

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

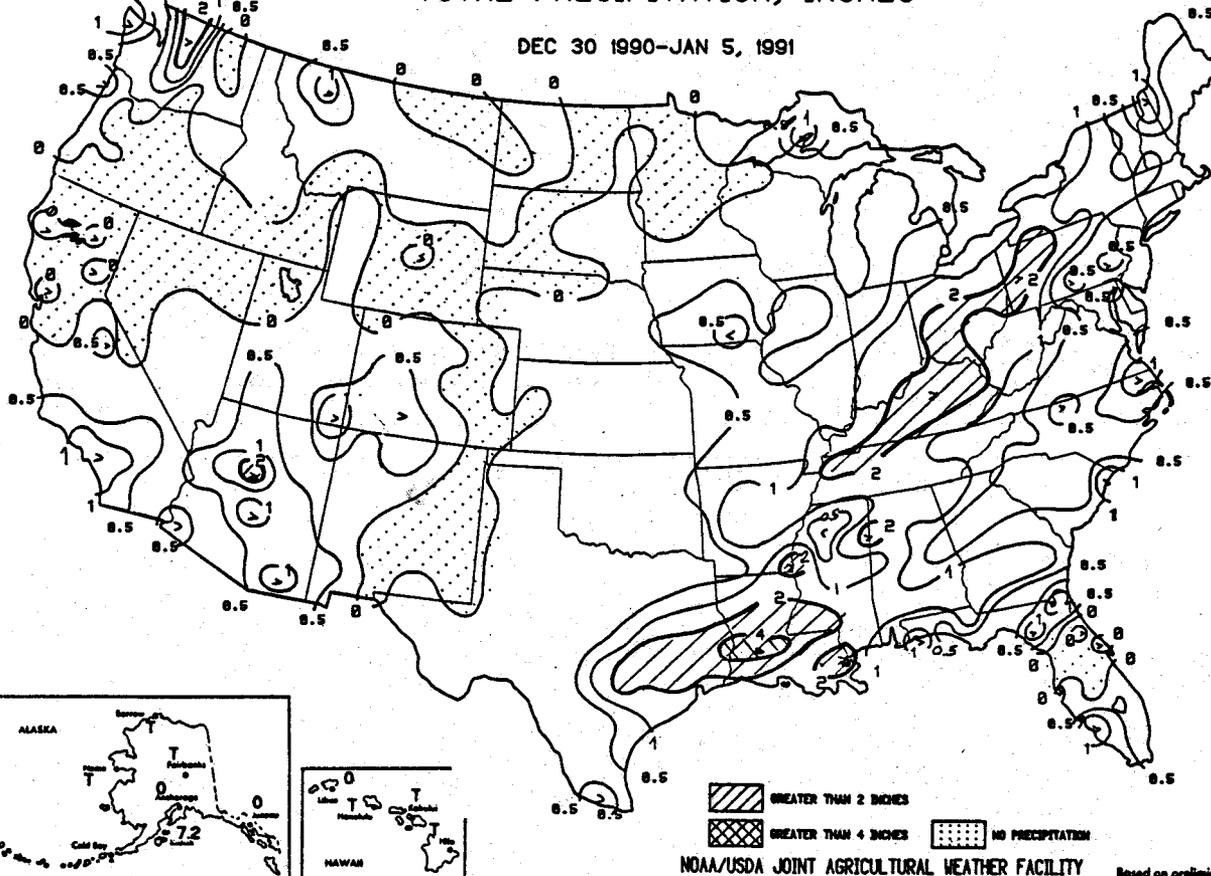
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January 8, 1991

TOTAL PRECIPITATION, INCHES

DEC 30 1990-JAN 5, 1991



NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

Based on preliminary reports

HIGHLIGHTS

Dec. 30, 1990 - Jan. 5, 1991

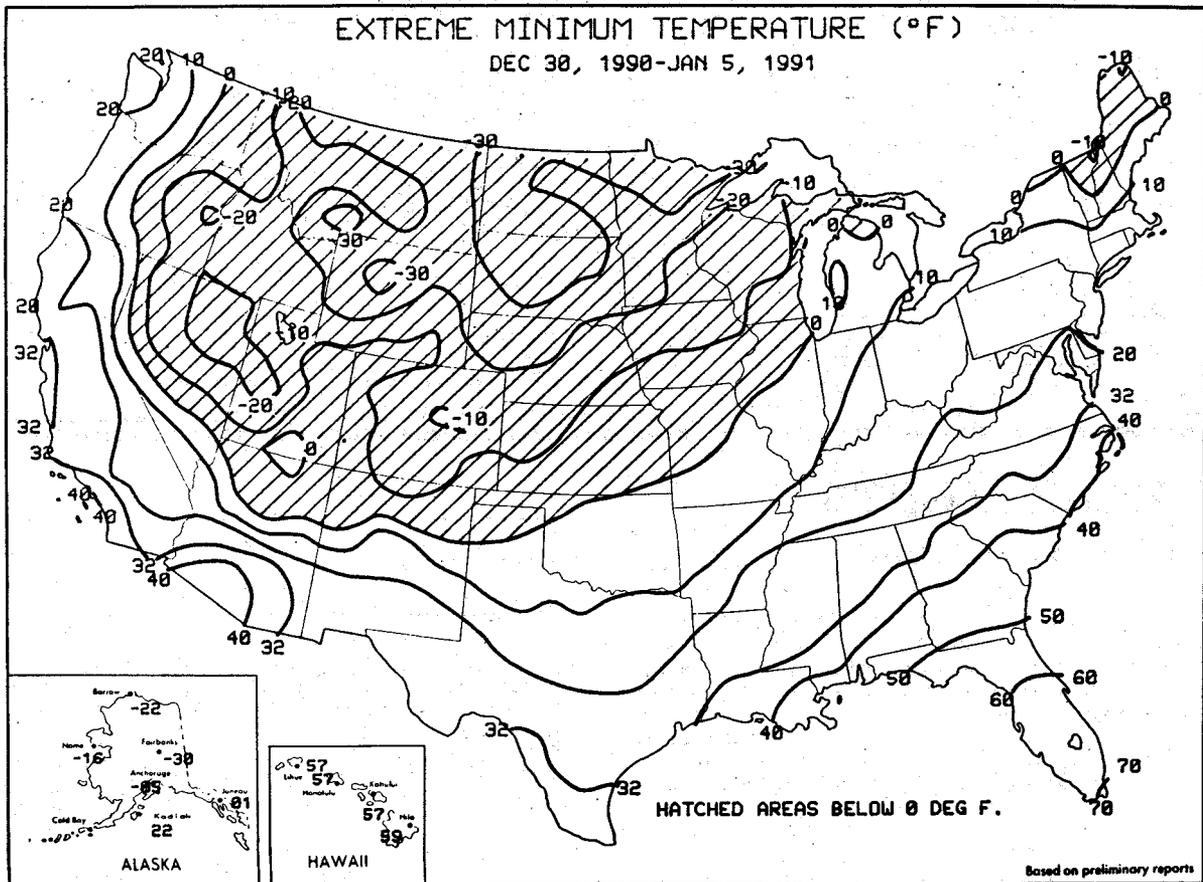
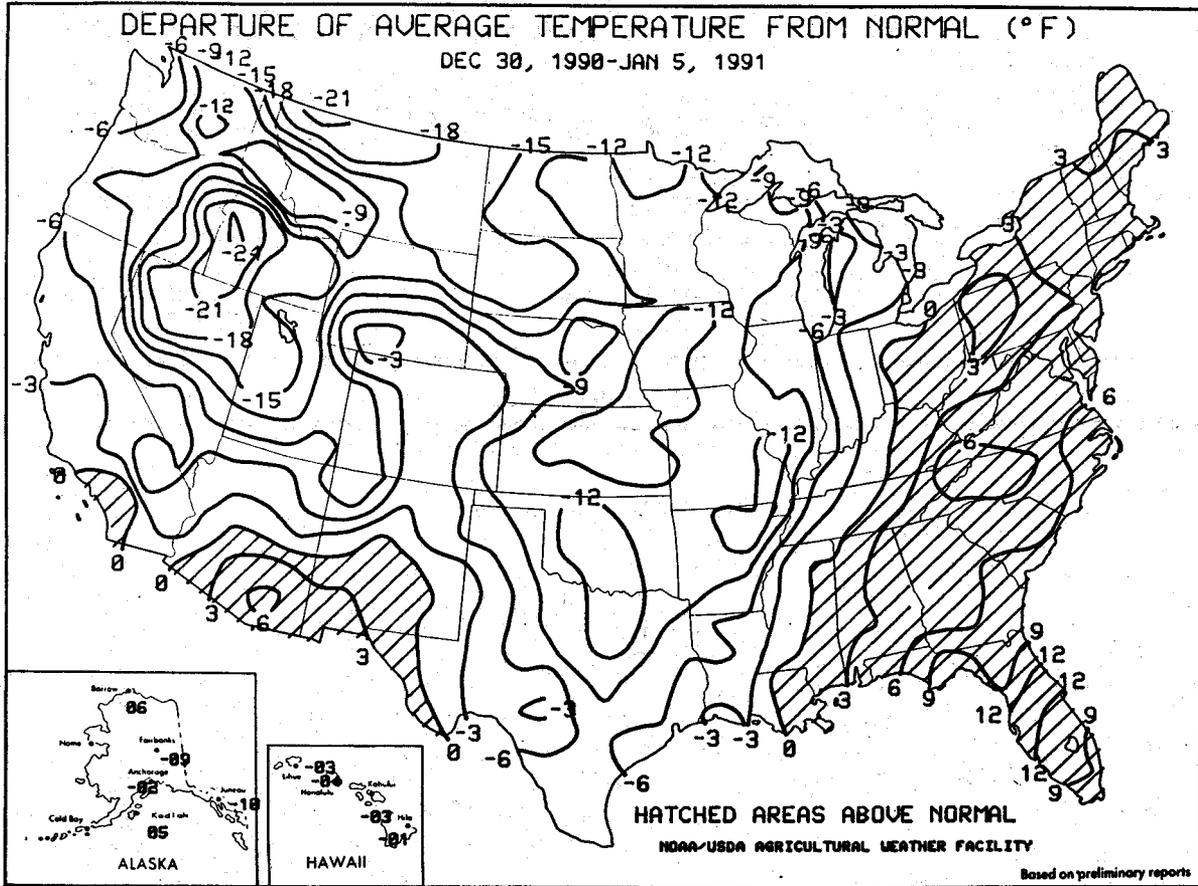
The year 1990 ended with a slew of records and extremes. On Sunday and Monday, low-temperature records were set in nearly 50 locations from the northern Plains to Texas, westward to California. Heavy snow and gusty winds belted the Northwest as the latest surge of frigid air settled in. Meanwhile, more than 30 record highs were notched from Maine to Florida. Not all the warmth was welcomed, as rapid snowmelt and rain combined to produce extensive flooding from Illinois eastward to the Appalachians, and southwestward to the Tennessee Valley. Flooding in the Ohio Valley persisted through the week. Chilly air and generally dry conditions were the rule as 1990 passed into the history books. Significant rain and mountain snow pushed into southern California on

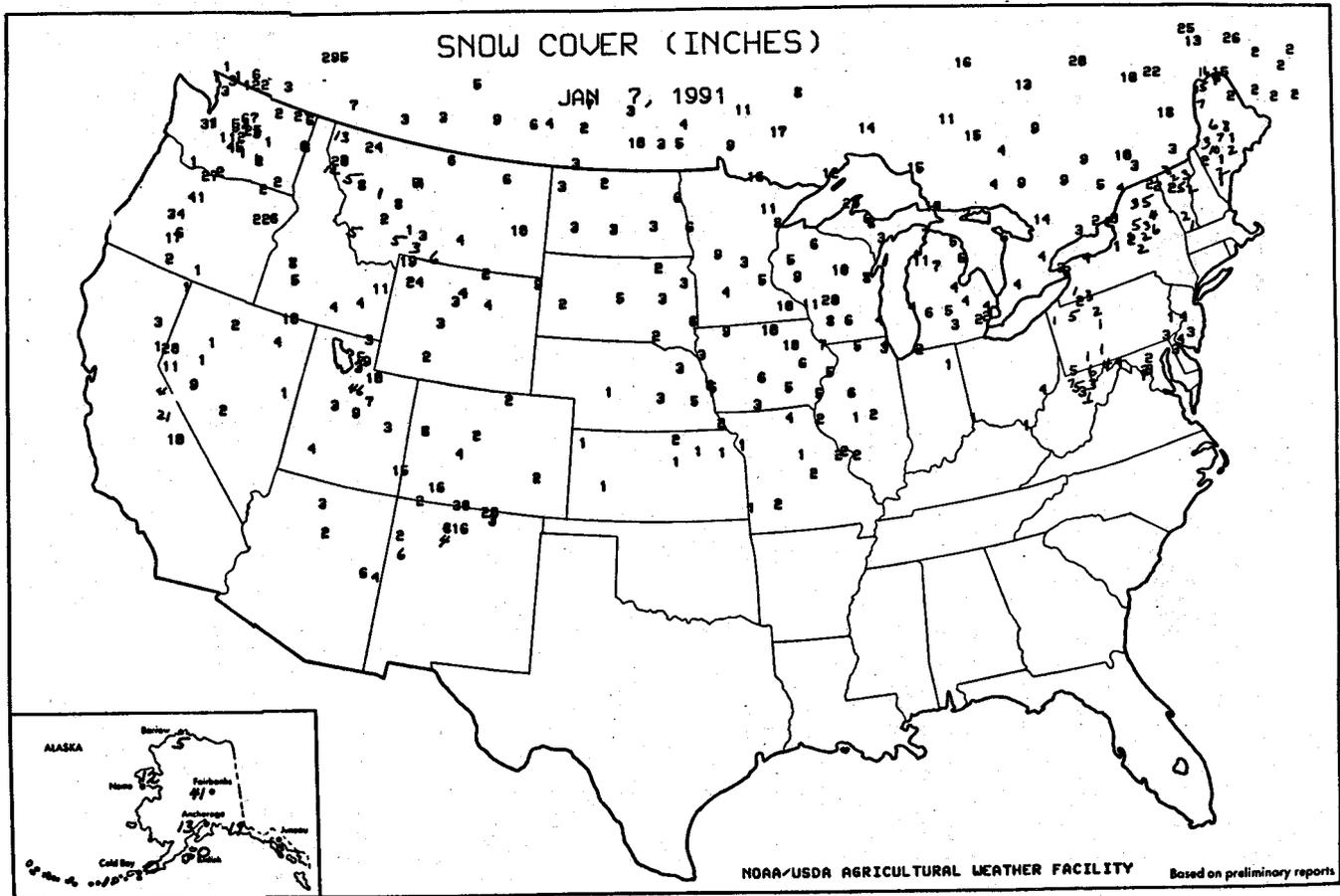
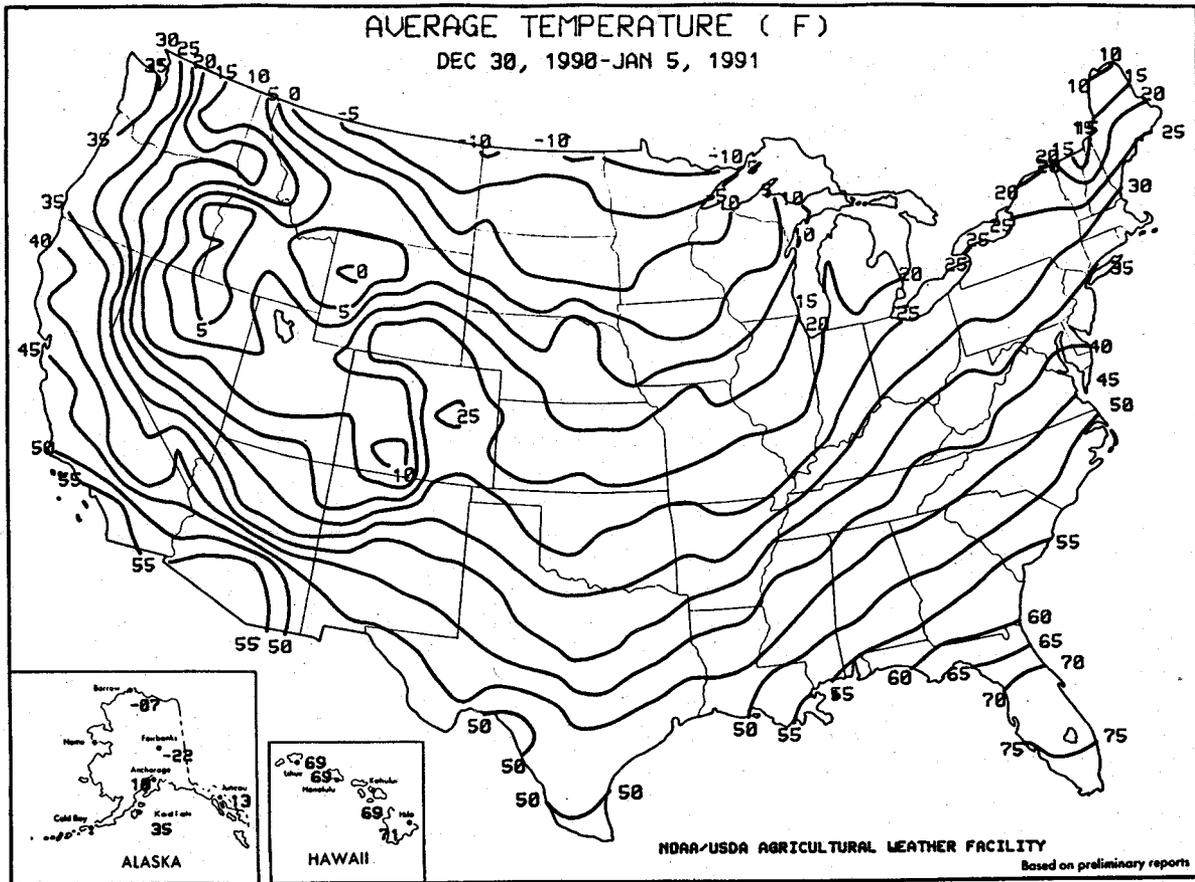
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National Weather Data for Selected Cities

Weather Data for the Week Ending January 5, 1991

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	MINIMUM	90 AND ABOVE	32 AND BELOW	TEMP. °F		
																			.01 INCH OR MORE	.50 INCH OR MORE	
AL BIRMINGHAM	55	38	75	28	46	3	1.0	-.2	.6	5.9	102	.4	51	89	82	0	0	2	2	1	
MOBILE	61	47	77	41	54	3	1.0	-.2	.6	6.0	97	.8	106	97	73	0	0	0	0	1	
MONTGOMERY	56	45	78	38	51	4	.5	-.6	.2	3.7	67	.4	49	98	74	0	0	0	0	0	
AK ANCHORAGE	15	5	21	-5	10	0	.0	-.2	.0	1.8	147	.0	0	85	61	0	0	7	4	0	
BARROW	0	-15	6	-22	-7	6	.0	.0	.0	.1	76	.0	0	81	69	0	0	7	1	0	
FAIRBANKS	-16	-27	3	-30	-22	-9	.0	-.1	.0	3.0	357	.0	0	89	62	0	0	7	0	0	
JUNEAU	21	4	26	1	13	-10	.0	-.9	.0	5.5	105	.0	0	88	36	0	0	7	0	0	
KODIAK	37	32	39	22	35	5	7.2	5.9	2.7	12.1	187	7.2	769	92	75	0	0	3	5	3	
NOME	23	7	33	-16	15	10	.0	-.2	.0	1.3	174	.0	8	75	55	0	0	7	1	0	
AZ PHOENIX	64	46	69	36	55	3	.6	.5	.3	1.1	116	.6	485	80	44	0	0	0	3	0	
PRESCOTT	45	24	48	9	35	-1	.6	-.2	.4	.8	43	.6	200	78	50	0	0	4	3	0	
TUCSON	68	46	74	37	57	6	1.0	.8	.9	2.5	232	1.0	679	92	41	0	0	0	2	1	
YUMA	62	48	66	41	55	0	1.3	1.2	1.3	1.3	333	1.3	1000	52	28	0	0	0	1	1	
AR FORT SMITH	33	22	38	9	28	-10	.0	.7	.3	.5	160	.2	61	95	75	0	0	7	3	1	
LITTLE ROCK	35	21	46	11	28	-12	1.7	.8	.9	9.0	185	.9	142	87	76	0	0	7	3	2	
CA BAKERSFIELD	53	35	59	25	44	-3	.3	.1	.2	.6	71	.3	207	95	46	0	0	4	2	0	
EUREKA	49	34	54	30	42	-6	.0	-.6	.0	2.9	40	.0	86	70	0	0	3	0	0		
FRESNO	51	33	54	24	42	-2	.1	-.3	.1	.8	41	.1	35	95	54	0	0	4	2	0	
LOS ANGELES	66	50	74	44	58	2	1.0	.5	.7	1.1	53	1.0	242	74	32	0	0	0	3	1	
REDDING	56	21	62	18	38	-8	.0	-.9	.0	.6	7	.0	0	82	26	0	0	7	0	0	
SACRAMENTO	51	29	54	22	40	-5	.0	-.8	.0	1.5	42	.0	0	87	45	0	0	5	0	0	
SAN DIEGO	65	50	69	39	57	1	.8	.3	.5	1.4	60	.8	236	84	46	0	0	0	2	0	0
SAN FRANCISCO	52	36	54	32	44	-4	.0	-.0	.0	1.8	42	.0	0	82	44	0	0	1	0	0	
CO DENVER	40	13	59	-8	27	-13	.1	-.1	.1	.3	54	.1	75	84	41	0	0	7	2	0	
GRAND JUNCTION	25	2	35	-8	14	-15	.5	.4	.5	1.5	219	.5	490	86	57	0	0	7	2	0	
PUEBLO	41	9	63	-13	25	-5	.0	-.1	.0	.2	67	.0	0	92	46	0	0	7	0	0	
CT BRIDGEPORT	41	28	50	20	34	4	.1	-.7	.1	.3	83	.7	80	53	0	0	5	2	0		
HARTFORD	43	22	55	15	32	6	.2	-.7	.1	4.9	102	.0	0	85	43	0	0	6	6	0	
DC WASHINGTON	52	32	70	24	42	6	.3	-.4	.3	4.7	130	.0	0	96	49	0	0	0	0	0	
FL APALACHICOLA	68	59	76	56	63	10	.2	-.6	.2	1.6	40	.0	0	99	82	0	0	1	1	0	
DAYTONA BEACH	80	63	88	60	71	13	.0	-.5	.0	.3	13	.0	0	100	64	0	0	0	0	0	
JACKSONVILLE	68	57	83	54	62	8	1.1	.4	1.1	1.9	67	.0	0	96	77	0	0	0	1	1	
KEY WEST	80	72	82	70	76	8	1.4	1.0	1.2	2.7	135	1.4	519	89	67	0	0	0	4	1	
MIAMI	81	69	82	66	75	8	.0	-.4	.0	1.1	49	.0	6	89	60	0	0	0	2	0	
ORLANDO	82	65	85	62	73	13	.0	-.4	.0	.8	38	.0	0	100	55	0	0	0	0	0	
TALLAHASSEE	68	56	77	53	62	10	.0	-.0	.0	4.5	84	.0	0	98	75	0	0	0	1	0	
TAMPA	83	65	86	63	74	14	.0	-.5	.0	.2	8	.0	0	99	57	0	0	0	0	0	
WEST PALM BEACH	81	68	82	64	74	8	.1	-.5	.1	2.0	77	.1	24	92	64	0	0	0	3	0	
GA ATLANTA	54	41	69	34	48	5	.4	-.7	.3	3.1	62	.1	8	99	74	0	0	0	3	0	
AUGUSTA	58	44	74	41	51	6	.5	-.4	.4	2.4	62	.4	61	97	71	0	0	0	4	0	
MACON	59	46	74	40	52	6	.7	-.3	.4	4.0	84	.5	68	100	74	0	0	0	5	0	
SAVANNAH	63	51	79	44	57	8	.6	-.1	.6	2.7	83	.6	122	95	69	0	0	0	1	1	
HI HILO	79	63	79	59	71	-1	.0	-.3	.0	30.1	209	.0	0	82	48	0	0	0	0	0	
HONOLULU	78	60	79	57	69	-4	.0	-.9	.0	4.9	122	.0	0	85	48	0	0	0	0	0	
KAHULUI	78	61	80	57	69	-3	.0	-.8	.0	6.0	177	.0	0	90	53	0	0	0	0	0	
LIHUE	76	62	79	57	69	-3	.0	-.4	.0	3.4	52	.0	0	79	52	0	0	0	0	0	
ID BOISE	14	-5	21	-12	5	-25	.0	-.4	.0	.9	59	.0	0	88	67	0	0	7	0	0	
LEWISTON	31	21	41	2	26	-6	.0	-.3	.0	.4	27	.0	0	57	43	0	0	6	1	0	
POCATELLO	20	-5	25	-17	8	-16	.0	-.2	.0	1.2	105	.0	0	83	57	0	0	7	0	0	
IL CHICAGO	24	7	30	-2	15	-7	.4	-.1	.3	2.2	82	.3	81	87	59	0	0	7	2	0	
MOLINE	22	4	33	-1	13	-8	.6	-.2	.6	3.6	164	.6	190	87	58	0	0	7	3	1	
PEORIA	21	7	33	-1	14	-9	.9	-.5	.6	4.4	190	.7	233	89	66	0	0	7	3	1	
QUINCY	21	8	34	0	15	-10	.2	-.2	.2	1.9	95	.2	62	92	63	0	0	7	1	0	
ROCKFORD	20	4	30	-6	12	-8	.5	-.1	.4	2.9	133	.4	165	84	58	0	0	7	2	0	
SPRINGFIELD	23	12	34	3	17	-8	.3	-.1	.2	5.2	215	.2	64	88	63	0	0	7	2	0	
IN EVANSVILLE	33	16	40	11	24	-7	1.5	.8	.9	8.0	202	.6	108	95	70	0	0	7	2	2	
FORT WAYNE	30	16	42	11	23	-1	1.0	.5	.8	7.7	274	.1	36	88	63	0	0	7	2	1	
INDIANAPOLIS	32	16	42	11	24	-4	1.4	.8	1.4	7.8	227	.1	11	93	61	0	0	7	2	1	
SOUTH BEND	29	15	33	5	22	-3	.3	-.3	.2	5.2	156	.2	39	87	58	0	0	7	3	0	
IA DES MOINES	17	0	31	-8	9	-11	.7	.5	.5	2.8	238	.7	406	81	62	0	0	7	3	1	
SIOUX CITY	18	-2	33	-11	8	-9	.2	-.1	.2	1.0	114	.2	180	83	58	0	0	7	2	0	
WATERLOO	15	-7	27	-15	4	-12	.5	.3	.5	1.7	136	.5	343	87	65	0	0	7	3	0	
KS COMCORDIA	23	5	38	-7	14	-13	.3	-.1	.2	.6	79	.2	180	87	56	0	0	7	3	0	
DODGE CITY	29	9	50	-6	19	-11	.0	-.1	.0	.6	102	.0	0	93	64	0	0	7	1	0	
GOODLAND	31	8	59	-13	20	-8	.0	-.1	.0	.2	39	.0	33	90	61	0	0	7	2	0	
TOPEKA	26	7	39	-4	16	-11	.3	-.1	.2	1.1	77	.1	75	92	57	0	0	7	2	0	
WICHITA	27	11	38	-3	19	-12	.1	-.1	.1	.9	82	.1	92	90	61	0	0	7	2	0	
KY BOWLING GREEN	44	23	66	14	33	-2	2.3	1.3	2.3	11.5	216	.5	98	68	0	0	7	2	1		
LEXINGTON	43	23	66	17	33	0	2.6	1.7	2.2	10.5	241	.4	61	94	63	0	0	7	2	1	
LOUISVILLE	41	21	65	15	31	-2	2.2	1.5	1.8	9.3	231	.4	78	90	59	0	0	7	2	1	
LA ALEXANDRIA	50	35	73	29	42	-6	2.5	1.5	2.4	10.7	191	2.5	331	93	77	0	0	3	3	1	
BATON ROUGE	59	44	79	38	52	0	1.2	.1	.8	6.0	104	1.2	157	94	67	0	0	0	3	1	
LAKE CHARLES	56	41	75	35	48	-3	2.4	1.3	2.3	6.4	110	2.4	300	96	77	0	0	0	2	1	
NEW ORLEANS	60	47	81	42	54	1	2.3	1.2	1.3	11.2	184	1.5	185	96	77	0	0	0	5	2	

Based on 1951-80 normals

Weather Data for the Week Ending January 5, 1991

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	TEMP. °F		PRECIP.	
																			.01 INCH OR MORE	.50 INCH OR MORE	.01 INCH OR MORE	.50 INCH OR MORE
SENECA	48	31	71	23	40	-6	.7	-.2	.4	4.3	95	.3	51	93	69	0	0	3	5	0	0	
ME CARIBOU	20	5	38	-10	13	1.1	.5	-.2	.3	5.6	157	.1	5	83	59	0	0	6	4	0	0	
PORTLAND	39	18	53	9	28	-.6	.3	-.7	.1	8.0	156	.1	18	86	51	0	0	6	3	0	0	
MD BALTIMORE	50	26	68	20	38	-.6	.5	-.4	.4	4.9	126	.1	12	88	46	0	0	6	3	0	0	
SALISBURY	52	29	68	20	41	-.5	.1	-.7	.1	4.2	97	.1	19	94	55	0	0	6	1	0	0	
MA BOSTON	44	27	59	19	35	-.2	.2	-.8	.1	3.2	62	.1	0	76	45	0	0	6	2	0	0	
CHATHAM	42	30	50	22	36	-.4	.1	-.9	.1	3.9	68	.1	12	84	45	0	0	5	4	0	0	
MI ALPENA	25	11	32	1	18	-.2	.2	-.2	.2	2.0	87	.2	53	79	32	0	0	7	2	0	0	
DETROIT	30	15	40	11	23	-.2	.1	-.1	.3	4.6	160	.2	53	89	60	0	0	7	4	0	0	
FLINT	26	9	33	5	18	-.5	.6	-.3	.3	2.8	125	.3	121	87	56	0	0	7	3	0	0	
GRAND RAPIDS	26	13	32	11	20	-.4	.4	-.1	.2	3.3	112	.3	84	90	65	0	0	7	5	0	0	
HOOCHTON LAKE	21	8	29	0	15	-.4	.4	-.1	.4	1.9	88	.4	130	85	64	0	0	7	3	0	0	
LANSING	26	10	32	3	18	-.4	.5	-.1	.4	3.1	110	.3	81	87	59	0	0	7	3	0	0	
MARQUETTE	15	-5	24	-11	5	-.9	-.4	-.3	.0	1.8	63	.1	14	85	60	0	0	7	3	0	0	
MUSKOGON	28	18	34	14	23	-.2	.4	-.2	.3	2.9	97	.3	73	89	63	0	0	7	4	0	0	
SADLT ST. MARIE	20	1	29	-11	10	-.5	.1	-.4	.0	2.6	88	.1	26	87	59	0	0	7	5	0	0	
MS ALEXANDRIA	8	-11	19	-25	-1	-.9	.1	.1	.1	.5	60	.1	5	80	53	0	0	7	0	0	0	
DULUTH	7	-14	17	-24	-3	-11	.1	.3	.1	.5	34	.1	5	80	50	0	0	7	1	0	0	
INT'L FALLS	1	-22	10	-39	-11	-12	.1	-.2	.1	1.3	119	.1	33	81	55	0	0	7	1	0	0	
MINNEAPOLIS	11	-7	25	-13	2	-11	.1	-.2	.1	1.0	104	.1	7	75	52	0	0	7	1	0	0	
ROCHESTER	11	-10	27	-18	1	-10	.2	-.2	.2	1.9	182	.2	150	81	64	0	0	7	1	0	0	
MO GREENWOOD	52	32	77	27	42	-.2	.3	-.3	.3	9.1	144	.3	34	91	64	0	0	4	2	0	0	
JACKSON	54	35	79	31	45	-.1	1.0	-.3	.5	6.4	103	.7	80	96	71	0	0	2	3	0	0	
MERIDIAN	56	37	78	31	47	1	1.0	-.2	.5	4.2	64	.5	59	97	66	0	0	1	3	1	1	
MO CAPE GIRARDEAU	30	16	37	9	23	-.1	1.5	.7	1.1	9.5	223	.4	79	95	77	0	0	7	2	1	1	
COLUMBIA	25	11	37	1	18	-11	.6	.2	.4	3.9	171	.4	140	87	58	0	0	7	3	0	0	
KANSAS CITY	24	6	36	-5	15	-14	.3	-.1	.2	1.3	80	.2	105	88	60	0	0	7	3	0	0	
SAINT LOUIS	26	14	36	5	20	-10	.8	.4	.7	6.6	263	.1	37	88	60	0	0	7	2	1	1	
SPRINGFIELD	30	15	40	3	23	-10	.8	.3	.6	6.2	219	.2	60	90	68	0	0	7	3	1	1	
MT BILLINGS	18	-4	36	-15	7	-15	.2	.0	.1	.7	71	.2	106	72	53	0	0	7	2	0	0	
GLASSBORO	2	-17	18	-28	-8	-18	.1	.1	.1	.5	139	.1	0	83	61	0	0	7	0	0	0	
GREAT FALLS	12	-6	36	-12	3	-18	.1	-.1	.1	.8	89	.1	62	82	61	0	0	7	2	0	0	
HAVRE	2	-17	32	-32	-8	-21	.1	.1	.1	.3	55	.1	0	81	55	0	0	7	0	0	0	
HELENA	20	-2	41	-18	9	-10	.1	.1	.1	.5	67	.1	17	85	54	0	0	7	2	0	0	
KALISPELL	15	-12	32	-20	1	-19	.9	.5	.6	4.6	250	.2	71	90	74	0	0	7	4	1	1	
MILES CITY	12	-14	36	-27	-1	-17	.3	.2	.3	.5	73	.3	300	82	47	0	0	7	1	0	0	
MISSOULA	21	4	35	-16	13	-9	-.1	-.2	.1	1.1	78	.1	0	87	67	0	0	7	2	0	0	
NE GRAND ISLAND	24	2	46	-13	13	-9	.3	-.2	.2	1.0	130	.2	250	84	58	0	0	7	3	0	0	
LINCOLN	21	0	39	-8	11	-10	.4	.3	.3	1.1	151	.4	360	83	56	0	0	7	3	0	0	
NORFOLK	21	-2	38	-14	10	-9	.3	.2	.2	.8	117	.3	375	87	61	0	0	7	3	0	0	
NORTH PLATTE	28	0	52	-18	14	-8	-.2	.1	.2	.3	65	.2	350	92	53	0	0	7	2	0	0	
OMAHA	17	0	29	-11	8	-13	.5	.3	.3	1.2	138	.4	367	72	55	0	0	7	3	0	0	
SCOTTSBLUFF	32	4	54	-23	18	-6	.1	.1	.1	.4	65	.1	12	86	48	0	0	7	1	0	0	
VALENTINE	22	-10	41	-29	6	-14	.1	.1	.1	.3	69	.1	0	85	54	0	0	7	0	0	0	
NV RLY	41	2	51	-19	21	-3	.1	-.1	.1	.4	46	.1	67	76	36	0	0	7	1	0	0	
LAS VEGAS	48	29	54	15	38	-5	.2	.1	.1	.2	58	.2	300	53	32	0	0	4	2	0	0	
RENO	35	9	42	1	22	-9	.0	-.3	.0	.5	32	.0	0	89	46	0	0	7	0	0	0	
WYNNEMUCA	26	-8	31	-17	9	-20	.0	-.2	.0	.4	61	.0	0	83	48	0	0	7	0	0	0	
NE CONCORD	40	13	54	4	27	6	.1	-.6	.1	4.1	105	.0	0	91	46	0	0	6	2	0	0	
NJ ATLANTIC CITY	49	25	67	15	37	4	.4	-.4	.3	3.6	87	.1	11	71	48	0	0	6	3	0	0	
NM ALBUQUERQUE	46	23	54	13	35	0	.2	.0	.1	.8	132	.2	188	77	37	0	0	6	2	0	0	
CLOVIS	50	21	62	8	35	-2	.1	.1	.1	.4	61	.1	0	93	45	0	0	7	0	0	0	
ROSWELL	52	26	69	21	39	0	.1	-.1	.1	.3	74	.1	0	86	45	0	0	7	0	0	0	
NY ALBANY	37	19	47	11	28	6	.4	-.2	.4	3.5	103	.1	0	88	50	0	0	6	1	0	0	
BINGHAMTON	34	19	53	13	26	4	.6	.0	.6	5.2	158	.1	2	90	53	0	0	7	3	1	1	
BUFFALO	33	20	54	16	27	1	1.7	.9	1.4	9.0	228	.3	50	89	61	0	0	7	4	0	0	
NEW YORK	46	32	61	25	39	6	.1	-.6	.1	4.9	116	.1	0	75	47	0	0	4	2	0	0	
ROCHESTER	34	18	55	14	26	1	1.3	.7	1.1	4.4	146	.2	49	88	62	0	0	7	4	1	1	
SYRACUSE	36	19	58	13	27	3	.9	.3	.8	5.4	147	.1	25	86	59	0	0	7	5	1	1	
NC ASHEVILLE	51	37	66	25	44	6	.5	-.2	.2	4.7	128	.2	47	98	71	0	0	2	2	0	0	
CHARLOTTE	55	40	69	34	47	7	.2	-.6	.1	3.4	84	.1	20	96	66	0	0	0	3	0	0	
GREENSBORO	53	35	67	29	44	6	.8	.0	.6	4.3	109	.1	23	93	55	0	0	4	3	1	1	
HATTERAS	60	51	74	46	55	9	.2	-.9	.1	5.3	103	.2	26	96	73	0	0	0	3	0	0	
NEW BERN	59	44	79	37	51	7	.6	-.3	.5	2.5	57	.5	84	94	68	0	0	0	3	0	0	
RALEIGH	54	35	70	29	46	6	.3	-.4	.2	3.4	91	.3	49	96	56	0	0	4	5	0	0	
WILMINGTON	60	45	78	41	53	7	.3	-.6	.2	2.9	72	.3	42	96	63	0	0	0	4	3	0	0
ND BISMARCK	8	-19	20	-37	-5	-14	.1	.1	.1	.5	91	.1	25	84	59	0	0	7	1	0	0	
FARGO	4	-15	11	-27	-5	-12	.1	.1	.1	.8	113	.1	30	73	57	0	0	7	2	0	0	
GRAND FORKS	3	-17	14	-30	-7	-11	.1	.1	.1	.5	73	.1	33	74	55	0	0	7	1	0	0	
WILLISTON	4	-19	12	-31	-7	-16	.1	.1	.1	.4	70	.1	0	82	62	0	0	7	1	0	0	
OH AKRON-CANTON	37	19	60	13	28	2	1.9	1.2	1.6	7.0	226	.3	67	94	64	0	0	7	3	1	1	
CINCINNATI	40	20	64	15	30	-1	1.3	.6	1.1	8.1	232	.2	37	89	61	0	0	7	3	1	1	
CLEVELAND	36	19	56	12	27	0	1.8	1.2	1.6	8.8	278	.2	45	92	61	0	0	7	4	1	1	
COLUMBUS	39	21	62	15	30	2	1.8	1.2	1.6	7.2	238	.2	51	93	59	0	0	7	2	1	1	

Based on 1951-80 normals

Weather Data for the Week Ending January 5, 1991

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	TEMP. °F		PRECIP.
													.01 INCH OR MORE						.50 INCH OR MORE		
DAYTON	37	19	62	13	28	0	3.0	2.4	2.8	10.2	353	.2	44	90	63	0	7	7	2	1	
TOLDO	30	16	41	11	23	-1	.8	.3	.7	5.8	196	.1	33	91	64	0	7	7	2	1	
YOUNGSTOWN	37	18	61	12	27	2	1.8	1.2	1.6	6.8	213	.3	58	94	66	0	7	7	3	1	
OK OKLAHOMA CITY	32	17	42	3	25	-12	.2	.0	.2	1.7	129	.2	150	91	66	0	6	6	2	0	
TOLSA	31	18	41	5	25	-11	.2	.1	.1	3.1	152	.1	61	92	65	0	6	6	3	0	
OR ASTORIA	43	30	46	19	36	-5	.3	-2.4	-1.1	5.2	38	.0	2	96	71	0	0	5	3	0	
BURNS	29	-3	37	-13	13	-13	.0	-4.4	-0.0	.2	9	.0	0	81	46	0	0	7	0	0	
MEDFORD	43	17	46	13	30	-7	.4	-1.8	-1.1	1.1	28	.0	0	97	50	0	0	0	0	0	
FENDLETON	30	15	44	-11	23	-10	.4	-4.4	-1.4	.8	43	.0	0	92	70	0	0	7	1	0	
PORTLAND	39	24	48	14	32	-7	.4	-1.5	-2.4	2.4	32	.0	1	87	58	0	0	2	2	0	
SALEM	40	24	48	11	32	-7	.4	-1.7	-2.8	2.8	34	.0	0	83	64	0	0	6	6	0	
PA ALLENTOWN	40	21	48	15	30	2	.2	-6.6	-1.1	5.7	133	.0	2	91	56	0	0	6	3	0	
ERIE	36	23	60	16	29	3	1.7	1.1	1.4	7.1	193	.2	45	88	57	0	0	7	5	1	
HARRISBURG	43	22	57	17	33	2	.2	-5.1	-1.1	5.7	153	.0	8	92	50	0	0	6	2	0	
PHILADELPHIA	47	28	65	23	38	5	.1	-7.7	-1.1	3.8	96	.0	0	93	53	0	0	6	2	0	
PITTSBURGH	41	21	64	15	31	3	2.8	2.2	2.6	8.7	289	.2	49	91	57	0	0	6	2	1	
SCRANTON	38	22	53	17	30	3	.5	-1.1	.3	4.3	150	.0	0	87	54	0	0	6	2	0	
RI PROVIDENCE	45	23	58	16	34	5	.2	-8.1	-1.1	5.6	108	.1	14	87	46	0	0	6	3	0	
SC CHARLESTON	63	49	79	42	56	8	.5	-3.5	-1.1	3.2	88	.5	94	97	68	0	0	0	2	0	
COLUMBIA	57	44	72	40	50	6	.3	-6.6	-1.1	1.8	44	.2	29	96	65	0	0	0	4	0	
FLORENCE	58	43	78	38	51	6	.3	-5.1	-1.1	2.8	78	.2	41	94	62	0	0	0	6	0	
GREENVILLE	53	39	67	33	46	5	.4	-5.3	-1.1	3.4	72	.1	20	96	74	0	0	0	4	0	
SD ABERDEEN	9	-16	22	-33	-4	-13	.4	-1.1	-1.1	.4	67	.0	12	79	57	0	0	7	1	0	
HURON	11	-16	25	-29	-2	-15	.1	.0	.1	.5	91	.1	133	84	62	0	0	7	2	0	
RAPID CITY	18	-7	34	-30	5	-17	.4	-1.1	.4	.4	71	.0	33	83	58	0	0	7	1	0	
SIOUX FALLS	14	-11	30	-23	2	-12	.1	.0	.1	.7	92	.1	138	86	63	0	0	7	1	0	
TN CHATTANOOGA	51	37	71	30	44	5	1.1	-2.8	.8	10.6	177	.3	33	90	68	0	0	2	3	1	
KNOXVILLE	51	34	73	26	42	4	.9	-2.9	.9	9.0	168	.0	0	96	67	0	0	2	1	1	
MEMPHIS	46	27	71	20	36	-4	1.4	-3.3	1.3	10.6	189	.1	8	91	64	0	0	6	2	1	
NASHVILLE	47	25	71	17	36	-2	1.1	-1.1	1.1	10.8	201	.0	0	93	67	0	0	6	1	1	
TX ABILENE	45	24	67	11	34	-9	.2	-2.2	.8	.8	80	.0	7	95	63	0	0	5	1	0	
AMARILLO	42	15	61	-1	28	-7	.4	-1.1	.2	.2	42	.0	12	92	53	0	0	7	2	0	
AUSTIN	50	33	69	21	41	-8	1.9	1.5	1.6	2.6	114	1.9	760	94	74	0	0	3	5	1	
BEAUMONT	57	41	76	32	49	-3	2.8	1.8	2.7	6.6	118	2.8	400	95	77	0	0	1	4	1	
BROWNSVILLE	61	45	83	35	53	-7	.4	-2.2	.4	.1	5	.0	22	99	82	0	0	0	3	0	
CORPUS CHRISTI	58	42	79	32	50	-6	.9	-6.5	1.3	86	.8	342	95	80	0	0	1	5	0	0	
DEL RIO	57	41	68	31	49	-1	.1	.0	-1.1	.4	57	.1	175	75	46	0	0	1	4	0	
EL PASO	59	33	62	26	46	3	.4	-1.1	.3	.3	79	.0	0	83	39	0	0	4	0	0	
FORT WORTH	39	26	47	13	33	-12	.2	-2.2	.2	1.7	84	.2	82	97	76	0	0	5	4	0	
GALVESTON	56	42	73	31	49	-5	.4	-4.4	.4	2.2	53	.4	70	93	77	0	0	1	2	0	
HOUSTON	54	38	73	25	46	-7	2.5	1.7	2.3	4.2	.96	2.4	416	94	77	0	0	3	4	1	
LUBBOCK	49	21	69	7	35	-4	.4	-1.1	.4	.4	98	.0	0	95	51	0	0	7	1	0	
MIDLAND	53	27	72	20	40	-4	.4	-1.1	.4	.7	142	.0	0	97	52	0	0	5	2	0	
SAN ANGELO	50	28	69	18	39	-7	.4	-1.1	.2	.2	32	.0	0	97	61	0	0	5	1	0	
SAN ANTONIO	54	36	68	27	45	-4	1.0	-7.5	1.1	70	.9	409	90	69	0	0	5	5	1	0	
WACO	40	29	47	17	35	-12	.6	-4.4	.5	2.0	91	.6	230	96	83	0	0	5	5	1	
VICTORIA	56	39	71	27	48	-6	.9	-4.4	.4	1.6	66	.8	267	95	77	0	0	2	4	0	
WICHITA FALLS	40	29	47	17	35	-12	.6	-4.4	.5	2.0	91	.6	230	96	83	0	0	5	5	1	
UT CEDAR FALLS	38	20	59	7	29	-11	.7	-1.1	-1.1	1.1	81	.1	81	96	67	0	0	7	3	0	
SALT LAKE CITY	31	7	40	-14	19	-10	.7	-6.3	1.8	235	.7	700	87	57	0	0	7	3	0	0	
VT BURLINGTON	22	1	28	-9	12	-16	.4	-3.3	.3	3.6	36	.0	0	92	62	0	0	7	0	0	
VA NORFOLK	32	14	51	3	23	5	.4	-1.1	.3	3.6	132	.1	15	91	61	0	0	7	4	0	
RICHMOND	54	39	74	32	47	6	.6	-2.5	.5	3.3	87	.6	98	94	59	0	0	1	3	0	
ROANOKE	53	32	72	25	43	5	.2	-5.1	-1.1	3.6	92	.1	15	93	57	0	0	6	3	0	
WA QUILLAYUTE	52	29	69	23	41	5	.3	-4.3	.3	3.8	113	.0	0	89	54	0	0	5	1	0	
SEATTLE-TACOMA	41	30	45	23	36	-3	1.5	-2.1	1.0	17.0	85	.2	9	100	76	0	0	5	4	1	
SPOKANE	42	31	47	20	36	-3	.1	-1.4	.0	3.6	50	.0	0	93	61	0	0	4	3	0	
YAKIMA	22	8	33	-6	15	-11	.3	-4.4	.2	1.7	59	.0	0	83	76	0	0	7	3	0	
WV BECKLEY	31	9	43	2	20	-9	.9	-3.3	.9	.2	16	.0	0	88	55	0	0	7	0	0	
CHARLESTON	46	26	68	20	36	5	.9	-1.1	.9	5.3	143	.0	0	92	63	0	0	6	2	1	
HUNTINGTON	48	27	72	22	37	4	1.6	-8.6	1.6	7.0	184	.0	0	94	55	0	0	6	1	1	
PARKERSBURG	47	26	70	21	37	2	1.9	1.1	1.8	8.1	222	.1	11	92	56	0	0	6	2	1	
WI GREEN BAY	44	22	67	15	33	1	1.8	1.1	1.7	7.2	226	.1	28	96	61	0	0	6	2	1	
LACROSSE	15	-2	24	-10	6	-9	.3	.0	.2	2.3	145	.2	114	80	59	0	0	7	2	0	
MADISON	14	-4	25	-10	5	-10	.3	-1.1	.2	3.3	264	.3	212	80	52	0	0	7	2	0	
MILWAUKEE	18	1	29	-6	9	-8	.4	-1.1	.3	3.8	225	.4	190	79	57	0	0	7	3	0	
WAUSAU	21	5	30	-3	13	-8	.5	-0.3	.3	3.0	130	.4	117	77	54	0	0	7	3	0	
CASPER	12	-6	22	-15	3	-10	.1	-2.2	.1	2.0	142	.1	29	87	68	0	0	7	1	0	
CHEYENNE	29	4	41	-13	17	-6	.4	-1.1	.4	.6	107	.0	0	77	49	0	0	7	0	0	
LANDER	37	13	48	-9	25	-2	.4	-1.1	.4	.4	91	.0	0	75	36	0	0	6	0	0	
SHERIDAN	24	0	40	-27	12	-8	.4	-1.1	.4	.6	69	.0	0	83	57	0	0	7	0	0	
	20	-6	45	-30	7	-14	.4	-2.2	.4	.4	48	.0	8	84	56	0	0	7	1	0	

Based on 1951-80 normals

December Weather and Crop Summary

Weather

December 1990 was a month of many faces. Weather conditions ranged from pleasant to downright brutal, depending on which part of the Nation you were in, or even which half of the month it was. The eastern third of the Nation enjoyed unusual warmth, interrupted by occasional cold intrusions the latter half of the month. Record warmth was pervasive in the East in advance of cold fronts during the last 2 weeks. Providence, RI had its warmest December ever, and Tampa, FL ended the month with five consecutive record highs. The West experienced a dramatic shift in temperature in the middle of the month as arctic cold replaced seasonable airmasses. The northern Plains had the most extreme change, as 2 weeks of frequent record highs and temperature anomalies of greater than +6° Fahrenheit (F) gave way to bitter cold with anomalies of up to -20° F. Portions of the West coast, including Eureka, CA and Olympia, WA, reported a record-cold December.

Excessive moisture plagued the Appalachian cordillera, the lower Mississippi Valley, and the eastern Corn Belt. Several cities in Indiana and Ohio received record December rainfall. Ohio and Tennessee River drainage basins were beset by frequent flooding. Most of Florida and the Southeast continued to have below-normal rainfall. In the West, only the central and southern Rockies and a few other spotty locations collected above-normal precipitation. A large portion of southern California received no rain.

The month began on an ominous note in the eastern half of the Nation with record snow and flood-producing rain. Heavy snow fell on the 3rd and 4th in a band from Nebraska to northern Maine. Madison, WI received a record-setting 17-inch accumulation. Meanwhile, rainfall exceeding 1 inch soaked the area between the Mississippi River and the Appalachian divide. Greater than 8 inches of rain fell near New Orleans, LA in the 2-day period. Heavy rain finally abated in western Washington State by the 10th. Nevertheless, Quillayute, WA picked up 11 inches of rain in 10 days before the moist flow off of the Pacific Ocean subsided.

From the 5th to the 16th, a tranquil period graced the Nation, which, in retrospect, proved to be the proverbial "calm before the storm." Three relatively weak storm systems affected the United States during this time. The first brushed the Southeast and brought the only measurable rainfall of the month to portions of central and southern Florida on the 7th. The second produced rain and snow from Oregon and northern California to Minnesota. The third provided snowpack for the central and southern Rockies on the 12th and 13th before spreading rain, ice, and snow from the middle Mississippi Valley northeastward.

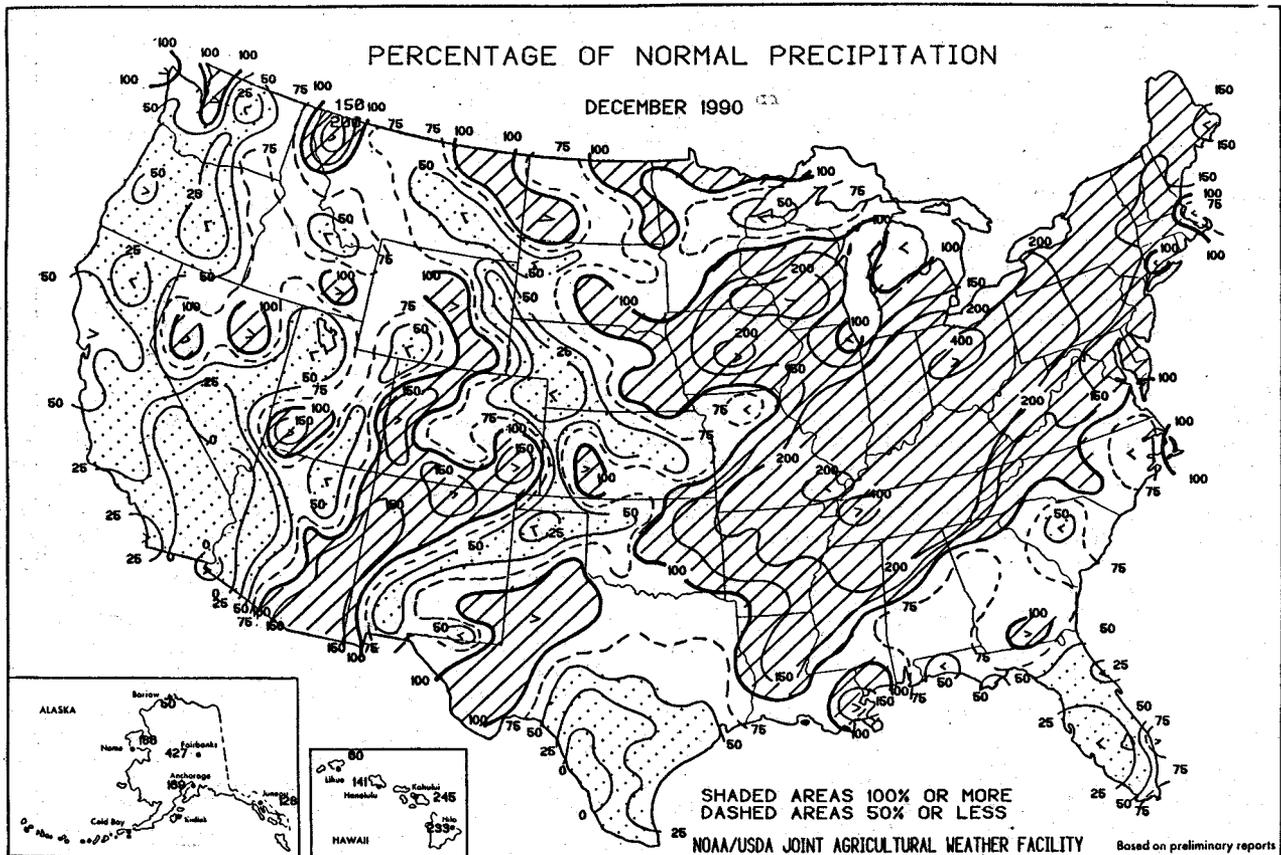
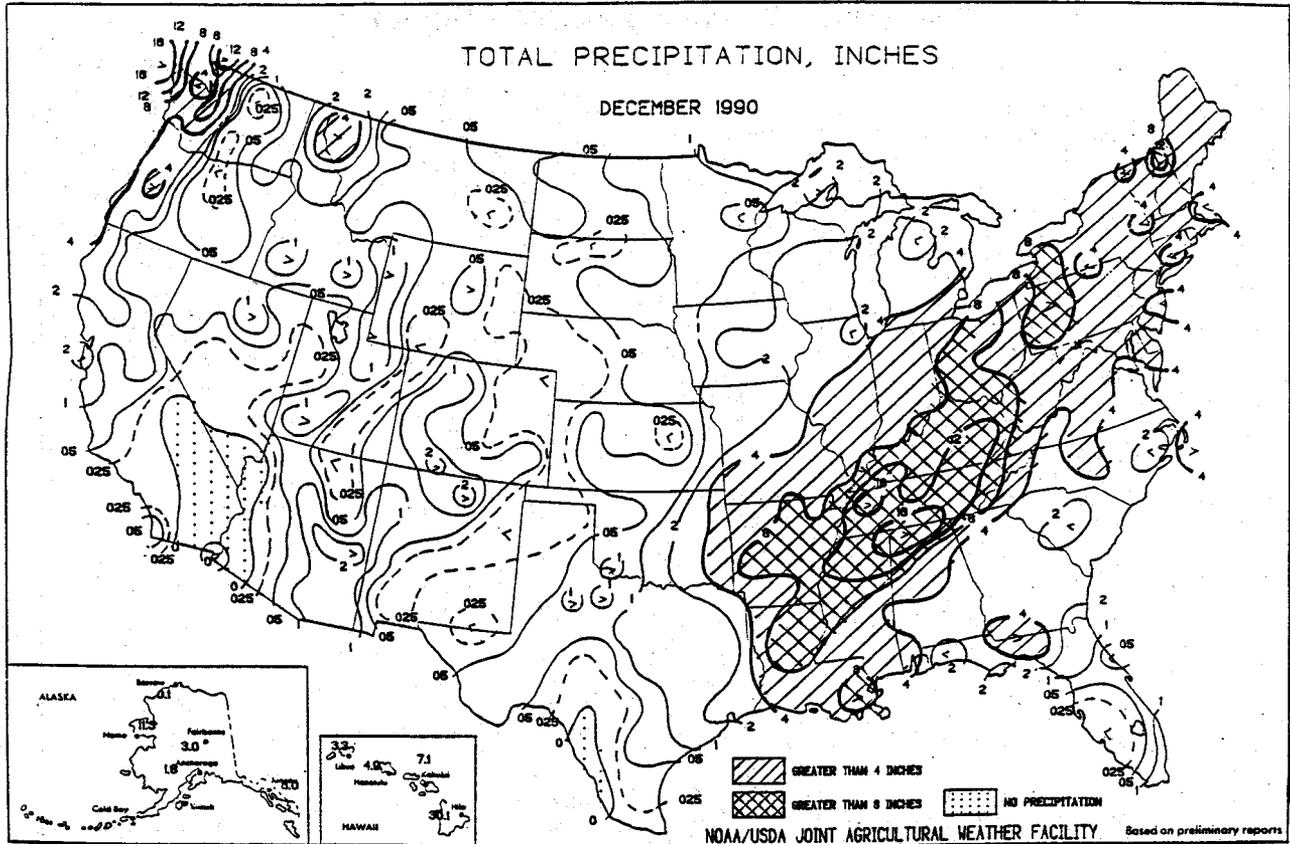
An intense temperature contrast evolved in mid-December. Moist, subtropical air surged northward toward the Great Lakes as arctic air plunged southward into the northern Plains. The clashing airmasses fueled heavy rain on the 17th and 18th from Arkansas to the west slopes of the

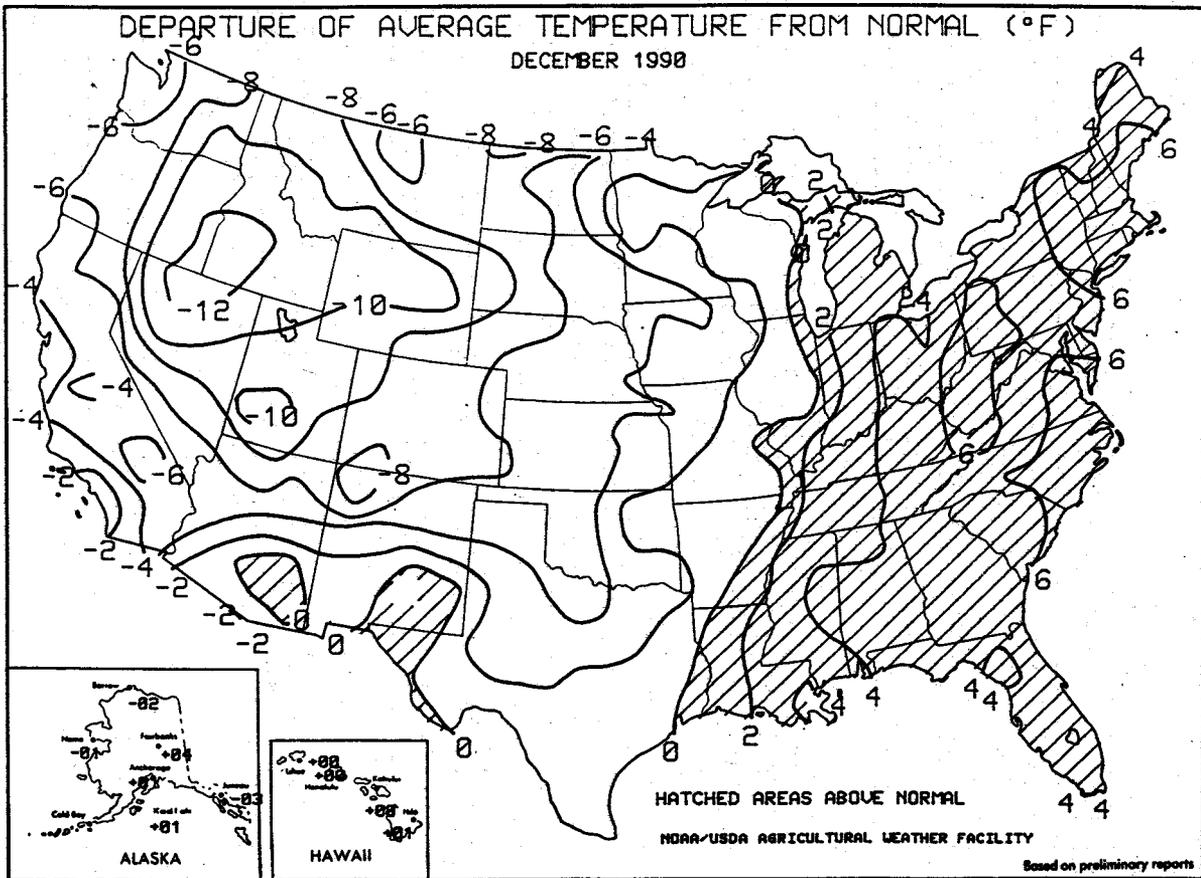
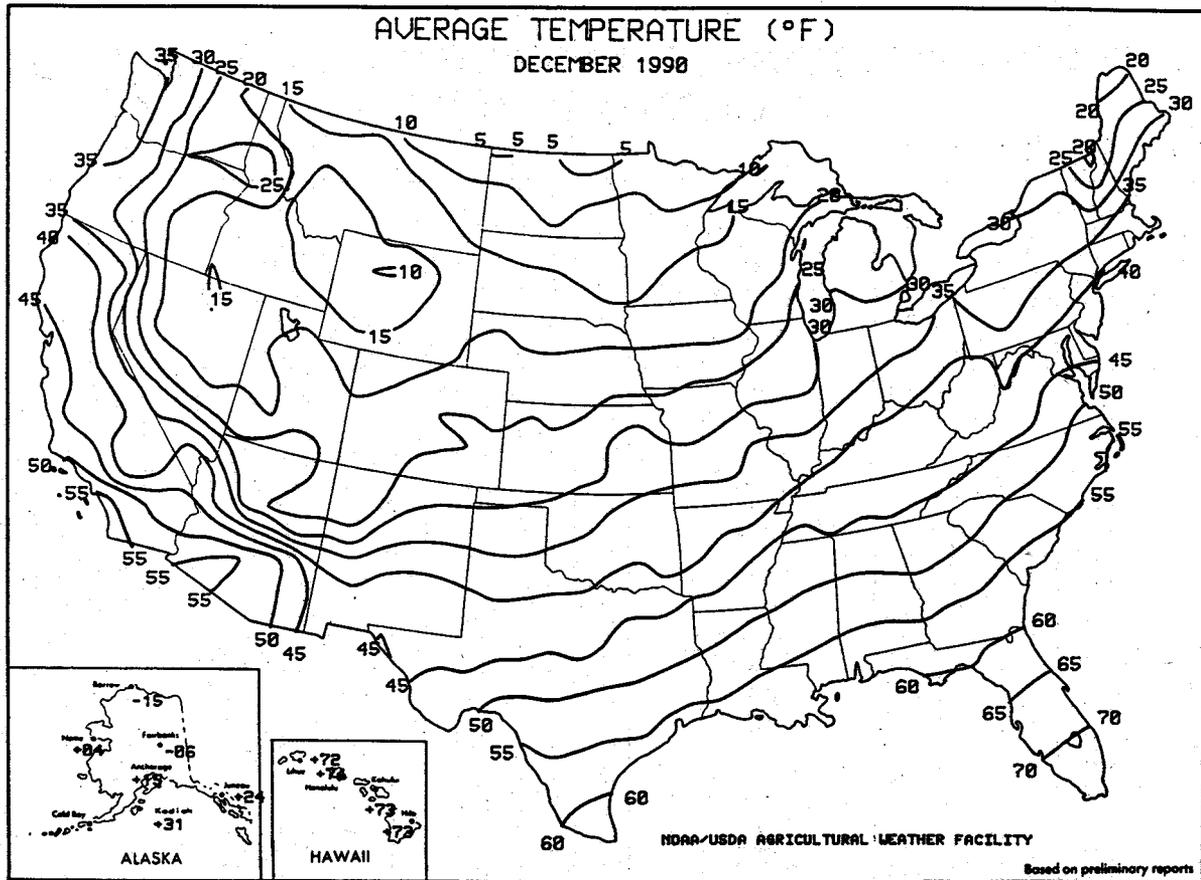
Appalachians, resulting in widespread minor flooding. Pure arctic air poured into the northern Plains beginning on the 18th. By the 22nd, the western two-thirds of the Nation was enveloped by record-breaking bitter cold. On the 18th, the Seattle, WA area was immobilized by up to 14 inches of snow, high winds, and temperatures plummeting into the teens. Southern California took the full brunt of the arctic punch, as temperatures in some agricultural valleys dipped to 20° F or below for up to five mornings in a row. An ice storm affected the Nation's midsection from Texas to the Upper Great Lakes as the arctic front edged eastward. Heavy rain returned to the East from the 20th through the 22nd. Major flooding occurred in the Ohio and Tennessee River Valleys. Huntsville, AL reported a 2-day rainfall of nearly 12 inches. For the week of December 16-22, greater than 4 inches of rain fell from northern Louisiana to Kentucky.

During the final week of December, cold air remained entrenched in the West. Bakersfield, CA, in an orange-growing region of the San Joaquin Valley, reported 5 consecutive record-low temperatures ending the 25th, including an all-time record low of 19° F, and 12 consecutive mornings below freezing to end the month (the streak ended at 15, 1 day shy of the all-time record, set in 1949). Enough cold air spilled into the East by Christmas Eve to change lingering moisture to snow in the Appalachians and the Great Lakes. Later in the week, areas from Missouri to New England were blanketed with snow. Some mountain locations in Pennsylvania received more than a foot of snow. A rapid warmup followed by more heavy rain induced severe flooding in Ohio and Indiana. Less serious but widespread flooding continued and worsened in the Ohio and Tennessee River Valleys. A reinforcing arctic airmass dried and chilled much of the Nation on the final day of the month.

Winter Wheat

Dry conditions and short soil moisture were major concerns for most of the winter wheat-producing areas. The wheat crop was in mostly good condition, with additional moisture needed for good development in the Great Plains and the West. Texas winter wheat was 96 percent (%) emerged, 1 point above the 5-year average. Kansas wheat continued good development, with light greenbug activity and some wheat streak mosaic in west and central areas. By mid-December, continued dry conditions in the Plains and the West stressed the wheat crop and promoted insect activity. Greenbug damage was evident in the Low Plains, Blacklands, and Cross Timbers areas of Texas, while cutworm damage was evident in the Edwards Plateau. Mild temperatures in Oregon and Utah allowed Russian wheat aphid numbers to build. Moisture in Oklahoma helped develop wheat root systems in the west, but additional moisture was needed for sustained development. Late in the month, snow had provided insulation from arctic temperatures in Montana and Oklahoma. Some wheat fields in south-central Kansas had serious army cutworm damage. Illinois wheat was in mostly good to excellent condition.





TEMPERATURE AND PRECIPITATION SUMMARY DECEMBER 1990

STATES AND STATIONS	Temp. °F		Precip.		STATES AND STATIONS	Temp. °F		Precip.		STATES AND STATIONS	Temp. °F		Precip.	
	AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AL BIRMINGHAM	49	4	5.5	0.6	LA PADUCAH	40	2	9.6	5.4	DAYTON	36	4	10.0	7.6
AL HUNTVILLE	47	4	18.7	13.3	LA ALEXANDRIA	52	2	8.2	3.4	MANSFIELD	35	5	11.2	8.8
AL MOBILE	57	4	5.2	-0.2	LA BATON ROUGE	56	3	4.8	-0.2	TOLEDO	33	4	5.7	3.1
AL MONTGOMERY	53	4	3.3	-1.5	LA LAKE CHARLES	55	1	4.0	-1.0	YOUNGSTOWN	35	6	6.5	3.8
AK ANCHORAGE	15	1	1.8	0.7	LA NEW ORLEANS	59	4	9.7	4.4	OK OKLAHOMA CITY	37	-3	1.5	0.3
AK BARROW	-15	-2	0.1	0.0	ME SHREVEPORT	49	0	4.0	0.1	TULSA	38	-1	2.9	1.1
AK FAIRBANKS	-6	4	3.0	2.2	ME CARIBOU	20	4	5.6	2.5	OR ASTORIA	37	-6	5.1	-6.5
AK JUNEAU	24	-3	6.0	1.3	ME PORTLAND	34	8	7.9	3.4	BURNS	17	-10	0.3	-1.3
AK KODIAK	31	1	4.9	-0.6	MD BALTIMORE	42	6	4.9	1.5	MEDFORD	32	-6	1.1	-2.4
AK NOME	4	-1	1.3	0.6	MD SALISBURY	45	6	4.1	0.4	PENDLETON	26	-10	0.8	-0.8
AZ FLAGSTAFF	25	-5	1.7	-0.6	MA BOSTON	41	7	3.2	-1.3	PORTLAND	35	-6	2.4	-4.0
AZ PHOENIX	54	0	0.5	-0.4	MA CHATHAM	41	6	3.7	-1.3	SALEM	34	-6	2.8	-4.3
AZ PRESCOTT	33	-5	0.3	-1.4	MI ALPENA	27	2	1.8	-0.2	PA ALLENTOWN	37	5	5.7	2.0
AZ TUCSON	51	-1	1.5	0.6	MI DETROIT	33	4	4.4	1.9	ERIE	37	6	6.9	3.7
AZ WINSLOW	26	-7	0.3	-0.3	MI FLINT	30	2	2.5	0.5	HARRISBURG	38	5	6.1	2.9
AR YUMA	54	-2	T	-0.3	MI GRAND RAPIDS	30	2	3.0	0.4	PHILADELPHIA	42	6	3.8	0.4
AR FORT SMITH	39	-2	4.8	2.0	MI HOUGHTON LAKE	26	3	1.6	-0.3	PITTSBURGH	38	6	8.5	6.0
AR LITTLE ROCK	43	-1	8.1	3.9	MI LANSING	29	3	2.8	0.3	SCRANTON	36	6	4.3	1.8
CA BAKERSFIELD	43	-5	0.3	-0.4	MI MARQUETTE	18	0	1.7	-0.7	WILLIAMSPORT	35	4	5.7	2.5
CA BISHOP	32	-7	0.0	-1.0	MI MUSKEGON	31	3	2.6	0.0	RI PROVIDENCE	40	7	5.5	1.0
CA EUREKA	43	-5	2.9	-3.3	MI SAULT ST. MARIE	22	2	2.5	-0.1	SC CHARLESTON	56	6	2.7	-0.4
CA FRESNO	42	-4	0.7	-0.9	MN ALEXANDRIA	13	-1	0.5	-0.2	COLOMBIA	52	5	1.6	-1.9
CA LOS ANGELES	57	0	T	-1.6	MN DULUTH	13	-2	0.5	-0.8	FLORENCE	53	6	2.5	-0.5
CA REDDING	40	-7	0.6	-6.5	MI INY' L FALLS	6	-3	1.2	0.3	GREENVILLE	48	4	3.3	-0.8
CA SACRAMENTO	41	-5	1.5	-1.4	MI MINNEAPOLIS	17	-2	1.0	0.2	SD ABERDEEN	12	-4	0.4	-0.1
CA SAN DIEGO	56	-2	0.6	-1.3	MI ROCHESTER	15	-3	1.7	0.9	HURON	14	-5	0.4	-0.1
CA SAN FRANCISCO	46	-3	1.8	-1.7	MI ST CLOUD	14	-1	0.7	-0.2	RAPID CITY	18	-8	0.3	-0.1
CA STOCKTON	41	-5	0.9	-1.5	MS GREENWOOD	49	3	8.8	3.4	STOUX FALLS	15	-5	0.6	-0.1
CO ALAMOSA	13	-5	0.8	0.4	MS JACKSON	52	3	5.7	0.3	TN BRISTOL	44	6	4.9	1.4
CO CO SPRINGS	24	-7	0.3	0.0	MS MERIDIAN	53	5	3.7	-2.0	CHARITANOOGA	46	5	10.3	5.2
CO DENVER	26	-7	0.3	-0.3	MS TUPALO	47	2	14.5	8.8	KNOXVILLE	45	4	9.0	4.4
CO GRAND JUNCTION	21	-8	1.0	0.4	MO CAPE GIRARDEAU	--	-	9.1	5.3	MEMPHIS	46	2	10.6	5.7
CO PUEBLO	25	-8	0.2	-0.1	MO COLUMBIA	32	-2	3.5	1.5	NASHVILLE	44	3	10.8	6.2
CT BRIDGEPORT	40	6	3.5	-0.2	MO KANSAS CITY	29	-4	1.1	-0.4	TX ABILENE	43	-4	0.8	0.0
CT HARTFORD	37	7	4.9	0.7	MO SAINT LOUIS	35	0	6.5	4.3	AMARILLO	33	-5	0.2	-0.2
DC WASHINGTON	44	5	4.7	1.6	MO SPRINGFIELD	35	-1	6.1	3.5	AUSTIN	51	-1	0.7	-1.3
FL APALACHICOLA	60	5	1.6	-1.9	MT BILLINGS	19	-8	0.5	-0.3	BEAUMONT	55	1	3.8	-1.1
FL DAYTONA BEACH	65	6	0.3	-1.9	MT GLASGOW	10	-7	0.5	0.2	BROWNSVILLE	62	0	0.1	-1.1
FL FT. MYERS	70	5	0.2	-1.4	MT GREAT FALLS	18	-8	0.7	0.0	CORPUS CHRISTI	58	-1	0.4	-0.8
FL JACKSONVILLE	61	5	1.9	-0.5	MT HAVRE	15	-5	0.3	-0.2	DEL RIO	52	0	0.2	-0.3
FL KEY WEST	75	4	1.3	-0.4	MT HELENA	14	-9	0.5	-0.1	EL PASO	45	0	0.3	0.0
FL MIAMI	73	4	1.0	-0.8	MT KALISPELL	16	-9	4.4	2.8	PORT WORTH	44	-4	1.5	-0.2
FL ORLANDO	66	5	0.8	-1.1	MT MILES CITY	15	-7	0.2	-0.4	GALVESTON	57	0	1.8	-1.8
FL TALLAHASSEE	59	6	4.5	-0.1	MT MISSOULA	16	-9	1.1	-0.1	HOUSTON	54	-1	1.8	-2.0
FL TAMPA	67	5	0.2	-1.9	NE GRAND ISLAND	23	-4	0.8	0.1	LAREDO	57	0	0.1	-0.8
FL WEST PALM BEACH	71	4	1.9	-0.3	NE LINCOLN	24	-3	0.8	0.1	LUBBOCK	39	-3	0.4	0.0
GA ATHEN	49	4	3.3	-0.8	NE NORFOLK	20	-4	0.5	-0.1	MIDLAND	43	-2	0.7	0.3
GA ATLANTA	49	4	3.0	-1.2	NE NORTH PLATTE	22	-4	0.1	-0.3	SAN ANGELO	45	-3	0.2	-0.4
GA AUGUSTA	51	5	2.0	-1.2	NE OMAHA	22	-6	0.8	0.0	SAN ANTONIO	52	-1	0.2	-1.2
GA MACON	53	4	3.5	-0.5	NE SCOTTSBLUFF	21	-7	0.4	-0.2	VICTORIA	55	-1	0.8	-1.3
GA SAVANNAH	56	6	2.1	-0.7	NE VALENTINE	17	-7	0.3	0.0	WACO	47	-2	1.4	-0.5
HI HILO	73	0	30.1	17.3	NV ELKO	15	-11	1.2	0.2	WICHITA FALLS	39	-5	1.0	-0.2
HI HONOLULU	74	0	4.9	1.5	NV ELY	18	-8	0.3	-0.4	UT BLANDING	--	-	0.9	-0.4
HI KAHULUI	73	0	7.1	4.2	NV LAS VEGAS	40	-5	T	-0.3	CDAR CITY	21	-10	1.1	0.4
HI LIHUE	72	0	3.3	-2.2	NV RENO	26	-7	0.5	-0.7	SALT LAKE CITY	21	-9	0.6	-0.8
ID BOISE	18	-14	1.0	-0.3	NV WINNEMUCCA	18	-12	0.6	-0.2	VT BURLINGTON	30	7	3.6	1.2
ID LEWISTON	31	-4	0.9	-0.4	NH CONCORD	31	6	4.1	0.7	VA LYNCHBURG	44	6	5.1	1.9
ID POCATELLO	15	-12	1.2	0.2	NJ ATLANTIC CITY	41	5	3.6	0.0	NORFOLK	51	7	2.7	-0.5
IL CAIRO	--	-	7.1	2.9	NM ALBUQUERQUE	32	-3	0.6	0.1	RICHMOND	46	6	3.5	0.2
IL CHICAGO	29	1	1.9	-0.4	NM CLOVIS	37	-2	0.4	-0.2	ROANOKE	44	5	3.8	0.9
IL MOLINE	25	-2	3.1	1.2	NM ROSWELL	42	2	0.3	-0.1	COLVILLE	18	-10	1.6	-0.9
IL PEORIA	28	0	3.7	1.7	NY ALBANY	34	7	3.5	0.5	QUILLAYUTE	36	-5	16.8	-0.7
IL QUINCY	29	-1	1.7	0.0	NY BINGHAMTON	32	6	5.2	2.3	SEATTLE-TACOMA	35	-6	3.6	-2.7
IL ROCKFORD	24	-1	2.4	0.5	NY BUFFALO	34	5	8.7	5.3	SPOKANE	21	-8	1.7	-0.8
IL SPRINGFIELD	30	-1	5.0	2.9	NY NEW YORK	43	7	4.9	1.2	WALLA WALLA	--	-	1.8	-0.4
IN EVANSVILLE	38	3	7.4	4.0	NY ROCHESTER	34	5	4.2	1.6	YAKIMA	23	-8	0.2	-1.0
IN FORT WAYNE	32	3	7.6	5.1	NY SYRACUSE	33	5	5.2	2.1	WV BECKLEY	41	7	5.3	2.1
IN INDIANAPOLIS	35	3	7.7	4.7	NC ASHEVILLE	46	6	4.5	1.3	CHARLESTON	44	6	7.0	3.8
IN SOUTH BEND	32	2	5.0	2.1	NC CHARLOTTE	49	6	3.2	-0.1	ELKINS	39	6	6.1	2.8
IA DES MOINES	23	-3	2.2	1.0	NC GREENSBORO	46	6	4.2	0.8	HUNTINGTON	43	6	8.1	5.0
IA DUBUQUE	20	-3	2.9	1.0	NC HATTERAS	56	7	5.1	0.7	PARKERSBURG	41	6	7.1	4.4
IA SIOUX CITY	20	-4	0.8	0.0	NC NEW BERN	53	6	1.9	-1.8	WI GREEN BAY	21	0	2.1	0.7
IA WATERLOO	18	-4	1.3	0.1	NC RALEIGH	48	6	3.1	0.0	LACROSSE	19	-2	2.9	1.8
KS CONCORDIA	26	-6	0.5	-0.2	ND WILLINGTON	55	7	2.7	-0.7	MADISON	21	-2	3.5	2.0
KS DODGE CITY	28	-5	0.6	0.1	ND BISMARCK	9	-6	0.5	0.0	MILWAUKEE	27	2	2.7	0.6
KS GOODLAND	25	-5	0.1	-0.2	ND FARGO	12	-1	0.8	0.2	WAUSAU	17	-1	2.0	0.7
KS TOPEKA	30	-2	1.0	-0.3	ND GRAND FORKS	9	-2	0.5	-0.1	WY CASPER	16	-10	0.6	0.1
KS WICHITA	30	-5	0.8	-0.2	OH WILLISTON	9	-7	0.4	-0.1	CHEYENNE	21	-9	0.4	0.0
KY BOWLING GREEN	42	4	11.4	6.9	OH AKRON-CANTON	35	5	6.7	4.1	LANDER	13	-10	0.4	-0.1
KY JACKSON	43	9	13.0	9.5	OH CINCINNATI	38	4	7.9	4.9	SHERIDAN	16	-9	0.4	-0.3
KY LEXINGTON	40	4	10.2	6.4	OH CLEVELAND	36	4	8.6	5.9	PR SAN JUAN	77	0	5.0	0.6
KY LOUISVILLE	41	4	8.9	5.4	OH COLUMBUS	37	5	7.0	4.4					

Based on 1951-80 normals

Heating Degree Days (Base 65°) For December 1990

States and Stations	TOTAL	Depart Normal	States and Stations	TOTAL	Depart Normal	States and Stations	TOTAL	Depart Normal
AL. Birmingham . . .	477	-124	MD. Baltimore . . .	701	-183	OK. Okla. City . . .	860	82
Mobile . . .	287	-95	MA. Boston . . .	744	-226	Tulsa . . .	813	32
AK. Montgomery . . .	365	-134	Chatham . . .	757	-164	OR. Astoria . . .	863	184
Anchorage . . .	1557	-30	MI. Alpena . . .	1181	-106	Burns . . .	1474	311
Barrow . . .	2511	96	Detroit . . .	994	-138	Medford . . .	1022	176
Fairbanks . . .	2212	-116	Flint . . .	1084	-88	Pendleton . . .	1211	312
Nome . . .	1897	18	Grand Rapids . . .	1077	-92	Portland . . .	933	186
AZ. Flagstaff . . .	1232	141	Houghton Lake . . .	1206	-99	Salem . . .	939	186
Phoenix . . .	348	-20	Lansing . . .	1102	-76	PA. Allentown . . .	853	-186
Tucson . . .	427	24	Marquette . . .	1454	-6	Erie . . .	866	-219
Winslow . . .	1187	186	S. Ste. Marie . . .	1319	-85	Harrisburg . . .	816	-164
Yuma . . .	337	61	MN. Duluth . . .	1623	36	Philadelphia . . .	701	-214
AR. Fort Smith . . .	794	56	Internatl Falls . . .	1833	72	Pittsburg . . .	829	-213
Little Rock . . .	681	5	Minneapolis . . .	1484	64	Scranton . . .	894	-200
CA. Bakersfield . . .	677	156	Rochester . . .	1534	92	RI. Providence . . .	781	-233
Eureka . . .	678	160	St. Cloud . . .	1591	47	SC. Charleston . . .	280	-191
Fresno . . .	722	111	MS. Jackson . . .	427	-86	Columbia . . .	414	-153
Los Angeles . . .	261	6	Meridian . . .	391	-136	Greenville . . .	518	-152
Redding . . .	760	211	MO. Columbia . . .	1027	32	SD. Aberdeen . . .	1633	129
Stockton . . .	741	136	Kansas City . . .	1104	78	Huron . . .	1564	138
San Diego . . .	281	41	St. Louis . . .	934	-21	Rapid City . . .	1462	256
San Francisco . . .	570	80	Springfield . . .	929	36	Sioux Falls . . .	1538	134
CO. Denver . . .	1211	207	MT. Billings . . .	1413	-238	TN. Chattanooga . . .	571	-158
Pueblo . . .	1245	247	Glasgow . . .	1704	213	Knoxville . . .	612	-129
CO. Bridgeport . . .	771	-184	Great Falls . . .	1460	242	Memphis . . .	593	-80
Hartford . . .	873	-240	Havre . . .	1567	135	Nashville . . .	654	-93
DC. Washington . . .	630	-179	Helena . . .	1579	292	TX. Abilene . . .	680	103
FL. Apalachicola . . .	190	-130	Kalispell . . .	1528	263	Amarillo . . .	981	153
Jacksonville . . .	191	-141	Miles City . . .	1565	216	Austin . . .	430	24
Key West . . .	3	-19	Missoula . . .	1525	282	Beamont . . .	338	11
Miami . . .	4	-38	NE. Grand Island . . .	1303	116	Brownsville . . .	194	44
Orlando . . .	69	-88	Lincoln . . .	1283	93	Corpus Christi . . .	271	51
W. Palm Beach . . .	11	-46	Norfolk . . .	1379	105	Del Rio . . .	388	0
Tallahassee . . .	228	-155	North Platte . . .	1331	119	El Paso . . .	617	-22
Tampa . . .	70	-103	Omaha . . .	1341	123	Fort Worth . . .	646	113
GA. Atlanta . . .	488	-148	Valentine . . .	1479	208	Galveston . . .	268	1
Augusta . . .	417	-144	NV. Ely . . .	1455	246	Houston . . .	395	46
Macon . . .	378	-127	Las Vegas . . .	761	153	Lubbock . . .	801	72
Savannah . . .	279	-165	Reno . . .	1209	201	Midland . . .	662	73
ID. Boise . . .	1449	426	Winnemucca . . .	1498	425	San Angelo . . .	610	83
Lewiston . . .	1059	126	NH. Concord . . .	1049	-207	San Antonio . . .	422	44
Pocatello . . .	1555	365	NJ. Atlantic City . . .	722	-183	Victoria . . .	349	-58
IL. Chicago . . .	1120	-36	NM. Albuquerque . . .	1013	102	Waco . . .	555	74
Moline . . .	1248	51	NY. Albany . . .	964	-230	Wichita Falls . . .	793	139
Peoria . . .	1148	-5	Binghamton . . .	1018	-185	UT. Salt Lake City . . .	1359	283
Rockford . . .	1273	27	Buffalo . . .	941	-181	VT. Burlington . . .	1074	-240
Springfield . . .	1080	-172	New York . . .	670	-223	VA. Lynchburg . . .	659	-169
Fort Wayne . . .	1007	-109	Rochester . . .	959	-157	Norfolk . . .	444	-223
Indianapolis . . .	932	-107	Syracuse . . .	967	-171	Richmond . . .	574	-204
South Bend . . .	1021	-92	NC. Asheville . . .	601	-196	Roanoke . . .	652	-176
IA. Des Moines . . .	1301	83	Charlotte . . .	491	-203	WA. Quillayute . . .	883	133
Dubuque . . .	1388	77	Greensboro . . .	573	-196	Seattle-Tacoma . . .	913	169
Souix City . . .	1401	108	Hatteras . . .	288	-222	Spokane . . .	1356	240
KS. Concordia . . .	1191	131	Raleigh . . .	520	-193	Walla Walla . . .		
Dodge City . . .	1147	177	Wilmington . . .	327	-194	Yakima . . .	1301	262
Goodland . . .	1224	148	ND. Bismark . . .	1722	184	WV Beckley . . .	736	-234
Topeka . . .	1093	64	Fargo . . .	1637	16	Charleston . . .	655	-216
Wichita . . .	1074	125	Williston . . .	1728	175	Huntington . . .	670	-201
KY. Lexington . . .	757	-139	OH. Akron-Canton . . .	909	-167	WI. Green Bay . . .	1357	-13
Louisville . . .	745	-117	Cincinnati . . .	821	-146	La Crosse . . .	1421	72
LA. Baton Rouge . . .	311	-69	Cleveland . . .	906	-145	Madison . . .	1349	0
Lake Charles . . .	333	-18	Columbus . . .	857	-163	Milwaukee . . .	1173	-64
New Orleans . . .	244	-92	Dayton . . .	886	-143	WY Casper . . .	1523	305
Shreveport . . .	509	4	Toledo . . .	981	-163	Cheyenne . . .	1364	257
ME. Caribou . . .	1370	-158	Youngstown . . .	918	-186	Lander . . .	1599	303
Portland . . .	964	-251			Sheridan . . .	1526	274	

Based on 1951-80 normals.

December Weather in Historical Perspective

Temperatures for December 1990 averaged well-below normal for the Nation, ranking as the 18th coldest December on record (fig. 1). The national precipitation index indicates that December ranked as the 34th wettest out of 96 years of data (fig 2).

Regional rankings for the nine climatically homogeneous regions are listed in table 1 (see the Weekly Weather and Crop Bulletin, Vol. 77, No. 49, Dec. 11, 1990, page 15 for a map of the regions). The Northwest (fig. 3) and the West had their coldest December on record in 1990, while the Southwest and the West North Central had their 5th and 10th coldest December, respectively. In contrast, the Northeast experienced its fifth warmest December, and the Southeast had its ninth warmest. A simple breakdown shows that temperatures were above normal in the eastern third of the Nation, and below normal for the western two-thirds.

The month was extremely wet in the Northeast and Central regions. The Central region had its wettest December on record, and the Northeast its fifth wettest. The month tended toward the dry side in the Southeast, West, and Northwest regions. October to December precipitation in the Primary Hard Red Winter Wheat belt (extending roughly from Nebraska to the Texas panhandle) was below normal (fig. 4), ranking as the 37th driest such period on record. This marks the fourth consecutive dry start to the winter wheat growing season.

TABLE 1. TEMPERATURE AND PRECIPITATION RANKINGS FOR DECEMBER 1990, BASED ON THE PERIOD 1895-1990. 1 = DRIEST/COLDEST, 96 = WETTEST/HOTTEST.

REGION	PRECIPITATION	TEMPERATURE
NORTHEAST	92	92
EAST NORTH CENTRAL	82	40
CENTRAL	96	65
SOUTHEAST	34	88
WEST NORTH CENTRAL	49	10
SOUTH	49	33
SOUTHWEST	48	5
NORTHWEST	26	1
WEST	14	1
NATIONAL	63	18

Figure 1

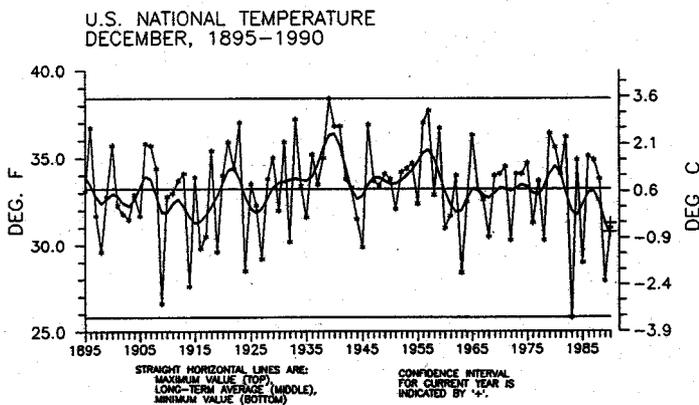


Figure 2

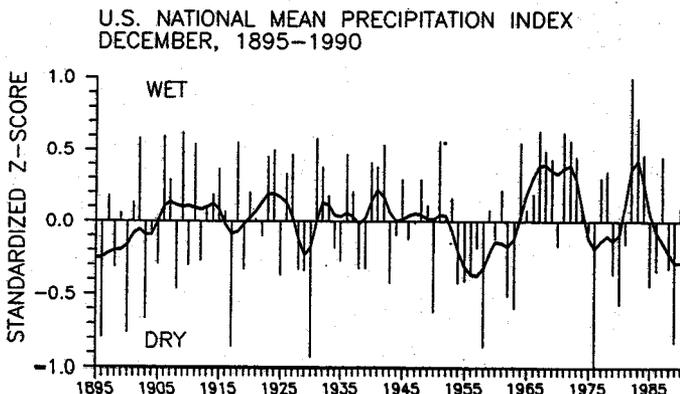


Figure 3

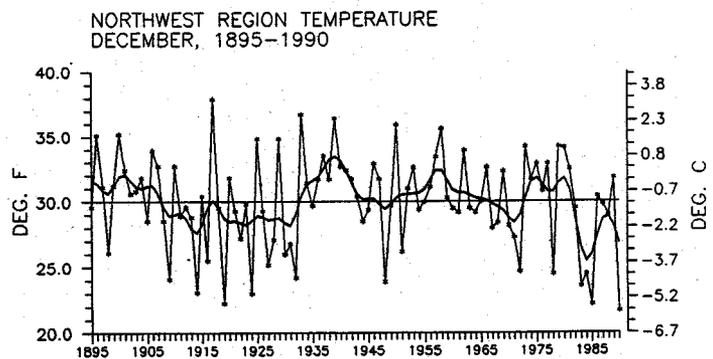
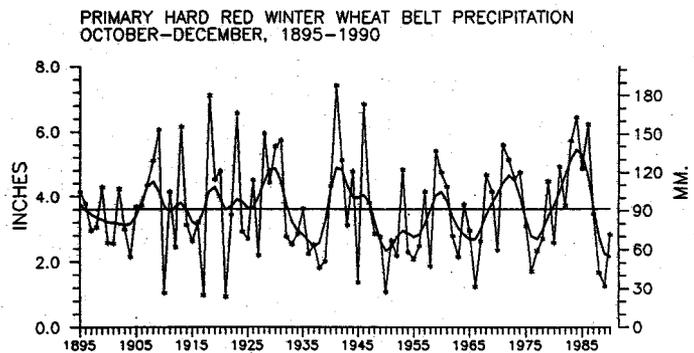


Figure 4



National Agricultural Summary

December 31 - January 6, 1990

HIGHLIGHTS: California lemon trees were the hardest hit by the freeze. The orange damage was most extensive in the Central Valley. Continued rain caused flooding in the Ohio Valley, with damage to some fall planted crops. Snow cover protected winter wheat from major damage in the Plains States, while the cold temperatures decreased insect populations.

SMALL GRAINS: Snow cover in Montana through the northern Plains provided protection from cold temperatures for winter wheat. Arizona wheat was 78 percent (%) emerged, 5 points ahead of last year. Arkansas' winter wheat was good with no reports of weather related damage. Georgia wheat was fair to mostly good with seeding virtually complete, except in the southwest. Topdressing was underway in most areas. Flooding may have caused damage to wheat fields in Indiana. Illinois wheat was mostly good. Cold weather in Kansas reduced greenbug and armyworm populations in south-central winter wheat fields. The Wyoming winter wheat crop was fair to good with some freeze and wind damage reported.

OTHER FIELD CROPS: Texas cotton harvest was virtually complete with good yield and grades, except on the High Plains, where icy conditions delayed harvest. Recently emerged alfalfa fields in California were wilted by the cold weather. Most of the newly planted sugarbeet fields will have to be replanted due to the cold temperatures. Arizona alfalfa was in good condition, although cold weather slowed growth and harvest. Georgia tobacco bed preparation was over 95% complete. Florida sugarcane harvest and planting continued. Hawaii sugar and pineapple harvests continued.

FRUIT AND NUTS: California orange damage was extensive in the Central Valley, but some oranges remained for harvest in the southern areas. Lemon

trees were hit hardest by the freeze. Arizona pecan harvest and packing continued. Apple shipping continued in the east, and citrus harvest continued in the west. Georgia pecan harvest was almost complete, except for 5% in the southwest. In Florida irrigation continued in all citrus areas. Early orange and honey tangerine harvests continued, with fresh and processed grapefruit movement increased.

VEGETABLES: California broccoli supply was seasonally light with fair quality and the potato harvest continued in the Hemet San Jucinto area. Georgia onion transplanting was almost complete, with some disease problems in the west. Arizona mixed vegetable harvest continued in the west and central areas. Florida vegetable harvests continued for tomatoes, peppers, celery, cabbage, sweet corn, snap beans, squash, and lettuce. Wet, damp conditions slowed cabbage and celery harvests in the Rio Grande Valley of Texas. In the San Antonio-Winter Garden area, onions and other leafy vegetables were not affected by the low temperatures.

PASTURES AND LIVESTOCK: Pastures and livestock were in mostly good condition. Abnormal cold temperatures in Montana stressed livestock and raised the feed requirements. Hay and roughage were mostly adequate in North Carolina and mostly short in Mississippi.

(Continued from front cover)

Thursday. Even non-mountainous locales recorded over an inch of rain. Heavy mountain snow fell in Arizona, southern Utah, and Colorado toward the end of the week. From midweek onward, subtropical moisture overrode cold surface air in the southern Plains, touching off freezing drizzle and light snow. Snow and icing conditions spread to the Ohio Valley and Great Lakes by Saturday. In addition, heavy rain fell in the lower Mississippi Valley on Wednesday and in Arkansas on Saturday night. By week's end, flooding was a threat or a reality in portions of the Ohio, Tennessee, and central and lower Mississippi River Valleys.

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 overall 0.50 to 1.50 in. Heaviest rain in the southwest near 5.00 in. Temperatures 4° above normal.

Continued wet conditions limited all field work. Wheat conditions mostly good. Primary activities: General care, feeding of livestock, poultry, catfish; grading sweet potatoes; machinery, equipment repair; maintenance, repair of farm buildings, fences.

ARIZONA: Mostly sunny skies, warming trend 30th. High cloudiness, slightly above normal temperatures 1st. Increased cloudiness 2nd, occasional rain over most of state 3rd. Precipitation increased 4th, all localities statewide received rain, snow. Slow moving storm system centered over state 5th, produced moderate, heavy rain south, central, little far north. Rainfall 0.50 to 1.50 in.; snowfall traces to 2.00 in. Temperatures 6° below normal to 6° above.

Wheat, barley good condition; rains, cold weather slowed development, field activities; to date 95% acreage seeded, 90% 1990; 78% stands established, 73% 1990. Cotton stalk shredding, disking, plow down activities slowed, wet ground conditions. Alfalfa good condition; rains, cold weather slowed growth, harvest progress; sheep grazing mostly moderate statewide; light frost damage west. Mixed vegetable, citrus harvest continued west, central. Apple shipping continued east. Pecan harvest, packing continued statewide. Cattle, calves fair to good condition; ranges provided below average, mostly average feed supplies; stock water supplies, soil moisture short, mostly adequate; insect damage minimal; sheep, lambs mostly good condition.

ARKANSAS: Cold week with temperatures below normal. Frozen precipitation first of week, northern half; heavy rainfall, flooding southeast, end of week. Extremes 64°; 4°. Rainfall 0.05 to 3.12 in.

Wheat crop good, no reports of weather related damage. Livestock, poultry fair to good.

CALIFORNIA: Another week of record low temperatures began new year as high pressure continued to spread frigid arctic air throughout State. Temperatures warmed some by end week as warmer southwest flow from low pressure system brought rain to the southern part of State.

Field activities progressed, open weather. Seeding small grains, forage mixes continued. Germination, emergence seeded fields slowed, cold temperatures, low moisture. Recently emerged alfalfa, oats, wheat burned, wilted by frost. Expect recovery many fields. Over wintered sugarbeets suffered top damage many areas. Most newly planted sugarbeets killed; replanting necessary. Ground preparation 1991 cotton, sugarbeets continued. Weed treatment, soil fumigation some fields. General activities included pre irrigation, cultivation. Citrus industry devastated by cold temperatures. Tree damage to citrus trees, especially young trees. Official citrus forecast available 11th. Orange damage extensive Central Valley. Some oranges remained for harvest, southern areas. Lemon trees hit hardest by freeze. Avocado, olive trees damaged, Tulare County. Avocado damage depended on location, Riverside County. Normal winter cultural practices gained momentum. Fuji apples packed.

Kiwifruit moved to local markets. Broccoli seasonally light supply, fair quality. Potato harvest continued Hemet San Jacinto area. Cattle on supplemental feed, average condition. Range conditions poor to very poor southern two thirds of State, poor to good northern third. Water supplies short some pastures. Extreme cold hindered lambing. Sheep continued grazing, crop residues.

COLORADO: Clear skies started the week eventually giving way to low clouds, fog, snow later in the week. Southern part of the State received up to 20.0 in. of snow as a result of that weather pattern. Temperature 5 to 10° below normal in the east 10° below normal in the west.

FLORIDA: Week quite warm; Temperatures 2 to 5° above normal, Panhandle; 7 to 10° above remainder of north; 8 to 12° above normal, central, south. Warmest afternoon highs mid to upper 60s Panhandle to low, mid 70s Big Bend, mid 80s central, south. Coolest lows only reached mid, upper 40s Panhandle to upper 50s central, south. Many Panhandle locations recorded rain between 1.00 to 2.00 in.; elsewhere, amounts generally under 0.50 in.; only isolated locations recording over 1.00 in.

Soil moisture short throughout State, except few coastal, other low lying Peninsular areas. Sugarcane harvest, planting continued active. Pastures 25% poor, 45% fair, 25% good, 5% excellent. Cattle fair, Panhandle; mostly fair to good, Peninsula. Rain needed all citrus areas; irrigation continued. High temperatures increased evaporation. Early orange harvest continued active. Grapefruit movement increased for fresh, processed use. Honey tangerine harvest increased. Caretakers cutting cover crops, spraying fresh fruit crops. Warm weather continued over major vegetable producing areas. Shower activity, especially southwest, beneficial. Planting spring crops gaining momentum. Harvest winter crops increased. Volume leaders: Tomatoes, peppers, celery, cabbage, sweet corn, snap beans, squash, lettuce. Also carrots, radishes, eggplant, escarole available. Planting spring crop Ruskin tomatoes underway.

GEORGIA: Warm week. Temperatures 3 to 6° above normal. Warmest upper 50s extreme north, mid to upper 70s southeast. Coldest upper 20s, mid 30s north, upper 30s, low 40s central, mid 40s, low 50s south. Rainfall 0.50 in. common, local totals 1.00 to 2.00 in.

Soil moisture adequate to surplus. Wet weather limiting field operations. Tobacco bed preparation over 95% complete. Onion transplanting about complete; disease problems due to wet, warm and foggy weather. Small grains fair to mostly good, seeding virtually complete all but southwest. Small grain top dressing just underway most areas. Soybean harvest complete. Pecan harvest nearly complete except southwest 5% remains. Livestock fair to mostly good, extra attention required due to wet weather.

HAWAII: Pleasant weather continued throughout islands. Days were cool, sunny with some cloudy periods. Winds variable 5 to 15 mph with temperatures high 50s to low 80s. Rainfall none to 1.30 in.

Days suitable for farm work 7.0. Papaya production on decline due to high disease incidence. Sugar, pineapple harvest continuous.

IDAHO: Temperatures well below normal, extremely cold over night lows. Precipitation below normal; light snow in most areas.

Outdoor farming activities minimal due to cold weather. Lambing, calving underway. Livestock good. Winter wheat stressful. Hay, roughage supplies adequate. Farmers, ranchers busy with shopwork, financial planning, attending meetings. Winter wheat, north, may be damaged by cold weather. Soil moisture supplies adequate, north, mostly short rest of State.

ILLINOIS: Temperatures 4 to 8° below normal. Precipitation generally 0.50 in. or less, far south more than 1.00 in.

Winter wheat mostly good. Snow cover limiting stalk grazing by livestock.

INDIANA: Temperatures 0 to 5° below normal. Lows low teens to low 20s, highs mid 20s to mid 30s. Precipitation 0.25 to 1.50 in.

Field activity halted, wet conditions, flooding. Other activities: Hauling manure, machinery repair, purchasing supplies, cutting wood, clearing fence rows, attending meetings, tax preparation, care of livestock. Livestock mostly good. Wheat fair to good. Flooding, ponding major problem in many fields. Some wheat fields may be damaged.

IOWA: Another cold, snowy week. Temperatures 6° to 13° below normal. Extremes -27°; 34°. Precipitation 0.13 to 0.75 in.; average 0.40 in. Snow cover 3.00 to 5.00 in. south; 4.00 to 6.00 in. north.

Livestock mostly good. Cold weather giving rise to high fuel costs. Feeder cattle movement to auctions brisk. Farmers working on taxes, machinery repairs.

KANSAS: Temperatures 15° below normal. Precipitation almost 0.60 in. northeast to 0.06 in. south central.

Wheat has some snow cover except south central. Cold weather reduced greenbug populations, armyworms in wheat, seedling alfalfa south central.

KENTUCKY: High temperatures mid 30s near Ohio River, 5° below normal, mid to upper 40s south central, southeast, 5° above normal. Low temperatures lower 20s western areas, 2 to 4° below normal, around 30° south central, southeast, 5° above normal. High temperature 58° at Quicksand, lowest 4° above zero at Hardinsburg. Precipitation 1.00 to 2.00 in. 5th to 6th, 0.50 to 1.00 in. above normal.

Soil moisture surplus. Flood water receding most areas. Wet conditions limited field activities, stressed livestock. Burley market resumed activity.

LOUISIANA: Temperatures 5.7° below normal to 2.3° above normal. Extremes 21°; 81°. Rainfall 0.88 to 2.13 in.

Main activities: Crawfishing, livestock care, routine chores.

MARYLAND & DELAWARE: **MARYLAND:** Precipitation 0.38 in. Temperature 39.1°, normal 33.3°. Extremes 11°; 70°.

Activities for the week: Repairing fence; hauling manure; spreading fertilizer; maintaining machinery; caring for livestock.

DELAWARE: Precipitation 0.44 in. Temperature 40.8°, normal 34.5°. Extremes 19°; 69°.

Activities for the week: Repairing fence; hauling manure; spreading fertilizer; maintaining machinery; caring for livestock.

MICHIGAN: Temperatures -8° below normal to no change from normal. Extremes -11°; 41°. Precipitation 0.04 to 1.50 in. across the State. Snow melted by rains earlier in the week quickly replaced by more precipitation. Below freezing temperatures throughout the State have maintained new snow cover. Frozen ground allowed farmers to harvest last remnants of corn crop. Feed supply plentiful, livestock good.

Major activities included: Removing snow, purchasing seed for spring planting, caring for the livestock, making winter repairs on equipment.

MINNESOTA: Temperatures 9 to 12° below normal. Extremes 30°; 38°. Precipitation none to 0.22 in. across State. Greatest weekly total 0.21 in. at Winona.

MISSISSIPPI: Weather Data Not available.

Days suitable for fieldwork .6, 1.5 1989, 2.5 avg. Soil moisture 20% adequate, 80% surplus. Pasture 20% poor, 64% fair, 16% good. Livestock 84% fair, 16% good. Hay, roughage 71% short, 29% adequate. Feed grain 14% short, 86% adequate. Activities: Feeding livestock, farm planning.

MISSOURI: Temperatures 10 to 12° below normal. Snow, sleet, freezing rain on 4th, 5th. Precipitation less than 0.50 north, 0.50 to 1.00 in. south, except Bootheel nearly 2.00 in.

Topsoil 5% short, 67% adequate, 28% surplus. Subsoil 19% short, 64% adequate, 17% surplus. Wheat 4% poor, 60% fair, 35% good, 1% excellent. Livestock 1% poor, 20% fair, 74% good, 5% excellent. Hay 9% short, 75% adequate, 16% surplus. Livestock water 6% short, 94% adequate. Work limited to barnyard chores.

MONTANA: Temperatures extremely cold. Southwest 5 to 11° below normal. Rest of state 17 to 20° below normal. Minus zero temperatures reported all areas. Light snow most of State with locally heavy amounts northwest.

Abnormal cold stressing livestock. Feed requirements raised significantly. Snow cover protection on winter wheat most areas.

NEBRASKA: Cold air continued over the region with temperatures 5 to 10° below normal. Precipitation was light except for a one day storm which left 3.00 to 6.00 in. of snow in the eastern portion of the State. Extremes -14°; 57°.

NEVADA: Temperatures averaged well below normal. Extremes -39°; 59°. Precipitation trace to 0.89.

Record low temperatures early in the week increased stress on livestock. Major activities: Livestock feeding, ice chopping, general maintenance.

NEW ENGLAND: Precipitation 0.10 to 0.85 in. Temperatures 5 to 15° northern Maine, high teens to mid 20s rest of north, mid 20s to low 30s south. Maximum temperatures mid 30s north to mid 50s south; minimum temperatures -20° north to 20° south.

Major farm activities: Tending livestock, general repairs, maintenance.

NEW JERSEY: Temperatures near normal, 28° south, 33° north, 37° coastal. Extremes 10°; 63°. Precipitation below normal, averaged 0.04 in. north, 0.23 in. south, 0.23 in. coastal. Heaviest 24 hour total 0.34 in. on 6th, 7th.

Farmers caring for livestock, tending to other normal winter chores.

NEW MEXICO: Temperatures over the State were generally above normal except for the eastern plains 0 to 6° below normal. Farmington also reported below normal temperatures. Precipitation totals over the State a trace at Clovis to 1.30 in. at Chama.

NEW YORK: Temperatures above normal early week. By mid week returned to near normal. Extremes -7°; 60°. Widespread rain fell across the State on December 30. Rest of week was mostly dry.

Major farm activities: Caring for livestock, machinery maintenance, attending meetings, making plans for up coming season.

NORTH CAROLINA: Temperatures 8° above normal in the mountains, 8 to 10° above in the Piedmont, 11° above at the coast. Precipitation 0.12 to 1.89 in.

Days suitable for fieldwork 2.8. Soil moisture 3% short, 69% adequate, 28% surplus. Pasture 12% poor, 34% fair, 54% good. Livestock feed from pasture 39%. Crop condition: Wheat 17% fair, 83% good; oats 17% fair, 83% good; barley 21% fair, 79% good; rye 18% fair, 82% good. Hay, roughage supplies 10% short, 88% adequate, 2% surplus. Feed grain supplies 6% short, 94% adequate. Activities: Tending livestock; preparing tobacco plant beds; cutting wood; equipment repair; general farm maintenance.

NORTH DAKOTA: Temperatures 12 to 16° below normal. Extremes -46°; 33° south central. Precipitation none south central to 0.05 in. southwest. Snow cover 3.60 in.

Snow cover adequate to protect 58% winter wheat, 75% rye, 67% alfalfa hay. Cattle, sheep in mostly good condition. Hay supplies adequate.

OHIO: High temperatures low to mid 30s to low 40s while low temperatures upper teens to low 20s. This was mostly 1 to 4° above normal. Precipitation 0.10 in. to 0.30 in. which is below normal for the State 0.25 to 0.50 in.

A slow moving cold front, low pressure system brought freezing rain, sleet, snow to most of State the first week of 1991. Farm activities mostly involved marketing crops, plowing snow, caring for livestock, machinery repairs.

OKLAHOMA: No weather data available.

Topsoil moisture 25% short, 55% adequate, 20% surplus. Subsoil moisture 15% short, 85% adequate. Wheat 27% fair, 53% good, 20% excellent. Bitter cold weather may reduce insect activity. Freeze damage anticipated east. Pastures 1% poor, 65%

fair, 32% good, 2% excellent. Forage supplies short to adequate. Cattle good, prices untested due to slow market.

OREGON: Temperatures moderated somewhat from previous weeks, but remained below normal statewide. Temperatures 7° below normal west, 12° below normal east. Northeast, extreme east remained very cold with minimum temperatures below zero most days. Precipitation light compared to last week. Coastal areas, north Cascades, northeast mountains 0.10 in. Other areas trace or no precipitation.

Soil moisture mostly adequate west, mostly short east except northeast mountains surplus. Limited freeze damage west. Winter wheat mostly snow covered Columbia Basin, cold damage likely minimal to date. Concern about frost heaving, related cephalosporium stripe infections. Livestock mostly good west, fair to good east. Routine winter feeding throughout eastern range country. Some problems with watering. Some early calving underway. Preparing for lambing. Range, pasture poor to fair east, fair to good west.

PENNSYLVANIA: Generally seasonal weather across Commonwealth. Temperature 30°, 3° above normal. Extremes 4°; 67°. Precipitation 0.81 in, 0.14 in. above normal.

Activities: Spreading manure; maintaining machinery, caring for livestock.

PUERTO RICO: Data Not Available.

SOUTH CAROLINA: Temperatures near normal northwest to 4° above normal along the coast. Rainfall 1.00 in. along the coast to less than 0.20 in. elsewhere.

Farm activities included final preparation, seeding of tobacco beds, land preparation for spring planting. Small grains reported in good condition.

SOUTH DAKOTA: Very cold temperatures during the week. Temperature -15 to -20°. Extremes -37°; 43°. Variable amounts of snow statewide, mostly 1.00 to 3.00 in. Snow cover over much of State 2.00 to 5.00 in. However, 1.00 in. southwest, south central, up to 10.0 in. central, northwest. Wide ranging temperatures causing more than normal amounts of pneumonia in backgrounded calves.

Winter wheat mostly fair condition. Winter rye fair to good. Livestock mostly good. Feed supplies adequate, cold temperatures causing farmers to feed more. Water supplies mostly adequate to short with a few reports of very short.

TENNESSEE: Cold high pressure dominated State early week. Cold front crossed State from northwest mid week with light precipitation. Cold front over weekend brought moderate to heavy rains, mostly west. Temperatures west, middle 2 to 7° below normal; east normal to 6° above normal. Highs mid 30s northwest, lower 50s southeast. Lows low 30s east, 20s elsewhere. Rainfall west around 2.00 in.; middle, east mostly less than 1.00 in.; little or no precipitation extreme northeast.

Soil moisture surplus most areas. Flooding problems west, middle. Several rivers at or near flood stage. Additional cresting predicted. Most lowland areas saturated, river bottoms flooded.

Primary activities: Flood control; turning cropland; repairing, cleaning, storing harvest equipment; repairing fences; hauling manure; spreading fertilizer; pruning fruit trees; care of livestock, poultry. Fuel supplies adequate, prices causing concern.

TEXAS: Weather information not available.

Crops: Cotton harvest virtually complete. Icy weather continued to delay unharvested fields Low Plains. Yields grades remained good. Small grain growth beginning deteriorate, as freezing temperatures dry conditions during past weeks stressed moisture levels. Freeze damage reported many areas; however, still too early to assess full extent of damage. Younger stands affected more than earlier planted fields. Cold weather helped control greenbug other insect problems. Statewide wheat condition is rated at 64% of normal compared with 31% last year. Soybean harvest ended in Coastal area before adverse weather conditions set in. Other field crops: Pecans 93% harvested, 99% 1989, 95% avg. Soybeans 100% harvested, 100% 1989, 99% avg. Sunflowers 100% harvested, 100% 1989, 100% avg. Oats planted 99%, 100% 1989, 99% avg.

Commercial Vegetables: Rio Grande Valley, wet, damp conditions slowed cabbage celery harvest. Carrot harvest begin soon. Onion stands making good progress. San Antonio Winter Garden, onions other leafy vegetables continued steady progress spite cold temperatures. Wet, icy conditions delayed pecan harvest remaining areas, yields remained good grades vary poor to good.

Range and Livestock: Livestock continued good condition, signs weight loss evident. Many producers continued supplemental feeding haying. Some cattle movement from over grazed winter pastures continued. Calving continued increase, despite cold temperatures. Some respiratory problems associated with cold weather reported central areas. Moisture still needed to sustain deteriorating ranges pastures. Range, pasture 2% very poor, 10% poor, 56% fair, 26% good, 6% excellent.

UTAH: Very light precipitation throughout the State. Temperature maximums, minimums 13° below normal.

Temperatures remained cold, kept farm activities to a minimum. Major farm activities: Care, feeding of livestock; maintenance of farm equipment, buildings; income tax preparation; attending growers, producers meetings.

VIRGINIA: Temperatures 5° above normal. Extremes 17°; 67°. Precipitation was below normal across the State.

Days suitable for fieldwork 1.9. Topsoil moisture 62% adequate, 38% surplus. Winter grains, grazing crops 2% very poor, 11% poor, 26% fair, 59% good and 2% excellent. Forage from pastures, winter grazing crops dairy cattle 10%, beef cattle 34%, sheep 36%. Feed supply plentiful. Grading, marketing burley tobacco, fruit tree pruning, equipment repair, preparing for taxes.

WASHINGTON: Temperatures 12 to 21° below normal, east; 4 to 13° below normal, west. Precipitation none to 0.26 in. east; 0.03 to 0.51 in. west.

Days suitable for fieldwork 2.6. Soil moisture 52% short, 38% adequate, 10% surplus. Range, good. Hay, other roughage 1% short, 99% adequate. Winter wheat 3% very poor, 36% poor, 38% fair, 23% good. Barley 5% very poor, 40% poor, 50% fair, 5% good. Weather continued cold during the week. Crop damage has occurred to fruits, berries, winter wheat. Winter wheat has been damaged by strong winds, extreme cold temperatures in central, eastern areas. The extent of the damage is unknown at this time. Livestock producers continue to supplement winter feeding programs.

WEST VIRGINIA: Temperature 33°. Extremes 13°; 57°. Precipitation 0.71 in., 0.14 in. below to 0.14 in. above normal.

Days suitable for fieldwork 2.0. Soil moisture 22% adequate, 78% surplus. Wheat, barley good. Cattle, sheep good. Hay feed 76% adequate, 24% surplus. Other feed supplies adequate. Farm activities: Feeding livestock, general maintenance.

WISCONSIN: Temperature 7°. Extremes -23°; 32°. Below normal temperatures. Snowfall south 2nd with heaviest accumulations up to 2.50 in. southwest. Snowfall 3.00 to 8.00 in. southern half of State 5th.

WYOMING: Bitterly cold weather continued early in the week resulting in temperatures 5 to 20° below normal. Precipitation normal. Precipitation mostly below normal.

Winter wheat fair to good. Freeze, wind damage reported. Livestock mostly good. Cold temperatures increasing stress, feeding requirements. Hay supplies reported adequate.

International Weather and Crop Summary

HIGHLIGHTS

December 30, 1990 - January 5, 1991

WESTERN USSR ... Overwintering conditions continue favorable for winter grains. A protective snow cover is needed in western and southern winter grain areas, where unseasonably warm weather diminished snow cover.

NORTHWESTERN AFRICA ... Welcomed dryness covers Tunisian winter grain areas, helping late planting efforts. Minimal rain covers crop areas in Morocco and Algeria.

EUROPE ... Gale force winds accompany moderate to heavy rain in the northwest. Above-normal temperatures diminish snow cover in the north and east.

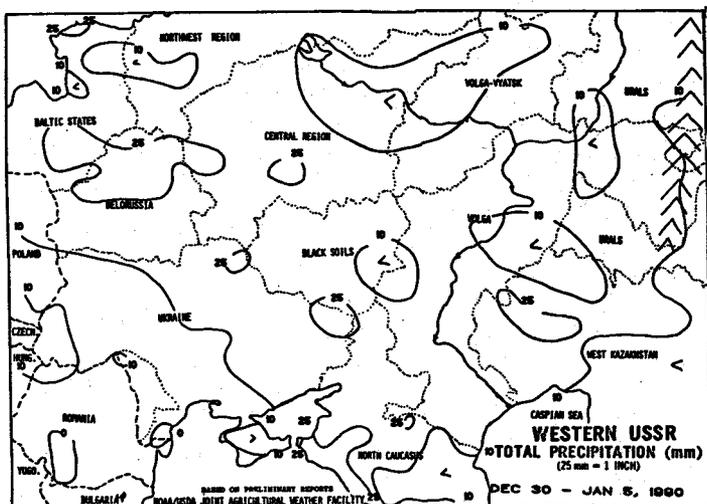
EASTERN ASIA ... Moderate to heavy showers continue over the Yangtze Valley. Light precipitation covers most winter wheat areas.

SOUTHEAST ASIA ... Widespread showers cover Indonesia and Malaysia. Drier weather covers the Philippines.

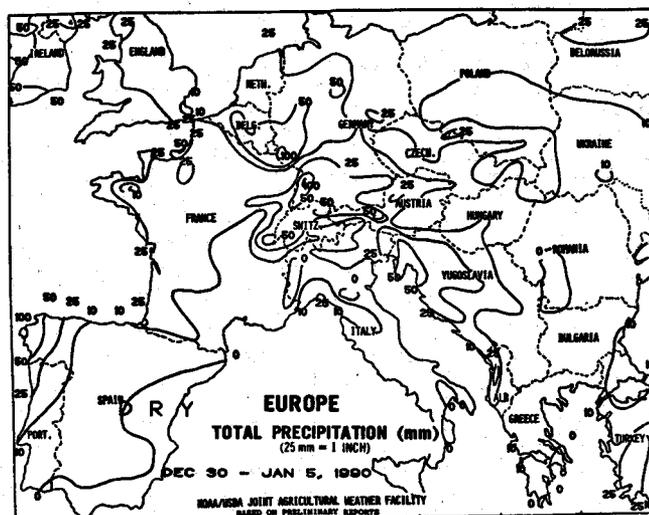
SOUTH AFRICA ... Rain benefits eastern corn in or nearing reproduction, but stressful growing conditions persist in the west.

SOUTH AMERICA ... In Argentina, showers benefit crop growth. In south-central Brazil, dry weather prevails over southern soybeans while showers help northern crops.

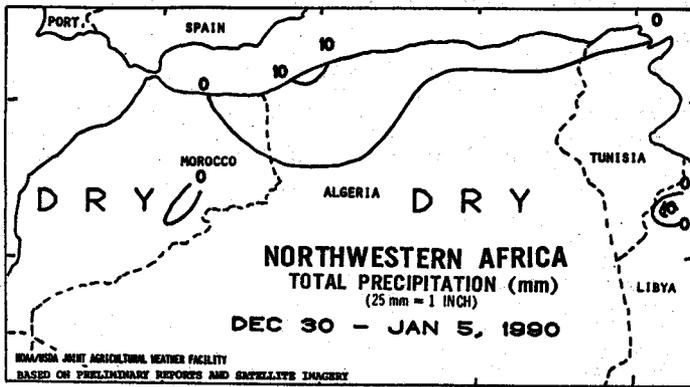
AUSTRALIA ... Inundating rain continues along Queensland's east-central coast. Beneficial showers help summer crops.



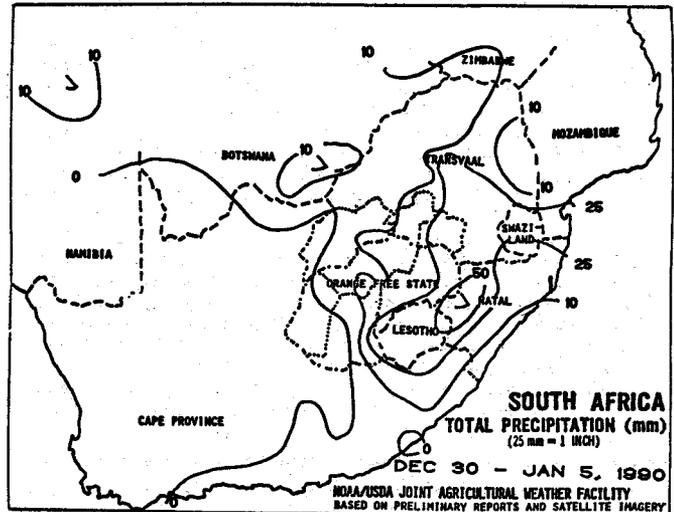
WESTERN USSR ... Well above-normal temperatures accompanied widespread precipitation. Early-week snow changed over to mostly rain in western Belorussia, most of the Ukraine, and the North Caucasus. As a result, winter grains in these areas lack a protective snow cover. Widespread snow increased snow cover over the remainder of the region. Total precipitation generally ranged from 10 to 25mm, with local amounts in excess of 25mm covering northern Belorussia, the northeastern Ukraine, and the western North Caucasus. Unusually mild weather continued to provide favorable overwintering conditions for winter grains. Weekly average temperatures ranged from 4 to 7 degrees Celsius (C) above normal in the west and south, and 2 to 5 degrees C above normal in the east.



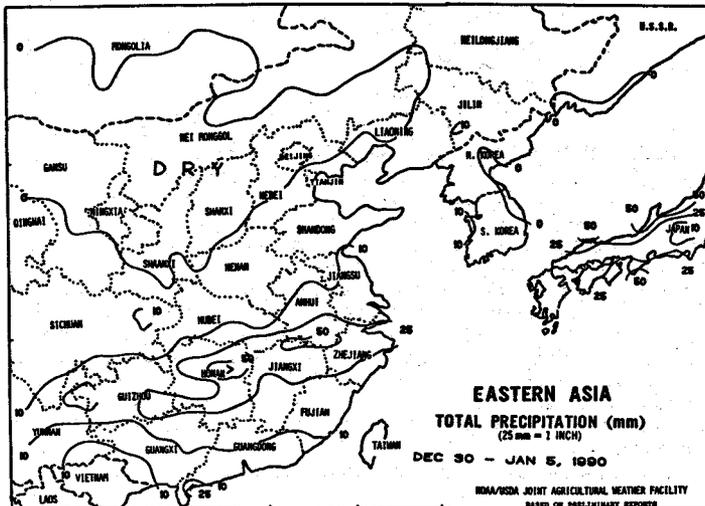
EUROPE ... Stormy weather continued over the northwestern portion of the region. Gale force winds (28-55 knots) over the United Kingdom, northwestern France, Benelux, and northern Germany were accompanied by moderate to locally heavy rain (20-70mm, with local amounts in excess of 100mm). The precipitation in these areas helped to increase moisture reserves for winter grains. Further south, minimal rain (less than 5mm) covered vegetative winter grains in southern Spain, southern Italy, and Greece. Well above-normal temperatures were accompanied by light precipitation (generally less than 10mm) in Poland, Czechoslovakia, Romania, and Bulgaria. Continued above-normal temperatures in northern and eastern Europe have reduced or completely melted snow cover, leaving dormant winter grains potentially more vulnerable to extreme cold. Weekly average temperatures in the north and east were 4-7 degrees C above normal.



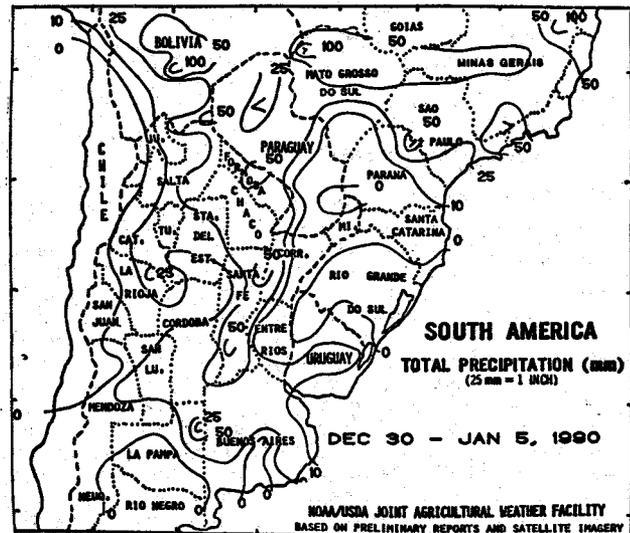
NORTHWESTERN AFRICA ... Winter grain planting was nearing completion over most of the region. Following several weeks of wet weather, welcomed dryness covered winter grain areas in Tunisia, helping late planting efforts. Moisture reserves were adequate to surplus for emerging crops. In Algeria, station reports were continuous throughout the week. Minimal rain (less than 5mm) over Algerian winter grain areas benefited late planting. In Morocco, although the second consecutive week of dryness covered winter grain areas, adequate moisture reserves favored early crop growth.



SOUTH AFRICA ... Moderate showers (15-33mm) benefited vegetative to reproductive corn over the eastern half of the Maize Triangle, but further west, only local areas received more than 10mm. Temperatures averaged 2-4 degrees C above normal in the west, with highs of 35 degrees C or more common across much of the area, causing more stress to vegetative crops. Elsewhere, moderate to heavy showers (25-70mm) covered crop regions of interior Natal as well as portions of the eastern Cape Province, but most sugarcane areas received 15mm or less.



EASTERN ASIA ... Light to moderate precipitation (5-25mm) covered most crop areas of southern China, with much of the Yangtze Valley receiving moderate to heavy showers (25-69mm), improving moisture reserves for spring plantings. Further north, light to moderate precipitation (1-25mm) fell over most winter wheat areas, including a large portion of the North China Plain. Temperatures averaged slightly above normal but were sufficiently cool to keep crops dormant or semidormant. The primary winter wheat regions lack a protective snow cover, but crops in the north should be adequately hardened. In the northeast, light precipitation (less than 10mm) covered Manchuria and the Koreas, as moderate to heavy showers (25-95mm) continued to soak western Japan.



SOUTH AMERICA ... In Argentina, showers covered nearly all summer crop areas, with weekly rainfall of 10-25mm maintaining adequate moisture for reproductive corn and emerging soybeans. Heavier showers (25-72mm) from Santa Fe to northern cotton areas also kept soils well supplied with moisture for crop growth. Dry weather in southwestern Buenos Aires favored late wheat harvesting, which also progressed elsewhere with several days of dry weather. Daily maximum temperatures generally ranged from the upper 20's to middle 30's, promoting crop development. In south-central Brazil, dry weather prevailed from Rio Grande do Sul to southern Parana and extreme southern Mato Grosso do Sul. Substantial showers (25-70mm) favored corn, soybeans, and coffee across northern portions of the region. Maximum temperatures in the drier southern area averaged in the low to middle 30's, promoting growth but reducing soil moisture supplies.

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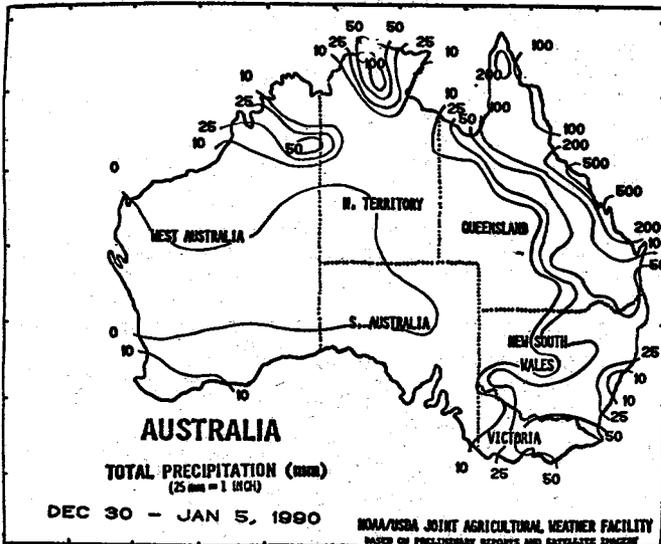
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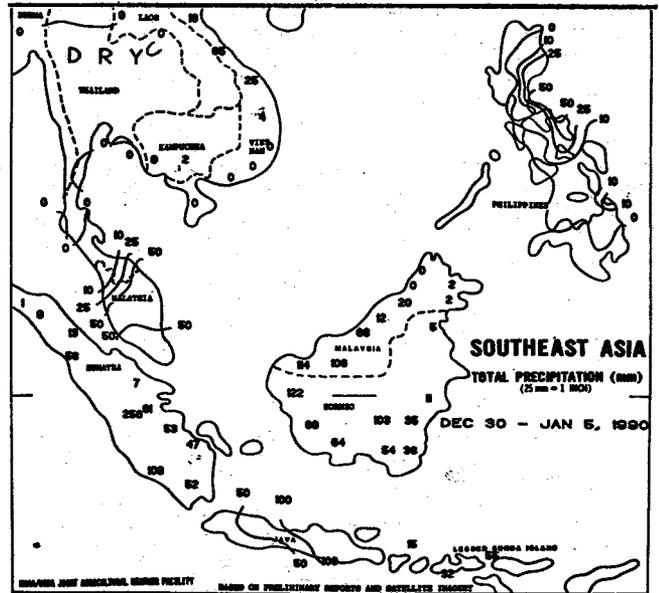
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AUSTRALIA ... Widespread rain fell over eastern Australia, with tropical showers across the north, remnants of cyclone Joy continuing to inundate coastal sugarcane areas of Queensland, and moisture from a cool front in the southeast. Severe flooding persisted along Queensland's east-central coast, with rainfall ranging from 200 to over 600mm for the second consecutive week likely causing damaging erosion problems. The summer crop areas of southeastern Queensland and northern New South Wales benefited from 25 to 50mm of rain. Nonirrigated crops had been stressed by dryness and heat. The recent moisture was especially helpful for crops entering reproduction.



SOUTHEAST ASIA ... Seasonable rainfall continued over most Indonesian and Malaysian crop regions, with heavy showers (100-135mm) again concentrated over much of eastern Java and southern palm oil regions of eastern Malaysia. Although some flooding has occurred locally in Java, rainfall since late November has greatly increased reservoir levels for rice planting. In the Philippines, only local areas in primary eastern crop regions received more than 25mm. Except for southern Luzon, more rain is needed over most fall grain regions following recent weeks of drier-than-usual weather.

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