

# 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

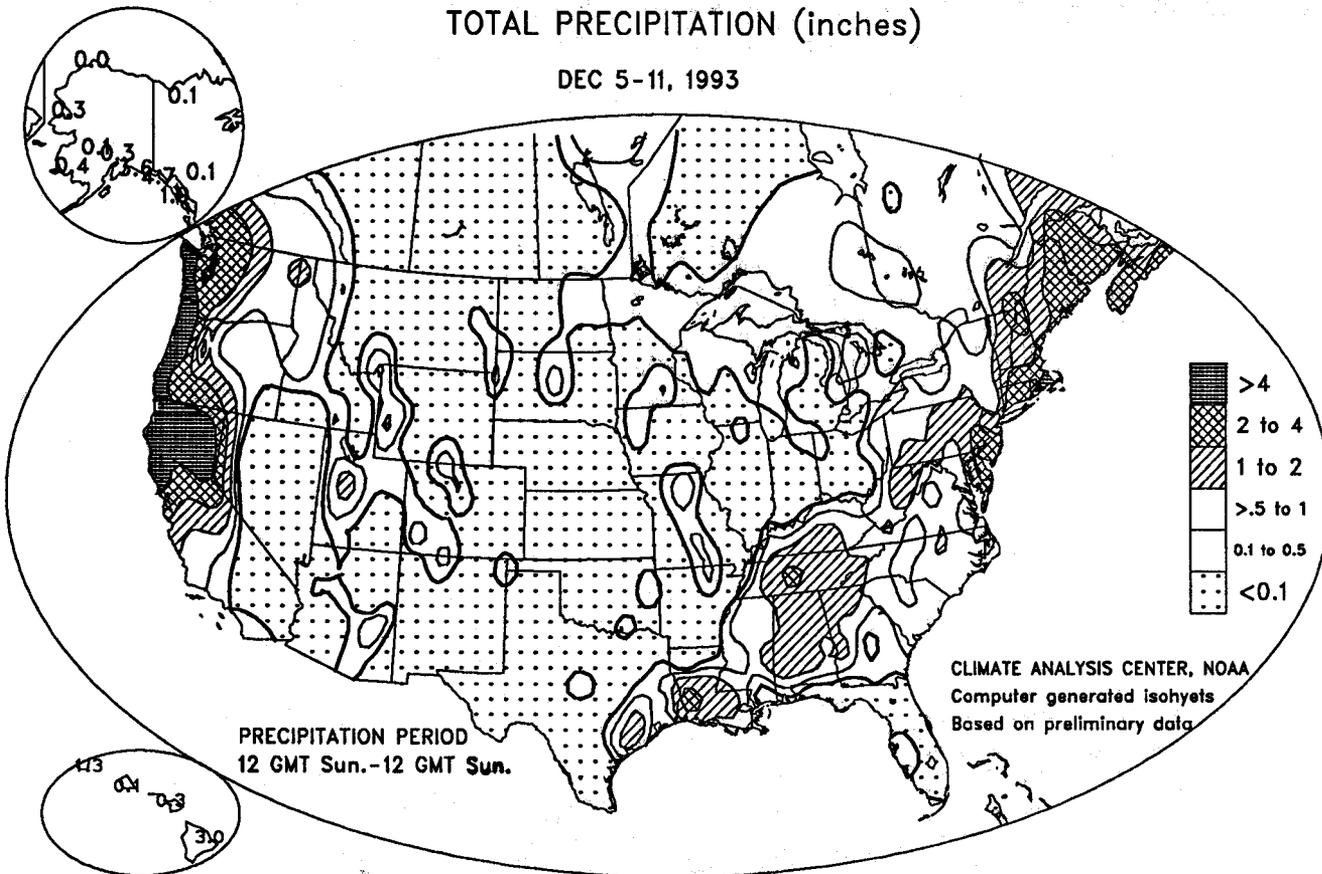
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Washington, D.C.

December 14, 1993

## TOTAL PRECIPITATION (inches)

DEC 5-11, 1993



CLIMATE ANALYSIS CENTER, NOAA  
Computer generated isohyets  
Based on preliminary data

PRECIPITATION PERIOD  
12 GMT Sun.-12 GMT Sun.

## HIGHLIGHTS

December 5 - 11, 1993

Wet, windy weather lashed the Pacific Northwest, alleviating autumn dryness, but causing local wind damage and flash flooding. On the opposite coast, early- and late-week storms slapped the North Atlantic States with gusty winds, rain, and snow. The early-week system left a swath of heavy rain, charging surf, and high winds along its path from the Middle Atlantic States to coastal New England. But by Tuesday, attention shifted to the Northwest, where high winds and very heavy rain blasted coastal Oregon and northwestern California. Wind gusts above 70 miles per hour destroyed the anemometer at Brookings, OR, while as much as 6 inches of rain drenched California's coastal range in Humboldt County. Inland, 27 inches of snow buried Oregon's Crater Lake National Park in 24 hours. A second, stronger, storm hit the Northwest at midweek, fueling

(Continued to p. 10)

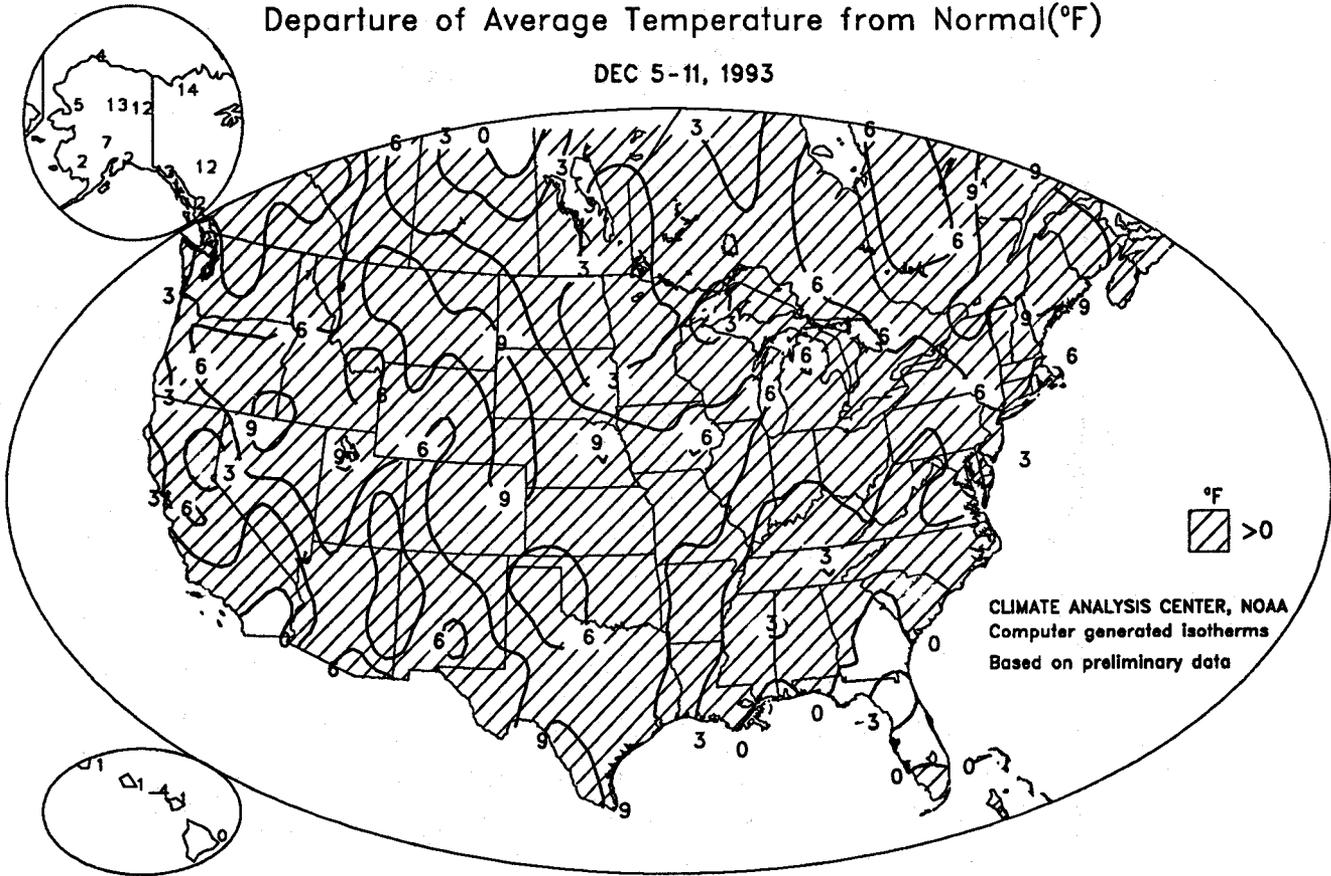
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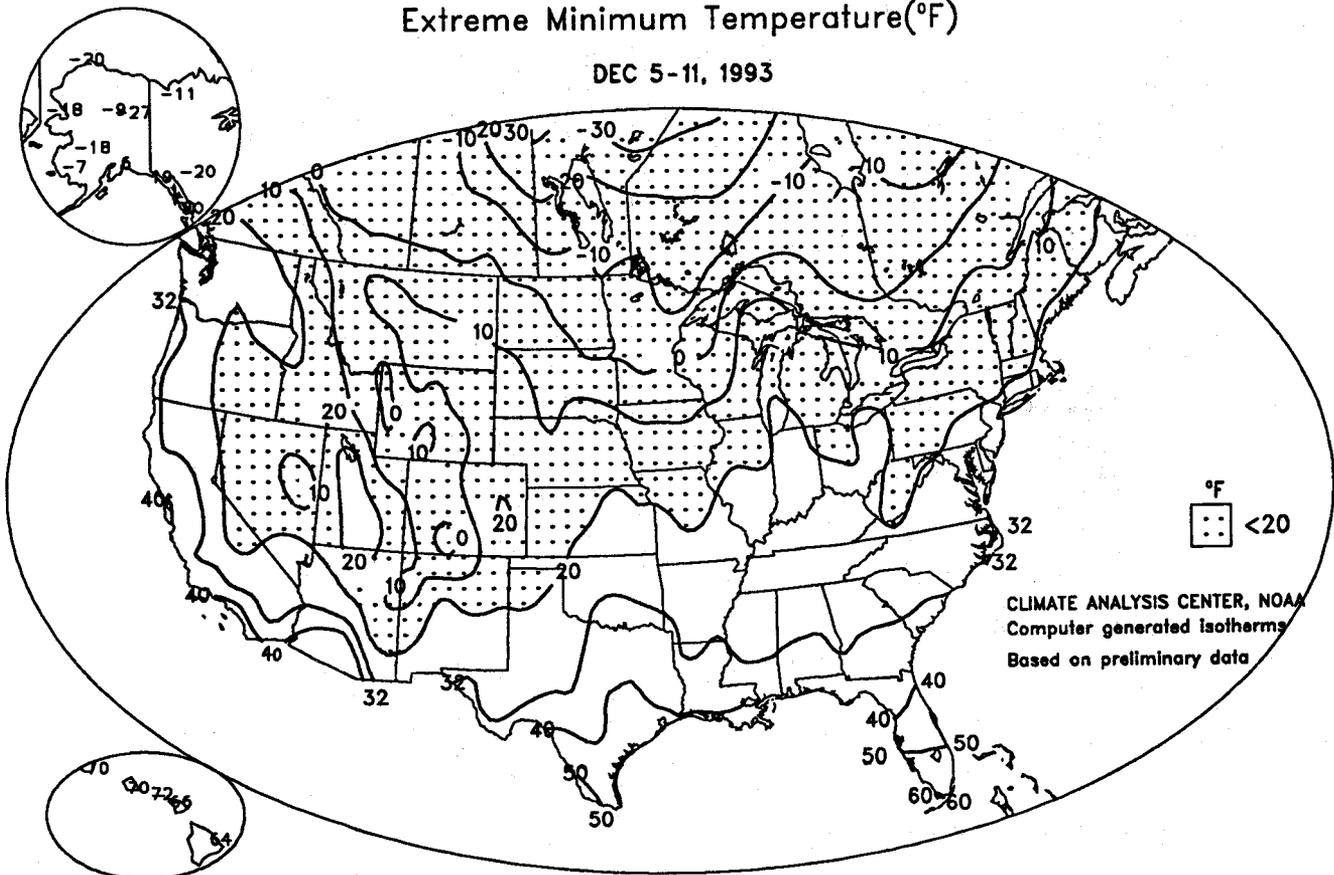
Departure of Average Temperature from Normal(°F)

DEC 5-11, 1993



Extreme Minimum Temperature(°F)

DEC 5-11, 1993



# National Weather Data for Selected Cities

Weather Data for the Week Ending December 11, 1993

STATES AND STATIONS	TEMPERATURE °F							PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS					
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE	MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE		.50 INCH OR MORE	
																			.01 INCH OR MORE	.50 INCH OR MORE		
AL BIRMINGHAM	60	36	67	27	48	1	1.3	.2	1.2	1.8	101	36.8	72	90	46	0	2	2	2	1		
MOBILE	65	42	70	36	54	-1	1.1	-1.1	1.1	1.4	21	57.1	94	89	50	0	0	1	1	0		
MONTGOMERY	63	38	71	33	51	1	1.9	.8	1.9	2.5	140	50.1	97	91	51	0	0	2	1	1		
AK ANCHORAGE	25	13	34	6	19	2	1.1	-2	1.1	2	41	16.7	110	86	71	0	7	7	1	0		
BARROW	1	-12	6	-21	-5	5	1.1	0	1.1	200	5.3	124	81	77	0	7	7	3	0	0		
FAIRBANKS	8	-12	24	-20	-2	3	1.1	0	1.1	7	10.9	105	83	74	0	7	7	1	0	0		
JUNEAU	38	32	40	26	35	7	1.3	-7	1.3	106	56.8	110	92	75	0	3	3	3	0	0		
KODIAK	38	28	43	19	33	2	1.5	1	1.5	1.6	72	68.6	109	86	72	0	6	6	1	1		
NOME	18	9	24	3	14	5	1.6	5	1.6	250	18.3	127	85	75	0	7	7	4	0	0		
AZ PHOENIX	73	46	76	43	60	4	1.1	-2	1.1	0	13.3	189	65	25	0	0	0	0	0	0		
PRESCOTT	61	26	65	22	44	6	1.1	-3	1.1	4	16.9	91	60	19	0	7	7	1	0	0		
TUCSON	76	44	79	40	60	7	1.0	-2	1.0	0	14.8	131	57	21	0	0	0	0	0	0		
YUMA	73	48	77	44	61	3	1.0	-1	1.0	0	4.6	161	52	20	0	0	0	0	0	0		
AR FORT SMITH	61	37	72	30	49	7	1.0	-8	1.0	2.0	163	46.7	119	89	39	0	2	2	0	0		
LITTLE ROCK	58	41	67	35	50	5	1.0	-1	1.0	3.3	184	46.7	100	81	44	0	0	0	0	0		
CA BAKERSFIELD	65	40	75	35	53	4	1.3	2	1.3	136	7.9	148	70	39	0	0	0	1	0	0		
EUREKA	59	48	65	36	54	5	1.2	3.8	1.2	261	38.1	113	87	63	0	0	0	4	3	3		
FRESNO	62	42	69	39	52	6	1.4	4	1.4	88	13.2	137	92	54	0	0	0	1	0	0		
LOS ANGELES	65	50	70	47	57	0	1.5	1	1.5	82	19.9	163	89	60	0	0	0	1	0	0		
REDDING	55	44	61	33	50	4	1.9	7	1.9	101	42.6	144	94	70	0	0	0	6	2	2		
SACRAMENTO	59	45	63	37	52	6	1.2	6	1.2	138	22.9	144	97	65	0	0	0	3	0	0		
SAN DIEGO	64	48	65	46	56	6	1.4	1	1.4	75	16.9	190	94	63	0	0	0	1	0	0		
SAN FRANCISCO	60	49	63	42	55	4	1.4	8	1.4	147	22.8	130	93	72	0	0	0	3	2	2		
CO DENVER	55	28	64	19	41	9	1.0	-2	1.0	0	14.4	96	56	22	0	5	5	0	0	0		
GRAND JUNCTION	49	22	53	19	36	2	1.0	-2	1.0	4	11.1	112	80	36	0	7	7	0	0	0		
PUEBLO	57	18	66	13	38	5	1.0	-1	1.0	0	14.5	133	80	28	0	7	7	0	0	0		
CT BRIDGEPORT	50	35	54	23	43	6	2.0	2.1	2.4	3.5	277	36.4	92	85	54	0	2	2	3	1		
HARTFORD	47	29	52	21	38	6	2.1	1.2	1.7	2.6	180	43.6	105	95	62	0	4	4	3	1		
DC WASHINGTON	53	36	62	25	45	3	1.7	9	1.6	2.7	242	39.7	108	94	59	0	1	1	2	1		
FL APALACHICOLA	66	44	69	40	55	-2	1.1	-8	1.1	2	11	48.7	93	91	51	0	0	0	1	0		
DAYTONA BEACH	71	46	77	41	58	-3	1.1	-6	1.1	12	34.0	73	98	49	0	0	0	1	0	0		
JACKSONVILLE	68	42	72	34	55	-4	1.1	-6	1.1	9	46.2	97	93	54	0	0	0	1	0	0		
KEY WEST	79	68	84	66	73	1	1.6	1.1	1.6	207	35.4	92	89	63	0	0	0	1	1	1		
MIAMI	80	62	83	56	71	1	1.1	-4	1.1	0	60.5	110	85	52	0	0	0	0	0	0		
ORLANDO	73	50	78	47	62	-2	1.1	-4	1.1	10	43.9	94	94	53	0	0	0	1	0	0		
TALLAHASSEE	68	38	74	31	53	-2	1.1	-1	1.1	10	49.7	80	93	45	0	1	1	0	0	0		
TAMPA	73	49	77	43	61	-2	1.2	-3	1.2	28	36.4	86	95	46	0	0	0	2	0	0		
WEST PALM BEACH	78	57	81	52	68	-1	1.2	-5	1.2	5	61.2	106	97	58	0	0	0	0	0	0		
GA ATLANTA	59	39	65	31	49	3	1.7	-3	1.7	1.3	87	46.8	98	83	48	0	1	2	1	0		
AUGUSTA	62	36	69	30	49	0	1.4	-3	1.4	1.0	87	36.6	86	92	44	0	2	2	1	0		
MACON	62	37	69	30	50	-1	1.6	-3	1.6	1.1	75	47.7	114	93	46	0	2	2	1	1		
SAVANNAH	64	43	69	34	53	0	1.8	-2	1.8	4	45	46.4	98	90	48	0	0	0	1	0		
HI HILO	78	66	81	64	72	-1	1.8	-1.2	1.8	4.1	89	102.6	84	89	65	0	0	0	5	1		
HONOLULU	81	71	82	70	76	1	1.1	-8	1.1	1	5	5.5	28	70	51	0	0	0	1	0		
KAHULUI	80	69	82	66	75	1	1.2	-5	1.2	4	37	11.8	63	74	54	0	0	0	3	0		
LIHUE	78	71	79	70	75	1	1.6	-6	1.6	1.3	71	20.8	52	78	60	0	0	0	2	0		
ID BOISE	51	37	60	25	44	12	1.1	-2	1.1	8	160	12.5	112	66	38	0	2	3	0	0		
LEWISTON	46	34	54	25	40	4	1.2	0	1.2	4	102	12.6	108	78	51	0	3	2	0	0		
POCATELLO	45	22	56	8	33	7	1.1	-2	1.1	1	36	17.4	153	81	54	0	6	2	0	0		
IL CHICAGO	42	27	51	18	35	5	1.1	-6	1.1	3	28	44.2	129	91	64	0	5	2	0	0		
MOLINE	44	27	56	16	36	7	1.1	-5	1.1	1	16	49.8	132	84	61	0	5	0	0	0		
PEORIA	45	28	59	19	37	7	1.1	-6	1.1	4	45	53.4	153	90	70	0	5	0	0	0		
QUINCY	46	29	58	17	38	6	1.1	-6	1.1	6	66	36.8	96	83	52	0	5	0	0	0		
ROCKFORD	40	25	51	15	33	6	1.2	-3	1.2	1	64	41.7	119	93	63	0	6	2	0	0		
SPRINGFIELD	46	30	58	22	38	5	1.1	-7	1.1	5	45	47.0	140	85	64	0	5	0	0	0		
IN EVANSVILLE	49	31	58	25	40	1	1.1	-9	1.1	2.1	145	45.2	104	87	58	0	5	1	0	0		
FORT WAYNE	43	30	52	20	36	5	1.1	-6	1.1	7	68	41.4	126	91	74	0	5	2	0	0		
INDIANAPOLIS	44	29	52	22	37	3	1.1	-8	1.1	1.0	78	49.6	131	88	68	0	5	2	0	0		
SOUTH BEND	41	29	51	25	35	4	1.1	-6	1.1	7	53	45.8	123	92	69	0	5	4	0	0		
IA DES MOINES	44	23	57	12	34	7	1.1	-3	1.1	0	55.1	166	92	59	0	6	0	0	0	0		
SIOUX CITY	41	21	51	15	31	7	1.1	-2	1.1	0	31.9	126	88	62	0	7	0	0	0	0		
WATERLOO	39	21	47	9	30	7	1.1	-3	1.1	0	52.3	159	92	60	0	7	0	0	0	0		
KS CONCORDIA	52	29	64	20	41	9	1.1	-2	1.1	0	43.4	154	79	41	0	5	0	0	0	0		
DODGE CITY	57	26	70	18	42	7	1.0	-2	1.0	12	25.5	121	76	31	0	7	0	0	0	0		
GOODLAND	56	23	68	15	40	9	1.0	-1	1.0	0	20.2	113	73	27	0	6	0	0	0	0		
TOPEKA	52	28	60	20	40	7	1.0	-4	1.0	5	46.5	135	89	47	0	6	0	0	0	0		
WICHITA	55	31	65	26	43	7	1.0	-4	1.0	2	34	31.7	93	81	44	0	5	0	0	0		
KY BOWLING GREEN	51	32	62	25	42	2	1.4	2	1.3	4.8	264	36.7	77	96	58	0	4	2	1	1		
LEXINGTON	48	33	59	22	41	3	1.6	-3	1.6	2.0	139	44.3	105	87	58	0	3	3	0	0		
LOUISVILLE	49	33	59	24	41	2	1.6	-7	1.6	1.6	121	46.5	110	90	67	0	4	3	0	0		
LA BATON ROUGE	64	43	71	37	54	-1	1.7	-6	1.7	1.0	53	58.5	102	97	48	0	0	1	1	1		
LAKE CHARLES	70	48	77	39	59	4	1.7	-5	1.7	9	49	57.8	112	91	54	0	0	1	1	1		
NEW ORLEANS	66	46	73	39	56	0	1.3	-1.0	1.3	1.0	50	50.8	87	91	61	0	0	1	0	0		
SHREVEPORT	66	44	77	33	55	6	1.1	-1.1	1.1	5	27	56.2	122	87	47	0	0	0	0	0		

Based on 1961-90 normals.

Weather Data for the Week Ending December 11, 1993

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
ME CARIBOU	34	23	48	9	28	10	2.6	1.8	1.7	2.8	226	38.7	112	95	78	0	6	5	1		
PORTLAND	46	29	50	19	37	8	2.6	1.5	1.2	2.8	161	41.3	99	91	68	0	6	4	2		
MD BALTIMORE	52	32	56	24	42	3	1.6	.8	1.5	2.8	231	40.8	106	90	51	0	5	2	1		
SALISBURY	56	32	63	26	44	3	1.8	1.0	1.3	1.9	154	45.4	106	97	49	0	5	2	2		
MA BOSTON	47	34	53	25	41	5	3.8	2.9	2.7	4.1	274	40.7	104	87	60	0	2	4	2		
CHATHAM	49	37	55	32	43	6	4.3	3.3	2.7	4.5	275	38.9	92	90	75	0	2	6	2		
MI ALPENA	38	23	49	13	31	5	.2	-.3	.2	.2	32	25.7	93	94	60	0	7	2	0		
DETROIT	44	30	55	19	37	7	-.1	-.6	-.1	-.4	38	30.3	98	84	62	0	5	1	0		
FLINT	41	27	49	14	34	4	.1	-.4	-.1	-.3	37	30.9	107	93	66	0	6	2	0		
GRAND RAPIDS	42	26	50	17	34	5	.3	-.4	-.3	-.7	66	45.8	133	93	66	0	6	2	0		
HOUGHTON LAKE	38	24	48	17	31	6	-.1	-.3	-.1	-.3	36	26.2	97	94	64	0	7	3	0		
LANSING	42	27	50	17	34	6	-.1	-.4	-.1	-.3	41	35.1	116	93	64	0	6	3	0		
MARQUETTE	32	18	39	13	25	5	-.2	-.2	-.3	-.5	49	32.1	95	92	65	0	7	3	0		
MUSKOGON	41	27	49	19	34	3	.4	-.5	-.2	-.4	38	35.5	116	90	65	0	5	2	0		
SAULT ST. MARIE	34	20	44	4	27	5	-.4	-.3	-.2	-.8	69	32.2	99	95	64	0	6	3	0		
MN ALEXANDRIA	28	10	35	0	19	3	-.1	-.1	-.1	-.1	27	26.0	104	92	70	0	7	1	0		
DULUTH	29	10	40	-8	19	4	-.2	-.1	-.1	-.3	68	31.4	108	91	65	0	7	4	0		
INT'L FALLS	27	4	32	-12	16	5	-.1	-.1	-.1	-.3	97	21.4	90	91	66	0	7	1	0		
MINNEAPOLIS	34	18	41	7	26	5	-.1	-.2	-.1	-.1	24	31.8	115	93	66	0	7	2	0		
ROCHESTER	34	18	38	7	26	6	-.1	-.2	-.1	-.1	10	37.8	130	97	70	0	7	1	0		
MS GREENWOOD	62	40	70	29	51	3	-.2	-.1	-.2	1.1	54	40.1	79	94	48	0	1	1	0		
JACKSON	61	39	67	30	50	1	-.2	-.2	-.2	.6	26	45.8	90	96	46	0	1	1	0		
MERIDIAN	64	39	69	31	52	2	.8	-.6	.8	1.1	51	52.2	99	87	44	0	1	1	1		
MO CAPH GIRARDEAU	51	33	60	26	42	3	-.1	-1.0	-.1	1.8	112	48.1	110	95	53	0	4	1	0		
COLUMBIA	51	29	61	17	40	7	.0	.7	.0	.7	64	61.7	167	91	52	0	5	0	0		
KANSAS CITY	51	30	58	20	41	8	.0	.4	.1	1.1	50	50.4	138	82	46	0	5	0	0		
SAINT LOUIS	51	34	61	25	42	6	.0	.7	.0	.8	69	54.1	152	77	49	0	3	0	0		
SPRINGFIELD	55	32	66	21	43	6	.0	.7	.0	.8	87	55.2	132	86	46	0	5	0	0		
MT BILLINGS	47	28	61	16	38	10	.0	.2	.0	1.0	12	15.6	107	63	33	0	5	0	0		
GLASGOW	32	16	42	4	24	6	.0	.2	.0	.1	16.1	151	90	69	0	7	7	0	0		
GREAT FALLS	45	30	60	13	38	12	.0	.2	.1	.1	21	22.9	156	68	42	0	3	1	0		
HAVRE	43	22	58	10	32	13	.0	.2	.0	.0	12.8	119	88	55	0	7	7	0	0		
HELENA	44	22	55	8	33	10	-.1	.0	-.1	.1	55	18.8	167	83	44	0	6	2	0		
KALISPELL	39	24	47	10	32	7	-.1	-.1	-.2	.6	98	22.4	146	90	66	0	7	3	0		
MILES CITY	43	24	53	14	34	12	-.1	-.1	-.1	.1	14	18.7	137	87	52	0	5	0	0		
MISSOULA	37	22	45	5	29	5	-.1	-.1	-.1	.1	61	13.9	109	88	67	0	7	3	0		
NE GRAND ISLAND	49	23	69	15	36	9	.0	.0	.0	.2	0	32.7	133	83	44	0	7	0	0		
LINCOLN	49	22	65	16	36	8	.0	.2	.0	.0	0	25.4	91	90	38	0	7	0	0		
NORFOLK	47	22	67	17	35	10	.0	.2	.0	.0	0	33.9	137	83	46	0	7	0	0		
NORTH PLATTE	52	17	63	12	34	8	.0	.2	.0	.0	0	26.0	137	84	40	0	7	0	0		
OMAHA	45	26	61	17	36	9	.0	.2	.0	.0	0	41.4	144	83	55	0	6	0	0		
SCOTTSBLUFF	50	22	61	13	36	9	.0	.2	.0	.0	0	24.2	163	83	34	0	7	0	0		
VALENTINE	47	21	58	8	34	7	.0	.2	.0	.0	0	20.3	92	79	42	0	7	0	0		
NV ELY	50	19	59	5	34	8	.1	-.1	-.1	-.1	42	10.0	103	76	29	0	7	1	0		
LAS VEGAS	63	36	65	32	50	3	.0	-.1	.0	.0	23	4.9	126	56	22	0	1	1	0		
RENO	56	31	67	21	43	10	.0	.2	.0	.0	3	6.4	94	76	34	0	4	1	0		
WINNEMUCCA	54	28	62	14	41	10	-.1	.1	.1	.1	39	7.1	92	73	35	0	4	2	0		
NH CONCORD	45	24	49	14	34	8	1.6	.8	1.0	1.8	147	30.0	87	97	64	0	6	4	1		
NJ ATLANTIC CITY	53	30	59	24	41	3	2.5	1.7	1.9	2.9	240	37.4	98	94	54	0	6	3	1		
NM ALBUQUERQUE	58	27	61	24	42	6	.0	-.1	.0	.0	0	8.8	103	70	21	0	7	0	0		
CLOVIS	61	33	72	21	47	7	.0	-.1	.0	.0	0	14.0	81	55	19	0	2	0	0		
ROSWELL	65	30	75	24	47	5	.0	-.1	.0	.0	0	9.9	80	53	19	0	5	0	0		
NY ALBANY	43	29	48	18	36	7	.5	-.2	.4	1.3	119	39.5	115	87	63	0	3	3	0		
BINGHAMTON	40	27	44	12	33	5	1.0	.2	.8	1.9	172	41.2	117	90	68	0	6	4	1		
BUFFALO	42	31	51	16	36	5	.6	-.3	.4	1.5	112	38.7	106	84	59	0	4	3	0		
NEW YORK	52	38	57	24	45	6	2.1	1.3	1.1	2.7	212	41.5	104	86	56	0	1	3	2		
ROCHESTER	41	29	48	15	35	4	.3	-.3	.2	.9	85	28.4	94	91	61	0	4	3	0		
SYRACUSE	42	28	47	14	35	4	.5	-.3	.3	1.5	123	47.4	128	93	68	0	4	5	0		
NC ASHEVILLE	52	30	57	24	41	0	.2	-.8	.2	1.9	120	36.3	68	88	50	0	5	1	0		
CHARLOTTE	57	36	64	29	47	2	.5	-.3	.3	1.2	96	33.6	82	87	42	0	1	2	0		
GREENSBORO	55	33	61	26	44	2	.8	-.1	.5	1.4	122	40.5	100	88	46	0	4	2	1		
HATTERAS	62	42	71	34	52	2	1.9	.9	1.4	1.9	122	57.0	107	93	58	0	0	3	1		
NEW BERN	63	35	69	30	49	0	.6	-.2	.3	.7	55	43.7	84	96	42	0	2	3	0		
RALEIGH	59	34	66	27	46	2	1.6	.9	1.3	1.9	169	36.2	92	93	45	0	4	2	1		
WILMINGTON	65	38	71	30	51	2	.9	.0	.5	.9	66	60.0	111	97	43	0	1	3	0		
ND BISMARCK	31	8	43	-1	19	3	-.1	.0	-.1	.2	88	26.3	174	98	68	0	7	1	0		
FARGO	26	7	35	-4	17	2	-.1	-.1	-.1	-.1	41	21.0	110	86	70	0	7	3	0		
GRAND FORKS	25	5	32	-7	15	1	-.4	.2	.2	.4	164	21.3	119	89	71	0	7	2	0		
WILLISTON	33	13	42	-2	23	7	.0	.2	.0	.0	11	18.6	140	90	71	0	7	1	0		
OH AKRON-CANTON	42	30	55	20	36	3	.4	-.3	.2	1.7	155	40.2	115	91	69	0	5	3	0		
CINCINNATI	46	31	57	20	38	2	-.1	-.7	-.1	1.4	118	37.6	96	90	63	0	4	2	0		
CLEVELAND	44	32	57	24	38	4	-.2	-.6	-.1	1.3	111	39.7	115	85	63	0	5	3	0		
COLUMBUS	46	31	58	19	38	6	-.1	-.6	-.1	1.5	126	37.1	103	88	63	0	3	2	0		
DAYTON	44	30	55	20	37	3	-.1	-.6	-.1	2.0	183	51.5	148	87	66	0	5	2	0		

Based on 1961-90 normals.

Weather Data for the Week Ending December 11, 1993

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	TEMP. °F		PRECIP.	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
TOLEDO	43	29	53	16	36	6	T	-7	T	.6	51	29.2	94	91	66	0	5	2	0
YOUNGSTOWN	42	30	52	19	36	4	T	-1	T	1.5	131	35.7	100	91	66	0	5	3	0
OK OKLAHOMA CITY	59	35	67	31	47	6	T	-3	T	.5	82	32.1	99	85	44	0	3	0	0
TULSA	61	34	75	27	48	7	T	-5	T	.9	106	38.3	98	84	41	0	4	0	0
OR ASTORIA	52	41	60	31	46	3	5.0	2.6	1.8	7.7	203	51.0	85	96	75	0	1	6	4
BURNS	44	26	57	17	35	9	T	.4	T	.8	195	9.4	102	86	54	0	5	2	0
MEDFORD	52	37	69	30	44	6	2.0	1.2	.9	2.3	189	16.5	99	91	67	0	1	3	3
FENDLTON	50	32	63	23	41	6	.3	-1	.1	.6	98	13.5	122	81	57	0	3	4	0
PORTLAND	52	40	65	33	46	5	2.9	1.5	.9	4.1	189	29.5	91	96	71	0	0	6	3
SALM	53	42	68	32	48	7	4.3	2.7	1.3	5.9	240	33.6	96	93	73	0	1	6	4
PA ALLENTOWN	49	31	52	23	40	6	2.0	1.2	1.8	3.4	266	51.5	125	94	62	0	5	2	1
ERIE	43	31	51	21	37	3	.4	-.4	.2	1.5	107	36.7	93	87	56	0	4	3	0
HARRISBURG	48	35	54	24	41	5	2.4	1.7	2.1	3.1	256	47.5	124	90	54	0	3	2	1
PHILADELPHIA	54	37	61	27	45	9	1.7	.8	1.4	2.6	195	41.1	94	89	52	0	1	3	1
PITTSBURGH	45	31	52	19	38	4	.2	-.4	.1	1.2	112	37.3	107	89	62	0	4	4	0
SCRANTON	45	31	48	19	38	6	1.1	.5	.7	1.5	156	38.0	109	88	63	0	3	2	1
RI PROVIDENCE	50	31	57	23	40	5	3.7	2.7	2.8	3.9	246	40.4	95	94	65	0	5	3	1
SC CHARLESTON	64	43	69	34	53	0	.6	-1	.4	.6	61	51.0	103	89	45	0	0	3	0
COLUMBIA	62	35	69	30	48	0	.5	-.3	.5	.9	78	37.5	79	93	48	0	2	1	0
FLORENCE	62	37	69	30	49	0	.5	-.2	.5	.6	54	31.6	76	96	44	0	2	1	1
GREENVILLE	57	34	63	31	45	0	.3	-.7	.3	1.3	92	37.7	78	86	43	0	4	1	0
SD ABERDEEN	32	8	42	-2	20	2	.1	-1	.1	.1	26	27.6	133	96	68	0	7	1	0
HURON	34	12	40	5	23	3	.1	-1	.1	.1	71	29.4	149	95	71	0	7	1	0
RAPID CITY	49	22	58	14	36	10	T	-1	T	.1	59	19.4	119	80	41	0	7	0	0
SIOUX FALLS	35	16	41	9	25	4	T	-2	T	T	0	35.8	153	93	63	0	7	0	0
TN CHATTANOOGA	57	35	64	30	46	3	.7	-.5	.6	2.8	152	37.6	75	90	53	0	3	2	1
KNOXVILLE	53	35	59	27	44	2	.6	-.4	.6	5.8	368	43.9	99	92	62	0	2	2	1
MEMPHIS	57	39	65	32	48	3	1	-1.3	.1	3.6	170	42.0	87	89	52	0	1	1	0
NASHVILLE	53	32	62	26	43	0	1.1	.0	.9	4.3	255	41.8	94	88	51	0	4	2	1
TX ABILENE	67	40	73	31	54	7	.0	-.3	.0	.5	121	18.4	77	76	39	0	1	0	0
AMARILLO	59	29	69	19	44	6	.0	-1	.0	.0	0	17.4	90	67	25	0	7	0	0
AUSTIN	71	53	77	40	62	8	.1	-.4	.1	1.1	20	25.6	83	75	46	0	0	4	0
BEAUMONT	72	51	82	38	62	6	.5	-.6	.5	1.0	56	66.1	122	92	52	0	0	1	1
BROWNSVILLE	81	60	85	47	70	7	.0	-.3	.0	T	0	25.0	97	96	62	0	0	0	0
CORPUS CHRISTI	78	59	89	42	68	9	T	-.3	T	T	0	32.9	112	86	50	0	0	0	0
DEL RIO	74	52	80	43	63	9	.0	-.3	.0	T	0	14.2	59	70	39	0	0	0	0
EL PASO	69	36	73	31	52	7	.0	-1	.0	.0	0	8.9	104	57	21	0	2	0	0
FORT WORTH	66	46	73	40	56	9	T	-.5	T	1.6	210	31.9	89	89	42	0	0	0	0
GALVESTON	70	60	79	54	65	7	T	-.8	T	.3	24	45.1	113	83	63	0	0	1	0
HOUSTON	72	51	80	39	61	7	.3	-.9	.2	1.5	82	56.8	111	92	57	0	2	0	0
LUBBOCK	65	32	73	24	49	7	.0	-1	.0	.1	36	12.5	68	59	25	0	5	0	0
MIDLAND	69	36	73	26	53	6	T	-1	T	T	0	16.1	108	70	26	0	1	1	0
SAN ANGELO	71	42	75	32	56	9	T	-.2	T	.2	53	15.1	75	80	40	0	0	0	0
SAN ANTONIO	73	50	79	36	62	8	T	-.3	T	.1	20	31.7	105	83	44	0	0	1	0
VICTORIA	72	55	80	47	63	7	1.1	.4	1.1	1.5	143	48.9	112	89	58	0	0	2	0
WACO	68	45	74	37	56	6	.1	-.4	.0	.2	34	30.6	99	91	55	0	0	2	0
WICHITA FALLS	63	37	72	31	50	6	.0	-.4	.0	1.6	288	28.3	92	88	42	0	1	0	0
UT CEDAR CITY	56	24	62	17	40	8	T	-1	T	T	11	9.9	89	73	21	0	7	1	0
SALT LAKE CITY	51	31	62	23	41	10	T	-.3	T	T	4	18.0	117	73	41	0	4	0	0
VT BURLINGTON	42	28	48	16	35	9	.3	-.3	.1	.8	81	33.5	102	92	70	0	3	5	0
VA NORFOLK	58	36	66	29	47	2	.6	-1	.3	.7	62	35.4	79	90	51	0	1	3	0
RICHMOND	57	33	66	27	45	3	.8	.0	.6	1.0	83	39.4	96	93	48	0	3	3	1
ROANOKE	54	32	58	23	43	3	.8	.1	.7	3.5	321	37.9	97	84	50	0	5	2	6
WA QUILLAYUTE	48	39	52	30	43	3	5.4	1.9	1.4	7.9	142	64.9	68	89	90	0	2	6	5
SEATTLE-TACOMA	51	39	64	31	45	4	2.3	.9	.7	3.5	161	27.3	82	89	65	0	1	6	1
SPOKANE	40	30	53	19	35	6	1.0	.4	.3	1.5	171	13.3	89	92	73	0	3	4	0
YAKIMA	42	26	46	18	34	3	.7	-.4	.5	.9	179	6.2	88	95	70	0	6	4	0
WV BECKLEY	46	30	57	17	38	2	.7	-1	.3	2.3	203	38.1	98	88	59	0	4	3	0
CHARLESTON	50	33	61	21	41	2	.4	-.4	.2	1.9	152	40.4	100	90	59	0	3	5	0
HUNTINGTON	50	34	59	23	42	5	.6	-.2	.3	1.7	131	40.6	99	83	52	0	2	4	0
PARKERSBURG	48	33	56	21	40	4	.3	-.3	.2	1.2	118	36.6	94	91	59	0	3	3	0
WI GREEN BAY	36	23	46	16	30	6	.2	-.2	.1	.2	39	33.6	120	94	64	0	6	3	0
LACROSSE	36	23	46	11	30	7	T	-.3	T	T	0	40.9	137	87	57	0	6	0	0
MADISON	39	24	48	12	32	7	.1	-.4	.1	.1	17	43.1	139	91	62	0	6	1	0
MILWAUKEE	42	26	52	19	34	7	.1	-.5	.1	.5	61	36.7	116	90	60	0	6	2	0
WAUSAU	33	16	44	6	25	4	.2	-.2	.2	.3	60	36.1	113	92	57	0	7	2	0
WY CASPER	47	27	58	9	37	12	T	-.2	T	.1	19	15.3	126	64	35	0	3	0	0
CHEYENNE	47	27	60	15	37	8	.0	-1	.0	T	0	18.6	132	63	34	0	5	0	0
LANDER	41	20	51	9	31	8	.0	-1	.0	T	0	16.2	127	70	36	0	7	0	0
SHERIDAN	46	19	62	11	32	8	T	-.2	T	T	4	16.8	120	82	53	0	7	0	0

Based on 1961-90 normals.

## HEATING DEGREE DAYS (Base 65° F)

December 5 - 11, 1993

(Cumulative totals and departures from normal are for the period July 1 - December 11, 1993)

STATES AND STATIONS	WEEKLY		CUMULATIVE		STATES AND STATIONS	WEEKLY		CUMULATIVE		STATES AND STATIONS	WEEKLY		CUMULATIVE				
	TOTAL	DEPARTURE	TOTAL	DEPARTURE		TOTAL	DEPARTURE	TOTAL	DEPARTURE		TOTAL	DEPARTURE	TOTAL	DEPARTURE	DEP from '92		
AL BIRMINGHAM	117	-10	724	11	-53	LA BATON ROUGE	79	-2	491	123	49	TULSA	119	-49	1118	245	85
HUNTSVILLE	134	-7	847	34	-39	LAKE CHARLES	48	-28	380	36	-27	OR ASTORIA	129	-24	1740	77	37
MOBILE	77	-2	435	66	-1	NEW ORLEANS	61	-8	373	60	24	EUGENE	133	-29	1461	121	183
MONTCOMERY	100	-4	585	61	-6	SHREVEPORT	73	-34	629	140	08	MEDFORD	143	-42	1312	-34	207
AK ANCHORAGE	317	-19	3251	-504	-511	ME BANGOR	210	-65	2082	-3	-186	NORTH BEND	105	-22	1531	50	193
BARROW	486	-38	6224	-864	-881	PORTLAND	193	-59	1887	-39	-152	PENDLETON	164	-43	1622	22	-25
BETHEL	368	-20	3822	-610	-797	MD BALTIMORE	162	-20	1152	22	-68	PORTLAND	131	-36	1216	-101	-7
COLD BAY	262	30	3103	-354	-510	MA BOSTON	168	-35	1340	41	-205	REDMOND	177	-50	2322	209	188
FAIRBANKS	462	-28	4396	-451	-624	MI ALPENA	238	-34	2341	123	-171	SALEM	120	-50	1328	-140	54
JUNEAU	209	-49	2556	-600	-382	DETROIT	192	-47	1581	-83	-183	PA ALLENTOWN	174	-42	1471	21	-147
KING SALMON	321	-17	3307	-709	-790	FLINT	219	-27	2023	236	55	BRADFORD	234	-31	2184	-83	-128
KOTzebue	415	-41	4775	-407	-695	GRAND RAPIDS	214	-36	1956	120	-27	ERIE	192	-25	1577	120	-11
MCGRATH	427	-59	4301	-692	-710	LANSING	215	-38	2003	145	-93	PHILADELPHIA	136	-53	954	-207	-206
NOME	359	-39	4356	-440	-906	MUSKOGON	215	-25	1915	154	-30	PITTSBURGH	189	-29	1463	-67	-171
ST PAUL ISLAND	281	34	3447	-475	-640	TRaverse CITY	222	-39	2017	26	-200	SCRANTON	187	-41	1647	46	-44
YAKUTAT	232	-27	2877	-511	-489	MN DULUTH	317	-28	3053	263	56	WILLIAMSPORT	185	-37	1627	68	24
AZ FLAGSTAFF	205	-36	2026	-76	-3	INT'L FALLS	344	-37	3221	213	88	RI PROVIDENCE	171	-39	1418	11	-101
PHOENIX	36	-35	184	-73	-40	MINNEAPOLIS	273	-36	2326	197	79	SC CHARLESTON	81	-10	381	-65	-98
TUCSON	35	-49	275	-68	-115	ROCHESTER	273	-40	2434	219	-38	COLUMBIA	115	-1	631	-12	-92
AR FORT SMITH	108	-51	929	106	45	MS JACKSON	107	-5	707	130	83	GREENVILLE	135	-6	860	61	-143
LITTLE ROCK	107	-39	866	110	62	MERIDIAN	93	-12	597	7	-17	SD ABERDEEN	314	-14	2463	129	-20
CA FRESNO	86	-44	483	-150	-2	MO COLUMBIA	172	-44	1494	200	46	HURON	291	-19	2386	215	60
LOS ANGELES	51	-5	118	-152	-37	KANSAS CITY	169	-56	1512	169	35	PIERRE	294	-37	2240	227	109
SACRAMENTO	90	-40	575	-69	46	SAINT LOUIS	156	-44	1209	81	00	RAPID CITY	205	-69	2117	22	-55
SAN DIEGO	61	11	175	-43	12	SPRINGFIELD	150	-44	1318	160	81	STOUX FALLS	276	-32	2307	168	68
SAN FRANCISCO	71	-32	545	-293	39	MT SPRINGFIELD	190	-75	2210	109	164	TN BRISTOL	152	-23	1125	-7	-139
CO COLORADO SPRINGS	179	-59	2009	168	106	GLASGOW	287	-43	2722	196	291	CHATTANOOGA	132	-22	806	-63	-164
DENVER	164	-65	1813	105	22	GREAT FALLS	188	-87	2699	370	331	KNOXVILLE	148	-13	991	-1	-171
GRAND JUNCTION	205	-33	1666	175	153	HAVRE	229	-90	2703	169	174	MEMPHIS	117	-19	779	51	-15
CT HARTFORD	186	-45	1640	95	-109	HELENA	222	-73	2723	227	248	NASHVILLE	154	-4	991	84	18
DE WILMINGTON	154	-35	1110	-62	-141	KALISPELL	233	-52	2887	117	218	TX ABILENE	77	-48	756	168	120
DC WASHINGTON	143	-20	960	46	-147	MISSOULA	248	-34	2633	124	84	AMARILLO	145	-41	1324	215	20
FL DAYTONA BEACH	45	5	123	-19	-24	NE GRAND ISLAND	202	-60	1861	121	-55	AUSTIN	29	-59	403	80	01
FORT MYERS	4	-13	23	-27	-13	NORTH PLATTE	212	-61	2049	97	-12	BROWNSVILLE	2	-30	150	-52	21
JACKSONVILLE	69	2	257	-23	-53	OMAHA	204	-63	1828	166	52	CORPUS CHRISTI	8	-43	210	40	-6
KEY WEST	0	0	0	0	00	SCOTTSDUFF	199	-62	2187	262	33	DALLAS FT WORTH	65	-50	646	146	65
MIAMI	0	-7	4	-13	00	NV ELKO	209	-56	2601	485	186	EL PASO	86	-51	664	-12	-117
ORLANDO	23	-10	80	-22	-24	ELY	213	-54	2556	274	377	HOUSTON	38	-36	395	71	-6
PENSACOLA	64	-12	324	-13	-23	LAS VEGAS	107	-19	579	21	-3	LUBBOCK	110	-50	1003	131	94
TALLAHASSEE	83	2	346	-28	-34	RENO	148	-72	1392	-340	-20	LUFKIN	59	-38	558	130	-18
TAMPA	29	-4	83	-36	-26	WINNEMUCCA	167	-70	1963	38	125	MIDLAND ODESSA	86	-48	794	96	73
WEST PALM BEACH	2	-12	13	-21	-9	NH CONCORD	212	-54	2063	37	-134	SAN ANGELO	60	-62	654	93	70
GA ATHENS	126	-1	729	41	-88	NJ ATLANTIC CITY	164	-25	1287	44	-76	SAN ANTONIO	29	-56	409	71	21
ATLANTA	109	-22	639	-76	-150	NEWARK	144	-42	1058	-35	-92	VICTORIA	25	-37	318	62	16
AUGUSTA	111	-2	556	-59	-95	NM ALBUQUERQUE	156	-43	1192	-12	-41	WACO	63	-42	653	211	136
MACON	106	2	605	49	-42	NY ALBANY	201	-49	1820	67	-140	WICHITA FALLS	102	-41	902	191	154
SAVANNAH	81	-8	355	-56	-88	BINGHAMTON	220	-33	2054	132	-186	UT CEDAR CITY	173	-59	1678	11	72
ID BOISE	146	-87	1789	77	-31	BUFFALO	199	-36	1775	96	-91	SALT LAKE CITY	166	-67	1673	107	13
POCATELLO	220	-49	2417	337	190	MASSENA	220	-72	2058	-128	-281	VT BURLINGTON	208	-66	1984	-49	-164
IL CHICAGO	213	-37	1772	146	-63	NEW YORK	137	-45	1012	-75	-190	VA LYNCHBURG	149	-24	1052	-33	-116
MOLINE	204	-53	1732	121	-91	ROCHESTER	209	-26	1839	133	-152	NORFOLK	123	-12	688	-72	-89
PEORIA	197	-50	1600	99	-44	SYRACUSE	207	-32	1835	114	-109	RICHMOND	140	-21	883	-80	-156
ROCKFORD	225	-43	1891	130	-104	NC ASHEVILLE	165	-2	1168	23	-92	ROANOKE	155	-19	1131	17	-127
SPRINGFIELD	189	-39	1507	130	81	CAPE HATTERAS	87	-17	297	-216	-170	WA OLYMPIA	154	-29	1703	-151	73
IN EVANSVILLE	174	-18	1189	32	21	CHARLOTTE	125	-19	728	-49	-112	QUILLAYUTE	150	-18	1908	-63	42
FORT WAYNE	199	-38	1590	37	-104	GREENSBORO	145	-14	961	12	-144	SEATTLE TACOMA	136	-31	1447	-60	71
INDIANAPOLIS	197	-24	1514	119	31	RALPHIGH DURHAM	129	-15	827	-5	-110	SPOKANE	208	-44	2249	102	90
SOUTH BEND	208	-27	1743	150	07	WILMINGTON	95	-8	447	-70	-156	YAKIMA	215	-22	2003	151	146
IA DES MOINES	219	-45	1830	192	-7	ND BISMARCK	317	-21	2722	164	88	WV BECKLEY	189	-14	1386	-120	-149
MASON CITY	260	-46	2267	185	-45	FARGO	337	-15	2651	99	-10	CHARLESTON	164	-17	1142	-24	-151
STOUX CITY	236	-48	2072	246	66	MINOT	306	-36	2820	176	93	HUNTINGTON	159	-23	1145	-42	-117
WATERLOO	242	-50	1965	5	-133	WILLISTON	292	-52	2919	231	173	WI EAU CLAIRE	285	-32	2442	201	124
KS CONCORDIA	171	-62	1567	161	-86	OH AKRON CANTON	201	-22	1645	99	-155	GREEN BAY	246	-48	2193	48	-120
DODGE CITY	162	-53	1550	274	-67	CLEVELAND	189	-32	1544	37	-128	MADISON	231	-53	2035	-6	-94
GOODLAND	177	-63	1902	223	-32	COLUMBUS	185	-30	1367	-79	-130	MILWAUKEE	212	-53	1670	-176	-245
RUSSELL	175	-51	1535	170	-32	CINCINNATI	187	-17	1386	74	-77	WY CASPER	193	-86	2179	-83	60
TOPKA	174	-50	1504	163	41	DAYTON	196	-21	1498	69	-73	CHEYENNE	196	-56	2441	271	225
NICHITA	151	-59	1329	149	44	TOLEDO	203	-39	1685	2	-61	LANDER	239	-60	2496	161	181
KY LEXINGTON	167	-22	1235	42	-65	YOUNGSTOWN	201	-30	1713	45	-161	ROCK SPRINGS	252	-45	2814	282	236
LOUISVILLE	165	-17	1154	50	44	OK OKLAHOMA CITY	125	-41	1098	231	121	SHERIDAN	227	-59	2519	174	170

Based on 1961-90 normals.

# November Weather in Historical Perspective

Seven of nine climatic regions recorded below-normal temperatures in November, pacing the Nation to its 10th coldest November since 1895 (table 1). The Nation's monthly average temperature of 39.7°F (3.0°F below normal) was considerably lower than normal for the third consecutive November (fig. 1). Only the Northeast and Southeast regions mustered near-normal temperatures, while four regions (West North Central, South, Southwest, and Northwest) endured an 11th coldest, or colder, November.

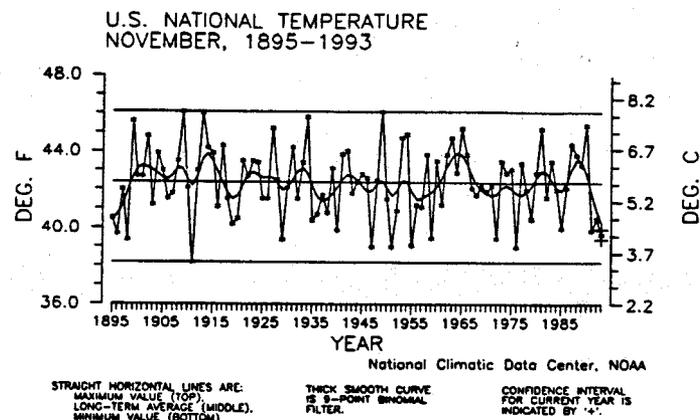
Regional variation characterized the precipitation pattern, as rankings ranged from a 23rd wettest November in the Central region to a 7th driest November in the Northwest (table 1). Nationally, November ranked as the 40th driest such month in the 99-year period of record, according to the normalized precipitation index (fig. 2). State-by-state November historical rankings of temperature and precipitation appear in figure 3. Precipitation rankings should be used with caution due to the high variability of precipitation on a small scale of time and space.

**Table 1**

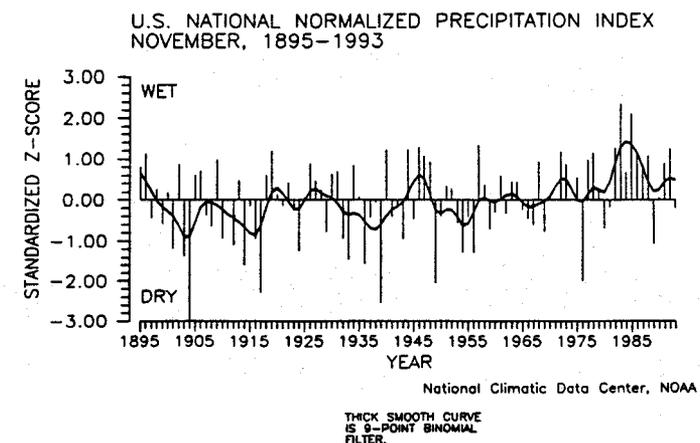
Table 1. Temperature and precipitation rankings for November 1993, based on the period 1895-1993. 1 = Driest/Coldest, 99 = Wettest/Hottest.

Region	Precipitation	Temperature
Northeast	54	47
East North Central	36	29
Central	77	32
Southeast	61	56
West North Central	59	11
South	45	10
Southwest	67	11
Northwest	7	3
West	33	16
National	40	10

**Figure 1**

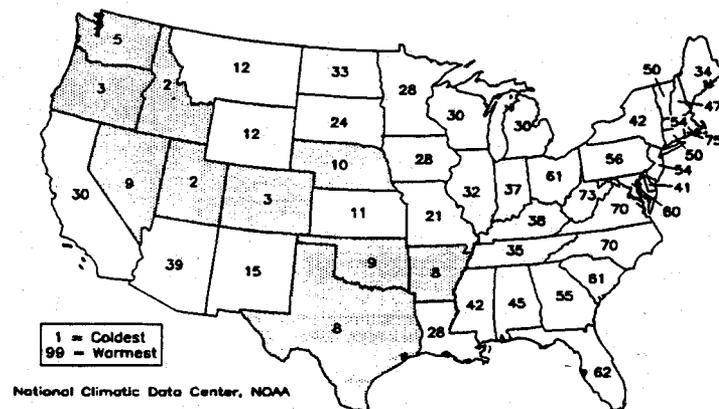


**Figure 2**



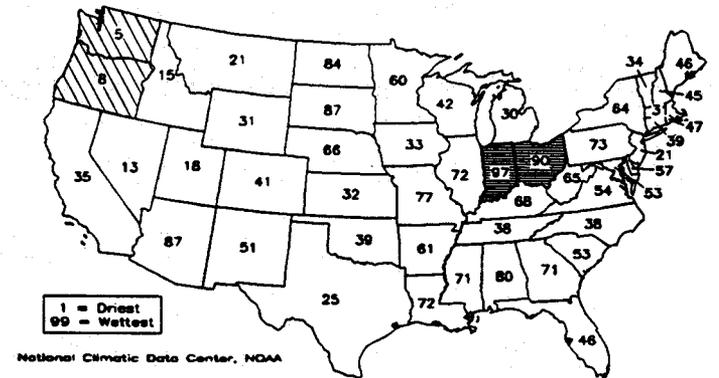
**Figure 3**

NOVEMBER 1993 STATEWIDE TEMPERATURE RANKS



Temperature Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1993. States having a rank of top ten coldest (rank 1-10) or top ten warmest (rank 90-99) are shaded.

NOVEMBER 1993 STATEWIDE PRECIPITATION RANKS



Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1993. States having a rank of top ten driest (rank 1-10) or top ten wettest (rank 90-99) are shaded.

# Autumn Weather in Historical Perspective

Autumn 1993 was the coldest September-to-November period for the contiguous United States since 1976, and the third coldest during the 99-year climatological record (fig. 1). Temperatures averaged nearly 2°F below normal during the 91-day period on the strength of near-record cold in five of the nine climatic divisions (table 1). In the East North Central region, which recorded its fifth coldest autumn, seven of the past eight autumns have featured average temperatures at least 1°F below normal (fig. 2). Only the Southeast and West regions notched near-normal temperatures during the autumn of 1993.

Autumn precipitation rankings were highly variable, ranging from eighth wettest in the Central region to fifth driest in the Northwest (table 1). For the contiguous States as a whole, the normalized precipitation index indicated the autumn of 1993 to

be the 35th driest such period on record (fig. 3). In contrast to the wetness in the Northeast and Central regions (fig. 4), drier-than-normal conditions affected the westernmost regions during the typical start of their winter wet season. In the West region, which registered its 14th driest autumn, similar conditions prevailed a year ago into early December (fig. 5), but heavy precipitation between December 1992 and March 1993 ended a 6-year drought.

State temperature rankings show the extent of the abnormal chill, as 17 States from the Rockies to the Appalachians noted a 10th coldest, or colder, autumn (fig. 6). State precipitation rankings highlight atypical wetness from the middle Mississippi Valley through the Ohio Valley, and unusual dryness from the Pacific Northwest into portions of the northern Plains (fig. 7).

--Brad Rippey

Figure 1

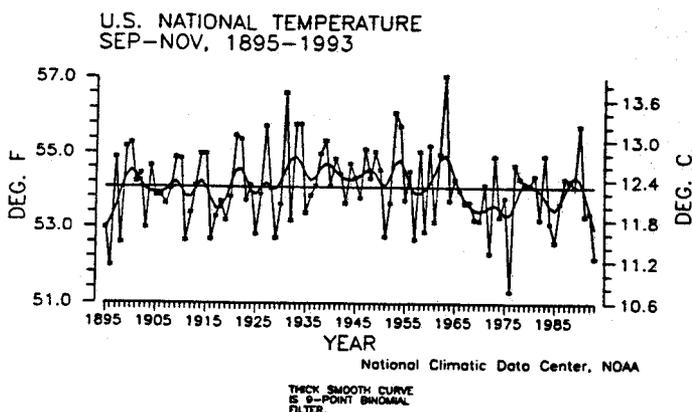


Table 1. Temperature and precipitation rankings for Autumn 1993, based on the period 1895-1993. 1 = Driest/Coldest, 99 = Wettest/Hottest.

Region	Precipitation	Temperature
Northeast	79	19
East North Central	29	5
Central	92	6
Southeast	65	58
West North Central	39	8
South	44	5
Southwest	31	9
Northwest	5	28
West	14	44
National	35	3

Figure 2

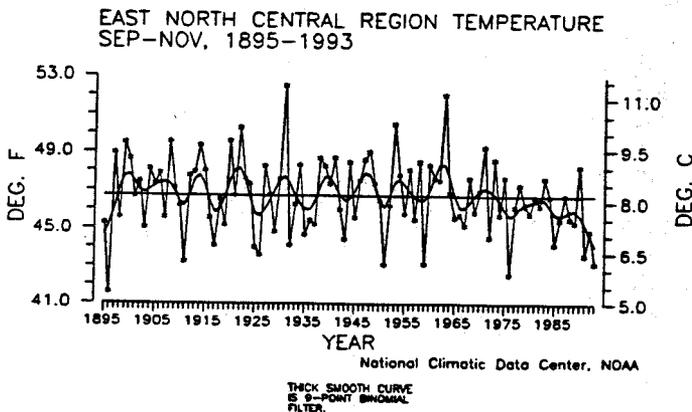


Figure 3

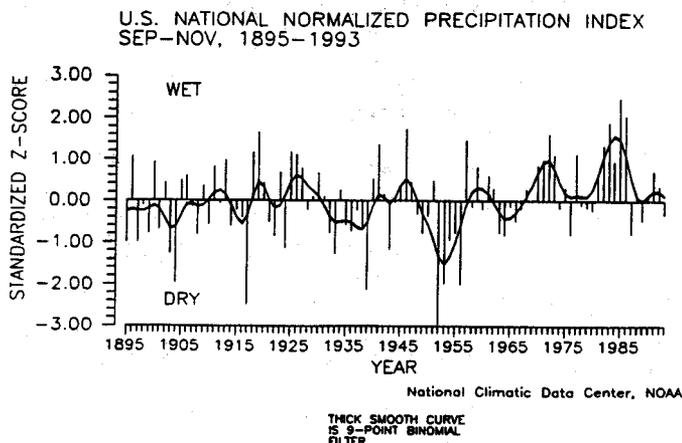
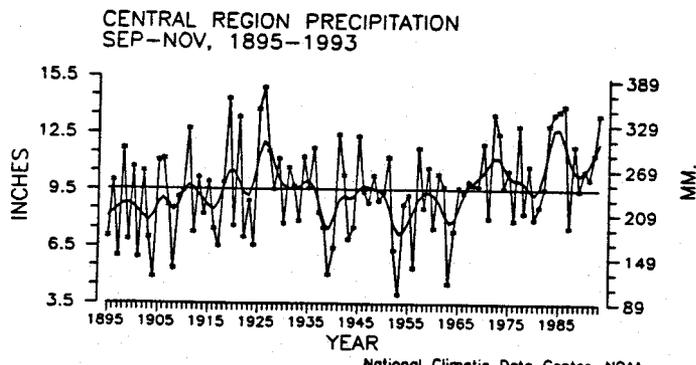
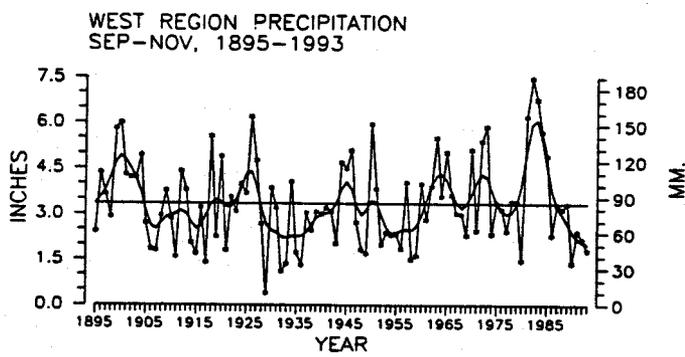


Figure 4



THICK SMOOTH CURVE IS 9-POINT BINOMIAL FILTER.

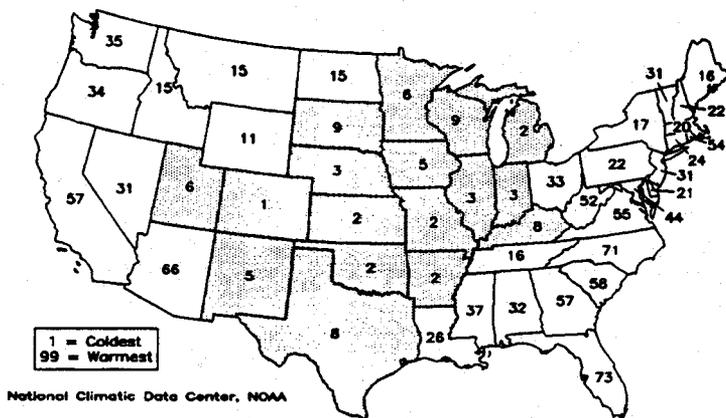
Figure 5



THICK SMOOTH CURVE IS 9-POINT BINOMIAL FILTER.

Figure 6

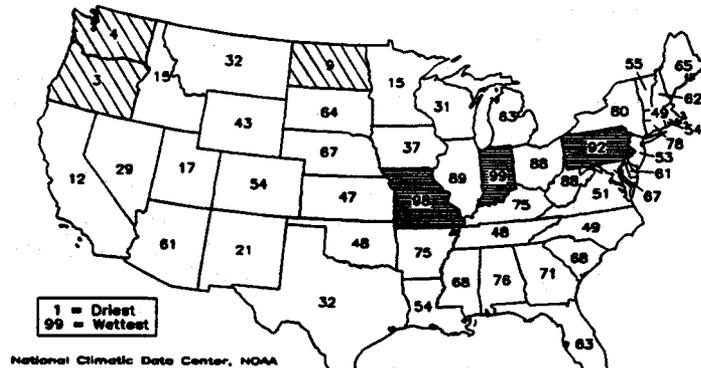
SEP-NOV 1993 STATEWIDE TEMPERATURE RANKS



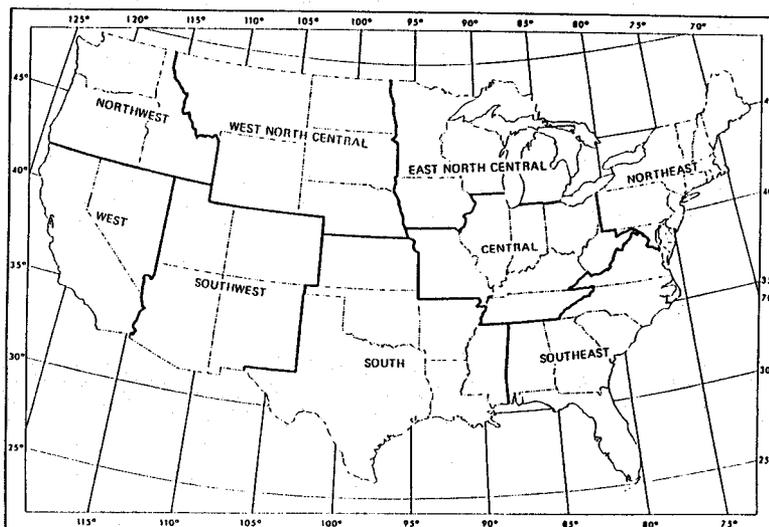
Temperature Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1993. States having a rank of top ten coldest (rank 1-10) or top ten warmest (rank 90-99) are shaded.

Figure 7

SEP-NOV 1993 STATEWIDE PRECIPITATION RANKS



Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1993. States having a rank of top ten driest (rank 1-10) or top ten wettest (rank 90-99) are shaded.



## National Agricultural Summary

December 6 - 12, 1993

**HIGHLIGHTS:** Significant precipitation occurred throughout the week over the Northwest and more generally across the Pacific Coast. The precipitation hindered fieldwork but improved soil moisture conditions. A storm system near the end of the week brought moisture from the Gulf Coast States to New England. Elsewhere, the Nation was dry, allowing the harvest of late-planted row crops to resume. Temperatures were above normal for the week, which benefited livestock but reduced the snow cover for the winter wheat crop in the northern Great Plains.

**SMALL GRAINS:** Above-normal temperatures caused winter wheat snow cover to mostly disappear in South Dakota. In Montana, the warm conditions reduced the snow cover protectiveness rating to poor. In North Dakota, the snow depth was reduced but was still thick enough to provide adequate protection. Dry conditions allowed land preparation and small grain planting to progress in the Southeast. In Texas, most wheat fields needed rain. Greenbugs and mites caused problems in some wheat fields in parts of Texas. In California, rain delayed small grain field activities, but aided emergence.

**SOYBEANS:** Favorable conditions in Georgia and the Carolinas helped the soybean harvest to advance. The harvest in this region reached 92 percent (%) complete, compared with 77% at this time in 1992. Dry conditions also allowed the harvest to reach completion in Kentucky and Tennessee.

**COTTON:** The Texas cotton harvest was active in the Plains and the Cross Timbers regions, and neared completion in the Blacklands and Trans-Pecos regions. Harvest clean-up activities were active in Arizona, Texas, and California.

**OTHER FIELD CROPS:** Onion planting was active in California, Texas, and Georgia. In Georgia, planting progress reached 85%, compared with 71% last year, and the crop was rated mostly fair. Dry conditions permitted tobacco producers in Tennessee to finish stripping their crop. The peanut harvest in Texas neared completion. Some dryland fields that were unharvested will be abandoned or cut for hay due to the dry conditions. Sugar beets were irrigated and weeded in

California. The Texas sugarcane and sugar beet harvests advanced. The winter potato harvest was active in California.

**FRUITS AND NUTS:** Citrus harvests continued in Arizona, California, Florida, and Texas. The California Central Valley navel orange harvest was hindered by varying fruit maturity. In Florida, dry conditions over the citrus area caused producers to irrigate their groves. The Pecan harvest was active in the Southeast, South, and Southwest. In Georgia and Mississippi, harvest progress was behind last year. Some pecan quality problems were discovered in central and northern Georgia. Excellent conditions increased harvest progress in the Trans-Pecos region of Texas. Earlier freezes reduced pecan yield potential in many areas of Texas.

**VEGETABLES:** The vegetable harvest continued in California, Florida, Georgia, and Arizona. Rain hindered field activities in northern and central California. Field preparation for the spring vegetable crop was active in California, Texas, and Florida. Dry conditions in parts of southern Florida caused vegetable growers to irrigate their fields. Some dryland vegetable fields in Texas needed moisture.

**PASTURE AND LIVESTOCK:** Mild conditions allowed livestock producers to reduce the rate of supplemental feeding. Pasture feed conditions continued generally fair to good across the Nation. Livestock condition remained mostly good. Precipitation improved pastures in California. Texas pastures continued to need additional moisture. Hay supplies remained adequate, except in Texas where supplies remained short and in the Southeast where supplies were getting short.

(Continued from front cover)

hurricane-force winds, with gusts to 98 miles per hour, near the mouth of the Columbia River. Strong, moisture-laden winds also spread eastward across the Rocky Mountain States, generating orographic snowfall. Despite the storminess, seasonably warm weather covered the Nation, resulting in about 2 dozen daily record highs after midweek. Records included 75°F in Tulsa, OK on Thursday, 89°F in Corpus Christi, TX on Friday, and 60°F in Great Falls, MT on Saturday. Toward

week's end, a brief influx of moisture from the Gulf of Mexico produced rain from eastern Texas to New England, while yet another storm crossed the West coast. By Saturday, snow depths reached 25 inches in the central Sierras at Mammoth Mountain, and 12 inches in the foothills at Blue Canyon, CA. Meanwhile in the East, an intensifying storm near the Middle Atlantic coast brought a rain-to-snow transition from the central Appalachians to parts of the Northeast. Snowfall totaled 8 inches in Elkins, WV and 5 inches at New York City's LaGuardia Airport.

## 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 0.25 to 1.41 in. north; 0.69 to 1.91 in. central; 0.03 to 1.17 in. south. Temperatures 4° below normal to 3° above normal north; 3° below normal to 3° above normal central; 4° below normal to 2° above normal south. Lows 17 to 27° north; 19 to 29° central; 22 to 32° south. Highs 60 to 69° north; 67 to 72° central; 70 to 74° south.

Primary activities: Cultivating fields, general care of livestock, poultry, catfish.

**ARIZONA:** Above normal temperatures gave way to cool weather by weekend. Temperatures 1 to 8° above normal. Extremes 12°; 78° higher elevations; 19°, 79° deserts. Scattered rain, snow above 6,000 feet weekend.

Cotton harvest near complete; limited scragging continued. Stalk shredding, plowdown activity moderate to active central, eastern areas. Small grains field preparations active. Small grain seeded 66%, 59% 1992, 57% avg.; established 40%, 40% 1992, 36% avg. Alfalfa condition good. Harvest mostly active. Sheepling off activities light to moderate. Grapefruit, navel oranges, lemons available central, western areas. Tangerines, tangelos available central area. Vegetable harvest active. Available from western, central areas: Iceberg, Boston, leaf, romaine, broccoli, cabbage, spinach. Also available from west: Celery, endive, escarole. Additional central crops included: Sweet corn, mixed greens, leeks, green onions, radishes, rapini. Apples, pecans, pecans available eastern areas.

**ARKANSAS:** Mild, relatively dry. Temperatures little above normal. Light rain southern region middle of week. Extremes 18°; 73°. Rainfall none to 0.69 in.

Days suitable for fieldwork 6. Soil moisture supplies adequate to surplus. Wheat fair to good, needs sunshine, dry weather. Main farming activities: Harvesting cotton, soybeans; marketing calves; working cattle; fertilizing cool season forages; poultry house maintenance. Soybean harvest completed. Livestock good. Producers feeding hay, supplies adequate. Pastures good.

**CALIFORNIA:** Jet stream over northern areas brought 2 weather systems across region: one overnight 8th, 9th and another 11th. Later storm brought significant precipitation northern areas, including large snowfall Sierras. Temperatures slightly above normal north State, near normal south State.

Widespread rain central valley, snow higher elevations. Field activities delayed, precipitation assisted emergence, development fall small grains, winter forage. Winter wheat good, excellent. Small grains irrigated. Planting, field preparation fall, winter crops continued. Weed control ongoing most areas. Winter forage crops harvested southern desert. Cotton harvest nearly complete most areas. Shredding, discing harvested acres pink bollworm control. Milo harvested scattered areas. 1994 sugarbeets irrigated, thinned, hand weeded. Bare root nursery stock digging active. Pruning, weed control, replanting, tree hole fumigation continued. Date, avocado picking continued southern areas. Central valley Navel orange harvest slowed due to varying maturity. Lemon, grapefruit, tangerine picking active. Broccoli harvest continued San Joaquin Valley. Cabbage planted Stanislaus County. Packing carrots Kern County. Cauliflower harvest ongoing Stanislaus, Tulare counties. Along central coast broccoli, celery harvests

light, virtually no lettuce harvested. Planting garlic Fresno County. Fall head lettuce harvest winding down central valley. Riverside County head, leaf lettuce harvests continued. Onions planted Fresno County, peas planted Stanislaus County. Harvest winter potatoes continued Coachella Valley. Sweet corn harvest complete Kern County. Processing tomato fields treated with Vapam Fresno County. Rain delayed field activities San Joaquin, other northern valley counties. Other crops harvested: eggplant, cabbage, snap beans, sweet potatoes, okra, peppers. Additional rainfall improved conditions but rangeland developed slower than normal. Foothills greening, not providing much feed to date. Livestock remained good. Calving, lambing continued.

**COLORADO:** Strong westerly flow remained in place over the State bringing fast moving, dry disturbances through the State. Quick-moving Pacific fronts brought small but short-lived temperature changes around midweek. Precipitation was almost non-existent with only isolated reports in the mountains. Gusty winds continued from the previous week, again were of little significance below tree line. Temperatures 2 to 10° above normal. Few precipitation reports were less than 0.10 in.

Winds did not adversely affect winter wheat crop. Moisture conditions still good on the Eastern Plains.

**FLORIDA:** Temperatures 1 to 5° below normal. Freezing temperatures occurred over northern area. Scattered frost occurred over central, coldest areas of interior south. Lows; mid 20s north, to upper 40s south. Highs; low 70s north to low 80s south. Light rains late 9th to 10th. Rain 0.25 in. or less.

Soil moisture short to adequate throughout State. Cotton, soybean harvest complete. Sugarcane harvest active. Small grain, sugarcane planting active. Pecan harvest winding down. Citrus groves, trees, fruit very good. Rain needed many areas. Irrigation most counties. Fruit drop minimal with good natural fruit coloring. Early orange harvest very active. Grapefruit movement increases for domestic, export trades. All tangerine harvest increasing. Caretakers clean cutting cover crops, banking young trees, placing heaters. Growing conditions good through out major vegetable growing areas. Except for West Central, no significant rainfall last week. South, growers irrigating all crops except potatoes. Dade tomato harvesting begun. Volume leaders; tomatoes, peppers, cucumbers, snap beans, squash. Also available; cabbage, chinese cabbage, carrots, sweet corn, celery, iceberg, specialty lettuces, radishes, cherry tomatoes, watermelons. Pastures poor to excellent; 15% poor, 55% fair, 25% good, 5% excellent. Cattle herds mostly fair to good.

**GEORGIA:** Cool temperatures 2 to 4° below normal. Highs in lower 60s north to lower 70s along State border. Lows around 20° northeast mountains middle 20s elsewhere except upper 20s near border, around 30° along coast. Rain one to two days north, southwest, one day southeast. Rainfall mostly 0.50 to 1.00 in. north, southwest, over 1.00 in. some local areas, generally under 0.50 in. southeast.

Days suitable for fieldwork 5.5. Soil moisture 24% short, 74% adequate, 2% surplus. Cotton 1% very poor, 13% poor, 61% fair, 25% good; 98% harvested for grain, 86% 1992, 94% avg. Sorghum 99% harvested for grain, 97% 1992, 98% avg. Soybeans 20% very poor, 29% poor, 45% fair, 6% good; 95% harvested, 90% 1992, 94% avg. Wheat 3% poor, 36% fair, 60% good, 1%

excellent; 90% planted, 78% 1992, 84% avg.; 72% emerged, 64% 1992, 63% avg. Rye 99% planted, 97% 1992, 98% avg.; early seeded growing slow. Other small grains 6% poor, 36% fair, 57% good, 1% excellent; 97% planted, 97% 1992, 95% avg. Onions 85% fair, 15% good; 86% planted, 71% 1992, NA avg. Other vegetables 19% very poor, 10% poor, 46% fair, 22% good, 3% excellent; Good supply cabbage and winter greens southwest. Apples 100% harvested, 100% 1992, 100% avg. Pecans 27% fair, 73% good; 86% harvested, 88% 1992, 87% avg.; quality problems central, north. Pasture feed 2% very poor, 11% poor, 54% fair, 33% good. Cattle fair to good, concern over winter forage shortage increasing. Hogs 26% fair, 66% good, 8% excellent; Hogs fair to good, mostly good. Activities: Planting winter annual pasture, searching for cattle feed, soil sampling, liming, repairing equipment, routine care of livestock, poultry.

**HAWAII:** High winds continued across State. On Hawaii island, gusty winds fanned brush fire charring 2,000 acres of grazing land. A few homes lost. Rains none to 2.40 in. Temperatures mid 60s to low 80s.

High winds caused light damage to fruit, vine, leafy crops in exposed areas. Some scratching, bruising fruits, vegetables more evident in a few weeks. Cavendish banana production seasonal decline. Papaya orchards passed peak harvest output lower.

**IDAHO:** Temperatures 10° above to 1° below normal. Precipitation 0.15 to 1.44 in. north, none to 0.28 in. southwest, 0.01 to 1.01 in. south central, none to 0.12 in. east. Fairfield reached the State low of -3°.

Soil moisture adequate. Hay, roughage supplies adequate. Activities: Marketing, educational meetings, machinery repair, shop work, livestock care. Livestock good condition.

**ILLINOIS:** Dry, above normal temperatures occurred across the State last week. Highs 40 to 50° while average lows ranged from the low 20s to low 30s. Precipitation generally under 0.10 in.

Farmers were marketing grains, tending, marketing livestock, completing some tillage work, machinery maintenance.

**INDIANA:** Temperatures near normal in southern areas, 2 to 6° above normal in the central, north. Highs were mostly in the lower to middle 40s. Mean lows middle 20s to lower 30s. Rainfall water equivalent was light, generally under two-tenths inch with many areas not recording any measurable amounts.

Week of drier conditions, colder temperatures allowed operators to get to unharvested crops. Wheat remains mostly good across the State. Some low spots in wheat fields have been drowned out. Hay supplies are reported good to adequate. Weather, farm lot conditions for livestock is good. Meetings, record keeping, chemical purchases were many of the reported activities this past week.

**IOWA:** Mild, dry week with temperatures 5 to 7° above normal. Extremes 6°; 61°. Measurable precipitation limited to 12th night; 0.52 in. Bedford (southwest) to only traces extreme north, east. Precipitation 0.05 in. (normal 0.25 in.).

Fall weather has been very good for livestock producers.

**KANSAS:** Another warm week across State. All districts were above normal. Coolest district was the northwestern region with 4° above normal. Weather was the coolest in the western districts ranging from 4° above to 7° above normal. Elsewhere in the central, eastern districts it was 8 to 9° above normal. Temperatures continued to average in the low 40s

across the State. These levels were above normal by some 4 to 9°. Precipitation amounts were generally light across all districts with the southeast receiving a 0.25 in.

Low temperatures in the upper teens presented no problems to the dormant wheat crop.

**KENTUCKY:** Mild, dry. Daytime highs around 50°, lows near freezing. Temperatures about 2° above normal. Rainfall around 0.50 in. or about 0.50 in. below normal except south central which received around 1.00 in.

Soil moisture adequate to surplus. Dry weather allowed harvest of remaining double crop soybeans to resume. Winter wheat generally good condition. Burley tobacco percentage placed under loan remained about same. Both price, quality declined slightly. Mild, drier weather benefited livestock.

**LOUISIANA:** Temperatures 0.3 to 5.1° above normal. Extremes 28°; 77°. Rainfall none in. northwest to 1.68 in. southwest.

Days suitable for fieldwork 4.7. Soil moisture 73% adequate, 27% surplus. Pecans 87% harvested, 88% 1992, 82% avg. Harvest continued active. Soybeans 100% harvested, 100% 1992, 100% avg. Sweet potatoes 100% harvested, 99% 1992, 99% avg. Sugarcane 92% harvested, 84% 1992, 89% avg. Progressing smoothly, slightly ahead of schedule. Wheat 2% very poor, 9% poor, 52% fair, 37% good; 97% planted, 91% 1992, 94% avg.; 96% emerged, 87% 1992, 90% avg. Planting active with good germination, emergence. Livestock 53% fair, 47% good. Feeding of hay active. Pastures 2% very poor, 6% poor, 21% fair, 69% good, 2% excellent. Ryegrass pastures looking good. Vegetables 5% very poor, 11% poor, 54% fair, 30% good.

**MARYLAND & DELAWARE:** **MARYLAND:** Precipitation 2.37 in., normal 0.77 in. Temperature 43.3°, normal 37.5°. Extremes 20°; 67°.

Activities: Stripping tobacco. Finishing planting of wheat, rye. Caring for livestock. General chores.

**DELAWARE:** Precipitation 2.36 in., normal 0.83 in. Temperature 44.3°, normal 38.7°. Extremes 23°; 62°.

Activities: Finishing small grain seeding. Caring for livestock. General chores.

**MICHIGAN:** Extremes 5°; 55°. Precipitation 0.02 to 0.40 in. across the State.

Corn 97% harvested, 45% 1992, 90% avg. Livestock good condition. Major activities: Harvesting when possible, cutting wood, pruning orchards, fall tillage work, repairing machinery, spreading manure.

**MINNESOTA:** Temperatures 2 to 6° above normal for the State. Extremes -14°; 48°. Precipitation 0.06 to 0.17 in. above normal for northeast, north central 0.06 to 0.26 in. below normal elsewhere. Precipitation 0.01 to 0.30 in. for State. Greatest weekly total was 0.60 in. Snowfall a trace to 2 in. for State.

Livestock going into winter in good shape, there is quality feed to see them through the winter.

**MISSISSIPPI:** Temperatures 51°, 2.4° above normal. Extremes 22°; 73°. Precipitation was light throughout the State with less than an inch accumulated. State average 0.40 in., 0.96 in. below normal. Soil temperature 52°.

Days suitable for fieldwork 3.2, 1.1 1992, 2.9 avg. Soil moisture 67% adequate, 22% surplus, 11% excessive. Soybeans 98% harvested, 97% 1992, 98% avg. Wheat 100% planted, 99% 1992, 98% avg.; 95% emerged, 94% 1992, 88% avg.; 39% fair, 61% good. Pecans 82% harvested, 81% 1992, 86% avg.; 10% very poor, 30% poor, 45% fair, 15% good. Hay supply 100% adequate. Feed grain 23% short, 77% adequate. Livestock 12% fair, 86%

good, 2% excellent. Pasture 90% of normal. Activities: Completing crop harvest for 1993, feeding livestock.

**MISSOURI:** Temperatures 4° above normal southeast to 7° above normal northwest. Virtually no precipitation, except 0.50 in. southeast.

Fieldwork mostly complete for year. Livestock doing well.

**MONTANA:** Temperatures well above normal. Precipitation near normal west, little to none east.

Protectiveness of snowcover for winter wheat 75% poor, 23% fair, 2% good. Winter wheat 5% poor, 20% fair, 63% good, 12% excellent. Grazing 88% open, 12% difficult. Supplemental feed was given to 58% of the livestock.

**NEBRASKA:** Temperatures 9 to 11° above normal. No precipitation occurred.

Producer activities included late fall tillage, winter preparations for livestock care.

**NEVADA:** Period began with a weak high pressure system across norther half of State bringing light amounts of precipitation to northern, central, eastern areas. Final weather system moved in midweek bringing strong, southerly, gusty winds over much of State. Strong winds resulted in record high temperatures in extreme west, moderate temperatures elsewhere. Extremes 3°; 68°.

Supplemental feeding livestock continuing. Other major activities include routine winter chores, hunting, attending winter meetings.

**NEW ENGLAND:** Precipitation 0.21 to 3.17 in. regionwide. Temperatures 27 to 37° north; 33 to 42° south. Maximum temperatures 41 to 53° north; 46 to 56° south. Minimum temperatures 7 to 27° north; 11 to 23° south.

Major farm activities: Preparing for winter.

**NEW JERSEY:** Temperatures slightly above normal, 35° north, 39° south, 41° coastal. Extremes 15°; 57°. Precipitation was below normal; averaging 0.41 in. north, 0.44 in. south, 0.54 in. coastal. Heaviest 24 hour total 0.53 in. on 10th, 11th. Heaviest 24-hour snowfall 1.5 inches on the 11th, 12th.

Farmers busy deer hunting, cutting, digging, selling Christmas trees, pruning fruit trees, caring for livestock.

**NEW MEXICO:** Temperatures between 5 to 6° above normal for the State. Quite a few locations in the plains, lower elevations of the south had maximums in the 70s on several days. A developing winter storm brought colder temperatures to all but the eastern plains on 12th, along with winds that gusted to well over 50 miles per hour at some locations. Some precipitation fell with the developing winter storm. Higher reports included 0.48 in. at Clovis, 0.37 in. at Gallup, 0.22 in. at Chama.

Days suitable for fieldwork 6.8. Soil moisture 72% short, 28% adequate. Crop conditions: Cotton good to excellent; 97% harvested. Irrigated sorghum fair to good. Dryland sorghum good. Irrigated wheat 20% poor, 20% fair, 60% good. Dryland wheat 49% poor, 38% fair, 13% good. Pecans 14% poor, 57% fair, 29% good; harvest active. Chile harvest near complete. Cattle, sheep fair to mostly good condition. Range feed conditions 68% of normal.

**NEW YORK:** Temperatures above normal. Highs generally in mid 30s to mid 40s. Warmer in southeast. Lows were in mid 20s to mid 30s. It turned sharply colder at weekend. Extremes 9°; 55°. Precipitation was below normal. Most locations

received between 0.25 to 0.75 in. Heaviest in southeast where up to 1.25 in. was received. Rain changed to snow on night of 10th. Between 2 to 4 in. fell in western, central areas. Between 2 to 5 in. fell in the southeastern areas.

Major activities: Caring for livestock, orchard clean-up, repairing machinery, moving crops from storage.

**NORTH CAROLINA:** Temperatures high 71° Wilmington to a low 41° Asheville. Precipitation since September 1, 1993: 20.25 in. at Cape Hatteras to 6.91° Charlotte.

Days suitable for fieldwork 4.8. Soil moisture 4% short, 85% adequate, 11% surplus. Crop condition: Wheat 26% fair, 70% good, 4% excellent. Oats 26% fair, 72% good, 2% excellent. Barley 26% fair, 74% good. Rye 26% fair, 71% good, 3% excellent. Pasture 14% poor, 48% fair, 38% good. Cotton 4% very poor, 8% poor, 40% fair, 48% good. Soybeans 2% very poor, 13% poor, 58% fair, 27% good. Hay, roughage supplies 4% very short, 22% short, 72% adequate, 2% surplus. Feed grain supplies 3% very short, 24% short, 73% adequate. Soybeans harvested 87%, 75% 1992, 81% avg. Sorghum for grain harvested 97%, 96% 1992, 100% avg. Cotton harvested 99%, 78% 1992, 95% avg. Major activities: Planting small grain, harvesting soybeans. Other activities included: Harvesting cotton; land preparation; tending livestock; general farm maintenance.

**NORTH DAKOTA:** Snowcover depleted in many areas with warmer temperatures, brief periods of rain. Temperatures 1 to 4° above normal. Extremes -10° northeast, west central; 46° southwest.

Snowcover sufficient to protect fall seeded crops despite reduction in average snow depth. Grain marketing relatively normal with hauling activity dependent on availability of unit trains in some areas. Cattle, sheep in good condition with little health problems reported. Feed, forage in good supply, roads fairly clear.

**OHIO:** Conditions settled down with high pressure keeping skies mainly dry, temperatures mild. Brisk northerly winds off Lake Erie contributed to some snowfall in the snow belts, limited moisture was noted elsewhere. Temperatures mid to upper 30s, 1 to 2° above normal south, 3 to 5° above normal north. Maximums varied in the 40s with mean lows ranging in the mid 20s to near 30°. Up to 0.60 in. of precipitation (water equivalent) fell in the northeast. Elsewhere, amounts held below 0.20 in.

Winter wheat conditions are mostly good; snowcover would be welcome in the northwest. Livestock have benefited from warm temperatures, requiring less than normal amounts of roughage.

**OKLAHOMA:** Weather information not available.

Open weather allowed for good progress on cotton harvest. Rains late in the week benefited small grain crops. Feeder steers 700 lbs. plus steady to \$1.00 higher. Steer calves, all heifers steady to \$2.00 lower.

**OREGON:** Temperatures 4° above normal, western areas, 5° above normal, east. Precipitation 7.50 in., coast 2.00 to 4.50 in. western interior; eastern sections 0.10 to 0.60 in. High winds battered much of the coastal, western valleys throughout the week.

Soil moisture: mostly adequate. Christmas tree, holly harvests winding down. Winter orchard clean up continues. Livestock good to excellent. Supplemental feeding continues, statewide.

**PENNSYLVANIA:** First week of winter weather. Snow flurries, freezing temperatures. Temperature 39°, 4° above normal. Extremes 8°; 61°. Precipitation 0.70 in., 0.03 in. below normal.

Activities: Hauling manure; fixing fence; caring for livestock.

**PUERTO RICO:** No weather data available.

**SOUTH CAROLINA:** Temperatures across the State 1 to 2° below normal. Average rainfall 0.40 in.

Land preparation, planting of small grains progressed well, slowed only slightly by the scattered showers during weekend. Overall small grains looked good, with wheat reported as growing fast, rye reported as doing well, growing slow. Soybean harvest is complete, cotton harvest 99% complete.

**SOUTH DAKOTA:** Temperatures 10° above normal last week. Extremes -3°; 62°. It was a dry week for the most part with a little precipitation spilling over from the previous week. Maximum 0.07 in. Precipitation for the year continues to be well above average especially in the southeast.

Except for some areas of snow pack in the higher northern Black Hills, snowcover is near a foot in a few locations in the northeast to snow just in the draws, sheltered areas in much of the west. Farm activities include: Livestock care, equipment maintenance, routine chores.

**TENNESSEE:** Temperatures were near normal for most of the State, being only slightly below normal in the eastern portion. Extremes 19°; 65°. Rainfall 1.59 in. Plateau region (0.49 in. above normal) to 0.05 in. Memphis (1.04 in. below normal).

Soybean harvest was finished. Most tobacco has been stripped, is ready for market. Other activities included routine farm maintenance, livestock chores. Cattle good condition.

**TEXAS:** Week was characterized by warm, mild weather with scattered showers. Except for some parts of East Texas, most areas of State were in need of rain. Rio Grande Valley had excellent growing weather for vegetables. Sugarcane harvest was progressing well. Harvest of gift fruit reached its peak. Citrus crop continues to be excellent quality. In Northern High Plains, sugarbeets harvest continued, small grain fields were in need of rain to boost growth. Some ranchers were culling herds to ease cost of feeding as hay supplies remained short.

**Crops:** Cotton harvest winding down in Plains, Cross Timbers. In Blacklands only a few fields remained to be harvested. Harvest almost complete in Trans-Pecos, producers were busy with clean-up operations. Small grains: In Northern High Plains, most wheat fields were in need of moisture, greenbug infestations were heavy in some fields. Irrigated wheat fields made good progress. In Northern Low Plains, some producers were having to treat their wheat fields for wild oats. In Cross Timbers, some fields were treated for greenbugs, winter grain mites. Most fields across State were in need of rain. Wheat 66% normal, 64% 1992. Peanuts harvest winding down in Cross Timbers. Dryland fields that were still standing in Cross Timbers, Blacklands will probably be abandoned or baled for hay. Some below average yields were reported in Northern Low Plains. Soybeans harvest virtually completed.

**Commercial Vegetables:** Rio Grande Valley, harvest of broccoli, cabbage, greens, peppers continued. Onion crop made good progress. Irrigated land being prepared for spring watermelon planting, while dryland fields were in need of moisture. In East Texas, some land preparation was completed. Harvest of carrots, cabbage, greens, turnips continued. In High Plains, some land preparation was active for spring planting. In Trans-Pecos, producers were preparing seed beds for planting, controlling weeds. Pecans: Harvest continued across State, many areas are reporting below average yields due to earlier freezes. Excellent weather conditions in Trans-Pecos increased speed of harvest there. Harvest winding down along Upper Coast.

**Range and Livestock:** Most winter pastures in State continue to be in need of rain. Cattle made good gains on irrigated wheat in High Plains, grazing on dryland wheat continued to suffer due to a lack of rain. Some ranchers culled livestock herds to reduce feeding costs. Hay supplies remained short. Supplemental feeding continued. Livestock remained in fair to good condition.

**UTAH:** Temperature 5° above normal, minimums 3° above normal. Precipitation was light across north central, northern mountains, zero for the remainder of the State.

Farm activities: Hauling manure; marketing hay, grain, onions; feeding, caring for livestock. Mink pelting is now underway. Some death loss in calves reported due to pneumonia, however, cattle are generally reported in good condition across the State.

**VIRGINIA:** Temperatures well above normal. Extremes 18°; 66°. Heavy rainfall was observed in many areas; 0.31 to 3.53 in.

Days suitable for fieldwork 2.2. Topsoil 59% adequate, 41% surplus. Soybeans harvested 93%, 87% 1992, 94% avg. Winter grains, grazing crops 2% poor, 33% fair, 60% good, 5% excellent. Winter wheat seeding completed. Forage from pastures, grazing crops dairy cattle 8%, beef cattle 43%, sheep 47%. Fixing fences, attending meetings, marketing fire, burley tobacco, cutting Christmas trees, taking soil samples.

**WASHINGTON:** Temperatures 1 to 4° above normal west; 2° below normal to 9° above normal east. Precipitation 0.95 to 3.77 in. west; 0.29 to 1.28 in. east. Flooding was a major problem in some western counties. Freezing temperatures were reported across the eastern half of the State.

Days suitable for fieldwork 2.0. Soil moisture 21% short, 71% adequate, 8% surplus. Hay, other roughage supplies 4% very short, 10% short, 86% adequate. Range, pasture feed 3% very poor, 52% poor, 38% fair, 7% good. Winter wheat dryland 55% fair, 45% good; irrigated 5% fair, 95% good. Barley dryland 85% fair, 15% good; irrigated 10% fair, 90% good. Rain and snow across the State limited fieldwork. Some fields were flooded in the western half of the State. Soil moisture conditions improved dramatically, as most precipitation soaked in with very little runoff. Snowcover for winter grains was present in some areas. Fruit tree pruning was picking up in many areas as the weather allowed. Christmas tree harvest was winding down on commercial farms, while U-cut tree operations continued to do a strong business.

**WEST VIRGINIA:** Temperature 36°. Extremes 11°; 61°. Precipitation 0.57 in.

Farm activities: Moving livestock, feeding livestock, chopping silage, harvesting corn, harvesting soybeans, sowing wheat.

**WISCONSIN:** Temperatures above normal with light amounts of precipitation. On 6th, 7th central, northern areas of State received between 0.5 to 3.0 in. of snow. Night of 9th, into morning of 10th, some areas across the northern half of State received 0.5 in. of snow. Temperature 28°. Extremes -8°; 55°. Precipitation trace to 0.20 in.

**WYOMING:** Temperatures were well above normal across most of the State ranging from near normal in Newcastle to 10° above normal in Douglas. Precipitation was mostly below normal except for a few areas in the extreme northwest, northeast where precipitation was above normal. Moran Junction the largest amount of precipitation with 1.10 in. followed by Sundance with 0.41 in.

Topsoil moisture supplies mostly adequate. Some corn still being harvested. Winter wheat fair to good. Livestock mostly good. Hay, roughage supplies mostly adequate.

# International Weather and Crop Summary

## HIGHLIGHTS

December 5 - 11, 1993

**EUROPE:** Wet, mild weather prevailed across northern Europe, melting the snow cover in the northeast. Drier weather helped fieldwork across the south.

**SOUTH ASIA:** A tropical cyclone caused some coastal crop damage but brought mostly beneficial rain to fall crop areas as it moved inland and dissipated.

**SOUTHEAST ASIA:** Typhoons Lola and Manny caused some flooding and crop damage in the Philippines and Vietnam.

**EASTERN ASIA:** Seasonably dry weather prevailed across the main wheat belt.

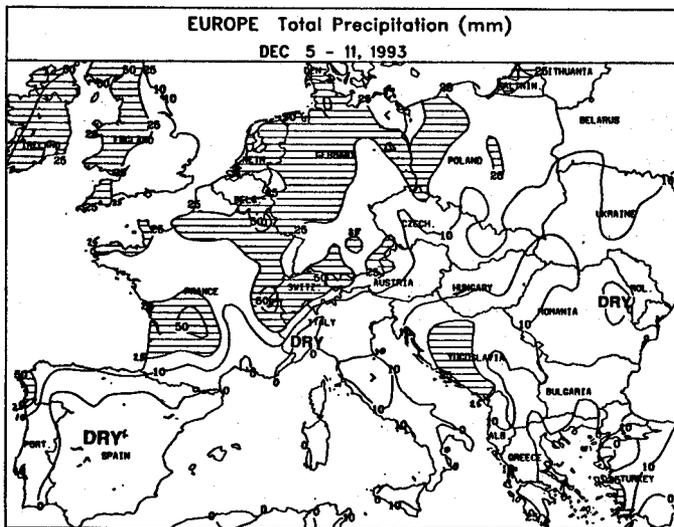
**AUSTRALIA:** Widespread rain increased soil moisture for eastern summer crop planting and germination. Light rain slowed wheat harvesting across the south.

**SOUTH AMERICA:** Across southern Brazil, continued wet weather delayed corn and soybean planting. Drier weather across Argentina favored summer crop planting and winter wheat maturation and harvesting.

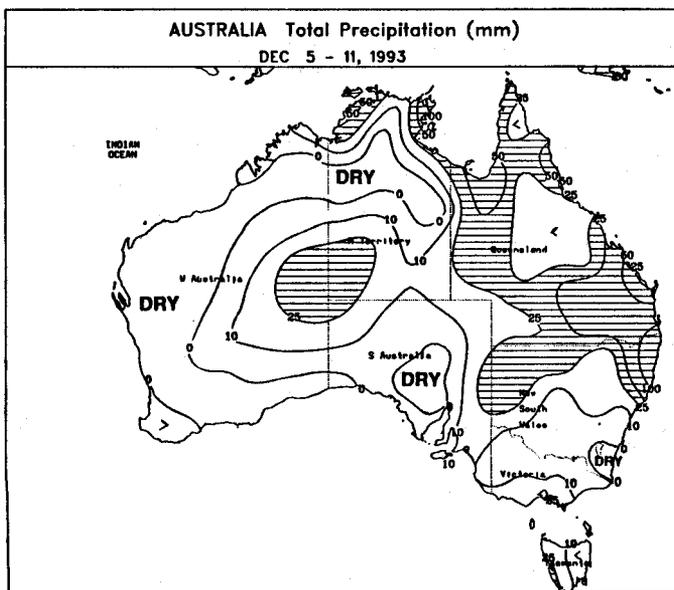
**NORTHWESTERN AFRICA:** Dry weather prevailed over most areas, allowing winter grain planting.

**SOUTH AFRICA:** Rain benefited most corn and sugarcane areas, although sections of the western corn belt are still too dry.

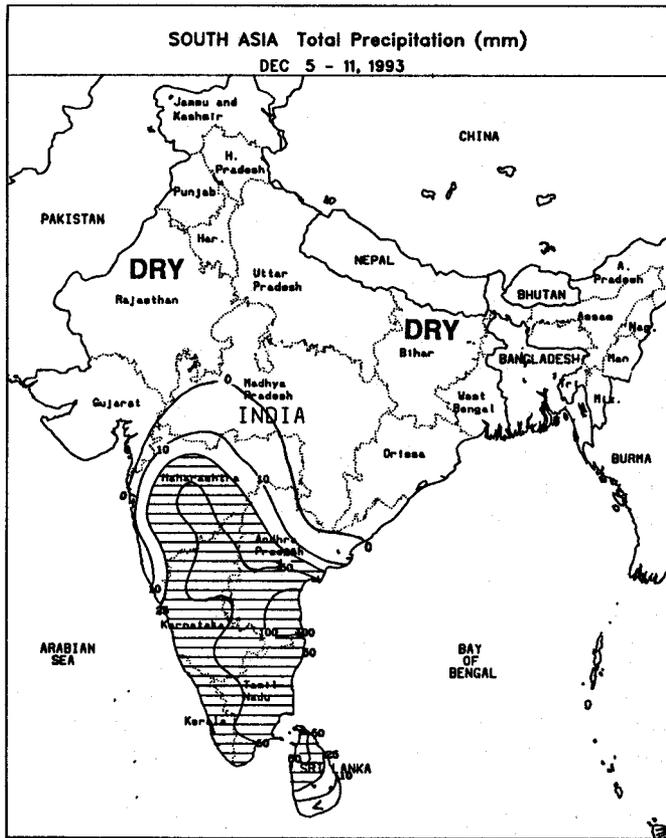
**FSU:** A warming trend ended a 4-week cold wave, improving overwintering conditions for dormant winter grains.



**EUROPE:** Above-average rainfall and higher-than-average temperatures prevailed over northern Europe. Weekly rainfall averaged 25-70 mm from southwestern France to western Poland, boosting soil moisture across the region but delaying late sugar beet harvesting in western crop areas. Milder weather accompanied the showers, melting the snow cover in northeastern Europe. Light showers helped emerging winter crops along northwestern portions of the Iberian peninsula, but dry weather and seasonable temperatures generally prevailed over the Mediterranean region. Some winter crop planting may still be underway in the south. Dry weather returned to Greece, following the earlier drought-breaking rains. The only area with lingering unseasonably cold weather was concentrated over the Balkan region, but temperatures slowly moderated throughout the week.

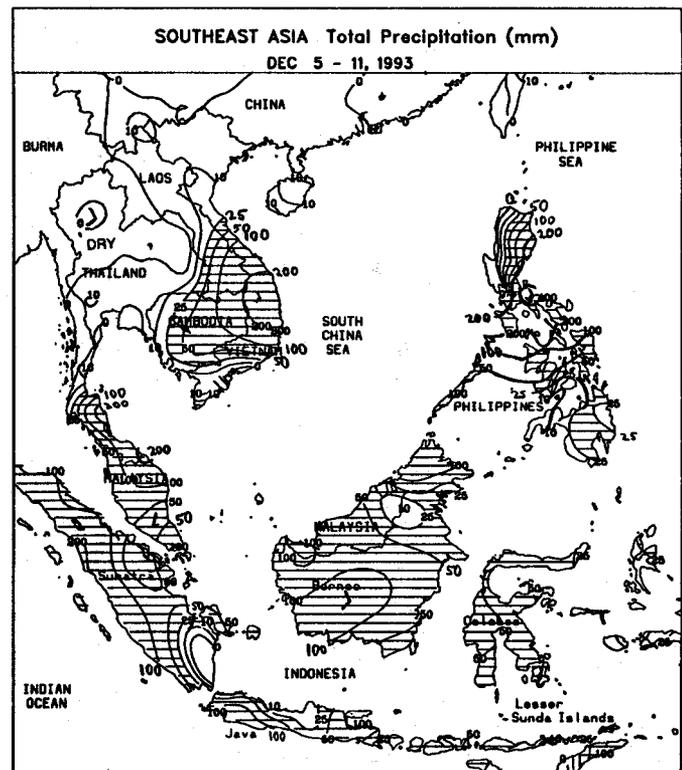


**AUSTRALIA:** Widespread showers (20-80 mm) covered most of the eastern summer crop region (southern Queensland and northern New South Wales), increasing soil moisture for planting and germination. Across this region, wheat harvesting was virtually complete. Across Victoria, southern New South Wales, and South Australia, light to moderate rain (5-20 mm) slowed winter wheat harvesting. In the west, dry weather favored fieldwork. The northeast coast of Queensland received scattered showers (10-75 mm), favoring sugarcane. Rainfall across this region typically increases by late November and early December. Temperatures averaged near normal in the west, 1-2 degrees C above normal across the south, and 2-4 degrees C below normal in the eastern summer crop region.

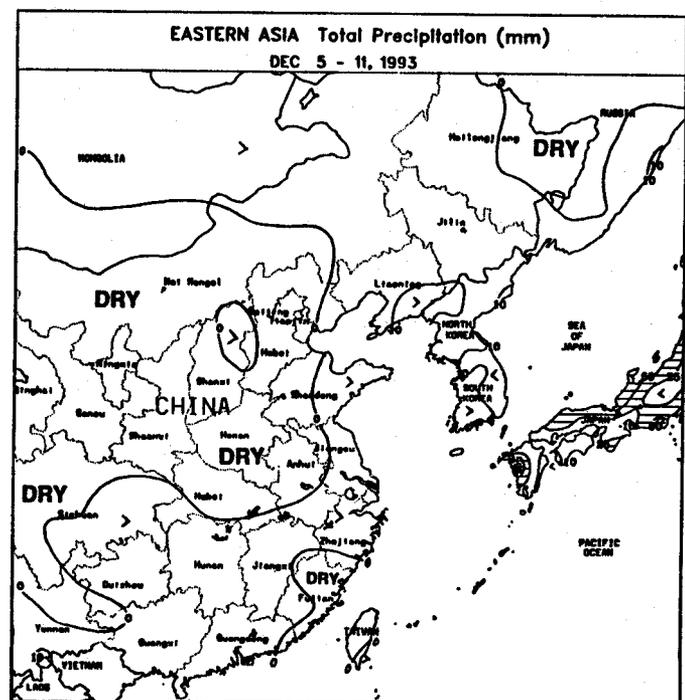


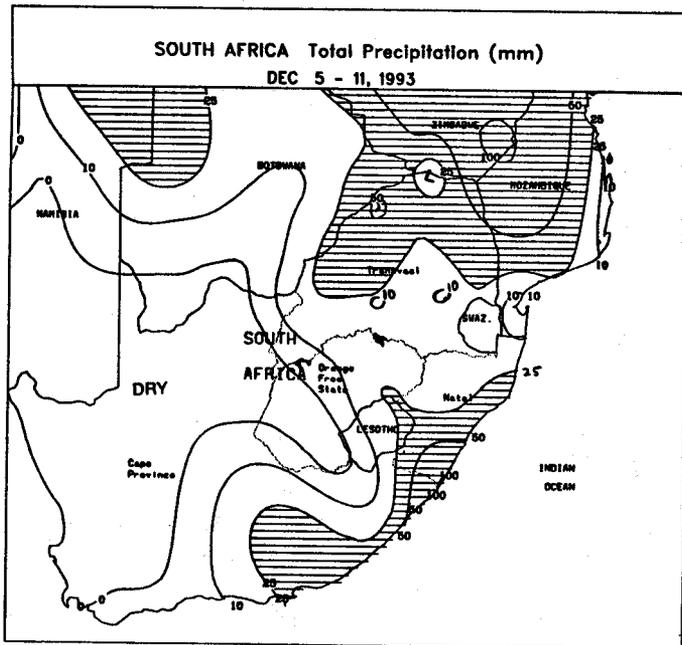
**SOUTH ASIA:** The tropical cyclone that struck near Madras, Tamil Nadu on December 5 dissipated and moved northwestward into the southern interior. The resulting moderate to heavy showers (25-90 mm) benefited immature fall grains, oilseeds, and cotton, but raised some quality concerns for unharvested main-season cotton. The cyclone reportedly caused coastal flooding and some damage to rice and fall-planted groundnuts as it made landfall. Elsewhere, dry, warm weather favored establishment and early development of winter grains and oilseeds.

**EASTERN ASIA:** Seasonably dry weather prevailed across the North China Plain while winter wheat remained dormant. Light rain (1-5 mm) covered most of central and southern China. The mostly dry weather favored routine farm maintenance and southern sugarcane harvesting. Temperatures averaged 1-2 degrees C above normal across central China.

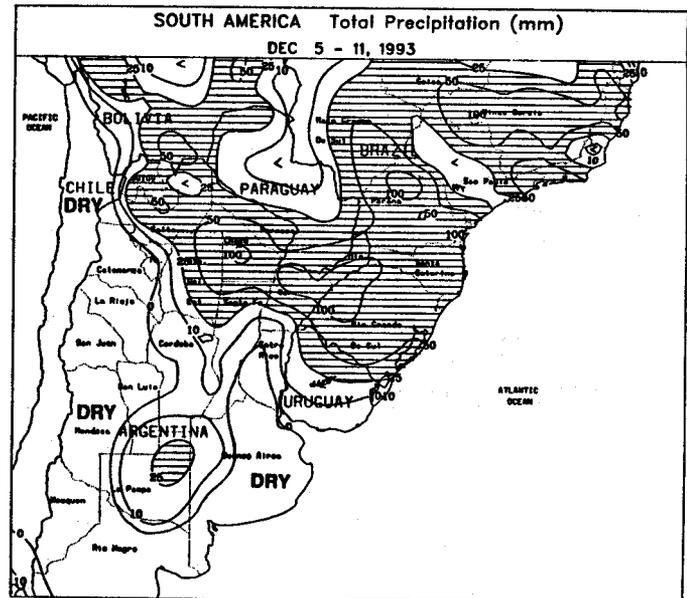


**SOUTHEAST ASIA:** Typhoons Lola and Manny (sustained winds at landfall of 80 knots and 120 knots, respectively) rolled across the north-central Philippines less than 1 week apart. Moderate to heavy rain (50-200 mm or more) from the storms covered southern Luzon and the northern Visayans, with some flooding and wind damage in important rice, sugarcane, and copra areas. Lola struck the south-central coast of Vietnam on December 8, causing some flooding and damage to newly planted winter rice. Further south, moderate to heavy rain (60-100 mm or more) covered much of Malaysia and Indonesia, increasing moisture reserves for rice and oil palm but resulting in localized flooding.



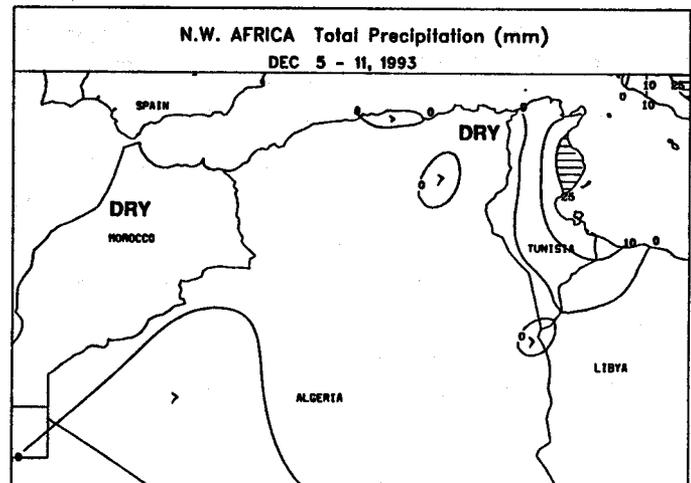


**SOUTH AFRICA:** Light to moderate rain (10-31 mm) maintained generally favorable moisture levels in eastern corn areas for establishment and early development. Moderate to heavy showers (35-106 mm) were concentrated over southern Natal and sections of the eastern Cape Province, benefiting sugarcane and other crops. However, mostly dry, warm weather continued in western corn areas, reducing moisture for normal development.

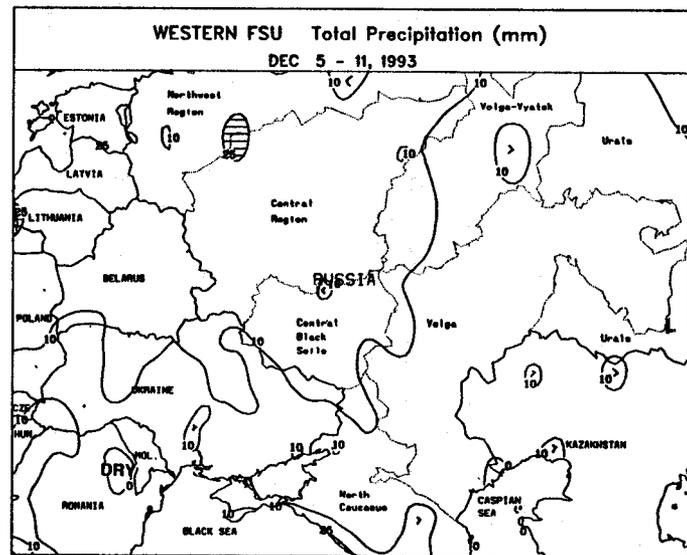


**SOUTH AMERICA:** In southern Brazil, almost daily showers produced large weekly rainfall totals (60-150 mm) across northern Rio Grande do Sul, Santa Catarina, and Parana, delaying soybean and corn planting. Mato Grosso do Sul and Goias received plentiful showers (30-100 mm), favoring germinating to vegetative soybeans, while Mato Grosso received scattered showers (10-60 mm). Moderate to heavy showers (30-100 mm) benefited coffee, citrus, and cotton across Minas Gerais and Sao Paulo. These areas were especially warm and dry during November. Scattered showers (10-50 mm) benefited cocoa across southern Bahia. Drier, warmer weather prevailed across central Argentina, favoring winter wheat maturation and harvesting and summer crop planting. The only significant rain (6-30 mm) fell across western Buenos Aires, northeastern Le Pampa, and southern Cordoba, which slowed fieldwork. Further north, heavy rains (40-100 mm) returned to portions of the cotton region, causing local flooding. Temperatures averaged 1-2 degrees C above normal across Argentina and 2-4 degrees C above normal across southern Brazil. So far this season, the cotton and soybean regions of southern Paraguay have received abundant moisture with a few cases of excessive rain.

**NORTHWESTERN AFRICA:** Mostly dry weather prevailed over winter grain areas in Morocco, Algeria, and Tunisia, allowing planting. Although moisture reserves were adequate for germination and early crop growth in most areas, additional rain is needed to ensure a good start to this year's growing season. Usually, the bulk of winter grains are planted by mid-December. However, planting can extend into early January without a loss in yield potential.



**FSU-WESTERN:** A warming trend spread gradually eastward over the region, ending a 4-week cold wave. The milder weather improved overwintering conditions for winter grains. Weekly average temperatures were 2-4 degrees Celsius (C) above normal in the Baltic States, Belarus, Russia's Central Region, and western Ukraine. Further east, despite a warming trend over Russian winter grain areas in the Volga Valley and North Caucasus, weekly average temperatures were 2-4 degrees C below normal. Widespread, light precipitation (around 10 mm) covered the region, falling in the form of mixed rain and snow in the west and south, and mainly as snow in the north and east.



### FSU November 1993 Cold Wave Historical Perspective (1881 - 1993)

Selected stations	November 1993 avg. temp. (C)	Coldest since	Record year
St. Petersburg, Russia	-5.7	1921 (-5.8)	1921
Kazan, Russia	-9.9	1919 (-10.0)	1891
Moscow, Russia	-8.0	1919 (-8.1)	1919 & 1908
Kiev, Ukraine	-6.0	record cold	1993
Lviv, Ukraine	-2.8	record cold	1993
Odesa, Ukraine	-0.5	1920 (-1.4)	1920

In early November, bitter cold air from Siberia brought an unusually early and severe cold snap to winter grain areas in the Baltic States, Belarus, Ukraine, and Russia. The unusual cold persisted into early December, after milder air from Europe spread gradually eastward over the region. Historical data for several locations revealed that November was the coldest in at least the past 43 years. For a few locations in Russia and Ukraine, long-term temperature records were available dating back to 1881 (see above). For Kazan and Moscow in Russia, November was the coldest since 1919. For Kiev and Lviv in Ukraine, November was the coldest on record. (See next week's issue for further details on November's weather in the former USSR as well as other parts of the world).

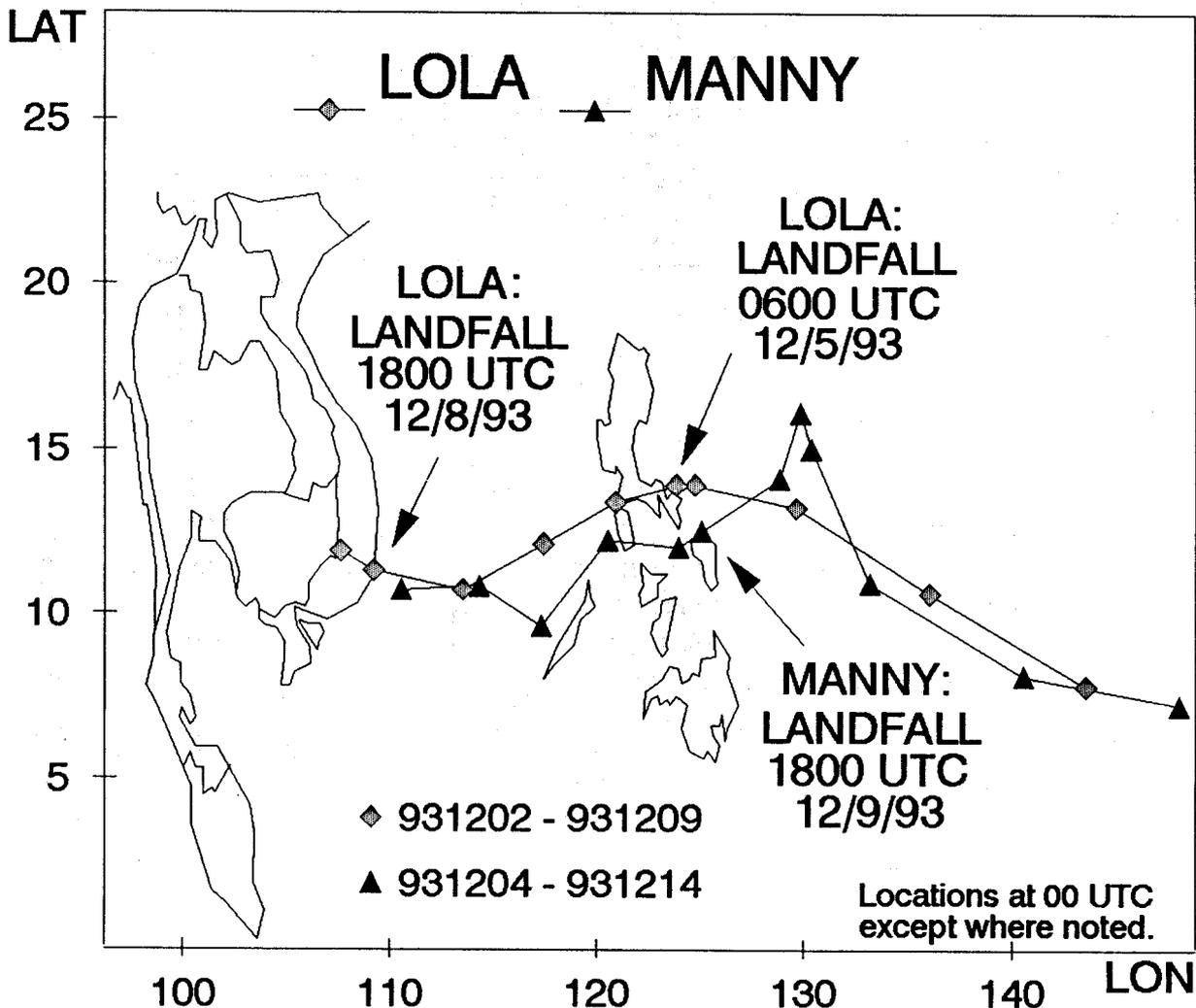
--Tom Puterbaugh

## Cyclones Slam into the Philippines and Vietnam

Typhoon Manny crossed the central Philippines on December 9-10, passing only about 100 km south of the track Typhoon Lola took just 4 days earlier. Packing estimated winds of 120 knots, Manny's center passed close to northern Samar and southeastern Luzon on Thursday. The storm traveled slowly westward, crossing the southern coast of Mindoro on Friday with winds of about 80 knots. Though Manny was an intense storm, its compact size limited the scope of its wind and rain damage. Reported rainfall totals reached as high as 219 mm. Typhoon Lola crossed southern Luzon on December 5 with winds around 80 knots. Though not as intense as Manny, Lola was wetter, dumping up to 487 mm of rain on southeast Luzon. The two storms caused some flood and wind damage to important rice, sugarcane, and copra areas. Lola and Manny were the third and fourth typhoons to cross central or northern Philippines in the past 3 months, with Flo hitting Luzon in early October and Ira striking Luzon in early November (see "Another Typhoon Strikes Luzon" in the November 9, 1993, issue of the WWCB).

After sweeping across the Philippines, Typhoon Lola regained strength in the South China Sea and crossed the southern Vietnam coast near Cam Ranh Bay on Wednesday, December 8. Before striking land, estimated sustained winds reached 115 knots. The storm rapidly lost strength as it moved in a west-northwest direction, with winds dropping to about 50 knots near the Cambodia border. Lola caused some flooding and damage to newly planted winter rice in Vietnam. Only 2 weeks earlier, on November 23, Typhoon Kyle struck the southern Vietnam coast some 100 km north of Lola's landfall. Typhoon Manny maintained a track quite similar to Lola's while crossing the South China Sea, but weakened considerably by the time it reached southern Vietnam. On December 14, Manny was only a tropical depression with 30 knot winds and little threat to land.

--Douglas Le Comte and David Secora



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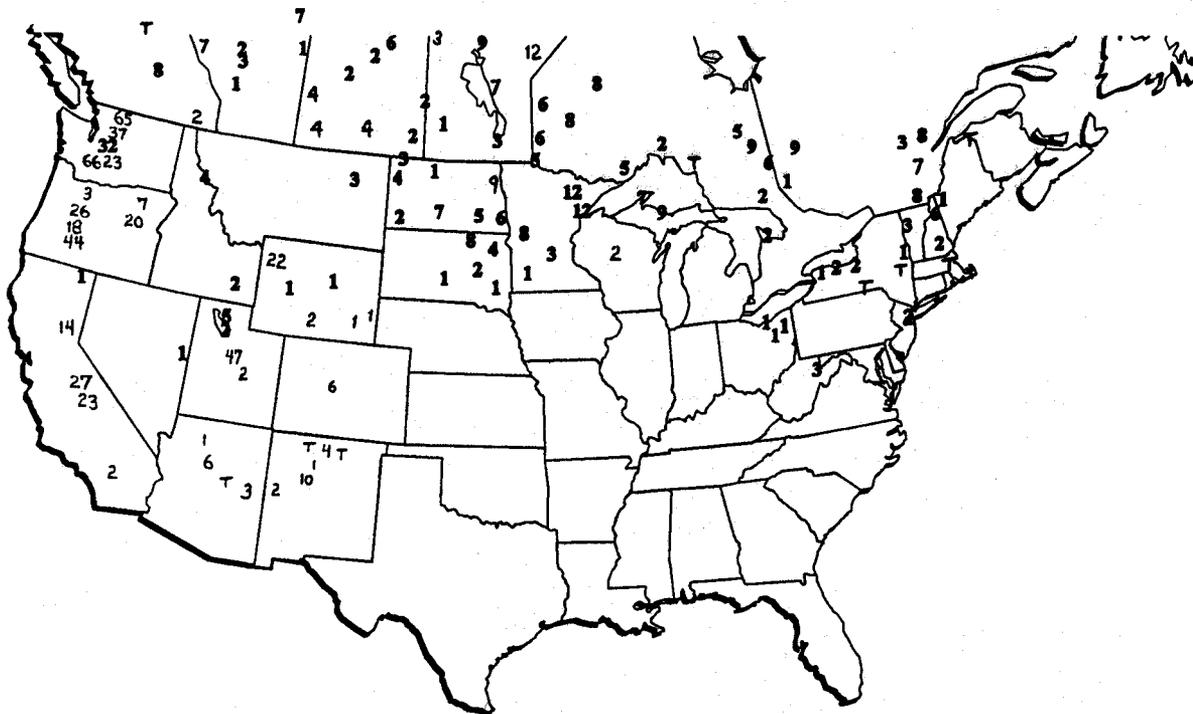
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## Total Snow Cover (Inches) December 13, 1993



NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

Based on preliminary reports

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