

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

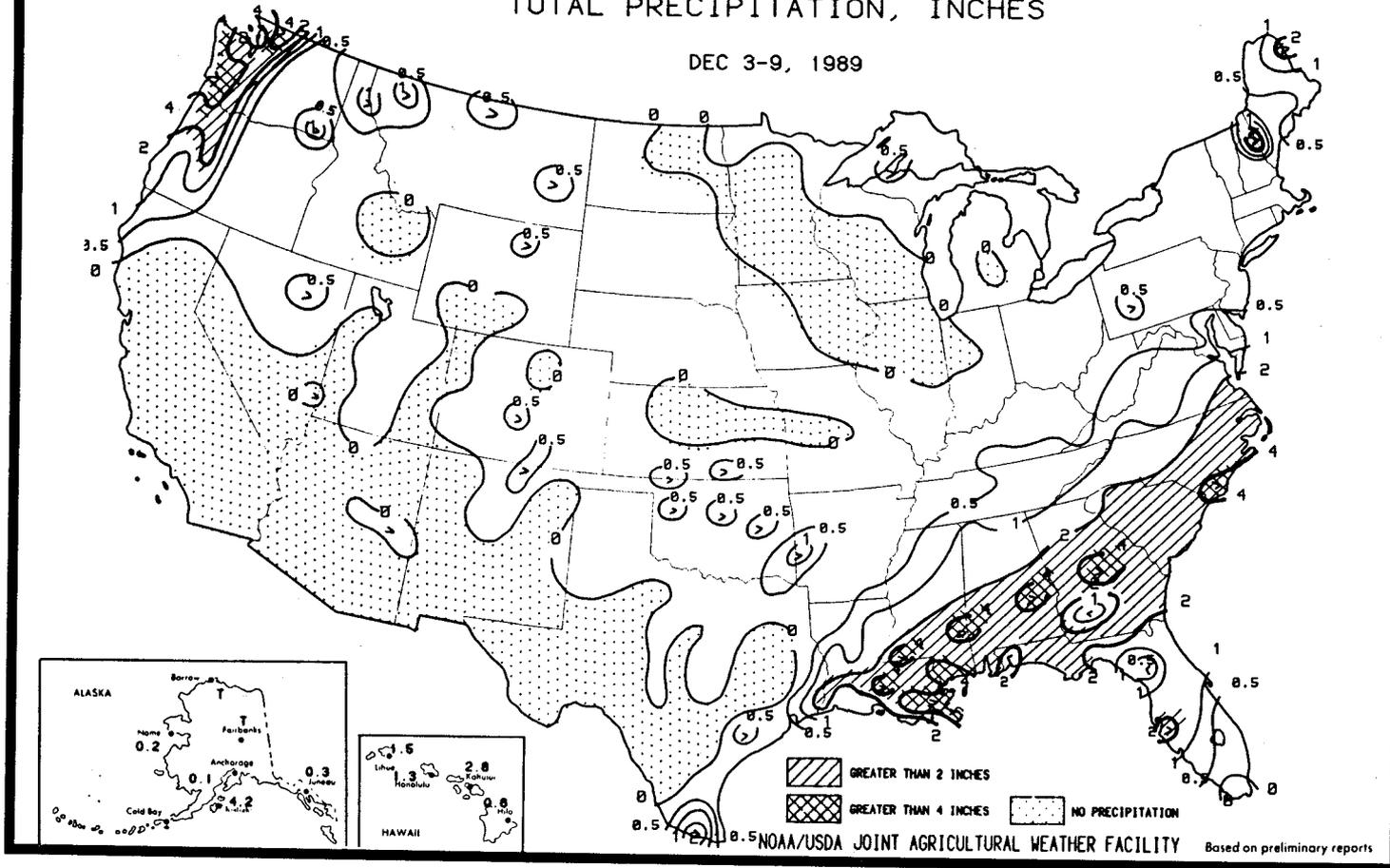
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Dec. 12, 1989

TOTAL PRECIPITATION, INCHES

DEC 3-9, 1989



HIGHLIGHTS

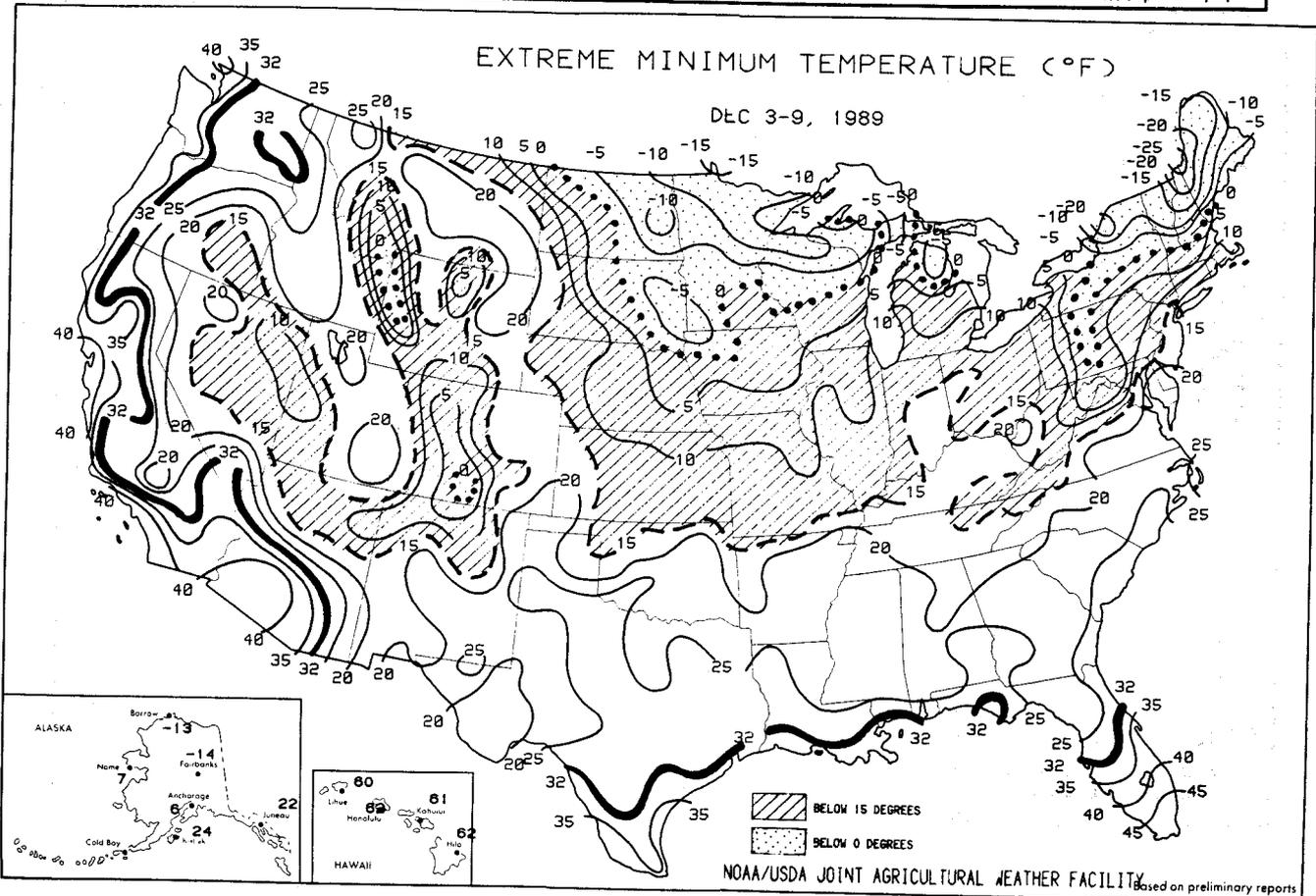
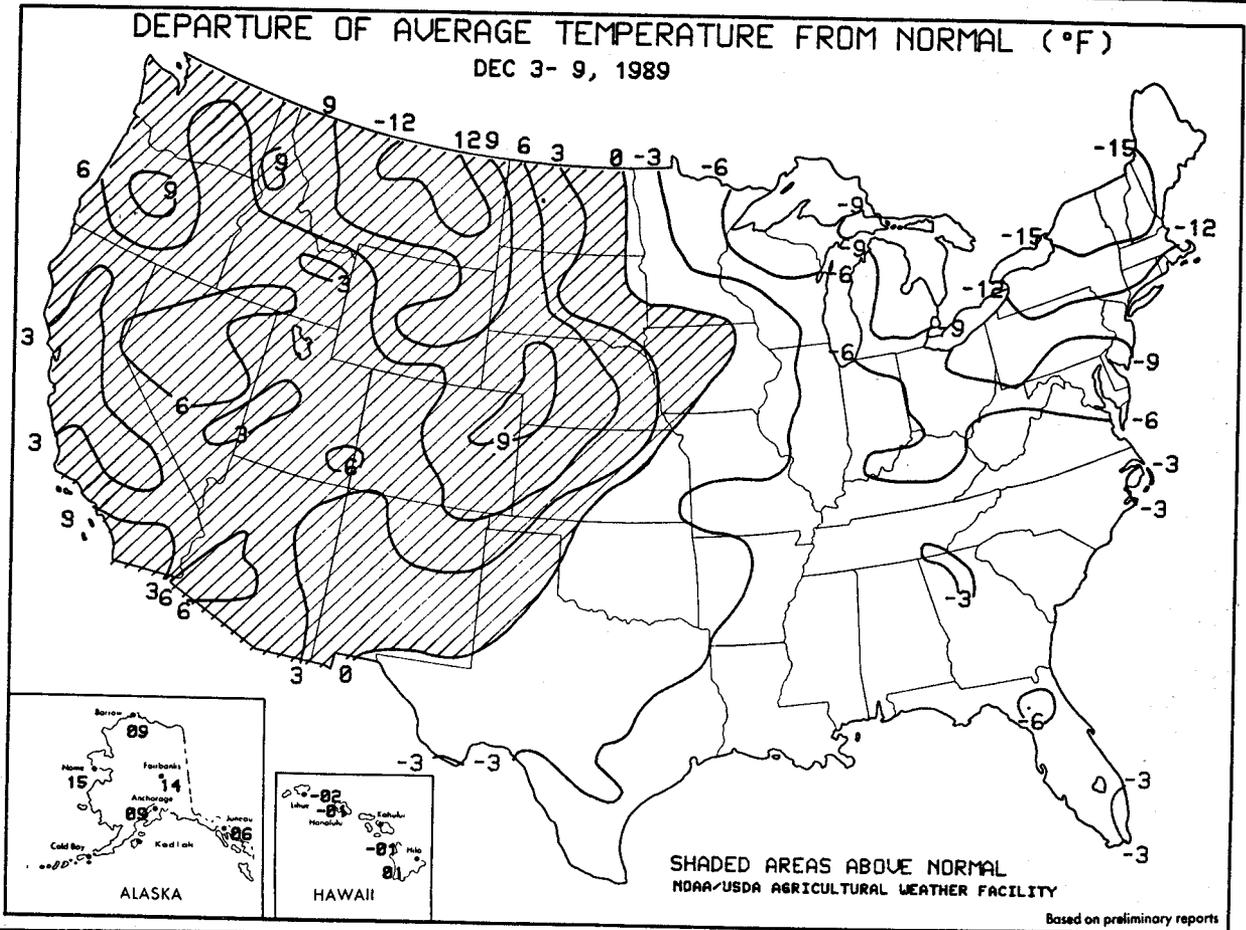
December 3-9, 1989

At the first of the week, a winter storm struck **New England** with high wind and heavy snow. Arctic air plunged into the **East** behind the storm as 18 low temperature records were set, and temperatures dropped below freezing into **central Florida**. The low of 31 degrees at **Lakeland, FL**, smashed their previous record for the date by 8 degrees. At the same time, a **Pacific** storm spread rain with snow in the higher elevations over the **Northwest**. During the latter half of the week, a storm system developed over the **central Gulf coast** and edged northeastward, spreading heavy rain across the **Southeast** and snow up the **middle Atlantic Coast States**. Rain and snow showers gave needed moisture to the **central and southern Plains**, while another **Pacific** storm caused more precipitation in the **Northwest**. Mild weather prevailed over the **western half of the Nation**, but a cold

front brought much cooler air into the **North Central States** at week's end.

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National Weather Data for Selected Cities

Weather Data for the Week Ending December 9, 1989

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS				
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE °F		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	54	34	70	20	44	-3	1.2	.1	.7	1.2	87	59.0	116	86	53	0	3	3	1
MOBILE	60	39	71	25	49	-5	2.6	1.4	1.3	2.6	171	59.3	98	91	58	0	2	3	2
MONTGOMERY	59	36	73	22	47	-3	3.8	2.8	1.8	3.8	292	69.3	153	90	57	0	3	4	3
AK ANCHORAGE	31	19	41	6	25	9	.1	-2	.1	.1	22	26.3	187	93	74	0	7	2	0
BARROW	1	-5	5	-13	-2	9	T	0	T	T	140	7.1	161	90	74	0	7	1	0
FAIRBANKS	15	-1	29	-14	7	14	T	T	T	T	0	9.8	99	92	77	0	7	0	0
JUNEAU	39	32	46	22	35	6	.4	-7	.2	.8	55	46.5	94	100	82	0	4	3	0
KODIAK	41	32	43	24	37	6	4.2	3.0	1.5	6.0	375	55.2	97	97	76	0	3	5	3
NOME	28	15	33	7	21	15	.2	-1	.2	.2	105	20.1	143	93	67	0	7	2	0
AZ PHOENIX	74	48	75	44	61	6	0	-2	0	0	0	4.6	73	42	14	0	0	0	0
PRESCOTT	63	25	71	21	44	6	0	-4	0	0	0	9.4	53	54	13	0	7	0	0
TUCSON	73	41	78	36	57	4	0	-2	0	0	0	6.3	61	43	14	0	0	0	0
YUMA	78	50	80	46	64	6	0	-1	0	0	0	7.2	331	30	13	0	0	0	0
AR FORT SMITH	58	25	75	19	41	-2	.2	-5	.2	.2	19	46.9	124	89	32	0	6	2	0
LITTLE ROCK	54	32	69	25	43	-3	.2	-8	.1	.2	12	47.5	103	64	40	0	5	2	0
CA BAKERSFIELD	65	36	75	31	50	1	0	-1	0	0	0	2.9	57	87	40	0	1	0	0
EUREKA	60	48	66	39	54	5	.6	-8	.4	.6	34	25.3	75	95	74	0	0	2	0
FRESNO	62	38	69	33	50	3	0	-3	0	0	0	6.9	75	99	53	0	0	0	0
LOS ANGELES	77	50	82	47	64	6	0	-1.3	0	0	0	4.2	39	82	20	0	0	0	0
REDDING	63	36	69	31	49	1	0	-1.5	0	0	0	29.6	83	91	38	0	3	0	0
SACRAMENTO	62	38	68	33	50	3	0	-6	0	0	0	15.1	102	98	57	0	0	0	0
SAN DIEGO	74	48	80	46	61	2	0	-4	0	0	0	2.7	32	65	17	0	0	0	0
SAN FRANCISCO	61	46	65	44	53	3	0	-7	0	0	0	11.4	67	98	63	0	0	0	0
CO DENVER	57	27	68	17	42	8	T	T	T	T	0	14.7	100	82	31	0	6	0	0
GRAND JUNCTION	47	21	52	15	34	3	T	-1	T	T	0	5.5	74	65	29	0	6	0	0
PUEBLO	58	24	70	12	41	7	.3	-3	.3	.3	300	7.2	68	74	28	0	6	1	0
CT BRIDGEPORT	32	18	44	14	25	-12	.1	-8	.1	.1	6	49.8	129	65	35	0	7	1	0
HARTFORD	31	11	42	4	21	-12	T	-9	T	T	4	53.2	129	72	34	0	7	1	0
DC WASHINGTON	40	26	51	21	33	-8	.3	-4	.3	.3	36	48.5	133	75	44	0	6	2	0
FL APALACHICOLA	63	42	73	27	53	-4	3.6	2.8	3.6	3.6	374	54.9	105	93	59	0	1	2	1
DAYTONA BEACH	70	45	83	32	57	-4	1.3	.8	1.3	1.3	206	42.0	90	87	45	0	1	2	1
JACKSONVILLE	66	39	79	27	52	-5	1.0	-.5	.9	1.0	161	49.0	99	86	39	0	1	2	1
KEY WEST	74	63	83	57	68	-4	.3	-1	.3	.3	53	29.8	78	91	62	0	0	2	0
MIAMI	77	57	85	47	67	-2	T	-4	T	T	4	42.0	75	81	51	0	0	1	0
ORLANDO	71	46	83	35	58	-4	1.5	1.1	1.4	1.5	281	42.6	89	84	44	0	0	2	1
TALLAHASSEE	63	39	75	22	51	-3	1.6	-.7	1.6	1.6	131	60.6	99	91	50	0	2	2	1
TAMPA	70	48	81	33	59	-3	1.6	1.1	1.4	1.6	258	40.4	90	92	49	0	0	2	1
WEST PALM BEACH	76	54	86	43	65	-3	.1	-5	0	.1	9	36.7	63	87	45	0	0	2	0
GA ATLANTA	53	35	68	24	44	-2	2.1	1.2	1.3	2.1	187	60.9	134	78	55	0	2	3	2
AUGUSTA	56	34	72	22	45	-3	2.7	2.1	1.4	2.7	343	47.3	117	80	49	0	2	3	2
MACON	57	36	70	23	46	-4	4.6	3.8	2.3	4.6	439	47.2	113	82	54	0	3	4	3
SAVANNAH	59	38	72	26	48	-4	3.0	2.4	2.7	3.0	410	44.4	93	73	46	0	2	3	1
HI HILO	82	65	84	62	74	1	1.6	-2.6	.6	1.2	29	161.7	136	92	61	0	0	1	1
HONOLULU	84	64	86	62	74	-1	.3	.6	1.3	1.3	138	22.9	110	92	50	0	0	1	1
KAHULUI	83	63	86	61	73	-1	2.8	2.3	2.8	3.0	438	38.7	240	94	61	0	0	1	1
LIHUE	79	64	80	60	72	-2	1.5	.4	1.5	1.5	101	54.4	136	81	59	0	0	1	1
ID BOISE	45	28	49	21	36	3	.1	-2	.1	.1	29	10.5	100	96	58	0	7	2	0
LEWISTON	53	40	60	32	47	10	.1	-2	.1	.1	29	13.4	113	77	50	0	1	1	0
POCATELLO	44	24	49	17	34	5	T	-2	T	T	0	9.5	95	93	51	0	7	0	0
IL CHICAGO	35	19	47	12	27	-4	T	-6	T	T	3	29.0	89	77	43	0	6	0	0
MOLINE	38	18	58	10	28	-2	T	-4	0	T	0	31.2	88	79	37	0	7	0	0
PEORIA	39	18	56	10	28	-3	T	-5	T	T	0	21.7	65	81	37	0	6	0	0
QUINCY	42	19	59	10	31	-3	T	-4	T	T	8	17.6	48	76	38	0	6	1	0
ROCKFORD	34	15	49	8	24	-4	T	-5	T	T	0	25.7	73	82	41	0	7	0	0
SPRINGFIELD	41	19	57	12	30	-4	T	-5	T	T	3	27.5	84	83	40	0	6	1	0
IN EVANSVILLE	43	21	59	12	32	-6	.1	-7	.1	.1	11	46.1	118	84	47	0	7	1	0
FORT WAYNE	33	18	41	13	26	-6	T	-6	T	T	5	34.2	104	88	58	0	7	2	0
INDIANAPOLIS	38	20	52	16	29	-5	.1	-6	.1	.1	10	48.7	132	85	49	0	7	1	0
SOUTH BEND	32	19	39	12	26	-7	.3	-3	.3	.5	64	34.8	97	93	63	0	7	1	0
IA DES MOINES	39	20	60	5	30	0	T	-2	T	T	3	28.6	96	83	43	0	6	1	0
SIOUX CITY	40	20	56	4	30	3	.1	-1	0	.1	39	19.0	76	89	49	0	6	4	0
WATERLOO	35	16	51	4	25	0	0	-3	0	T	0	19.4	61	84	43	0	7	0	0
KS CONCORDIA	51	25	69	9	38	4	T	-2	T	T	0	24.3	91	76	39	0	5	0	0
DODGE CITY	52	26	70	13	39	3	.3	.1	.3	.3	153	20.4	102	79	45	0	5	1	0
GOODLAND	55	27	68	18	41	9	.1	0	.1	.1	50	17.9	113	77	38	0	5	1	0
TOPEKA	48	20	66	11	34	-1	T	-3	T	T	0	37.8	116	82	36	0	7	0	0
WICHITA	47	22	71	11	34	-3	.3	0	.3	.3	91	34.5	123	80	42	0	7	1	0
KY BOWLING GREEN	45	26	65	17	35	-5	.8	-2	.8	.8	65	58.0	127	84	53	0	5	1	1
LEXINGTON	39	24	59	16	31	-7	.1	-7	.1	.1	12	51.5	120	85	52	0	6	2	0
LOUISVILLE	42	25	57	18	34	-6	.1	-7	.1	.1	11	49.6	121	80	43	0	5	2	0
LA ALEXANDRIA	60	36	73	25	48	-4	.6	-5	.5	.6	41	55.7	114	85	47	0	2	2	1
BATON ROUGE	61	40	72	30	51	-4	2.7	1.5	1.9	2.7	188	83.7	160	90	51	0	2	2	0
LAKE CHARLES	62	41	75	33	51	-4	.9	-2	.5	.9	62	59.3	118	94	54	0	1	0	0
NEW ORLEANS	63	43	76	32	53	-3	4.9	3.8	3.0	4.9	336	66.1	119	92	57	0	1	3	2

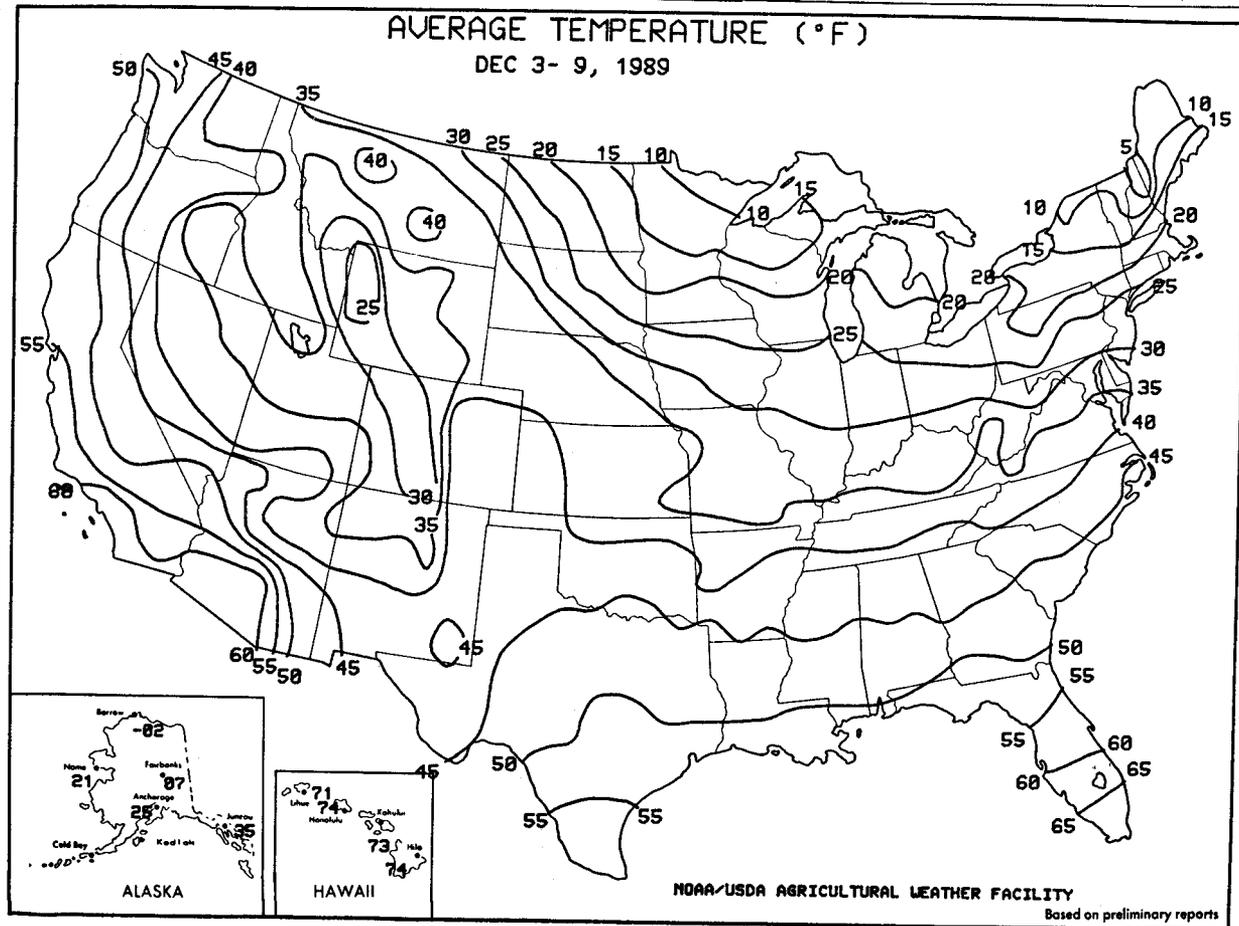
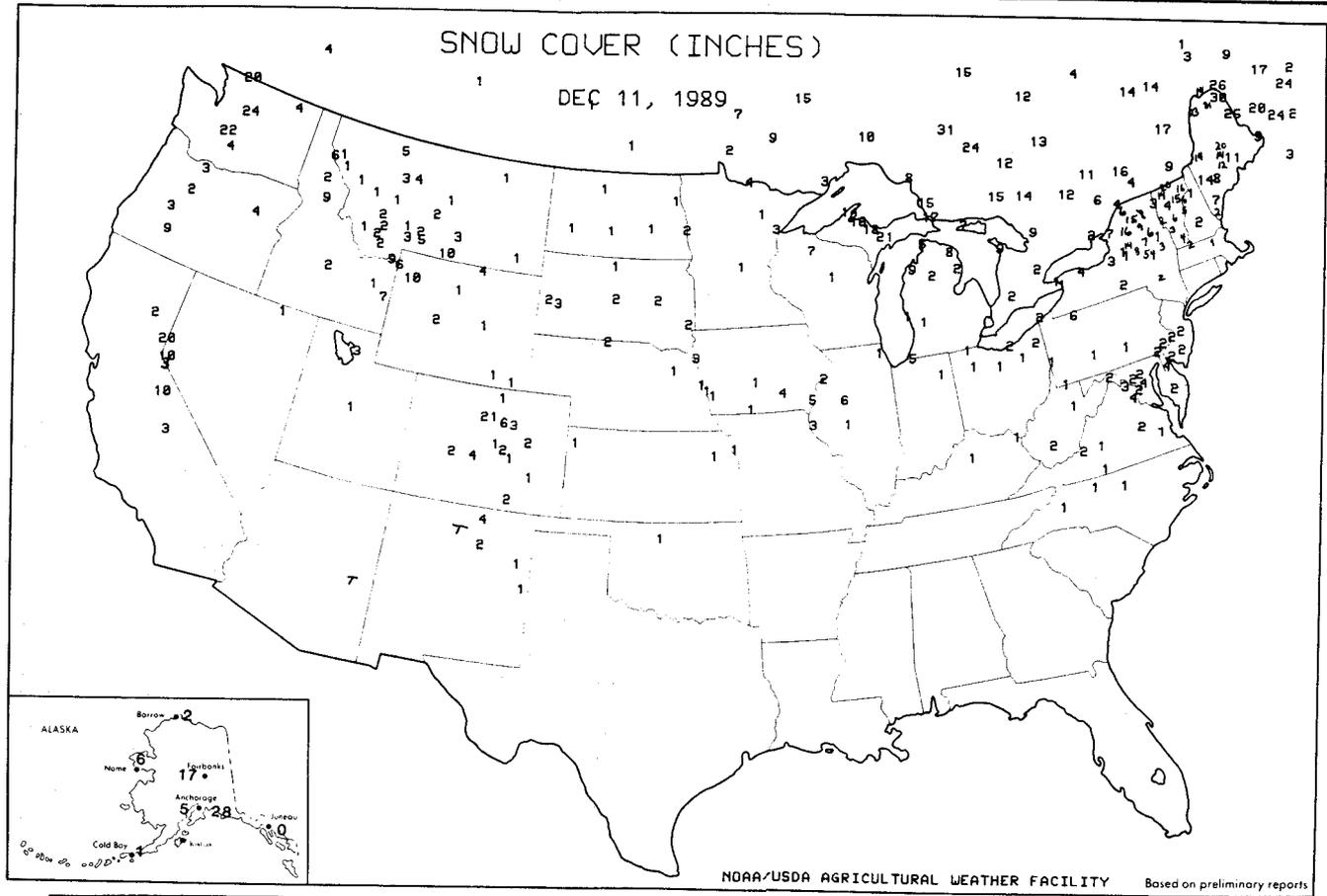
Based on 1951-80 normals

Weather Data for the Week Ending December 9, 1989

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS				
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE		PRECIPITATION	
																30 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
SHREVEPORT	60	35	77	25	48	-3	.2	-.7	.1	.2	13	57.7	141	85	40	0	3	2	0
ME CARIBOU	17	-2	24	-13	7	-12	1.7	.9	1.1	1.7	173	32.1	94	81	63	0	7	4	1
PORTLAND	27	5	36	-5	16	-13	.3	-.8	.2	1.0	72	40.3	100	74	36	0	7	2	0
MD BALTIMORE	38	24	50	18	31	-8	.7	-.1	.7	.7	69	50.3	128	82	48	0	7	1	1
SALISBURY	42	25	61	21	34	-7	.8	0	.8	.8	79	51.7	121	87	47	0	7	2	1
MA BOSTON	32	14	44	10	23	-13	.1	-.9	.1	.1	10	41.6	103	67	28	0	7	1	0
CHATHAM	35	19	45	14	27	-11	T	-.1	T	T	1	45.2	105	75	38	0	6	1	0
MI ALPENA	25	3	34	-3	14	-13	T	-.4	T	.2	32	20.6	75	88	55	0	7	3	0
DETROIT	31	16	39	12	23	-8	T	-.5	T	.1	14	28.1	97	87	59	0	7	2	0
FLINT	28	13	37	9	20	-10	T	-.5	T	.1	10	30.3	110	90	55	0	7	1	0
GRAND RAPIDS	29	13	36	6	21	-10	T	-.6	T	.2	30	33.2	105	87	55	0	7	1	0
HOUGHTON LAKE	25	7	33	-8	16	-10	.1	-.4	0	.1	22	19.4	73	85	63	0	7	3	0
LANSING	28	13	3	8	20	-9	T	-.6	T	.1	18	30.0	107	93	59	0	7	0	0
MARQUETTE	21	5	33	-8	13	-8	.2	-.4	.1	.8	111	28.0	79	96	68	0	7	4	0
MUSKEGON	32	17	39	12	24	-7	.1	-.5	.1	.2	21	24.2	82	91	61	0	7	2	0
SAULT ST. MARIE	22	3	33	-4	12	-11	.4	-.2	.2	.9	108	25.1	80	88	64	0	7	5	0
MN ALEXANDRIA	25	7	37	-2	16	-2	T	-.2	T	T	0	20.9	87	92	70	0	7	0	0
DULUTH	21	2	38	-10	11	-7	.1	-.2	.1	.1	31	25.8	90	88	59	0	7	1	0
INT'L FALLS	19	-3	33	-14	8	-5	.2	-.1	.1	.2	57	20.7	88	88	58	0	7	2	0
MINNEAPOLIS	31	12	45	2	22	-2	T	-.2	T	T	0	22.9	90	83	51	0	7	0	0
ROCHESTER	31	13	45	0	22	-1	0	-.2	0	T	0	23.0	83	84	53	0	7	0	0
MS GREENWOOD	54	34	72	20	44	-4	.6	-.6	.3	.6	38	61.1	124	89	53	0	4	3	0
JACKSON	58	34	73	20	46	-4	2.0	.8	1.9	2.0	135	50.4	105	94	54	0	3	3	1
MERIDIAN	58	34	72	20	46	-4	3.3	2.1	2.8	3.3	212	66.9	136	90	55	0	4	4	1
MO CAPE GIRARDEAU	45	24	62	12	34	--	.1	-.4	.1	.1	5	48.3	115	84	46	0	6	1	0
COLUMBIA	44	21	61	11	33	-3	.1	-.4	.1	.1	12	34.0	96	71	36	0	6	6	0
KANSAS CITY	46	23	65	8	35	-2	.1	-.2	.1	.1	21	37.2	106	73	37	0	6	2	0
SAINT LOUIS	46	25	65	15	36	-2	.1	-.5	.1	.1	12	28.0	87	66	34	0	6	1	0
SPRINGFIELD	46	21	69	11	33	-5	.4	-.2	.4	.4	49	31.1	82	81	40	0	7	2	0
MT BILLINGS	49	32	59	22	40	10	.2	.1	.1	.2	105	14.3	100	78	42	0	5	4	0
GLASGOW	43	23	52	13	33	12	T	-.1	T	T	14	10.0	95	91	62	0	6	1	0
GREAT FALLS	47	34	57	21	40	12	.1	-.1	.1	.1	57	21.5	149	83	49	0	4	2	0
HAVRE	41	28	56	13	35	12	.7	.6	.3	.7	486	11.9	105	93	71	0	4	3	0
HELENA	47	26	57	15	36	10	1.1	-.1	.1	.1	33	12.0	108	88	48	0	6	1	0
KALISPELL	41	30	48	27	35	9	1.3	1.0	.6	1.3	298	21.2	146	98	78	0	7	5	1
MILES CITY	47	29	63	23	38	13	.6	.4	.5	.6	317	14.3	104	85	58	0	5	2	1
MISSOULA	39	27	49	18	33	6	.2	0	.1	.2	68	13.2	108	97	69	0	6	6	0
NE GRAND ISLAND	50	24	69	8	37	7	.2	0	.1	.2	95	21.7	96	84	44	0	5	3	0
LINCOLN	48	22	69	4	35	5	.3	.1	.2	.3	119	23.5	89	80	42	0	6	2	0
NORFOLK	43	22	61	1	33	5	.2	.1	.1	.2	122	16.0	69	89	55	0	5	3	0
NORTH PLATTE	53	22	67	9	38	9	.1	0	.1	.1	57	13.8	73	86	40	0	6	2	0
OMAHA	43	22	63	5	33	2	.2	0	.1	.2	76	22.0	74	78	44	0	6	2	0
SCOTTSBLUFF	53	22	64	13	38	8	.1	0	.1	.1	64	9.4	66	84	37	0	7	2	0
VALENTINE	49	22	64	11	36	8	.1	0	.1	.1	64	12.2	72	74	42	0	7	1	0
NV ELY	55	17	61	12	36	8	T	-.2	T	T	10	6.7	80	81	27	0	7	1	0
LAS VEGAS	65	37	72	33	51	5	0	-.1	0	0	0	2.2	58	35	17	0	0	0	0
RENO	60	26	66	22	43	9	0	-.2	0	0	0	7.3	117	87	26	0	7	0	0
WINNEMUCCA	51	25	60	21	38	6	.1	-.1	.1	.1	58	5.6	79	90	45	0	7	2	0
NH CONCORD	25	1	36	-7	13	-15	.1	-.8	.1	.2	22	37.6	110	81	39	0	7	1	0
NJ ATLANTIC CITY	37	21	53	17	29	-10	.5	-.4	.5	.5	42	49.3	126	84	41	0	7	1	0
NM ALBUQUERQUE	54	26	62	21	40	3	T	-.1	T	.1	71	4.8	64	78	32	0	7	1	0
CLOVIS	56	29	70	27	43	2	.1	-.1	.1	.5	313	14.6	88	80	35	0	7	1	0
ROSWELL	62	27	74	22	44	3	0	-.1	0	T	0	6.2	60	71	24	0	6	0	0
NY ALBANY	26	6	40	2	16	-14	.1	-.6	.1	.1	11	39.1	117	83	41	0	7	1	0
BINGHAMTON	24	9	37	3	16	-13	.2	-.5	.2	.2	24	37.3	108	89	58	0	7	2	0
BUFFALO	27	12	41	6	20	-13	.3	-.6	.2	.3	27	39.2	112	90	59	0	7	3	0
NEW YORK	35	22	49	16	29	-11	T	-.9	T	T	0	53.9	135	69	34	0	7	0	0
ROCHESTER	27	11	41	4	19	-13	.4	-.2	.2	.4	51	31.6	107	90	65	0	7	3	0
SYRACUSE	27	8	40	-3	17	-15	.3	-.4	.2	.3	35	35.2	96	92	61	0	7	4	0
NC ASHEVILLE	48	28	69	16	38	-3	1.8	1.1	.7	1.8	192	59.0	142	89	49	0	5	3	2
CHARLOTTE	51	31	70	20	41	-4	1.6	.9	1.2	1.6	169	47.8	118	78	43	0	4	3	1
GREENSBORO	48	29	65	18	38	-4	1.3	.6	1.1	1.3	145	48.4	122	76	43	0	5	3	1
HATTERAS	57	41	68	30	49	-1	3.5	2.5	2.0	3.6	279	87.7	167	84	53	0	2	3	2
NEW BERN	54	35	70	25	45	-4	3.8	3.0	1.8	3.8	371	61.5	122	76	47	0	2	3	2
RALEIGH	49	31	66	20	40	-4	2.0	1.3	1.3	2.0	227	52.7	134	75	45	0	5	3	2
WILMINGTON	55	35	71	26	45	-5	4.9	4.2	2.5	4.9	513	64.5	127	84	51	0	2	3	2
ND BISMARCK	36	13	50	4	24	5	.1	0	.1	.1	50	11.1	75	92	65	0	7	2	0
FARGO	25	4	40	-8	14	-3	T	-.1	T	.1	28	19.0	100	89	71	0	7	0	0
GRAND FORKS	25	4	45	-8	15	-1	T	-.1	T	.1	28	11.5	65	85	60	0	7	1	0
WILLISTON	37	17	48	4	27	7	.1	0	.1	.1	57	11.2	86	93	68	0	7	2	0
OH AKRON-CANTON	30	17	41	13	24	-10	.2	-.4	.2	.3	34	37.5	111	88	60	0	7	2	0
CINCINNATI	39	23	52	14	31	-5	.2	-.5	.1	.2	26	47.9	127	79	46	0	7	2	0
CLEVELAND	32	19	43	14	25	-9	.3	-.4	.2	.3	40	42.5	128	86	53	0	7	2	0
COLUMBUS	35	21	45	13	28	-7	.3	-.3	.3	.3	43	42.3	121	87	55	0	7	3	0

Weather Data for the Week Ending December 9, 1989

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS				
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE		PRECIPITATION	
																90 AND ABOVE	72 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	35	20	47	13	28	-7	.4	-1.2	.4	.4	53	47.9	146	87	58	0	7	2	0
TOLEDO	32	14	42	8	23	-8	.4	-1.6	.4	.1	8	36.3	122	91	51	0	7	2	0
YOUNGSTOWN	30	15	42	11	22	-10	.3	-1.4	.2	.1	8	42.2	120	90	55	0	7	3	0
OK OKLAHOMA CITY	54	31	74	24	42	0	.2	-1.1	.2	.2	37	40.7	136	73	37	0	4	2	0
TULSA	53	29	77	22	41	-1	.2	-1.3	.2	.2	27	29.6	79	77	35	0	4	2	0
OR ASTORIA	55	47	60	37	51	7	5.0	2.5	2.5	6.7	201	54.6	89	98	77	0	0	7	3
BURNS	42	25	47	14	33	4	.1	-1.3	.1	.1	14	9.4	104	98	69	0	7	1	0
MEDFORD	53	36	63	31	45	6	.6	-1.3	.6	.6	66	14.8	86	97	68	0	2	3	0
PENDLETON	50	35	64	28	43	5	.1	-1.1	.1	.1	28	12.4	114	88	62	0	2	3	0
PORTLAND	54	44	61	40	49	7	2.4	1.0	1.1	2.6	148	28.8	89	98	75	0	0	5	2
SALEM	56	42	61	33	49	8	3.5	1.9	2.6	3.7	186	27.5	79	99	73	0	0	5	1
PA ALLENTOWN	32	16	42	7	24	-10	.1	-1.7	.1	.1	12	43.8	106	84	45	0	7	3	0
ERIE	31	19	42	14	25	-9	.2	-1.6	.2	.6	61	39.9	106	80	55	0	7	3	0
HARRISBURG	34	21	44	7	28	-8	.1	-1.6	.1	.1	15	45.5	123	75	45	0	7	1	0
PHILADELPHIA	37	23	49	18	30	-8	.4	-1.4	.4	.4	38	47.9	124	78	42	0	6	3	0
PITTSBURGH	31	18	45	12	24	-10	.3	-1.2	.2	.3	48	40.4	117	88	57	0	7	3	0
SCRANTON	30	14	42	7	22	-11	.1	-1.5	.0	.1	6	38.0	115	87	52	0	7	3	0
RI PROVIDENCE	34	14	47	12	24	-11	.1	-1.9	.1	.2	12	54.4	130	65	29	0	7	1	0
SC CHARLESTON	57	38	72	28	48	-4	2.4	1.7	1.7	2.4	291	53.0	108	78	50	0	2	3	2
COLUMBIA	56	34	74	22	45	-3	3.5	2.8	1.9	3.5	392	50.1	108	86	52	0	2	3	2
FLORENCE	54	34	71	20	44	-5	3.2	2.5	1.4	3.2	404	50.0	120	77	49	0	3	3	3
GREENVILLE	51	32	69	20	42	-4	2.4	1.5	1.4	2.4	217	48.1	100	76	47	0	4	3	2
SD ABERDEEN	31	11	43	-2	21	1	T	-1	T	T	21	18.4	106	93	69	0	7	1	0
HURON	35	13	46	-6	24	1	.2	0	.1	.2	100	14.5	80	90	65	0	7	2	0
RAPID CITY	48	25	60	16	37	8	.4	.3	.2	.4	307	13.2	84	90	49	0	5	4	0
SIOUX FALLS	35	13	50	-6	24	1	.2	0	.2	.2	77	15.7	67	89	57	0	6	2	0
TN CHATTANOOGA	51	32	68	19	41	-2	.9	-1.2	.4	.9	62	69.0	141	88	51	0	3	3	0
KNOXVILLE	48	32	67	17	40	-3	.5	-1.5	.4	.5	41	53.9	123	84	51	0	3	3	0
MEMPHIS	49	31	65	24	40	-5	.2	-1.9	.2	.2	17	57.1	119	80	47	0	4	2	0
NASHVILLE	46	28	70	17	37	-6	.3	-1.7	.2	.3	21	55.3	123	84	49	0	5	2	0
TX ABILENE	61	34	74	26	48	0	T	-2	T	.2	58	27.6	122	80	33	0	4	1	0
AMARILLO	56	27	70	19	41	1	.2	0	.2	.2	250	19.4	104	83	40	0	6	1	0
AUSTIN	65	39	81	30	52	-2	T	-1.5	T	.1	10	25.8	86	86	37	0	2	1	0
BEAUMONT	64	41	79	32	53	-3	2.8	1.7	2.1	2.8	195	65.8	127	92	46	0	1	3	2
BROWNSVILLE	66	48	79	35	57	-6	.5	-2	.3	1.4	444	20.9	86	93	55	0	0	3	0
CORPUS CHRISTI	65	48	81	32	56	-1	.1	-2	.1	1.5	448	18.8	63	95	49	0	1	1	0
DEL RIO	62	40	78	32	51	0	0	-1	0	.3	139	9.1	54	75	35	0	1	0	0
EL PASO	61	27	68	19	44	-2	0	-1	0	0	0	7.1	97	78	25	0	5	0	0
FORT WORTH	62	34	78	26	48	-2	T	-1.4	T	T	4	39.5	132	80	35	0	4	1	0
GALVESTON	61	47	72	37	54	-4	.4	-1.4	.3	.4	35	41.3	109	85	57	0	0	3	0
HOUSTON	63	40	77	28	52	-5	T	-1.8	T	T	3	56.5	130	88	44	0	1	1	0
LUBBOCK	59	28	72	22	44	0	.1	0	.1	.1	127	14.8	86	77	30	0	6	1	0
MIDLAND	61	29	74	22	45	-2	T	-1	T	T	29	8.0	61	79	29	0	5	0	0
SAN ANGELO	62	33	75	27	48	-2	T	-2	T	.1	53	17.5	100	89	30	0	4	0	0
SAN ANTONIO	63	38	77	28	50	-1	T	-1.3	T	.3	76	22.1	79	90	39	0	1	0	0
VICTORIA	63	44	77	34	54	-4	.3	-1.3	.3	.9	136	25.5	72	90	46	0	0	1	0
WACO	65	33	77	25	49	-2	.1	-1.4	.1	.1	14	28.0	95	82	34	0	4	1	0
WICHITA FALLS	59	31	73	23	45	-1	T	-1.3	T	T	3	36.4	142	78	34	0	4	1	0
UT CEDAR CITY	53	21	63	14	37	5	T	-2	T	T	0	6.4	65	83	29	0	6	0	0
SALT LAKE CITY	45	28	51	22	36	4	T	-1.3	T	T	5	10.6	75	92	54	0	6	2	0
VT BURLINGTON	22	0	35	-9	11	-16	.4	-2	.2	.4	53	35.1	110	84	47	0	7	3	0
VA NORFOLK	49	32	69	24	41	-5	2.5	1.8	1.5	2.5	291	56.1	132	73	44	0	3	2	2
RICHMOND	46	27	65	20	37	-5	1.2	.4	1.0	1.2	123	48.3	117	76	38	0	5	3	1
ROANOKE	46	31	67	20	38	-2	.8	-1	.8	.8	91	52.5	142	71	42	0	4	1	1
WA QUILLAYUTE	52	46	55	37	49	7	5.3	1.4	2.5	6.7	135	83.1	88	100	84	0	0	7	3
SEATTLE-TACOMA	53	46	57	39	49	7	3.1	1.7	1.5	4.1	228	34.1	101	98	83	0	0	5	2
SPOKANE	42	33	50	28	37	7	.8	-1.1	.1	.2	56	5.4	80	97	72	0	5	3	0
YAKIMA	45	31	52	27	38	5	.5	-1.1	.4	.8	122	13.9	94	99	82	0	4	3	0
WV BECKLEY	37	25	58	11	31	-5	.5	-1.1	.1	.2	56	5.4	80	97	72	0	5	3	0
CHARLESTON	43	30	64	20	36	-3	.3	-1.4	.2	.3	33	56.4	142	86	52	0	5	3	0
HUNTINGTON	41	29	62	20	35	-5	.4	-1.3	.4	.4	46	58.1	151	79	49	0	5	3	0
PARKERSBURG	36	24	51	14	30	-8	.3	-1.3	.2	.3	37	51.7	144	82	50	0	5	2	0
WI GREEN BAY	27	12	37	2	19	-5	T	-1.3	T	T	2	19.9	74	77	48	0	7	1	0
LACROSSE	32	12	50	2	22	-3	0	-1.3	0	T	0	22.5	77	80	45	0	7	0	0
MADISON	33	15	50	5	24	-2	0	-1.4	0	T	0	24.1	82	77	42	0	7	0	0
MILWAUKEE	31	15	41	10	23	-6	0	-1.5	0	T	7	30.1	103	76	47	0	7	0	0
WAUSAU	25	7	37	-3	16	-6	T	-1.3	T	T	0	22.2	72	83	57	0	7	0	0
WY CASPER	46	29	57	21	37	10	.1	0	.1	.1	57	13.5	125	77	39	0	5	3	0
CHEYENNE	48	25	57	17	36	3	.1	0	.1	.1	55	12.1	93	84	40	0	6	1	0
LANDER	45	23	55	16	34	9	.1	-1	.1	.1	41	15.2	120	83	38	0	7	1	0
SHERIDAN	46	21	59	8	34	7	.1	0	.1	.1	67	13.1	90	89	53	0	6	2	0



November Weather and Crop Summary

HIGHLIGHTS: Dry conditions prevailed from the central and southern Pacific coast to the middle Mississippi Valley. No precipitation fell over almost all of the hard red winter wheat in the parched central and southern Plains. Kansas City, MO, recorded the driest November ever with only a trace of rain. In contrast, heavy rain inundated the central Gulf coast, as New Orleans, LA, had their wettest November on record with 19.81 inches of which 13 inches fell from one storm early in the month. Near- to above-normal precipitation covered most of the northern tier of States as heavy lake effect snow blanketed the Great Lakes. The 47 inches at Sault Ste. Marie, MI, was their heaviest November snowfall. Unseasonable mild conditions covered the West and South during the month, while frequent blasts of arctic air kept the upper Mississippi Valley to New England abnormally cold. At mid-November, a strong cold front produced severe weather in the South and East, followed by a Thanksgiving Day storm which brought early season snow to the middle Atlantic Coast States. Tropical Storm Karen drenched western Cuba with torrential rain at month's end.

NOVEMBER 1-4: Showers brought substantial rain to the eastern seaboard and snow and light rain to the northern tier of States. Dry weather continued over much of the remainder of the Nation. Temperatures dropped below freezing into the middle Atlantic States at the end of the period.

NOVEMBER 5-11: Warm weather prevailed as temperatures averaged above normal across nearly the entire contiguous United States. At week's end, 27 cities reported record-high temperatures for the date from Oregon to Texas and North Carolina. In contrast, bitter polar air settled over central Alaska, where temperatures in Fairbanks, AK, averaged 27 degrees below normal and dropped to -42 degrees Fahrenheit. Early in the week, an upper level disturbance caused torrential rain along the central Gulf coast. Nearly 13 inches inundated New Orleans, LA, on Monday and Tuesday. The rains moved slowly northward into the Great Lakes and Northeast during the remainder of the week. With the exception of the northern Pacific coast, dry conditions again covered much of the western half of the Nation and the upper and middle Mississippi Valley.

NOVEMBER 12-18: Early in the week, warm and dry conditions prevailed across much of the Nation. Fifty-nine stations from the southern Rockies to the middle and southern Atlantic Coast reported record-high temperatures on either the 12th or 13th. At midweek, a strong frontal system brought bitter arctic air into the North Central States and heavy rain and severe weather from the Gulf Coast States into the Northeast. A number of tornadoes struck the Southeast and middle Atlantic Coast States. The system also left

heavy snow across the Great Lakes and northern portions of the eastern Corn Belt. Dry weather continued to plague the winter wheat regions in the central and southern Plains, as warm and dry conditions returned to most of the country at week's end.

NOVEMBER 26-30: A winter storm spread snow and gusty wind from the central Rockies, across the Great Lakes, and into New England. Heavy rain fell along the Gulf coast, and record-high temperatures were set from eastern Texas and the Southeast to the lower Great Lakes, preceding a cold front. Freezing temperatures dipped into central California on the 29th, as Bakersfield tied their 31-degree record for the date. At month's end, Karen, a rare, late-season tropical storm, drenched western Cuba with heavy rain, while snow showers persisted across the Great Lakes. Beneficial rain fell across portions of the southern Plains, but dry weather continued to plague most of the hard red winter wheat.

NOVEMBER 19-25: At the first of the week, a powerful storm system swept across the Great Lakes into the Northeast, bringing snow and damaging wind. Winds gusted to 87 MPH at Harrisburg, PA. On Wednesday, another storm system spread heavy rain from eastern Texas to the southern and middle Atlantic coast. On Thanksgiving Day, the system blanketed the Atlantic seaboard with 4-10 inches of snow from the Virginias to Maine. The 6.5 inches at Stratford, CT, was a record total for the month of November. The coldest air of the season plunged into the eastern half of the Nation behind the storm, as freezing temperatures penetrated into parts of northern Florida. Sixteen stations from the upper Mississippi Valley to the Northeast reported record-low temperatures on Friday, including 9 degrees F at Washington Dulles Airport; 6 degrees F at Providence, RI; 3 degrees F at Portland, ME; and -5 degrees F at Concord, NH. A Pacific storm spread rain across the West, with snow in the higher elevations at week's end. Unseasonably warm and dry weather again covered the hard red winter wheat in the central and southern Plains.

WINTER WHEAT PLANTING

At the beginning of November, planting was nearly complete except in California and the Southeast. Planting was 93% complete, 4 points ahead of normal on November 5. Crop condition was good to fair with 83% of the acres emerged. Rain was needed in the Great Plains to promote growth and emergence. By mid-November, winter wheat was mostly fair to good with 92% of the acres emerged, 4 points ahead of normal. Continued dry weather combined with high winds lowered crop condition in the Great Plains. Producers in the

(Continued to back cover)

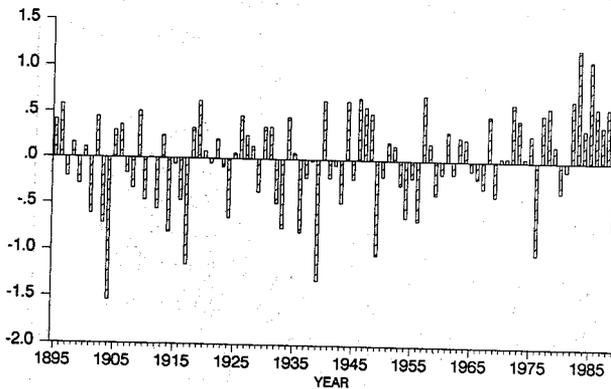
November in Historical Perspective

Preliminary data for November 1989 indicate that temperatures across the contiguous United States were above the long-term mean (fig. 1) and ranks as the 34th warmest November on record. The standard error of estimate of .26 degrees F is shown by the +. The standardized national precipitation ranks November 1989 as the ninth driest on record (fig. 2).

The temperature and precipitation rankings for November 1989 for the nine climatically homogeneous regions (fig.3) are listed in table 1. The Southwest region had the second driest November on record, while the West ranked thirteenth driest. Precipitation was generally in the dry rankings for most of the country, except for the Southeast. The East North Central had the twelfth coldest November, and the Northeast was 23rd coldest. Nationally, 1989 so far has been slightly warmer than the long-term mean and the coolest in the past 4 years (fig. 4).

Figure 2

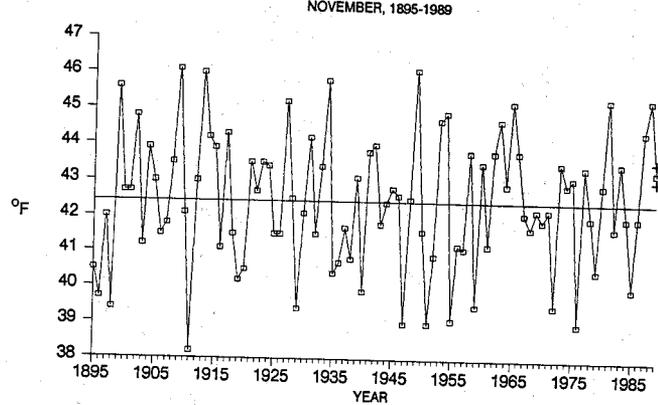
U.S. NATIONAL MEAN PRECIP INDEX
NOVEMBER, 1895-1989



National Climatic Data Center, NOAA

Figure 1

U.S. NATIONAL TEMPERATURE
NOVEMBER, 1895-1989



National Climatic Data Center, NOAA

Figure 3

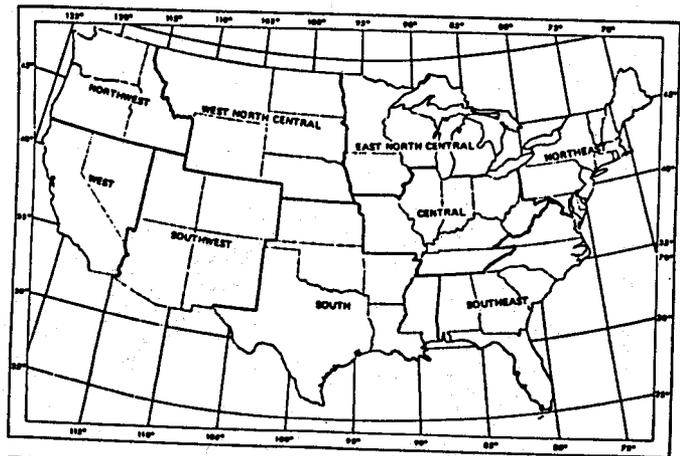
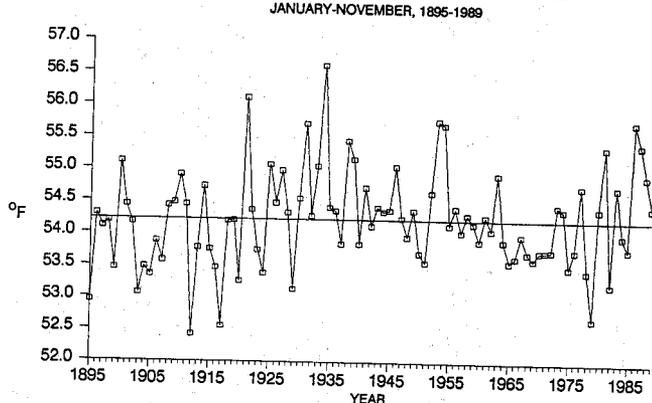


Figure 4

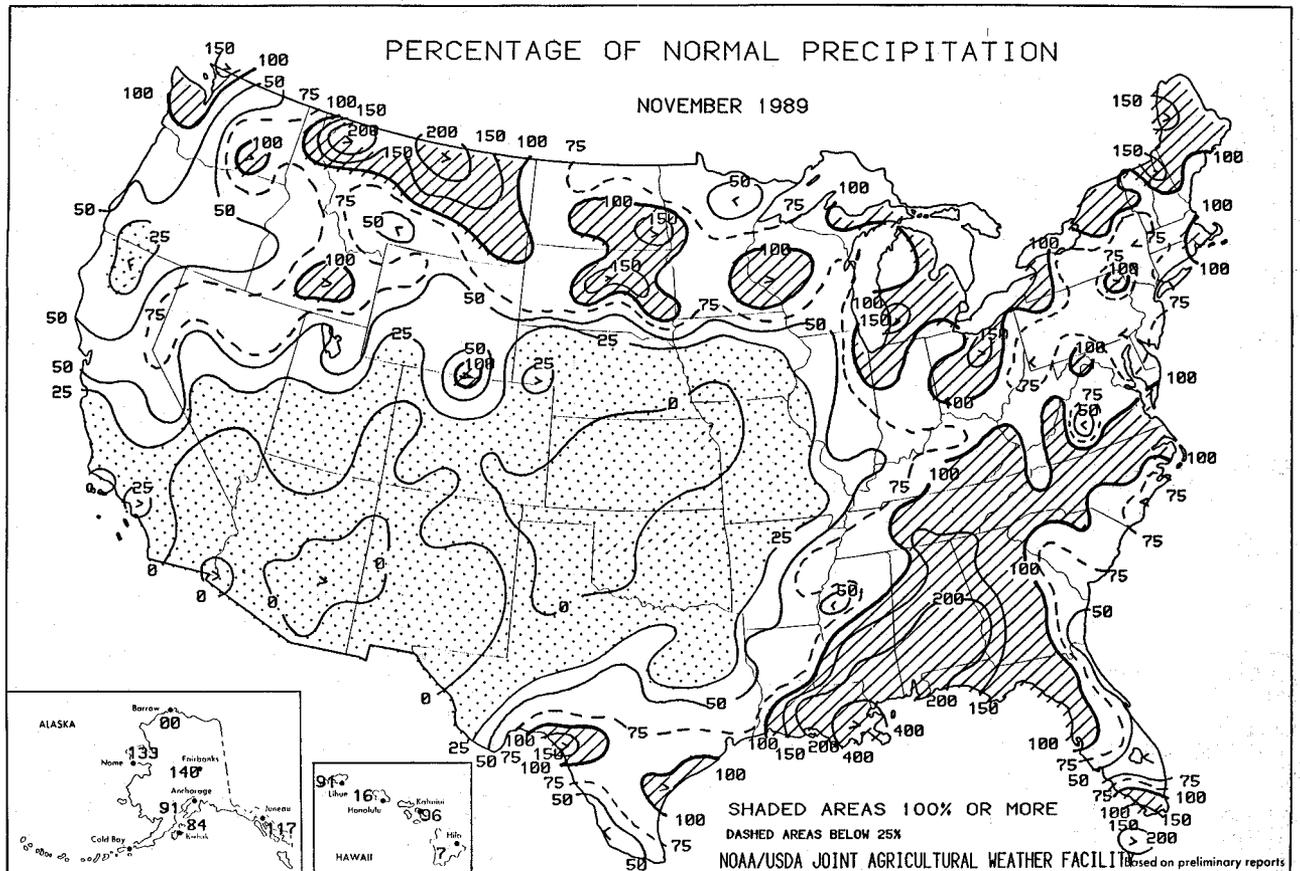
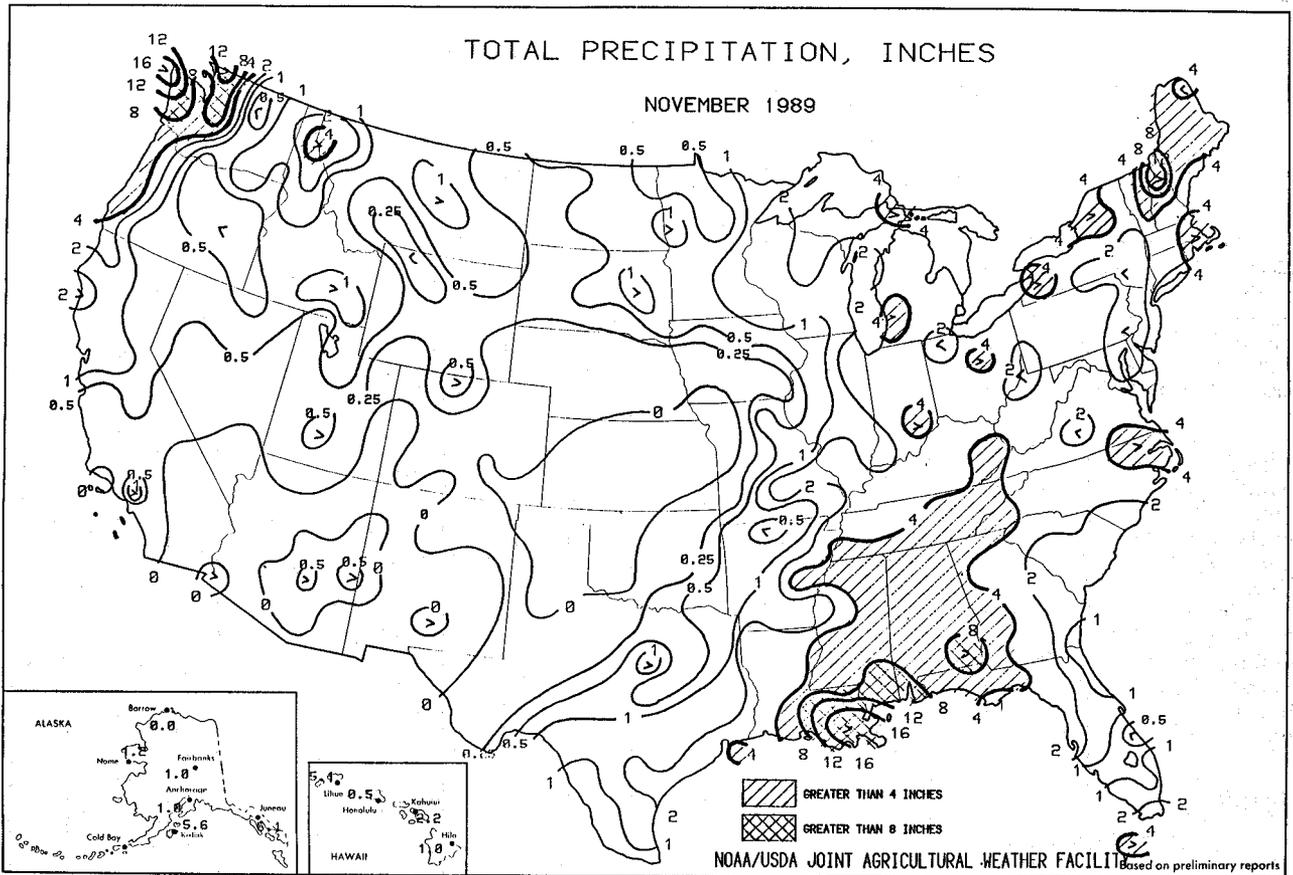
U.S. NATIONAL TEMPERATURE
JANUARY-NOVEMBER, 1895-1989

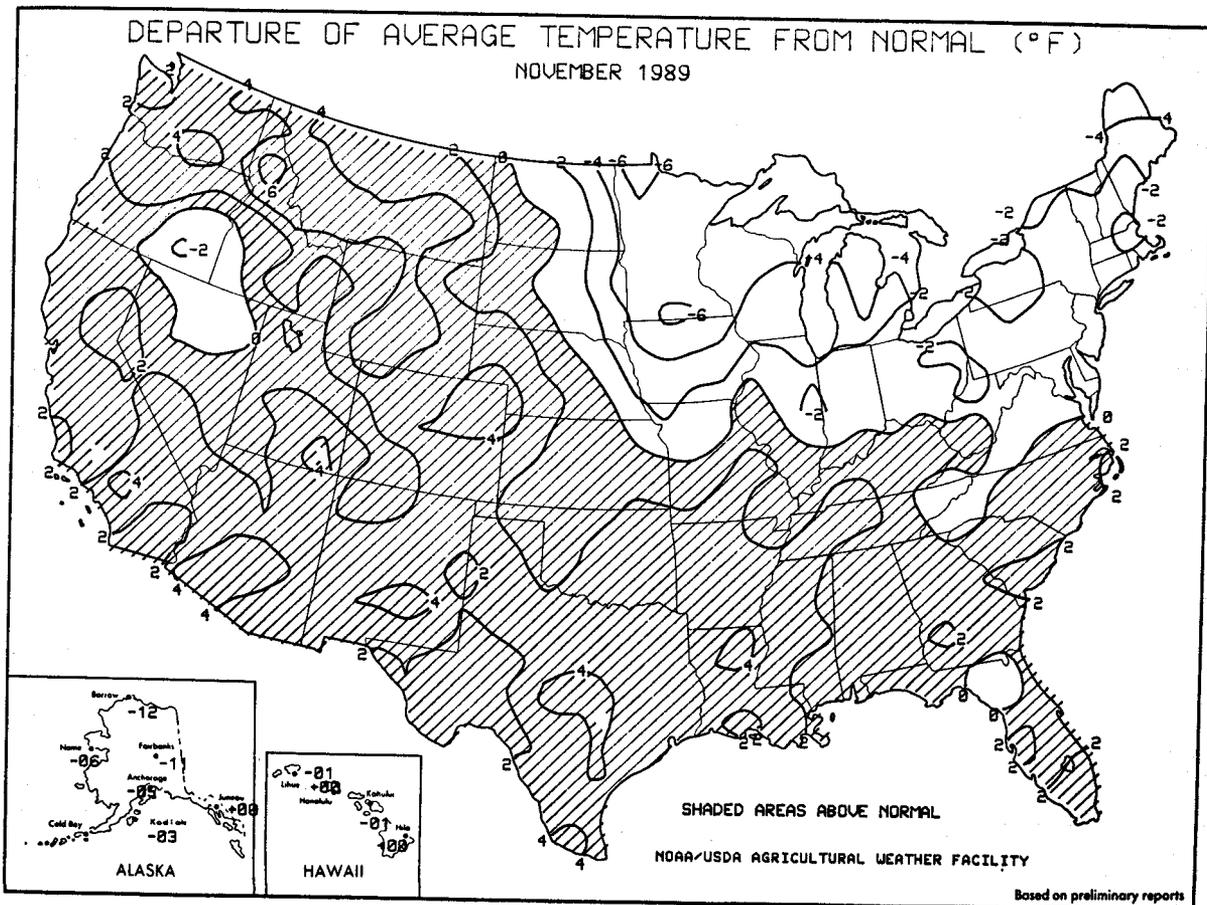
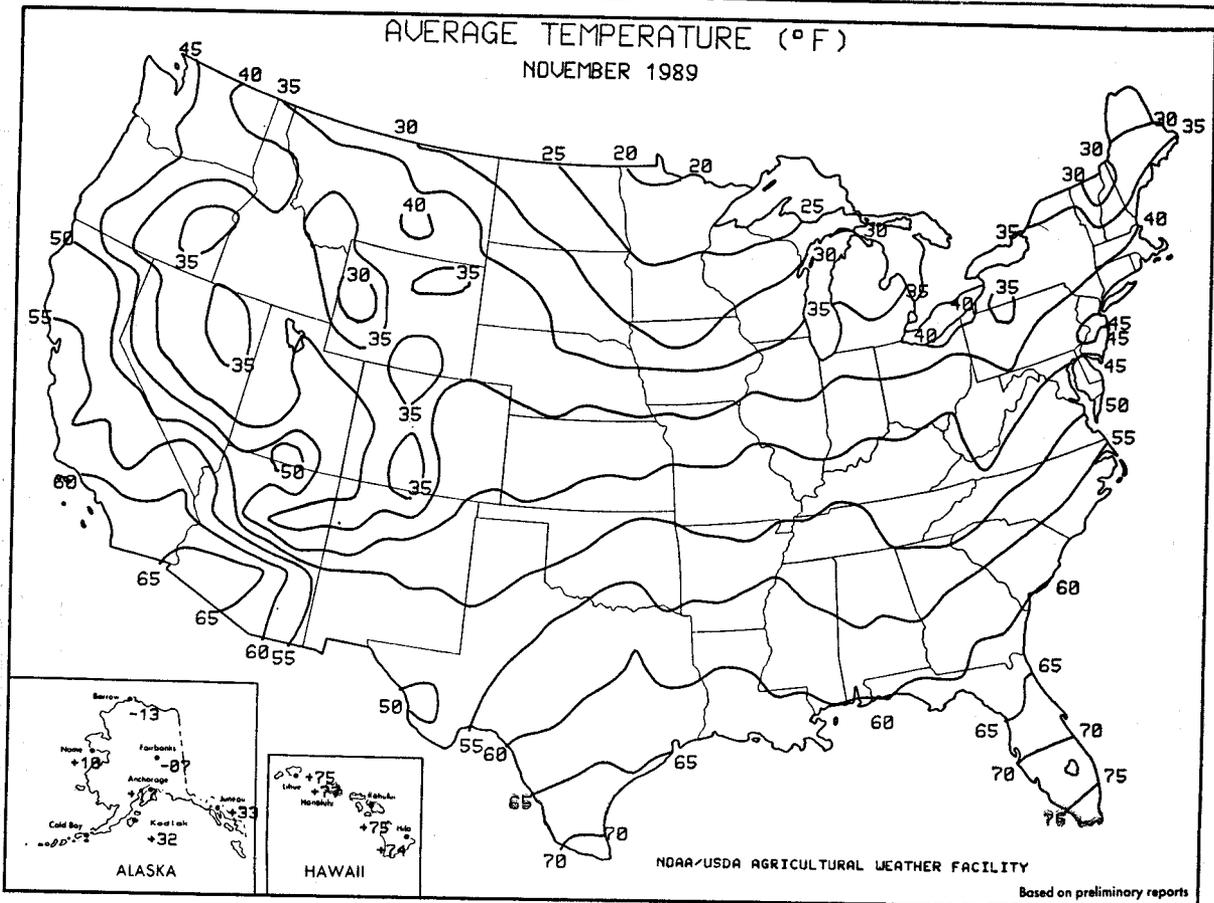


National Climatic Data Center, NOAA

TABLE 1. TEMPERATURE AND PRECIPITATION RANKINGS FOR NOV 1989, BASED ON THE PERIOD 1895-1989. 1 = DRIEST/COLDEST, 95 = WETTEST/HOTTEST.

REGION	PRECIPITATION	TEMPERATURE
NATIONAL	19	62
NORTHEAST	36	23
EAST NORTH CENTRAL	33	12
CENTRAL	25	49
SOUTHEAST	69	55
WEST NORTH CENTRAL	35	69
SOUTH	28	69
SOUTHWEST	2	78
NORTHWEST	31	70
WEST	13	60

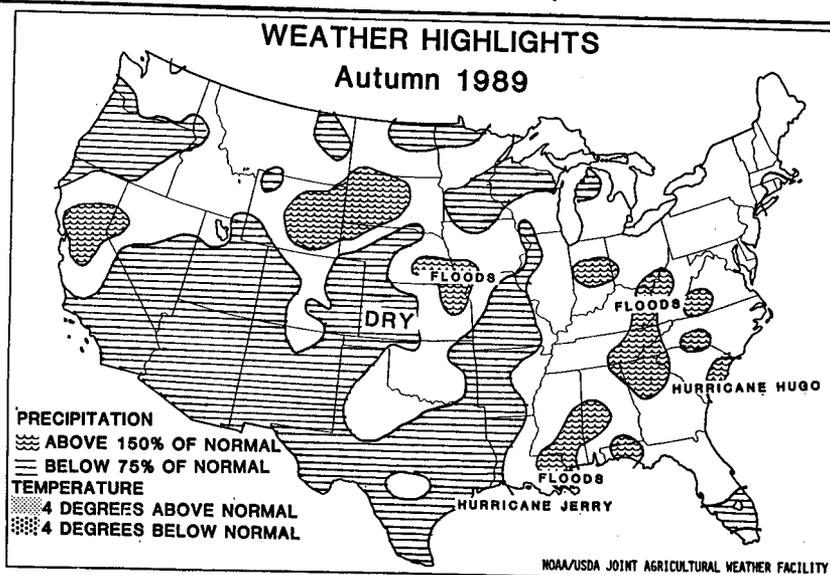




Temperature and Precipitation Data for November 1989

States and Stations	Temperature of		Precipitation Inches		States and Stations	Temperature of		Precipitation Inches		States and Stations	Temperature of		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
AL BIRMINGHAM	53	1	5.1	1.5	LA PADUCAH	49	2	2.6	-1.4	DAYTON	41	-1	3.7	1.0
HUNTSVILLE	51	0	6.8	2.6	ALEXANDRIA	61	4	1.8	-2.4	MANSFIELD	39	-2	4.4	1.2
MOBILE	59	0	11.3	7.7	BATON ROUGE	61	2	13.6	9.6	TOLEDO	38	-1	1.9	-0.5
MONTGOMERY	55	0	6.4	3.4	LAKE CHARLES	62	2	3.9	-0.3	YOUNGSTOWN	39	-1	2.5	-0.3
AK ANCHORAGE	18	-5	1.0	0.0	NEW ORLEANS	62	2	19.8	15.8	OK OKLAHOMA CITY	52	3	0.1	-1.4
BARROW	-13	-12	0.0	-0.3	SHREVEPORT	59	3	2.3	-1.4	TULSA	53	4	0.2	-2.4
FAIRBANKS	-7	-11	1.0	0.3	ME CARIBOU	27	-1	3.9	0.7	OR ASTORIA	49	2	6.7	-3.4
JUNEAU	33	0	6.2	1.0	PORTLAND	37	-1	4.0	-0.7	BURNS	34	-2	0.5	-0.7
KODIAK	32	-3	5.6	-0.2	MD BALTIMORE	45	-2	2.0	-1.1	EUGENE	47	2	5.0	-1.8
NOME	10	-6	1.2	0.3	SALISBURY	46	-1	2.6	-0.5	MEDFORD	43	-1	0.7	-2.2
AZ FLAGSTAFF	38	2	T	-1.7	MA BOSTON	43	-2	4.1	-0.1	PENDLETON	45	4	1.3	-0.2
PHOENIX	66	6	0.1	-0.4	CHATHAM	44	-1	4.6	0.1	PORTLAND	49	3	3.2	-2.0
PHRESCOTT	47	3	0.0	-1.3	MI ALPENA	30	-5	2.3	0.1	SALEM	48	3	3.1	-2.6
WINSLOW	44	1	T	-0.4	TROIT	38	-2	2.5	0.2	PA ALLENTOWN	42	-1	1.9	-1.8
TUCSON	62	3	0.1	-0.5	FLINT	36	-3	2.9	0.6	ERIE	41	-1	3.9	0.1
YUMA	68	4	T	-0.2	GRAND RAPIDS	36	-3	4.9	2.0	HARRISBURG	43	-1	2.2	-1.0
AR PORT SMITH	53	3	0.6	-2.9	HOUGHTON LAKE	30	-4	2.1	-0.2	PILADELPHIA	45	-1	1.8	-1.5
LITTLE ROCK	55	3	1.9	-2.5	LANSING	33	-6	3.7	1.3	PITTSBURGH	40	-1	1.6	-0.8
CA BAKERSFIELD	56	0	0.1	-0.6	MARQUETTE	24	-6	3.4	0.5	SCRANTON	40	-1	3.6	0.6
BISHOP	47	1	0.3	-0.2	MUSKOGEE	36	-3	2.9	0.1	WILLIAMSPORT	40	-1	2.1	-1.5
BUREKA	53	1	1.6	-4.3	SAULT ST. MARIE	28	-5	4.3	1.1	RI PROVIDENCE	42	-1	4.4	0.2
FRESNO	54	1	0.5	-0.7	MN ALEXANDRIA	23	-5	0.9	-0.3	SC CHARLESTON	60	4	1.9	-0.3
LOS ANGELES	65	4	0.4	-1.1	DULUTH	25	-5	1.0	-0.7	COLUMBIA	56	2	1.9	-0.7
REDDING	54	0	1.2	-4.4	INT'L FALLS	20	-5	1.0	-0.3	FLORENCE	56	1	1.9	-0.3
SACRAMENTO	54	1	1.4	-0.8	MINNEAPOLIS	28	-5	1.4	0.1	GREENVILLE	51	-1	3.8	0.6
SAN DIEGO	63	2	0.1	-0.9	ROCHESTER	27	-6	1.6	0.2	SD ABERDEEN	29	-1	0.7	0.1
SAN FRANCISCO	56	2	1.3	-1.0	ST. CLOUD	25	-5	1.0	0.3	HURON	31	-1	1.1	0.4
CO ALAMOS	31	2	0.0	-0.4	MS GREENWOOD	56	3	1.2	-3.4	RAPID CITY	37	-2	0.4	-0.1
CO. SPRINGS	42	4	T	-0.5	JACKSON	57	2	6.9	2.9	STIOUX FALLS	30	-3	0.9	0.0
DENVER	43	4	0.2	-0.7	MERIDIAN	56	2	6.0	2.5	TN BRISTOL	46	0	3.2	0.2
GRAND JUNCTION	41	1	T	-0.6	TUPELO	53	2	4.1	-0.6	CHATTAHOOGA	51	2	5.5	1.3
PUEBLO	42	2	T	-0.5	MO COLUMBIA	44	0	0.4	-1.8	KNOXVILLE	48	0	4.9	1.2
CT BRIDGEPORT	44	-2	3.3	-0.5	KANSAS CITY	42	-2	T	-1.6	MEMPHIS	54	3	3.7	-0.5
HARTFORD	41	-1	2.9	-1.1	SAINT LOUIS	47	2	0.6	-1.9	NASHVILLE	52	3	3.9	0.4
DC WASHINGTON	48	-1	2.4	-0.4	SPRINGFIELD	47	2	0.2	-2.7	TX ABILENE	56	3	0.2	-1.1
FL APALACHICOLA	62	1	3.9	1.1	MT BILLINGS	40	5	0.5	-0.3	AMARILLO	48	2	0.0	-0.6
DAYTONA BEACH	66	1	0.9	-1.7	GLASGOW	32	3	0.5	0.2	AUSTIN	63	4	1.3	-0.9
FT MYERS	72	2	0.5	0.3	GREAT FALLS	37	2	0.8	0.1	BEAUMONT	63	3	3.1	-1.1
JACKSONVILLE	62	1	0.5	-1.1	HAVRE	34	3	0.9	0.4	BROWNSVILLE	71	3	0.9	-0.5
KEY WEST	77	2	6.5	3.3	HELENA	37	5	0.3	-0.3	CORPUS CHRISTI	68	3	1.8	0.4
MIAMI	76	3	1.0	-1.7	KALISPELL	35	4	3.3	2.0	DEL RIO	60	1	1.3	0.5
ORLANDO	69	2	1.4	-0.4	MILES CITY	37	5	0.7	0.1	EL PASO	54	2	0.0	-0.3
TALLAHASSEE	59	1	4.6	1.3	MISSOULA	37	5	0.9	0.0	FORT WORTH	58	3	0.5	-1.6
TAMPA	69	2	2.1	0.2	NE GRAND ISLAND	39	1	T	-0.8	GALVESTON	66	3	2.8	-0.3
WEST PALM BEACH	74	2	1.2	-2.2	LINCOLN	38	-1	T	-1.0	HOUSTON	63	2	1.8	-1.8
GA ATHENS	53	1	3.5	0.2	NORFOLK	35	-1	0.1	-0.6	LAREDO	67	3	0.6	-0.6
ATLANTA	54	2	4.0	0.6	NORTH PLATTE	38	-3	T	-0.5	LUBBOCK	51	3	0.0	-0.6
AUGUSTA	56	2	1.3	-0.8	OMAHA	37	-3	T	-1.3	MIDLAND	54	1	T	-0.6
MACON	56	0	3.0	0.7	SCOTTSBLUFF	39	3	0.1	-0.5	SAN ANGELO	56	2	0.5	-0.5
SAVANNAH	59	2	1.3	-0.6	VALENTINE	35	1	0.1	-0.3	SAN ANTONIO	62	2	1.9	-0.4
HI HILO	74	0	1.0	-1.98	NV ELKO	33	-2	0.8	0.0	VICTORIA	65	2	1.9	-0.3
HONOLULU	77	0	0.5	-2.7	ELY	35	1	0.2	-0.4	WACO	60	3	0.3	-1.9
KAHULUI	75	-1	2.2	-0.1	LAS VEGAS	57	4	0.0	-0.4	WICHITA FALLS	55	3	T	-1.4
LIHUE	75	-1	5.1	-0.5	RENO	42	2	0.6	0.0	UT BLANDING	--	--	T	-0.9
ID BOISE	40	0	0.6	-0.7	WINNEMUCCA	38	0	0.8	0.0	CEDAR CITY	40	1	0.1	-0.8
LEWISTON	47	7	0.7	-0.5	NH CONCORD	36	-2	3.3	-0.3	SALT LAKE CITY	41	1	0.7	-0.5
POCATELLO	37	2	1.0	0.1	NJ ATLANTIC CITY	44	-2	2.9	-0.8	VT BURLINGTON	36	-1	2.4	-0.4
IL CAIRO	--	--	1.2	-2.8	NM ALBUQUERQUE	47	2	T	-0.4	VA LYNCHBURG	47	0	1.4	-1.5
CHICAGO	38	-3	2.2	0.0	CLOVIS	48	1	0.0	-0.4	NORFOLK	53	1	3.7	0.9
MOLINE	39	0	0.7	-1.2	ROSWELL	52	4	0.0	-0.3	RICHMOND	49	0	3.0	-0.3
PEORIA	40	0	0.9	-1.0	NY ALBANY	39	0	1.9	-1.1	ROANOKE	46	-1	3.9	1.3
QUINCY	42	0	0.4	-1.7	BINGHAMTON	36	-3	2.0	-1.1	WA COLVILLE	33	-1	1.4	-0.7
ROCKFORD	35	-2	0.9	-1.3	BUFFALO	38	-3	4.8	1.2	QUILLAYUTE	46	2	16.6	3.5
SPRINGFIELD	42	0	0.8	-1.1	NEW YORK	46	-1	2.5	-1.2	SEATTLE-TACOMA	47	2	6.1	0.6
IN EVANSVILLE	46	0	1.6	-1.7	ROCHESTER	38	-3	2.0	-0.6	SPOKANE	38	3	1.7	-0.4
FORT WAYNE	39	-1	2.1	-0.5	SYRACUSE	39	-2	2.8	-0.7	YAKIMA	42	4	0.7	-0.2
INDIANAPOLIS	41	-1	2.8	-0.2	NC ASHEVILLE	46	-1	4.3	1.2	WI BECKLEY	43	1	2.1	-0.8
SOUTH BEND	39	-2	3.6	0.8	CHARLOTTE	52	1	3.1	0.3	CHARLESTON	46	0	2.9	0.0
IA DES MOINES	36	-3	0.2	-1.3	GREENSBORO	49	0	2.9	0.4	ELKINS	40	-1	2.5	-0.2
DUBUQUE	34	-2	0.8	-1.7	HATTERAS	59	3	5.2	0.4	HUNTINGTON	46	0	2.4	-0.4
SIoux CITY	33	-3	0.2	-0.7	NEW BERN	56	1	1.3	-1.8	PARKERSBURG	43	-2	1.4	-1.0
WATERLOO	32	-4	0.5	-1.1	RALEIGH	51	1	3.9	1.1	GREEN BAY	31	-3	1.3	-0.5
KS CONCORDIA	43	1	T	-1.1	WILMINGTON	57	1	1.9	-1.3	LACROSSE	31	-4	1.5	0.0
DODGE CITY	44	2	T	-0.7	ND BISMARCK	29	0	0.6	0.2	MADISON	33	-2	1.0	-0.8
GOODLAND	42	4	0.1	-0.5	FARGO	24	-4	1.2	0.4	MILWAUKEE	35	-2	1.9	-0.1
TOPEKA	42	0	T	-1.8	GRAND FORKS	22	-4	0.4	-0.4	WAUSAU	28	-4	2.2	0.4
WICHITA	45	1	T	-1.5	WILLISTON	29	1	0.4	0.0	WY CASPER	37	5	0.3	-0.3
KY BOWLING GREEN	49	2	3.2	-0.7	OH AKRON-CANTON	39	-2	2.5	0.0	CHEYENNE	39	4	0.1	-0.4
JACKSON	47	4	4.3	1.1	CINCINNATI	44	0	3.1	-0.1	LANDER	35	4	0.3	-0.4
LEXINGTON	45	0	2.4	-0.9	CLEVELAND	41	-1	3.6	0.9	SHERIDAN	36	4	0.6	-0.2
LOUISVILLE	47	1	2.6	-0.9	COLUMBUS	42	0	2.7	0.0	PR SAN JUAN	80	0	2.0	-4.1

Based on 1951-80 normals.



Autumn Weather Review

September - November 1989

HIGHLIGHTS: Dry conditions covered much of the western two-thirds of the Nation, while the eastern third was abnormally wet. After torrential rains inundated portions of the Missouri Valley and southern Plains during the first half of September, most of the Great Plains and Western Mississippi Valley were extremely dry. No rain fell over the hard red winter wheat in the central and southern Plains during the latter part of the season. Although temperatures generally averaged near normal, frequent frontal systems brought blasts of arctic air into much of the Nation.

Massive Hurricane Hugo devastated South Carolina in mid-September, while Hurricane Jerry struck Galveston, TX, in mid-October. A powerful cold front in mid-November brought severe weather and tornadoes to the Southeast and middle Atlantic Coast States. An early winter storm blanketed the Ohio Valley with snow in mid-October, while a Thanksgiving Day storm spread snow up the middle eastern seaboard.

SEPTEMBER: Hurricane Hugo raged across South Carolina during the middle of the month, with heavy rain and high wind causing widespread damage. Hugo had previously devastated parts of Puerto Rico and the Virgin Islands. Rains from Hugo and showers and thunderstorms throughout the month kept the Southeast and Atlantic Coast States wet. Flooding resulted from torrential rain in the middle and lower Missouri Valley at the first of the month. Heavy rain fell over much of the Corn Belt and central and southern Plains during the first half of the month, while dry conditions prevailed during the latter half. Early season rain, largely moisture from the remnants of Pacific Hurricane Octave, brought unseasonably wet weather to California. A number of frontal systems pushed across the eastern two-thirds of the Nation. Cold air spilled in behind the system, keeping the Central States abnormally cool with freezing temperatures dipping into the northern Corn Belt.

OCTOBER: Harvest weather prevailed over the Great Plains, Corn Belt, and Delta, while above-normal precipitation covered much of the East. A large

portion of the country from the northern and central Rockies to the Appalachians experienced alternating periods of record-warm and cold conditions throughout the month. Above-normal temperatures generally persisted over the southern Plains and along the Atlantic seaboard. Early in the month, moisture from the remnants of Pacific Hurricane Raymond caused unseasonable rain in the Southwest and contributed to substantial rain from the southern High Plains to the middle Mississippi Valley. Torrential rain also fell along Florida's Atlantic coast. At mid-October, Hurricane Jerry smashed into Galveston, TX, and subsequently, moisture from the remains brought heavy rain along the central Gulf coast and into the upper Ohio Valley. Also during mid-October, unusual early heavy snow blanketed the eastern Corn Belt. Late in the month, scattered showers and thunderstorms brought needed moisture into the Great Plains and western Corn Belt, while Pacific storms caused early season rain in California. Cold arctic air plunged into the North Central States at month's end.

NOVEMBER: Dry conditions prevailed from the central and southern Pacific coast to the middle Mississippi Valley. No precipitation fell over almost all of the hard red winter wheat in the parched central and southern Plains. Kansas City, MO, recorded the driest November ever with only a trace of rain. In contrast, heavy rain inundated the central Gulf coast as New Orleans, LA, had their wettest November on record with 19.81 inches of which 13 inches fell from one storm early in the month. Near- to above-normal precipitation covered most of the northern tier of States as heavy lake effect snow blanketed the Great Lakes. The 47 inches at Sault Ste. Marie, MI, was their heaviest November snowfall. Unseasonable mild conditions covered the West and South during the month, while frequent blasts of arctic air kept the upper Mississippi Valley to New England abnormally cold. At mid-November, a strong cold front produced severe weather in the South and East, followed by a Thanksgiving Day storm which brought early season snow to the middle Atlantic Coast States. Tropical Storm Karen drenched western Cuba with torrential rain at month's end.

Autumn in Historical Perspective

Preliminary data for autumn 1989 indicate that temperature averaged across the contiguous United States was near the long-term mean (fig. 1), ranking as the 41st warmest. Autumns after the mid-1960's have been predominantly near or cooler than the long-term mean compared to autumns prior to the mid-1960's. Historical precipitation is shown in figure 2 and ranks autumn 1989 as the 28th driest on record.

Central to warm in the Southwest. Conditions were especially extreme in the Southwest, where autumn 1989 ranked as the fourth driest and sixth hottest on record. Autumn precipitation in six States (Arizona, Colorado, Missouri, Oregon, Texas, and Utah) ranked among the 10th driest. (table 2).

The temperature and precipitation rankings for the nine climatically homogeneous regions in the United States are listed in table 1. Wet conditions prevailed in the Northeast and Southeast and dry conditions most everywhere else. Seasonal temperatures ranged from cold in the East North

Although dryness along the Pacific Coast States has not been extreme this autumn, 1989 is the latest in a string with precipitation below the long-term mean. The Northwest has now had three consecutive dry autumns (fig. 3) following several years (1981-86) with wet autumns. The West has had four comparatively dry autumns (fig. 4) following several years (1981-1985) with unusually wet autumns.

Figure 1
U.S. NATIONAL TEMPERATURE
AUTUMN, 1895-1989

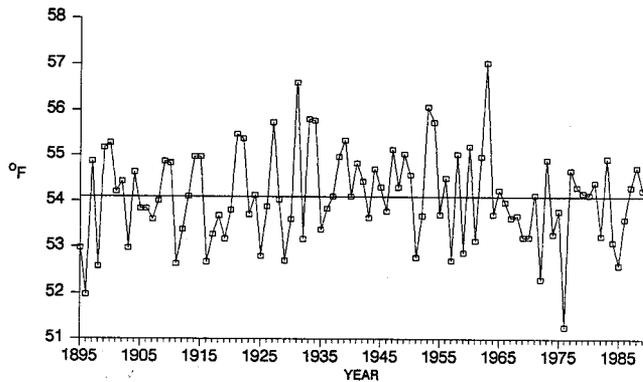


Table 1. Temperature and Precipitation Rankings for Autumn 1989, based on the period 1895-1989. 1 = driest/coldest, 95 = wettest/hottest.

Region	Precipitation	Temperature
National	26	55
Northeast	77	39
East North Central	25	20
Central	42	32
Southeast	78	47
West North Central	39	63
South	22	36
Southwest	4	80
Northwest	26	66
West	33	58

Figure 2
U.S. NATIONAL MEAN PRECIP INDEX
AUTUMN, 1895-1989

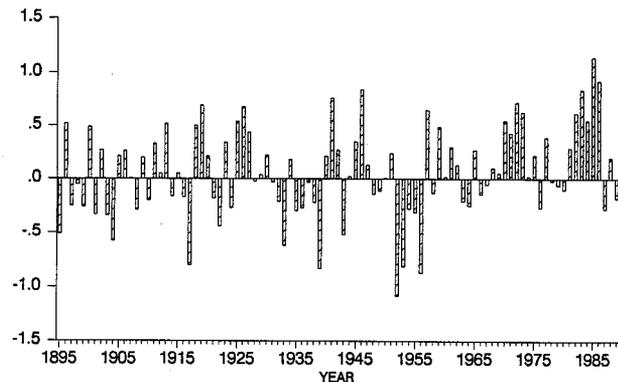


Table 2. Precipitation Rankings for Autumn 1989, based on the period 1895 to 1989. 1 = driest, 95 = wettest.

State	Rank	State	Rank	State	Rank	State	Rank
AL	85	IA	37	NE	36	RI	63
AZ	12	KS	27	NV	38	SC	83
AR	7	KY	76	NH	59	SD	73
CA	37	LA	41	NJ	83	TN	78
CO	5	ME	41	NM	14	TX	4
CT	83	MD	71	NY	85	UT	7
DE	74	MA	58	NC	84	VT	73
FL	34	MI	30	ND	24	VA	80
GA	69	MN	24	OH	56	WA	29
ID	43	MS	74	OK	35	WV	81
IL	39	MO	5	OR	10	WI	16
IN	63	MT	33	PA	67	WY	52

Figure 3
NORTHWEST REGION PRECIPITATION
AUTUMN, 1895-1989

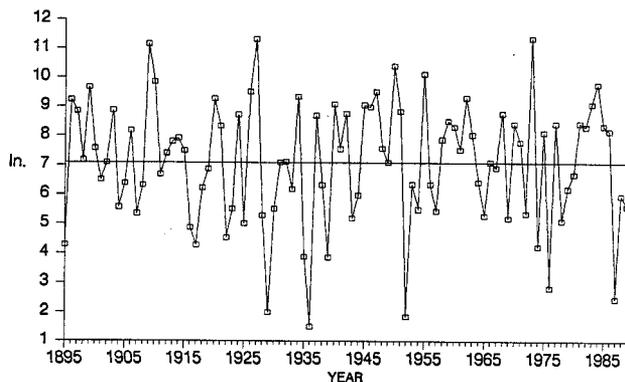
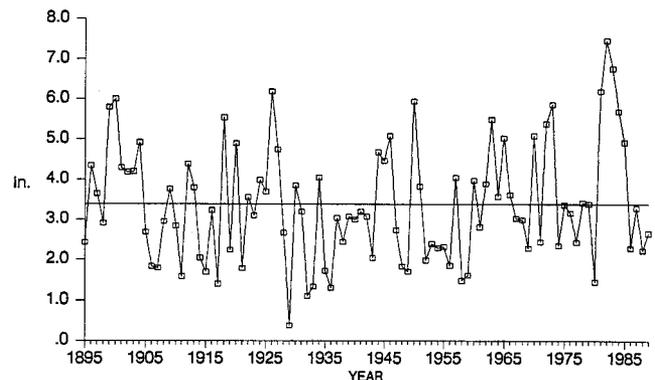
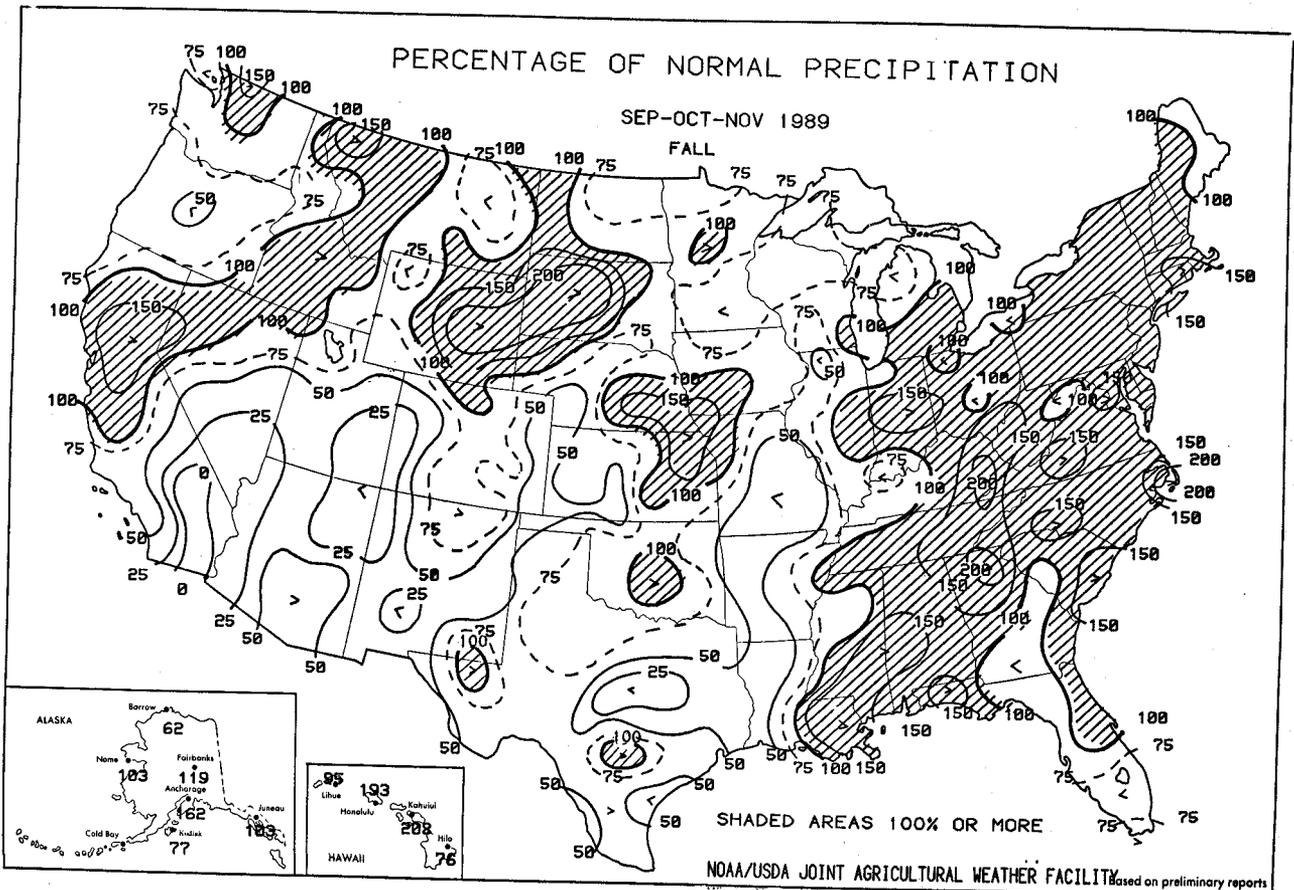
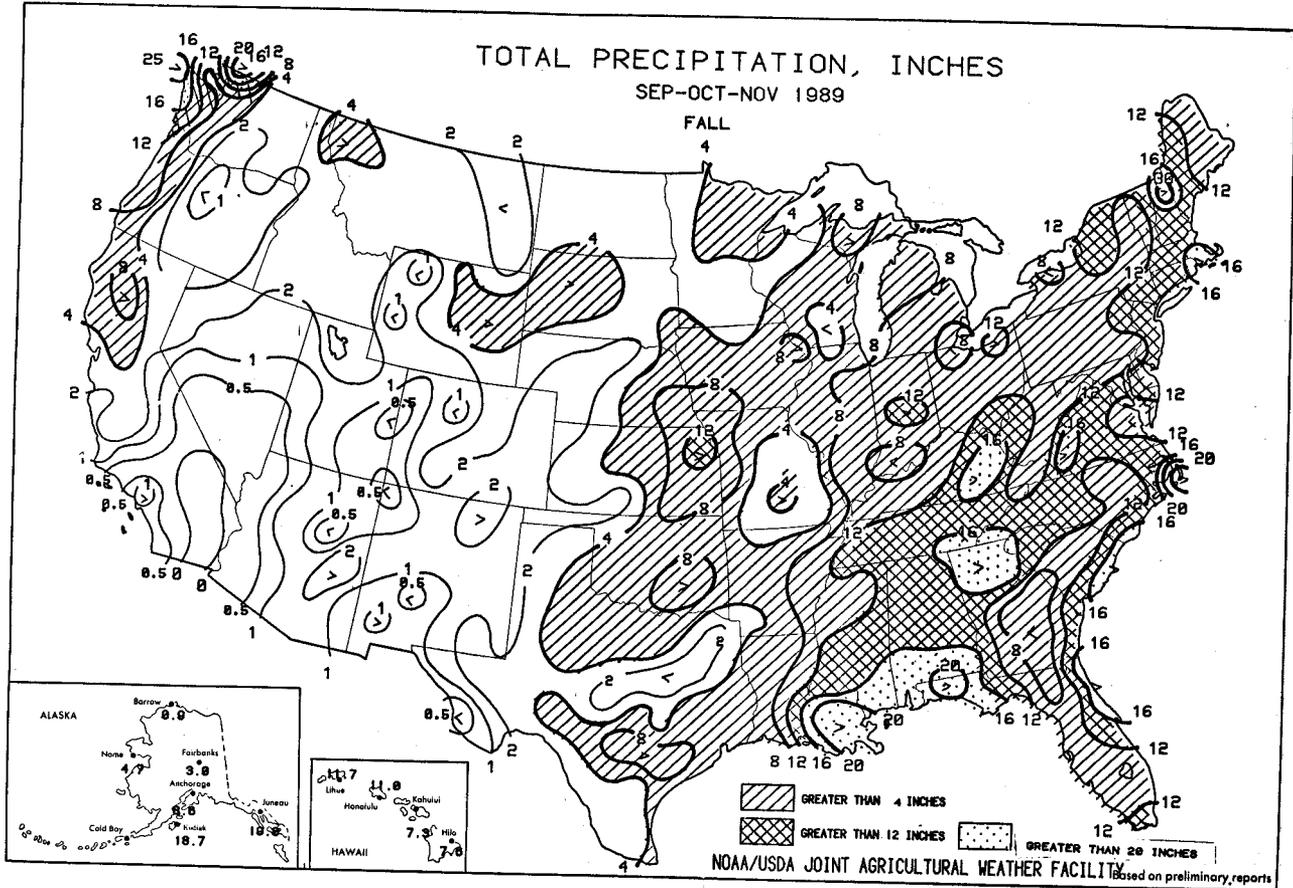
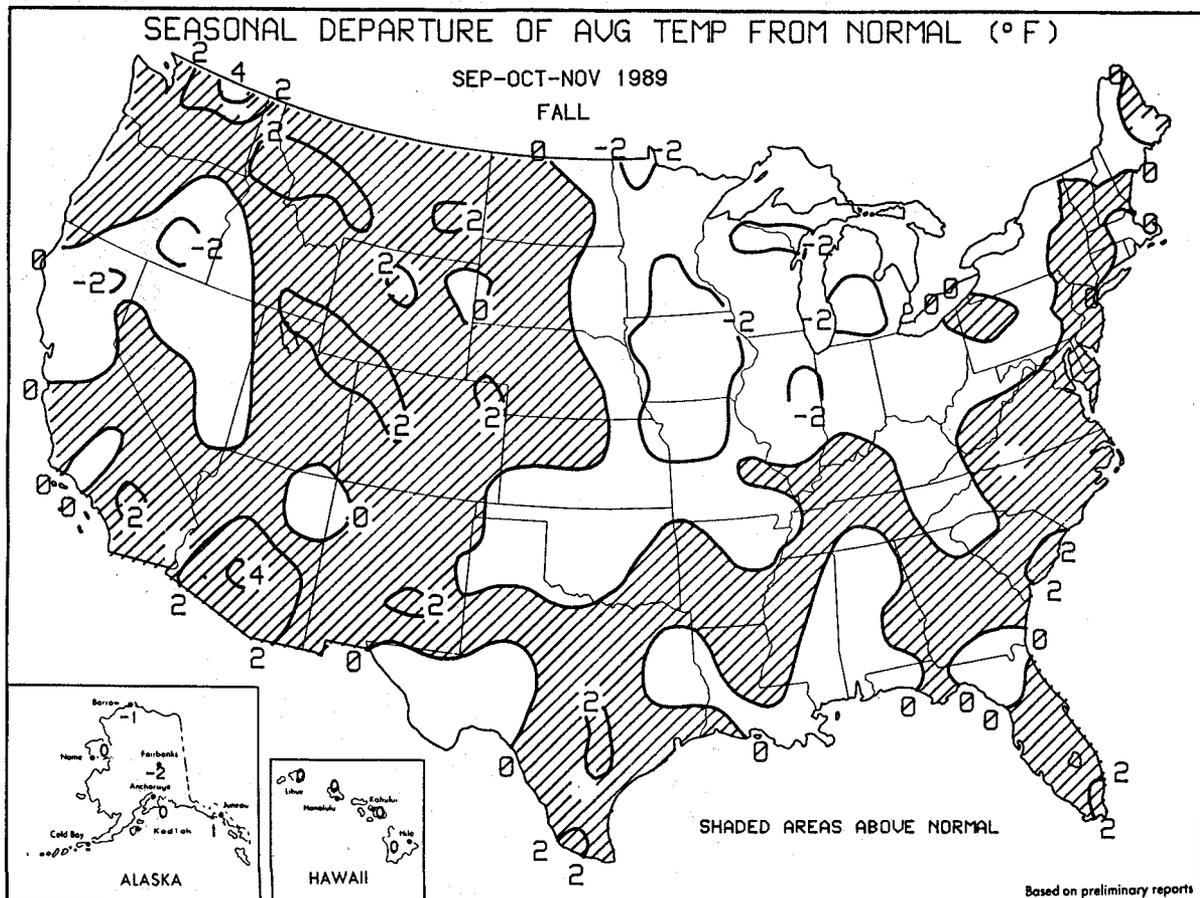
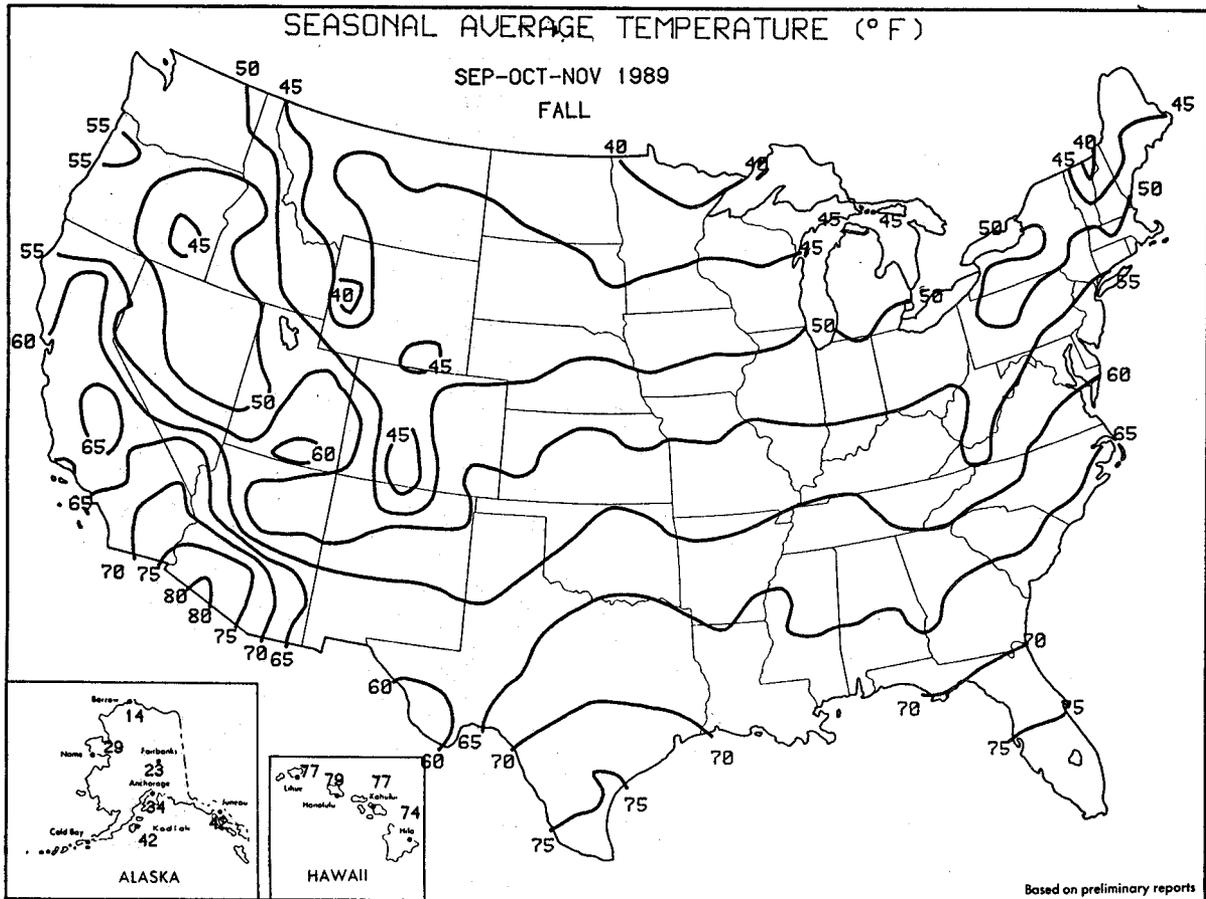


Figure 4
WEST REGION PRECIPITATION
AUTUMN, 1895-1989







National Agricultural Summary

December 4-10, 1989

HIGHLIGHTS: Soil moisture remained short in the **Great Plains**. Some snow was received in the **central and northern Great Plains**, but additional moisture was needed. Rain slowed remaining crop harvests in portions of the **Delta** and **Southeast**, where soil moisture was adequate to surplus. Soil moisture was short to adequate in the **West**.

SMALL GRAINS: Winter wheat planting continued in the Southeast, Arizona, and California. In California, planting progressed rapidly. Earlier planted dryland fields needed rain. Crop condition was fair to good. Russian wheat aphids were present in some areas. In Oregon, emergence was spotty in the drier areas of the Columbia Basin. Condition was fair to good in Oregon and good to fair in Washington. The Great Plains remained dry. Snow provided some needed moisture and reduced insect activity in the central and northern Great Plains. In Montana, winter wheat was good to fair. Wind damage was light. In Nebraska, dry fall weather has left winter wheat in poor condition upon entering dormancy. Some replanting occurred in the Blacklands area of Texas. In the Corn Belt, crop condition was good. In North Carolina, planting was 88 percent (%) complete, 2 percentage points behind the 5-year average. Crop condition was good to fair.

CORN: Corn harvest was nearing completion in the eastern Corn Belt. Harvest was nearly complete in Indiana and reached 93% completion in Pennsylvania.

SOYBEANS: Soybean harvest continued in portions of the Delta and Southeast. In South Carolina, harvest was 83% complete, 6 points ahead of normal. Rain and wet fields slowed Georgia's harvest. Mississippi's harvest was 97% complete, 5 points ahead of normal.

COTTON: In Texas, cotton harvest progressed well but was slowed by rain late in the week. Harvest was 95% complete, 24 points ahead of normal. Harvest continued in southern California. Arizona's harvest was nearly complete. Mississippi's harvest was 97% complete, 5 points ahead of normal. Arkansas' harvest was complete. Cotton harvest continued in the Southeast.

OTHER FIELD CROPS: In Texas, peanut harvest was 91% complete, equal to the average. Wet conditions slowed harvest in the central and southern areas. Sorghum harvest was nearly complete in the Plains of Texas. Sugar beet harvest continued in central California. In Florida, sugarcane harvest was active. Muddy fields slowed sugarcane harvest in Louisiana.

FRUIT AND NUTS: Florida's citrus trees were in good condition. Harvest of oranges for processing was active. Pecan harvest continued in most of the Delta. Georgia's pecan harvest was 88% complete, 6 points ahead of normal. In Texas, pecan harvest was 74% complete, 2 points behind normal. Rain slowed citrus harvest in the Rio Grande Valley. Harvest and packing of lemons, oranges, grapefruit, and tangerines continued in central and western Arizona. Pecan harvest continued in eastern Arizona. In California, Deglet Noor date harvest was nearly complete in the Riverside area. Grapefruit, tangerine, and lemon harvests continued in the desert area.

VEGETABLES: Vegetable harvests were active in Florida. Tomato harvest began in the Homestead area. Rain slowed vegetable harvests in the Rio Grande Valley, Texas. In California, broccoli supplies were light to moderate and of good quality. Cauliflower supplies were light and of variable quality in the central coast area. Plantings of garlic, onions, and spring lettuce were ongoing. Potato and onion packing continued in Oregon.

PASTURES AND LIVESTOCK: Pastures were good to fair in the South. Livestock was in mostly good condition. Varying temperatures caused some respiratory problems for livestock in Iowa. In California, stockwater supplies were below normal in most areas.

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 1.00 in.; 2.00 to 4.00 in. central, south. Temperatures 1 to 3° below normal.

Days suitable for fieldwork 4.6. Soil moisture 58% adequate, 42% surplus. Cotton 98% harvested, 99% 1988, 99% avg. Soybeans 96% harvested, 93% 1988, 94% avg. Winter wheat 85% seeded, 93% 1988, 90% avg. Livestock, pastures mostly good. Primary activities: Harvesting cotton, soybeans, pecans; seeding winter annuals; soil testing; turning harvested cropland; shredding cotton stalks; repairing, storing harvest equipment; general care of livestock, poultry.

ARIZONA: Sunny, mild days; clear, cool nights; fourth week out of last 5 with no precipitation; temperatures normal to 6° above normal. Extremes 11°; 80°.

Cotton harvest 98%; 96% 1988, avg.; stalk shredding, plow down continued. Wheat, barley planting progressed normally; 52% seeded, 35% stands established; 47% seeded 1988, 33% avg.; 24% established 1988, 9% avg. Good to excellent except extreme southeast, fair. Alfalfa crop good west, fair elsewhere; sheepling off increased west; new stands growing well. Harvest, packing lemons, oranges, grapefruit, tangerines continued west, central; groves in good condition. Fall lettuce harvest continued Aguila, Scottsdale, Marana Eloy, Parker Poston areas; mixed vegetable harvests continued west, central. Apple packing slowing, pecan harvest continued east.

ARKANSAS: Wet, cool week. Up to 4.00 in. snow northwest. Extremes 11°; 79°. Rainfall 0.04 to 1.31 in.

Cotton, soybean harvest complete. Wheat condition good. Dry conditions northwest, north central. Land preparation ahead of schedule. Pecan harvest continued, yields fair. Pastures fair to good. Hay supply good. Livestock good.

CALIFORNIA: High pressure dominated State throughout week, caused dry conditions generally above normal temperatures. Southern areas experienced Santa Ana wind conditions, had much above normal temperatures through most of week. 6th, weak frontal system brushed extreme northern area, bringing precipitation to Oregon border area, north coast.

Clear weather all week, good progress field activities. Seeding small grains rapid pace. Earlier seeded dryland needed rain, heavy dew maintained fair to good. Broadleaf weed controls emerged fields. Russian wheat aphid appeared four new counties; colonies also appeared volunteer wheat, some movement to seeded fields. Cotton harvest progressed southern areas. New alfalfa seeded. Alfalfa harvest ongoing south central, southern. Corn harvest continued southern. Sugarbeet harvest continued central. Normal cultural practices continued in stone fruit, nut orchards. Pruning, floor clean up, herbicide spraying, fertilizer application principal activities. Deglet Noor date harvest winding down, Riverside. Vineyards pruned, fertilized, irrigated. Avocado harvest slow. Desert grapefruit, tangerine, lemon harvests continued. Navel oranges progressed, showing better color. Satsuma mandarins, lemons harvested, packed. Broccoli light to moderate supply, generally good quality. Desert broccoli harvest slow. Cauliflower light supply, variable

quality, central coast. Celery moderate supply, generally good quality. Head lettuce light supply. Planting of garlic, onions, spring crop lettuce ongoing. Livestock good condition, Statewide. Range, pasture conditions dry, water supplies below normal most areas due minimal precipitation. Movement to winter ranges, feedlots active. Supplemental feeding continued.

COLORADO: Warm, dry week across State. Weak cold front moved across the State after mid week producing some precipitation. Precipitation was generally restricted to the Arkansas River basin with the Rio Grande, Colorado Basins receiving no precipitation at all. Continued warm, dry statewide until after mid week. Some light precipitation over Arkansas River Basin, none elsewhere. Temperatures above normal statewide with weekly means 2 to 9° above normal.

Feed, care of livestock is the major farm activities. Wheat condition holding, still needs moisture.

FLORIDA: Temperatures 1 to 6° below normal north, 1 to 5° below central, south. Extreme highs mid to upper 70s north to low 80s central, mid 80s south. Coldest lows mid 20s Panhandle, Big Bend to low, mid 30s interior areas central, southern Peninsula. Almost all areas recorded rain, between 1.00 to 2.00 in. Panhandle, Big Bend, central Peninsula. Elsewhere, amounts generally under 0.50 in.

Soil moisture Panhandle mostly adequate, Peninsula short to adequate. Limited soybeans remain for harvest. Sugarcane harvest active. Winter wheat planting active, where soil moisture sufficient. Warm weather pastures, Panhandle, northern Peninsula declined seasonally; most winter pastures good, few very poor due to extreme dryness. Frost browned some west coast central Peninsula pastures. Central Peninsula grazing variable, from very poor to fair. Southern Peninsula pastures fair to good. Cattle fair to good. Citrus trees good. Varying rainfall, cooler temperatures beneficial. Harvest active, increasing for processing oranges, holiday fresh usage for Navels, tangerines, tangelos. Cool, dry weather prevailed over major vegetable producing areas, most of week. Weekend rainfall plentiful, generally welcomed. Planting, harvest active. Volume leaders: Tomatoes, peppers, cucumbers, squash, snap beans, celery, radishes. Also available: Sweet corn, cabbage, eggplant, lettuce, escarole, carrots, strawberries. First homestead tomatoes harvested.

GEORGIA: Wet week, over 1.00 in. rain most areas. Over 2.00 in. several areas with local totals 5.00 in. Snow northern area late 8th, early 9th. Temperatures about normal north, 2 to 5° below central, south. Warmest mid 60s north, mid and upper 70s south. Coldest mid 20s to mid 30s.

Days suitable for fieldwork 4.7. Soil moisture 15% short, 64% adequate, 21% surplus. Cotton 97% harvested, 95% 1988, 94% avg. Sorghum harvest virtually complete. Soybeans 16% poor, 50% fair, 28% good, 6% excellent; 94% harvested, 94% 1988, 87% avg. Harvest very active, slowed by rain, wet fields some areas. Wheat 8% fair, 92% good; 80% planted, 88% 1988, 84% avg.; 52% emerged, 66% 1988, 67% avg. Seeding active. Planting of rye,

other small grains slowed by weather, farmers concentrating on late row crop harvest, planting wheat. Pecans 21% poor, 56% fair, 22% good; 88% harvested, 80% 1988, 82% avg. Pastures mostly good. Livestock good. Other activities spreading lime, planting onions, winter tillage operations.

HAWAII: High pressure ridge maintained favorable weather over island. Frontal system brought heavy rains 9th, clearing with gusty winds 10th. Mostly warm, dry days with cool, damp nights favored crop growth. Winds 5 to 15 mph most of week, becoming gusty to 40 mph weekend. Temperatures low 60s to upper 80s. Rainfall 0.03 to 4.03 in.

Days suitable for farm work 7.0. Sugar harvesting suspended some island for normal annual mill cleaning. Pineapple picking still continuous. Winds caused some damage to banana, papaya orchards.

IDAHO: Temperatures 5 to 10° above normal around the State. Precipitation was above normal north to below normal in the south.

Very little fieldwork. Heavy rains, some flooding in north. Milder temperatures in south, east. Farm activities: Shopwork, cleaning sheds, feeding livestock. Some early lambing, calving in north. Livestock good condition, partial or full feed on most operations. Mostly adequate supplies hay, roughage.

ILLINOIS: Temperatures normal to 3° below normal across State. Light precipitation central, virtually none elsewhere.

Wheat condition mostly good. Livestock good.

INDIANA: Temperatures 1 to 3° below normal. Lows upper teens to mid 20s, highs mid 30s to low 40s. Precipitation up to 0.25 in.

Corn, soybean harvest winding up. Other activities: Plowing, disking, chiseling, spreading fertilizer, moving grain, cleaning, digging ditches, farm machinery repair, hauling manure, processing tobacco, care of livestock. Pastures diminishing. Wheat fair to good. Dry week.

IOWA: Temperatures none to 3° above normal. Extremes -9°; 64°. Precipitation none northeast third, light elsewhere. Rainfall none to 0.34 in.; average 0.10 in. Most farmers hoping for good early spring rains.

Concerns over dry soils on tilled fields with wind erosion. Livestock mostly good. Some respiratory diseases in young animals from variable temperatures. Southern areas reporting Blackleg in cattle.

KANSAS: Temperatures 8° above normal northwest to normal southeast, south central. Temperatures 6° above normal north central, 5° above west central, 4° above central, 3° above northeast, southwest, 2° above east central. Precipitation none east central, 0.01 in. north central, 0.02 in. central, 0.03 in. northwest, 0.04 in. northeast, 0.08 in. west central, 0.14 in. southeast, southwest, 0.22 in. south central. Snow received most areas, amounts varied. Snow accumulations as much as 6.00 in. south central; some northern areas received trace amounts.

KENTUCKY: Near normal temperatures, daytime highs mid 40s, 3° below norm; lows upper 20s, normal. Light rain, snow widespread north, heavier south. Precipitation 0.75 in.; below media north, near normal south.

Soil moisture still mostly adequate for late fall needs. Burley stripping would be enhanced with high humidity. Kentucky burley sales 22.5

million ahead of a year ago, after adjusting for resales only about 10 million above 1988 crop. Many comments about burley weighing light. Livestock good, ample feed supplies.

LOUISIANA: Temperatures 3 to 6° below normal. Extremes 20°; 78°. Rainfall 0.11 to 3.32 in.

Days suitable for fieldwork 3.0. Soil moisture 13% short, 35% adequate, 52% surplus. Pecans harvested 90%, 76% 1988, 84% avg. Sugarcane harvested 90%, 89% 1988, 86% avg. Muddy fields made harvest difficult. Sweet potatoes harvested 100%, 100% 1988, 99% avg. Wheat planted 98%, 92% 1988, 89% avg.; emerged 95%, 85% 1988, 81% avg.; 3% very poor, 3% poor, 56% fair, 38% good. Excessive rainfall made emergence poor in most low lying areas. Livestock 2% poor, 43% fair, 55% good. Pasture 16% poor, 55% fair, 29% good. Vegetable 3% very poor, 13% poor, 56% fair, 28% good.

MARYLAND & DELAWARE: MARYLAND: Precipitation 0.40 in. Temperature 34°, normal 40°. Extremes 8°; 60°.

DELAWARE: Precipitation 0.41 in. Temperature 35°, normal 39°. Extremes 19°; 58°.

MICHIGAN: Temperatures 9 to 13° below normal. Extremes -8°; 42°. Precipitation none to 0.36 in. across State. Cold, dry in most areas. Snow cover needed in central, southern areas to protect winter wheat seedings.

Major activities: Pruning orchards, repairing machinery, attending farm auctions, marketing grain, spreading manure. Livestock good. Cattle still grazing harvested corn fields. Feed supplies good.

MINNESOTA: Temperatures none to 5° below normal. Extremes -16°; 51°. Precipitation none to 0.14 in. Greatest weekly total 0.23 in.

MISSISSIPPI: Cold, wet, some snow. Temperatures 44°, 5° below normal. Rainfall 1.93 in., 0.70 above normal.

Days suitable for fieldwork 3.4, 3.9 1988, 3.1 avg. Soil moisture 40% adequate, 50% surplus, 10% excessive. Cotton 99% harvested, 99% 1988, 97% avg. Pecans 85% harvested, 72% 1988, 76% avg. Soybeans 97% harvested, 93% 1988, 92% avg. Wheat good to fair; 96% planted, 92% 1988, 94% avg. Hay, roughage 10% short, 10 adequate, 10% surplus. Livestock good, pastures fair to good. Difficult to finish cropping practices due to rain, some snow. Activities: Subsoiling, other fall tillage, livestock chores.

MISSOURI: Temperatures 5° below normal. Precipitation less than 0.10 in. except southwest 0.25 in. Winter wheat, pastures need rain. Farmers hauling hay, fixing fence, caring for livestock.

MONTANA: Temperatures above zero, some below zero minimums southwest. Temperatures 14° above normal southeast to 6° above in west. Several western areas received over 1.00 in. rain.

Topsoil 17% short, 72% adequate, 11% surplus. Subsoil 45% short, 53% adequate, 2% surplus. Winter wheat 1% very poor, 2% poor, 28% fair, 57% good, 12% excellent. Wind damage to winter wheat fields 38% none, 59% light, 2% moderate, 1% severe. Cattle, calves receiving supplemental feed 45%, sheep, lambs 55%. Grazing open. Hay supplies for livestock 20% short, 59% adequate, 21% surplus.

NEBRASKA: Temperatures 4 to 8° above normal. Precipitation occurred latter of week with traces northwest up to almost 0.40 in. northeast. Extremes 7°; 69°.

Very dry fall has left winter wheat in a weakened condition prior to entering dormancy.

NEVADA: High pressure dominated weather pattern entire week. Weak front brought generally light precipitation northeast mid week. Rain lower elevation, snow well above valley floors. Winds brought clearer air, unseasonably mild daytime temperatures most areas end of period. South dry with gusty winds mid week.

Low night temperatures increased livestock feeding requirements. Movement potatoes to market continued strong.

NEW ENGLAND: Precipitation (rainfall, water equivalent of snow) 0.25 to 0.50 in. northern New Hampshire, Maine, less than 0.25 in. remainder. Temperatures single digits near Canadian border to mid 20s south coast. Temperatures below normal.

Major farm activities: Tending livestock, machinery maintenance, shipping produce for holiday trade.

NEW JERSEY: Temperatures much below normal; 23° north, 27° south, 31° coastal. Extremes 5°; 53°. Precipitation below normal; 0.02 in. north, 0.26 in. south, 0.32 in. coastal. Heaviest 24 hour total 0.45 in. on 8th, 9th. Heaviest 24 hour snowfall 4.80 in. on 8th, 9th. Depth of snow on ground 11th, 3.00 in. south.

Many farmers deer hunting. Other activities: Christmas tree digging, cutting; fruit pruning; soybean combining; snow plowing; caring for livestock.

NEW MEXICO: Several weather disturbances moved through State. Light snow fell over north central, northeast.

Days suitable for fieldwork 6.5. Soil moisture 90% short, 10% adequate. Cotton 94% harvested. Wheat 100% emerged; 20% very poor, 25% poor, 42% fair, 13% good. Cattle 70% fair, 30% good. Sheep 60% fair, 40% good. Ranges, pastures 25% very poor, 25% poor, 45% fair, 5% good.

NEW YORK: Temperatures 10 to 15° below normal. Extremes 23°; 49°. Northern, northeastern areas received 3.00 to 5.00 in. of snow. Western areas continued to receive lake effect snow. On the whole, precipitation was on the low side with the most coming from the St. Lawrence Valley across the Adirondacks to Lake Champlain, lake effected belts in west.

Fruit growers grading, packing this years crops. Pruning active in some areas. Cut your own Christmas tree operations in full swing. Hunting was major activity for many farmers.

NORTH CAROLINA: Temperatures 2 to 5° below normal across State. Extremes 8°; 71°. Precipitation 0.40 to 3.50 in.

Days suitable for fieldwork 5.1. Soil moisture 4% short, 85% adequate, 11% surplus. Pasture 1% very poor, 4% poor, 38% fair, 57% good. Livestock feed from pasture 62%. Crop condition: Wheat 1% poor, 22% fair, 76% good, 1% excellent; oats 2% poor, 21% fair, 76% good, 1% excellent; barley 21% fair, 78% good, 1% excellent; rye 20% fair, 80% good; hay, roughage supplies 2% short, 82% adequate, 16% surplus. Feed grain supplies 1% very short, 1% short, 96% adequate, 2% surplus. Plantings completed: Wheat 88%, 92% 1988, 90% avg.; emerged 77%, 81% 1988. Major activities: Planting small grains, cover crops; soybean harvest, Christmas tree harvest. Other activities included: Harvesting cotton; cutting wood; tending livestock, general farm maintenance.

NORTH DAKOTA: Temperatures normal to 7° above normal. Precipitation as snow trace to 0.10 in.

Soil moisture short in most areas. Additional snow cover needed for fall seeded crops, to reduce wind erosion. Hay supplies adequate. Normal year end grain, livestock movement.

OHIO: High temperatures low to mid 30s; 4 to 9° subnormal. Low temperatures upper teens to low 20s; 3 to 6° subnormal. Precipitation 0.10 to 0.40 in. water equivalent; 0.30 to 0.50 in. subnormal. Soil temperatures under bare soil mid 30s.

Crop drying activities slowing. Fall plowing continued as conditions permitted.

OKLAHOMA: Temperatures normal Panhandle to 7° below normal north central. Precipitation none west central to 0.64 in. southeast.

Snow provided much needed moisture, reduced insect activity. Wheat dormant. Cotton 97% harvested, 75% 1988, 65% avg. Ranchers feeding hay. Cattle prices steady to slightly lower.

OREGON: Heavy precipitation west, modest amounts eastern two thirds of State. Rainfall 4.00 to 9.50 in. fell along north coast, coast. Willamette Valley just under 2.00 to 3.50 in. East of Cascades, Dallesport 0.80 in., other areas less than 0.50 in. Temperatures 5 to 10° above normal Statewide.

Soil moisture short to adequate, some surplus west. Winter wheat fair to good, emergence spotty in drier parts of Columbia Basin counties. Some mint planting central area. Pruning fruit, nut trees. Pruning, training caneberreries. Vegetable harvest essentially completed west. Potato, onion packing continued. Livestock good to excellent. Range, pasture fair to good.

PENNSYLVANIA: Quite cold, dry throughout week. Temperature 22°, 13° below normal. Extremes -5°; 50°. Precipitation 0.19 in., 0.54 in. below normal.

Corn 93% harvested, 95% 1988, 94% avg. Soybean harvest 92% complete, 96% 1988, 97% avg. Activities: Harvesting corn, soybeans; maintaining machinery, spreading manure, caring for livestock.

SOUTH CAROLINA: Temperatures 2 to 4° colder than usual. Rainfall 2.00 to 4.00 in. across State.

Days suitable for fieldwork 4.2. Soil moisture 9% short, 67% adequate, 24% surplus. Soybeans 7% poor, 78% fair, 15% good; 83% harvested, 90% 1988, 77% avg. Wheat good; 81% planted, 84% 1988, n/a avg.; 61% emerged, 67% 1988, n/a avg.

SOUTH DAKOTA: Temperatures mostly below normal east, above central, west. Range 3° below normal to 13° above normal. Extremes -11°; 63°. Precipitation above normal northeast, parts of northwest, below normal elsewhere. Range 3.55 in. above normal to 8.24 in. below normal. Precipitation below normal east, above normal elsewhere. Snow cover a trace northeast to 11.00 in. south central, extreme southeast.

TENNESSEE: Arctic air mass moved over State 7th preceded by intense cold front. Low pressure mixed with cold air 8th producing mixture of freezing rain, sleet, snow over most of State. Temperatures unseasonably cold Statewide. Coldest regions mid State, Plateau. Precipitation mainly 8th, 9th, below normal all areas.

Fieldwork limited by cold, snow. Widespread tree, structure damage due to ice. Primary activities: Repairs, meetings.

TEXAS: Early week tropical disturbance brought showers lower valley, rest of State remained dry.

Temperatures unseasonably warm most areas until mid week. Upper air disturbance interacted with cold air to produce light rain, except Trans Pecos. Temperatures climbed again late week. Temperatures below normal south, Rolling Plains, near normal elsewhere. Rainfall below normal except near normal High Plains.

Crops: Grain sorghum producers Plains almost finished harvest activities early last week. Sorghum harvested 99%, 100% 1988, 98% avg. Cotton harvest good progress through mid week Plains, Trans Pecos. Ginning activities active. Cold, wet conditions late week kept many producers from completing harvest. Cotton 95% harvested, 85% 1988, 71% avg. Small grains received very little benefit from light snow Plains, remain very short moisture. Not much new growth Plains. Insect activity increasing better stands. Blacklands spraying activities continued greenbugs, grain mites. Some replanting. Fields central improved slightly with recent moisture; growth behind normal. Most planting completed early last week. Wheat 99% planted, 100% 1988, 99% avg.; emerged 93%, 100% 1988, 96% avg. Peanut harvest nearing completion most fields Low Plains, Cross Timbers. Grades below average. Wet conditions caused slight harvest delays central, south. Grades these areas low. Soybean harvest nearly completed Plains. Upper Coast harvest poor, later varieties continued. Yields average Plains. Other crops: Peanuts harvested 91%, 97% 1988, 91% avg. Pecans 74%, 81% 1988, 76% avg. Soybeans harvested 90%, 99% 1988, 93% avg. Sugarbeets 98%, 100% 1988, 90% avg. Sunflowers harvested 92%, 95% 1988, 94% avg. Oats planted 95%, 96% 1988, 95% avg.

Commercial Vegetables: Rio Grande Valley, harvest slowed some because wet conditions. Yields good. Citrus harvest slowed some late week. Demand good. Rainfall helped citrus trees. San Antonio Winter Garden, harvest moved ahead until late week. Yields, quality good. Pecan producers good harvest progress across State until late week. Prices, quality relatively good, yields down.

Range and Livestock: Forage supplies low most ranges, pastures. Light rainfall scattered areas helped winter forage slightly; more rain needed. Wheat pastures remained short Plains, stocker numbers being reduced. Temperature variations caused some health problems. Supplemental feeding active.

UTAH: Temperatures 1° above normal in northwestern two third, 4° above normal in south eastern third. Precipitation light in northwestern two third, almost zero in southeastern third.

Russian wheat aphid population present several counties. County extension agents monitoring closely. Field activity minimal. Alfalfa hay short supply. Some sheep death loss caused by poison plants. Moving cattle, hauling hay, stock water continued. Winter range poor condition. Winterization continued.

VIRGINIA: Cold period 4 to 5° below normal. Extremes 4°; 69°. Two days of snow, sleet, freezing rain. Up to 3.00 in. freezing rain eastern, southeastern areas, 3.00 to 6.00 in. of snow rest of State.

Days suitable for fieldwork 4.7. Topsoil 14% surplus, 82% adequate, 4% short. Soybeans 95% harvested, 76% 1988, 76% 5 year avg. Winter grains, grazing crops 16% excellent, 55% good, 24% fair, 5% poor. Pastures 30% excellent, 56% good, 9% fair, 5% poor. Forage from pastures, winter grazing crops dairy cattle 17%, beef cattle 55%, sheep 49%. Livestock 36% excellent, 56% good, 8% fair. Marketing burley tobacco, calving, lambing, soil sampling, equipment maintenance.

WASHINGTON: Temperatures 1 to 7° above normal, east; 7 to 9° above normal, west. Precipitation 0.07 to 1.52 in., east; 2.94 to 5.67 in., west.

Days suitable for fieldwork 2.9. Soil moisture 30% short, 55% adequate, 15% surplus. Range, pasture 75% short, 25% adequate. Hay, other roughage 15% short, 80% adequate, 5% surplus. Winter rains halted most activity. Where weather permitted, the activities included: Fruit tree, grape vine pruning; caneberry pruning, tying; carrot digging; Christmas tree harvest; moving, feeding livestock. Winter wheat remained constant at 35% fair, 65% good.

WEST VIRGINIA: Temperature 31°, 3 to 8° below normal. Extremes 2°; 64°. Precipitation mostly snow, averaged 0.46 in.; 0.31 in. northwest to 0.64 in. central areas.

Days suitable for fieldwork 2.9. Soil moisture 3% short, 84% adequate, 13% surplus. Corn good to fair; some weather damage, harvest 95% complete. Wheat seeding 96% complete. Livestock, good. Farm activities: Feeding cattle, fence repair, corn harvest, tobacco stripping.

WISCONSIN: Temperature 21°. Extremes -21°; 52°. Precipitation trace. Snow 0.50 to 2.00 in. north, trace elsewhere, 4th.

WYOMING: Temperatures above normal. Precipitation below normal.

Winter wheat fair to good. Moisture conditions improved northeast, additional moisture needed for good development in southeast. Livestock mostly good. Supplemental feeding increasing with colder temperatures, snow cover. Livestock producers continue to cull, market livestock.

International Weather and Crop Summary

December 3-9, 1989

HIGHLIGHTS

USSR ... Winter grains remain dormant. A protective snow cover increases.

NORTHWESTERN AFRICA ... Beneficial precipitation continues over Moroccan winter grains. Winter grain planting in Algeria and southern crop areas in Tunisia is likely progressing slowly due to limited topsoil moisture

EUROPE ... Heavy rain and flooding continue in southern sections of Spain and Portugal. Abnormally cold weather persists in the north and east.

SOUTH ASIA ... Seasonably dry weather covers most of the region. Showers decrease in the south.

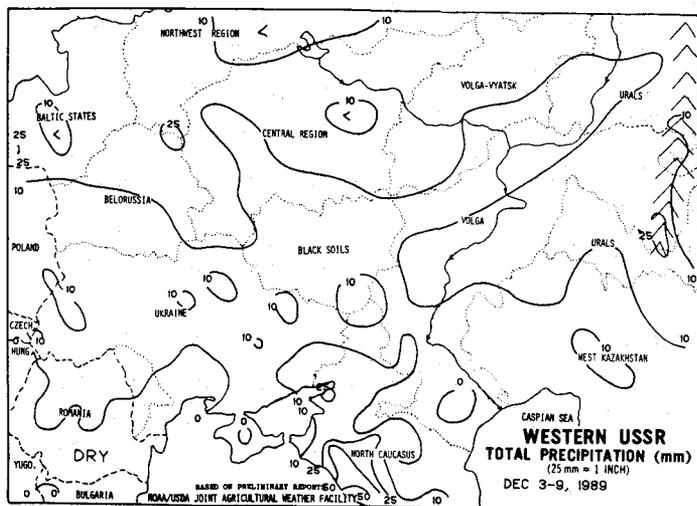
EASTERN ASIA ... Seasonable dryness continues in much of China. Heavy rain and snow fall across sections of Japan.

SOUTHEAST ASIA ... Showers diminish over the Malaysian peninsula but continue to provide adequate moisture for rice planting in Java.

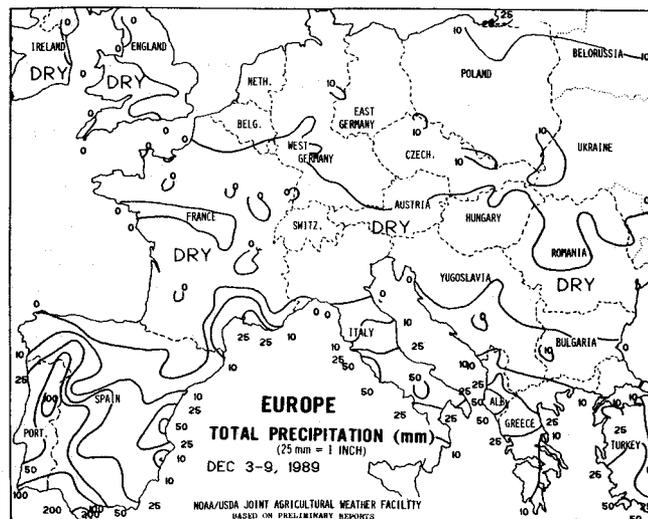
SOUTH AFRICA ... Rain continues throughout most of the Maize Triangle.

SOUTH AMERICA ... Widespread rain soaks mature wheat but provides ample moisture for emerging summer crops in Argentina. Soybean planting advances in southern Brazil, but showers slow fieldwork further north.

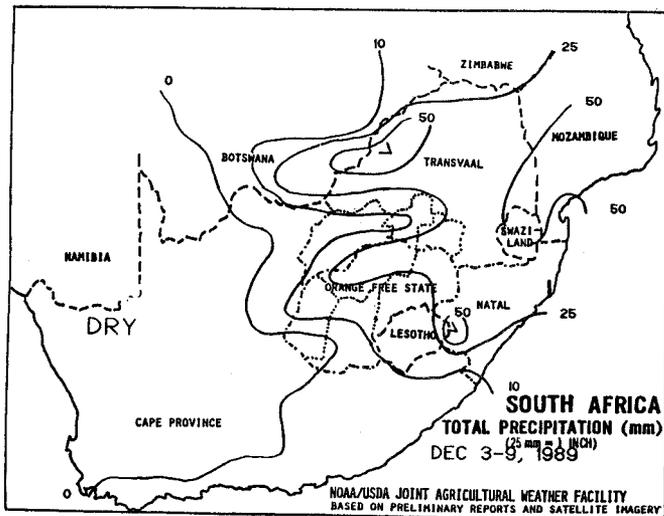
AUSTRALIA ... Rain favors vegetative summer crops in the east. Warm and dry weather favors winter grain harvest in the south.



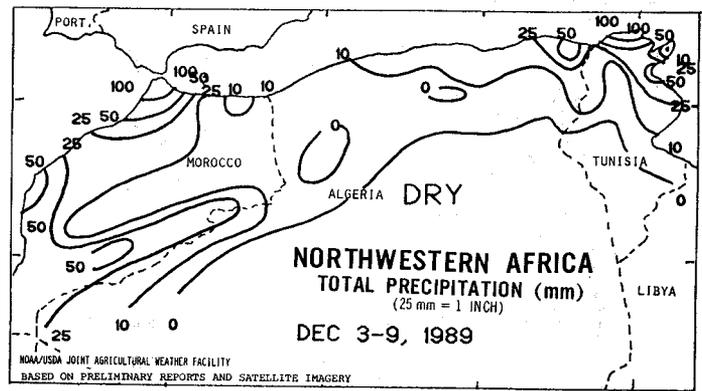
WESTERN USSR ... Winter grains remained dormant over the region. Mild weather early in the week was followed by colder weather which continued until week's end. Minimum temperatures early in the week over the region ranged from -6 to 2 degrees Celsius (C) but by week's end, minimum temperatures ranged from -20 to -3 degrees C. Coldest weather (minimum temperatures ranging from -13 to -20 degrees C) covered winter grains in Belorussia, the Central Region, Black Soils Region, the Volga Vyatsk Region, and the Volga which were protected by snow cover. Widespread precipitation (5-25mm), mainly snow, covered most areas increasing snow cover. Weekly average temperatures were 2 to 4 degrees C below normal over the region.



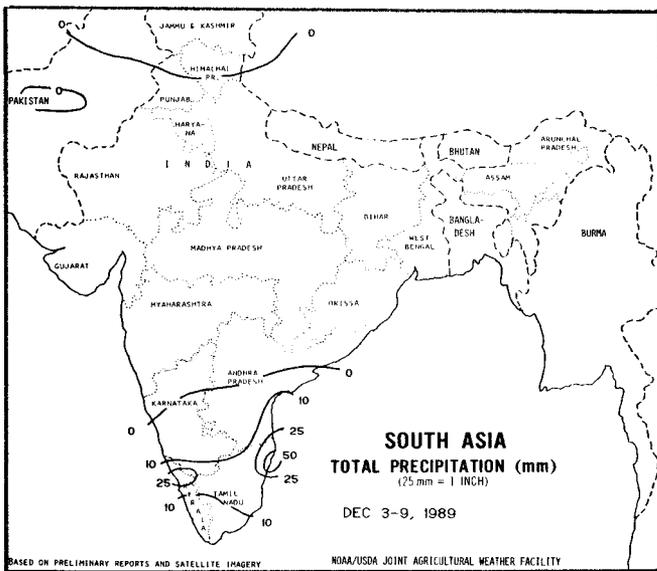
EUROPE ... Heavy rain (25-100mm, with scattered amounts in excess of 100mm) continued for the fourth consecutive week across Portugal and southern Spain. Very heavy rains (100-230mm) on already saturated soils likely caused continued flooding in extreme southern portions of both Portugal and Spain. Heavy rain (25-80mm) also fell across sections of central Italy and the southern Balkans. Elsewhere, light snow and rain (less than 10mm) fell across northern crop areas, while much of central interior Europe remained dry. Much below normal temperatures (2-8 degrees below normal) kept winter grains dormant or semi-dormant across most all but southwestern growing areas, where temperatures were above normal. Abnormally cold and dry weather has persisted over much of northern and eastern Europe for the past four weeks.



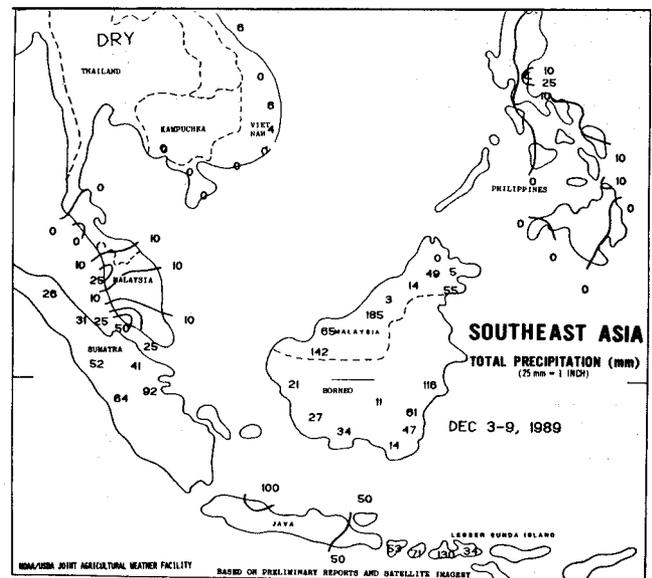
SOUTH AFRICA ... Rain covered most areas, with weekly amounts averaging less than 10mm in western fringes of the Maize Triangle. Showers increased to the north and east, with 10-40mm of weekly rainfall over most of the Orange Free State providing favorable moisture for early corn growth. Locally heavier rain (40-76mm) fell in Natal and western portions of the Transvaal. High temperatures generally reached the low 30's C in the Maize Triangle, but maximum temperatures pushed into the middle to upper 30's C in western portions where moisture is limited for corn growth.



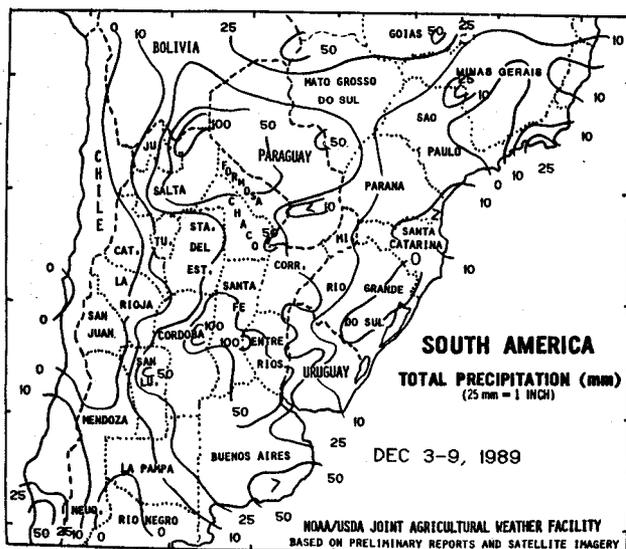
NORTHWESTERN AFRICA ... Normally, winter grain planting is well underway over most of the region. Widespread precipitation (13-50mm, with isolated amounts in excess of 50mm) continued to provide abundant moisture for winter grain planting and early plant establishment. Planting continued to progress slowly in Algeria and southernmost crop areas in Tunisia where minimal rain (precipitation less than 6mm) continued to create limited topsoil moisture conditions for crop emergence and early growth. In northernmost crop areas in eastern Algeria and northern Tunisia, light to moderate showers (10-35mm, with isolated amounts in excess of 50mm) continued to benefit winter grain emergence and early growth.



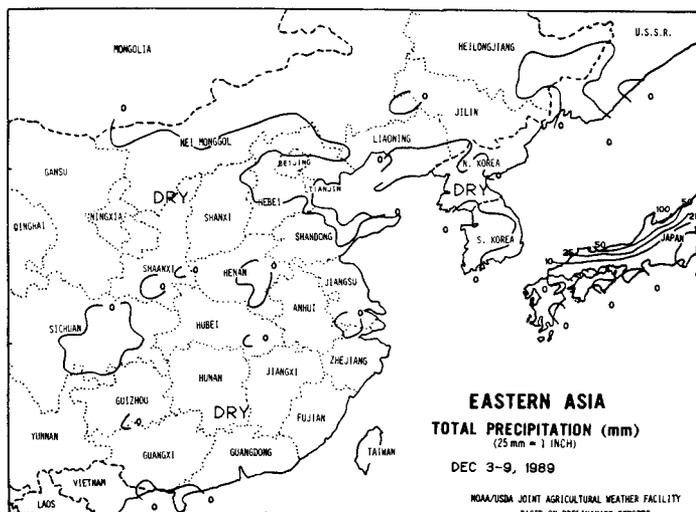
SOUTH ASIA ... Seasonably dry weather continued to dominate most of the region. Scattered light showers (1-7mm) fell in northern Pakistan and extreme northwestern India. Showers fell in Tamil Nadu, Kerala, and extreme southeastern Andhra Pradesh, but weekly rainfall amounts diminished from the previous week. The heaviest rain fell again along Tamil Nadu's northeast coast where 40-56mm of rain soaked the area. Otherwise, rainfall amounts averaged 14-29mm, except in the extreme south coast where less than 10mm of rain fell.



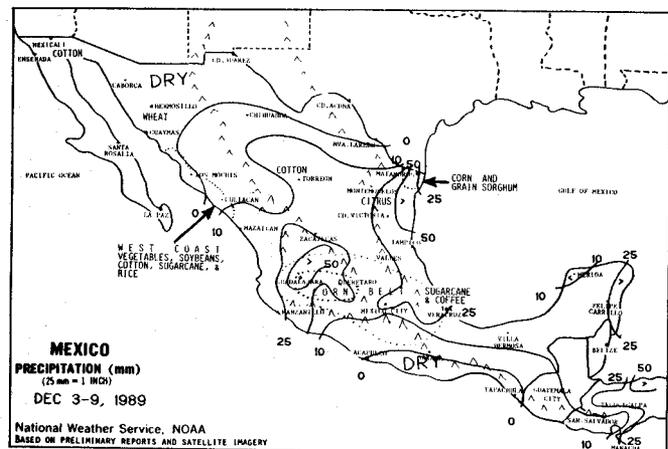
SOUTHEAST ASIA ... Seasonably dry weather prevailed over Thailand. Showers diminished over the peninsula, with less than 10mm of weekly rainfall, except along Malaysia's west coast where scattered heavier amounts (25-95mm) fell. The drier weather along Malaysia's east coast eased flooding from the previous week's heavy downpours. Widespread variable rain fell over the remainder of Malaysia and Indonesia, with scattered amounts in excess of 100mm throughout the region including Java where rice planting is underway. In the Philippines, scattered light showers generally produced 10mm or less, with isolated heavier showers (11-28mm) mostly along the east coast.



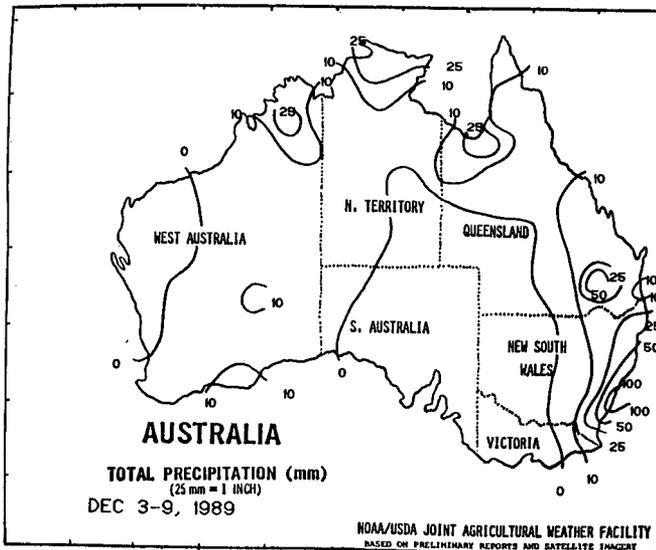
SOUTH AMERICA ... In Argentina, widespread rain fell throughout the crop areas, causing some wheat harvest delays but providing additional moisture for summer crop establishment. Weekly rainfall amounts generally averaged 27-60mm from the primary corn growing area to the northern cotton area. Locally heavier rain (60-74mm) fell along the southeast coast of Buenos Aires, soaking mature wheat. Argentina's soybean planting reached nearly 45 percent by early December, ahead of last year's pace. Mostly dry weather prevailed in southern Brazil. In western Rio Grande do Sul where 20-66mm of rain fell, and in eastern Santa Catarina where rainfall averaged 10-21mm. Weekly rainfall generally averaged 5mm or less in most of Parana. Rainfall increased in Mato Grosso do Sul, Goias, and extreme western fringes of Parana and Sao Paulo. Soybean planting reportedly reached 60 percent completion by early December, still behind the average pace.



EASTERN ASIA ... Seasonably dry weather persisted over much of China, with only scattered light rain (less than 10mm) in sections of the North China Plain and upper Yangtze Valley, and light snow (less than 10mm) in Manchuria. Much above normal temperatures (2-6 degrees above normal) covered central and northern crop areas, causing some late season winter grain development in the Yangtze Valley and southern North China Plain. In Japan, heavy rain (25-75mm), with isolated rainfall in excess of 75mm fell over northern and western sections of Honshu, while moderate to heavy rain and snow (10-60mm) fell over Hokkaido. Scattered light rain (less than 10mm) fell in western sections of South Korea, while crop areas in North Korea remained mostly dry.



An active subtropical jet stream brought unseasonably heavy rain to central and northeastern Mexico.



AUSTRALIA ... Moderate to heavy rain (10-50mm, with isolated amounts in excess of 50mm) fell across crop areas of southeastern Queensland and northeastern New South Wales, causing delays in late winter grain harvest but benefiting vegetative cotton and sorghum. Mostly dry and warm weather favored winter grain harvest across crop areas of southern New South Wales, Victoria, South Australia, and Western Australia, although late-week light rain (less than 10mm) in southern portions of Western Australia may have caused minor delays. Mean weekly temperatures were above normal in South Australia, Victoria, and southern New South Wales, and normal to below normal across other crop areas.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Analysis Center
Managing Editor Douglas Le Comte
Meteorologists Tom Heddinghaus (202) 382-1444
Vilhelm Bjerknes, Bob Stefanski, Wes Byrd, and Eyad Atallah

Subscriptions (202) 447-7917 . . Jeanette Hill

U.S. DEPARTMENT OF AGRICULTURE
Economics Management Staff
Editor Sharon Lee
National Agricultural Statistics Service
Agricultural Statistician . . . Tom Kurtz (202) 447-2157
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Tom Puterbaugh, Mark Brusberg, and Jeff Andresen

(Continued from p. 7)

central and southern Great Plains limited grazing on winter wheat because of poor secondary root development. Dry weather prevailed in the Great Plains through the end of the month. In Texas, rain did improve crop condition in the Blacklands and central area late in November, but the Plains area remained dry. Crop condition was good to fair in the Corn Belt during the month.

ROW CROP HARVEST

Harvest was nearly complete in the central and northern Great Plains early in November. Harvest progressed rapidly during the month in the Delta and Southeast. Rain slowed harvest in the eastern Corn Belt periodically. By the end of November, harvest progress was ahead of normal in most areas.

The corn harvest was 88 percent (%) complete, 10 percentage points ahead of the 5-year average by November 5. Harvest was ahead of normal except in the eastern Corn Belt. By mid-November, harvest was complete except in the eastern Corn Belt. Rain and snow slowed harvest in Indiana, Ohio, and Pennsylvania. Harvest was 88% complete, 2 points ahead of normal in Ohio by

November 26. Harvest continued in Indiana and Pennsylvania.

By November 5, soybean harvest was 87% complete, 11 points ahead of normal. Harvest was complete in Minnesota and South Dakota and nearly complete in Illinois, Iowa, Michigan, and Nebraska. By mid-November, harvest was nearly complete except in the Southeast. Rain slowed harvest in the eastern Corn Belt and the Delta during November. By November 26, harvest was 97% complete, 5 points ahead of normal.

Cotton harvest progressed rapidly in November. On November 5, harvest was 55% complete, 5 points ahead of normal. By November 26, harvest was 86% complete, 17 points ahead of normal. Harvest lagged behind normal in the Southeast early in the month, but by the end of November, harvest was near or ahead of normal in all the major producing States. In Texas, freezing temperatures damaged late maturing fields in the Plains area early in the month. By the end of November, harvest was 31 points ahead of normal in Texas and 40 points ahead in Oklahoma. The third week of November, freezing temperatures damaged late cotton in Georgia.

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