

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

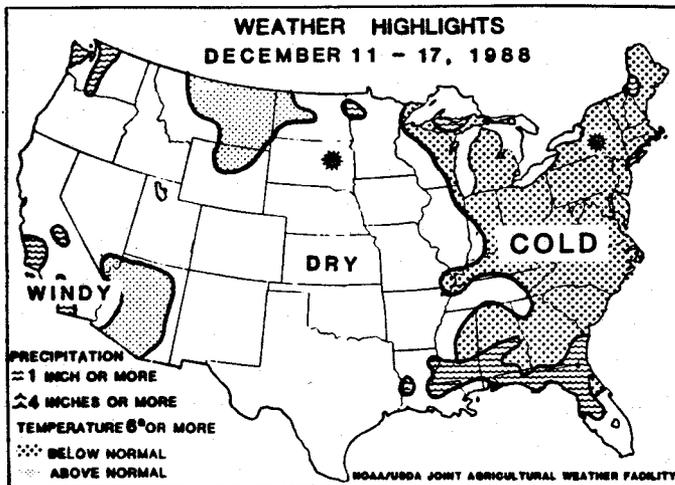
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Dec. 20, 1988

National Weather Summary

December 11-17, 1988



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

SUNDAY: A frigid arctic air mass gripped the northern tier of States from the Dakotas to New England. Some record-low temperatures for the date were broken. Lake effect snow continued over the Great Lakes and rain across the Gulf Coast States. Rainfall was locally heavy in Florida. A weak storm system produced snow in the northern and central Plains and middle Missouri Valley.

MONDAY: The Northeast remained under the influence of the bitter arctic air mass as more record-low temperature records were set. Snow spread eastward over the Great Lakes and eastern Corn Belt. A developing low pressure system off the Atlantic coast brought continued rain to eastern Florida. A cold front over the Northwest produced rain along the northern Pacific coast and snow over the Cascade Mountains.

TUESDAY: A rapidly moving weather system spread snow from the Ohio Valley and southern Appalachians to the north Atlantic coast. Heavy snow fell on Long Island and southern New England. Another fast moving system produced high wind, rain, freezing rain, and snow across the northern Plains into the Great Lakes. The West was warm and windy as high temperature records were set from the Pacific to the central Plains.

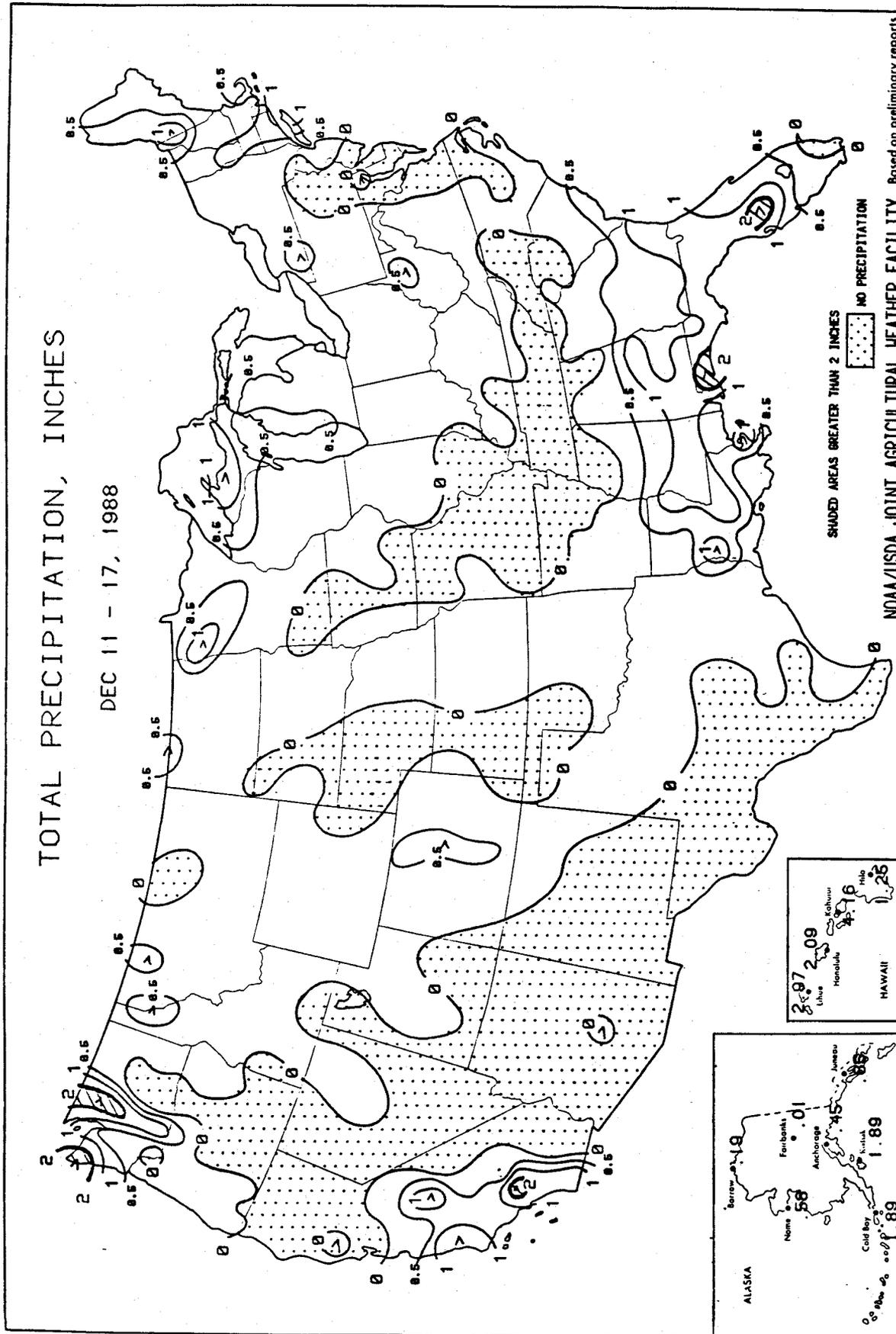
WEDNESDAY: The fast moving storm spread rain and snow from the Great Lakes into New England. Widespread snow covered the northern and central Rockies into the Plains. Another blast of arctic air plunged southward across the northern Plains. Light rain extended from Louisiana to northern Georgia.

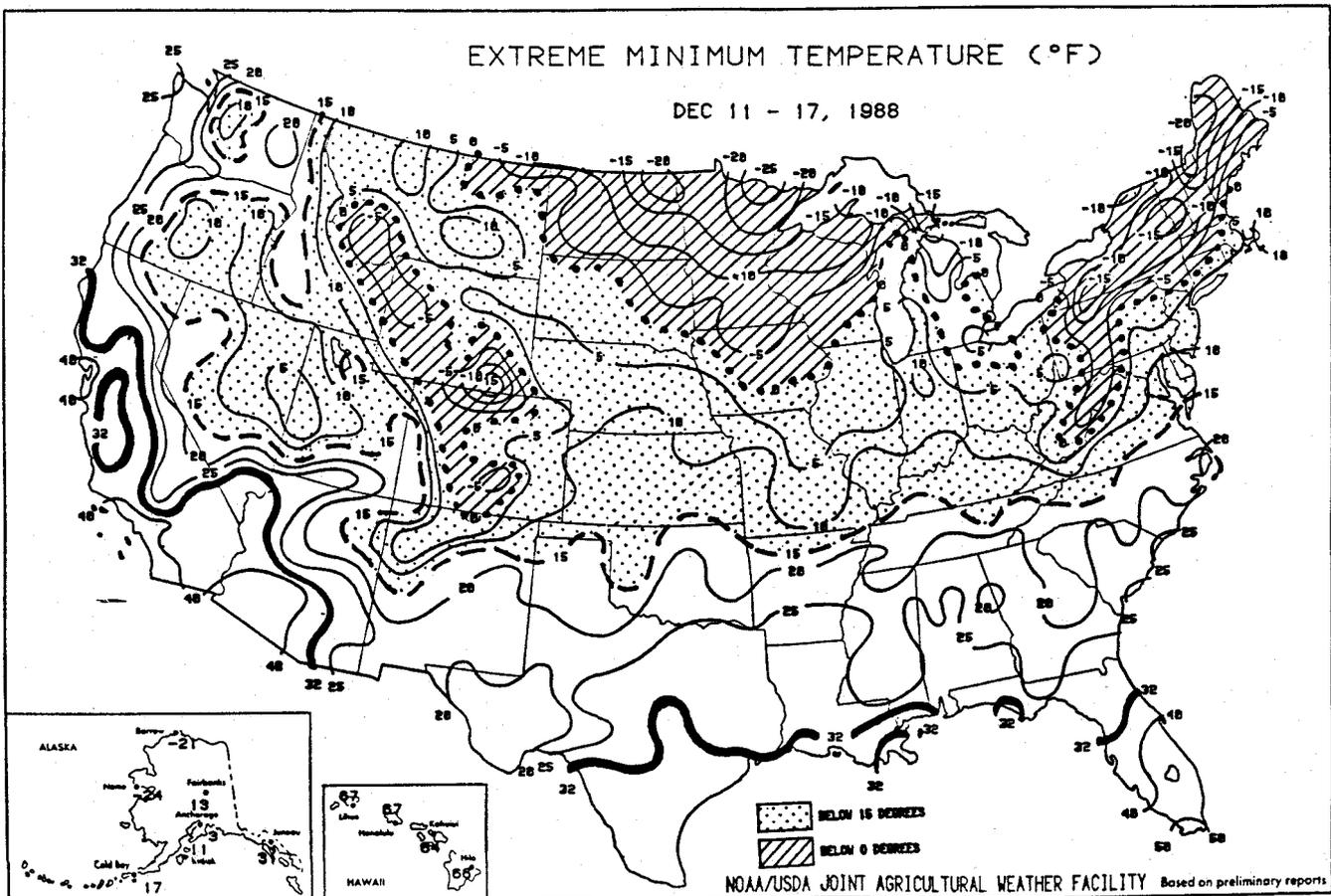
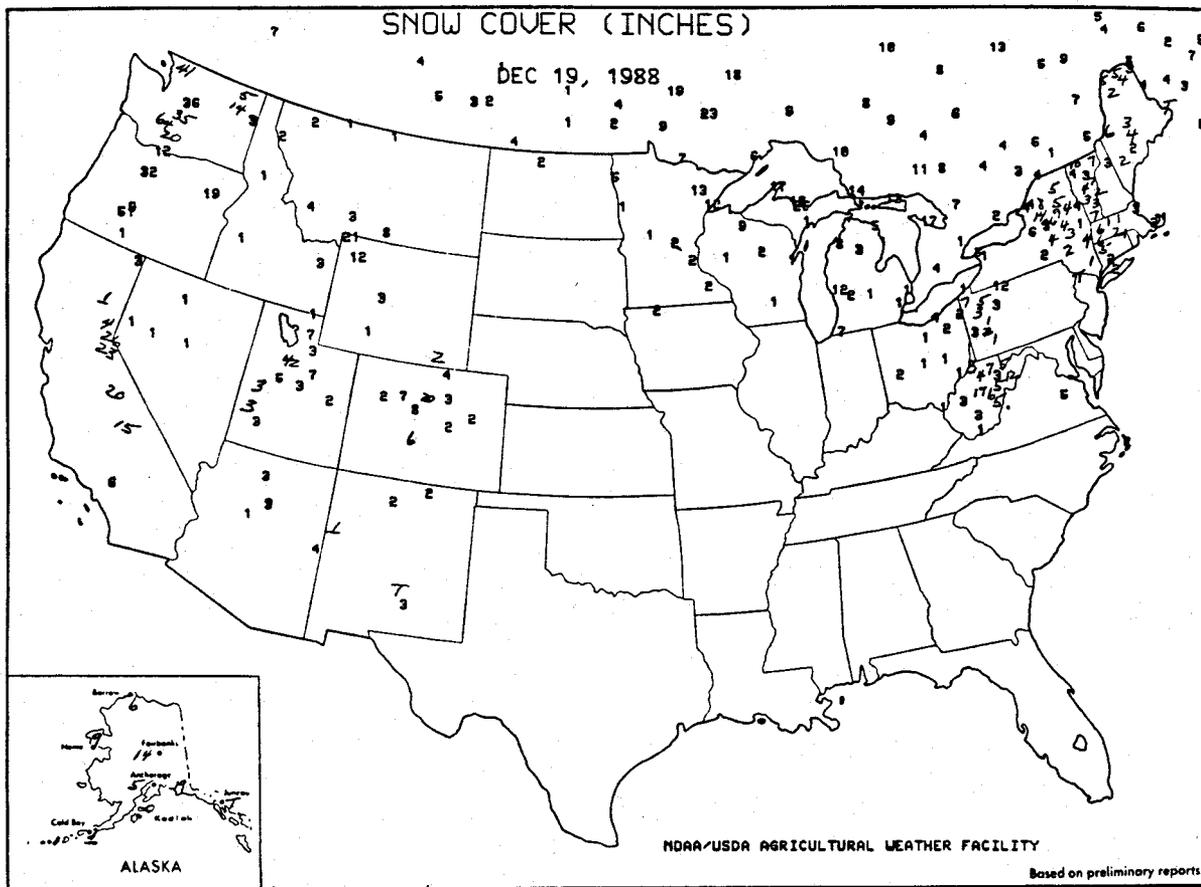
THURSDAY: A large high pressure system over the Central United States pulled frigid Canadian air into the East. The cold air flowing across the warm waters of the Great Lakes produced lake effect snow. A winter storm brought strong winds, rain, and unusual amounts of snow to southern California. Fierce north winds ripped across northern and central California, where ice pellets and snow fell in the San Joaquin Valley and along the coast.

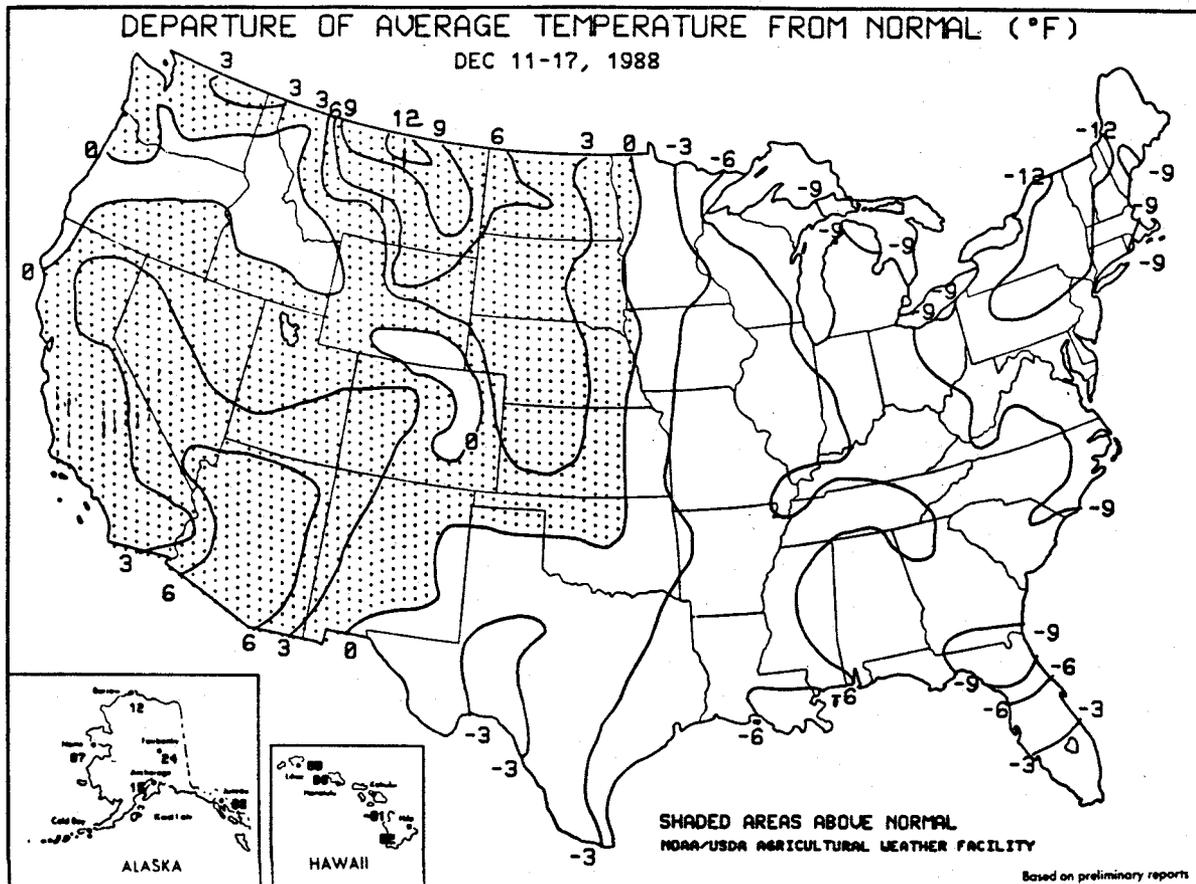
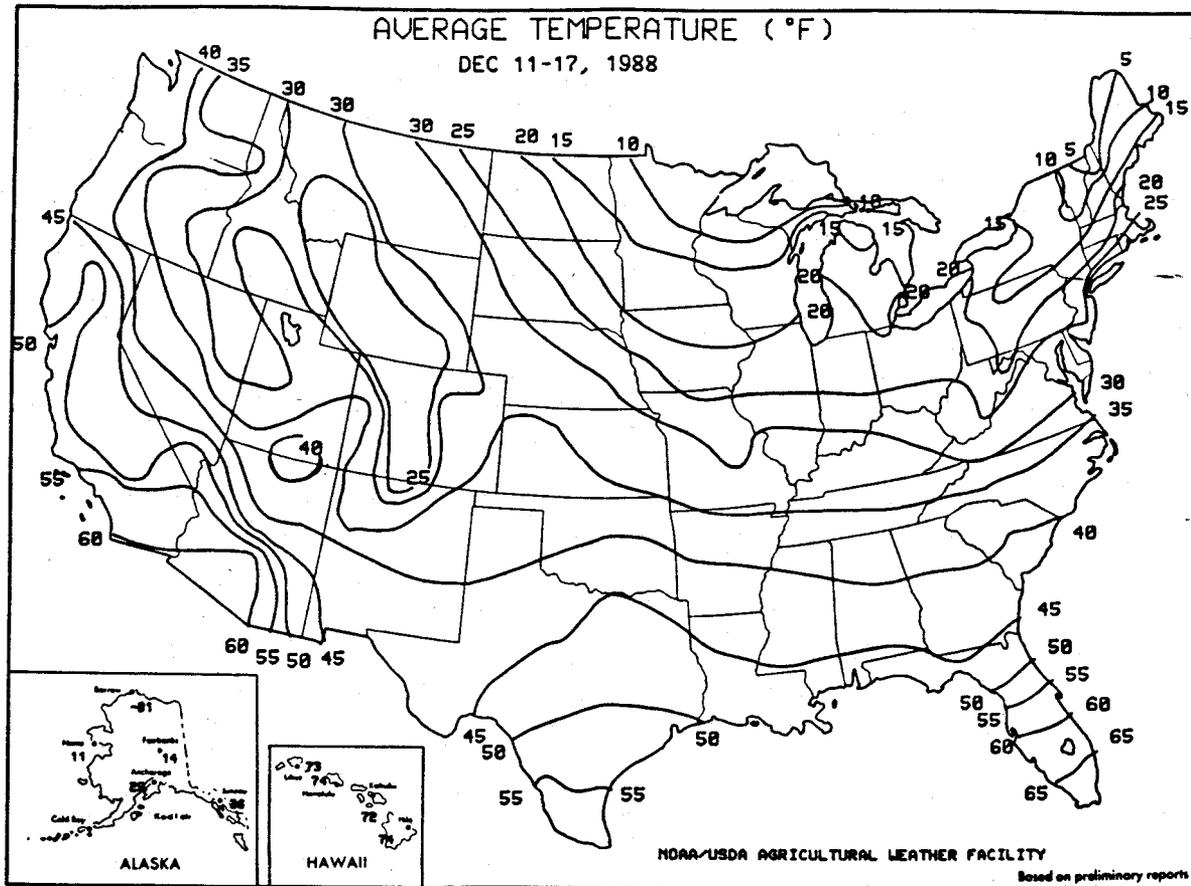
FRIDAY: Heavy snow and strong winds continued over the mountains of southern California with heavy rain showers in the lower elevations. Snow also fell across the coastal areas of the Carolinas. A low pressure system moving across northern Minnesota brought light snow to the Dakotas and Great Lakes.

SATURDAY: The low pressure system that was in Minnesota brought snow to the Great Lakes, leaving a foot of snow along the southern coast of Lake Erie. Snow spread into the central Appalachians and Ohio Valley. A developing low pressure system off the New England coast produced snow along the coastal areas of New Jersey and Massachusetts.

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Heating Degree Days Summary

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

LAST DATE OF DATA COLLECTION PERIOD IS 12-17-1988
ACCUMULATIONS ARE FROM JULY 1
** - NORMAL LESS THAN 100 OR RATIO INCALCULABLE

Table with columns: STATE CITY, CALL WEEK, WEEK WPKR, CUM CUM CUM CUM CUM, DEV DEV DEV DEV DEV, FROM FROM FROM FROM FROM, L YR L YR L YR L YR L YR, PRCT PRCT PRCT PRCT PRCT. Lists cities and their corresponding heating degree day data.

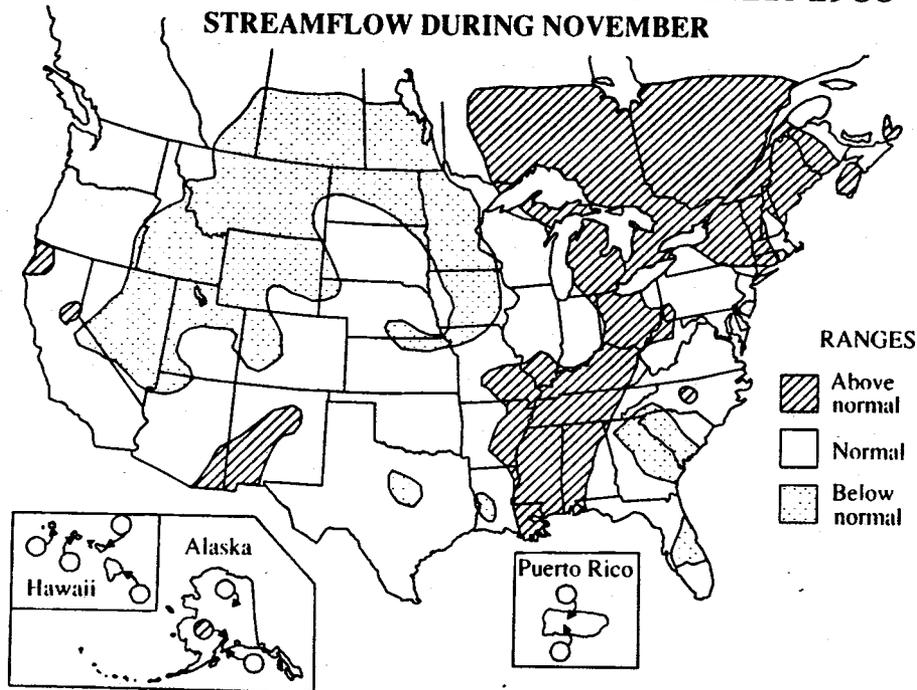
National Water Conditions

UNITED STATES
Department of the Interior
Geological Survey

CANADA
Department of the Environment
Water Resources Branch

NOVEMBER 1988

STREAMFLOW DURING NOVEMBER



Streamflow was in the normal to above-normal range at 80 percent of the 189 reporting index stations in southern Canada, the United States, and Puerto Rico, during November compared with 65 percent of 191 stations in those ranges during last month. Total November flow for the 180 reporting index stations in the conterminous United States and southern Canada was 11 percent above median. Below-normal range streamflow occurred in 22 percent of the area of southern Canada and the conterminous United States during November compared with 28 percent during October.

The combined flow of the 3 largest rivers in the lower 48 States--Mississippi, St. Lawrence, and Columbia--averaged a normal-range 664,100 cfs (less than 1 percent below median), during November after a 32 percent increase from October to November. Flows of all three rivers were in the normal range.

Monthend index reservoir contents for November 1988 were in the below-average range at 28 of 100 reporting sites, compared with 39 of 100 during October 1988. Lake Tahoe, straddling California and Nevada, had no usable storage for the second consecutive month.

Mean November elevations at the four master gages on the Great Lakes (provisional National Ocean Service data) declined from those for October except on Lake Superior. The monthly means were in the normal range on all four lakes.

The elevation of Utah's Great Salt Lake declined 0.10 foot to 4,206.50 feet above National Geodetic Vertical Datum of 1929 on November 15, and remained at that level through November 30.

National Weather Data for Selected Cities

Weather Data for the Week Ending December 17, 1988

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS						
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN. 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE °F					
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE		
AL BIRMINGHAM	50	29	62	26	39	-6	.1	-1.0	.1	.2	6	38.3	73	85	39	0	6	2	0	1	
MOBILE	58	35	74	28	46	-7	.9	-1.3	.8	1.4	47	61.8	100	96	51	0	4	4	0	0	
MONTGOMERY	53	29	66	24	41	-8	1.1	-0.8	.5	1.3	51	62.5	133	94	48	0	5	3	0	0	
AK ANCHORAGE	35	22	42	3	29	15	.5	.2	.3	1.0	173	13.7	95	89	65	0	7	3	0	0	
BARRON	5	-7	10	-21	-1	12	.2	.2	.2	.2	343	3.6	80	85	80	0	7	4	0	0	
FAIRBANKS	24	4	41	-13	14	24	T	T	T	.2	38	10.1	100	93	70	0	7	1	0	0	
JUNEAU	38	33	41	31	36	0	1.2	.1	.4	5.0	190	58.2	114	99	86	0	3	5	0	0	
KODIAK	38	25	43	11	31	2	1.9	.7	.8	6.4	212	79.8	137	96	66	0	6	5	1	0	
NOME	19	3	34	-24	11	7	.5	.4	.4	.6	179	12.3	86	91	71	0	7	6	0	0	
AZ PHOENIX	74	48	80	45	61	8	0	.2	0	.1	18	7.2	109	63	23	0	0	0	0	0	
PRESCOTT	61	27	65	23	44	7	0	.4	0	0	0	13.8	76	68	22	0	7	0	0	0	
TUCSON	74	42	80	33	58	6	0	.2	0	0	4	11.6	109	57	18	0	0	0	0	0	
YUMA	74	48	82	45	61	5	0	.1	0	0	0	2.8	121	58	23	0	0	0	0	0	
AR FORT SMITH	49	27	63	20	38	-3	.1	-0.6	.1	.5	28	33.8	88	90	47	0	6	1	0	0	
LITTLE ROCK	49	30	61	21	40	-4	.4	-1.0	.2	.2	8	44.9	95	69	39	0	5	0	0	0	
CA BAKERSFIELD	61	38	70	34	49	1	.5	.4	.3	.5	152	4.2	79	93	46	0	0	2	0	0	
EUREKA	57	40	63	32	49	0	0	-1.4	0	.1	4	25.5	71	90	66	0	1	0	0	0	
FRESNO	56	36	67	32	46	1	1.0	.7	.8	1.0	123	8.0	83	97	58	0	2	2	1	0	
LOS ANGELES	65	50	80	47	57	0	.7	.4	.4	.7	88	6.1	55	89	43	0	0	2	0	0	
REDDING	64	37	74	28	51	4	0	-1.6	0	0	0	27.2	72	67	30	0	1	0	0	0	
SACRAMENTO	61	37	67	35	49	3	0	-0.6	0	0	0	9.1	58	82	38	0	0	0	0	0	
SAN DIEGO	65	50	71	47	58	0	1.0	.5	.8	1.0	98	9.0	98	96	52	0	0	2	1	0	
SAN FRANCISCO	61	45	66	42	53	3	0	-0.8	0	0	0	10.0	56	87	47	0	0	0	0	0	
CO DENVER	48	19	70	2	33	1	.5	.4	.3	.9	274	14.8	100	84	41	0	6	3	0	0	
GRAND JUNCTION	44	22	48	19	33	4	T	-1	T	T	10	7.7	101	86	42	0	7	1	0	0	
PUEBLO	48	13	73	-6	31	-2	.1	0	.1	.4	194	11.2	105	99	48	0	7	1	0	0	
CT BRIDGEPORT	31	17	45	3	24	-10	.7	-1	.4	.7	35	37.9	95	67	44	0	7	2	0	0	
HARTFORD	29	8	45	-3	19	-11	.5	-0.4	.4	.5	22	39.0	92	86	44	0	7	0	0	0	
DC WASHINGTON	35	21	52	13	28	-11	T	-0.7	T	.2	11	30.6	82	68	38	0	7	0	0	0	
FL APALACHICOLA	58	37	67	29	48	-7	1.2	.4	1.0	1.2	62	62.3	116	92	49	0	2	3	1	0	
DAYTONA BEACH	64	42	76	33	53	-6	.5	0	.4	.7	58	40.7	86	95	51	0	0	3	0	0	
JACKSONVILLE	57	34	74	27	46	-10	1.1	.5	1.0	1.1	90	60.6	120	97	52	0	4	3	1	0	
KEY WEST	76	64	88	59	70	-1	.1	-0.2	.1	.2	19	36.5	95	91	64	0	0	1	0	0	
MIAMI	75	58	82	46	67	-2	T	-0.4	T	T	0	44.4	78	87	51	0	0	0	0	0	
ORLANDO	66	46	76	39	56	-5	.9	.5	.9	.9	89	52.4	108	97	51	0	0	3	1	0	
TALLAHASSEE	57	31	69	23	44	-9	1.1	0	.9	1.1	43	48.4	78	95	45	0	4	3	1	1	
TAMPA	67	47	75	39	57	-5	1.6	1.1	1.6	1.6	143	52.4	115	93	53	0	0	1	1	0	
WEST PALM BEACH	74	54	83	44	64	-3	.2	-0.3	.2	.2	19	63.3	108	92	47	0	5	2	0	0	
GA ATLANTA	48	30	63	25	39	-5	.1	-0.9	0	.1	3	44.7	96	76	37	0	5	3	0	0	
AUGUSTA	50	27	63	18	39	-8	.4	-0.3	.3	.5	33	40.3	97	85	42	0	5	3	0	0	
MACON	52	30	64	20	41	-7	.6	-0.3	.3	.7	33	42.1	98	88	39	0	5	3	0	0	
SAVANNAH	54	33	70	24	43	-8	.9	.2	.4	1.0	69	48.1	99	91	45	0	4	2	0	0	
HI HILO	81	66	85	65	74	2	1.3	-1.7	.9	1.3	17	128.0	104	90	57	0	0	4	1	1	
HONOLULU	81	67	84	58	74	0	2.1	1.3	1.0	5.4	297	15.2	70	93	63	0	0	4	2	0	
KAHULUI	80	64	83	60	72	-1	4.2	3.6	3.6	9.3	678	27.0	160	94	61	0	0	2	2	0	
LIHUE	78	67	81	61	73	0	3.0	1.8	1.1	4.4	151	40.8	98	94	68	0	0	5	3	0	
ID BOISE	38	25	40	16	31	-1	T	-0.3	T	T	1	10.5	97	93	61	0	6	0	0	0	
LEWISTON	43	28	57	17	36	0	T	-0.3	T	T	6	8.4	68	88	56	0	4	1	0	0	
POCATELLO	34	18	46	7	26	-1	.1	-1.1	.1	.3	53	7.2	78	92	62	0	7	1	0	0	
IL CHICAGO	29	13	47	3	21	-7	T	-0.5	T	T	.1	8	31.1	94	81	50	0	7	2	0	0
MOLINE	33	12	45	1	22	-5	T	-0.4	T	T	1	24.2	67	81	47	0	7	1	0	0	
PEORIA	34	14	50	1	24	-4	T	-0.4	T	T	4	20.0	59	82	44	0	6	1	0	0	
QUINCY	37	14	53	2	26	-4	T	-0.4	T	T	0	17.1	46	78	42	0	6	0	0	0	
ROCKFORD	30	10	45	1	20	-5	.1	-0.3	.1	.1	10	23.1	65	84	49	0	7	3	0	0	
SPRINGFIELD	36	16	56	4	26	-5	T	-0.5	T	T	2	22.1	67	75	38	0	6	1	0	0	
IN EVANSVILLE	40	22	63	13	31	-5	T	-0.8	T	T	1	35.7	89	76	38	0	6	0	0	0	
FORT WAYNE	30	14	50	3	22	-7	.1	-0.5	0	.1	9	31.0	93	89	55	0	6	5	0	0	
INDIANAPOLIS	34	16	53	8	25	-7	.1	-0.6	.1	.1	7	29.0	77	84	48	0	6	3	0	0	
SOUTH BEND	29	15	46	5	22	-7	.4	-0.2	.2	.5	32	36.3	99	89	60	0	6	7	0	0	
IA DES MOINES	32	11	46	-1	22	-4	T	0	T	T	2	21.2	79	79	46	0	7	1	0	0	
SIOUX CITY	34	15	48	4	24	1	.2	0	.2	.2	38	22.9	91	89	55	0	7	1	0	0	
WATERLOO	29	8	40	-3	19	-4	T	-0.3	T	T	3	18.5	57	83	57	0	7	1	0	0	
KS CONCORDIA	46	21	68	13	34	2	.1	-1.1	.1	.1	22	14.0	52	80	37	0	6	1	0	0	
DOGGE CITY	53	21	73	13	37	3	T	-0.1	T	T	0	14.9	74	81	34	0	7	0	0	0	
GOODLAND	50	22	74	11	36	5	.1	0	.1	.2	81	20.6	129	87	39	0	7	2	0	0	
TOPEKA	43	17	58	7	30	-2	T	-0.3	T	T	3	18.6	56	82	40	0	7	1	0	0	
WICHITA	47	23	61	13	35	0	.1	-0.2	.1	.1	12	16.7	59	85	42	0	6	1	0	0	
KY BOWLING GREEN	41	23	61	14	32	-6	T	-1.0	T	T	0	40.9	87	83	48	0	6	0	0	0	
LEXINGTON	38	20	62	8	29	-7	T	-0.8	T	T	.1	4	35.4	80	84	40	0	7	1	0	0
LOUISVILLE	39	22	64	12	30	-7	T	-0.8	T	T	2	34.1	81	79	34	0	7	2	0	0	
LA ALEXANDRIA	56	36	68	30	46	-4	.5	-0.6	.4	1.9	71	40.6	81	89	48	0	2	2	0	0	
BATON ROUGE	59	37	72	31	48	-5	.9	-0.3	.5	3.9	142	71.7	134	93	50	0	2	2	0	0	
LAKE CHARLES	60	39	71	34	49	-4	.5	-0.7	.3	1.7	63	56.0	108	91	52	0	0	2	0	0	
NEW ORLEANS	60	38	78	30	49	-6	.7	-0.5	.5	.8	27	70.7	123	98	51	0	2	2	1	0	

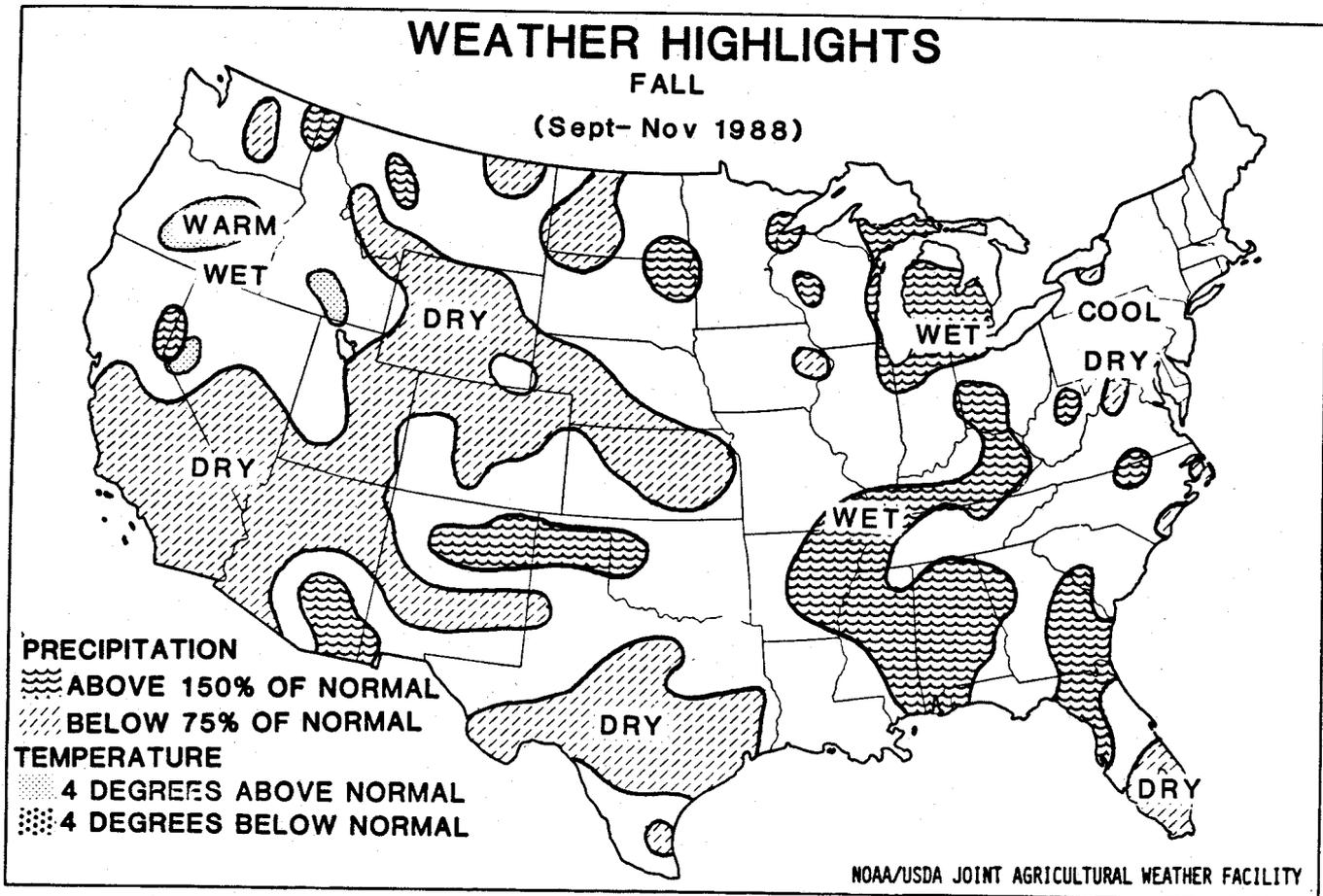
Based on 1951-80 normals

Weather Data for the Week Ending December 17, 1988

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS					
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERA- TURE		PRECIPI- TATION		
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE	
SHREVEPORT	55	34	68	28	45	-4	.1	-.8	0	1.2	57	32.9	78	92	42	0	3	2	0	
ME CARIBOU	13	-2	30	-16	6	-10	.2	-.5	.1	.2	13	29.9	85	84	62	0	7	4	0	
PORTLAND	27	8	46	-3	18	-8	.3	-.7	.2	.3	13	42.8	103	82	63	0	7	4	0	
MD BALTIMORE	34	18	50	9	26	-10	T	-.8	T	.1	6	31.5	78	73	38	0	7	1	0	
SALISBURY	36	19	56	12	27	-11	0	-.9	0	.1	4	42.4	97	75	39	0	7	0	0	
MA BOSTON	32	15	48	2	24	-10	.7	-.8	.1	.2	10	34.1	82	76	41	0	6	4	0	
CHATHAM	38	20	47	12	29	-6	.2	-.4	.3	.7	27	39.6	89	80	56	0	6	0	0	
MI ALPENA	23	5	36	-11	14	-16	.2	-.3	.2	.2	18	26.1	93	90	64	0	7	5	0	
DETROIT	29	12	44	-2	20	-9	.1	-.5	.1	.2	14	25.2	85	86	49	0	7	4	0	
FLINT	27	10	42	8	19	-8	.1	-.3	.1	.2	17	26.5	94	89	52	0	7	3	0	
GRAND RAPIDS	27	13	42	1	20	-8	.2	-.4	0	.3	18	34.7	107	92	61	0	7	5	0	
HOUGHTON LAKE	23	6	41	-12	15	-8	.2	-.2	.1	.4	32	28.3	104	90	59	0	7	4	0	
LANSING	28	10	44	-1	19	-8	.1	-.5	0	.2	14	30.3	105	90	59	0	7	5	0	
MARQUETTE	18	1	31	-11	9	-9	1.3	-.8	1.1	1.5	109	41.0	113	95	77	0	7	6	1	
MUSKOGON	29	14	42	7	22	-7	.9	.3	.4	1.1	75	34.4	114	93	63	0	7	7	0	
SAULT ST. MARIE	19	-1	33	-14	9	-11	.8	.2	.4	1.4	94	34.6	107	91	64	0	7	6	0	
MN ALEXANDRIA	22	5	35	-13	14	-1	T	-.2	T	T	5	22.3	92	89	67	0	7	1	0	
DULUTH	18	-2	31	-17	8	-6	.4	-.1	.1	.4	54	31.5	109	88	57	0	7	4	0	
INT'L FALLS	17	-5	30	-25	6	-3	.1	-.1	.1	.1	27	24.3	102	91	61	0	7	5	0	
MINNEAPOLIS	26	7	38	-4	17	-3	.1	-.1	.1	.1	24	18.5	72	84	58	0	7	3	0	
ROCHESTER	25	5	36	-8	15	-3	T	-.2	T	T	6	20.3	73	85	65	0	7	2	0	
MS GREENWOOD	49	31	62	25	40	-6	T	-.2	T	.3	9	34.8	69	86	37	0	5	2	0	
JACKSON	52	32	62	23	42	-6	.9	-.4	.7	1.3	44	40.5	82	98	53	0	4	2	1	
MERIDIAN	52	30	62	22	41	-7	.7	-.6	.5	1.1	37	50.6	99	92	45	0	5	2	1	
MO CAPE GIRARDEAU	41	21	58	11	31	-1	0	-.9	0	0	0	35.4	82	82	42	0	6	0	0	
COLUMBIA	39	16	56	4	27	-6	T	-.5	T	T	3	27.2	76	79	39	0	7	0	0	
KANSAS CITY	40	17	56	8	29	-5	T	-.3	T	T	1	23.4	66	77	39	0	7	1	0	
SAINT LOUIS	40	21	59	9	31	-4	T	-.5	T	.1	5	30.8	94	71	32	0	5	0	0	
SPRINGFIELD	43	21	59	10	32	-4	0	-.6	0	.4	28	45.8	119	79	36	0	7	0	0	
MT BILLINGS	43	25	59	13	34	6	.1	-.1	0	0	.2	55	10.0	69	71	38	0	6	2	0
GLASGOW	37	16	48	-3	26	9	T	0	T	.1	50	7.1	67	90	59	0	7	1	0	
GREAT FALLS	43	25	54	11	34	8	.1	-.1	.1	.5	117	11.3	77	82	46	0	6	1	0	
HAVRE	40	22	48	8	31	12	T	-.1	T	T	0	5.9	52	89	54	0	7	0	0	
HELENA	39	19	57	5	29	6	T	-.1	T	.1	15	9.8	88	89	49	0	5	1	0	
KALISPELL	34	16	48	6	25	0	.5	-.1	.4	1.3	150	13.9	92	94	66	0	7	2	0	
MILES CITY	41	22	54	7	32	10	.2	0	.2	.2	55	4.9	35	75	43	0	7	2	0	
MISSOULA	35	19	52	8	27	2	.1	-.2	.1	.3	51	10.7	85	98	62	0	6	3	0	
NE GRAND ISLAND	44	17	63	8	31	4	.1	-.1	.1	.1	13	20.9	92	95	49	0	7	1	0	
LINCOLN	40	14	55	5	27	0	.2	0	.2	.2	49	18.0	67	87	45	0	7	1	0	
NORFOLK	37	15	54	5	26	2	.2	-.1	.2	.2	64	24.0	103	90	48	0	7	1	0	
NORTH PLATTE	48	14	70	9	31	5	T	-.1	T	T	0	18.8	99	92	38	0	7	0	0	
OMAHA	36	16	50	8	26	-2	.1	0	.1	.1	30	20.7	69	76	55	0	7	1	0	
SCOTT'SBLUFF	45	16	63	6	31	3	T	-.1	T	.2	85	15.2	106	86	36	0	7	0	0	
VALENTINE	43	14	65	4	28	4	T	-.1	T	T	0	19.8	118	77	41	0	7	0	0	
NV ELY	42	14	57	5	28	2	T	-.2	T	T	0	7.8	91	89	42	0	7	0	0	
LAS VEGAS	64	38	69	35	51	6	0	-.1	0	0	0	2.2	57	51	21	0	0	0	0	
RENO	49	22	60	20	36	3	0	-.3	T	T	0	4.5	68	83	31	0	7	0	0	
WINNEMUCCA	46	20	56	16	33	2	0	-.2	0	0	0	6.2	85	80	37	0	7	0	0	
NH CONCORD	26	4	44	-8	15	-9	.2	-.5	.1	.3	13	32.5	92	91	46	0	7	4	0	
NJ ATLANTIC CITY	34	14	53	5	24	-13	T	-.8	T	.1	3	32.9	82	81	38	0	7	1	0	
NM ALBUQUERQUE	48	23	56	17	36	0	0	-.1	0	0	0	13.1	171	79	36	0	7	0	0	
CLOVIS	51	25	64	19	38	-1	T	-.1	T	1.4	458	20.9	125	80	32	0	6	1	0	
ROSWELL	54	27	65	23	41	1	0	-.1	0	.5	250	13.7	132	84	34	0	7	0	0	
NY ALBANY	23	2	41	-12	12	-14	.2	-.5	.2	.3	17	28.8	84	87	54	0	7	3	0	
BINGHAMTON	21	3	36	-11	12	-14	.1	-.5	.1	.3	17	32.7	92	90	53	0	7	4	0	
BUFFALO	27	11	43	-9	19	-10	.4	-.4	.3	.6	29	37.0	103	87	50	0	7	5	0	
NEW YORK	32	19	48	8	26	-10	T	-.8	T	T	2	39.4	96	65	34	0	7	1	0	
ROCHESTER	26	9	42	-8	18	-11	.2	-.4	.1	.3	20	23.8	79	89	53	0	7	3	0	
SYRACUSE	26	6	41	-10	16	-13	.3	-.5	.1	.5	29	33.1	88	91	50	0	7	5	0	
NC ASHEVILLE	43	22	61	16	33	-7	T	-.7	T	T	5	25.3	60	75	37	0	7	0	0	
CHARLOTTE	46	29	63	20	38	-5	T	-.8	T	.1	8	32.7	79	74	31	0	5	0	0	
GREENSBORO	41	22	59	14	32	-9	T	-.8	T	.2	11	34.3	84	80	37	0	6	0	0	
HATTERAS	46	34	59	25	40	-9	.5	-.5	.4	.5	22	42.0	78	89	50	0	2	2	0	
NEW BERN	46	27	65	18	36	-10	.2	-.6	.2	.3	14	50.3	98	82	40	0	6	1	0	
RALEIGH	44	24	64	17	34	-8	T	-.7	T	.3	18	36.9	92	77	36	0	6	1	0	
WILMINGTON	48	26	63	20	37	-11	.3	-.5	.3	.3	18	57.9	112	81	38	0	6	2	0	
ND BISMARCK	33	12	51	-9	23	7	.1	0	.1	.2	59	9.6	64	88	64	0	7	3	0	
FARGO	26	5	38	-13	16	2	.2	.1	.1	.2	61	13.6	71	86	65	0	7	3	0	
GRAND FORKS	25	0	38	-20	12	1	1.0	.9	.8	1.0	315	12.8	71	89	67	0	7	4	1	
WILLISTON	34	13	45	-4	24	8	.1	0	.1	.3	104	10.1	76	87	64	0	7	2	0	
OH AKRON-CANTON	28	12	46	3	20	-10	.2	-.5	.1	.3	18	31.7	92	91	58	0	7	2	0	
CINCINNATI	34	18	58	7	26	-8	.1	-.5	.1	.2	9	37.3	96	87	44	0	6	2	0	
CLEVELAND	38	15	47	4	23	-9	.3	-.3	.1	.6	41	27.8	82	87	56	0	7	3	0	
COLUMBUS	32	15	52	3	23	-9	.2	-.4	.1	.2	16	34.3	96	90	51	0	7	2	0	

Weather Data for the Week Ending December 17, 1988

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS						
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE °F					
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE		
DAYTON	31	15	53	4	23	-9	.1	-.5	.1	.2	4	34.0	102	87	52	0	7	1	2	0	
TOLEDO	30	11	47	-6	20	-8	.1	-.6	.1	.2	10	26.8	88	88	56	0	7	2	0	0	
YOUNGSTOWN	28	12	45	-1	20	-10	.2	-.4	.1	.3	22	30.1	84	90	56	0	7	3	1	0	
OK OKLAHOMA CITY	51	31	68	21	41	1	.1	-.2	.1	.4	67	31.0	102	85	43	0	4	1	1	0	
TULSA	49	29	63	19	39	-1	.1	-.3	.1	.5	43	31.9	84	82	43	0	5	1	1	0	
OR ASTORIA	51	38	56	29	45	1	.3	-2.3	.2	1.3	21	49.2	76	91	60	0	2	2	0	0	
BURNS	39	20	49	12	30	2	T	-.4	T	.1	10	7.7	80	87	49	0	7	1	0	0	
MEDFORD	50	28	62	19	39	1	0	-.8	0	0	0	12.3	68	91	53	0	5	0	0	0	
PENDLETON	43	29	60	18	36	0	T	-.4	T	.1	9	9.9	88	90	62	0	4	0	0	0	
PORTLAND	51	37	55	26	44	3	T	-1.5	T	.4	10	29.7	86	85	55	0	1	0	0	0	
SALEM	51	33	58	24	42	1	T	-1.6	T	.2	4	29.6	80	88	55	0	4	1	1	0	
PA ALLENTOWN	31	12	46	2	21	-10	T	-.8	T	T	0	38.4	90	82	42	0	7	0	0	0	
ERIE	30	17	44	5	23	-8	.2	-.5	.1	1.0	51	37.2	96	85	55	0	7	6	0	0	
HARRISBURG	31	15	48	6	23	-10	T	-.7	T	T	0	32.5	86	79	40	0	7	0	0	0	
PHILADELPHIA	35	18	52	8	26	-9	T	-.8	T	T	2	37.5	94	73	34	0	7	1	0	0	
PITTSBURGH	30	13	49	2	22	-10	.1	-.5	.1	.2	15	25.2	72	96	65	0	7	2	0	0	
SCRANTON	27	8	40	-5	17	-13	T	-.6	T	T	3	30.4	90	84	45	0	0	0	0	0	
RI PROVIDENCE	32	15	49	2	23	-9	.4	-.6	.3	.4	18	37.8	87	84	44	0	6	3	0	0	
SC CHARLESTON	52	31	67	24	42	-8	.6	-.1	.4	.6	39	42.5	85	88	45	0	5	2	1	0	
COLUMBIA	51	29	66	18	40	-7	.1	-.6	.1	.2	11	42.8	90	83	36	0	5	1	0	0	
FLORENCE	50	27	65	19	39	-9	T	-.7	T	T	1	6	36.8	86	85	37	0	6	0	0	0
GREENVILLE	49	25	65	17	37	-6	0	-.9	0	0	5	36.4	74	85	35	0	6	0	0	0	
SD ABERDEEN	29	10	46	-6	19	3	T	-.1	T	T	15	17.7	101	85	62	0	7	1	1	0	
HURON	33	10	48	-5	22	2	.1	-.1	0	.1	25	18.7	102	86	55	0	7	2	0	0	
RAPID CITY	43	17	65	3	30	4	T	-.1	T	.2	58	10.6	67	90	46	0	7	2	0	0	
SIOUX FALLS	29	11	43	-1	20	0	.1	-.1	.1	.1	12	18.8	80	85	58	0	7	1	0	0	
TN CHATTANOOGA	48	27	63	23	37	-4	0	-1.2	0	.2	5	40.5	80	79	34	0	6	0	0	0	
KNOXVILLE	45	25	61	19	35	-6	0	-1.0	0	.1	3	30.8	68	80	42	0	4	0	0	0	
MEMPHIS	46	30	60	20	38	-5	0	-1.1	0	.1	5	44.5	90	81	37	0	4	0	0	0	
NASHVILLE	46	25	65	19	36	-6	0	-1.1	0	.2	6	27.6	60	75	37	0	7	1	0	0	
TX ABILENE	53	33	65	25	43	-3	T	-.2	T	.8	165	16.2	71	87	42	0	3	1	0	0	
AMARILLO	53	24	66	17	39	0	T	-.1	T	.2	56	24.7	132	78	27	0	7	1	0	0	
AUSTIN	60	40	72	34	50	-2	T	-.5	T	1.0	84	19.1	63	87	44	0	0	0	0	0	
BEAUMONT	61	37	73	29	49	-5	.3	-.9	.1	1.7	61	45.9	87	96	50	0	2	2	0	0	
BROWNSVILLE	69	47	82	37	58	-4	T	-.3	T	.1	12	23.1	93	94	45	0	0	0	0	0	
CORPUS CHRISTI	66	43	80	33	54	-5	.3	0	.3	.6	97	18.9	62	88	43	0	0	1	0	0	
DEL RIO	60	38	70	32	49	-3	0	-.1	0	.4	91	15.5	91	80	38	0	1	0	0	0	
EL PASO	57	28	66	23	43	-2	0	-.1	0	.3	195	11.0	148	94	38	0	6	0	0	0	
FORT WORTH	56	36	69	28	46	-2	.1	-.3	.1	1.4	144	24.0	75	84	46	0	2	1	0	0	
GALVESTON	60	45	72	39	52	-4	T	-.8	T	.3	16	17.3	96	87	56	0	0	2	0	0	
HOUSTON	62	38	74	30	50	-5	T	-.8	T	.9	42	22.5	50	92	47	0	2	1	0	0	
LUBBOCK	54	27	64	20	40	-1	T	0	T	.6	200	15.0	77	83	33	0	6	1	0	0	
MIDLAND	56	28	68	19	42	-4	0	-.1	0	.5	196	18.3	137	90	31	0	6	0	0	0	
SAN ANGELO	57	35	70	30	46	-2	0	-.1	0	.8	226	14.0	79	87	38	0	3	0	0	0	
SAN ANTONIO	63	37	73	31	50	-3	T	-.3	T	.6	77	19.0	67	87	38	0	1	1	0	0	
VICTORIA	61	40	74	34	50	-6	T	-.5	T	2.1	174	15.8	44	89	49	0	0	0	0	0	
WACO	57	38	71	30	47	-2	T	-.4	T	1.4	129	24.1	80	94	52	0	1	0	0	0	
WICHITA FALLS	54	31	68	21	43	-1	.4	-.1	.4	.8	124	23.2	89	88	40	0	4	1	0	0	
UT CEDAR CITY	48	19	64	14	34	3	T	-.1	T	T	5	12.0	120	98	44	0	7	0	0	0	
SALT LAKE CITY	42	24	50	16	33	3	T	-.3	T	.1	8	8.8	60	90	49	0	7	1	0	0	
VT BURLINGTON	20	2	40	-9	11	-12	.3	-.2	.2	.5	33	26.3	81	86	48	0	7	4	0	0	
VA NORFOLK	42	27	62	18	34	-9	T	-.7	T	.5	28	38.5	88	74	44	0	6	0	0	0	
RICHMOND	38	19	61	11	28	-12	T	-.8	T	.4	22	36.9	87	79	38	0	7	0	0	0	
ROANOKE	38	21	52	11	30	-8	T	-.7	T	.7	42	30.9	82	70	40	0	6	1	0	0	
WA QUILLAYUTE	50	34	55	23	42	1	2.2	-1.8	1.6	5.0	52	91.7	93	97	61	0	4	3	2	0	
SEATTLE-TACOMA	47	36	56	28	42	1	.2	-1.2	.2	.9	25	30.3	85	94	70	0	3	2	0	0	
SPOKANE	38	25	48	16	31	2	.2	-.4	.2	.5	35	15.2	99	92	67	0	6	2	0	0	
YAKIMA	43	24	54	12	33	2	T	-.3	T	T	6	4.8	67	91	53	0	5	0	0	0	
WV BECKLEY	32	14	51	-3	23	-11	.1	-.6	.1	.4	26	31.8	78	90	49	0	7	2	0	0	
CHARLESTON	37	20	60	6	29	-8	.3	-.5	.1	.3	18	29.1	71	84	40	0	7	2	0	0	
HUNTINGTON	38	21	63	9	30	-8	.2	-.5	.1	.2	13	33.2	84	83	40	0	7	2	0	0	
PARKERSBURG	34	16	57	2	25	-11	.1	-.5	.1	.2	10	30.2	82	90	47	0	7	2	0	0	
WI GREEN BAY	23	6	38	-3	14	-7	.2	-.1	.2	.2	24	23.4	86	91	61	0	7	2	0	0	
LACROSSE	26	8	38	-3	17	-5	.1	-.2	0	.1	19	25.6	87	85	58	0	7	2	0	0	
MADISON	27	9	44	0	18	-5	.1	-.3	.1	.1	13	23.1	77	83	53	0	7	3	0	0	
MILWAUKEE	27	11	45	3	19	-7	.1	-.3	.1	.2	13	29.1	97	83	53	0	7	2	0	0	
WAUSAU	21	2	37	-8	12	-7	.2	-.1	.1	.2	25	22.9	74	89	51	0	7	3	0	0	
WY CASPER	39	19	56	-2	29	3	T	-.1	T	.1	48	6.2	56	72	37	0	7	1	0	0	
CHEYENNE	39	17	54	-8	28	-2	.3	-.2	.2	.5	245	15.7	120	78	48	0	6	3	0	0	
LANDER	37	12	54	-4	24	1	.3	-.2	.3	.6	197	7.5	59	83	43	0	7	1	0	0	
SHERIDAN	44	20	60	4	32	7	T	-.2	T	.2	60	9.5	65	86	40	0	7	1	0	0	
PR SAN JUAN	84	69	86	67	76	-1	.6	-.4	.4	1.3	48	57.6	109	96	71	0	0	4	0	0	



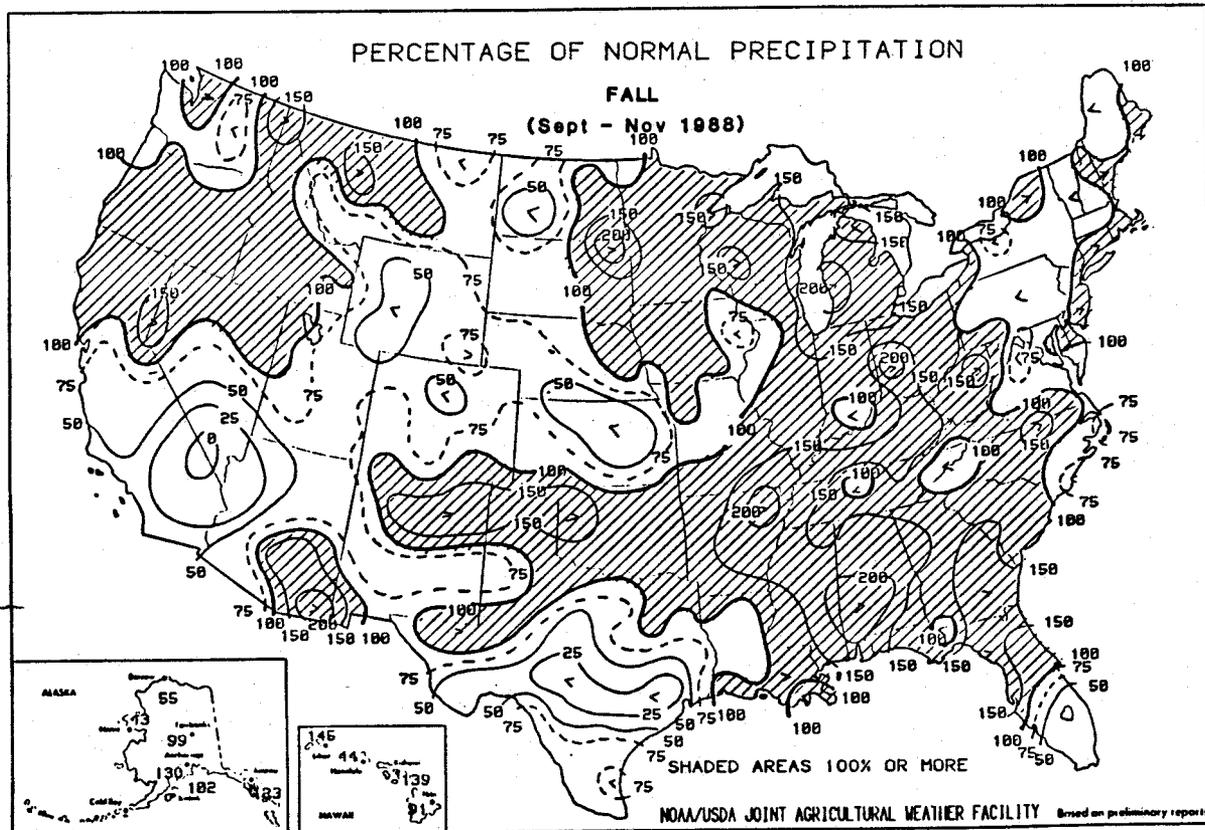
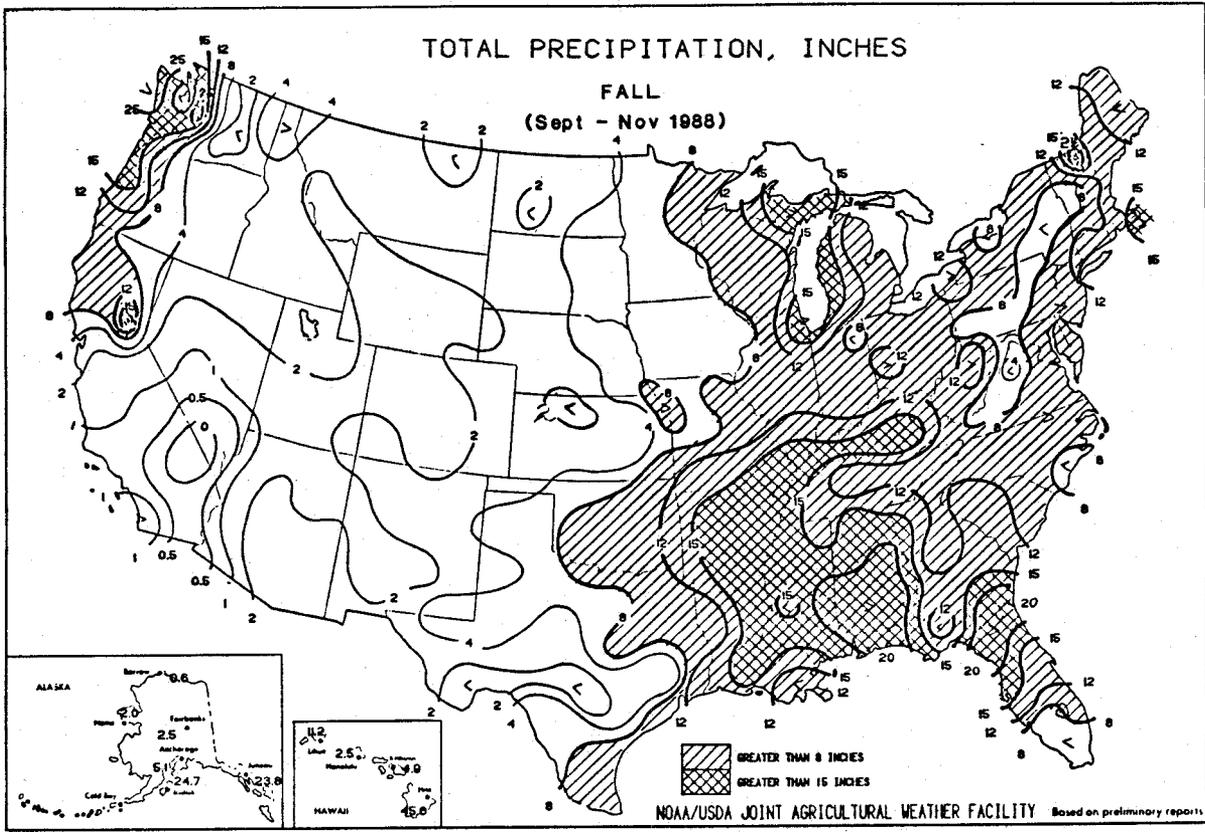
Autumn Weather Review

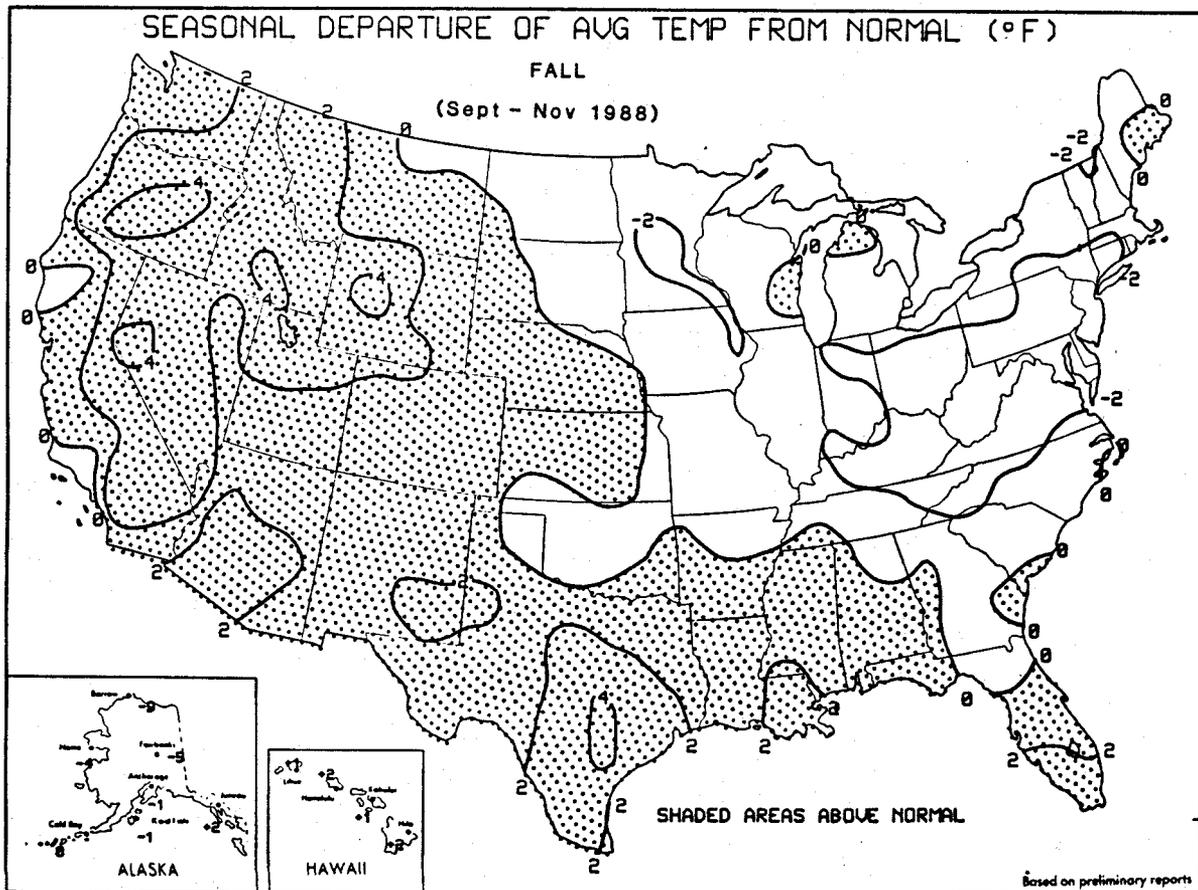
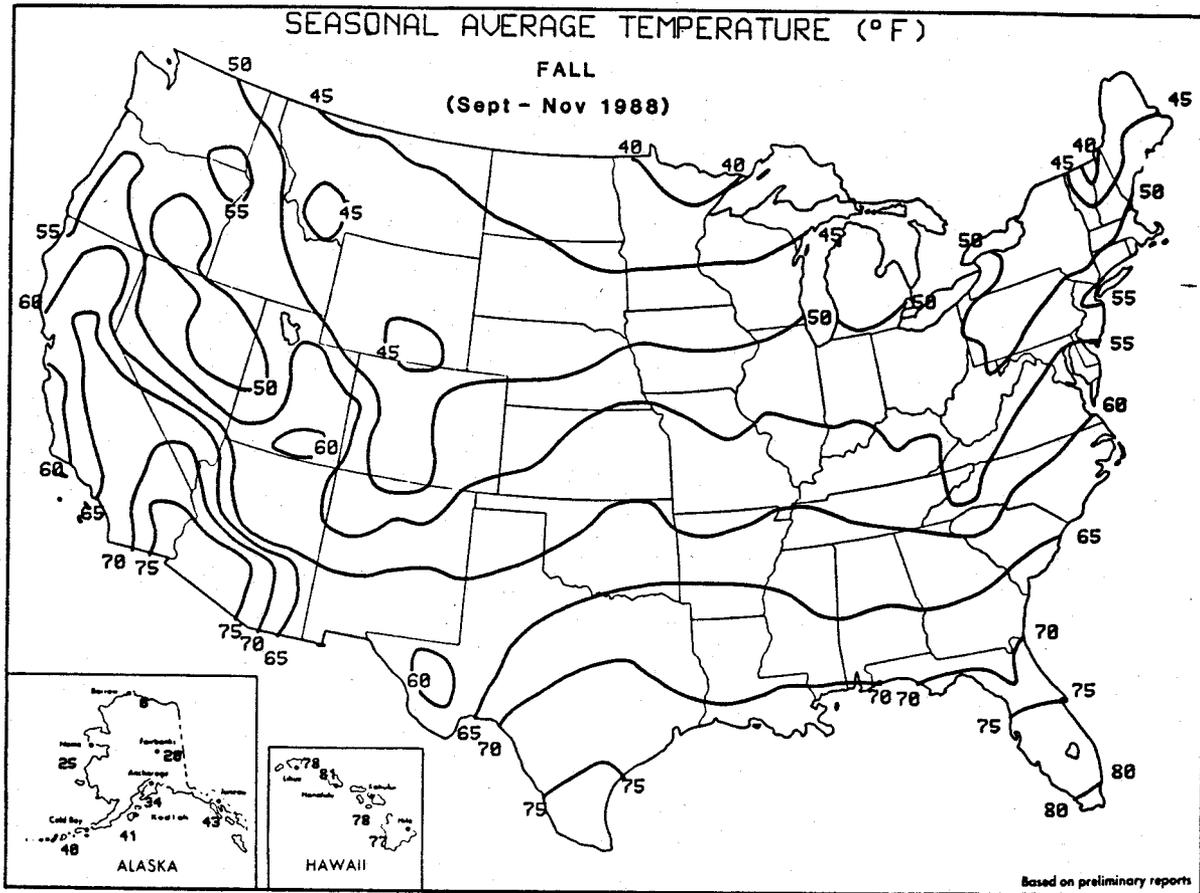
HIGHLIGHTS: Much of the eastern half of the country and the Northwest received above-normal precipitation, relieving or ending long-term moisture deficits in the previously drought-stricken Mississippi, Ohio, and Tennessee Valleys. In contrast, abnormally dry conditions persisted in the northern and central Plains and central Rockies. Dry weather also prevailed over southern Texas and southern Florida, which had the driest autumn in the past 50 years. Late in the season, severe thunderstorms spawned late-season tornadoes in the middle and lower Mississippi Valley and the Southeast. Unseasonably mild weather persisted throughout the western third of the Nation and along the Gulf coast. Cold fronts brought surges of cold Canadian air that kept average temperatures below normal in much of the East.

SEPTEMBER: During the first part of the month, the far West was plagued with severe heat, while Hurricane Florence and a stationary front caused heavy rain along the central Gulf and southern Atlantic coasts. Extensive flooding occurred across northern Florida. At midmonth, massive Hurricane Gilbert devastated Jamaica, the Yucatan, and northeastern Mexico before its remnants brought beneficial moisture into the Central United States. Dry harvest weather prevailed over the Corn Belt.

OCTOBER: Cold fronts brought surges of cold Canadian air into the eastern half of the United States. The cold in the East was in contrast to the persistent warmth in the West. Showers and thunderstorms brought substantial rain to the Southeast and Southwest. Storm systems caused wet and windy weather over the Great Lakes. Little rain fell over the winter wheat areas of the Great Plains and Northwest.

NOVEMBER: A series of frontal systems brought substantial precipitation to much of the eastern half of the Nation and the Northwest, relieving or ending long-term moisture deficits. These systems also brought heavy snow to the mountains of the West, the upper Mississippi Valley, and upper Great Lakes. Torrential rain caused flooding in the Mississippi and lower Ohio Valleys at midmonth. Severe thunderstorms spawned an unusual number of late-season tornadoes in the middle and lower Mississippi Valley and the Southeast, with powerful tornadoes raking the Raleigh, North Carolina area. Dry conditions persisted over much of the winter wheat regions of the Great Plains. The south Atlantic coast was relatively dry except for Tropical Storm Keith which drenched central Florida with heavy rain. Unseasonably mild weather generally prevailed over the Nation.





Autumn In Historical Perspective

Preliminary reports indicate that autumn (September-November) 1988 temperature and precipitation averaged across the contiguous United States were near the long-term mean (Figs. 1 and 2). Record or near-record temperatures occurred on a regional basis. The 1988 autumn mean temperature for the Northwest United States (including the states of Washington, Oregon, and Idaho) was the warmest of record (Fig. 3). The Western region (California and Nevada) experienced the eighth warmest autumn of record (Fig. 4).

A record number of tornadoes occurred in the United States during November 1988. Preliminary reports list the national tornado count at 147, nearly twice the previous November record of 81 which occurred in 1973 (Fig 5). The average number of tornadoes in November is 23, based on records from the period 1953-1987.

National Climatic Data Center

Figure 1

AREALLY AVERAGED NATIONAL TEMPERATURE, SEPTEMBER-NOVEMBER

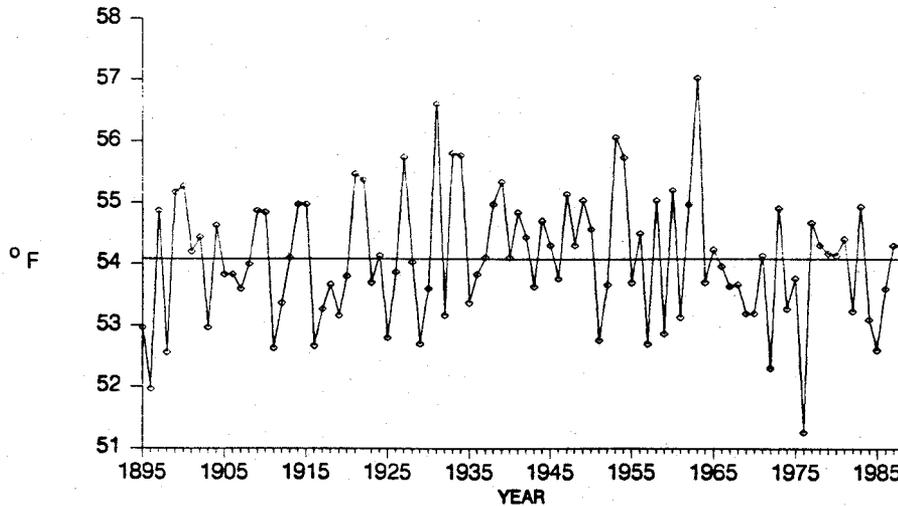


Figure 2

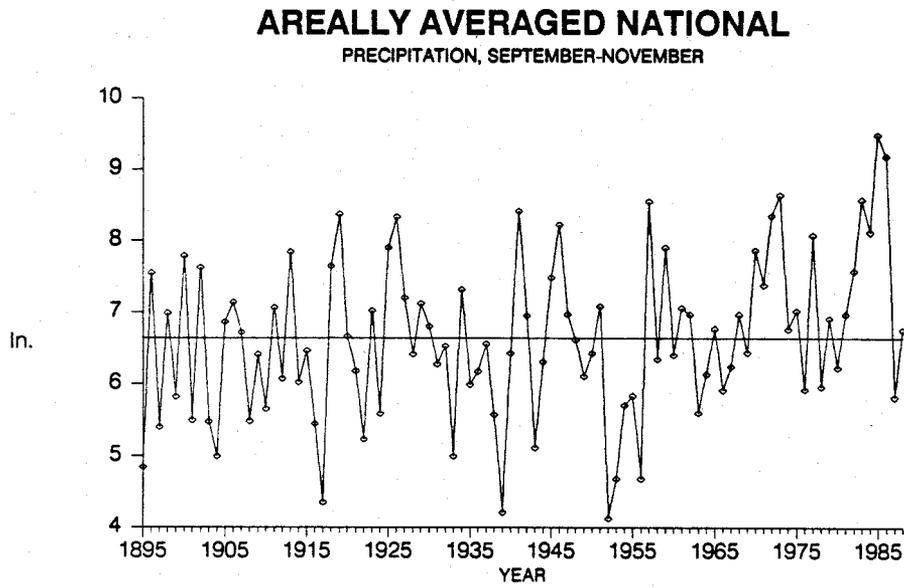


Figure 3

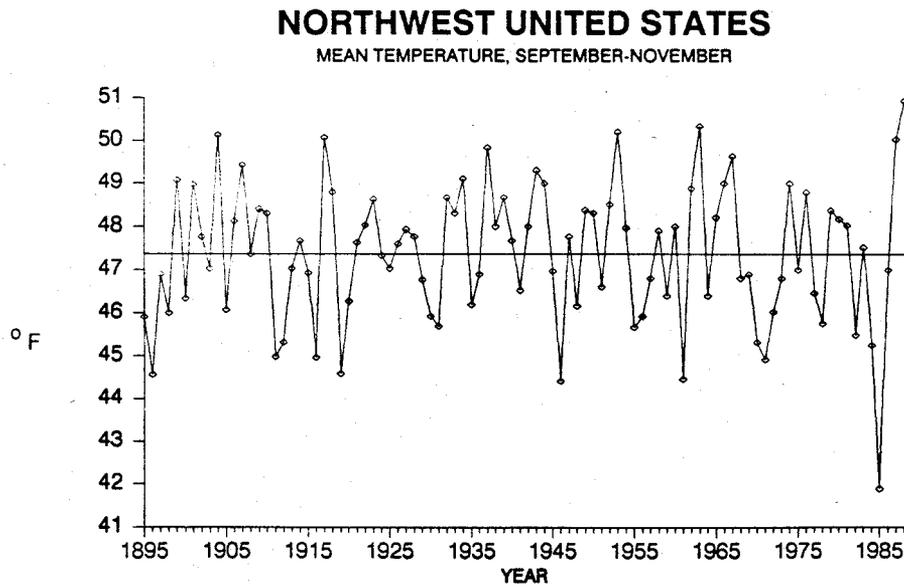


Figure 4

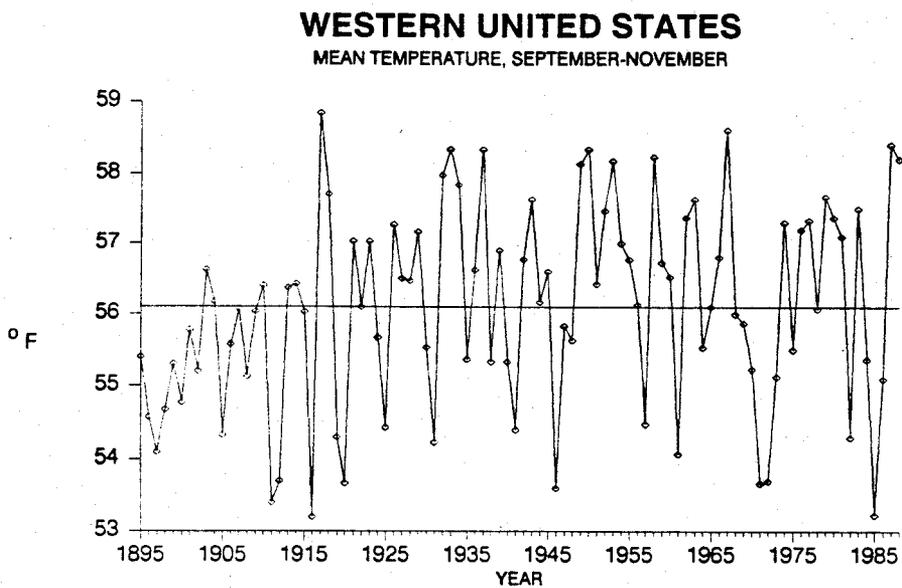
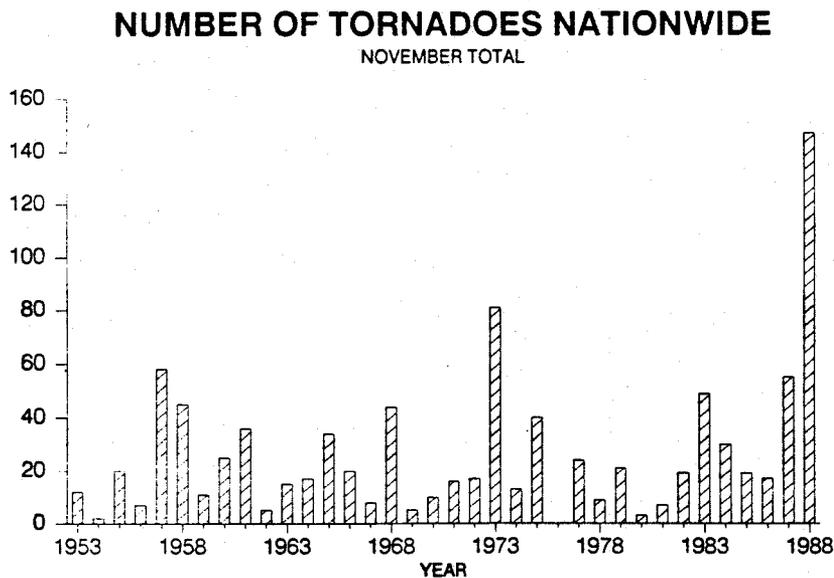


Figure 5



National Climatic Data Center, NOAA

National Agricultural Summary

December 12-18, 1988

HIGHLIGHTS: Lack of precipitation concerned winter wheat producers in the Plains. Greenbug infestation was a continuing problem in the southern Plains. Soybean and cotton harvests were nearly complete. Cold, damp weather slowed cotton harvest in portions of Texas. Texas vegetable producers continued land preparation for spring plantings. Light to moderate frost occurred in central and northern Florida. Damage to the vegetable crops was minimal. Florida's citrus groves were mostly good. Pastures in the South were mostly good to fair. Livestock was mostly good.

SMALL GRAINS: Winter wheat fields in central and western Kansas continued to show signs of moisture stress. Greenbug infestation was a continuing problem, but growers delayed spraying in anticipation of colder temperatures. Oklahoma's winter wheat needed moisture. In south-central Texas, producers were reseeding some winter wheat fields. Dry conditions in the Plains area have limited use of wheat fields for grazing. In the Cross Timbers and Blacklands area, greenbug infestation was heavy. In Colorado, snow provided limited snow cover for the major winter wheat producing areas. Additional moisture was still needed. Montana's winter wheat remained mostly fair to good with minimal wind damage. In Oregon and Washington, Russian wheat aphids remained active. Illinois' winter wheat was mostly good despite some herbicide carryover. Winter wheat in the Southeast was mostly good to fair.

SOYBEANS: Harvest continued in portions of the South and in Michigan. Georgia's harvest was virtually complete. North Carolina's harvest was 92 percent (%) complete, 10 percentage points ahead of the 5-year average. Harvest was nearly complete in Alabama and Mississippi. The frozen ground enabled Michigan producers to continue harvesting.

COTTON: Texas' cotton harvest was 95% complete, 16 points ahead of normal. Cold, damp weather slowed harvest in the Plains and Trans-Pecos early in the week. Weather reduced the quality of unharvested fields. In California, only a few fields remained unharvested. Shredding and discing progressed well in compliance with pink bollworm quarantine. Arizona's harvest was nearly complete. Late in the week, rain slowed harvest in eastern Arizona. Harvest was virtually complete in the other major producing States.

OTHER FIELD CROPS: Texas' peanut harvest was 99% complete, 4 points ahead of normal. Yield in dryland fields was lower than normal. Burley tobacco markets were closed for the holidays.

FRUIT AND NUTS: Florida's citrus groves were mostly good. Widely scattered rain fell over most of the citrus producing areas, but cumulative amounts were small. Light to moderate frost occurred in the central and northern areas. Cold temperatures were expected to induce semi-dormancy for future cold weather protection. Harvest of fresh and processing fruit increased seasonally, following the Thanksgiving Holiday. Caretakers continued to prepare groves for winter. In Arizona, harvest and packing of lemons, grapefruit, and tangerines continued. Apple packing was virtually complete. Harvest and packing of pecans continued. Georgia's pecan harvest was 86% complete, 8 points ahead of normal. Texas' pecan harvest was 90% complete, 8 points ahead of the average. Rain slowed harvest in some areas. Nut size and quality were poor for native varieties. Citrus harvest continued in the Rio Grande Valley. Quality was excellent. In California, desert lemon, grapefruit, and tangerine harvests were slowed by wet, foggy weather conditions. Avocado harvest gained momentum and date harvest was virtually complete. Navel orange harvest was active. Growers continued routine cultural practices.

VEGETABLES: Florida's vegetable harvest remained active. Light to moderate frost caused minimal damage. Harvest activities included tomatoes, peppers, cucumbers, and sweet corn. Fall crop harvest was complete in the west-central area. Arizona's vegetable harvest remained active. Harvest activities included lettuce, broccoli, and cauliflower. In the Rio Grande Valley of Texas, lettuce, tomato, and pepper harvests continued. Fall onion planting progressed well in the Laredo area and was complete in the Trans-Pecos. Land preparation for spring onion planting was underway. Winter vegetable harvest continued in the San Antonio-Winter Garden area. California's vegetable harvests continued. Westside fall lettuce harvest was nearly complete. Growers continued to plant spring lettuce fields. Celery harvest was complete in the Salinas-Watsonville area. Potato packing sheds continued to operate at full capacity in the Riverside area and the Tulelake-Butte Valley. Winter truck crops were harvested in the San Joaquin Valley. Central valley activities included packing sweet potatoes, and harvesting leaf lettuce and cabbage.

PASTURES AND LIVESTOCK: Pastures in the South were mostly good to fair. Livestock was mostly good. In Texas, many producers discontinued grazing on winter wheat pasture. In Montana, lack of snow cover allowed producers to use crop residue for grazing. Livestock water supplies continued short in northern Missouri. Rain was needed in most of California to promote forage growth and replenish stock water supplies.

State Summaries of Weather and Agriculture

These summaries provide brief descriptions of crop and weather conditions important on a national scale. More detailed data are available in Weather and Crop Bulletins published each Monday by NASS State Statistical Offices in cooperation with the National Weather Service.

ALABAMA: Rainfall mostly 0.33 in.; local 0.60 in. Temperatures 5 to 10° below normal.

Days suitable for fieldwork 4.9. Soil moisture 4% short, 92% adequate, 4% surplus. Conditions favorable for row crop harvest wrap-up, small grain seeding, fertilization. Soybeans 96% harvested, 100% 1987, 97% avg. Wheat 98% seeded, 98% 1987, 94% avg. Pastures 10% poor, 60% fair, 30% good. Livestock 39% fair, 59% good, 2% excellent. Supplemental feeding increased as temperatures dropped. Primary activities: Harvesting soybeans, pecans, greens; seeding, fertilizing small grains; turning harvested cropland; soil testing; pruning fruit trees; routine care of livestock, poultry.

ARIZONA: Sunny skies, warming trend prevailed 11th to 13th. Afternoon readings 70s, lower 80s deserts; 60s 5,000 ft.; 50s higher elevations. High cloudiness, sunny, mild 14th to 15th. Increased cloudiness 16th to 17th. Temperatures 1 to 8° above normal.

Cotton 99% harvested. Stalk shredding, disking, plow down west, central. Late rains delayed harvest east. Planting, irrigation wheat, barley; 65% seeded, 35% stands established. Stands good. Harvest, packing lemons, grapefruit, tangerines west, central. Navels, mineolas, arizona sweets harvested central. Boston, leaf, romaine, head lettuce; broccoli, cauliflower, cabbage, kale, napa, escarole, bok choy, endive harvest west, central. Harvest, packing pecans active west, central, east. Greens, rapini, green onions, parsley, carrots harvested central. Apple packing virtually completed east.

ARKANSAS: Cold, very little rainfall. Temperatures well below normal. Temperature extremes 12°; 68°. Rainfall none to 0.27 in.

Soil moisture adequate. Cotton harvest virtually complete. Late harvesting continued soybeans, pecans. Wheat, oats good. Pastures good. Livestock good.

CALIFORNIA: Strong high pressure north early week, low pressure south produced gusty northerly winds and cooling. Precipitation weekend started as snow low elevations especially southern area. Low pressure trough along west dominated late week.

Fieldwork progress good. Wheat, barley seeding increased. Broadleaf weed control earlier seedings. Oats, winter forage doing well. Only few unharvested cotton fields. Shredding, disking for pink bollworm quarantine good progress. Many alfalfa seed fields mowed or sheared-off. Sugarbeet harvest normal. Southern seed corn harvest underway, good yields. Routine cultural practices such as pruning, spraying, fertilizing, preparing for replants continued. Avocado harvest gained momentum. Date harvest virtually complete. Navel orange harvest active. Harvesting desert lemons, grapefruit, tangerines continued. Wet, foggy conditions slowed harvest. Beekeepers prepared for pollination season. Fall lettuce harvest slowly winding down westside. Growers continued planting 1989 spring lettuce season. Quality, demand desert lettuce Palo Verde Valley good, fair yields. Broccoli harvest underway Merced-Atwater. Supplies Salinas-Watsonville, Santa Maria remained moderate, light, good quality. Celery harvest complete Salinas-Watsonville, well underway westside. Cauliflower movement fairly light Salinas-Watsonville area, moderate Santa Maria area, good quality. Potato harvest ongoing

Riverside County, packing sheds Tulelake-Butte Valley continued operate full force. Demand moderate, prices steady, shipments below 1987. Strawberry fields showed good growth Riverside. Winter truck crops harvested San Joaquin Valley. Activities central valley included packing sweetpotatoes, harvesting leaf lettuce, cabbage. Livestock fair to good statewide. Range, pasture; valley, foothill areas poor to very poor; rain badly needed for grass growth, replenish water supplies. North coastal, north central feeding areas received more rain in November, fair to good, benefiting from cool, sunny weather. Supplemental feeding necessary most areas. Livestock movement slowed for holiday season. Calving, lambing continued.

COLORADO: Winter storm brought snow most of parts 14th to 15th. Along with storm, very cold Canadian air moved south into State, especially east of Rockies. Temperatures rather warm this time of year early week, suddenly became much colder midweek. Temperatures able to recover weekend to above normal again many areas.

Snow midweek provided limited snow cover major wheat areas. Additional moisture still needed. Livestock remained good.

FLORIDA: Few light showers accompanied strong cold fronts early week; again on 16th producing coldest weather, early winter season. Freezes, frosts occurred 12th, 13th; again 17th, 18th. First hard killing freezes occurred north with light freeze, frost central areas, scattered frost south. Only lower southeast escaped frost. Temperatures 10° below normal north to 5° below south. Rainfall less than 0.25 in.

Soil moisture mostly adequate except few widely scattered areas short. Cotton harvest completed. Winter wheat planting, sugarcane harvest active. Frosts extending into central Peninsula browned permanent pastures; however, winter grazing crops growing mostly from central areas northward generally good progress. Supplemental feeding more active. Grazing poor to fair northern Peninsula, Panhandle; good to mostly fair elsewhere. Condition cattle herds showed increased variability, but generally fair to good. Widely scattered rain over citrus producing areas, but cumulative amounts small. Cold fronts brought coldest mornings of season; light to moderate frost central areas northward. Groves good; cold temperatures helped induce semi-dormancy for future cold protection. Harvest fresh shipments, processing increased seasonally following Thanksgiving Holiday. Navel, other early oranges, grapefruit, fancy tangerines, tangelos being harvested. Cultivation limited to mowing, preparation for future cold weather. Light frost, freezing, near freezing temperatures throughout most vegetable producing areas. Damage minimal. Rainfall generally limited. Planting, harvesting active. Volume leaders: Tomatoes, peppers, cucumbers, celery, lettuce, squash, cabbage, snap beans, sweet corn, radishes. Lesser supplies escarole, endive, eggplant, carrots, strawberries. Harvest west central fall crops completed.

GEORGIA: Temperatures 5 to 10° below normal. Extremes 10° Clayton, 72° Alma. Rain mostly under 0.33 in. Greatest total 0.62 in. Claxton. Little rain mountains.

Days suitable for fieldwork 5.3. Soil moisture 5% very short, 45% short, 47% adequate, 3% surplus.

Soybean, cotton harvests virtually complete. Wheat 20% fair, 74% good, 6% excellent; 92% planted, 84% avg. Rye, other small grains virtually planted, fair to mostly good. Pecans 86% harvested, 94% avg. Pastures fair to good. Livestock good.

HAWAII: Variable weather. Mostly sunny, few showers first half week. Cold front brought showers midweek. Light to heavy showers, mostly western part of island chain. Rain evenly - no flooding, washouts. Eastern end of State relatively dry, good weather. Temperatures cooled, upper 50s to mid 80s. Rainfall 0.66 to 7.69 in. Winds variable, light 5 to 20 mph.

Days suitable for fieldwork 7.0. Farming activity slowed due to soggy field conditions. Crops poor to good. Chinese cabbage production steady, moderate volume. Head cabbage output steady, good quality. Tomato supplies steady. Banana harvesting active. Papaya production continued to decline.

IDAHO: Temperatures above normal north, near normal elsewhere. Precipitation below normal statewide.

Very little fieldwork completed, except some plowing sandy soils, warmer areas. Marketing grain, shipping hay, potato selling main crop activities. Shop work, equipment maintenance, farm planning, record keeping, arranging finances, preparing for taxes, major miscellaneous activities. Most farm activities involved livestock management, feeding. Little movement of cattle. Some calving, lambing. Livestock remained good. Adequate supplies of hay, roughage available to most farmers.

ILLINOIS: Temperatures 1 to 5° below normal. Temperature lows 2 to 4° below normal, highs 1 to 2° of normal. Precipitation not significant less than 0.10 in. Light snow northern areas 1.00 in. Precipitation 0.10 in.

Winter wheat 18% fair, 74% good, 8% excellent. Short plants, herbicide carry over, temperature fluctuation problems. Livestock good to excellent. Weather favorable for continued grazing, weight gain, feedlot management.

INDIANA: Temperatures 1 to 4° below normal. Lows, single digits to teens, highs upper 40s to 50s. Precipitation minimal, 0.10 in. to less than 0.50 in.

Corn, soybean harvest neared completion. Other activities: Spreading fertilizer, hauling manure, plowing, tilling, processing tobacco, cleaning fence rows, machinery repair, caring of livestock. Cold slowed field activities some areas.

IOWA: Temperatures fluctuated greatly yet near normal as whole. Extremes -8° Algona 16th, 58° Sioux City 18th. Precipitation negligible, all totals less 0.10 in.

Livestock mostly good. Farm activities centered around chores, bookkeeping, livestock management.

KANSAS: Precipitation widespread, light rain, snow most counties, amounts 0.10 in. or less. Most moisture central, southeast. Temperatures above normal. Southwest 35 to 40°. West particularly warm. Northwest 9° above normal, southeast 2° above normal.

Fieldwork, good progress, dry conditions. Soybean harvest completed southeast. Wheat continued to suffer moisture stress western, central areas. Greenbug infestations continued problem, many growers holding off spraying anticipating colder temperatures.

KENTUCKY: Early low temperatures, east single digits. Light snow north, east; 1.00 in. over

mountains. Warmed rapidly midweek; 60s west, central. Late cold front brought 1.00 to 2.00 in. snow to north, east. Temperatures normal late 18th.

Topsoil moisture short to adequate. Markets closed for holidays sales resume 9th. Volume remained light less than 1% going government pool, 8% 1987. Pastures limited. Livestock satisfactory. Colder temperatures caused some stress.

LOUISIANA: Temperatures 4 to 7° below normal. Temperature extremes 23°; 80°. Rainfall 0.50 to 1.00 in.

Days suitable for fieldwork 2.9. Soil moisture 2% short, 65% adequate, 33% surplus. Sugarcane 96% harvested. Winter wheat fair to good; 96% planted, 93% emerged. Pecans 81% harvested. Hay, roughage 30% short, 68% adequate, 2% surplus. Livestock, pastures, vegetables fair to good. Spraying strawberries. Main activities: Harvesting remaining crops, planting wheat, winter pastures; working feeding livestock; farmstead maintenance; equipment, fence repair.

MARYLAND & DELAWARE: **MARYLAND:** Precipitation 0.05 in. Temperature 27°, normal 38°. Temperature extremes 3°; 56°.

Main farm activity caring for livestock.

DELAWARE: Precipitation trace. Temperature 28°, normal 37°. Temperature extremes 8°; 54°.

Main farm activity caring for livestock.

MICHIGAN: Temperatures 5 to 8° below normal. Temperature extremes -13°; 47°. Precipitation 0.03 to 1.34 in. Heavy snowfall Upper Peninsula, light to moderate remainder.

Wheat mostly good to excellent, limited snow cover. Activities: Corn, soybean harvest continued, ground frozen. Pruning fruit trees, routine farm, building maintenance. Livestock excellent, feed supplies mostly adequate.

MINNESOTA: Temperatures 2° below to 3° above normal. Temperature extremes -24°; 46°. Precipitation none to 0.48 in. Greatest weekly total 0.65 in. Snowfall none to 11 in. Snow depth none to 11 in.

Normal winter activities. More snow needed for moisture, to protect alfalfa.

MISSISSIPPI: Clear, cold temperatures 3 to 9° below normal. Extremes 20°; 76°. Rainfall 0.95 in. below normal. Maximum weekly rainfall 2.08 in.

Days suitable for fieldwork 3.7, 6.1 1987, 3.0 avg. Soil moisture 70% adequate, 30% surplus. Cotton 100% harvested, 100% 1987, 98% avg. Soybeans 97% harvested, 100% 1987, 96% avg. Wheat good; 97% planted, 97% 1987, 89% avg.; 91% emerged. Pecans 84% harvested, 77% 1987, 84% avg. Pastures good. Livestock good. Hay 10% short, 85% adequate, 5% surplus. Feed grain 15% short, 85% adequate. Activities: Fall tillage, finishing cotton, soybean harvest; planting wheat.

MISSOURI: Temperatures near normal, slightly below normal southeast. No precipitation northern half, southern half 0.25 in.

Late harvesting being completed southeast. Wheat mostly fair to good. Livestock water short northern counties, run-off needed for ponds. Weather permitting grazing where available.

MONTANA: Slightly above normal temperatures southwest, west. Much above normal temperatures rest of State. Precipitation measured all sites. West significant precipitation. Southwest, north central, northeast very light precipitation.

Soil moisture shortages continued. Winter wheat remained fair to good. Wind damage mostly light. Grazing on crop residue open many areas. Most livestock supplemental feed.

NEBRASKA: Temperatures 5° above normal. Only trace amounts of precipitation occurred throughout week. Extremes 4°; 70°.

NEVADA: High pressure system early gave way to cold, dry northerly airflow. Precipitation mainly in form of light snow late. Temperatures slightly above normal. Temperature extremes 6°; 73°. Low night temperatures early hard on newborn calves, lambs. Chopping ice required some areas.

NEW ENGLAND: Precipitation 0.50 to 0.75 in. Connecticut, western Massachusetts, 0.25 to 0.50 in. remainder. Temperatures single digits near Canadian border to low 20s southern coast. Temperatures below normal.

Major farm activities: Machinery repair, tending livestock.

NEW JERSEY: Temperatures much below normal, 21° north, 25° south, 28° coastal. Extremes -1°; 53°. Precipitation below normal; none north, 0.03 in. south, 0.01 in. coastal. Heaviest 24-hour total 0.20 in. on 17th to 18th. Heaviest 24-hour snowfall 3 in. on 17th to 18th. Depth of snow 19th, 3 in.

Farm activities consisted mainly of fruit pruning; combining grain corn, soybeans unharvestable earlier; caring for livestock; marketing apples, cider, Christmas trees, sweetpotatoes, turkeys.

NEW MEXICO: Temperatures above normal. Measurable snowfall over portions northeast.

Harvest of most crops virtually complete; limited pecan, cotton, red chile harvest continued.

NEW YORK: Weak storm moved across southern area early morning 11th followed by large area of high pressure which brought Arctic like cold to area. Albany established new record lows on 11th to 13th. Also on 12th every National Weather Service office in State set new cold mark for date. Second storm moved off State on morning 15th. Accompanied by another surge of cold air. However, later cold snap not as pronounced as first. Temperatures generally 10 to 12° below normal for mid December. Coastal departures not great; only 7° below normal. Coldest readings 12th; Saranac Lake, Piseco Lake both recorded lows of -28°. Highest temperature 50° Bridgehampton 15th. Greatest amount of precipitation over coastal area especially over eastern Long Island when coastal storm hit eastern New England. Bridgehampton 1.89 in. rain 13th. Islip got 9 in. snow. Contrast least precipitation over New York City with an 0.04 in. equivalence. Least precipitation eastern Plateau 0.10 in. water equivalence. Lake effect snow important factor Great Lakes, northern Plateau.

Growers busy cutting, marketing Christmas trees. Fruit producers packing, grading apples. Caring for livestock major activity as cold temperatures moved in.

NORTH CAROLINA: Temperatures 10 to 12° below normal along coast, 7° below normal Piedmont. Temperature extremes 4°; 65°. Precipitation none to 0.52 in.

Days suitable for fieldwork 4.8. Soil moisture 1% very short, 16% short, 83% adequate. Pasture 4% very poor, 13% poor, 40% fair, 42% good, 1% excellent. Soybeans 92% harvested, 96% 1987, 82% avg. Oats 2% poor, 22% fair, 76% good. Barley 19% fair, 81% good. Rye 97% planted; 3% poor, 23% fair, 74% good. Wheat 96% planted; 1% poor, 24% fair, 73% good; 85% emerged, 90% 1987. Feed grains

4% short, 93% adequate, 3% surplus. Hay, roughage 6% short 87% adequate, 7% surplus. Major farm activities: Harvesting soybeans, tending livestock, general farm maintenance. Other activities: Harvesting cotton; seeding small grains; tobacco plant bed preparation; grading, marketing tobacco; fall plowing, marketing Christmas trees.

NORTH DAKOTA: Heavy snow, cold temperatures midweek northeast and north central; 5 to 10 in. snow northeast. Warmer late week. Precipitation 0.03 in. southeast to 0.44 in. north central. Temperatures 1° below to 6° above normal. Extremes -27° northeast; 58° southwest.

Soil moisture short. Hay, feed short to adequate. Snow cover generally below normal, some northeast counties adequate. Insects in stored grain continued to cause concern. Limited farm activity included grain hauling, end of year book work.

OHIO: Subnormal temperatures except upper 40s to 50s on 14th. Lows teens to low 20s, highs low to mid 50s. Temperatures 3 to 8° subnormal. Extreme minimum below zero north, single digits to low teens elsewhere. Precipitation snow statewide; total liquid 0.40 in. northeast to less than 0.10 in. elsewhere.

Last fields of corn combined. Machinery put away for season. Caring for livestock.

OKLAHOMA: Temperatures 1° above normal northeast to 4° above normal Panhandle. No precipitation anywhere in State.

Favorable weather accelerated late row crop harvest. Winds sapped soil moisture. Wheat needs rain for further growth. Cattle prices slightly lower than last week.

OREGON: Temperatures normal to slightly above normal most locations. Precipitation along coast, north Cascades 0.20 in. Rest of State 0.10 in. or less.

Soil moisture mostly adequate west, short to adequate east of Cascades. Winter wheat looks better than this date 1987 Columbia Basin; spraying for Russian Wheat aphid fall/winter sprays applied to orchards west. First hard freeze stopped bud development cherry orchards The Dalles. Some winter vegetables harvested Willamette Valley. Livestock good to excellent. Lambing underway Willamette Valley. Range, pasture fair to good. East, all precipitation soaked into ground since mild weather, no frozen soils. Grass growth limited, but hay supplies will probably be adequate.

PENNSYLVANIA: Cold, dry across State. Western areas snow, especially around Lake Erie. Eastern areas trace of snow. Temperature 20°, 12° below normal. Temperature extremes 14°; 61°. Precipitation 0.11 in., 0.61 in. below normal.

Activities: Harvesting corn grain, baling fodder; spreading manure, fertilizer; caring for livestock; maintaining machinery; fixing fence; grading potatoes.

PUERTO RICO: Island rainfall 0.37 in., 0.69 in. below normal. Highest weekly rainfall 1.97 in. Pico Del Este-Luquillo, 1.16 in. Trujillo Alto, 0.76 in. Gurabo. Highest 24-hour total 0.83 in. Trujillo Alto. Total rainfall since January 1st 62.36 in., 1% above normal. San Juan WSFO temperature 76°, 2° below normal. Total rainfall 0.28 in., 0.75 in. below normal. Divisional temperature 75 to 76° on coasts, 69 to 70° interior, station temperature 59° Adjuntas to 79° Roosevelt Roads. Lowest minimum temperature 47° Adjuntas. Highest maximum temperature 90° Sebastian.

SOUTH CAROLINA: Precipitation scattered, very light. Temperatures 7 to 10° colder than usual. Soybean harvesting, wheat planting continued.

SOUTH DAKOTA: Temperatures none to 10° above normal. Extremes -10°; 67°. Black Hills low -13°. Narrow band of snow 2 to 5 in. Lemmon to Pickstown. Light precipitation mostly less than 0.10 in. Precipitation for year mostly below normal. Most of State without snow cover.

Some problems with soil blowing, wide open fields with no snow cover.

TENNESSEE: Major front crossed State midweek, brought no significant precipitation. Snow flurries weekend, no accumulation. Temperatures 1° below normal. Precipitation 1.00 in. below normal statewide.

Primary activities farm chores, tending livestock.

TEXAS: NO WEATHER DATA AVAILABLE.

Crops: Cold, damp weather slowed cotton harvest Plains, Trans-Pecos early week, but harvest good progress later as fields dried. Lint grades remained good most areas, weather hurt quality some unharvested fields High Plains. Delays some gins High Plains ginning cotton modules. Yields remained above average some areas Trans-Pecos. Cotton 95% harvested, 93% 1987, 79% avg. Small grains moisture stressed most areas. Although some fields benefited from recent snow, rains, moisture shortage becoming critical some dryland fields. Greenbug populations moderate to heavy some High Plains fields, insects below ground, difficult to kill. Dry conditions across Plains reduced wheat grazing, many shallow rooted fields being pulled up by grazing cattle. Low Plains, small grains responded to recent moisture, few stockers moved onto wheat fields because poor grazing prospects. Small grain fields improved slightly Cross-Timbers, Blacklands, heavy greenbug infestations problem. South central producers replanting some wheat fields because poor development. Peanut harvest almost complete Cross-Timbers. Few late fields being harvested, yields some dryland fields disappointing. Other Field Crops: Peanuts 99% harvested, 98% 1987, 95% avg. Pecans 90% harvested, 82% 1987, 82% avg. Soybeans 100% harvested, 100% 1987, 95% avg. Sunflowers 100% harvested, 100% 1987, 97% avg. Oats 99% planted, 100% 1987, 97% avg.

Commercial Vegetables: Rio Grande Valley harvest lettuce, tomatoes, peppers continued. Onions, celery good progress. Citrus quality excellent. Producers pruning peach trees. Laredo area onions planted. Cabbage, cauliflower doing well. San Antonio-Winter Garden harvest carrots, cabbage, spinach, cole, leafy greens continued. Trans-Pecos fall onion seeding complete. Land preparation spring onion planting underway. Pecan harvest good progress, rains slowed operations some areas. Nut size, quality poor most native varieties because summer's dry weather.

Range and Pasture: Ranges, pastures remained short many areas, despite recent moisture. Many areas High Plains producers pulling cattle off winter wheat pastures because poor field condition. Supplemental feeding heavy, producers trying to make pastures last longer. Central native pastures short, over grazed. Supplemental feeding increased Blacklands through south central, hay supplies

short, high demand. Heavy frost south central increased risk of prussic acid poisoning. Livestock going into winter less than ideal conditions. Some producers culling herds, cattle going to markets lighter weights. Many mother cows rapidly losing condition after calving.

UTAH: Precipitation very light. Temperatures 2 to 7° above normal. Snow cover none to light.

Winter wheat 27% poor, 70% fair, 3% good. Winter range 36% poor, 64% fair. Livestock fair to good. Major farm activities: Alfalfa hay movement, livestock chores, hauling manure, equipment repair, servicing, tax records.

VIRGINIA: Unseasonably cool. Temperatures 8° below normal. Spotty snowfall beginning, mid period. Precipitation total 0.25 in.

Days suitable for fieldwork 2.5. Topsoil moisture 13% short, 62% adequate, 25% surplus. Soybeans 93% harvested, 95% 1987, 86% avg. Late planted small grains held down by cold spell. Winter grains, grazing crops 3% very poor, 16% poor, 40% fair, 41% good. Marketed burley, dark fire-cured tobacco. Livestock care, lambing, calving active. Pesticide recertification meetings.

WASHINGTON: Series of weather systems brought precipitation to State first half of week. Most precipitation confined to western area, northeast corner of State. Strong ridge of high pressure built in over area for latter half bringing dry weather, clear skies night overnight temperatures well below freezing on both sides of Cascades.

Overall very little field activity. Some alfalfa growers Grant County fertilizing fields. Rhubarb growers King, Pierce Counties digging crowns for early forcing sheds. Pruning trees, grapes many counties continued. Russian wheat aphids remained active many counties. Because of substantial regrowth, bluegrass growers Adams, Lincoln Counties seeking livestock producers for animal placement to graze excess growth. Mild weather Grant County encouraged grazing aftermath feed such as corn, alfalfa.

WEST VIRGINIA: Temperature 25°, 8 to 11° below normal. Extremes -12° Greenbank; 63° Huntington. Precipitation 0.19 in., 0.46 to 0.60 in. below normal.

Days suitable for fieldwork 4.6. Soil moisture 18% very short, 46% short, 36% adequate. Wheat, barley fair to poor. Livestock good to fair. Feed 7% very short, 29% short, 64% adequate. Farm activities: General farm maintenance, livestock care.

WISCONSIN: Cold, temperatures 17°. Extremes -18°; 47°. Precipitation trace to 0.40 in. Snowfall 1 to 3 in. 12th, 1 in. 16th; 6 to 12 in. near Lake Superior 14th to 16th. Frost depth 6.6 in., 4.4 in. normal. Snow depth 2 in., 5 in. normal.

Topsoil moist.

WYOMING: Temperatures above normal. Precipitation below normal.

Winter wheat fair to good. Additional moisture needed for good development. Livestock fair to good. Colder temperatures, snow increased stress, feed requirements. Producers feeding areas with snow cover or where winter pastures short.

International Weather and Crop Summary

December 11-17, 1988

WESTERN USSR ... Overwintering conditions continue mostly favorable for dormant winter grains.

EUROPE ... Dryness persists in the southwest. Freezing temperatures cause possible frost damage to fruit and vegetable crops in Spain and Italy.

SOUTH ASIA ... Showers in the south favor rice irrigation but slow summer crop harvesting.

EASTERN ASIA ... Seasonably cooler temperatures return to most crop areas.

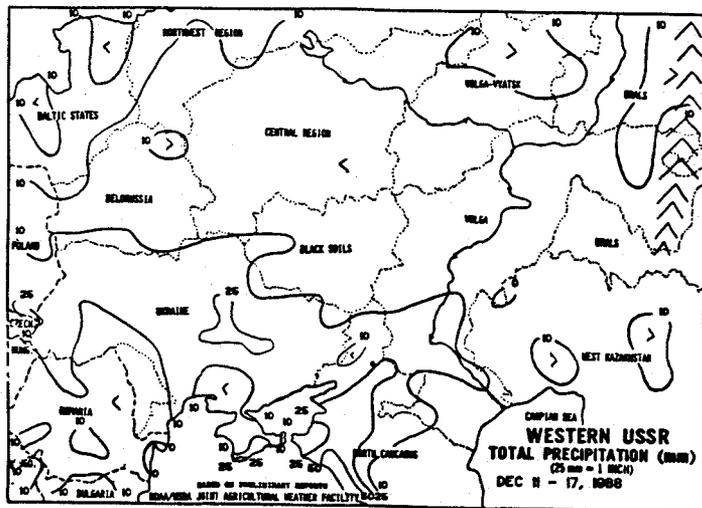
SOUTHEAST ASIA ... Widespread showers, with some local flooding, cover Indonesia, boosting planting irrigation levels. Drier weather brings some relief to flooded regions of Malaysia.

SOUTH AMERICA ... Beneficial rain in Argentina improves planting and early growth conditions. Rain also favors Brazil's southern and northern soybean areas, but only light rain and high temperatures hamper Parana's crops.

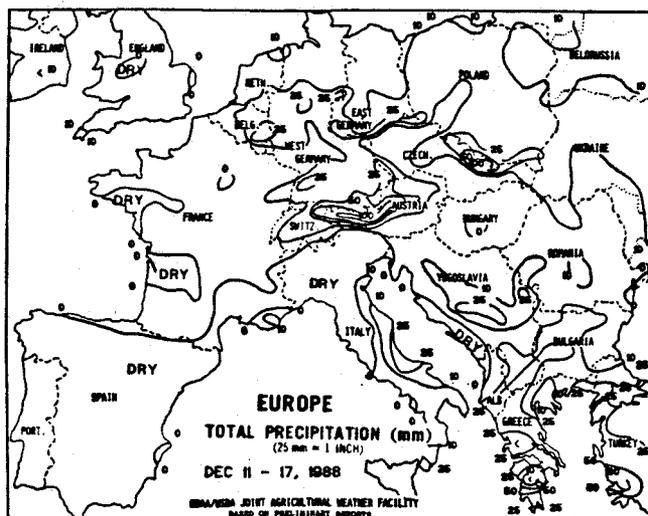
AUSTRALIA ... Favorably dry weather allows harvest progress in southern winter grain areas. Tropical Cyclone Ilona strikes the northwest.

SOUTH AFRICA ... Widespread rain and cooler-than-normal temperatures continue across South Africa, benefiting vegetative crops.

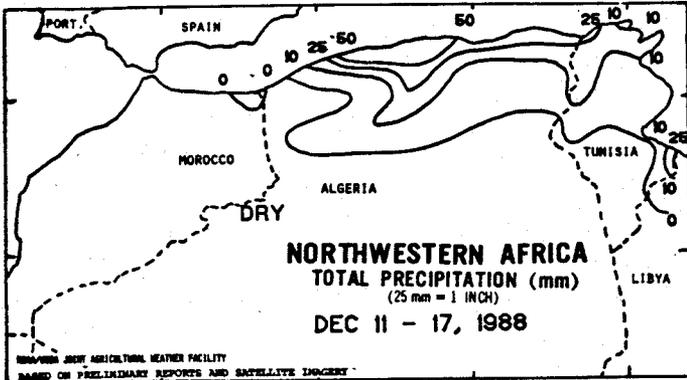
NORTHWESTERN AFRICA ... Dry weather continues over Moroccan winter grain areas, while beneficial rain continues over northern crop areas in Algeria and Tunisia.



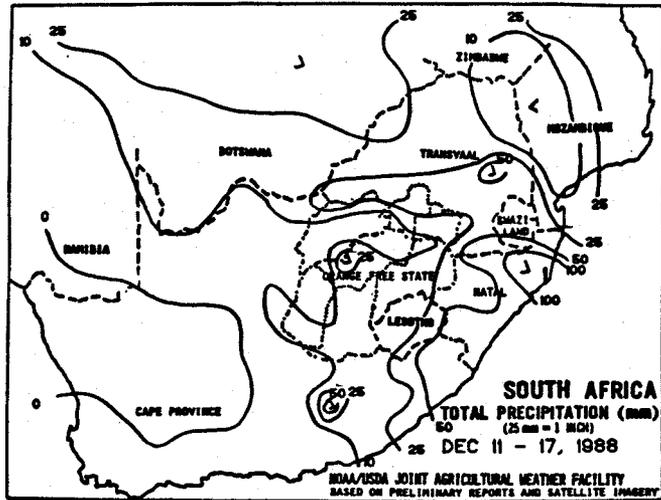
WESTERN USSR ... Light snow covered the northern half of the region, with precipitation amounts ranging from 3 to 10mm. Winter grain areas in the eastern Baltic States, Belorussia, the Central Volga, and the Volga Vyatsk were protected from extreme cold (temperatures less than -15 degrees Celsius) by moderate to deep snow cover. Further south, widespread snow covered the northern two-thirds of the Ukraine where precipitation amounts ranged from 15 to 30mm. Widespread moderate rain (25-56mm) fell over the western North Caucasus. Weekly average temperatures ranged from 2 to 4 degrees C below normal in most areas except for the western and southern North Caucasus where temperatures were near to slightly above normal.



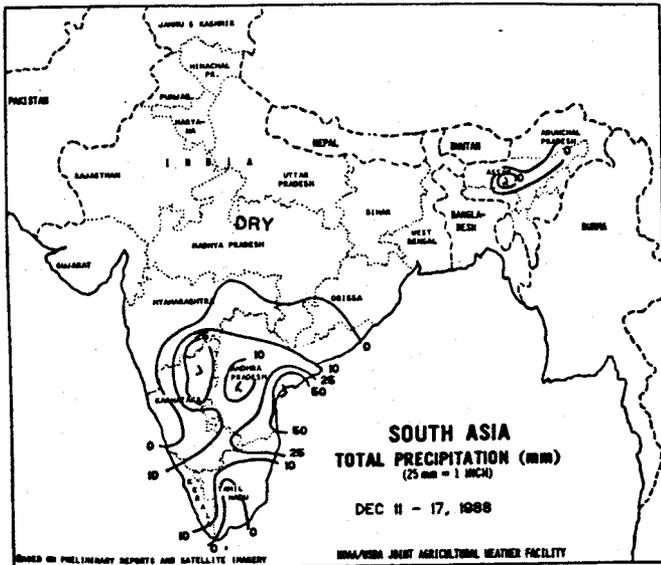
EUROPE ... Widespread rain and snow (10-30mm, with isolated amounts greater than 30mm) persisted over sections of the Low Countries, West and East Germany, Czechoslovakia, and Poland, keeping soils saturated. Moderate to heavy rain and snow (10-40mm, with scattered amounts greater than 40mm) also fell over sections of the southern Balkans, helping to recharge soil moisture after persistent late summer and fall dryness. Elsewhere, mostly dry weather covered sections of the United Kingdom, France, northern Italy, and the Iberian Peninsula, where persistent dryness over the past several weeks has caused stress in some vegetative winter grains. Mean temperatures ranged from above normal in the northwest to below normal over the remainder of the continent. Freezing minimum temperatures returned to much of interior Spain and Italy on the 14th-16th, possibly causing localized damage to some fruit and vegetable crops.



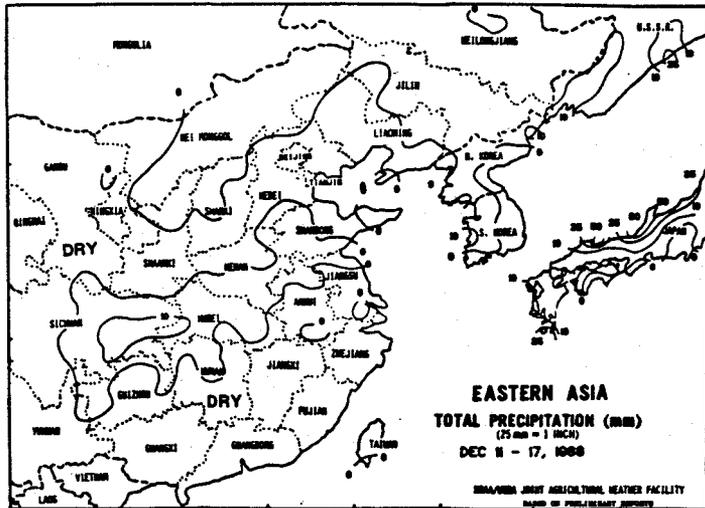
NORTHWESTERN AFRICA ... Although the second consecutive week of dry weather covered Moroccan winter grain areas, topsoil moisture remained adequate for crop emergence and early plant establishment. Widespread beneficial precipitation (12-60mm) continued over northern winter grain areas in Algeria and Tunisia although rainfall amounts were less than last week. Topsoil moisture for winter grain planting remained limited in southern growing areas where precipitation continued light and spotty.



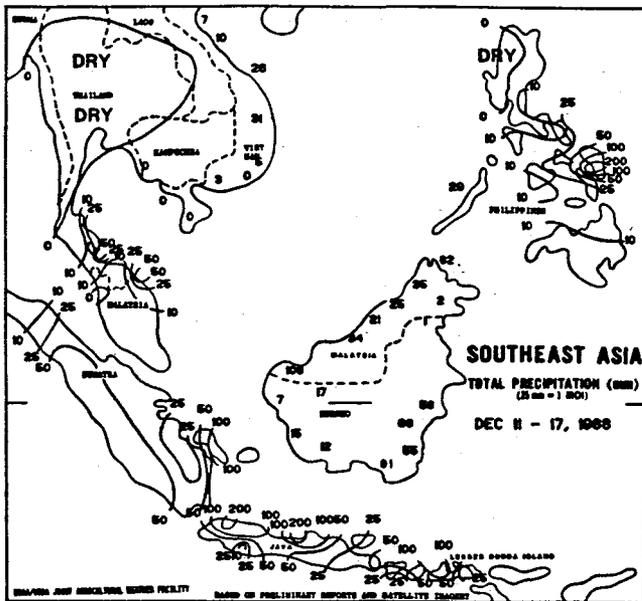
SOUTH AFRICA ... Light to moderate rain (4-25mm) covered most areas of the Maize Triangle, with heavier rain (25-50mm or more) over northeastern portions of the Triangle, central and northern Transvaal, and crop areas of the eastern Cape Province and Natal. Temperatures averaged near to below normal over most corn regions, reflecting this season's trend of cooler-than-normal weather which has slowed development. Moisture conditions continued favorable for vegetative crops.



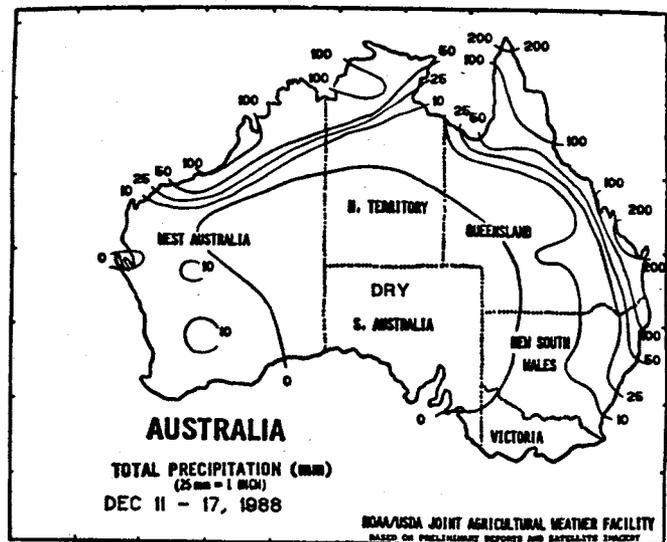
SOUTH ASIA ... Light to moderate showers (10-50mm or more) from a tropical low moved into southern India, benefiting irrigation reserves for newly planted rice but slowing summer crop harvesting. Dry, slightly warmer-than-normal temperatures covered the northern wheat regions where most of the crop is in or nearing the jointing stage.



EASTERN ASIA ... Mostly dry weather continued over the North China Plain and southern China. Scattered light to moderate rain (5-18mm) fell across northern sections of the Yangtze Valley and South Korea, while light snow (less than 10mm) covered parts of the Nei Mongol, Jilin, and Heilongjiang. In Japan, heavy rain (25-77mm) and possible flooding continued in western Honshu. Temperatures fell to near normal for the first time in several weeks across much of central China, although above-normal temperatures persisted in Manchuria. The cooler temperatures caused winter grains to become dormant over southern sections of the North China Plain.



SOUTHEAST ASIA ... Light to moderate rain (10-50mm or more) continued for the second week over eastern portions of the Malay Peninsula with minimal rain (1-10mm) falling over the south and west. Rainfall tapered off over all but southernmost eastern Malaysia as most recently flooded copra and palm oil regions received 21-34mm. Variable showers (10-100mm or more) continued over Indonesia, though locally heavy rain (100-263mm) persisted over northern Java, causing some flooding. Conditions for rice planting across Indonesia continued generally favorable. In the Philippines, locally heavy rain (50-200mm or more) continued over the east-central islands but more seasonable rainfall (25mm or less) fell elsewhere over the islands.



AUSTRALIA ... Favorably dry weather returned to crop areas of South Australia, Victoria, and southwestern New South Wales, allowing progress in winter grains harvest. Light showers (less than 10mm) caused only minimal harvest delays in southern crop areas of Western Australia. In coastal sections of northern Western Australia and Northern Territory, Tropical Cyclone Ilona formed offshore early in the week and moved onshore on the 17th, causing high winds, heavy rain (50-100mm, with isolated amounts greater than 100mm), and possible flooding. Heavy rain (50-150mm, with isolated rainfall in excess of 200mm) also covered much of coastal Queensland and New South Wales, causing localized flooding but benefiting vegetative sugarcane. Lighter rain (10-25mm) fell over interior growing areas of Queensland and New South Wales, favoring vegetative summer crops.

SOUTH AMERICA ... In Argentina, substantial rain fell again over most crop areas, improving soil conditions for late plantings and promoting growth of earlier planted grains and oilseeds. Weekly rainfall averaged 30-50mm or more in Santa Fe, which received only light rain during the previous week. Rainfall in Cordoba and northern Buenos Aires generally averaged 15-40mm, with locally heavier scattered amounts of 40-75mm. Significant showers (25-50mm) also favored cotton areas of Formosa but mostly light rain (10mm) fell in Chaco. Drier weather late in the week helped wheat harvesting. In south-central Brazil, beneficial rain (20-50mm or more) alleviated the recent drying trend in Rio Grande do Sul and promoted favorable growing conditions. Soaking rain (50-100mm or more) fell in far northern areas of Goias and Minas Gerais, providing needed moisture for crop growth. Showers produced variable rainfall amounts (3-22mm) in Mato Grosso do Sul, Parana, and Sao Paulo. Weekly temperatures averaged 3-4 degrees C above normal in these latter three states, aggravating unfavorable early season conditions for crop development.



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