

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

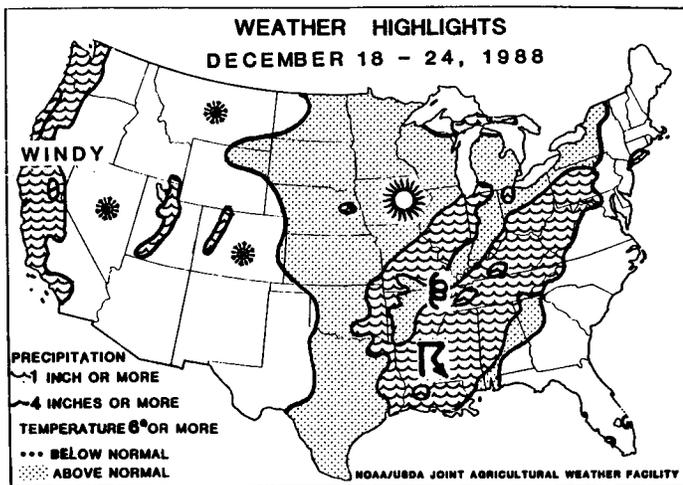
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Dec. 28, 1988

National Weather Summary

December 18-24, 1988



HIGHLIGHTS: The west Coast was buffeted by several storm systems which brought snow to the mountains and rain to the coast. High winds produced high surf and coastal erosion. Much of the Intermountain and Rocky Mountain States received snow from these storms. Low temperatures on Monday morning were well below freezing in northern and interior Florida, causing some damage to the vegetable crop with little or no damage to the citrus crop. Mild weather during the week prevented a white Christmas throughout the eastern half of the country except for the northern Plains and Great Lakes. Late-week heavy rain spread over the lower Mississippi Valley to the Ohio Valley. Severe weather produced several tornadoes in Tennessee on Saturday.

SUNDAY: Unseasonably mild temperatures prevailed across the Great Plains and the lower Mississippi Valley. By contrast, cool temperatures were felt in the Southeastern United States. Light to moderate snow fell across Ohio, Pennsylvania, and New York, with heavier amounts along the windward side of the lower Great Lakes. A developing low pressure system over the western Rockies produced snow across the northern mountains of southern California and western Nevada and showers along the central California coast.

MONDAY: Low temperatures across parts of northern and interior Florida fell well below freezing, causing some damage to vegetable crops. Little or no damage, however, was done to the citrus crop. Meanwhile, a winter storm was gathering strength over the Rockies, producing snow throughout the Intermountain and Rocky

Mountain States. The storm also spread snow across the mountains of northern California. A few record-high temperatures were broken in Iowa and Illinois.

TUESDAY: The low pressure system moved eastward in the Central United States, triggering thunderstorms with high winds across Missouri and Iowa and gale force winds over parts of the Great Lakes. Rain showers associated with the system stretched from Minnesota to Illinois with snow falling across the Dakotas to upper Michigan. A new Pacific storm spread coastal rains and mountain snow across the West Coast States. The storm caused high winds across parts of Nevada and Washington. Mild temperatures were prevalent across most of the eastern half of the country.

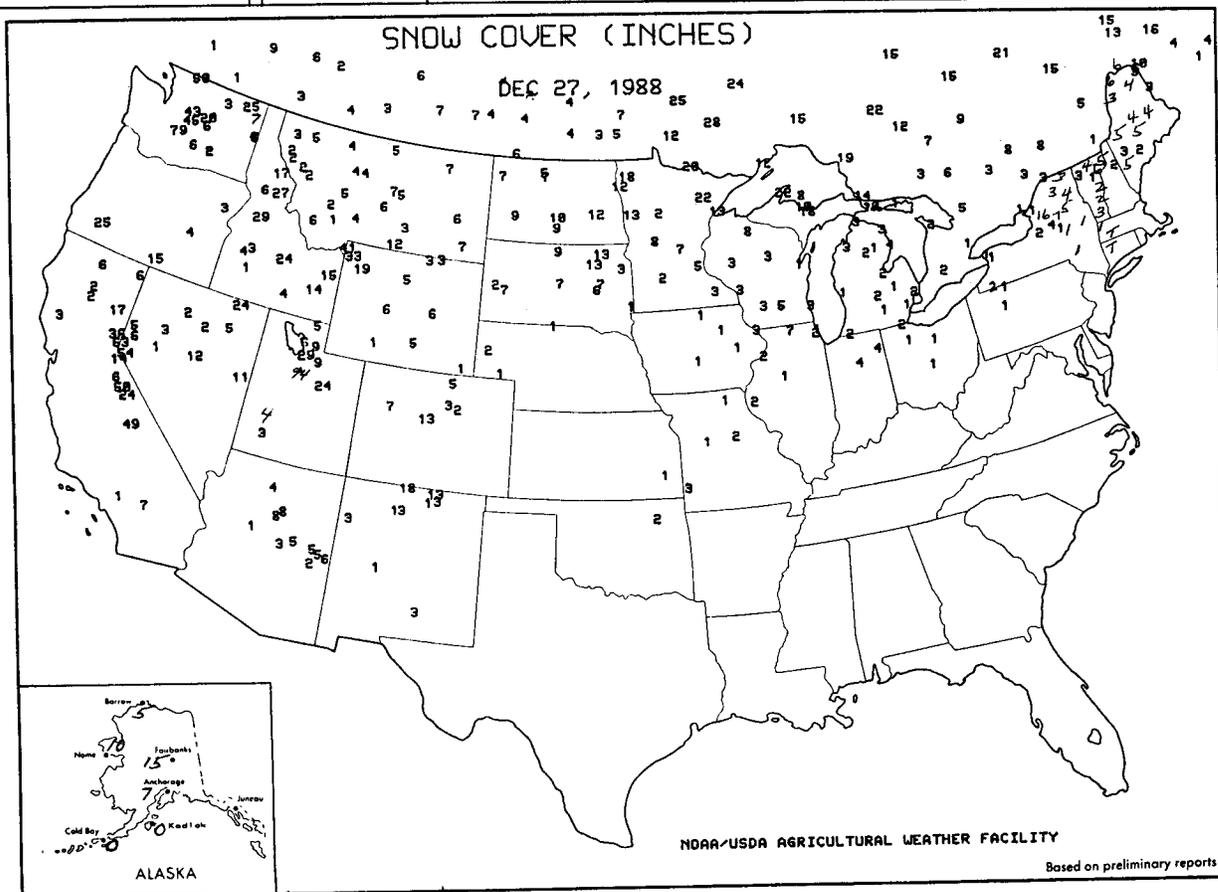
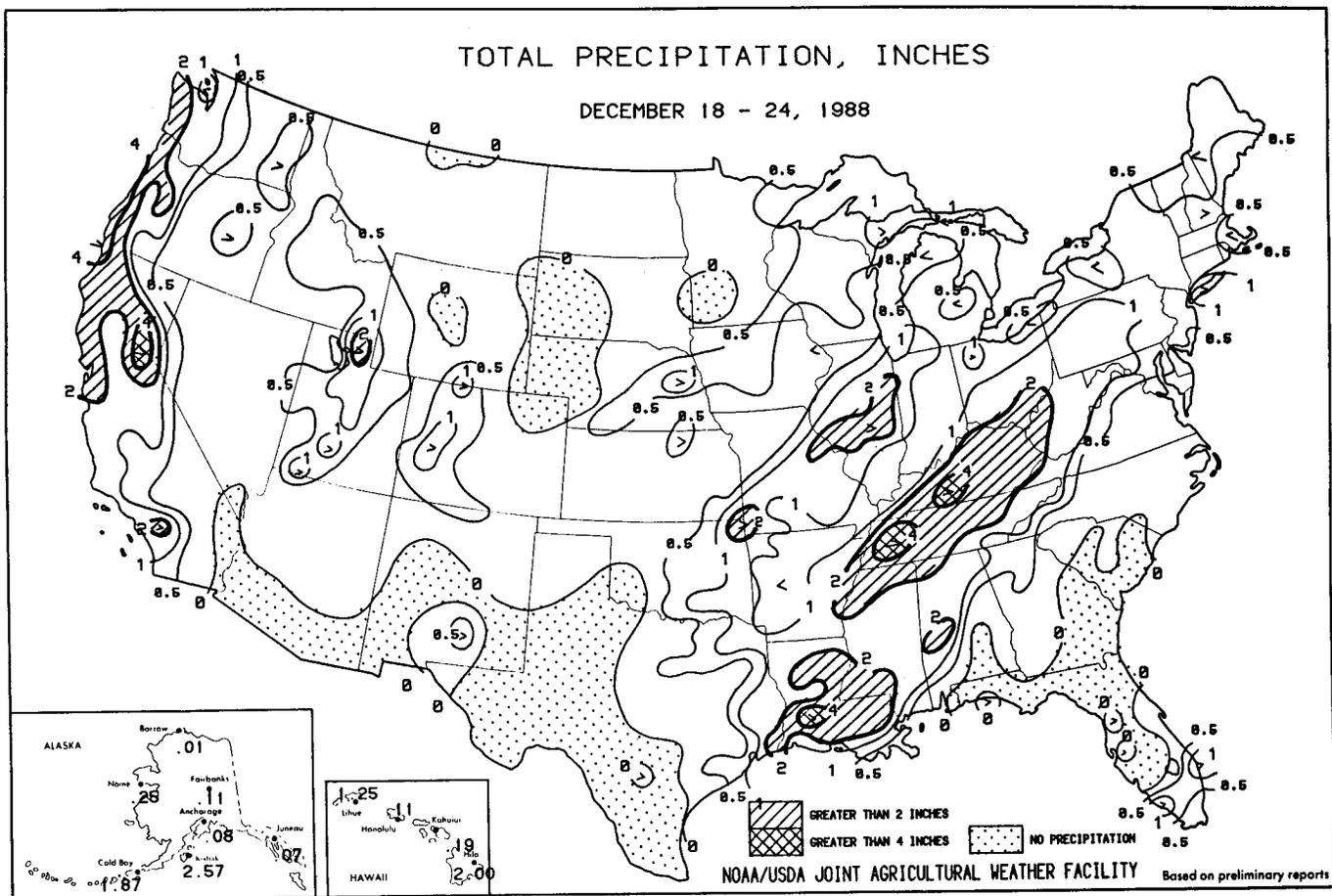
WEDNESDAY: A low pressure system and cold front moving inland from the Pacific brought rain to the Pacific coast, snow across the central Rockies, and strong winds to portions of the California coast. Scattered rain fell from Texas to southern New England due to a weak cold front. Mild temperatures continued over the Atlantic Coast States with several high temperature records being broken.

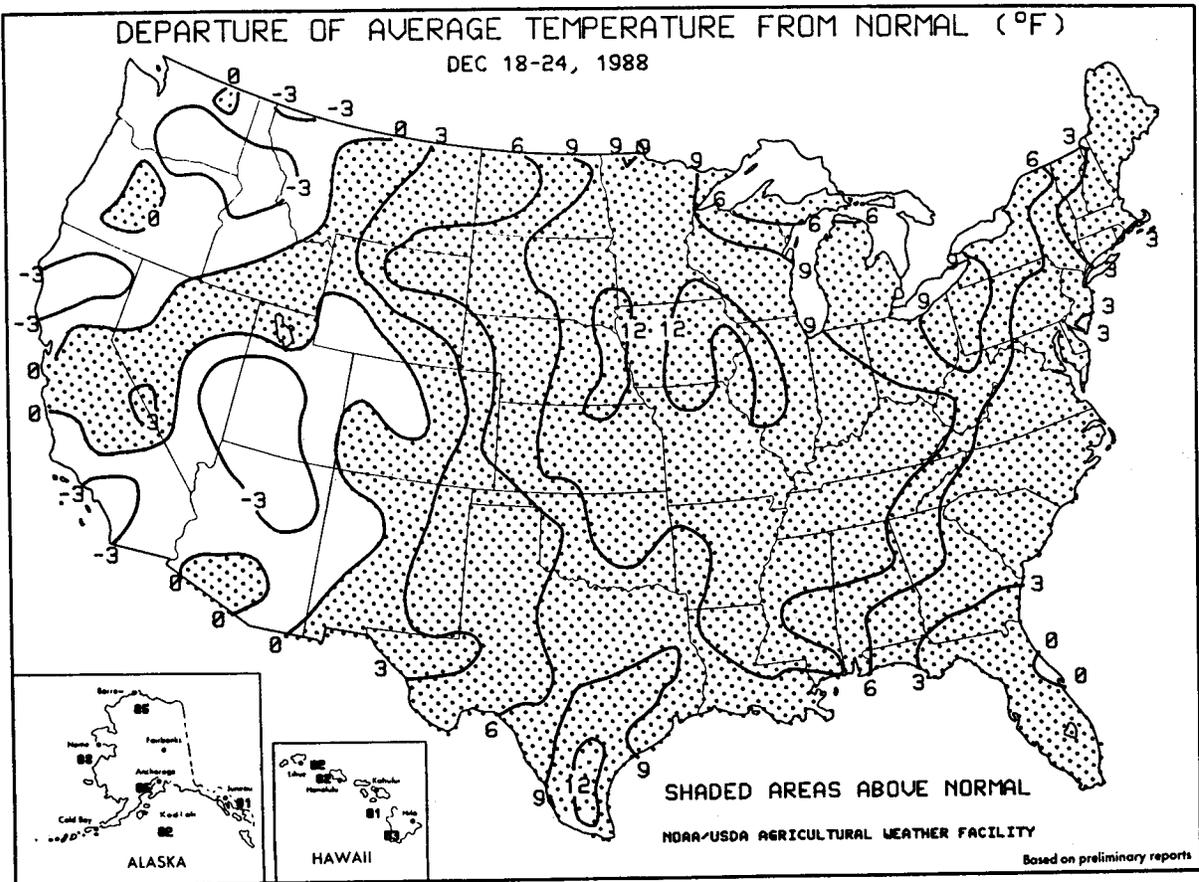
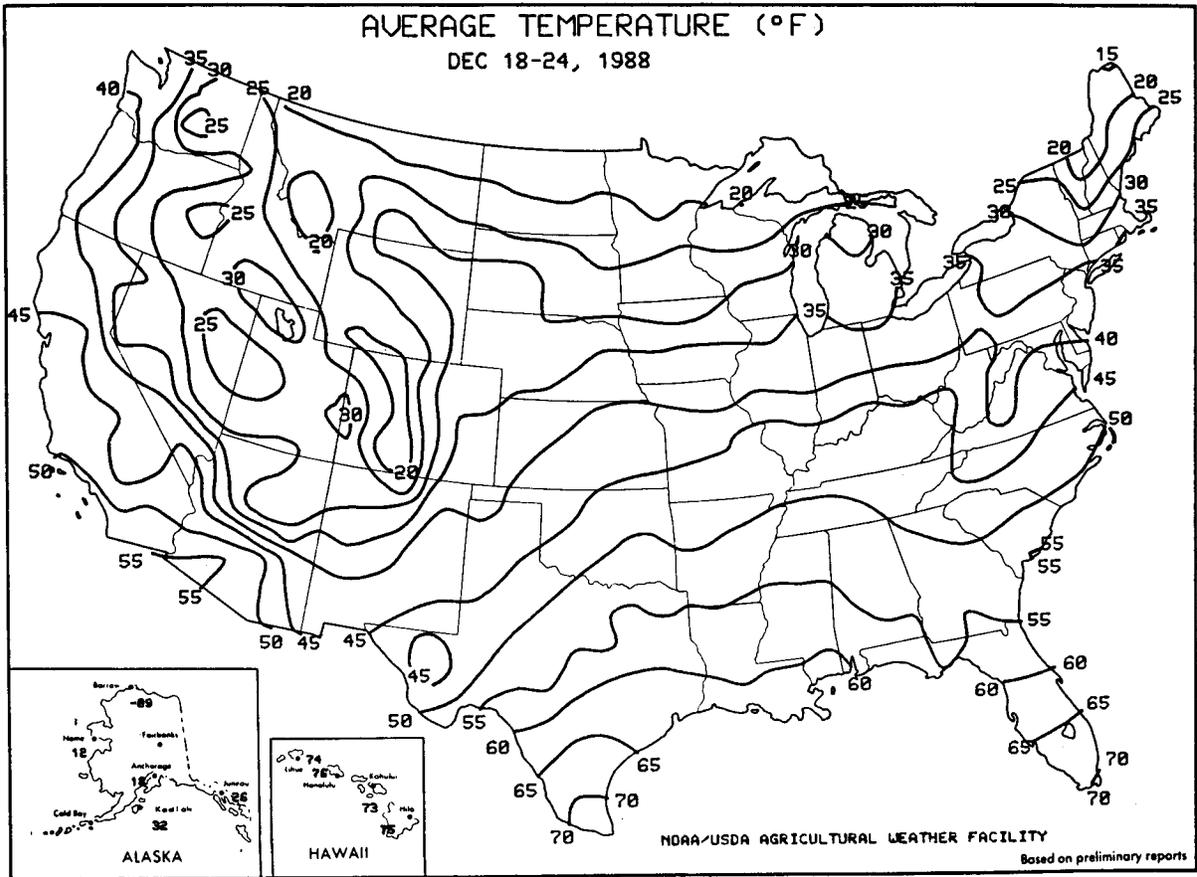
THURSDAY: The Pacific cold front moved across the Rockies into the Mississippi Valley, bringing very high winds to portions of Colorado. The same front produced thunderstorms from eastern Texas to southwest Missouri. The weak cold front in the east still produced rain from the lower Mississippi Valley to the Ohio Valley. Snow fell from central Nebraska to northern South Dakota. Rain and freezing rain created slick roads over eastern Iowa and northwest Illinois. Another storm system moved into the Pacific coast, bringing rain and strong winds again to the northern and central California coast.

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National Weather Data for Selected Cities

Weather Data for the Week Ending December 24, 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		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	63	43	70	19	53	9	1.0	-.1	.9	1.2	31	39.3	74	90	51	0	2	4	1
MOBILE	70	50	78	26	60	8	.1	-1.2	0	1.4	34	61.9	98	96	62	0	2	2	0
MONTGOMERY	67	39	78	21	53	5	T	-1.1	T	1.3	36	62.5	130	97	50	0	2	0	0
AK ANCHORAGE	25	12	41	-4	18	5	.1	-.2	.1	1.1	132	13.7	94	90	68	0	7	1	0
BARROW	0	-18	8	-42	-9	5	T	0	T	.3	250	3.6	80	84	75	0	7	1	0
FAIRBANKS	17	2	26	-15	10	21	.1	-.1	0	.3	46	10.3	100	93	78	0	7	4	0
JUNEAU	30	22	34	12	26	0	.1	-1.0	.1	5.0	138	58.3	112	100	81	0	7	1	0
KODIAK	36	27	39	21	32	2	2.6	1.3	1.7	9.0	210	82.4	138	92	62	0	6	5	1
NOME	22	2	33	-21	12	8	.3	.1	.1	.9	179	12.6	87	93	79	0	6	4	0
AZ PHOENIX	62	44	64	39	53	1	T	-.2	T	.1	17	7.2	107	68	30	0	1	1	0
PRESCOTT	46	24	58	15	35	-1	.3	-.1	.2	.3	26	14.1	76	79	37	0	6	3	0
TUCSON	64	35	72	31	50	-2	T	-.2	T	T	3	11.6	107	67	23	0	2	0	0
YUMA	66	44	69	39	55	0	T	-.1	T	T	0	2.8	116	62	26	0	0	0	0
AR FORT SMITH	62	33	66	19	48	8	.7	.1	.7	1.2	52	34.6	88	92	39	0	3	1	1
LITTLE ROCK	62	42	68	31	52	10	1.1	.1	.8	1.2	37	45.9	95	80	51	0	1	3	1
CA BAKERSFIELD	56	39	61	33	48	0	.6	.4	.3	1.1	223	4.7	88	95	60	0	0	3	0
EUREKA	50	41	52	37	46	-2	3.2	1.8	.9	3.4	71	28.7	77	86	70	0	0	6	4
FRESNO	51	38	57	31	45	0	1.2	.8	.6	2.2	183	9.1	91	97	64	0	1	4	1
LOS ANGELES	58	47	62	41	53	-4	1.7	1.3	.8	2.4	203	7.8	68	97	55	0	0	5	1
REDDING	47	34	54	28	40	-6	2.4	.8	.7	2.4	45	29.6	75	96	72	0	3	6	3
SACRAMENTO	51	40	54	33	45	1	2.2	1.5	.8	2.2	103	11.3	69	97	69	0	0	5	2
SAN DIEGO	60	48	62	44	54	-3	.6	.1	.4	1.5	105	9.6	100	91	58	0	0	5	0
SAN FRANCISCO	55	44	57	40	49	1	3.1	2.3	1.1	3.1	119	13.2	70	96	70	0	0	5	3
CO DENVER	44	23	59	14	34	2	T	-.1	T	.9	207	14.8	99	73	31	0	7	1	0
GRAND JUNCTION	39	20	46	12	30	3	.1	0	.1	.1	32	7.8	101	96	50	0	7	4	0
PUEBLO	48	19	54	11	33	2	T	0	T	.4	165	11.2	104	90	32	0	7	1	0
CT BRIDGEPORT	40	26	45	13	33	1	.1	-.7	.1	.9	30	38.1	94	83	61	0	6	3	0
HARTFORD	37	19	51	4	28	1	.6	-.3	.4	1.1	34	39.6	91	84	50	0	6	2	0
DC WASHINGTON	50	32	65	22	41	4	1.0	.3	.6	1.2	48	31.6	83	85	47	0	3	3	1
FL APALACHICOLA	67	45	75	30	56	2	0	-.8	0	1.2	43	62.3	115	96	60	0	2	0	0
DAYTONA BEACH	71	45	79	27	58	0	.2	-.3	.2	.9	54	40.9	85	95	50	0	2	1	0
JACKSONVILLE	71	40	80	24	56	1	0	-.6	0	1.1	61	60.7	119	98	45	0	3	0	0
KEY WEST	75	63	80	54	69	-1	T	-.4	T	.2	14	36.5	94	90	62	0	0	0	0
MIAMI	77	62	82	43	70	2	.1	-.3	.1	.1	9	44.6	78	86	50	0	0	2	0
ORLANDO	73	50	82	34	61	1	T	-.4	T	1.0	65	52.4	107	96	47	0	0	1	0
TALLAHASSEE	70	35	79	18	53	0	0	-1.1	0	1.1	30	48.4	76	99	46	0	3	0	0
TAMPA	74	50	82	34	62	2	0	-.5	0	1.6	99	52.4	114	90	40	0	0	0	0
WEST PALM BEACH	75	60	81	39	68	1	1.4	.8	.8	1.6	94	64.7	109	83	54	0	0	2	2
GA ATLANTA	62	41	69	21	51	8	.1	-.9	.1	.1	4	44.8	94	90	53	0	2	2	0
AUGUSTA	65	36	76	18	50	4	T	-.8	T	.5	23	40.3	96	97	49	0	3	0	0
Macon	66	40	76	24	53	5	T	-.9	T	.7	23	42.1	96	94	49	0	3	1	0
SAVANNAH	68	40	77	25	54	4	0	-.7	0	1.0	47	48.1	98	91	45	0	3	0	0
HI HILO	83	66	85	62	75	3	2.0	-.7	1.0	3.3	32	30.0	103	93	54	0	0	5	2
HONOLULU	83	68	85	57	76	2	.1	-.7	.1	5.5	211	15.3	68	86	55	0	0	2	0
KAHULUI	82	64	84	56	73	1	.2	-.5	.2	9.5	465	27.2	155	93	56	0	0	1	0
LIHUE	79	69	80	60	74	2	1.3	0	.6	5.6	136	42.0	99	90	68	0	0	3	1
ID BOISE	36	21	40	16	28	-3	.5	-.2	.2	.5	48	11.0	98	97	67	0	7	6	0
LEWISTON	35	26	40	19	30	-4	.1	-.2	.1	.1	14	8.4	67	95	75	0	7	1	0
POCATELLO	34	19	38	10	26	1	.1	-.1	.1	.4	56	7.3	70	91	63	0	7	3	0
IL CHICAGO	46	25	56	10	35	10	.9	.3	.8	1.0	52	31.9	95	88	55	0	6	3	1
MOLINE	47	26	57	19	36	12	.5	.1	.4	.5	33	24.7	68	87	50	0	6	3	0
PEORIA	49	27	61	19	38	12	1.1	.7	1.1	1.2	73	21.1	61	85	47	0	6	3	1
QUINCY	51	28	60	17	39	11	.7	.3	.7	.7	53	17.8	48	82	42	0	5	2	1
ROCKFORD	44	24	56	11	34	11	.4	0	.2	.5	32	23.5	65	89	57	0	6	3	0
SPRINGFIELD	52	29	60	18	40	12	2.2	1.8	2.2	2.3	135	24.3	72	80	44	0	5	3	1
IN EVANSVILLE	57	34	62	17	46	12	.7	-.1	.4	.7	26	36.4	89	85	45	0	3	4	0
FORT WAYNE	46	25	59	11	35	8	.7	.2	.5	.9	45	31.7	93	89	56	0	6	4	1
INDIANAPOLIS	50	29	62	10	40	10	.9	-.2	.6	1.0	44	29.9	78	84	46	0	5	3	1
SOUTH BEND	44	26	59	12	35	8	1.2	.6	1.0	1.7	76	37.5	100	88	55	0	5	4	1
IA DES MOINES	48	24	56	14	36	13	.6	.4	.3	.6	73	21.8	72	82	44	0	7	3	0
SIOUX CITY	43	24	58	14	33	12	.4	.2	.3	.5	91	23.2	92	89	54	0	6	3	0
WATERLOO	43	22	52	14	33	13	.2	0	.2	.2	24	18.7	57	93	57	0	7	3	0
KS CONCORDIA	51	31	61	23	41	12	.5	.3	.5	.5	98	14.5	54	75	37	0	5	1	0
DODGE CITY	56	28	67	20	42	10	.1	0	.1	.1	25	15.0	74	76	27	0	6	1	0
GOODLAND	49	24	67	15	37	7	.2	.1	.2	.4	127	20.8	130	79	31	0	6	1	0
TOPEKA	56	27	64	16	41	11	.1	-.2	.1	.1	11	18.7	56	81	28	0	5	1	0
WICHITA	56	29	63	23	42	9	T	-.2	T	.1	10	16.7	59	78	26	0	6	1	0
KY BOWLING GREEN	58	36	65	18	47	10	4.9	3.9	2.0	4.9	141	45.8	95	94	55	0	1	5	3
LEXINGTON	56	35	61	17	46	11	2.9	2.1	1.3	3.0	103	38.3	85	90	51	0	2	4	2
LOUISVILLE	58	36	62	18	47	11	1.7	1.0	.7	1.8	66	35.9	84	86	43	0	1	5	3
LA ALEXANDRIA	68	49	73	27	59	9	1.2	.1	.6	3.0	81	41.7	81	97	65	0	1	5	1
BATON ROUGE	73	48	80	27	61	9	2.9	1.8	2.6	6.8	176	74.7	136	97	57	0	2	2	1
LAKE CHARLES	72	50	76	32	61	8	1.9	.8	1.3	3.6	93	57.9	109	97	63	0	1	5	1
NEW ORLEANS	73	51	81	30	62	8	2.9	1.7	2.2	3.6	89	73.5	126	98	57	0	2	2	2

Based on 1951-80 normals

Weather Data for the Week Ending December 24, 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	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
SHREVEPORT	69	44	73	25	57	9	1.4	.5	.7	2.6	87	34.3	80	96	48	0	1	5	2
ME CARIBOU	25	5	48	-4	15	2	.4	-.3	.2	.6	25	30.3	85	92	72	0	1	5	0
PORTLAND	37	17	56	6	27	3	.6	-.4	.5	1.0	27	43.4	102	81	49	0	6	2	0
MD BALTIMORE	50	28	65	16	39	4	.7	-.1	.4	.8	31	32.2	88	88	45	0	5	3	0
SALISBURY	53	31	64	15	42	5	.5	-.4	.5	.6	20	42.9	96	85	50	0	4	2	0
MA BOSTON	42	26	58	15	34	2	.5	-.5	.4	.7	21	34.5	81	77	49	0	5	2	0
CHATHAM	42	30	49	19	36	2	.5	-.6	.2	1.2	32	40.1	88	86	71	0	3	3	0
MI ALPENA	37	19	51	-2	28	6	.4	-.1	.1	.6	37	26.5	93	96	66	0	7	5	0
DETROIT	42	26	57	13	34	7	.8	-.3	.4	1.0	52	26.0	86	86	53	0	6	5	0
FLINT	42	25	57	7	33	8	.4	-.1	.3	.5	35	26.9	94	85	54	0	6	4	0
GRAND RAPIDS	42	26	55	13	34	8	.9	-.3	.5	1.1	56	35.6	108	92	61	0	5	6	0
HOUGHTON LAKE	34	23	48	13	29	8	.5	-.1	.3	.9	59	28.8	104	90	70	0	5	5	0
LANSING	42	25	56	15	33	9	.4	-.1	.3	.6	32	30.8	105	88	57	0	6	5	0
MARQUETTE	29	11	37	3	20	4	.7	-.2	.3	2.3	117	41.7	113	95	72	0	5	6	1
MUSKOGON	42	26	50	14	34	7	.9	-.3	.5	2.0	98	35.3	114	91	63	0	5	6	1
SAULT ST. MARIE	32	14	43	-9	23	5	1.2	-.6	.6	2.5	126	35.8	109	92	68	0	7	1	1
MN ALEXANDRIA	29	16	44	5	22	11	T	-.2	T	T	7	22.3	91	91	72	0	7	1	0
DULUTH	29	13	34	-1	21	9	.3	0	.1	.6	64	31.7	109	95	71	0	7	5	0
INT'L FALLS	24	10	31	-4	17	12	.2	0	.1	.3	46	24.5	102	96	74	0	7	4	0
MINNEAPOLIS	36	19	45	10	28	11	.1	-.1	0	.2	28	18.6	71	90	63	0	7	3	0
ROCHESTER	36	19	40	10	27	12	.7	-.5	.5	.7	100	21.0	74	93	72	0	7	4	0
MS GREENWOOD	65	45	72	21	55	10	1.0	-.2	.6	1.3	31	35.8	69	92	52	0	1	4	1
JACKSON	69	43	75	22	56	8	1.4	-.2	1.4	2.7	66	41.9	83	97	58	0	2	1	1
MERIDIAN	68	42	74	20	55	8	1.5	-.2	1.2	2.6	60	52.1	100	95	56	0	2	2	1
MO CAPE GIRARDEAU	57	35	62	16	46	—	.9	0	.5	.9	29	36.2	82	91	52	0	1	3	0
COLUMBIA	54	28	63	14	41	9	1.9	1.5	1.9	2.0	125	29.1	80	85	40	0	6	2	1
KANSAS CITY	53	29	64	22	41	10	.1	-.2	.1	.1	12	23.5	66	78	35	0	5	2	0
SAINT LOUIS	57	34	67	21	45	13	1.6	1.1	1.5	1.7	96	32.4	97	79	39	0	3	3	1
SPRINGFIELD	57	32	62	21	45	10	.8	-.3	.8	1.2	60	46.6	119	84	34	0	4	7	0
MT BILLINGS	38	22	57	14	30	4	.1	-.1	0	.3	52	10.1	69	76	39	0	7	2	0
GLASGOW	28	10	50	-6	19	4	.1	0	.1	.2	79	7.2	67	90	64	0	7	2	0
GREAT FALLS	38	19	55	7	29	4	.1	-.1	.1	.6	97	11.4	77	82	45	0	6	3	0
HAVRE	27	7	54	-5	17	0	T	-.1	T	T	0	5.9	51	88	64	0	6	0	0
HELENA	31	11	39	3	21	-1	.1	-.1	.1	.1	26	9.9	87	93	60	0	7	1	0
KALISPELL	29	16	32	1	23	-1	.4	0	.2	1.7	142	14.3	93	97	79	0	7	7	0
MILES CITY	34	15	59	5	25	5	.2	0	.1	.3	70	5.1	36	77	47	0	7	2	0
MISSOULA	28	13	32	3	20	-4	.2	-.1	.1	.5	53	10.8	84	99	80	0	7	3	0
NE GRAND ISLAND	47	24	63	18	36	11	.2	.1	.2	.3	52	21.1	92	85	44	0	7	2	0
LINCOLN	48	24	62	19	36	12	.3	.1	.3	.5	88	18.3	68	87	43	0	6	1	0
NORFOLK	45	24	64	17	35	13	.7	.5	.6	.9	187	24.7	105	89	46	0	6	2	1
NORTH PLATTE	47	17	66	8	32	8	T	-.1	T	T	0	18.8	98	86	35	0	7	0	1
OMAHA	46	27	58	19	37	11	.5	.3	.5	.6	107	21.2	71	78	51	0	5	1	0
SCOTT'S BLUFF	45	18	60	12	32	5	T	-.1	T	.2	61	15.2	105	81	28	0	7	0	0
VALENTINE	43	16	61	1	30	7	.1	.1	.1	.1	55	19.9	118	77	40	0	7	1	0
NV ELY	33	10	42	0	21	-4	.5	.3	.2	.5	81	8.2	94	90	55	0	7	5	0
LAS VEGAS	54	33	57	26	44	-1	T	-.1	T	T	0	2.2	56	69	29	0	3	0	0
RENO	41	22	48	7	31	0	.8	.5	.6	.8	88	5.3	76	94	50	0	7	6	1
WINNEMUCA	37	23	46	16	30	1	.4	.2	.2	.4	58	6.6	87	89	59	0	7	4	0
NH CONCORD	35	9	54	-3	22	-1	.6	-.2	.4	.8	30	33.1	92	91	56	0	7	2	0
NJ ATLANTIC CITY	49	26	60	14	38	3	.4	-.4	.2	.5	17	33.4	81	92	47	0	4	3	0
NM ALBUQUERQUE	46	22	55	15	34	0	0	-.1	0	T	0	13.1	168	71	28	0	6	0	0
CLOVIS	55	27	61	23	41	3	T	-.1	T	1.4	320	20.9	124	66	21	0	6	1	0
ROSWELL	59	29	65	23	44	5	T	-.1	T	.5	179	13.7	131	66	19	0	6	0	0
NY ALBANY	38	19	49	1	29	4	.5	-.2	.5	.8	34	29.3	84	82	49	0	5	2	0
BINGHAMTON	39	23	56	7	31	7	.6	-.1	.6	.9	38	33.3	92	85	50	0	6	2	1
BUFFALO	44	29	57	18	37	9	.6	-.2	.3	1.2	44	37.6	103	82	47	0	5	4	0
NEW YORK	46	32	56	22	39	4	.9	.1	.3	.9	31	40.2	96	76	41	0	4	3	0
ROCHESTER	45	25	58	13	35	8	.3	-.3	.2	.6	30	24.2	78	80	46	0	6	2	0
SYRACUSE	44	23	58	12	33	7	.6	-.1	.3	1.1	44	33.7	88	82	53	0	6	4	0
NC ASHEVILLE	55	34	60	17	44	6	.4	-.3	.2	.5	20	25.7	60	90	52	0	2	3	0
CHARLOTTE	57	37	66	19	47	5	.1	-.7	.1	.3	10	34.3	83	88	55	0	3	2	0
GREENSBORO	53	33	64	14	43	4	.1	-.9	.1	.6	18	42.1	77	87	55	0	1	2	0
HATTERAS	59	44	71	28	52	4	.1	-.8	.3	.3	11	50.3	96	94	44	U	3	1	0
NEW BERN	63	35	74	24	49	4	T	-.8	T	.3	13	36.9	90	83	48	0	2	1	0
RALEIGH	56	36	73	15	46	5	T	-.7	T	.4	14	57.9	110	91	44	0	3	1	0
WILMINGTON	64	37	75	21	50	3	T	-.8	T	.4	14	57.9	110	91	44	0	3	1	0
ND BISMARCK	31	11	43	-4	21	8	.1	0	.1	.4	66	9.7	64	90	61	0	7	4	0
FARGO	29	15	35	-3	22	12	.3	.2	.3	.5	109	13.9	73	92	74	0	7	2	0
GRAND FORKS	26	10	33	0	18	10	.4	.2	.3	1.4	298	13.2	73	92	63	0	7	2	0
WILLISTON	26	11	38	-7	19	6	.1	0	.1	.4	100	10.2	76	89	63	0	7	2	0
OH AKRON-CANTON	47	30	56	17	39	10	.5	-.1	.2	.8	38	32.2	92	79	49	0	4	4	2
CINCINNATI	54	33	58	10	43	11	1.6	1.0	.7	1.8	77	38.9	99	87	50	0	4	4	0
CLEVELAND	48	30	61	17	39	9	.4	-.2	.2	1.1	50	28.3	82	84	48	0	4	5	0
COLUMBUS	49	28	57	11	39	8	1.2	.6	.6	1.4	69	35.5	98	87	50	0	6	5	1

Weather Data for the Week Ending December 24, 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		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	49	29	57	9	39	8	1.2	.6	.6	1.2	63	35.1	103	86	50	0	5	5	1
TOLEDO	46	23	59	13	34	7	.8	.2	.5	.9	45	27.5	89	91	53	0	6	4	0
YOUNGSTOWN	47	29	56	17	38	10	.8	.1	.3	1.1	51	30.8	84	83	50	0	6	5	0
OK OKLAHOMA CITY	60	36	66	31	48	10	.5	.3	.5	1.0	108	31.6	103	72	27	0	3	1	1
TULSA	62	37	67	30	50	11	.6	.2	.6	1.0	71	32.4	85	80	27	0	3	1	1
OR ASTORIA	45	36	50	26	41	2	2.2	-.4	.9	3.6	40	51.4	76	96	79	0	1	7	1
BURNS	32	10	39	-3	21	-3	.5	.1	.2	.5	45	8.1	82	88	66	0	7	2	0
MEDFORD	43	31	47	20	37	0	.9	.1	.3	.9	33	13.2	70	94	69	0	4	5	0
FENDLETON	40	27	43	13	33	-2	.3	-.1	.2	.3	27	10.2	87	91	65	0	6	3	0
PORTLAND	44	37	48	29	41	0	1.7	.2	.7	2.1	42	31.4	87	97	78	0	1	7	1
SALEM	45	34	49	20	40	-1	1.9	.3	.5	2.1	38	31.5	81	95	78	0	1	7	0
PA ALLENTOWN	43	24	52	14	34	4	.7	-.1	.4	.7	26	39.2	90	84	46	0	6	3	0
ERIE	47	31	58	20	39	10	.4	-.3	.2	1.4	54	37.7	96	83	45	0	4	5	0
HARRISBURG	45	26	59	15	35	4	.8	-.1	.4	.8	32	33.3	87	84	46	0	5	3	0
PHILADELPHIA	48	28	60	17	38	4	.8	0	.4	.8	30	38.2	94	89	46	0	5	3	0
PITTSBURGH	49	31	59	17	40	10	1.4	-.8	.9	1.6	83	26.6	74	89	53	0	4	5	1
SCRANTON	43	27	63	13	35	6	.6	-.1	.5	.7	34	31.0	91	82	46	0	5	2	1
RI PROVIDENCE	45	23	57	12	34	3	.3	-.7	.2	.7	21	38.1	86	88	50	0	6	2	0
SC CHARLESTON	69	42	78	24	55	6	T	-.7	T	.6	27	42.5	84	94	45	0	2	0	0
COLUMBIA	65	37	75	18	51	5	0	-.8	0	.2	7	42.8	89	94	44	0	3	0	0
FLORENCE	62	36	76	18	49	3	T	-.7	T	.1	4	36.8	85	96	47	0	3	0	0
GREENVILLE	57	37	64	17	47	5	.3	-.6	.3	.5	15	36.8	73	92	56	0	2	3	0
SD ABERDEEN	35	16	50	-2	25	11	.4	-.3	.4	.4	108	18.0	103	89	61	0	7	2	0
HURON	38	14	52	-2	26	9	.1	0	.1	.2	44	18.8	102	91	53	0	7	1	0
RAPID CITY	45	21	68	9	33	8	0	-.1	0	.2	43	10.6	67	76	36	0	6	0	0
SIoux FALLS	40	19	50	9	30	12	T	-.1	T	.1	13	18.9	79	87	51	0	7	1	0
TN CHATTANOOGA	58	39	67	17	49	8	.8	-.4	.6	1.0	25	41.4	80	92	55	0	2	4	1
KNOXVILLE	58	38	66	16	48	8	1.4	.3	.6	1.4	40	32.2	70	89	57	0	3	3	2
MEMPHIS	63	43	67	22	53	11	2.8	1.7	1.5	2.9	77	47.2	94	91	49	0	1	3	2
NASHVILLE	62	41	68	16	51	11	2.8	1.7	1.3	3.0	83	30.4	64	89	48	0	1	4	3
TX ABILENE	67	37	76	32	52	7	0	-.2	0	.8	118	16.2	70	69	20	0	1	0	0
AMARILLO	57	28	65	20	42	5	T	-.1	T	.2	45	24.7	131	66	21	0	6	1	0
AUSTIN	72	52	78	33	62	11	T	-.4	T	1.0	62	19.1	62	91	43	0	0	1	0
BEAUMONT	72	50	77	29	61	8	3.1	2.0	2.9	4.7	124	49.0	90	98	60	0	1	3	1
BROWNSVILLE	80	60	85	40	70	9	T	-.3	T	.1	8	23.1	92	96	57	0	0	0	0
CORPUS CHRISTI	78	58	84	39	68	10	0	-.3	0	.6	67	18.9	62	96	55	0	0	0	0
DEL RIO	70	47	76	35	58	7	0	-.1	0	.3	67	15.5	90	81	36	0	0	0	0
EL PASO	59	31	63	24	45	1	T	0	T	.4	154	11.1	147	73	22	0	5	1	0
PORT WORTH	66	40	70	30	53	7	.3	-.1	.3	1.7	128	24.3	79	81	25	0	2	1	0
GALVESTON	69	57	73	43	63	7	.9	-.1	.9	1.3	45	38.2	96	94	64	0	0	1	1
HOUSTON	73	53	78	30	63	9	.1	-.8	0	.9	32	22.6	50	96	54	0	1	4	0
LUBBOCK	61	31	65	25	46	5	0	-.1	0	.6	200	13.0	75	62	18	0	5	0	0
MIDLAND	65	31	74	22	48	3	T	-.1	T	.5	151	18.3	136	75	19	0	5	0	0
SAN ANGELO	69	36	77	29	52	5	0	-.1	0	.8	165	14.0	79	82	24	0	2	0	0
SAN ANTONIO	73	52	79	32	63	11	0	-.3	0	.6	57	19.0	66	90	39	0	1	0	0
VICTORIA	75	55	83	37	65	10	.1	-.4	.1	2.2	129	15.8	43	94	54	0	0	2	0
WACO	68	40	72	31	54	6	.3	-.1	.3	1.7	116	24.4	80	92	42	0	1	1	0
WICHITA FALLS	64	34	69	27	49	7	.1	-.2	.1	1.0	101	23.4	89	81	22	0	4	1	0
UT CEDAR CITY	37	17	44	12	27	-3	.4	-.3	.2	.5	88	12.4	123	97	54	0	7	4	0
SALT LAKE CITY	36	23	42	19	30	1	.3	0	.2	.3	33	9.0	61	94	59	0	7	5	0
VT BURLINGTON	36	18	52	5	27	7	.1	-.4	.1	.6	31	26.5	80	83	54	0	6	2	0
VA NORFOLK	59	36	72	20	48	5	.1	-.7	.1	.6	23	38.6	87	82	45	0	2	1	0
RICHMOND	55	32	71	20	44	5	.2	-.5	.1	.6	24	37.1	86	84	46	0	4	3	0
ROANOKE	50	30	63	20	40	3	.5	-.2	.3	1.2	52	29.8	78	90	51	0	4	3	0
WA QUILLAUUTE	42	33	46	26	38	-3	2.7	-.1	.7	7.7	56	94.4	92	100	85	0	2	7	3
SEATTLE-TACOMA	43	37	46	32	40	-1	1.3	-.2	.3	2.1	44	31.6	85	97	74	0	1	7	0
SPOKANE	30	22	33	14	26	-2	.6	0	.2	1.1	57	15.8	99	99	83	0	7	6	0
YAKIMA	28	15	35	8	22	-9	.6	-.3	.2	.7	69	5.5	73	99	85	0	6	5	0
WV BECKLEY	50	32	62	13	41	8	1.6	-.9	.8	2.1	87	33.5	81	85	55	0	3	4	2
CHARLESTON	55	34	65	15	45	9	2.0	1.3	1.1	2.3	94	31.1	75	87	46	0	3	4	2
HUNTINGTON	56	34	65	13	45	9	2.5	1.8	1.2	2.8	115	35.7	89	82	45	0	3	3	2
PARKERSBURG	53	32	62	17	42	8	2.0	1.4	1.1	2.2	103	32.2	86	83	45	0	4	3	1
WI GREEN BAY	37	21	44	7	29	10	.4	-.1	.3	.6	52	23.7	86	94	70	0	7	4	0
LACROSSE	39	22	46	14	30	11	.2	-.1	.3	.3	32	25.8	87	90	59	0	7	3	0
MADISON	41	23	51	9	32	11	.5	-.1	.3	.6	47	23.6	78	91	57	0	7	3	0
MILWAUKEE	42	25	52	11	34	10	.4	-.1	.2	.5	32	29.5	97	85	57	0	5	4	0
WAUSAU	34	18	41	4	26	10	.7	-.5	.3	.9	92	23.6	75	95	67	0	7	5	0
WY CASPER	39	20	47	9	29	4	T	-.1	T	.2	45	6.2	56	82	31	0	7	4	0
CHEYENNE	40	21	54	12	30	1	0	-.1	0	.5	175	15.7	119	74	36	0	6	0	0
LANDER	34	10	42	5	22	0	T	-.1	T	.6	143	7.5	58	73	41	0	7	0	0
SHERIDAN	41	18	68	11	30	6	T	-.1	T	.3	49	9.6	64	79	40	0	7	1	0
PR SAN JUAN	82	70	84	68	76	-1	1.7	-.8	1.1	2.9	83	59.2	110	92	69	0	0	5	1

National Agricultural Summary

December 19-25, 1988

HIGHLIGHTS: Lack of precipitation continued to stress winter wheat in the southern Plains. Greenbug infestations were a continuing problem. Freezing temperatures on the 19th caused no damage to Florida's citrus and vegetable crops. Rain slowed fruit and vegetable harvests in California but improved pasture conditions. Soybean and cotton harvests were nearly complete. Pasture condition was mostly good to fair in the South. Low temperatures and snow stressed livestock in portions of the West.

SMALL GRAINS: Winter wheat fields in Kansas continued to show signs of moisture stress. Greenbug infestation was a continuing problem. Moisture was needed for winter wheat in Oklahoma. Texas producers have been spraying to reduce greenbug populations. Winter wheat in much of Texas showed signs of moisture stress. Recent rains slightly improved conditions in the Blacklands. Producers continued to limit use of winter wheat fields for grazing. Colorado's winter wheat was mostly good but needed additional snow cover. Montana's winter wheat was mostly fair to good. Wind damage remains mostly light. Oregon's winter wheat was mostly good. Russian wheat aphids were a continuing problem in the east. Winter wheat seeding continued in some areas of the South. Storms nearly halted seeding in California.

COTTON: Texas' cotton harvest was 97 percent (%) complete, 14 percentage points ahead of the 5-year average. In the Plains, high winds and blowing sand damaged some of the unharvested crop. In Arizona, harvest was virtually complete except in the east. Producers continued stalk shredding, disking, and plowing in the central and western areas.

OTHER FIELD CROPS: Peanut harvest was virtually complete in Texas. North Carolina's soybean harvest was 96% complete, equal to the 96% average. Tobacco bed preparation continued in the South. In Kentucky, recent rains brought burley tobacco into case and stripping resumed.

FRUIT AND NUTS: Florida's citrus groves were mostly good. Lack of rain forced producers to irrigate in most areas. Freezing temperatures on the 19th caused no damage to trees or fruit. Orange harvest for processing was active. Grapefruit movement for fresh market and processing continued. In Arizona, pecan harvest and packing were active. Lemon and grapefruit harvests and packing continued in the west. Citrus harvest and packing in the central area included lemons, grapefruit, navels, and Orlando tangerines. Apple shipment out of cold storage was active in the east. In Texas, citrus harvest continued. High winds hampered pecan harvest in some areas. Pecan harvest was 94% finished, 6 points ahead of the average. In California, rain and fog slowed normal fall cultural practices. Avocado harvest continued. Date and kiwi harvests were nearly complete. Rain slowed navel orange harvest. Desert lemon, grapefruit, and tangerine harvests were active.

VEGETABLES: Florida's vegetable harvests were active. Main harvest activities included tomatoes, peppers, celery, and cucumbers. Tomato planting was complete in the Homestead area. In Arizona, harvest activities included lettuce, cauliflower, cabbage, and carrots. Fall lettuce harvest was nearly complete in the Parker-Poston area. Vegetable harvests were active in Texas. In California, rain and cool weather slowed vegetable planting and harvesting. Volume of broccoli and cauliflower harvested in the Salinas-Watsonville and Santa Maria areas decreased. Quality of the crops was good. Lettuce harvest continued in the Palo Verde Valley. Potato harvest was active in Riverside county and Tulalake-Butte Valley. Central valley harvest activities included carrots, celery, and cabbage. Sweet potato packing continued.

PASTURES AND LIVESTOCK: Pastures in the South were mostly good to fair. Livestock was mostly good. Texas producers continued to limit grazing on winter wheat pasture. Snow and cold temperatures increased livestock stress and feed requirements in Wyoming. In Nevada, heavy snow hampered livestock feeding operations. Cold temperatures stressed newborn calves and lambs. Rain improved California's range and pasture conditions. Stock water levels remained below seasonal normals.

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 to 3.00 in. north, west central; under 0.25 in. southeast. Temperatures 9 to 13^o above normal.

ARIZONA: Clouds, widely scattered showers western areas 18th, early morning 19th; snow level 4,000 ft. Mostly sunny southern deserts. Considerable high cloudiness statewide 20th. Weak storm system 21st, snow level 5,000 ft. Considerable sunshine 22nd. Christmas eve, partly cloudy skies south; mostly cloudy north, scattered light rain, snow. Temperatures 4^o below normal to 6^o above.

Small grains progressed well; 80% seeded, 58% stands established; 50% seeded 1987, 30% established. Planting, irrigation continued as primary activities. Stands good. Cotton harvest virtually complete, eastern areas harvest activity. All of crop picked once central, western areas. Stalk shredding, disking, plowing continued central, western areas. West harvest, packing citrus included lemons, grapefruit, few tangerines. Vegetable harvest west included boston, leaf, romaine, head lettuce; broccoli, cauliflower, cabbage, kale, napa, escarole, bok choy, endive. Harvest fall lettuce Parker-Poston area nearly complete. Harvest, packing lemons, grapefruit, navels, orlando tangerines, mineolas, few arizona sweets central areas. Fall lettuce harvest active Tolleson, Scottsdale, Sacaton, Maricopa, Marana-Eloy areas. Mixed vegetables harvested included greens, leaf lettuce, broccoli, cabbage, bok choy, rapini, green onions, parsley, cauliflower, carrots Salt River Valley. Apples shipped out of cold storage east. Pecan harvest, packing active statewide.

ARKANSAS: Mild, temperatures well above normal. Scattered showers statewide, heaviest southeast. Temperature extremes 19^o; 72^o. Rainfall 0.15 to 2.26 in.

Soil moisture adequate. Farming activities limited to routine livestock chores. Wheat good. Pastures good. Livestock good.

CALIFORNIA: Several cold frontal systems dropped southward thru State, brought precipitation, below normal temperatures. Snow down to 1500 ft. level, many locations. Between frontal systems, some gusty winds caused minor damage.

Storms nearly halted field activities. Some winter grains seeded. Good emergence, earlier seeded. Few cotton fields need shredding, disking to comply pink bollworm quarantine. Sheep grazing many seed alfalfa fields. Southern seed corn harvest almost complete, good yields. Normal fall cultural practices slowed due to fog, wet conditions. Pruning, spraying active as weather permitted. Avocado harvest active. Date, kiwifruit harvests nearly completed. Navel orange harvest hampered by wet conditions. Desert lemon, grapefruit, tangerine harvests continued. Beekeepers began preparing for upcoming pollination season, placing hives, conditions permitting. Vegetable activity limited most areas due to cool weather, rain. Broccoli, cauliflower Salinas-Watsonville, Santa Maria area, good quality, decreased volume. Lettuce harvest Palo Verde Valley continued good yield, quality. Lettuce harvest completed westside. Potato harvest continued Riverside County, packing sheds operating full capacity Tulelake-Butte Valley. Winter peas growing well Merced-Atwater. Strawberry fields continued good growth Riverside area. Central

valley harvesting carrots, celery, cabbage, packing sweetpotatoes. Livestock fair to good statewide. Range, pasture improved; winter rain, boosted grass growth valley, foothill areas. Water levels all areas remained below seasonal normal. Supplemental feeding active. Movement to market continued slow. Lambing almost complete some areas.

COLORADO: Upper air disturbances swept across from Pacific northwest. West of Continental Divide bore brunt of this almost continuous assault. Snow advisers daily in mountains 4 to 8 in. new snow almost daily. Western lower elevations snow on 19th, again on 25th with clouds and dense fog on days between. Only few snow showers on 23rd eastern area. Otherwise eastern area dry, windy with high winds 50 to 80 mph 22nd. Temperatures near normal, except Arkansas River Basin 1 to 5^o above normal.

Crop conditions remained good although snow cover would be beneficial. Livestock remained good.

FLORIDA: Cold, morning of 19th; hard freeze, frost north, light freeze, frost central Peninsula. Mid to upper 30s southward to Homestead growing areas lower southeast. Mostly dry, warming trend 20th through 25th. Mild Atlantic breezes caused scattered showers mid to lower east coast 20th through 24th with rainfall amounts less than 0.33 in. Temperatures 2 to 4^o below normal north, near normal central, south.

Soil moisture mostly adequate; short, few widely scattered areas. Winter wheat planting completed. Sugarcane harvest active. Small grains good. Most winter pastures continued good growth; grazing active early plantings. Many permanent pastures central, southern Peninsula areas received heavy frost damage last weekend. Statewide, pastures vary widely poor to excellent depending on extent of frost damage, progress of winter forage crops, northern areas. Cattle, calves continued fair to good. Citrus groves good. Rain needed; irrigation being applied most areas. Frost 19th; no damage to trees or fruit. Orange harvest active for processing, grapefruit movement divided between fresh, processed usage. Cool temperatures early week, warm late week most vegetable producing areas. Rainfall continued limited. Planting, harvesting active. Volume leaders: Tomatoes, peppers, celery, cabbage, cucumbers, squash, snap beans, sweet corn, lettuce. Lesser supplies carrots, radishes, eggplant, escarole, endive, lettuce, strawberries. Tomato planting completed, Homestead area.

GEORGIA: Temperatures 7 to 12^o warmer contrasting last 2 weeks temperatures. Warmest temperatures low 60s extreme north, low 80s extreme south. Rain 0.50 to 1.50 in. Northern quarter. Other totals under 0.25 in. central, south no rain.

Main activities: Planting small grains, transplanting onions, tobacco bed preparation, pecan harvest, livestock, poultry maintenance.

HAWAII: Variable weather. Mostly cloudy, brief showers early week. Strengthened high pressure system increased trades, drier weather remainder week. Temperatures 60s to mid 80s. Daytime temperatures above average, near daily record high. Rainfall none to 6.74 in. Winds mostly trades 10 to 20 mph.

Days suitable for fieldwork 7.0. Crop conditions varied fair to good. Chinese cabbage production steady, moderate volume. Head

cabbage output steady, good quality. Tomato supplies steady. Banana harvesting seasonal decline. Papaya production also seasonal decline. Harvesting of ginger root started, mostly immature types.

IDAHO: Temperatures near normal. Precipitation above normal statewide.

No fieldwork due to snow. Marketing grain, shipping hay, potato selling main crop activities. Shopwork, equipment maintenance, farm planning, record keeping, arranging finances, preparing for taxes major miscellaneous activities. Most farm activities involved livestock management. Little movement of cattle. Some calving, lambing. Livestock remained good. Adequate supplies of hay, roughage available to most farmers.

ILLINOIS: Temperatures 7 to 12° above normal. Precipitation mostly 1.00 to 2.50 in. northern two-thirds State, less than 1.00 in. southern one-third.

Winter wheat mostly good. Livestock good to excellent.

INDIANA: Temperatures 10 to 15° above normal. Lows, upper teens, highs mid 40s to mid 50s. Precipitation 0.50 to 1.50 in. Warm, first significant precipitation during month.

Corn, soybean harvest virtually completed. Other activities: Plowing, tilling, spreading fertilizer, hauling manure, processing tobacco, machinery repair, spreading lime, attending meetings, record keeping, care of livestock. Snow slowed fieldwork, northern areas.

IOWA: Temperatures 8 to 11° above normal; extremes 5° Ames 25th; 59° Burlington 19th. Precipitation, mainly form of rain, above normal most areas; 0.06 to 0.86 in., 0.40 in. avg.

Snow, ice limited grazing over weekend, northern areas. Livestock mostly good. Usual activities: Bookkeeping, tending livestock, machinery repair.

KANSAS: Precipitation spotty. Southeast most 0.25 in., 0.75 in. common. North central 0.25 in., 0.50 in. common. Temperatures 10° warmer than normal. Mid 30s northwest, mid 40s southeast. Eastern two-thirds 10°, 12° above average. Western 7°, 9° above normal.

Warm, dry weather allowed continued fieldwork. Lack precipitation continued moisture stress wheat. Greenbug populations continued problem.

KENTUCKY: Temperatures 10° above normal. Normal lows mid to upper 20s. Normal highs low to mid 40s. Precipitation over 2.00 in. South central most rainfall maximum 4.93 in. Bowling Green. Least precipitation Paducah to Owensboro, less than 1.00 in.

Agricultural activity minimal. Several rain periods brought burley into case, stripping resumed. Dark fired tobacco price very strong, many country contracts. Winter grains mostly green, satisfactory. Livestock satisfactory.

LOUISIANA: Temperatures 7° above normal. Temperature extremes 21°; 82°. Rainfall 1.00 to 2.50 in.

Main Activities: Planting winter wheat, harvesting pecans, sugarcane, winter vegetables, caring for livestock, routine chores.

MARYLAND & DELAWARE: **MARYLAND:** Precipitation 1.28 in. Temperature 45°, normal 42°. Temperature extremes 20°; 70°.

Topsoil moisture 100% adequate. Subsoil moisture 100% adequate. Main farm activity caring for livestock.

DELAWARE: Precipitation 1.59 in. Temperature 47°, normal 42°. Temperature extremes 27°; 71°.

Main farm activity caring for livestock.

MICHIGAN: Temperatures 5 to 9° above normal. Temperature extremes 3°; 59°. Precipitation 0.25 to 1.21 in. across State. Both rain, snow over State. Warmer temperatures reduced snow cover.

Activities: Pruning fruit trees, routine chores, caring for livestock. Livestock excellent, feed supplies mostly adequate.

MINNESOTA: Temperatures 7 to 11° above normal. Temperature extremes -19°; 51°. Precipitation 0.01 to 0.35 in. Greatest weekly total 0.64 in. Snowfall none to 3 in. Snow depth none to 14 in.

Above normal temperatures welcomed by livestock farmers. Ice on fields has alfalfa growers concerned.

MISSISSIPPI: NO WEATHER DATA AVAILABLE.

Days suitable for fieldwork 2.1, 3.0 1987, 1.6 avg. Soil moisture adequate. Soybeans 100% harvested, 100% 1987, 98% avg. Wheat good; 100% planted, 97% last week; 94% emerged. Pecans 91% harvested, 84% 1987, 88% avg. Pasture good. Livestock good to very good. Hay 100% adequate. Feed grains 100% adequate. Activities: Shop work, vacations.

MISSOURI: Temperatures 10° above normal, daytime highs mostly 50s. Precipitation 1.00 in. or above central, southwest areas, extreme north 0.33 in. or less.

Rain improved moisture supplies, many northern counties still short of soil moisture, livestock water. Fieldwork minimum, livestock chores main activity.

MONTANA: Temperatures near normal except eastern areas above normal. Precipitation very light central, eastern areas. Western areas heaviest.

Topsoil moisture 67% short, 33% adequate. Subsoil moisture 92% short, 8% adequate. Winter wheat 5% poor, 54% fair, 40% good, 1% excellent. Wind damage to winter wheat to date: 3% none, 89% light, 8% moderate. Grazing 71% open, 28% difficult, 1% closed. About 89% cattle, calves; 94% sheep, lambs received supplemental feed.

NEBRASKA: Temperatures near normal west, 9° above normal east. Precipitation occurred mainly eastern area, amounts 0.50 in. Extremes 58°.

NEVADA: Temperatures near normal beginning period. Storms of decade hit last half dumping heavy snow all elevations. Arctic air end of period dropped temperatures below zero most areas.

Frigid weather hard on newborn calves, lambs, donkeys. Livestock feeding requirements increased sharply with colder weather. Heavy snows hampered feeding operations. Chopping ice for livestock required all areas.

NEW ENGLAND: Precipitation 0.50 to 0.75 in. most of New England. Northern areas of Maine, New Hampshire 0.33 in. Southern Vermont 1.00 in. Temperatures upper teens northern Maine to mid 30s along southern coast. Temperature above normal north, near normal south.

Major farm activities: Machinery repair, tending livestock.

NEW JERSEY: Temperatures above normal, 35° north, 40° south, 42° coastal. Extremes 14°; 62°. Precipitation near normal north, south; below normal coastal; 0.77 in. north, 0.95 in. south, 0.42 in. coastal. Heaviest 24-hour total 1.02 in. on 22nd, 23rd.

Farm activities consisted mainly of fruit pruning; combining grain corn, soybeans; caring for livestock.

NEW MEXICO: Temperatures 6° below zero to high 68°. Heavy rain portions south central mountains; elsewhere, rain, snow generally light.

NEW YORK: Week started on cool side, warmed rapidly; 20th many locations hit daytime highs in 50s. Warm air continued into 21st when weak cold air front pushed through State. Syracuse, Binghamton record high temperatures before sunrise 21st. Unseasonably warm air returned late 22nd, lasted through weekend. Lake shore effect snow common in snow belts on 18th. Generally dry 20th to 22nd. Snow, sleet, rain common over far north 23rd to 24th. Elsewhere rainy. Bulk of weekly precipitation 24th.

Caring for livestock little easier with warmer temperatures. Fruit producers grading, packing apples.

NORTH CAROLINA: Temperatures 4 to 5° above normal over interior, 2° above normal along coast. Temperature extremes 6°; 75°. Precipitation none to 1.22 in. across State.

Days suitable for fieldwork 5.1. Soil moisture 31% short, 68% adequate, 1% surplus. Pasture 16% poor, 38% fair, 45% good, 1% excellent. Soybeans 96% harvested, 100% 1987, 96% avg. Oats 2% poor, 27% fair, 71% good. Barley 26% fair, 72% good, 2% excellent. Rye 2% poor, 20% fair, 75% good, 3% excellent. Wheat 1% poor, 28% fair, 68% good, 3% excellent; 91% emerged. Feed grains 4% short, 94% adequate, 2% surplus. Hay, roughage 4% short, 94% adequate, 2% surplus. Major farm activities: Fall plowing, tending livestock, general farm maintenance. Other activities: Harvesting soybeans; seeding, spraying small grains; tobacco plant bed preparation; grading, marketing tobacco; pruning fruit trees, cutting firewood.

NORTH DAKOTA: Temperatures 3° above normal southwest to 1° above normal southeast. Extremes -11°; 54°. Snowfall midweek. Precipitation 0.05 in. southeast, southwest to 0.23 in. northeast.

Soil moisture short. Winter grain seedings fair, more snow desired for adequate protection. Some producers concerned with continued insect infestations in stored grain. Livestock good, being fed supplemental forages.

OHIO: Low temperatures upper 20s to lower 30s, 6 to 12° above normal. Highs mid to upper 40s north, low to mid 50s south. Temperatures 10 to 14° above normal. Precipitation rain mostly southeast, 1.50 to 2.50 in. Elsewhere 0.40 to 1.00 in.

Minimal farm activity except caring for livestock.

OKLAHOMA: NO WEATHER DATA AVAILABLE.

Warm, dry weather accelerated late row crop harvest, benefited small grain growth. Moisture needed many areas. Cattle prices up moderately from last week.

OREGON: Temperatures slightly below normal entire state due to advance of Pacific weather system that kept sun hidden. Ranges 1 to 5° below normal, exception spots northeastern area slightly above normal. Precipitation wide spread because of same weather systems. Heaviest amounts along coastal strip, southwestern areas. Most noticeable 4.22 in. Laurel Mountain on coastal range. Many spots west exceeded 2 in. Elsewhere amounts less than 1.00 in.

Soil moisture short to adequate. Continued concern Russian wheat aphid in winter wheat fields east of Cascades. Otherwise, crop good most areas.

Livestock good, supplemental feeding continued. Pastures, ranges received needed moisture from winter storms moving across State.

PENNSYLVANIA: Warm, wet across State. Temperature 36°, 6° above normal. Temperature extremes 7°; 64°. Precipitation 0.90 in., 0.20 in. above normal.

Activities: Spreading manure, fertilizer; caring for livestock; maintaining machinery; fixing fence; grading potatoes.

PUERTO RICO: Island rainfall 0.74 in., 0.24 in. below normal. Highest weekly total rainfall 4.00 in. Pico Del Este-Luquillo, 1.97 in. San Lorenzo, 1.85 in. Maricao. Highest 24-hour total 1.70 in. Maricao. Total rainfall since January 1st 63.10 in., 1% above normal. San Juan WSFO temperature 76°, 1° below normal. Total rainfall 0.86 in., 0.08 in. below normal. Divisional temperature 76 to 77° on coasts, 70 to 71° interior. Station temperature 78° San Juan City to 61° Cerro Maravilla. Lowest minimum temperature 54° Cerro Maravilla. Highest maximum temperature 91° Mayaguez Ceer.

SOUTH CAROLINA: Temperatures 6 to 10° above normal. Rainfall last half week. Precipitation varied 1.00 in. mountains to little or none east central, southern parts of State.

SOUTH DAKOTA: Temperatures 8 to 14° above normal. Extremes -6°; 68°. Snow south central, east River. Rain southeast. Precipitation scattered, less than 0.55 in. Most of State 4 in. snow cover, 10 in. north central.

TENNESSEE: Series of cold fronts crossed State 21st to 24th. Widespread rain preceded each front. Destructive, killer tornadoes occurred around Nashville 24th. Temperatures 5 to 15° above normal. Lows 35 to 45°. Highs 55 to 65°. Rainfall generally above normal, 1.00 to 3.00 in. common. Locally heavier amounts observed.

Soil moisture improved with rain. Livestock fair to good. Major activities feeding, care of livestock, machinery repair, spreading manure.

TEXAS: NO WEATHER DATA AVAILABLE.

Crops: Cotton harvest good progress Plains, Trans-Pecos because open weather. High winds, blowing sand caused some problems Plains to cotton modules. Many producers finishing up for season. Ginning operations steady, some running little behind. Yields continued good later fields. Cotton 97% harvested, 96% 1987, 83% avg. Small grains desperately need rain many portions central, Hill Country. Additional losses stands occurred. Growth very slow surviving fields. Some recent rains Blacklands kept fields growing. Spraying greenbugs big activity. Dryland fields Plains continued decline. Many stockers moved off because lack forage. Irrigated fields provide good grazing. Mild temperatures helped. Later fields experiencing heavy greenbug populations. Fields across east show good growth. Peanut harvest virtually completed. Sugarcane harvest continued Rio Grande Valley without delay. Conditions ideal for good crop. Other Field Crops: Peanuts 100% harvested, 100% 1987, 97% avg. Pecans 94% harvested, 89% 1987, 88% avg. Oats 99% planted, 100% 1987, 98% avg.

Commercial Vegetables: Rio Grande Valley harvest slowed end week because holidays. Yields, quality good. Citrus harvest slowed by weekend. Quality sizes remained good. San Antonio-Winter Garden harvest all vegetables continued steady until weekend. Quality variable, but mainly good. High winds hampered pecan harvest some areas, however,

progress good overall. Quality above average west. Yields good other areas.

Range and Pasture: Ranges, pastures continued decline central under dry conditions. Full feeding continued. Dryland small grains providing little grazing Plains. Irrigated fields providing good forages. Movement stocks off dryland fields. Warm temperatures aided growth pastures east. Livestock conditions steady over State. General rain on rancher's mind.

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

Major farm activities include livestock chores, equipment, building maintenance, tax record summaries, attending farm seminars, organization meetings.

VIRGINIA: Beginning sunny, below normal temperatures. Warm front mid period with record warmth. Highest 72°. Temperatures above normal. Precipitation 0.25 to 0.50 in. most areas.

Days suitable for fieldwork 3.4. Topsoil moisture 40% short, 45% adequate, 15% surplus. Marketing tobacco, fall plowing. Winter grains, grazing crops 21% poor, 51% fair, 28% good. Lambing, calving, meetings active.

WASHINGTON: Temperatures 1 to 11° below normal across State. Precipitation west of Cascades 0.57 to 1.99 in. Eastside 0.07 to 0.71 in.

Fieldwork minimal. Berry pruning, west. Grape, fruit tree pruning, east. Livestock on winter feeding programs.

WEST VIRGINIA: Temperature 43°, 9 to 13° above normal. Extremes 69° Romney; 9° Terra Alta. Precipitation 1.71 in., 0.50 to 1.50 in. above normal.

Days suitable for fieldwork 3.8. 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: Warm, temperatures 29°. Extremes -5°; 54°. Precipitation 0.30 to 0.60 in. Snow 2 to 3 in. southwest 24th.

WYOMING: Temperatures mostly above normal. Precipitation below normal.

Winter wheat good. Additional moisture required for continued development. Livestock fair to good. Cold temperatures, snow increased stress, feeding requirements. Supplemental feeding necessary many areas with snow cover on short winter pastures.

(Continued from front cover)

FRIDAY: The persistent cold front in the East again brought rain from Louisiana to Pennsylvania. Rain spread across Oregon and northern California, with snow in the higher elevations. Snow also fell across the northern and coastal areas of New England.

SATURDAY: A cold front extended from Louisiana to Ohio, which touched off thunderstorms across the Tennessee Valley and tornadoes near Nashville, Tennessee. A major winter storm was poised over the Western United States, bringing snow, rain, and high winds. Snow also occurred in the Midwest and the Northeast. Temperatures were mild along the Atlantic coast.

International Weather and Crop Summary

December 18-24, 1988

HIGHLIGHTS

WESTERN USSR ... Rain showers accompany a warming trend. Snow cover diminishes in the southern Ukraine and southern North Caucasus.

EUROPE ... Heavy rain soaks the north, while dryness and cold weather persist in the southwest.

SOUTH ASIA ... Much needed rain covers wheat regions of northern Pakistan and north-central India. Dry weather elsewhere favors summer crop harvesting.

EASTERN ASIA ... Light precipitation brings some relief to the North China Plain. Above-average temperatures prevail throughout the region.

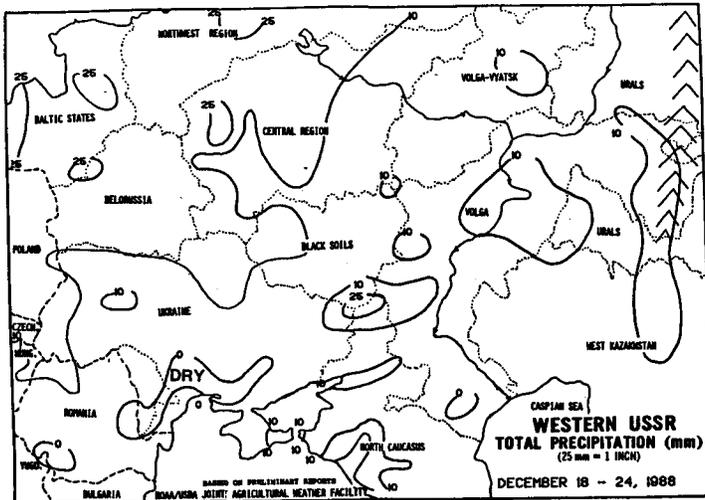
SOUTHEAST ASIA ... Heavy rain over Java exacerbates flooding. Tropical Storm Val brushes the eastern Philippines, causing local flooding.

SOUTH AMERICA ... Rain helps late plantings and crop establishment in south-central Brazil and Argentina.

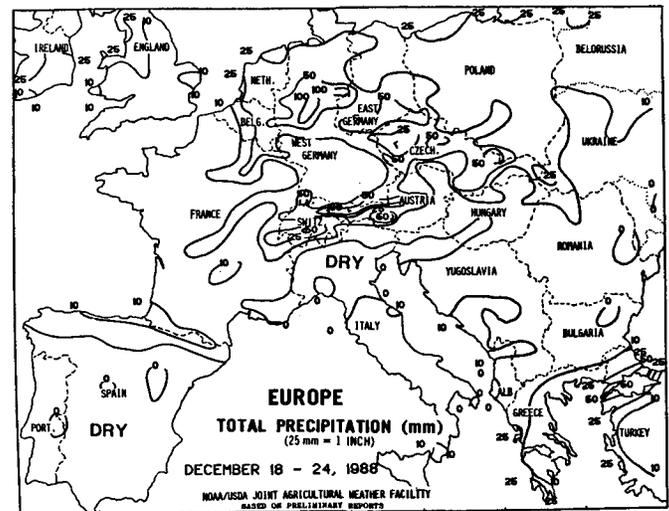
AUSTRALIA ... Light to moderate showers benefit summer crops in the east but slow winter grain harvesting in the south. Dryness prevails in western grain areas.

SOUTH AFRICA ... Widespread rain over the major production areas favors vegetative corn.

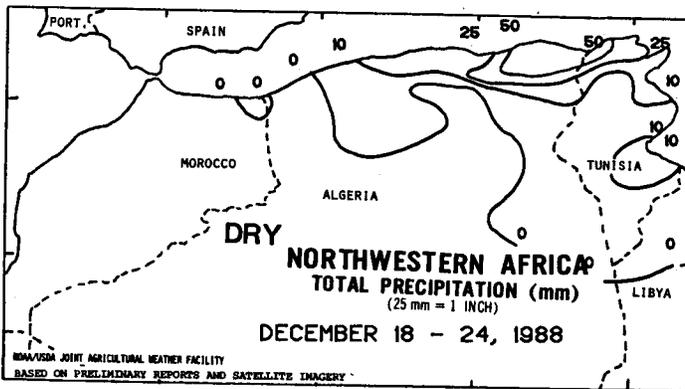
NORTHWESTERN AFRICA ... The third consecutive week of dry weather covers Moroccan winter grains in the early vegetative stage. Showers continue to benefit winter grains in Algeria and Tunisia.



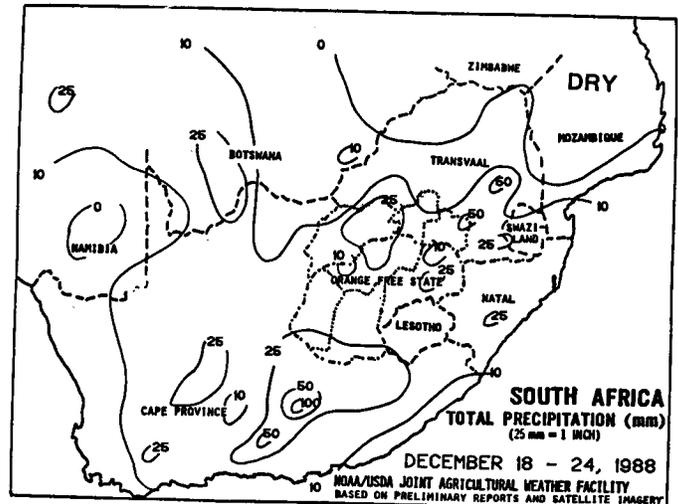
WESTERN USSR ... Widespread precipitation covered most of the region, except for the southern Ukraine where dry weather prevailed. Greatest amounts of precipitation (15-30mm) covered the Baltic States, Belorussia, the northern tip of the Ukraine, the western portion of the Central Region, and the southern Black Soils Region, where early-week snow changed to rain by week's end. A warming trend occurred during the week with maximum temperatures rising 1-2 degrees Celsius (C) above freezing as far north as the Central and Volga Vyatsk Regions. The unusually warm weather in these areas melted some of the deep snow cover, causing an ice crust. Further south, the unusually warm weather in the southern Ukraine and the southern North Caucasus diminished snow cover.



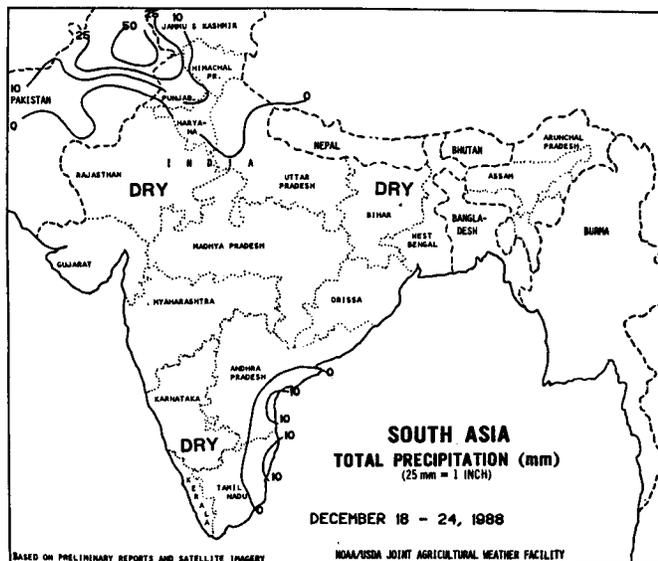
EUROPE ... A persistent weather pattern continued over the continent, with heavy precipitation (25-100mm or more) from the Benelux countries through northern West Germany and southern East Germany to Czechoslovakia, maintaining saturated soils. Widespread light to moderate precipitation covered the remainder of eastern Europe and the Balkans. Unseasonable cold weather over southern Europe produced snow as far south as southern Italy and Greece. Mostly light rain (10mm or less) fell over France and the United Kingdom. Dry weather again prevailed over the Iberian peninsula, southeastern France, Italy's Po Valley, and extreme northern Yugoslavia. Sub-freezing minimum temperatures again occurred over much of interior Spain, with nighttime temperatures falling as low as -9 degrees C on the 18th and 19th, and -7 degrees C on the 22nd. The persistent cold weather may have caused localized damage to fruit and vegetable crops.



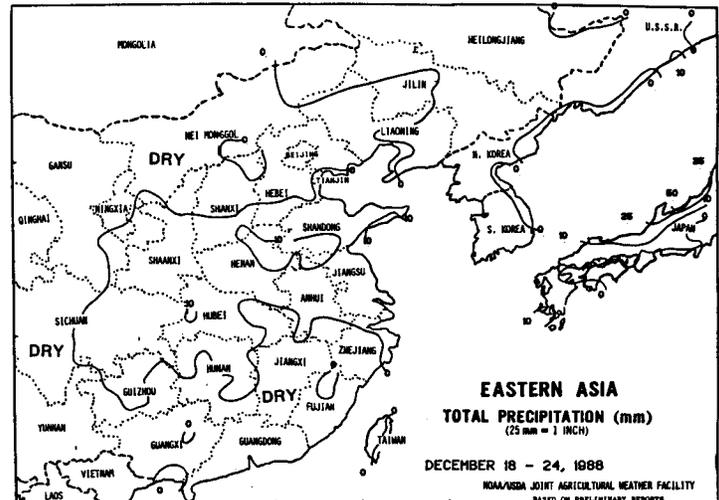
NORTHWESTERN AFRICA ... The third consecutive week of dry weather covered Moroccan winter grain areas. Winter grains, in the early vegetative stage, had to rely on soil moisture to meet crop moisture requirements. As a result, soil moisture is becoming limited and rain is needed to prevent crop stress. In Algeria and Tunisia, beneficial precipitation (21-65mm) continued over northern winter grain areas, providing ample moisture for crop emergence and early plant establishment. Southern growing areas received light precipitation (around 10mm). Usually, winter grain planting is complete in Tunisia by the end of December, while planting is nearing completion in Algeria and Morocco. Minimal rain in southernmost crop areas of Algeria and Tunisia since the beginning of the growing season has likely caused planting delays. As a result, planting will extend into January.



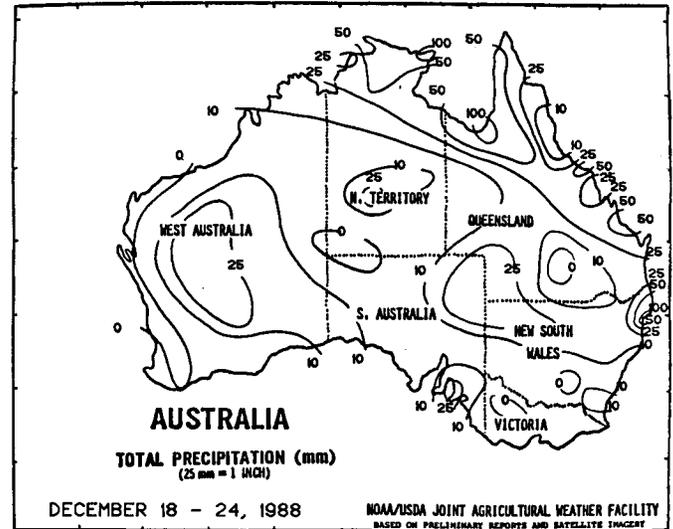
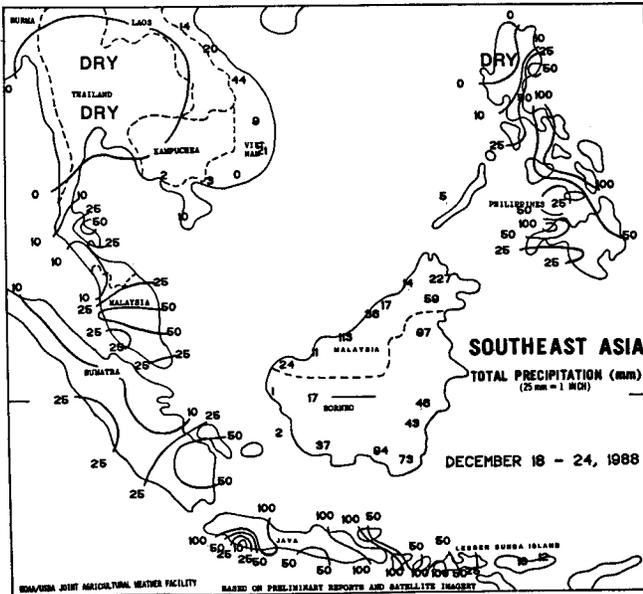
SOUTH AFRICA ... Widespread, variable showers (10-50mm or more) continued across South Africa, maintaining generally favorable moisture conditions for vegetative corn. Rainfall increased from the previous week over the Maize Triangle, with most areas receiving 10-40mm. Rain (10-25mm or more) finally reached chronically dry minor production areas of the southern Cape Province as showers continued elsewhere in the Cape Province and Natal. Temperatures averaged from 1-3 degrees C above normal over most regions, stimulating vegetative growth.



SOUTH ASIA ... Much needed rain reached wheat regions of northern Pakistan and north-central India, boosting irrigation reserves for jointing crops and bringing some relief to rainfed crops that historically account for about 10 percent of total production. Rainfall ranged from 10-69mm as far east as Haryana, with dry weather continuing over most of Uttar Pradesh. Light rain (1-14mm) along India's southeast coast covered vegetative rice, but elsewhere over South Asia, dry weather favored harvesting. Temperatures across the northern wheat areas averaged 1-3 degrees C above normal, increasing moisture demands.

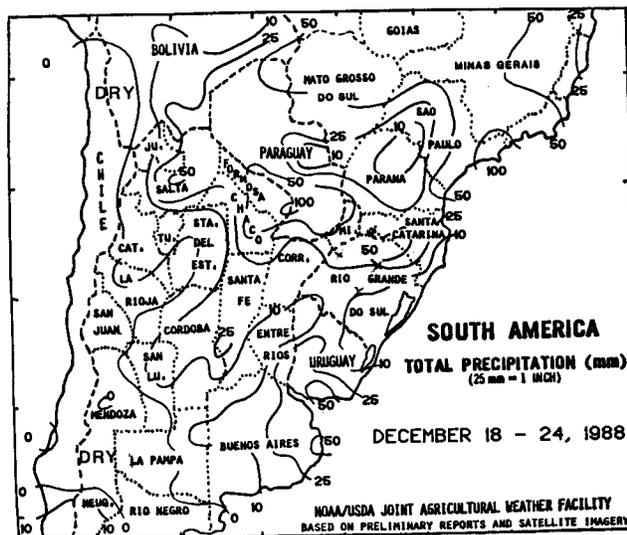


EASTERN ASIA ... Scattered light precipitation (less than 10mm) fell over much of central China, offering only limited relief for winter grains. Weekly rainfall, averaging 8-13mm in southern Shandong and northeastern Henan, brought some much needed moisture, however. Below-normal rainfall since October over much of the North China Plain has left soil moisture and irrigation reserves very low for winter crops. Elsewhere, scattered light rain and snow fell over the western Korean peninsula and northeastern China, while seasonal heavy rain continued in western Honshu, Japan. Dry weather continued over southern China and western Taiwan. Light showers fell in eastern Taiwan. Weekly temperatures averaged 3-5 degrees C above normal in northern China, limiting snow cover mostly to northern Manchuria. Temperatures averaged 5-7 degrees C above normal across southern China.



SOUTHEAST ASIA ... Variable rain (10-71mm) fell over the Malay Peninsula. Mostly light rain (10-36mm) continued over eastern Malaysia, although spotty areas received heavy showers (100mm or more). Heavy showers (100-181mm) continued over portions of Java, worsening flood conditions. Area of heaviest rainfall expanded to include southern and eastern portions of the island. Rice planting, usually underway at this time, has been hampered by the heavy rains, and replanting is necessary in some areas. In the Philippines, rainfall exceeded 100mm over persistently wet regions of the east-central islands, due mainly to Tropical Storm Val which brushed the central Philippines late in the week. Local flooding is likely over the east-central islands following several weeks of heavy rain.

AUSTRALIA ... Remnants of Tropical Cyclone Ilona brought heavy rain to normally dry areas of interior Western Australia early in the week. Variable rain (mostly 10-59mm) also fell over eastern coastal sections of Queensland, benefiting vegetative sugarcane. Light to moderate rain caused some delays in harvesting late winter grains across Victoria and South Australia, while crop areas in Western Australia remained favorably dry. Light to moderate showers also fell over eastern summer crop areas in southern Queensland and northern New South Wales, maintaining adequate to favorable moisture for most crops. Summer crops are still primarily in vegetative growth.



SOUTH AMERICA ... In south-central Brazil, widespread heavy rain (50-88mm) fell over northern crop areas from Mato Grosso do Sul, Goias, and Minas Gerais to northern Sao Paulo. The moisture soaked topsoils for emerging corn and soybeans and helped coffee fruit development. Inundating rain (110-175mm) fell on December 21 near Sao Paulo, however. Some rain fell in chronically dry Parana, but amounts ranged from 4mm at Londrina in the north to 40-68mm in the south. The variable rainfall benefited late planting and crop growth, but some important crop areas remained deficient in planting moisture. Showers (10-75mm) maintained adequate moisture in Rio Grande do Sul. In Argentina, locally heavy showers (50-97mm) fell over northern cotton areas, while lighter rain covered most crop areas to the south. The primary soybean areas of southern Santa Fe, southern Cordoba, and northern Buenos Aires received variable rainfall amounts of 3-30mm. Topsoil moisture has improved in recent weeks for summer crops while periodic dryness has allowed wheat harvesting.

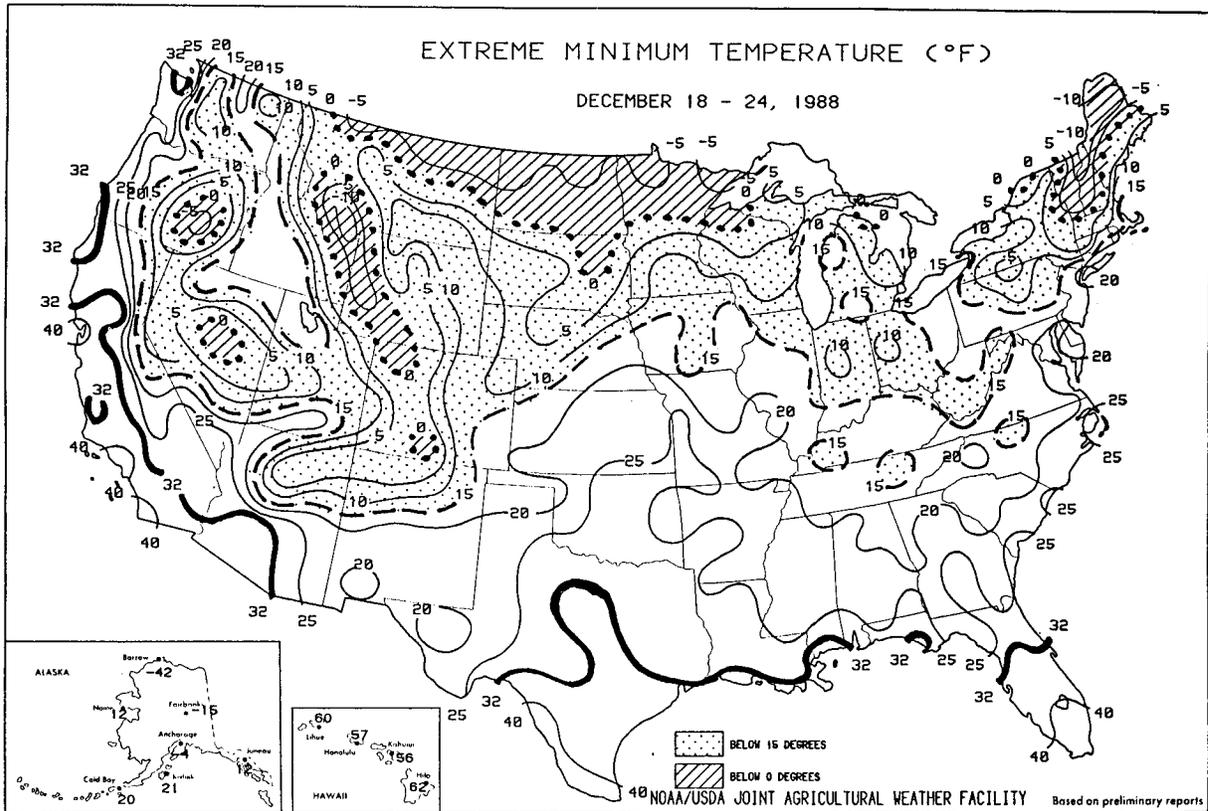
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