

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration, National Weather Service

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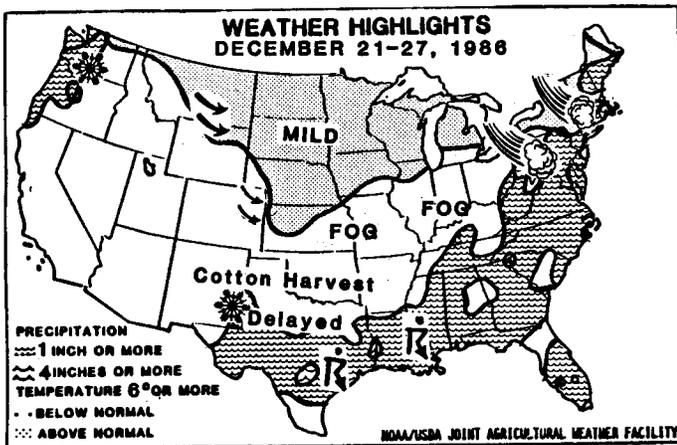
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Dec. 30, 1986

National Weather Summary

December 21 to 27, 1986



TUESDAY... Only a few showers remained in the West, but a storm in the Gulf of Mexico spread showers and a few thunderstorms from southeastern Texas through the Ohio Valley, the mid-Atlantic States, and across the South. Temperatures warmed through the High Plains from Texas to Montana.

WEDNESDAY... A few showers dotted the Northwest and southern Rockies. Rain and rainshowers were widespread from Alabama to Michigan and eastward to the Atlantic. Heavy rain fell in the drier parts of the mid-Atlantic States. Warmer weather returned to the East and the Great Plains.

THURSDAY... Rather tranquil weather covered most of the Nation Christmas day. The departing storm in the Northeast dropped moderate rain in eastern New England early in the day. Light snow and some freezing rain fell from the upper Ohio Valley into western New England. Moderate rain returned to the Northwest coast, and a few light showers developed in Texas.

FRIDAY... A few showers fell in the southern part of Florida, and very light showers covered the Northwest. The only dominating feature of the weather was dense fog that reached from the eastern part of the central Plains through the Ohio Valley. In late morning, the fog precipitated in very light drizzle. Cold weather covered the Midwest, the northern and central Plains, the Rockies, and the Plateau, but temperatures warmed to above seasonal levels during the day.

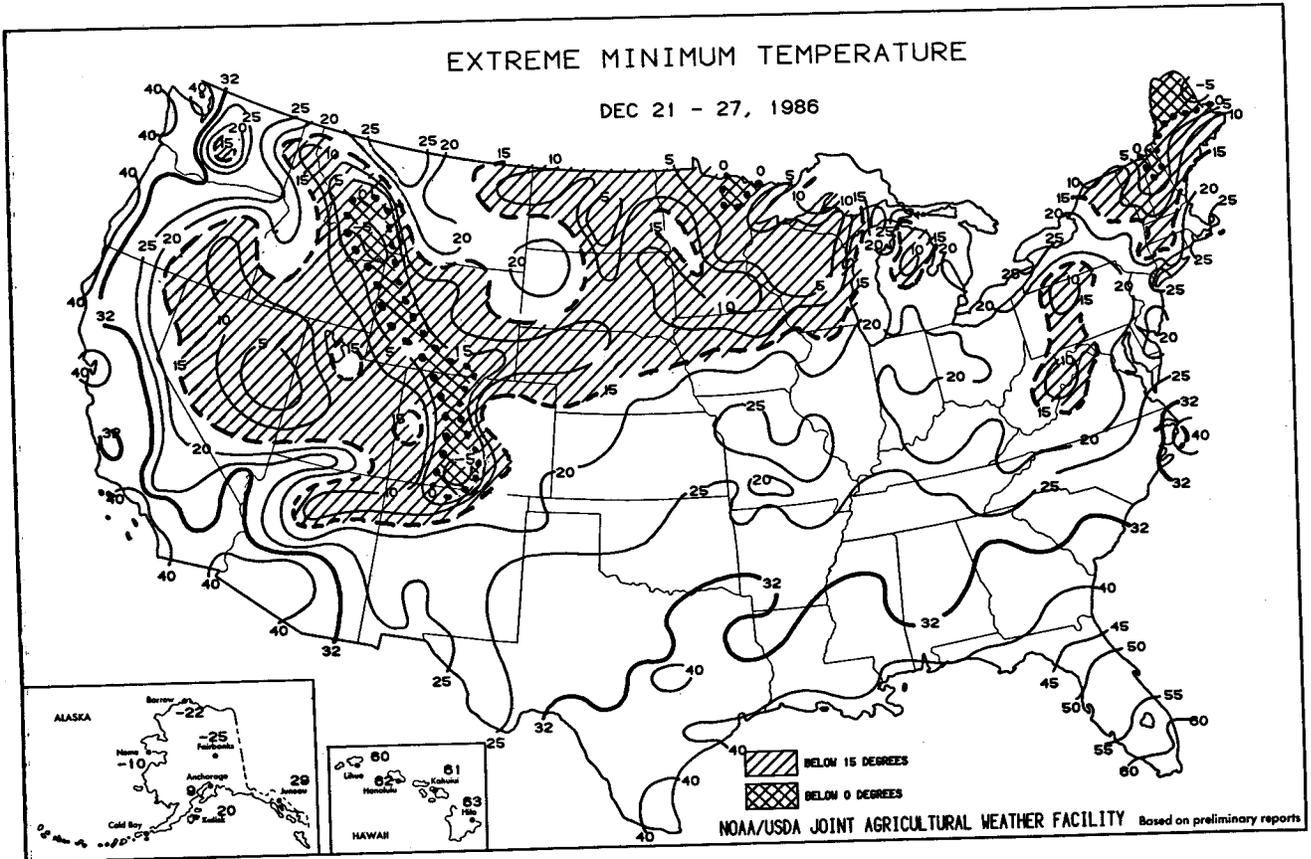
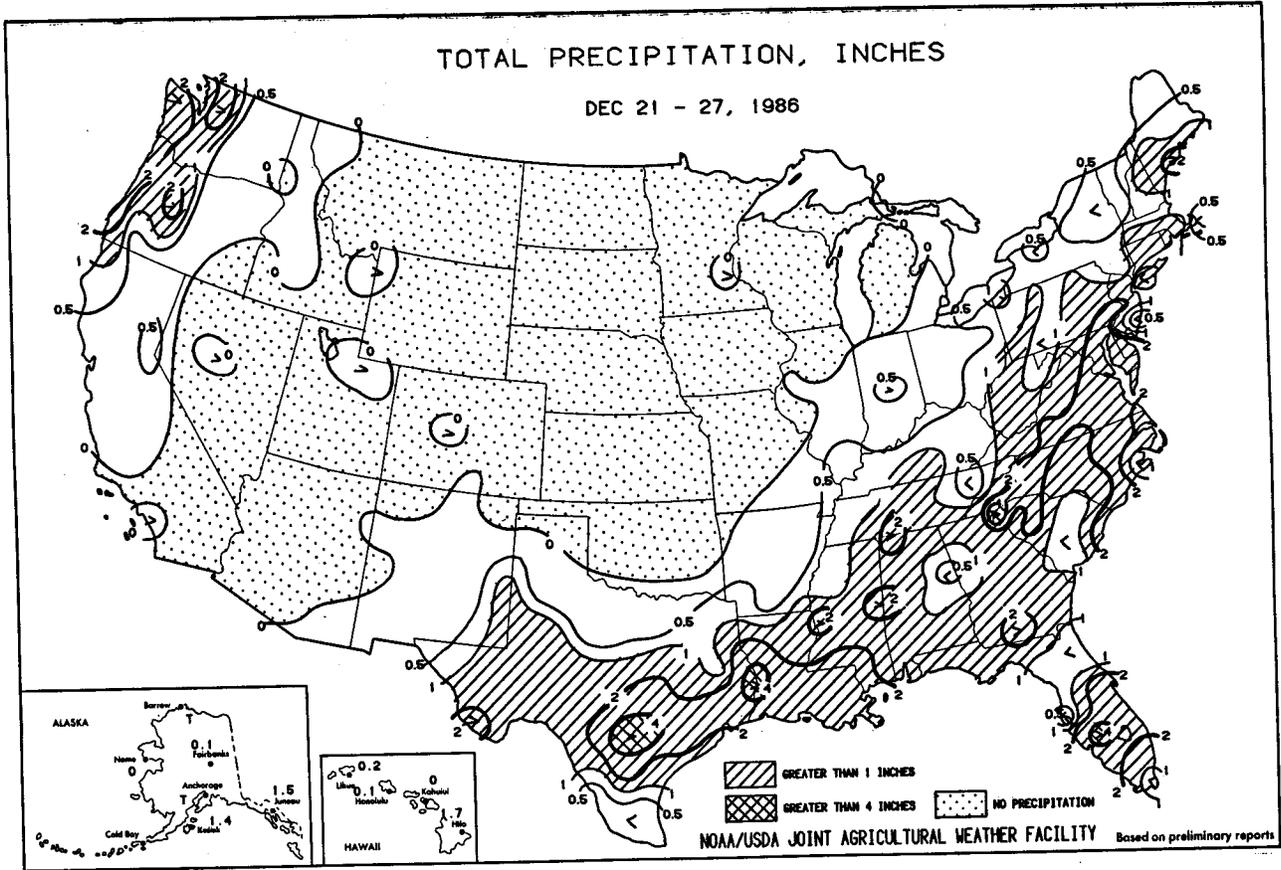
SATURDAY... Fog again dominated the area from the central Plains to the Ohio Valley and ended with very light drizzle. A few snow flurries fell in the eastern Great Lakes region, and showers covered southern Florida. It was a little cooler in the Midwest and Northeast, but temperatures soared into the fifties in the High Plains.

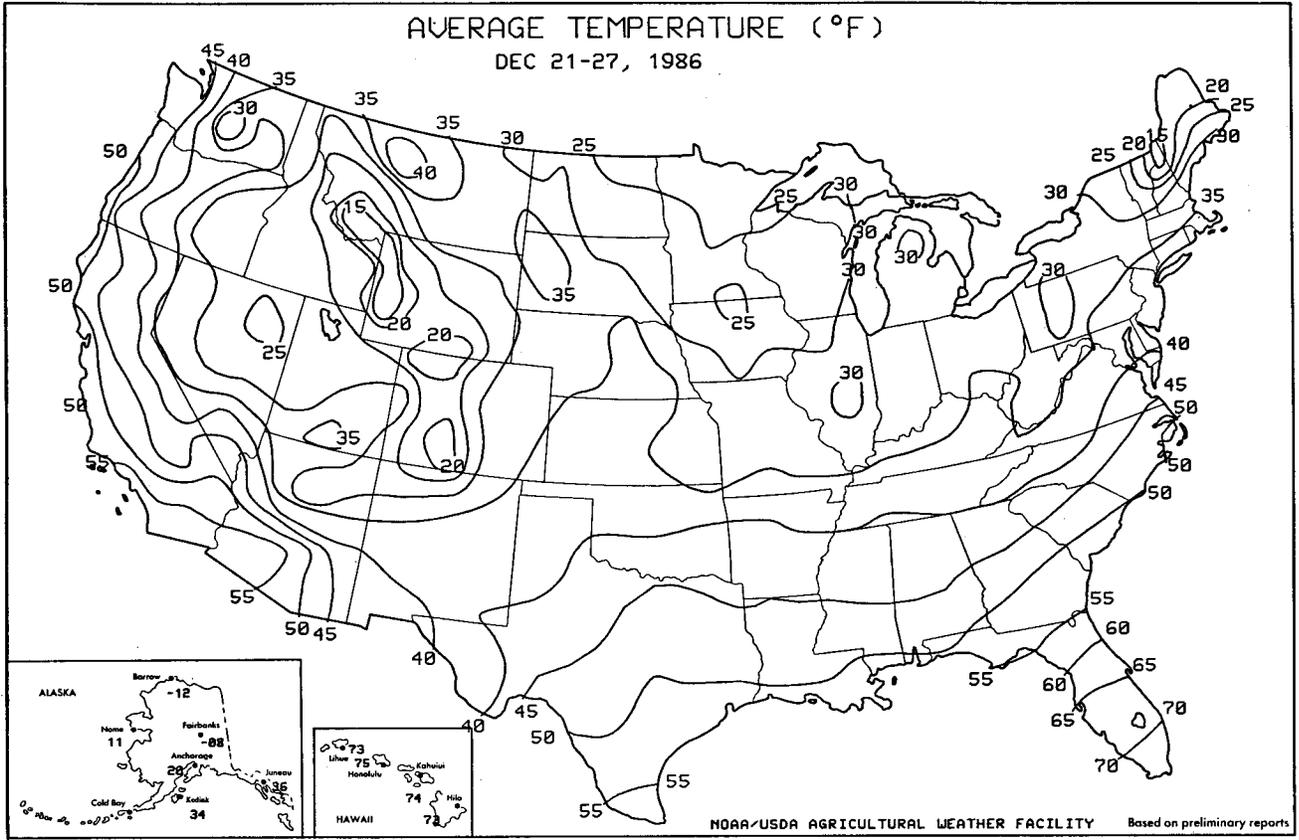
HIGHLIGHTS: A storm system in the western Gulf of Mexico early in the week moved eastward then north-eastward. The storm spread rain from Texas and New Mexico across the South, and over the east coast through New England. Snow covered parts of New Mexico and western Texas, and some freezing rain fell in the interior parts of the Northeast. Rain was heavy in some of the drier parts of the mid-Atlantic States. Heavy rain fell west of the Cascades in the Northwest, and lighter showers extended southward along the California coast. Snow covered the Cascades, but fell as rain at lower inland locations. Average temperatures were near normal in much of the Nation but much warmer than normal in the northern Great Plains and the Northeast.

SUNDAY... Fair skies dominated much of the Nation. However, rain and strong winds covered the Northwest coast from Washington to northern California. Snow or freezing rain fell in the Cascades and inland. A storm in the Gulf of Mexico spread rain from Texas and New Mexico to southern Alabama. Snow covered the mountains of New Mexico.

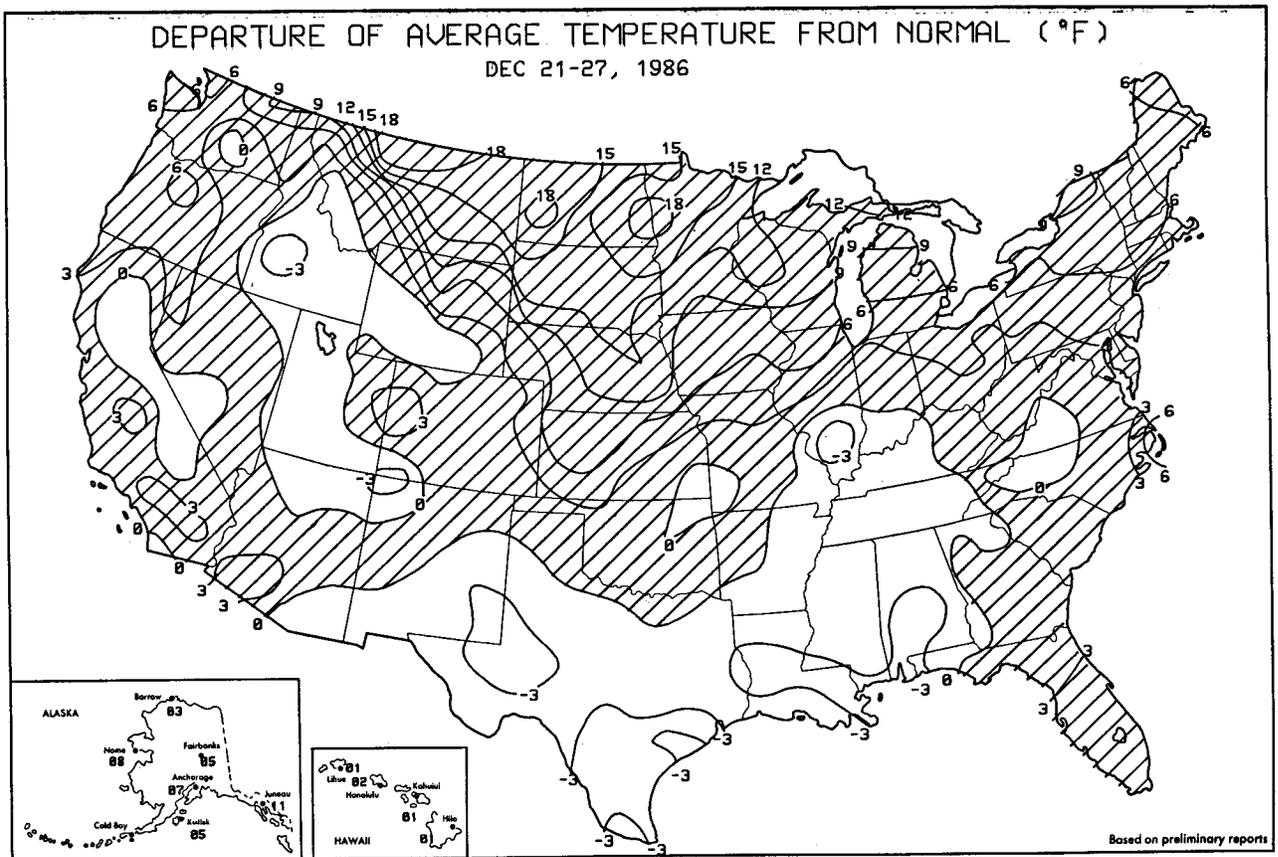
MONDAY... Fair weather continued over most of the Nation, but the precipitation areas expanded. Rain covered the west coast through the northern two-thirds of California. Snow or freezing rain fell in inland areas of the West early in the day but changed to rain later. Snow fell in parts of New Mexico and western Texas, and rain spread from the rest of Texas across the South to Georgia and Florida.

Contents	Page
National Weather Summary	1
Total Precipitation & Extreme Minimum Temperature.	2
Average Temperature & Departure.	3
National Weather Data for Selected Cities.	4
Heating Degree Day Summary Table	7
National Water Conditions, November 1986	8
National Agricultural Summary.	9
State Summaries of Weather and Agriculture	10
Global Weather Satellite Image	14
International Weather and Crop Summary	15
1986 Bulletin Index.	18
Subscription & Mailing Permit Information & Snow Cover Map	20





Point values may differ on these computerized maps from the reported values in the tables.



National Weather Data for Selected Cities

Weather Data for the Week Ending December 27, 1986

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 OF		PRECIPI- TATION		
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE	
AL BIRMINGHAM	49	34	56	29	42	-3	1.4	.3	1.4	3.4	78	41.4	77	96	71	0	0	0	1	
MOBILE	57	42	69	36	50	-3	1.7	.5	1.0	3.7	77	59.4	93	91	62	0	0	3	1	
MONTGOMERY	53	37	61	30	45	-3	.8	.3	.7	3.0	71	52.4	108	93	57	0	0	2	1	
AK ANCHORAGE	25	15	40	9	20	7	7	0	0	1.4	140	18.9	125	91	68	0	0	1	0	
BARROW	-7	-16	0	-22	-12	3	3	0	0	.1	64	4.1	87	81	74	0	0	2	0	
FAIRBANKS	-1	-15	18	-25	-8	5	5	0	0	.3	51	9.9	96	91	80	0	0	2	0	
JUNEAU	38	32	40	29	35	10	1.5	.5	.6	5.5	134	60.5	115	95	75	0	0	4	1	
KODIAK	39	29	41	20	34	5	1.4	.1	.9	9.7	181	75.9	104	91	68	0	0	6	1	
NOME	18	4	32	-10	11	8	8	0	0	1.1	193	17.5	119	75	52	0	0	0	0	
AZ PHOENIX	66	43	69	42	55	3	0	0	0	1.4	194	7.6	109	80	33	0	0	0	0	
PRESCOTT	49	24	53	19	37	3	0	0	0	.9	61	12.2	66	85	37	0	0	0	0	
TUCSON	63	37	65	35	50	-1	0	0	0	1.3	152	11.8	107	94	35	0	0	0	0	
YUMA	70	47	72	44	58	3	0	0	0	.2	85	1.8	69	54	23	0	0	0	0	
AR FORT SMITH	50	33	55	27	42	2	0	0	0	1.2	47	37.7	95	93	53	0	0	0	0	
LITTLE ROCK	46	36	55	31	41	0	.3	.6	.3	3.2	89	43.7	97	84	62	0	0	1	0	
CA BAKERSFIELD	52	41	54	37	47	0	.1	.1	.1	.7	137	5.6	100	99	78	0	0	1	0	
EUREKA	61	46	64	43	53	5	.8	.6	.4	3.2	59	36.9	88	88	67	0	0	4	0	
FRESNO	52	43	55	37	48	4	0	0	0	2.3	168	12.4	120	96	77	0	0	1	0	
LOS ANGELES	68	48	71	45	58	2	.5	.3	1.7	.3	22	15.9	135	91	41	0	0	2	0	
REDDING	54	35	61	30	44	**	.5	**	.3	1.7	**	**	**	97	62	0	0	1	0	
SACRAMENTO	51	37	60	34	44	-1	.1	.1	.1	.6	23	17.7	106	100	79	0	0	0	0	
SAN DIEGO	66	46	69	44	56	-1	.1	.1	.1	.9	82	12.2	134	90	47	0	0	2	0	
SAN FRANCISCO	55	43	58	41	49	1	.2	.2	.2	1.5	51	20.7	108	97	67	0	0	0	0	
CO DENVER	45	20	52	17	33	1	1	0	0	.3	61	12.0	78	76	29	0	0	7	0	
GRAND JUNCTION	43	20	46	16	31	5	0	0	0	.4	78	8.7	110	83	37	0	0	0	0	
PUEBLO	47	17	55	12	32	0	0	0	0	.4	156	10.6	98	97	36	0	0	5	1	
CT BRIDGEPORT	42	31	51	20	36	4	1.0	.2	.7	4.0	122	33.3	81	85	52	0	0	2	1	
HARTFORD	43	25	48	16	34	7	1.3	.4	1.0	6.0	164	44.4	101	86	45	0	0	5	1	
DC WASHINGTON	45	31	52	25	38	1	2.4	1.7	2.4	5.0	179	32.6	84	89	56	0	0	4	1	
FL APALACHICOLA	63	48	71	44	56	2	2.0	1.2	1.9	7.9	259	65.0	119	93	63	0	0	0	1	
DAYTONA BEACH	69	56	78	50	63	4	.8	.3	.6	1.4	73	46.1	96	96	66	0	0	2	1	
JACKSONVILLE	63	48	75	42	55	1	.9	.2	.8	3.2	141	42.7	81	97	70	0	0	0	1	
KEY WEST	79	70	82	68	74	4	2.5	2.2	1.9	9.3	605	38.9	99	96	65	0	0	4	1	
MIAMI	79	65	82	59	72	4	1.3	.9	.7	1.8	113	65.6	114	96	60	0	0	3	2	
ORLANDO	73	58	81	54	65	0	2.1	1.7	.9	2.3	144	48.4	102	96	60	0	0	0	1	
TALLAHASSEE	60	44	68	40	52	4	1.5	.4	1.4	6.1	154	70.7	110	93	59	0	0	2	0	
TAMPA	71	58	77	54	65	4	.4	.1	.4	1.0	52	40.3	87	94	61	0	0	5	3	
WEST PALM BEACH	76	64	80	59	70	4	3.3	2.8	1.2	8.2	423	67.2	113	95	68	0	0	0	1	
GA ATLANTA	50	38	56	33	44	1	1.2	.2	1.0	3.0	83	40.6	85	89	61	0	0	2	2	
AUGUSTA	55	40	61	31	48	2	1.6	.8	.9	3.8	140	43.5	102	93	57	0	0	1	1	
MACON	55	40	61	35	48	0	1.1	.1	1.0	3.0	87	37.9	86	92	58	0	0	2	1	
SAVANNAH	59	45	73	37	52	2	1.4	.8	1.4	4.7	199	45.5	92	90	56	0	0	0	1	
HI HILO	81	65	83	63	73	1	1.7	.9	1.1	5.1	44	168.6	133	94	56	0	0	5	0	
HONOLULU	84	66	86	62	75	2	.1	.7	0	.3	11	12.9	56	93	48	0	0	2	0	
KAHULUI	83	65	85	61	74	1	.6	.6	.6	.6	24	13.7	71	85	48	0	0	0	0	
LIHUE	79	66	83	60	73	1	.2	.1	.1	1.0	22	25.9	60	90	60	0	0	2	0	
ID BOISE	36	21	40	17	28	-2	0	0	0	.1	10	14.3	124	99	71	0	0	7	0	
LEWISTON	44	32	49	25	38	4	0	0	0	.4	34	10.6	85	86	51	0	0	4	0	
POCATELLO	32	13	39	9	23	-2	0	0	0	.2	25	12.4	116	93	67	0	0	7	0	
IL CHICAGO	36	26	44	20	31	6	0	0	0	1.1	58	31.7	96	93	71	0	0	7	0	
MOLINE	36	24	41	17	30	6	0	0	0	2.0	117	40.7	110	94	69	0	0	0	0	
PEORIA	36	25	40	20	31	5	0	0	0	2.6	147	37.4	108	97	73	0	0	7	0	
QUINCY	35	26	43	24	31	3	0	0	0	1.8	120	41.4	110	94	75	0	0	7	0	
ROCKFORD	35	23	39	14	29	7	0	0	0	.6	35	34.2	93	95	71	0	0	0	0	
SPRINGFIELD	36	26	42	24	31	3	0	0	0	1.4	77	35.7	107	97	75	0	0	7	0	
IN EVANSVILLE	39	28	45	21	33	0	.4	.4	.2	2.2	71	37.8	92	97	75	0	0	6	2	
FORT WAYNE	34	26	36	22	30	3	.2	.4	.2	1.5	67	42.3	124	96	79	0	0	7	1	
INDIANAPOLIS	35	27	40	21	31	2	.5	.1	.5	1.6	59	46.1	119	94	75	0	0	7	1	
SOUTH BEND	35	26	39	20	30	4	0	0	0	1.5	59	36.7	97	93	73	0	0	7	0	
IA DES MOINES	37	22	51	17	29	7	0	0	0	1.0	105	42.5	138	98	71	0	0	7	0	
SIoux CITY	39	21	44	12	30	10	0	0	0	.2	32	32.3	128	99	72	0	0	7	0	
WATERLOO	32	18	36	6	25	7	0	0	0	.8	79	36.2	110	99	85	0	0	7	0	
KS CONCORDIA	45	25	51	21	35	6	0	0	0	1.4	229	40.2	149	97	61	0	0	7	0	
DODGE CITY	51	25	55	21	38	6	0	0	0	1.0	200	20.2	98	91	42	0	0	7	0	
GOODLAND	50	21	54	18	36	7	0	0	0	.1	30	15.3	94	81	30	0	0	7	0	
TOPEKA	38	25	52	20	32	2	0	0	0	1.2	103	37.3	112	99	79	0	0	6	0	
WICHITA	43	23	52	20	33	1	0	0	0	1.2	139	31.2	109	97	69	0	0	7	0	
KY BOWLING GREEN	41	30	45	24	36	0	0	0	0	4.7	120	38.5	80	95	72	0	0	4	2	
LEXINGTON	41	28	51	18	35	0	1.2	.2	1.1	4.7	120	38.5	80	95	72	0	0	4	2	
LOUISVILLE	39	28	43	17	33	-2	.4	.4	.4	3.3	99	34.7	77	94	67	0	0	5	0	
LA ALEXANDRIA	54	42	63	39	48	-3	2.0	.9	1.1	5.0	115	47.6	88	86	63	0	0	0	2	
BATON ROUGE	56	42	62	37	49	-3	2.1	.9	2.1	6.2	142	55.4	100	93	63	0	0	0	1	
LAKE CHARLES	57	43	65	40	50	-3	2.6	1.5	2.3	9.8	221	58.6	112	97	62	0	0	0	2	
NEW ORLEANS	58	45	67	38	52	-2	2.4	1.3	2.3	5.0	109	47.9	81	96	68	0	0	3	1	

Based on 1951-80 normals.

Weather Data for the Week Ending December 27, 1986

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	54	38	62	32	46	-1	1.2	-.4	.9	4.7	140	58.2	134	98	56	0	1	2	1
ME CARIBOU	27	9	36	-1	18	5	.3	-.4	.2	1.6	57	34.4	95	92	67	0	7	2	0
PORTLAND	41	21	49	13	31	8	1.9	-.9	1.9	5.9	148	44.5	103	91	47	0	1	1	
MD BALTIMORE	46	28	54	18	37	3	2.5	1.7	2.5	5.4	180	33.4	81	88	51	0	5	1	
SALISBURY	49	29	62	19	39	3	3.2	2.4	3.2	6.8	209	33.1	74	94	54	0	5	1	
MA BOSTON	43	31	58	24	37	5	.8	-.2	.8	6.3	160	44.2	102	79	51	0	1	1	
CHATHAM	43	31	52	27	37	4	.4	-.7	.4	4.9	112	51.7	112	81	61	0	6	0	
MI ALPENA	37	27	42	13	32	11	T	T	T	.6	37	30.2	106	92	62	0	6	0	
DETROIT	36	28	39	19	32	6	T	T	T	2.3	102	37.6	122	94	67	0	6	0	
FLINT	35	27	36	18	31	6	T	T	T	1.7	95	37.7	130	93	72	0	2	0	
GRAND RAPIDS	35	27	37	17	31	6	T	T	T	1.0	44	47.7	140	90	65	0	7	0	
HOUGHTON LAKE	34	21	37	6	28	7	T	T	T	.5	28	33.4	120	90	69	0	7	0	
LANSING	35	27	36	18	31	6	T	T	T	1.0	51	37.2	127	92	69	0	7	0	
MARQUETTE	35	18	43	4	27	11	T	T	T	.5	23	30.4	82	94	65	0	7	0	
MUSKOGON	37	27	38	17	32	6	T	T	T	1.3	55	34.9	112	91	69	0	7	0	
MN SAULT STE. MARIE	35	26	39	21	31	14	T	T	T	1.9	81	37.3	112	88	68	0	7	0	
ALEXANDRIA	34	21	42	16	27	16	T	T	T	.1	16	33.0	136	95	73	0	7	0	
DULUTH	31	17	38	8	24	13	T	T	T	.4	37	36.3	123	96	74	0	7	0	
INT'L FALLS	32	14	37	4	23	18	T	T	T	.2	25	18.1	75	93	65	0	7	0	
MINNEAPOLIS	33	22	35	12	27	11	.1	-.1	.1	.3	39	36.5	139	100	88	0	7	1	
ROCHESTER	49	21	31	11	25	10	T	T	T	.3	42	40.0	142	99	88	0	7	0	
MS GREENWOOD	49	36	56	32	43	2	-.2	-.3	.9	2.5	54	40.5	77	95	69	0	1	3	
JACKSON	52	40	57	36	46	4	1.4	-.2	.9	5.0	106	50.2	96	98	71	0	0	3	
MERIDIAN	52	37	58	31	45	3	1.3	0	.9	4.2	84	49.5	94	97	67	0	1	3	
MO CAPE GIRARDEAU	39	26	50	22	33	2	-.2	-.5	.3	2.3	70	40.9	93	99	71	0	7	2	
COLUMBIA	39	28	48	24	33	3	0	-.4	0	2.1	120	39.7	111	97	66	0	6	0	
KANSAS CITY	37	27	50	24	32	3	T	T	T	1.3	103	39.2	112	98	79	0	6	0	
SAINT LOUIS	37	27	46	26	32	0	T	T	T	1.1	54	34.9	104	95	76	0	7	0	
SPRINGFIELD	43	26	51	19	34	0	T	T	T	1.3	57	40.1	102	98	64	0	7	0	
MT BILLINGS	47	27	50	23	37	12	0	-.2	0	.1	15	14.4	96	55	27	0	6	0	
GLASGOW	41	20	48	10	31	17	0	-.1	0	T	10	13.3	116	89	52	0	7	0	
GREAT FALLS	46	33	52	27	40	16	0	-.2	0	.2	32	13.9	92	59	29	0	3	0	
HAVRE	46	28	49	25	37	21	0	-.1	0	T	0	17.3	156	73	37	0	6	0	
HELENA	35	12	46	-3	23	2	0	-.1	0	.4	73	12.0	106	94	60	0	7	0	
KALISPELL	35	22	42	16	28	6	.1	-.3	0	.5	35	17.4	111	99	84	0	7	2	
MILES CITY	44	23	48	16	34	15	0	-.1	0	.1	9	15.7	111	76	42	0	7	0	
MISSOULA	31	15	41	1	23	0	0	-.3	0	.5	48	16.5	126	93	71	0	7	0	
NE GRAND ISLAND	47	23	53	20	35	11	0	-.1	0	.3	47	24.9	107	94	52	0	7	0	
LINCOLN	45	24	49	19	35	11	T	T	T	1.2	202	39.3	147	94	61	0	7	0	
NORFOLK	45	22	51	14	33	12	0	-.1	0	.4	69	30.8	130	95	56	0	7	0	
NORTH PLATTE	50	14	55	11	32	8	0	-.1	0	.3	69	17.0	88	92	28	0	7	0	
OMAHA	38	26	46	24	32	9	0	-.1	0	1.0	150	37.5	125	95	80	0	7	0	
SCOTTSDLUFF	46	12	51	9	29	3	0	-.1	0	.3	53	21.6	148	87	32	0	7	0	
VALENTINE	52	13	57	8	33	11	0	-.1	0	T	0	20.8	122	77	26	0	7	0	
NV ELY	42	10	50	3	26	1	0	-.2	0	.1	10	8.5	96	86	40	0	7	0	
LAS VEGAS	57	34	60	32	46	2	0	-.1	0	.5	168	2.6	62	87	30	0	3	0	
RENO	46	22	49	17	34	3	T	T	T	.2	19	9.0	123	96	48	0	7	2	
WINNEMUCCA	44	16	46	11	30	1	T	T	T	.1	9	5.5	71	95	51	0	7	0	
NH CONCORD	38	21	42	9	30	8	.9	-.1	.9	4.4	146	40.4	112	89	53	0	5	1	
NJ ATLANTIC CITY	49	25	57	18	37	3	.5	-.3	.5	4.3	136	40.2	97	94	46	0	6	2	
NM ALBUQUERQUE	44	28	47	22	36	2	.1	-.1	0	.6	122	13.2	163	93	45	0	6	2	
CLOVIS	42	29	48	26	36	-3	.5	.4	.3	1.4	256	21.0	122	88	63	0	6	2	
ROSWELL	47	30	53	25	39	-3	.1	.1	.1	.8	328	24.0	250	94	58	0	5	2	
NY ALBANY	38	25	43	19	31	8	.4	-.2	.3	3.7	139	43.7	123	94	66	0	5	2	
BINGHAMTON	36	27	43	20	32	8	.8	-.2	.6	2.5	96	44.4	122	88	62	0	6	3	
BUFFALO	37	30	40	26	34	7	.8	.1	.8	4.0	133	39.6	107	90	67	0	5	2	
NEW YORK	45	35	52	29	40	6	.9	.1	.6	5.0	155	38.6	91	81	50	0	2	1	
ROCHESTER	37	29	41	22	33	7	.1	-.4	.1	3.2	141	36.0	116	92	69	0	5	2	
SYRACUSE	37	28	42	22	33	7	.5	-.2	.3	3.3	118	42.9	111	90	64	0	5	3	
NC ASHEVILLE	48	29	55	23	39	1	1.9	1.1	1.1	4.3	139	34.7	73	98	56	0	5	2	
CHARLOTTE	48	35	56	27	42	1	1.2	.5	.9	3.2	109	27.0	63	94	59	0	3	2	
GREENSBORO	46	29	59	20	38	-1	1.6	.8	1.2	3.6	123	29.7	71	96	60	0	5	2	
HATTERAS	58	49	70	44	53	6	1.9	.9	1.9	6.5	166	48.7	88	94	66	0	0	2	
NEW BERN	55	40	68	31	47	2	.7	-.1	.7	3.5	109	44.2	84	94	65	0	1	2	
RALEIGH	50	33	57	24	41	1	1.2	.5	1.2	2.9	107	36.8	89	93	58	0	4	2	
WILMINGTON	58	40	71	30	49	3	2.8	2.0	2.6	6.3	211	59.4	112	93	62	0	2	2	
ND BISMARCK	39	14	44	3	26	14	0	-.1	0	T	5	24.2	158	94	59	0	7	0	
FARGO	37	19	43	16	28	19	0	-.1	0	.2	36	23.4	120	94	64	0	7	0	
GRAND FORKS	32	15	36	10	24	16	0	-.1	0	.3	45	15.8	87	94	79	0	7	0	
WILLISTON	38	18	40	6	28	16	0	-.1	0	T	9	21.8	158	94	65	0	7	0	
OH AKRON-CANTON	36	26	39	19	31	3	.4	-.2	.3	2.8	120	31.4	88	94	71	0	7	2	
CINCINNATI	38	27	41	17	32	0	.3	-.4	.2	2.5	96	33.5	84	88	68	0	5	2	
CLEVELAND	36	25	39	19	31	2	.7	.1	.5	2.8	117	40.7	116	94	71	0	6	3	
COLUMBUS	38	29	44	18	34	4	.3	-.3	.3	2.8	125	35.0	96	92	65	0	5	2	

Based on 1951-80 normals.

Weather Data for the Week Ending December 27, 1986

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	
DAYTON	35	28	39	20	32	2	.4	-.2	.4	2.7	123	42.6	124	91	70	0	6	2	0	
TOLEDO	36	27	41	19	31	6	T	-.5	T	1.9	83	37.3	118	96	75	0	7	2	0	
YOUNGSTOWN	36	24	38	18	30	3	.7	-.1	.5	3.5	147	46.3	125	97	71	0	7	2	0	
OK OKLAHOMA CITY	48	30	53	26	39	1	0	-.3	0	1.2	107	45.2	147	98	60	0	6	0	0	
TULSA	44	30	54	28	37	0	0	-.4	0	1.0	60	42.8	111	99	66	0	7	0	0	
OR ASTORIA	53	41	57	37	47	5	2.9	.2	1.7	5.0	50	61.1	90	97	76	0	0	1	0	
BURNS	38	22	43	9	30	3	.1	-.1	0	.1	13	10.0	130	—	—	0	7	2	0	
MEDFORD	48	33	57	28	40	3	.3	-.6	.2	.6	21	17.0	88	100	70	0	2	0	0	
PENDLETON	42	30	52	26	36	1	1	-.4	.7	52	12.5	104	96	71	0	5	2	1		
PORTLAND	49	40	53	36	45	5	1.1	-.3	.6	3.0	54	33.7	92	93	69	0	0	1	0	
SALEM	53	37	57	31	45	5	1.2	-.5	.5	2.5	41	38.1	97	96	69	0	1	5	0	
PA ALLENTOWN	42	27	47	19	34	5	1.5	.7	1.4	4.4	133	43.1	98	88	53	0	6	2	1	
ERIE	37	29	41	24	33	5	1.1	.4	.9	4.0	139	47.0	121	93	69	0	4	2	1	
HARRISBURG	41	31	46	23	36	5	1.7	1.0	1.6	4.9	173	42.7	110	88	55	0	4	2	1	
PHILADELPHIA	45	29	50	21	37	4	1.9	1.2	1.8	5.9	196	40.4	99	87	55	0	6	3	1	
PITTSBURGH	38	26	43	17	32	3	.8	-.2	.7	3.5	157	37.4	104	81	56	0	7	3	1	
SCRANTON	39	27	44	19	33	6	.7	-.2	.7	2.0	91	44.2	127	89	58	0	5	2	1	
RI PROVIDENCE	45	28	59	22	36	6	1.2	.2	1.1	7.9	202	45.8	102	82	46	0	6	3	1	
SC CHARLESTON	59	43	74	34	51	2	1.8	1.0	1.3	5.5	205	48.6	95	91	57	0	0	2	1	
COLUMBIA	53	36	61	30	45	0	.6	-.2	.3	2.4	82	34.2	70	94	57	0	2	2	0	
FLORENCE	56	37	69	29	47	1	.6	-.1	.6	3.2	127	31.5	72	94	52	0	2	2	1	
GREENVILLE	50	34	58	26	42	0	1.7	.8	1.0	4.1	121	39.3	79	91	60	0	3	2	2	
SD ABERDEEN	42	14	47	9	28	15	0	-.1	0	T	0	25.7	144	96	50	0	7	0	0	
HURON	45	16	50	12	30	14	0	-.1	0	T	0	27.4	147	94	44	0	7	0	0	
RAPID CITY	51	23	55	20	37	13	0	-.1	0	T	0	21.5	133	70	28	0	7	0	0	
SIOUX FALLS	41	13	44	6	27	10	T	-.1	0	T	0	30.5	127	98	58	0	7	0	0	
TN CHATTANOOGA	46	34	52	27	40	0	1.2	0	1.2	4.8	107	42.4	82	95	69	0	3	2	1	
KNOXVILLE	46	32	54	23	39	-.1	.3	-.8	.2	4.1	103	32.6	70	96	71	0	3	2	0	
MEMPHIS	45	35	53	32	40	-.2	.9	-.2	.9	3.9	92	38.7	76	95	69	0	2	1	1	
NASHVILLE	44	32	47	25	38	-.1	1.4	.4	1.2	3.6	89	31.8	66	93	71	0	3	2	1	
TX ABILENE	51	34	58	30	43	-.2	.4	-.2	.3	2.0	279	31.9	138	97	59	0	3	3	0	
AMARILLO	47	28	52	24	38	1	.1	-.1	.1	.7	147	25.2	132	92	45	0	6	1	0	
AUSTIN	59	43	69	40	51	0	2.4	2.0	2.2	5.8	315	35.0	112	92	58	0	0	3	1	
BEAUMONT	58	43	67	38	51	-.3	3.9	2.9	3.8	9.7	244	64.4	123	97	62	0	0	2	1	
BROWNSVILLE	66	49	71	42	58	-.4	.4	-.1	.3	1.0	96	26.3	104	95	65	0	0	3	0	
CORPUS CHRISTI	61	45	71	37	53	-.5	1.6	1.3	1.0	2.3	194	29.9	100	96	64	0	0	2	2	
DEL RIO	58	40	64	35	49	-.2	1.1	1.0	.6	2.3	455	25.1	146	90	70	0	0	5	1	
EL PASO	51	33	56	28	42	-.2	.2	-.1	.1	1.6	460	12.5	160	95	57	0	4	2	0	
FORT WORTH	53	38	60	32	46	-.1	.1	-.2	.1	2.4	164	32.4	111	91	53	0	2	2	0	
GALVESTON	58	47	64	42	53	-.3	1.8	1.0	1.7	4.1	128	35.5	89	91	62	0	0	3	1	
HOUSTON	59	42	68	36	51	-.2	2.6	1.8	2.0	5.7	178	45.0	102	95	58	0	0	3	2	
LUBBOCK	48	30	53	26	39	-.1	.5	.4	.3	1.3	333	26.5	150	98	64	0	4	2	0	
MIDLAND	51	31	60	26	41	-.4	1.7	1.7	1.1	3.3	793	32.0	234	95	57	0	4	3	2	
SAN ANGELO	53	34	57	26	44	-.3	1.4	1.2	1.1	2.4	427	32.8	181	97	59	0	3	3	1	
SAN ANTONIO	59	40	67	35	49	-.3	4.5	4.2	4.0	6.8	561	42.5	106	96	61	0	0	3	2	
VICTORIA	60	44	70	40	52	-.3	2.3	1.8	1.5	4.0	212	39.0	106	96	61	0	0	3	2	
WACO	56	38	63	32	47	-.1	1.8	1.3	1.5	3.5	205	35.6	116	99	62	0	0	3	1	
WICHITA FALLS	53	33	56	29	43	1	T	-.3	T	.9	84	34.5	130	94	53	0	2	1	0	
UT BLANDING	42	20	44	15	31	3	0	-.3	0	.7	61	15.9	138	84	50	0	7	0	0	
CEDAR CITY	42	17	47	13	30	0	0	-.1	0	.5	88	11.5	113	88	42	0	7	0	0	
SALT LAKE CITY	34	24	39	20	29	0	T	-.3	T	.1	9	19.5	128	93	71	0	7	1	0	
VT BURLINGTON	35	25	42	14	30	10	.3	-.2	.3	1.3	62	40.3	121	85	59	0	7	1	0	
VA NORFOLK	51	37	64	28	44	2	1.6	.9	1.5	3.7	137	26.4	59	92	62	0	2	2	1	
RICHMOND	40	30	59	19	40	2	2.7	1.9	2.3	5.2	173	36.6	84	92	55	0	4	2	1	
ROANOKE	44	27	53	17	36	-.1	2.1	1.4	2.0	5.4	209	33.7	87	93	57	0	4	2	1	
WA COLVILLE	47	32	52	23	35	9	.5	-.1	.2	1.2	54	21.4	124	98	92	0	2	5	0	
QUILLAYUTE	51	44	56	39	47	7	3.6	-.1	1.1	9.7	68	97.2	95	99	79	0	0	6	4	
SEATTLE-TACOMA	50	42	54	39	46	6	1.6	-.2	.7	2.3	42	37.0	98	93	65	0	0	5	1	
SPOKANE	36	26	39	10	31	4	.2	-.4	.1	.8	38	15.3	93	100	84	0	7	4	0	
YAKIMA	35	24	41	14	29	-.1	.1	-.2	.1	.6	57	9.1	117	99	79	0	7	3	0	
WV BECKLEY	41	25	46	16	33	1	1.0	-.2	.9	2.7	97	38.4	92	95	65	0	5	3	1	
CHARLESTON	43	30	51	19	36	1	1.4	.7	1.0	3.8	135	45.6	109	93	63	0	4	3	1	
HUNTINGTON	42	29	49	18	36	1	1.0	.3	.7	3.5	131	39.4	98	92	65	0	3	2	1	
PARKERSBURG	42	28	49	15	35	2	1.4	.7	.8	4.0	166	39.1	95	91	55	0	3	3	1	
WI GREEN BAY	33	23	35	6	28	10	T	-.3	T	.5	38	31.2	112	97	78	0	7	0	0	
LA CROSSE	34	23	36	8	29	10	T	-.2	T	.4	40	32.1	107	96	72	0	7	0	0	
MADISON	33	22	36	10	28	8	0	-.3	0	.6	40	31.7	103	95	77	0	7	0	0	
MILWAUKEE	36	27	39	19	31	9	T	-.4	T	1.1	59	41.8	136	88	68	0	7	0	0	
WAUSAU	32	21	35	1	27	11	T	-.3	T	.5	40	31.1	99	91	72	0	7	0	0	
WY CASPER	37	19	41	14	28	4	0	-.1	0	.3	57	16.1	141	76	42	0	7	0	0	
CHEYENNE	43	18	51	14	31	2	0	-.1	0	.2	55	14.5	109	76	25	0	7	0	0	
LANDER	41	9	43	6	20	-.2	0	-.1	0	.2	45	12.1	92	84	49	0	7	0	0	
SHERIDAN	46	20	51	12	33	11	0	-.1	0	.1	20	16.1	109	80	37	0	7	0	0	
PR SAN JUAN	84	70	86	68	77	0	1.3	.4	.9	3.0	76	54.0	102	97	65	0	0	4	1	

Based on 1951-80 normals.

Heating Degree Day Summary Table

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

LAST DATE OF DATA COLLECTION PERIOD IS 12-27-1986
ACCUMULATIONS ARE FROM JULY 1
** = NORMAL LESS THAN 100 OR RATIO INCALCULABLE

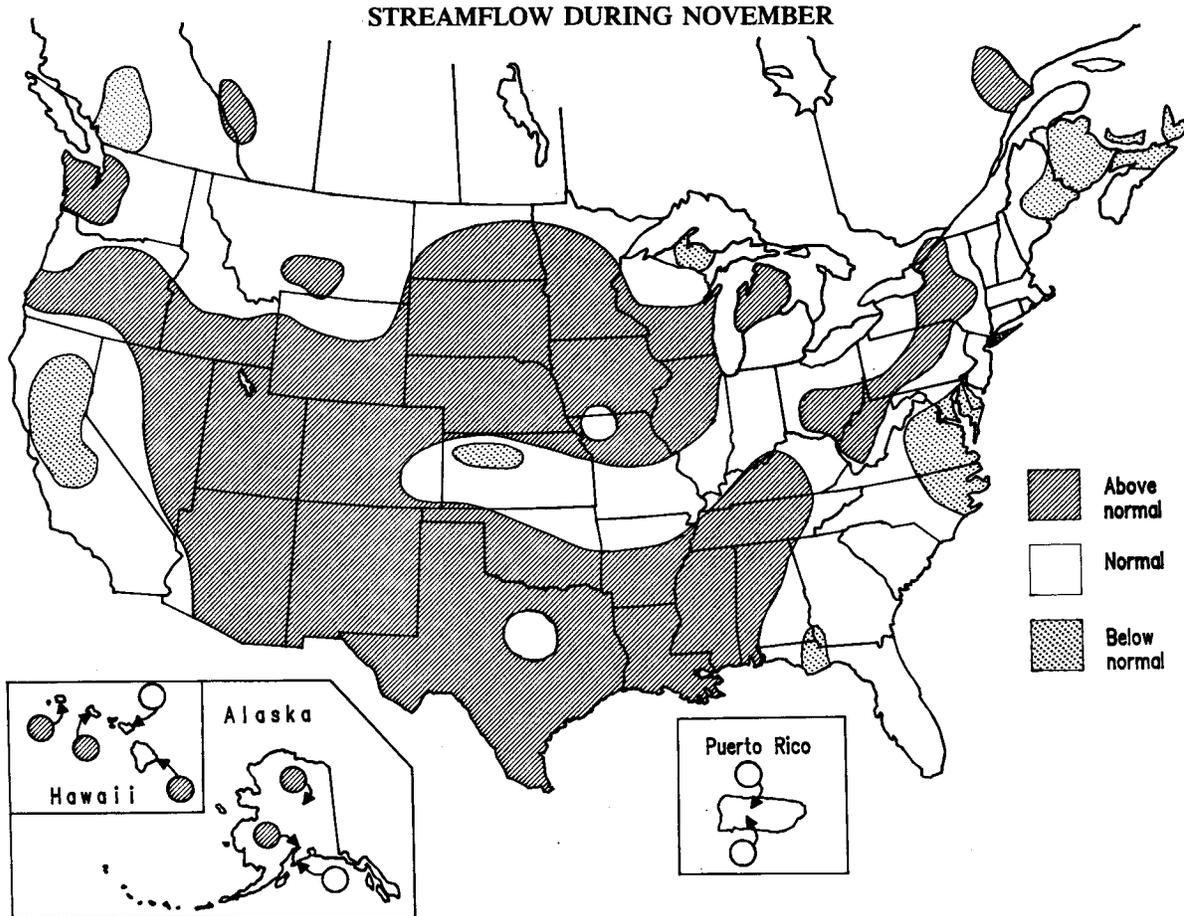
Table with columns: STATE CITY, CALL WEEK, WEEK WEEK, CUM CUM, CUM CUM, CUM CUM, CUM CUM, CUM CUM, CUM CUM, CUM CUM. Rows list various cities and their corresponding heating degree day data.

National Water Conditions

UNITED STATES
Department of the Interior
Geological Survey

CANADA
Department of the Environment
Water Resources Branch

NOVEMBER 1986



NOVEMBER WAS WET MONTH FOR NATION'S STREAMS

November was unusually wet in the United States with 50 percent of key index streams reporting well-above-average flows, according to the U.S. Geological Survey.

When combined with flows of 18 rivers in southern Canada, the total flow of rivers was 1.5 trillion gallons per day, 79 percent above the long-term average for November but 12 percent below the October flow.

The combined flow of the Mississippi, St. Lawrence, and Columbia Rivers was 798 billion gallons per day, 85 percent above the long-term November average. Reflecting the high-water level of the Great Lakes, flow of the St. Lawrence River was at a record high, the highest November flow in 126 years of record.

In the Southeast, which was plagued by drought throughout the summer and early fall, some streams showed upturns in flows. Only 5 of the 38 stations

had well-below average flows, a sharp contrast to conditions a few months earlier when flows were at record-low or near-record-low levels.

Of the 174 index streamflow-gaging stations across the Nation, 87 reported well-above average, 74 reported average, and 13 reported well-below-average flows for the month.

Most of the high streamflows were in the West. Flows at 7 stations, 3 of them in Utah, were at record-high levels. Flow of the San Juan River near Bluff, Utah, for example, was 3 billion gallons per day, over 5 times the long-term average flow for November and the highest November flow in 72 years of record.

Storage in key reservoirs across the country showed similar wet statistics. Storage in 61 percent of the 97 key reservoirs in the country was above average. Of those 97 key reservoirs, 59 showed increased contents from October.

National Agricultural Summary

DECEMBER 22 TO 28, 1986

HIGHLIGHTS: Precipitation throughout the South and East slowed harvest and other field activities. Cotton, at 81 percent (%) harvested, advanced only 1 percentage point from the previous week and was 13 points behind 1985 and the 5-year average. Soybean fields, left unharvested because of wet conditions, continued to deteriorate. Warm weather, along the west coast and northern two-thirds of the Nation, benefited livestock. Snow cover was greatly reduced or disappeared from most of the small grain fields, making them susceptible to cold temperatures. Cooler-than-normal temperatures were in the South, but Gulf coast areas escaped freezing temperatures.

SMALL GRAINS: Rain continued to hamper winter wheat seedings in the South and Southeast. In Texas, growth was slow because of cool, wet weather. Most small grains continued to look good and provided some grazing, but livestock was being moved off extremely wet fields. Yellowing increased at Cross Timbers because of additional moisture. Growth was good in the Blacklands and central areas, with rust and greenbugs increasing. In Oklahoma, wheat conditions continued good as growth improved with warmer temperatures. Kansas wheat remained dormant with favorable moisture. Snow cover was mostly nonexistent for much of the major wheat producing areas. Protection from extreme cold was minimal and continued to be a major concern. In Montana, wheat was fair to good with light wind damage. In the Southeast, dry weather was needed to complete seedings.

COTTON: In the 14 major producing States, cotton was 81% harvested, compared with 94% in 1985 and the 94% average. Harvest was virtually complete in most areas except in the southern Plains, New Mexico, Georgia, and South Carolina. In Texas, cotton harvest progressed to 65% complete, only 1 point greater than the previous week. Wet weather delayed or halted harvest activities across the State. Oklahoma's harvest was 50% behind normal with 35% harvested. In New Mexico, 85% was harvested, with the remaining fields in poor to mostly good condition. Georgia and South Carolina harvests continued to be delayed by rain and were 95% and 97% complete, respectively.

OTHER CROPS: Soybean harvest continued to lag behind normal as rain delayed harvest activities in the South. Some fields continued to deteriorate, hurting quality and potential yield. In Missouri, harvest only increased 2 points from the previous week reaching 85%.

In Texas, peanut harvest was 99% complete, but condition declined because of wet conditions, and

south-central producers may not harvest remaining fields.

Farmers prepared land when weather permitted. Activities also included spreading fertilizer, lime, and manure.

FRUIT AND NUTS: Rain fell across most of Florida's citrus areas. Cool temperatures slowed young tree growth but did not cause serious fruit droppage. Citrus harvest was active for fresh markets and increased for processing. In California, navel oranges, lemons, and tangerines were being harvested. Valencia oranges were beginning to color. Pruning, spraying, and grafting continued in fruit and nut orchards. Grape vineyards were being pruned, irrigated, and fertilized. In Arizona, citrus harvest was well advanced, with valencia oranges progressing well. Pecan harvest continued but was slowed by wet conditions in some areas.

VEGETABLES: In Florida, temperatures cooled to near normal over the vegetable producing regions. Volume was down as rain and the holidays slowed harvest. Tomatoes, green peppers, celery, and cabbage were in good supply. Squash, sweet corn, radishes, snap beans, lettuce, and egg plant were also available in good quantities. Carrot and strawberry supplies were increasing. Growers were planting spring vegetable crops. In Texas, precipitation continued to slow vegetable harvest. A few fields of cabbage, celery, and other greens were harvested in the Rio Grande Valley. In the San Antonio-Winter Garden area, carrot, cabbage, and spinach harvests were slow. Blue mold and white rust were increasing in spinach fields. Excessive moisture may delay onion development in some areas. In California, artichokes were in moderate supply and of variable quality from Salinas. Broccoli from Salinas and Santa Maria was in moderate supply and of good quality. Carrot supplies were light, and celery was moderate from Salinas. Cauliflower and celery were of good quality from Santa Maria. Lettuce planting continued. Lettuce, asparagus, broccoli, cauliflower, and mixed vegetables continued to be harvested in Arizona. Spring vegetable planting moved ahead with lettuce, cauliflower, broccoli, dry onions, potatoes, and mixed vegetables seeded.

PASTURES AND LIVESTOCK: Pastures continued fair to mostly good. Limited snow cover in the west allowed livestock to remain on pastures and ranges, with only a minimal amount of supplemental feeding. Above-normal temperatures in the north continued to benefit livestock. In Texas, wet fields continued to hamper small grain grazing. Livestock was mostly good.

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 totals averaged 1.00 in. statewide. Temperatures averaged 3 to 6° below normal. Cotton harvested 100%, 100% 1985, 100% avg.

ARIZONA: Weak weather system spread partly cloudy conditions south, mostly cloudy with scattered rain showers north, central, 23rd; snow level 4,000 ft., traces reported. Sunshine over most of State 24th. Clear, crisp 25th, except northern slope of White Mountains northward. Temperatures dropped to teens high country, 20s at 5,000 ft., 30s and 40s lower deserts. Variable high cloudiness with considerable sunshine 26th to 28th, except northeast where fog, low clouds became deeply entranced in pool of cold air. Average temperatures for period from 4° below normal to 4° above.

Wheat, barley 55% planted, 50% 1985; stands established 30%; crops good to excellent. Good growing conditions west. Cotton harvest nearing completion; fields wet southeast. Stalk shredding, plowdown mostly active. Alfalfa hay cutting slowed or ceased; sheep grazing moderate to heavy. Green chopping continued. Lettuce, asparagus, broccoli, cauliflower, mixed vegetables shipped. Spring vegetable planting moved ahead with lettuce, cauliflower, broccoli, dry onions, potatoes, mixed vegetables seeded. Citrus harvests advanced. Valencia oranges progressing well, all citrus groves good. Pecan harvest advanced. Apple shipping virtually completed. Range, pasture prospects for spring feed excellent. Stock water, soil moisture mostly adequate. Majority of cattle, calves good.

ARKANSAS: Temperatures near to slightly below normal. First of week scattered showers south with light rain north. Temperature extremes 17°; 61°. Rainfall none to 1.42 in.

Very little farming activity.

CALIFORNIA: Upper level storm dropped southeastward across State bringing rain across northern two-thirds. System weakened rapidly, few inches snow Sierra Nevada. High pressure reasserted itself by week's end. Temperatures near normal statewide.

Moisture needed. Cotton harvest complete. Little field activity. Alfalfa seeding. Sugarbeet harvest. Pruning, spraying fungicide, pesticides, grafting; replant preparation, floor clean-up fruit, nut orchards. Grape vineyards pruned, irrigated, fertilized. Avocados harvested, south; good quality. Kiwi, pomegranates placed in storage. Navel oranges harvested, some Valencias coloring. Lemons, tangerines harvested. Artichokes moderate supply variable quality Salinas. Broccoli Salinas, Santa Maria moderate supply, good quality. Carrots light supply quality good Salinas. Cauliflower moderate supply Santa Maria good quality. Celery moderate supply Salinas, fairly light Santa Maria; both quality good. Planting lettuce continued some damage birds, rabbits. Fall potato sheds operating full-time, holiday demand raised prices slightly. Ground fumigated preparation processing tomato. Grass greened up recent rain. More needed continued growth. Supplemental feeding continued heavy. Stock ponds low, dried up most areas. Calving continued active.

COLORADO: Temperatures averaged normal to 3° above normal. Precipitation amounts averaged none to trace.

Harvest of corn, sorghum continued to advance with fair weather, mild temperatures. Winter wheat dormant, good condition with light snow cover some areas. Livestock maintained good condition by grazing on crop residues, some supplemental feeding.

FLORIDA: General cooling period with temperatures at or little below normal for first time this winter. Cloudy skies with widespread showers, periods of rain prevailed almost statewide entire period with several minor frontal systems, upper level disturbances lingering over State. Rainfall amounts heaviest, most persistent over south central localities with 5.00 to 7.00 in. and more, west coast extending to east coast.

Soil moisture nearly adequate statewide, surplus few low lying south central Peninsula areas. Additional drying weather needed, some heavier soils western Panhandle, some low lying areas other Panhandle locations to permit completing harvest late soybeans, seeding of wheat. Earlier planted small grains good progress. Sugarcane harvest continued active. Cooler temperatures more favorable for winter pasture. Warm season grasses continued to provide considerable grazing southern, central areas, more limited amounts northern localities. Grazing good most of lower half of Peninsula, western Panhandle; generally fair elsewhere. Cattle, calves good most of southern Peninsula, western Panhandle; elsewhere, fair to good. Rain most citrus areas. Cool temperatures slowed young tree growth. Fruit droppage not serious. Harvest active first of week fresh citrus trade. Picking for processing increased. Caretakers still winterizing. Temperatures cooled to near normal over vegetable producing regions. Frequent showers, holidays slowed harvest. Volume leaders: tomatoes, green peppers, celery, cabbage, cucumbers. Also available good quantities: squash, sweet corn, radishes, snap beans, iceberg, specialty type lettuce, Escarole-Endive, eggplant. Increasing supplies carrots, strawberries available. Planting spring crops underway most areas.

GEORGIA: Temperatures 1° below normal except eastern counties averaged 1 to 3° above normal. Extremes 73° Brunswick, Savannah to 24° Clayton. Rain 2 days most locations. Weekly totals 1.00 in. range nearly statewide. Some 2.00 to 3.00 in. totals mountains.

Soil moisture adequate to surplus, mostly adequate. Main activities small grain planting; tobacco bed preparation; cotton, soybean harvesting.

HAWAII: Conditions mostly sunny. Days cool, few light showers mainly windward areas. Winds variable 5 to 15 mph. Temperatures ranged low 60s to mid 80s. Rainfall ranged none to 1.20 in.

Days suitable for fieldwork 7.0. Weather mostly favorable for crop development. Papaya, banana orchards fair. Leafy vegetables fair to good. Holiday barge cancellations minor disruption interisland produce movement.

IDAHO: High pressure continued, near normal temperatures, below normal precipitation, scattered light snow showers.

Farm activity limited by cold. General care, feeding livestock, some calving. Livestock good. Hay, roughage supplies adequate to surplus.

ILLINOIS: Temperatures averaged 3 to 9° above normal north, 2° below normal to 1° above normal south. Precipitation none north, none to 0.74 in. south.

Winter wheat mostly good. Livestock mostly good.

INDIANA: Temperatures averaged 1 to 3° above normal. Lows in 20s, highs in 30s. Precipitation light, mostly rain, ranged from 0.10 in. northwest to 0.70 in. south central. No significant snow cover.

Occasional rain, freezing, thawing limited field activities. Plowing of land, spreading fertilizer, manure where conditions permitted. Other activities include mending fences, repairing machinery, feeding and care of livestock, preparing taxes, usual farm chores.

IOWA: Warm, dry week. Temperatures averaged 6 to 8° above normal without measurable precipitation.

Farm activities include hauling manure, grain handling, machinery repair. Livestock mostly good, cattle on stalks.

KANSAS: Precipitation traces east; dense fog. Temperatures averaged 33 to 34° east, 36 to 38° central and west; normal southeast, 6 to 10° above normal west, north central and central.

Field conditions muddy, dense fog; some soybean harvest. Wheat dormant, favorable moisture conditions, no snow cover. Mild temperatures; livestock grazing wheat, crop residue.

KENTUCKY: Cloudy, cool. Lows averaged upper 20s to lower 30s, average highs upper 30s to lower 40s. Rainfall averaged from over 1.00 in. southwest to about 0.33 in. northeast.

Soil moisture ample. Wheat good, vulnerable to extreme cold. Minimal agricultural activity during holiday week. Burley markets closed. No snow, so cattle continued to graze pastures, crop residues.

LOUISIANA: Temperature extremes 35°; 68°. Rainfall widespread. Maximum rainfall 3.23 in. Bootheville.

Activities included harvesting soybeans, sugarcane, pecans, planting winter wheat, caring for livestock.

MARYLAND & DELAWARE: Maryland: Temperatures averaged 1 to 3° above normal. Lows, high teens to low 20s, except extreme west 7°. Highs, mid 50s except mid 40s far west, near 60s on lower Shore. Precipitation averaged 2.18 in., ranging from 0.88 in. Oakland to 3.88 in. Cambridge.

Days suitable for fieldwork 3.0. Topsoil moisture surplus. Subsoil moisture adequate. Soybean harvest virtually complete. Small grains good. Pastures wet, supplying ample feed.

Delaware: Temperatures averaged 2° above normal; Lows, high teens to low 20s. Highs, near 50s north to low 60s south. Precipitation averaged 2.14 in.

Days suitable for fieldwork 3.0. Topsoil moisture surplus. Subsoil moisture adequate. Soybean harvest virtually complete.

MICHIGAN: Temperatures ranged 6 to 12° above normal. Temperature extremes 16°; 43°. Precipitation ranged from none to 0.18 in. across State.

Activities: Combining corn, pruning fruit trees, spreading manure, caring for livestock. Most snow cover gone lower Peninsula. Livestock good. Feed supplies adequate.

MINNESOTA: Temperatures averaged 11 to 17° above normal for State. Temperature extremes 2°; 51°. Precipitation averaged 0.11 to 0.24 in. below normal for State. Snowfall averaged trace or less for State. Snow depth weeks end averaged 1 to 4 in. for northern one-third State, trace or less elsewhere.

Above normal temperatures, below average snow made livestock care lot easier. Livestock remains good with milder weather.

MISSISSIPPI: Temperatures averaged 3 to 5° below normal; extremes 27°; 68°. Strong low pressure early week resulted in rain. Weak high pressure remainder of week. Weekly rainfall averaged 1 to 2 in. across State.

Days suitable for fieldwork 0.5, 4.0 1985, 2.3 avg. Soil moisture surplus to excessive. Wheat 88% planted; fair to good. Pecans 91% harvested, 92% 1985, 95% avg.

MISSOURI: Temperatures averaged near normal. Fog prevalent across State. Precipitation restricted to southeast, amounts ranged from 0.25 to 0.50 in.

Wet fields limited fieldwork. Corn harvested 94%, 90% 1985, 98% avg. Sorghum grain harvested 93%, 92% 1985, 97% avg. Soybeans harvested 85%, 88% 1985, 93% avg. Soil moisture adequate to surplus.

MONTANA: Continued very mild, dry. Temperatures averaged normal to 5° above normal west, southwest, 10 to 20° above normal plains. Light precipitation parts of west.

Winter wheat snow cover protection mostly poor. Wind damage light. Grazing mostly open. Livestock good.

NEBRASKA: Mild, dry conditions continued to prevail throughout week. Average temperatures ranged from 4 to 14° above normal. No precipitation reported. Temperature extremes 8°; 57°.

Dry weather beneficial to winter grazing of livestock, limited hay usage.

NEVADA: Long wave ridges with weakening cold fronts delivered small amounts precipitation in form of light rain, snow. Snowpack over Sierra Mountains remained short term drought situation, little water storage. Temperatures near normal all areas. Extremes -1°; 66°.

Livestock feeding operations continued favorable due to near normal temperatures, lack of snow. Good progress trucking potatoes to market.

NEW ENGLAND: Precipitation averaged less than 0.50 in. northern area of region to 1.00 to 2.00 in. thru band from coastal Connecticut, Rhode Island, central Massachusetts, southern New Hampshire and coastal Maine; 0.50 to 1.00 in. elsewhere. Temperatures averaged from low 20s near Canadian border to mid 30s along south coast. Slightly above normal for this time of year.

Farm activities limited to normal chores for holiday season.

NEW JERSEY: Temperatures above normal, averaging 35° north, 37° south, 40° coastal. Extremes 15°; 58°. Precipitation above normal north, south, near normal coastal, averaging 1.47 in. north, 1.76 in. south, 0.92 in. coastal. Heaviest 24-hour total 3.92 in. on 24th, 25th.

Farm activity very limited, mainly caring for livestock, tending to normal winter chores. Soybean, corn for grain harvest complete most areas.

NEW MEXICO: Weekly average temperatures 8° below normal to 1° above normal throughout State. Temperatures 4° central highlands to 55°

northeastern plains, southern desert. Precipitation 0.10 in. or less most of State.

Days suitable for fieldwork 2.0. Soil moisture 33% adequate, 67% surplus. Cotton 25% poor, 25% fair, 50% good. Wheat 25% fair, 75% good. Grain sorghum 25% fair, 75% good. Pecans 33% fair, 67% good. Chile 67% fair, 33% good. Cattle 10% fair, 85% good, 5% excellent. Sheep 15% fair, 80% good, 5% excellent. Ranges 25% fair, 70% good, 5% excellent.

NEW YORK: Mild, wet weather. Temperatures averaged well above normal, 8 to 9°. Precipitation ranged from 0.50 to 0.75 in., lighter amounts from Mohawk Valley to Champlain Valley.

Farmers continued tending livestock, chopping wood, doing routine farm chores.

NORTH CAROLINA: Temperatures normal across State. Temperature extremes 13°; 71°. Precipitation ranged from 0.25 to 3.65 in.

Days suitable for fieldwork 3.7. Soil moisture 3% short, 75% adequate, 22% surplus. Cotton harvest nearly complete. Soybean harvest behind average, wet conditions. Wheat 95% emerged. Small grains fair to mostly good. Pasture 3% very poor, 14% poor, 24% fair, 59% good. Major farm activities: Harvesting soybeans, cotton, sorghum; land preparation; cutting firewood; tending livestock; seeding small grains; preparing tobacco plantbeds; repairing equipment; spreading lime; general farm maintenance.

NORTH DAKOTA: Warm, dry weather for 2nd week. Temperatures averaged 15 to 22° above normal. Extremes -4° north central 21st, 51° southwest 22nd. Trace of precipitation recorded northwest, east central, southeast.

Snow cover for winter wheat, alfalfa inadequate should weather turn cold before substantial snowfall. Warm temperatures easy on livestock.

OHIO: Relatively mild, wet early week, cool, dry late week. Temperatures close to normal. Lows mostly in 20s, highs mostly mid to upper 30s. Soils frozen 2 to 4 in. Precipitation ranged 0.25 to 1.00 in. Totals mostly 0.50 to 0.75 in. north, lesser amounts south.

Harvest virtually complete for 1986. No snow cover on winter wheat. Livestock not stressed. Marketing activities slowed during holidays. Crop farmers study 1987 farm programs.

OKLAHOMA: Temperatures averaged 2° below normal east central, southwest to 4° above normal northeast. No precipitation reported except 0.11 in. southeast.

Wheat, pasture growing with recent sunlight, warm temperatures. Weed infestations pronounced, not of major concern until spring. Some producers still planting wheat. Cotton 35% harvested, 65% 1985, 70% avg. Harvest increasing as fields dry sufficiently to support equipment. Warm, open weather benefits cotton which could improve sufficiently to meet grade standards. Pastures good; livestock good.

OREGON: Temperatures ranged 3 to 6° above normal west. East of Cascades temperatures near or slightly above normal, with only exception Enterprise at 2° below average for week. Precipitation along coast ranged from 1.50 to 3.00 in. with up to 5.00 in. received coastal range. Interior west measured 0.75 to 1.50 in. except lower elevations southwest 0.25 in. Generally, 0.10 in. or less recorded east of Cascades.

Soil moisture 100% adequate. Mild fall weather allowed good development on fall seeded grain, grass seed crops. Warmer weather melted some snow cover east. Pruning of fruit trees continued west. Caneberry growers pruning, training. Little

vegetable activity; some packing of storage crops underway. Livestock, range, pasture fair to good. Fall range well east with early moisture. Hay feeding down due to open fall.

PENNSYLVANIA: Week started out cold but by midweek temperatures near or above normal. Soaking rain throughout most of State during midweek. Average temperature 32°, 3° above normal. Temperature extremes 11°; 50°. Average precipitation 1.04 in., 0.35 in. above normal. Activities: Grading potatoes; hauling manure; cutting firewood; machinery maintenance; caring for livestock.

PUERTO RICO: Island average rainfall 0.62 in., 0.28 in. below normal. Highest weekly total 3.65 in. Highest 24-hour total 1.60 in. Temperature averaged about 76 to 78° on coasts and 64 to 70° interior divisions. Mean station temperature ranged from 64 to 81°. Extremes 56°; 89°. San Juan mean temperature 77°. Total rainfall 1.44 in.

SOUTH CAROLINA: Average temperatures varied lows 40s, upper 40s. Rainfall varied, 0.50 to 3.00 in. Some freezing rain mountains on 23rd.

Cotton 97% harvested, 100% 1985, 100% avg. Soybeans 89% harvested, 77% 1985, 98% avg. Crop continued to deteriorate in fields. Some remaining acreage may be left unharvested. More dry weather needed for continued small grain planting. Most tobacco plantbed preparation complete.

SOUTH DAKOTA: Average temperatures 9 to 19° above normal. Extremes 4°; 56°. Black Hills low -1°. No precipitation.

Winter wheat good. Growers concerned about extremely cold temperatures with no snow cover, blowing. Despite warm daytime temperatures, cool night temperatures keeping winter grains dormant. Livestock good. Some sickness in calves. Livestock on winter pastures, stalks. Supplemental feeding of calves as needed.

TENNESSEE: Temperatures averaged near normal. Rainfall averaged 0.75 to 1.00 in., least 0.26 in., most 1.42 in.

Major farm activities included caring for livestock, general farm chores.

TEXAS: Cool, dreary weather rule for state most week. Light rainfall middle week, strong upper level storm rain, snow parts west late weekend; rain elsewhere. Precipitation above normal except Blacklands, northeast, lower valley normal. Temperatures mostly below normal; above normal south central.

Crop: Wet soil conditions kept grain sorghum producers out of fields Plains most week. Some producers able to do little harvesting weekend, progress slow. Producers able to complete harvest with few days open weather. Harvested 99%, 100% 1985, 100% avg. Cotton harvest virtually non-existent Plains. Wet weather kept producers out of fields. Harvest delayed Trans-Pecos, Hill County. Open bolls 99%, 100% 1985, 100% avg. Small grains continued suffer from recent moisture. Growth slow Plains because cold temperatures. Most fields still look good, providing some grazing. Some producers moving livestock off pastures because excessive wetness. Cross-Timbers yellowing increased, too much rain. Blacklands, central, growth good, rust, greenbugs increased. Open, warmer weather improved conditions statewide. Wheat emerged 99%, 98% 1985, 99% avg. Peanut condition in fields declined. South central producers may not harvest any remaining fields. Excessive moisture severe damage fields. Harvested 99%, 94% 1985, 98% avg. Soybean fields declined to point of abandonment upper coast. Remaining fields damaged from heavy rains. Harvested 98%, 93% 1985,

98% avg. Other crops harvested: Sunflowers 97%, 97% 1985, 99% avg. Sugarbeets 80%, 95% 1985, 99% avg. Pecans 92%, 85% 1985, 89% avg. Other crops planted: Oats 97%, 94% 1985, 99% avg.

Commercial Vegetables: Rio Grande Valley, harvesting limited few fields cabbage, celery, other greens because continued wetness. Some peppers remain for harvest. Rain alleviated irrigation onions. Growth maybe slower onions because excessive rain some areas. San Antonio-Winter Garden, harvest slow carrots, cabbage spinach. Blue mold, white rust increasing spinach fields. Pecan harvesting little progress; volume limited. Damage continued increasing from wet weather.

Range and Pasture: Range, native pastures good condition as growth cool season grasses, weeds increased most areas. Small grain pastures remained very wet many areas, caused decrease grazing producers pull off stockers until drying occurs. Supplemental feeding increased. Livestock suffered some body shrinkage from cold weather Plains.

UTAH: Precipitation southeast very light. None elsewhere. Temperature 2° below to 7° above normal. Snow cover none to light valleys.

Livestock feed adequate. Livestock generally good. Major farm activities: Livestock care, equipment repair, fence repair, hauling manure, hauling water to range livestock, marketing livestock.

VIRGINIA: Above normal precipitation, normal temperatures. Rain 24th averaged 2.00 in. Temperature averages in mid 30s to low 40s. Low 12°, high 64°.

Days suitable for fieldwork 2.0. Topsoil moisture 50% adequate, 33% surplus. Soybean harvest 93% complete, 86% 1985, 95% avg. Pastures, livestock good. Muddy fields hard on young livestock. Calving, lambing active, progressing well. Hay mostly adequate, spot shortages expected later. Main activities: Livestock care, equipment maintenance, fencing.

WASHINGTON: Scattered rain, mild temperatures statewide. Snow in higher elevations.

Days suitable for fieldwork 1.0. Soil moisture 80% adequate, 20% short. Snow cover on winter wheat remained inadequate to protect from cold weather. Crop continued good. Winter repairs, maintenance of machinery underway.

WEST VIRGINIA: Temperatures below normal. Extremes 55° Creston; 2° Greenbank, average 34°. Precipitation above normal, average 1.18 in.

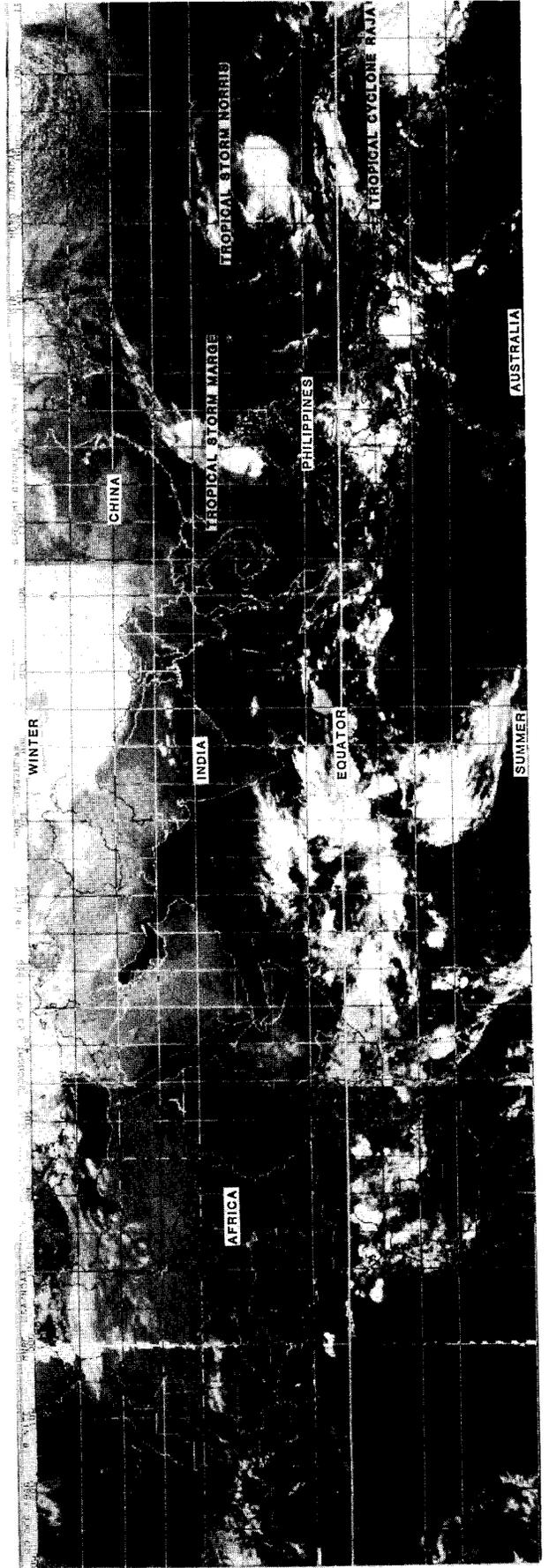
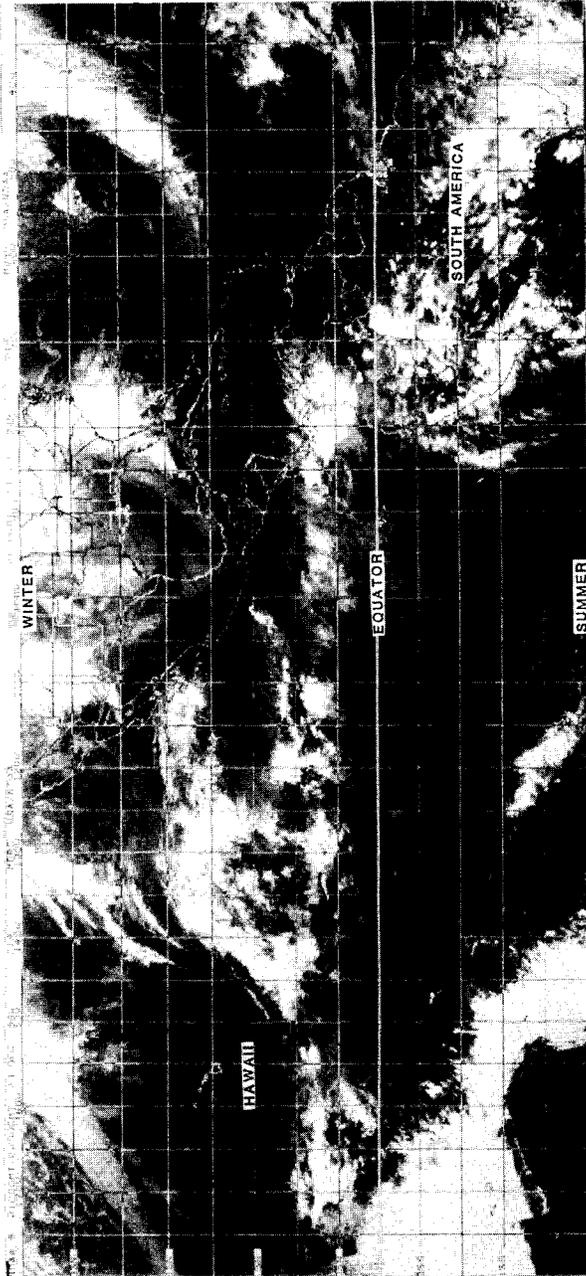
WISCONSIN: Temperatures relatively mild, averaged 28°; low 12°, high 42°. Precipitation spotty, none to trace. Foggy, cloudy days.

WYOMING: No precipitation reported. Temperatures 5° below normal northwest, 5° above normal rest of State.

Corn harvest nearing completion. Winter wheat good, needing moisture some areas. Snow cover gone. Livestock good, some supplemental feeding.

Global Weather Satellite Image

December 23, 1986



International Weather and Crop Summary

December 21-27, 1986

HIGHLIGHTS:

UNITED STATES ... Precipitation throughout the east and south slows harvest and other field activities. Snow cover is minimal over most small grain fields.

WESTERN U.S.S.R. ... Moderate to heavy snow blankets major southern winter wheat producing areas. Snow cover provides some protection from bitter cold in the west and north.

EUROPE ... Light snow accompanies bitter cold in winter grain areas in Eastern Europe. Below-freezing temperatures cover some citrus areas in Italy and Greece.

SOUTH ASIA ... Rainfall in central India favors winter grains but may slow late cotton harvesting.

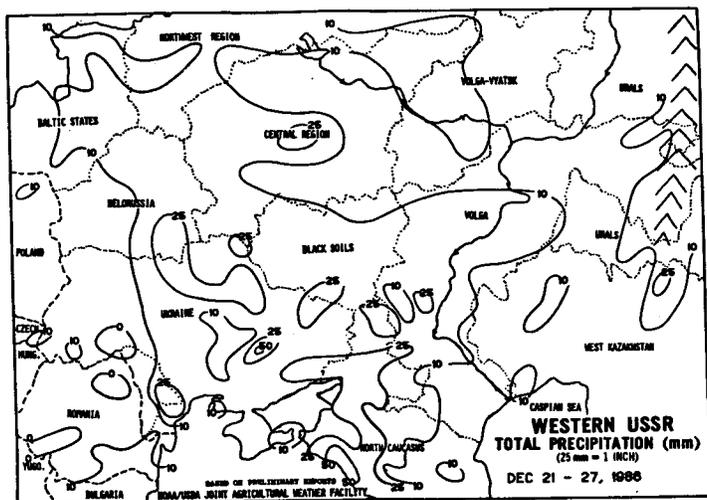
EASTERN ASIA ... Light snow covers dormant winter grains in the North China Plain.

SOUTH AMERICA ... Heavy showers continue in most soybean and corn areas of Brazil. Welcomed dryness covers northern Argentina. Late-week showers and cooler weather alleviate heat stress in corn and sorghum areas of central Argentina.

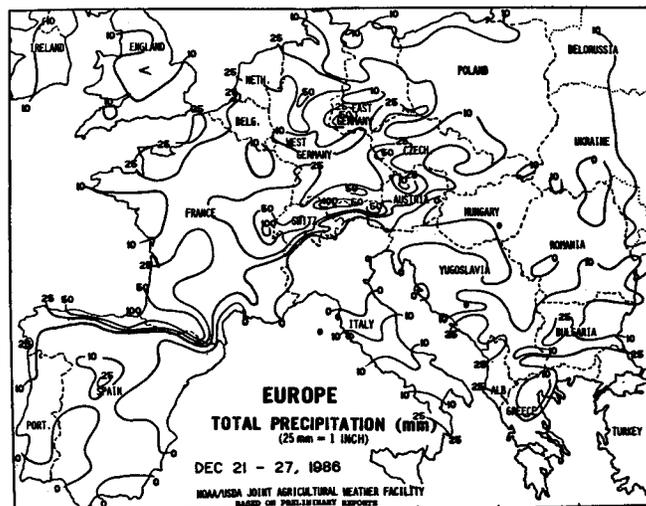
AUSTRALIA ... Dry weather and mild temperatures throughout the winter grain belt favor maturation and wheat harvesting.

SOUTH AFRICA ... Moderate to heavy showers in most major corn producing regions maintain favorable conditions as the crop approaches reproduction.

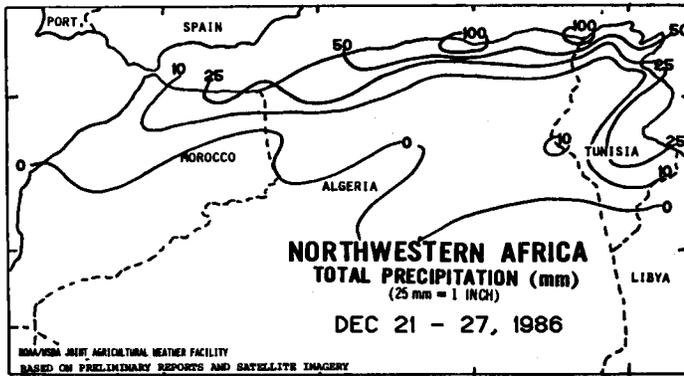
NORTHWESTERN AFRICA ... Light to moderate showers in Algeria and Tunisia maintain adequate moisture for winter grains. Below-normal precipitation continues over Morocco, where moisture supplies are becoming limited.



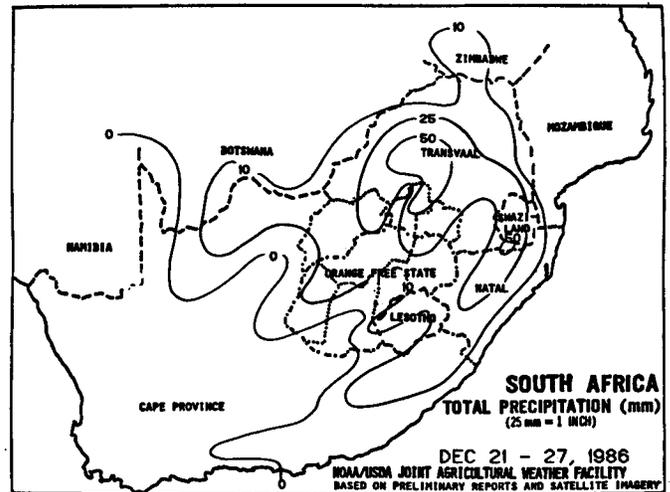
WESTERN U.S.S.R. ... Moderate to heavy snow blanketed winter grains from the central Ukraine and southern Black Soils, through the North Caucasus, and into the lower Volga. Lighter snowfall covered winter grains over the remainder of the region. Bitter cold air covered western and northern winter grain areas. Night lows on December 26 and 27 generally ranged from -15 to -20 degrees C, with some locations in the Volga Vyatsk and the upper Volga reporting minimums around -27 degrees C. Snow cover provided protection from extreme cold in most areas.



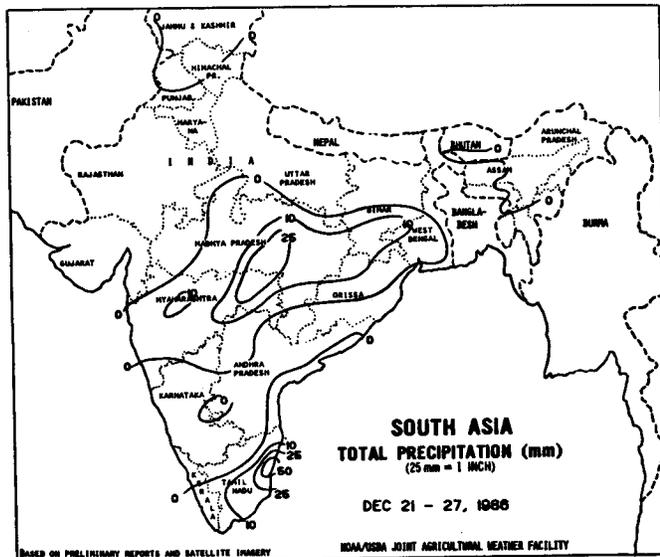
EUROPE ... Significant precipitation (17 to 46mm) covered winter grains in France, the Netherlands, Belgium, and West Germany. The precipitation fell mostly as rain in France and snow in West Germany. Lesser amounts of precipitation, mainly snow, occurred over winter grains in Eastern Europe, increasing snow cover. Bitter cold air moved westward into Eastern Europe. By week's end, minimum temperatures in winter grain areas generally ranged from -12 degrees C to -17 degrees C, with isolated locations in Romania, southern Yugoslavia, and Bulgaria reporting minimum temperatures below -17 degrees C. Significant winterkill likely did not occur because extreme cold did not last more than 1 day and snow cover provided some protection in most areas. The cold air reached as far south as citrus areas in Italy and Greece, where minimum temperatures dropped below freezing on December 26 and 27. Some damage to citrus is possible.



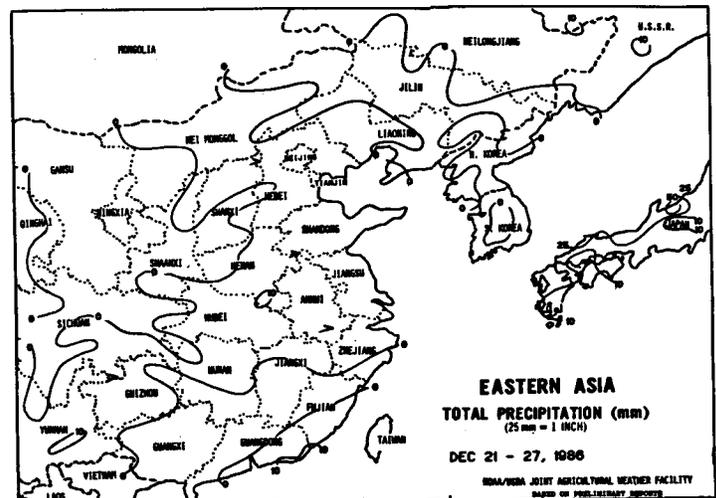
NORTHWESTERN AFRICA ... Light to moderate rain showers fell over winter grain areas in Algeria and Tunisia, maintaining adequate moisture for crop emergence and early growth. Heaviest rainfall (50 to 89mm) covered northernmost crop areas. Light rain (4 to 21mm) covered southern areas. In Morocco, light scattered showers continued a below-normal precipitation pattern that has covered winter grain areas since early December. As a result, moisture conditions are becoming limited for early crop growth. Weekly temperatures generally averaged 1 to 2 degrees C below normal across the region.



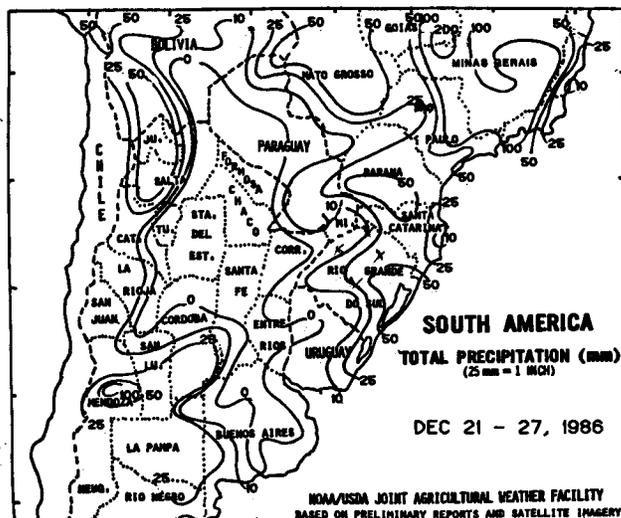
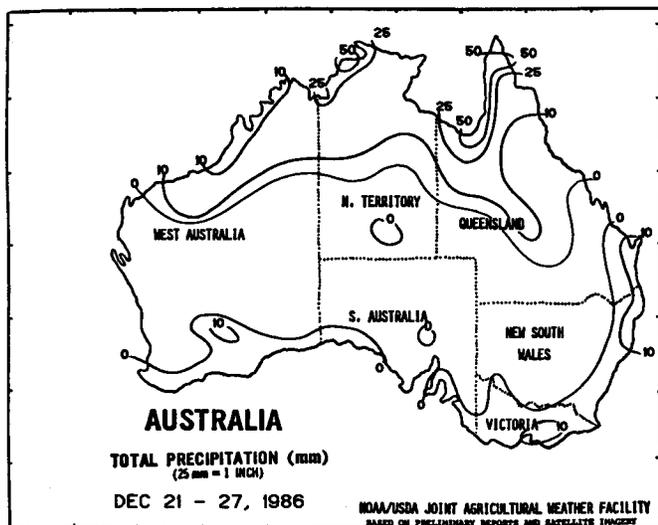
SOUTH AFRICA ... Light to moderate showers (15 to more than 50mm) covered grain areas in the eastern Maize Triangle, north central Transvaal, Natal, and the southeast Cape Province, maintaining favorable moisture conditions for corn in or nearing the reproductive stage of development. Minimal rain (1 to 10mm) fell in previously dry western Orange Free State as maximum temperatures averaged 35 degrees C. Soil moisture is limited in the westernmost grain areas for vegetative corn. Rainfall was light (4 to 11mm) in the eastern Transvaal for the third straight week with temperatures averaging 24 to 27 degrees C.



SOUTH ASIA ... Light to moderate rain (1 to more than 25mm) fell from Maharashtra to West Bengal, with heaviest rainfall in eastern Maharashtra and central Madhya Pradesh. The unseasonable rainfall improved moisture reserves for winter grains but may have slowed late cotton harvesting in Maharashtra. Mostly dry weather returned to the northern wheat areas of India and Pakistan, following the beneficial shower activity of recent weeks. Showers (10 to 50mm) fell in coastal Tamil Nadu, but drier conditions (less than 8mm) in southern India from Karnataka to West Bengal promoted summer rice planting.



EASTERN ASIA ... Winter wheat in the North China Plain remained dormant. Snow covered the North China Plain, but precipitation amounts were generally less than 5mm. In addition, minimal increase in snow cover likely occurred in southern wheat areas, where daily high temperatures were above freezing. Mostly dry weather and above-normal temperatures covered Korea's winter grain areas.



AUSTRALIA ... Dry weather and mild temperatures throughout Australia's winter grain belt benefited maturation and harvesting of wheat. Fieldwork likely resumed in Victoria, following 3 weeks of moderate to heavy showers that delayed harvest activities. Wheat harvesting usually lasts until late January in the southernmost growing areas. Soil moisture in the summer crop areas of southeast Queensland and New South Wales may be limited for vegetative growth due to the recent weeks of dry weather.

SOUTH AMERICA ... Moderate to heavy showers (40 to more than 100mm) maintained wet field conditions in Brazil from Santa Catarina to Minas Gerais and Mato Grosso. Local flooding from heavy showers (more than 150mm) was likely in parts of Minas Gerais and Goias. Soybean planting is about 90 percent complete, still lagging behind the normal pace due to heavy rain. Early-planted soybeans are flowering, and moisture is ample for crop development. Drier weather (less than 10mm) returned to previously wet areas of southern Brazil and northern Argentina. In central Argentina, early-week hot weather (35 to 40 degrees C) in southern Cordoba and northern La Pampa likely stressed corn and sorghum entering the reproductive stage. However, cooler weather and moderate showers (greater than 25mm) alleviated heat stress by week's end. Showers may have slowed wheat harvesting in parts of Buenos Aires Province. In Argentina, soybeans were over 50 percent planted and wheat is nearly 50 percent harvested.

CROP PROGRESS

FOR WEEK ENDING DECEMBER 28, 1986

	COTTON		
	% HARVESTED		
	1986	1985	AVG.
ALA	100	100	100
ARIZ	99	98	97
ARK	100	100	100
CALIF	100	97	99
GA	95	100	100
LA	100	100	100
MISS	100	100	100
MO	100	100	100
N MEX	85	98	97
N C	99	96	98
OKLA	35	65	70
S C	97	100	100
TENN	100	100	100
TEX	65	90	89

14 STATES 81 94 94

THESE 14 STATES PRODUCED 100% OF THE 1985 COTTON CROP.

1986 Bulletin Index Volumn 73

Regular Features*

Summaries:	Period Issued
National Weather	w/s
National Weather and Crop	m
National Agricultural (small grains, fruits, nuts, vegetables, other crops, pastures and livestock)	w
Corn and Soybeans	Apr.-Dec., w
Cotton	Apr.-Jan., w
State Weather and Agriculture	w
International Weather and Crop	w/m
African Agricultural Weather	June-Dec., m
National Water Conditions	m
Charts (National):	
Weather Highlights	w/s
Precipitation	w/m/s
Percent of Normal Precipitation	m/s
Average Temperature	w/m/s
Departure of Average Temperature from Normal	w/m/s
Extreme Minimum Temperature	Sept.-Apr., w
Extreme Maximum Temperature	Apr.-Sept., w
Depth of Snow on Ground	Dec.-Mar., w
Total Growing Degree-Days	Apr.-Oct., w
Growing Degree-Day Departures from Normal	Apr.-Oct., w
Average Soil Temperature (4 in. bare soil)	Mar.-May, w
Pan Evaporation	Apr.-Oct., w
Crop Moisture Index	Apr.-Oct., w
Drought Severity (Palmer) Index	Apr.-Oct., twice m
Additional Precipitation Needed to End Drought	Apr.-Oct., twice m
Streamflow	m
North American Satellite Photo	periodically
Charts (International):	
Precipitation (major crop areas)	w/m
Percent of Normal Precipitation (major crop areas)	m
Average Temperature (major crop areas)	m
Departure of Average Temperature from Normal (major crop areas)	m
Global Satellite Photo	w
Tabulations (National):	
Weather Data	w
Precipitation and Temperature	m
Heating Degree-Days	m
Heating Degree-Day Statistics for Week and Season	Oct.-Apr., w
Cooling Degree-Day Statistics for Week and Season	Apr.-Oct., w
Planting, Seeding, and Harvesting Progress	Apr.-Oct., w
Crop Conditions	Apr.-Dec., w
Tabulations (International):	
Precipitation and Temperature	m

* w = weekly, m = monthly, s = seasonal (seasonal summaries are published every March, June, September, and December for the prior 3 months)

Special Features

Charts:	Bulletin No.
1985 Precipitation and Percent of Normal (United States)	4
Mean Date of Last Freeze in Spring	6
Area Names Commonly Used in the Weekly Weather and Crop Bulletin	26
Mean Annual Number of Days Maximum Temperature (90°F and above)	29
Normal Total Precipitation, August	32
Water Levels in Key Observation Wells in Representative Aquifers in the United States	33
Mean Date of First Freeze in Autumn	35
Climatological Probabilities for a White Christmas	48
Mean Annual Total Snowfall	48
Articles:	
"1985 Weather Review"	4
"Southern Brazil and Paraguay Drought"	4
"The Drought Severity Index (Explanation)," L.M. Denny and T.R. Heddinghaus	8
"Picking a Safe Planting Date," D.J. Haddock	10
"Dry Conditions in Southern Africa"	13
"Summary of Dryness in the Eastern United States"	14
"Wayne Palmer's Early Work on Drought Severity"	15
"Use of Growing Degree Units in Corn Production"	16
"Record-low Temperatures Chill the Midwestern and Southeastern United States"	17
"The Crop Moisture Index (Explanation)," L.M. Denny and T.R. Heddinghaus	17
"Precipitation Needed to End Drought (Explanation)"	17
"Heating/Cooling Degree Days (Explanation)"	17
"Winds Over the U.S.S.R. Nuclear Accident Site," T.L. Puterbaugh and R.M. McInturff	18
"Limitations of the Crop Moisture Index"	19
"Fluctuations of the Great Salt Lake, Utah"	20
"Drought in the Southeastern United States"	31
"Flooding in the Central United States and Great Lakes Area"	41
"Wind Chill (Equivalent Temperatures)"	41
"Streamflow for Water Year 1986"	43
"USDA Outlook Conference 1987"	45

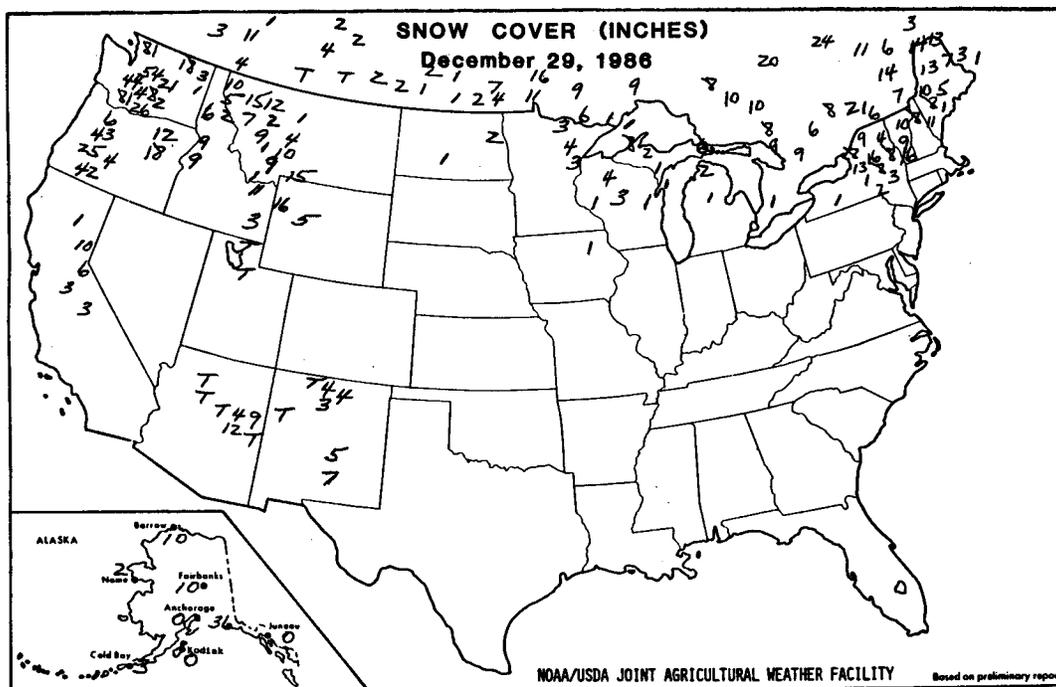
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