

# 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

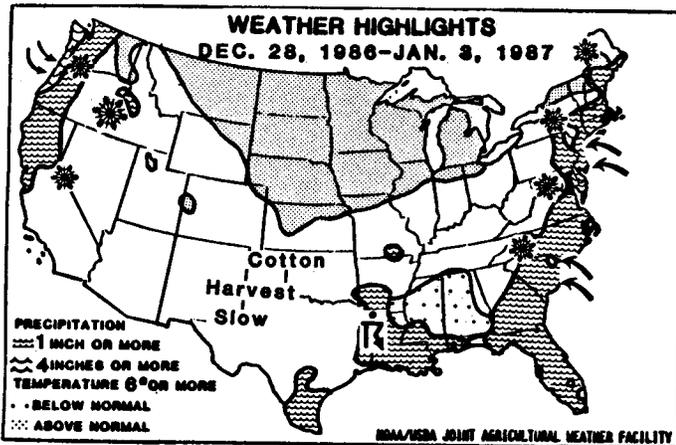
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Jan. 6, 1987

## National Weather Summary

December 28, 1986 to January 3, 1987



**HIGHLIGHTS:** Pacific storms, moving onto the Northwest coast, spread rain all along the west coast, with heavy amounts in the Northwest. Snow covered the Cascades and northern Sierras as well as across the Plateau and Intermountain region to the central and northern Rockies. A powerful storm moved out of the Gulf of Mexico and northward along the east coast. The storm spread heavy rain along the coast from Florida to New England. The heavy rain, combined with unusually high tides and easterly wind, caused severe coastal flooding. The rain mixed with snow just inland, and heavy snow fell through the Piedmont and the Appalachians. Cold weather pushed southward behind the storm, and freezing temperatures reached into northern Florida. Late-week showers and thunderstorms returned to the lower Mississippi Valley.

**SUNDAY...**Fog shrouded much of the Nation. A Pacific storm brought showers to the coast of Washington and Oregon, with a mixture of rain, freezing rain, and snow in eastern Washington. A few showers developed in southern Texas. Freezing weather pushed into parts of Georgia.

**MONDAY...**Rainshowers fell along the northern Pacific coast. Rain and snow extended across the Intermountain region, with freezing rain in parts of western Montana. A disturbance moving across the Great Lakes brought snowshowers to the Great Lakes region and the Ohio Valley. Freezing temperatures reached well into the Mississippi Delta.

**TUESDAY...**Snowshowers fell from the eastern Great Lakes, upper Ohio Valley, and central Appalachians to New England. Light rain, mixed with snow, reached from the mid-Atlantic States to southern New England. Rainshowers fell from central

California to western Oregon, and snow fell in the northern Rockies, while cold rain covered the northern Great Plains.

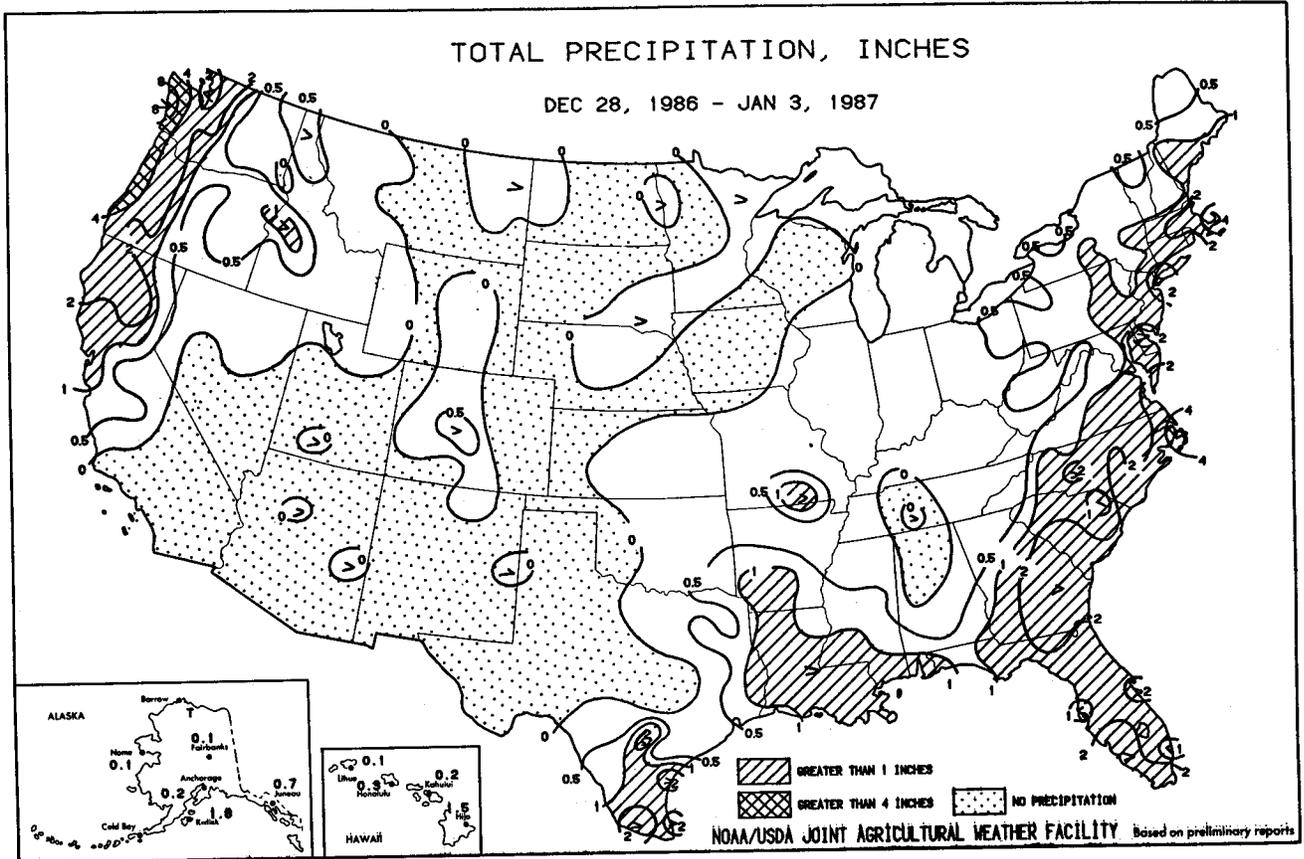
**WEDNESDAY...**Rain and high winds spread all along the Northwest coast, from central California northward. Snow fell at inland areas across the Intermountain region. An intense storm moved northeastward out of the Gulf of Mexico and brought heavy showers and thunderstorms to the Southeast from Florida into the Carolinas. Late-day freezing rain fell in the lower Appalachians.

**THURSDAY...**The potent storm moved northward along the Nation's east coast. Heavy rain spread from the Carolinas to southern New England. Strong onshore winds, combined with unusually high tides, caused severe coastal flooding. The rain mixed with snow just inland, and moderate to heavy snow fell from the middle Mississippi River to the upper Ohio Valley. Out West, another storm spread rain along the Pacific coast north of central California and heavy snow from the Cascades to the central Sierras and across the Plateau to the northern Rockies.

**FRIDAY...**The intense low pressure system moved along the Northeast coast and dropped heavy rain along the coast and snow inland, resulting in flooding and beach erosion. Snow fell from the Great Lakes and lower Lakes States to the mid-Atlantic and Northeast. Moisture from the Gulf of Mexico spread northward, causing rain in eastern Texas and snow in the central Plains and Rockies. Snow fell through most of the Rockies as another Pacific storm spread rain into the Northwest.

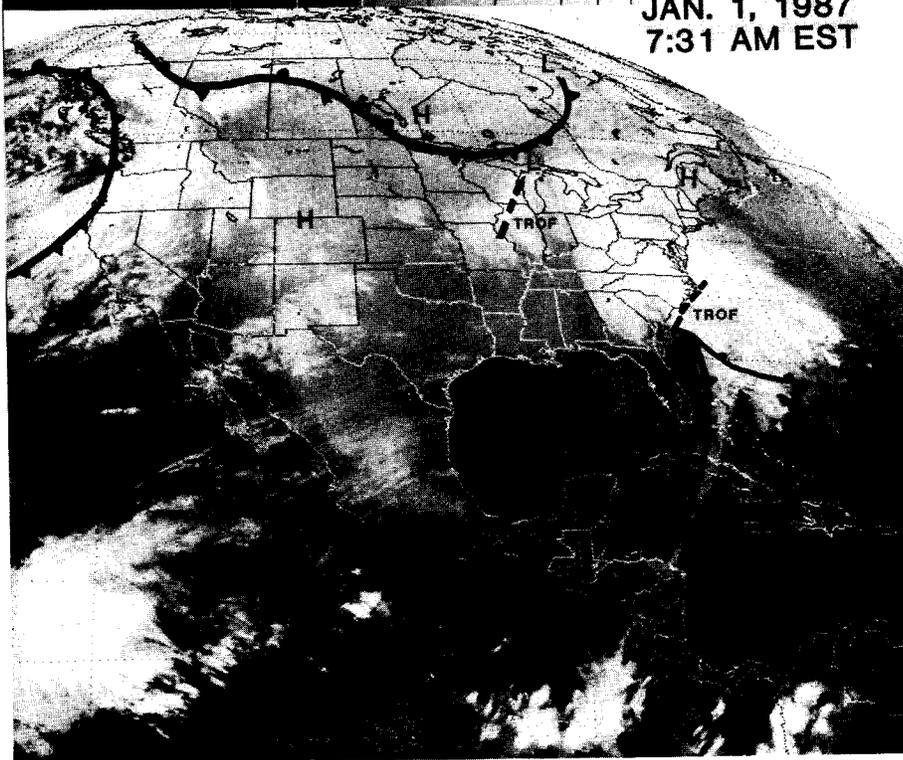
**SATURDAY...**The Atlantic storm moved out of the area, leaving only a few snow flurries in the colder air behind it. The cold air pushed southward into the Southeast. Freezing temperatures reached into the edge of northern Florida. Moderate showers and a few thunderstorms fell in the lower Mississippi Valley. Rain spread along the entire west coast.

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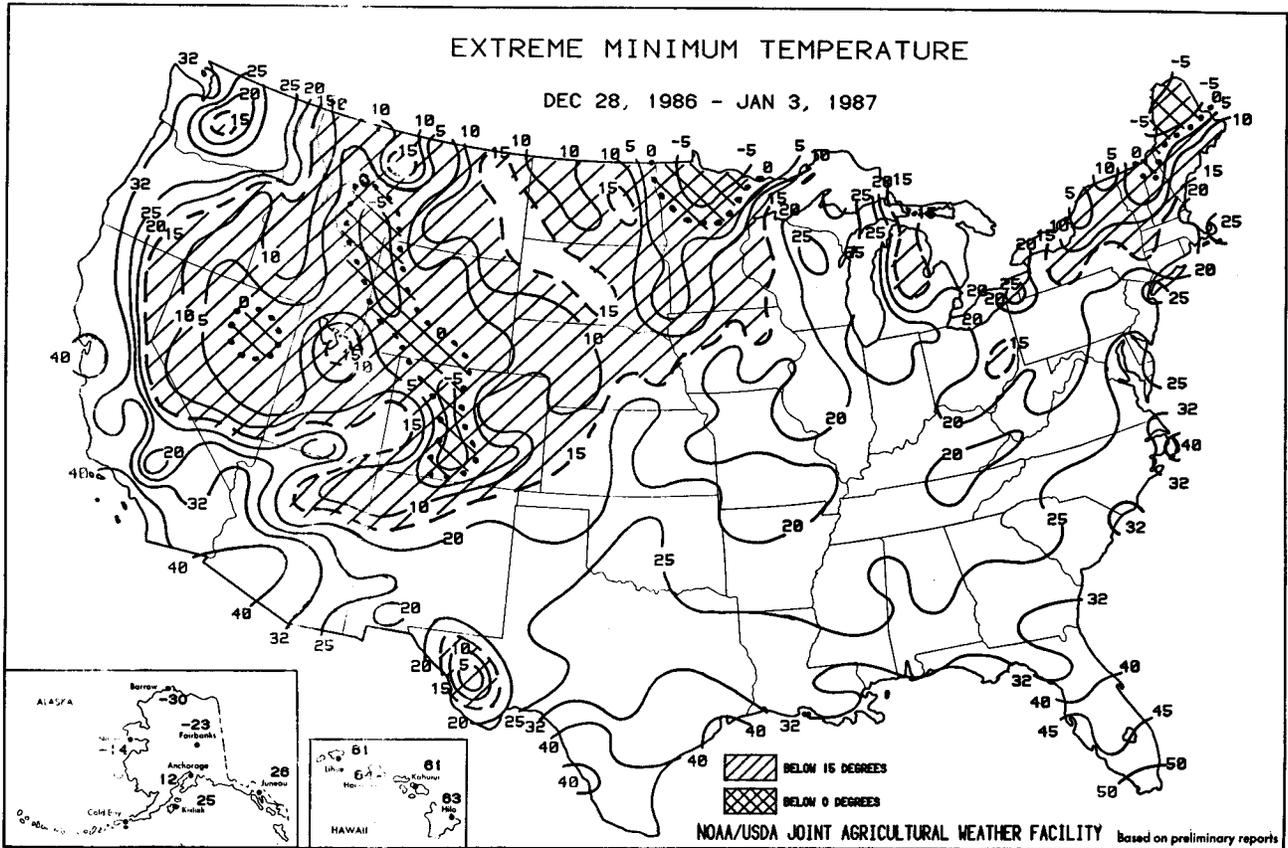
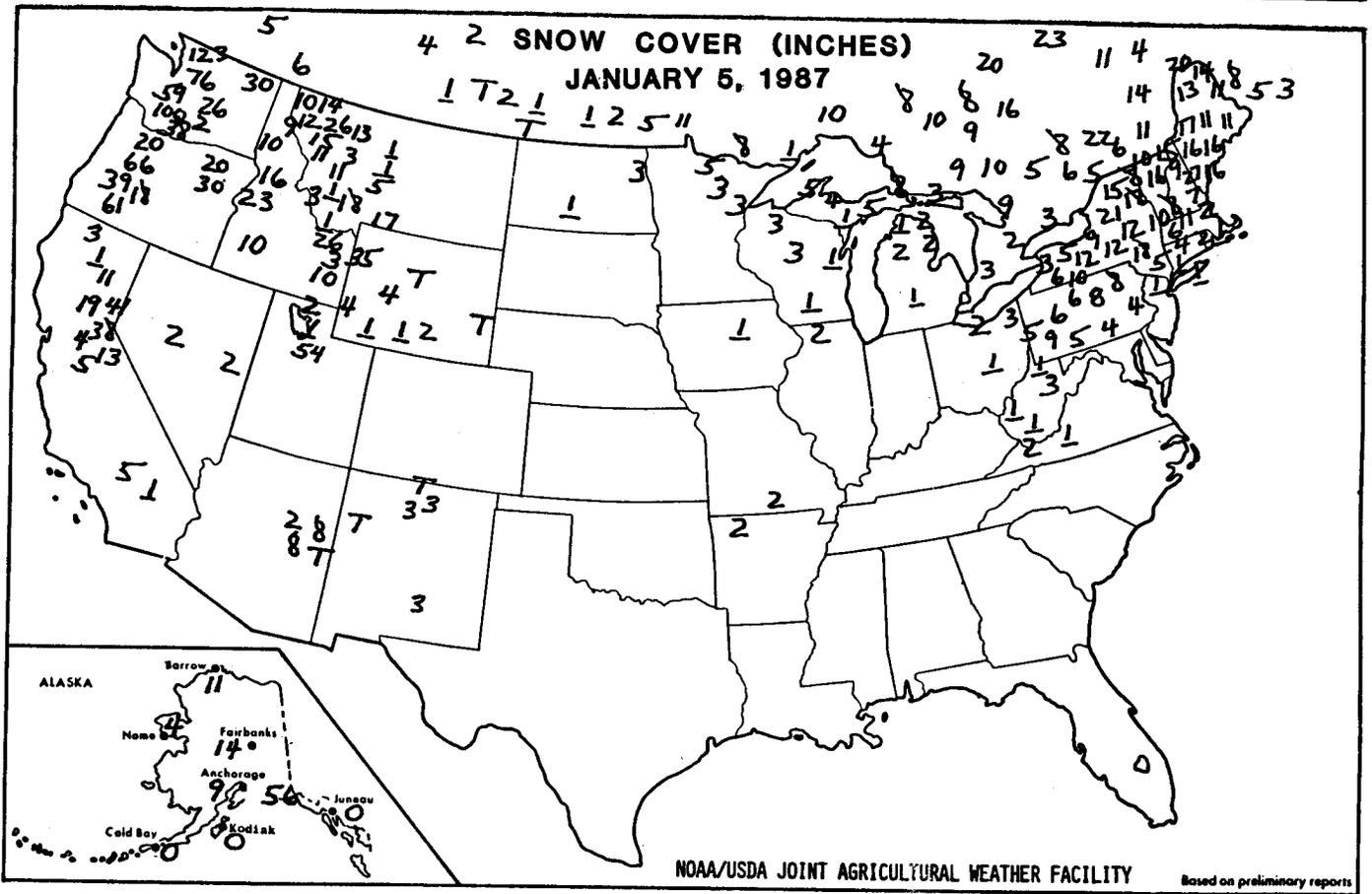
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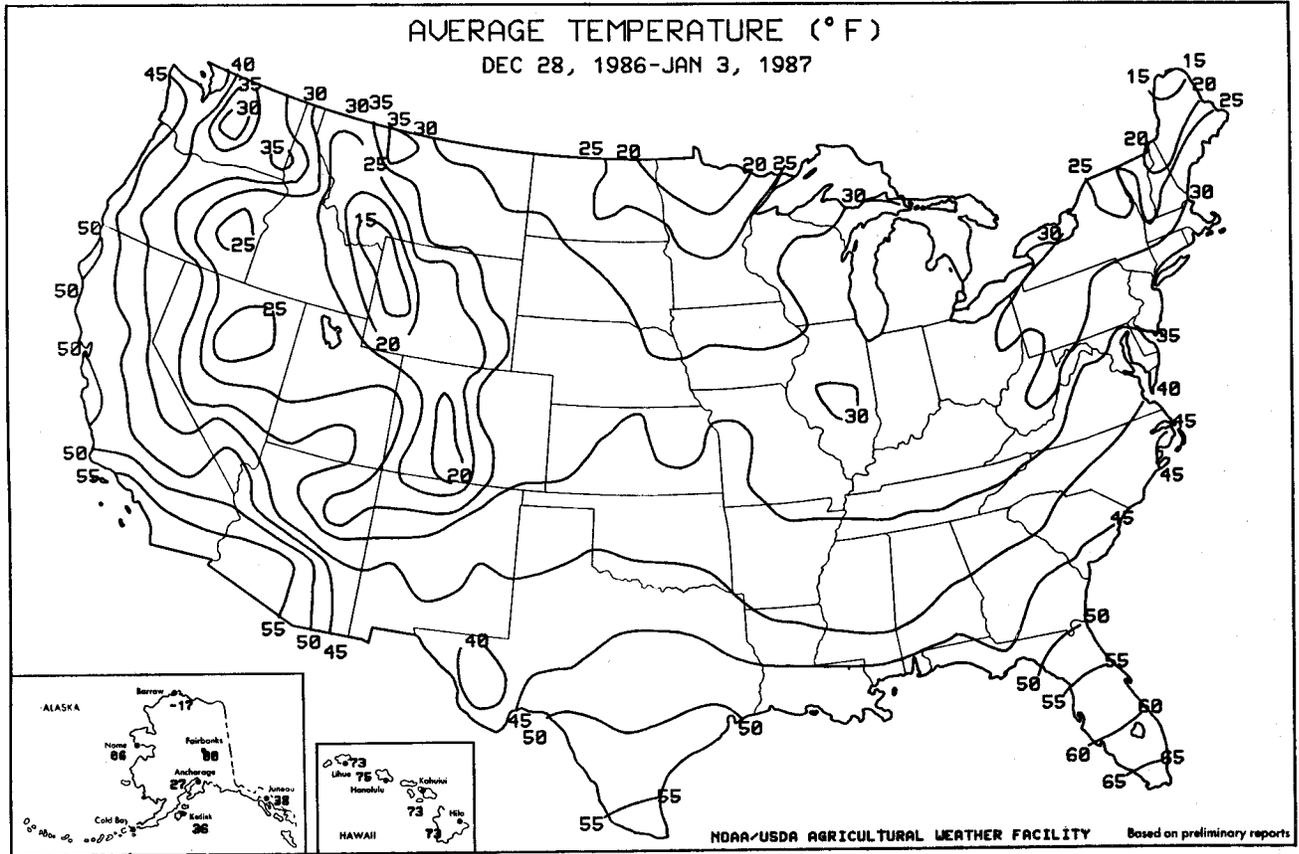
**JAN. 1, 1987**  
**7:31 AM EST**



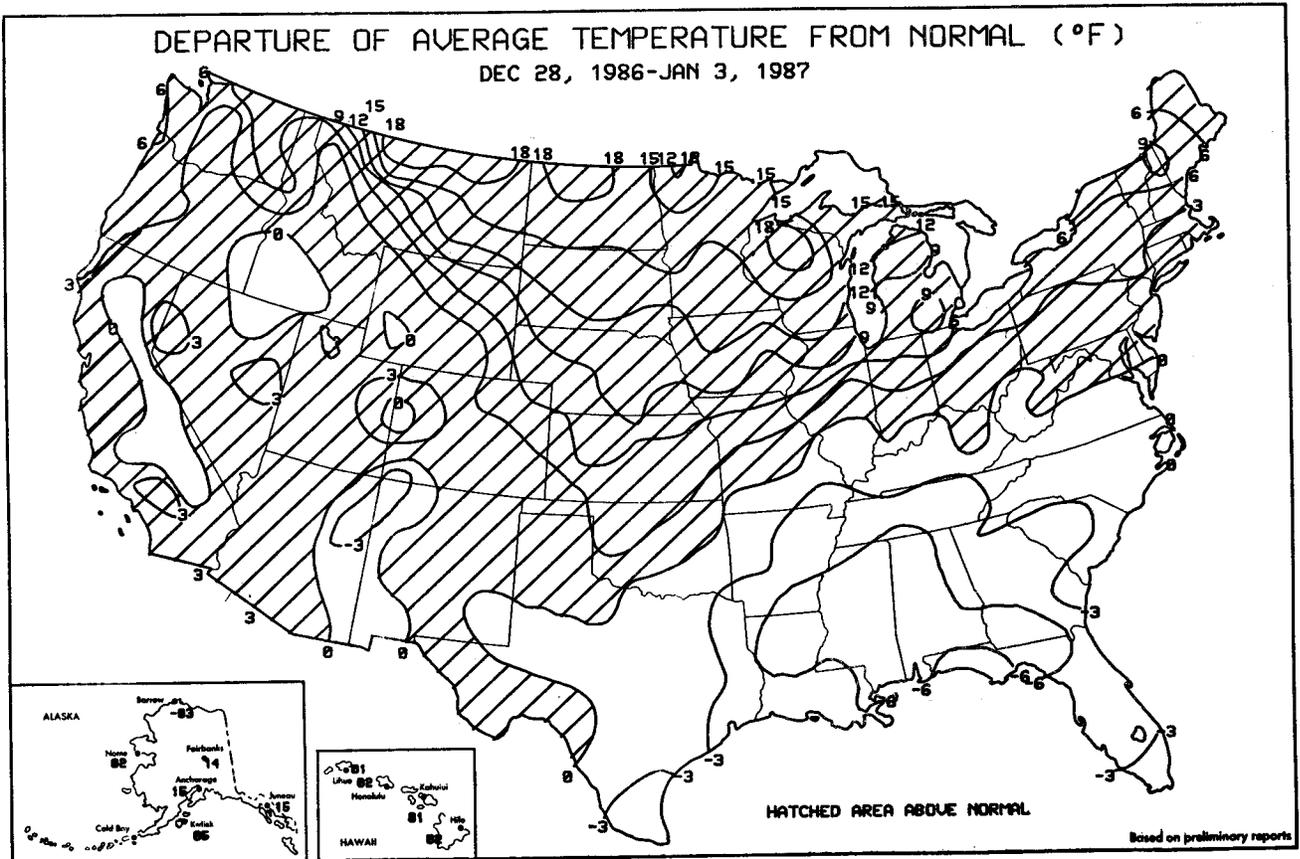
A NEW YEAR'S DAY STORM MOVES UP THE ATLANTIC COAST, DRENCHING THE EASTERN SEABOARD. THE RAINS, STRONG ONSHORE WINDS, AND EXCEPTIONALLY HIGH TIDES CAUSE SEVERE FLOODING ALONG THE MID-ATLANTIC COAST. THE STORM DUMPED HEAVY SNOW OVER MUCH OF THE NORTHEAST THE FOLLOWING DAY.

A PACIFIC STORM BRINGS RAIN TO THE NORTHWEST, WITH HEAVY SNOW FALLING IN THE HIGHER ELEVATIONS.





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 January 3, 1987

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	52 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	46	27	52	24	36	-7	0	-1.2	0	3.4	61	0	0	98	59	0	7	0	0
MOBILE	54	33	60	30	44	-7	1.2	-1	1.2	4.9	83	1.2	240	98	47	0	4	1	0
MONTGOMERY	51	30	57	24	40	-7	1.1	-0.9	1.1	3.1	59	1.1	25	97	52	0	6	2	0
AK ANCHORAGE	32	22	37	12	27	15	2	-1.1	1.1	1.5	129	1.1	100	94	71	0	7	3	0
BARROW	-11	-24	-5	-30	-17	13	1	0	T	1	67	0	0	78	69	0	7	1	0
FAIRBANKS	6	-7	11	-23	0	13	1	-1.1	0	4	51	1.1	100	89	70	0	7	4	0
JUNEAU	42	34	48	26	38	15	7	-2.5	5.5	6.2	123	0	0	94	73	0	3	5	0
KODIAK	41	31	42	25	36	15	1.8	-1.1	0.8	11.5	164	1.1	14	88	66	0	4	5	2
MOHE	15	-4	25	-14	6	4	1	-1.1	0	1.2	165	0	0	83	58	0	7	4	0
AZ PHOENIX	69	44	72	42	56	4	0	-2.2	0	1.4	150	0	0	63	23	0	0	0	0
PRESCOTT	55	23	59	20	39	3	0	-4	0	9	47	0	0	69	20	0	7	0	0
TUCSON	68	37	73	34	52	1	0	-2	0	1.3	121	0	0	72	19	0	0	0	0
YUMA	72	47	75	44	60	0	0	-1	0	2	61	0	0	50	19	0	0	0	0
AR FORT SMITH	48	28	54	20	38	5	0.5	0	0.5	1.7	55	0.5	250	92	48	0	5	1	0
LITTLE ROCK	45	29	53	26	37	-3	0.5	-4	0.5	3.6	82	0.5	125	84	62	0	7	1	0
CA BAKERSFIELD	55	37	70	34	46	7	1	-2	T	7	103	0	0	97	63	0	0	0	0
EUREKA	59	46	61	39	52	5	3.0	1.5	1.1	6.1	89	2.3	329	93	65	0	0	6	2
FRESNO	51	39	63	35	45	1	0.6	2	0.6	2.9	163	0.6	300	96	74	0	0	1	0
LOS ANGELES	68	47	73	45	58	2	0	-5	0	3	16	0	0	89	39	0	0	0	0
REDDING	47	38	50	30	43	**	2.9	**	1.4	4.6	**	2.6	**	100	84	0	1	4	2
SACRAMENTO	49	42	51	35	45	1	2.7	-1.1	0.7	1.3	40	0.7	175	97	80	0	0	3	1
SAN DIEGO	67	47	72	44	57	2	0	-4	0	9	60	0	0	86	39	0	0	0	0
SAN FRANCISCO	55	45	59	41	50	2	1.5	5	1.3	3.0	76	1.4	350	97	73	0	0	3	0
CO DENVER	47	21	55	12	34	3	3	-1	T	3	53	T	0	71	24	0	7	0	0
GRAND JUNCTION	42	19	47	16	31	6	T	-1	T	4	63	0	0	79	32	0	7	1	0
PUEBLO	48	14	56	7	31	1	1	-1	T	4	124	T	0	90	26	0	7	0	0
CT BRIDGEPORT	38	27	42	17	33	2	1.4	-6	0.9	5.4	132	1.2	400	82	59	0	7	3	1
HARTFORD	36	23	42	16	29	3	2.0	1.1	1.7	8.0	177	1.9	475	90	57	0	7	4	1
DC WASHINGTON	42	30	46	25	36	0	0.7	0	0.6	5.7	164	0.7	233	90	57	0	6	2	1
FL APALACHICOLA	59	41	64	34	50	-3	1.8	1.0	1.7	9.7	253	0	0	90	50	0	0	2	1
DAYTONA BEACH	63	46	67	36	55	-3	1.3	-8	1.3	2.7	111	T	0	97	63	0	0	1	1
JACKSONVILLE	61	35	67	13	48	-5	1.7	1.1	1.5	4.9	170	0.2	67	97	58	0	2	2	1
KEY WEST	74	65	80	59	70	0	1.6	1.3	1.6	10.9	577	T	0	88	63	0	0	2	1
MIAMI	73	57	78	48	65	-2	0.9	0.5	0.5	2.8	135	0.5	250	93	57	0	0	2	1
ORLANDO	66	50	74	41	58	-3	1.3	0.9	1.3	3.6	176	T	0	93	54	0	0	1	1
TALLAHASSEE	57	32	63	23	44	-8	1.8	0.7	1.5	7.9	156	0.2	40	97	46	0	3	2	1
TAMPA	67	48	73	43	57	-3	1.0	0.5	1.0	1.9	83	T	0	92	50	0	0	1	1
WEST PALM BEACH	71	55	76	47	63	-3	2.0	1.4	1.2	10.2	408	0.1	50	92	57	0	0	3	2
GA ATLANTA	46	31	51	26	39	1	2	-8	0.2	3.2	69	0.2	40	93	60	0	4	2	0
AUGUSTA	53	29	59	24	41	1	2.5	1.7	2.1	6.3	177	2.1	525	95	46	0	6	2	1
MACON	54	31	57	25	42	1	1.7	0.9	0.9	4.7	106	0.9	225	96	46	0	5	2	2
SAVANNAH	57	37	63	29	47	0	2.2	1.5	1.8	6.9	225	1.8	600	94	46	0	1	2	1
HI HILO	81	66	83	63	74	2	1.5	-7	0.6	6.6	48	1.1	122	94	63	0	0	4	1
HONOLULU	83	67	87	64	75	2	0.3	-6	0.2	0.6	16	0	0	93	54	0	0	3	0
KAHULUI	81	64	85	61	73	1	0.2	-6	0.1	0.8	24	T	0	89	57	0	0	2	0
LIHUE	79	67	80	61	73	1	0.1	-1.3	0.1	1.1	18	T	0	89	61	0	0	2	0
ID BOISE	38	20	48	11	29	0	0.2	-1	0.2	0.3	21	0.2	100	95	56	0	6	4	0
LEWISTON	46	33	50	28	40	7	T	-3	T	4	26	T	0	80	47	0	4	0	0
POCATELLO	37	10	46	2	24	0	0.2	-1	0.1	4	36	0.2	200	87	45	0	7	2	0
IL CHICAGO	38	28	43	25	33	10	0.2	-3	0.2	1.3	55	0.2	100	96	72	0	7	2	0
MOLINE	36	25	46	13	31	9	0.3	-1	0.3	2.3	107	0.3	150	93	71	0	7	1	0
PEORIA	35	26	41	19	31	8	0.2	-2	0.2	2.8	128	0.2	100	97	78	0	7	2	0
QUINCY	37	25	46	18	31	6	T	-3	T	1.9	99	0	0	90	63	0	7	1	0
ROCKFORD	35	28	43	21	32	12	0.2	-2	0.1	0.8	37	0.2	100	95	74	0	7	2	0
SPRINGFIELD	35	25	40	18	30	4	0.1	-3	0.1	1.5	69	0.1	50	96	74	0	7	3	0
IN EVANSVILLE	37	27	44	20	32	0	0.1	-6	0	2.2	60	0	0	95	69	0	6	3	0
FORT WAYNE	34	28	38	24	31	6	0.2	-3	0.1	1.6	61	0	0	98	80	0	7	3	0
INDIANAPOLIS	35	27	38	21	31	4	0.1	-4	0.1	1.7	53	0.1	33	95	78	0	7	2	0
SOUTH BEND	36	30	39	26	33	8	0.2	-5	0.1	1.7	52	0	0	95	75	0	7	3	0
IA DES MOINES	37	25	43	21	31	11	T	-2	T	1.0	86	T	0	91	66	0	7	0	0
SIOUX CITY	38	18	44	11	28	10	T	-1	T	2	26	T	0	97	67	0	7	0	0
WATERLOO	33	22	36	11	27	11	T	-2	T	0.8	65	T	0	97	81	0	7	0	0
KS CONCORDIA	46	25	50	22	35	9	T	-1	T	1.4	187	T	0	94	50	0	7	0	0
DODGE CITY	48	24	57	18	36	6	T	-1	T	1.0	169	0	0	88	36	0	7	1	0
GOODLAND	47	19	59	13	33	6	T	-1	T	1	25	T	0	77	30	0	7	0	0
TOPEKA	44	24	47	17	34	7	0.1	-1	0.1	1.3	95	0.1	100	96	59	0	7	1	0
MICHITA	45	23	51	19	34	3	0.2	0	0	1.4	128	0.2	200	95	54	0	7	2	0
KY BOWLING GREEN	39	27	43	21	33	0	T	-1.0	T	4.7	95	0	0	96	67	0	7	2	0
LEXINGTON	38	28	44	23	33	0	0	-8	T	3.3	80	0	0	94	69	0	6	2	0
LOUISVILLE	38	28	44	21	33	0	0.1	-7	0	2.7	71	0	0	92	66	0	6	2	0
LA ALEXANDRIA	53	33	66	29	43	-8	1.2	0	1.2	6.2	114	1.2	240	79	47	0	3	1	1
BATON ROUGE	57	36	60	32	47	-5	1.3	-3	1.3	7.6	139	1.3	260	89	40	0	1	1	1
LAKE CHARLES	58	37	63	30	48	-4	1.0	-1	1.0	10.8	196	1.0	200	94	50	0	1	1	1
NEW ORLEANS	56	38	64	32	47	-6	1.2	-1	1.2	6.2	108	1.2	240	96	48	0	1	1	1

Based on 1951-80 normals.

Weather Data for the Week Ending January 3, 1987

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	
ME SHREVEPORT	53	30	56	24	41	-5	.8	-.1	.8	5.5	129	.8	200	98	45	0	5	1	1	0
ME CARIBOU	24	7	34	-11	16	4	.3	-.3	.2	1.9	56	.3	100	93	72	0	7	2	2	1
ME PORTLAND	35	21	40	14	28	6	1.8	.9	1.5	7.7	157	1.8	450	90	55	0	7	2	2	1
MD BALTIMORE	42	27	46	21	35	1	1.1	.4	.9	6.5	175	1.1	367	88	53	0	6	2	2	1
MD SALISBURY	44	28	45	21	36	0	1.2	.4	1.0	8.0	197	1.1	367	92	59	0	6	3	1	1
MA BOSTON	38	27	42	23	32	2	2.5	1.5	2.3	8.8	180	2.4	600	87	56	0	7	5	5	1
MA CHATHAM	40	30	45	27	35	3	5.0	4.0	2.3	9.9	184	2.4	600	90	62	0	7	5	2	2
MI ALPENA	35	27	36	18	31	12	.2	-.2	.2	.9	41	.1	50	96	76	0	6	3	0	0
MI DETROIT	36	29	37	24	33	8	.2	-.3	.2	2.5	90	.2	100	93	69	0	6	3	0	0
MI FLINT	35	27	38	16	31	8	.2	-.2	.1	1.9	86	.1	50	95	73	0	7	3	0	0
MI GRAND RAPIDS	35	29	38	20	32	8	.1	-.4	.1	1.1	40	.1	50	91	72	0	7	2	0	0
MI HOUGHTON LAKE	33	27	36	13	30	11	.1	-.2	.1	.6	29	0	0	94	79	0	7	3	0	0
MI LANSING	35	27	39	15	31	8	.3	-.3	.1	1.2	49	.1	50	96	69	0	7	2	0	0
MI MARQUETTE	32	23	37	18	28	14	.2	-.2	.2	.8	30	.3	150	96	76	0	7	4	0	0
MI MUSKEGON	36	30	38	27	33	8	.1	-.5	.1	1.4	48	.3	150	95	74	0	6	1	0	0
MI SAULT STE. MARIE	33	25	35	10	29	14	.4	-.4	.4	2.2	79	T	0	92	74	0	7	1	0	0
MN ALEXANDRIA	32	17	37	9	25	17	T	-.2	T	.1	12	T	0	95	69	0	7	7	0	0
MN DULUTH	29	21	34	14	25	17	T	-.3	T	.4	31	T	0	95	81	0	7	1	0	0
MN INT'L FALLS	27	9	32	-8	18	16	.1	-.1	.1	.3	29	T	0	94	76	0	7	1	0	0
MN MINNEAPOLIS	32	22	36	14	27	14	T	-.2	T	.3	33	T	0	96	80	0	7	1	0	0
MN ROCHESTER	30	21	34	12	26	13	T	-.1	T	.3	36	T	0	97	82	0	7	0	0	0
MS GREENWOOD	46	27	50	24	37	-7	.3	-.9	.3	2.9	48	.3	60	94	54	0	7	1	0	0
MS JACKSON	50	27	57	24	39	-8	.6	-.6	.6	5.6	94	.6	120	97	49	0	7	1	1	1
MS MERIDIAN	49	26	54	24	38	-8	.5	-.8	.5	4.6	75	.5	100	98	50	0	7	1	0	0
MO CAPE GIRARDEAU	38	25	42	20	32	1	.1	-.7	.1	2.4	59	.1	33	96	70	0	6	1	0	0
MO COLUMBIA	39	25	46	21	32	3	.1	-.3	.1	2.1	101	.1	50	95	63	0	7	1	0	0
MO KANSAS CITY	41	25	44	18	33	6	T	-.3	T	1.3	85	0	0	95	61	0	7	1	0	0
MO SAINT LOUIS	37	26	45	18	32	1	.1	-.3	.1	1.2	50	.1	50	89	62	0	7	1	0	0
MO SPRINGFIELD	42	24	47	16	33	0	.3	-.1	.3	1.6	59	.3	150	96	57	0	7	2	0	0
MT BILLINGS	46	24	54	13	35	12	T	-.2	T	.1	11	T	0	60	25	0	6	0	0	0
MT GLASGOW	38	22	41	18	30	19	.1	0	.1	.1	25	0	0	87	53	0	7	1	0	0
MT GREAT FALLS	46	29	52	18	38	17	T	-.2	T	.2	27	0	0	58	26	0	5	1	0	0
MT HAVRE	46	19	50	3	32	19	T	-.1	T	T	0	0	0	80	34	0	7	0	0	0
MT HELENA	35	8	47	-1	22	2	T	-.1	T	.4	58	T	0	90	50	0	7	0	0	0
MT KALISPELL	33	17	39	8	25	5	.2	-.2	.1	.6	36	.2	100	100	86	0	7	2	0	0
MT MILES CITY	41	21	45	14	31	15	T	-.1	T	.1	9	0	0	82	45	0	7	1	0	0
MT MISSOULA	32	13	38	5	23	1	.1	-.2	.1	.6	46	.1	50	94	65	0	7	3	0	0
NE GRAND ISLAND	45	21	53	17	33	11	0	-.1	0	.3	38	0	0	91	48	0	7	0	0	0
NE LINCOLN	41	20	47	14	30	9	T	-.1	T	1.2	162	T	0	93	59	0	7	0	0	0
NE NORFOLK	41	18	51	12	30	11	T	-.1	T	.4	57	0	0	91	55	0	7	1	0	0
NE NORTH PLATTE	47	13	58	5	30	8	T	0	T	.3	65	0	0	90	32	0	7	1	0	0
NE OMAHA	37	24	44	18	30	10	T	-.1	T	1.0	124	T	0	89	72	0	7	0	0	0
NE SCOTTSBLUFF	48	15	53	6	32	7	T	-.1	T	.3	44	T	0	86	25	0	7	0	0	0
NE VALENTINE	46	17	56	10	31	11	T	-.1	T	T	6	0	0	74	31	0	7	1	0	0
NV ELY	47	11	50	3	29	5	0	-.2	0	.1	8	0	0	77	24	0	7	0	0	0
NV LAS VEGAS	58	33	60	31	46	2	0	-.1	0	.5	134	0	0	72	24	0	3	0	0	0
NV RENO	51	22	58	15	36	5	.4	-.1	.4	.6	42	.4	400	89	43	0	6	1	0	0
NV WINNEMUCCA	43	17	52	4	30	1	.3	-.1	.2	.4	43	.4	300	92	56	0	7	2	0	0
NH CONCORD	34	19	39	9	26	6	.6	-.1	.6	5.1	136	.6	200	91	55	0	7	1	1	1
NJ ATLANTIC CITY	42	27	44	20	34	1	1.2	-.4	.7	5.5	139	1.0	333	90	58	0	6	3	1	1
NM ALBUQUERQUE	48	22	51	19	35	1	0	-.1	0	.6	95	0	0	73	24	0	7	0	0	0
NM CLOVIS	51	27	59	24	39	2	.1	-.1	.1	1.5	216	.1	100	80	31	0	7	1	0	0
NM ROSWELL	55	27	64	22	41	0	0	-.1	0	.8	273	0	0	83	28	0	7	0	0	0
NY ALBANY	34	20	39	12	27	5	1.0	.3	.7	4.6	142	1.0	333	98	66	0	7	2	1	1
NY BINGHAMTON	32	24	38	19	28	6	.9	.3	.9	3.4	106	.9	300	86	65	0	7	3	1	1
NY BUFFALO	35	27	37	16	31	6	.5	-.2	.5	4.6	122	.5	167	90	67	0	7	1	1	0
NY NEW YORK	41	33	44	30	37	4	2.2	1.5	1.4	7.2	181	2.0	667	85	58	0	3	4	2	2
NY ROCHESTER	35	26	38	14	30	5	.3	-.3	.3	3.5	122	.3	150	91	57	0	7	1	0	0
NY SYRACUSE	35	23	41	8	29	5	.8	-.2	.8	4.2	120	.8	267	92	60	0	7	2	1	0
NC ASHEVILLE	43	27	51	23	35	-2	.3	-.5	.3	4.5	118	.3	100	95	51	0	7	1	0	0
NC CHARLOTTE	48	29	51	26	39	1	1.2	.7	1.5	4.7	126	1.5	375	93	44	0	6	1	1	1
NC GREENSBORO	47	26	50	21	36	-2	.9	0	.9	4.4	119	.9	225	93	49	0	6	1	1	1
NC HATTERAS	52	42	66	40	47	1	4.2	3.2	4.1	10.7	217	4.1	820	91	64	0	0	2	1	1
NC NEW BERN	53	34	59	28	43	-1	2.4	1.5	2.3	5.9	144	2.3	575	97	54	0	3	2	1	1
NC RALEIGH	47	28	51	23	38	1	1.6	.8	1.6	4.5	130	1.6	533	89	46	0	6	2	1	1
NC WILMINGTON	54	34	60	28	44	-2	2.4	1.6	2.4	8.7	230	2.4	800	93	47	0	3	1	1	1
ND BISHARCK	34	16	46	8	25	16	T	-.1	T	T	4	0	0	93	70	0	7	0	0	0
ND FARGO	31	14	38	2	23	16	.1	-.1	.1	.3	41	0	0	95	71	0	7	1	0	0
ND GRAND FORKS	28	11	32	-2	20	15	.1	-.1	.1	.3	49	T	0	95	81	0	7	1	0	0
ND WILLISTON	36	15	40	8	25	17	.1	-.1	.1	.1	15	0	0	94	65	0	7	1	0	0
OH AKRON-CANTON	34	25	37	17	30	3	.5	-.1	.3	3.3	114	.5	167	99	74	0	7	2	0	0
OH CINCINNATI	36	26	42	20	31	0	.2	-.5	.1	2.6	80	.1	33	92	70	0	7	3	0	0
OH CLEVELAND	36	27	38	18	32	4	.5	0	.4	3.4	112	.5	250	96	69	0	7	3	0	0
OH COLUMBUS	35	28	37	21	31	3	.1	-.6	0	T	100	.1	33	95	71	0	7	3	0	0

Based on 1951-80 normals.

Weather Data for the Week Ending January 3, 1987

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	38	20	31	3	.2	-.4	.2	2.9	105	0	0	96	77	0	7	2	0	
TOLEDO	36	29	39	25	33	8	.1	-.5	.1	2.0	70	.1	50	94	72	0	7	1	0	
YOUNGSTOWN	34	25	37	17	30	4	.5	-.1	.4	4.1	134	.5	167	97	74	0	7	3	0	
OK OKLAHOMA CITY	49	29	56	26	39	2	.1	-.1	.1	1.3	98	.1	100	91	44	0	6	1	0	
TULSA	48	28	55	23	38	2	.3	-.1	.3	1.3	63	.3	150	95	43	0	7	1	0	
OR ASTORIA	53	43	57	35	48	6	4.0	1.4	1.4	9.0	71	1.7	155	94	66	0	0	7	3	
BURNS	38	18	48	10	28	2	.7	.6	.6	.8	85	.6	600	—	—	0	5	2	1	
MEDFORD	48	32	57	27	40	4	1.2	.4	.8	1.8	48	1.1	275	98	63	0	5	4	1	
PENDLETON	45	30	54	26	38	4	.5	.1	.5	1.3	68	.5	250	92	60	0	5	2	2	
PORTLAND	48	37	53	31	43	4	2.8	1.3	1.1	5.8	82	1.5	250	93	66	0	1	6	2	
SALEM	49	37	55	29	43	4	2.6	.9	1.0	5.1	65	1.5	214	97	75	0	2	6	3	
PA ALLENTOWN	37	24	41	21	31	3	1.0	.2	.7	5.4	133	1.0	333	89	60	0	7	3	1	
ERIE	36	28	39	26	32	6	.4	-.2	.4	4.4	126	.4	133	90	69	0	7	2	0	
HARRISBURG	38	26	42	22	32	2	1.1	.4	.8	6.0	171	1.1	367	92	56	0	7	2	1	
PHILADELPHIA	41	29	44	24	35	3	1.2	.4	.6	7.1	188	1.2	400	86	59	0	5	2	2	
PITTSBURGH	35	25	40	20	30	2	.8	.1	.5	4.2	149	.7	233	82	61	0	7	4	1	
SCRANTON	34	25	39	19	30	3	.9	.4	.8	2.9	106	.9	450	87	64	0	7	3	1	
RI PROVIDENCE	38	25	41	15	31	2	1.5	.5	1.1	9.4	192	1.3	325	92	59	0	7	1	1	
SC CHARLESTON	55	36	59	30	46	3	1.7	1.0	1.5	7.2	210	1.5	500	91	47	0	1	2	1	
COLUMBIA	52	28	55	24	40	5	1.6	.7	1.5	4.0	103	1.5	375	91	43	0	6	1	1	
FLORENCE	51	32	57	27	42	3	.8	.1	.5	4.1	122	.8	267	94	38	0	4	2	0	
GREENVILLE	49	27	53	23	38	4	.9	0	.9	5.0	117	.9	225	95	46	0	7	1	1	
SD ABERDEEN	37	13	44	10	25	14	T	-.1	T	T	0	T	0	96	59	0	7	0	0	
HURON	40	14	50	10	27	14	T	0	T	T	7	0	0	93	53	0	7	1	0	
RAPID CITY	47	19	53	10	33	11	T	-.1	T	T	2	0	0	75	27	0	7	0	0	
SIOUX FALLS	38	13	41	4	25	11	T	-.1	T	T	4	0	0	91	60	0	7	1	0	
TN CHATTANOOGA	45	27	50	22	36	3	-.3	T	-.2	T	4.8	85	0	93	57	0	6	1	0	
KNOXVILLE	40	29	43	23	35	4	-.4	.2	.2	4.3	85	.2	40	93	67	0	5	2	0	
MEMPHIS	45	28	51	25	36	4	.3	-.8	.3	4.2	79	.3	60	95	54	0	6	1	0	
NASHVILLE	42	27	47	21	35	4	-.4	T	-.1	T	3.6	71	0	90	55	0	7	0	0	
TX ABILENE	57	32	61	28	44	0	0	-.2	0	2.0	217	T	0	82	36	0	5	0	0	
AMARILLO	53	23	63	18	38	2	T	-.1	T	.7	120	T	0	87	27	0	7	0	0	
AUSTIN	58	41	63	34	49	0	T	-.4	T	5.8	261	0	0	86	48	0	0	0	0	
BEAUMONT	59	38	64	32	49	4	1.0	0	1.0	10.7	216	1.0	250	90	48	0	1	1	1	
BROWNSVILLE	67	49	74	40	58	3	1.5	1.2	.8	2.5	194	0	0	99	63	0	0	4	2	
CORPUS CHRISTI	60	45	71	40	53	4	2.2	1.9	1.9	4.5	293	0	0	97	64	0	0	3	1	
DEL RIO	61	42	68	35	52	1	T	-.1	T	2.4	398	0	0	66	51	0	0	1	0	
EL PASO	57	28	64	22	43	0	0	-.1	0	1.6	383	0	0	86	31	0	7	0	0	
FORT WORTH	55	33	63	27	44	1	.1	-.3	.1	2.5	138	.1	50	91	47	0	4	1	0	
GALVESTON	58	45	64	41	51	3	-.2	-.6	.2	4.2	107	.2	67	86	56	0	6	1	0	
HOUSTON	59	40	63	34	49	3	.3	-.5	.3	6.0	151	.3	100	93	47	0	0	1	0	
LUBBOCK	54	27	65	24	41	2	0	-.1	0	1.3	283	0	0	92	33	0	7	0	0	
MIDLAND	57	29	66	24	43	1	0	-.1	0	3.3	677	0	0	88	30	0	6	0	0	
SAN ANGELO	58	29	62	25	43	3	-.3	T	-.1	T	3.4	0	0	88	40	0	6	0	0	
SAN ANTONIO	60	39	64	31	49	2	.2	-.1	.1	7.0	469	0	0	95	44	0	1	2	0	
VICTORIA	60	42	67	38	51	3	-.2	-.3	.1	4.2	180	0	0	96	56	0	0	2	0	
WACO	56	33	64	28	45	0	-.2	0	-.4	0	3.5	168	0	0	98	49	0	3	0	0
WICHITA FALLS	54	29	59	26	41	0	T	-.2	T	.9	70	0	0	91	44	0	7	1	0	
UT BLANDING	43	20	47	17	32	5	0	-.4	0	.7	47	0	0	79	45	0	7	0	0	
CEDAR CITY	48	16	54	13	32	3	T	-.1	T	.5	70	T	0	81	25	0	7	0	0	
SALT LAKE CITY	36	24	47	19	30	2	.2	-.1	.2	.3	19	.2	200	87	61	0	7	2	0	
VT BURLINGTON	31	20	35	7	26	7	.4	0	.3	1.8	67	.4	200	87	54	0	7	2	0	
VA NORFOLK	47	34	49	31	41	1	2.4	1.6	2.4	6.2	174	2.4	600	89	53	0	2	3	1	
RICHMOND	45	27	47	23	36	1	1.2	.5	1.2	6.4	172	1.2	400	91	54	0	6	2	1	
ROANOKE	43	27	50	22	35	1	.6	0	.6	6.0	188	.6	200	89	50	0	7	1	1	
WA COLVILLE	37	30	41	26	33	9	1.0	.4	.4	2.1	78	.6	300	98	91	0	5	4	0	
QUILLAYUTE	50	40	56	33	45	6	6.0	2.4	1.9	15.6	88	3.4	227	99	74	0	0	6	3	
SEATTLE-TACOMA	49	40	50	35	44	5	1.6	.2	.4	3.9	56	.9	150	92	68	0	0	5	0	
SPOKANE	36	26	41	20	31	5	.5	0	.2	1.4	50	.4	200	99	79	0	6	4	0	
YAKIMA	36	22	43	16	29	1	.2	-.2	.1	.8	56	.1	50	99	78	0	7	4	0	
WV BECKLEY	36	25	47	21	31	0	-.2	-.5	.2	2.9	83	.2	67	94	60	0	7	4	0	
CHARLESTON	37	27	46	22	32	2	.6	-.2	.4	4.4	123	.5	167	99	72	0	7	3	0	
HUNTINGTON	36	27	39	20	32	2	.4	-.4	.3	3.9	114	.4	133	98	71	0	7	3	0	
PARKERSBURG	36	28	40	19	32	0	.4	-.3	.3	4.4	141	.4	133	94	74	0	7	3	0	
WI GREEN BAY	34	29	36	24	31	15	T	-.3	T	.5	31	T	0	97	79	0	7	0	0	
LA CROSSE	33	28	38	19	31	15	T	-.2	T	.4	33	T	0	91	74	0	7	0	0	
MADISON	34	27	38	21	30	13	.2	-.1	.1	.7	44	0	0	95	75	0	7	3	0	
MILWAUKEE	35	29	37	24	32	12	.3	-.1	.1	1.4	62	.3	150	93	73	0	7	3	0	
WAUSAU	33	28	35	25	31	18	T	-.2	T	.5	34	T	0	90	70	0	7	0	0	
WY CASPER	38	16	43	4	27	5	T	0	T	.3	57	T	0	78	33	0	7	1	0	
CHEYENNE	42	17	53	4	30	3	T	-.1	T	.2	45	T	0	73	22	0	7	0	0	
LANDER	32	7	39	2	20	1	0	-.1	0	.2	39	0	0	75	44	0	7	0	0	
SHERIDAN	42	17	58	5	30	9	0	-.1	0	.1	16	0	0	76	35	0	7	0	0	
PR SAN JUAN	85	69	87	67	77	0	T	-.8	T	3.0	63	0	0	95	59	0	0	0	0	

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 1-3-1987  
ACCUMULATIONS ARE FROM JULY 1  
\*\* = NORMAL LESS THAN 100 OR RATIO INCALCULABLE

Table with columns: STATE CITY, CALL, WEEK TOTAL, WEEK DEV FROM NORM, WEEK DEV FROM L YR, CUM TOTAL, CUM DEV FROM NORM, CUM DEV FROM L YR, CUM DEV FROM PRCT, CUM DEV FROM L YR PRCT. Rows list various cities and their corresponding heating degree day data.

## National Agricultural Summary

December 29, 1986 to January 4, 1987

**HIGHLIGHTS:** Mild temperatures across much of the northern half of the Nation depleted snow cover on winter wheat and small grains. Small grains and winter wheat benefited from the warm temperatures but are vulnerable to winter damage if low temperatures should suddenly return. Rain and wetness continued hampering cotton harvest in Oklahoma, Texas, and New Mexico. Harvest progressed little in the Plains. Corn and soybean harvests progressed little in the Southeast, Corn Belt, and Rocky Mountain States. Rain hampered vegetable harvest in Texas. Spring vegetable planting was active in Florida, California, and Arizona. Cold temperatures dipped into Florida but did not reach major fruit and vegetable producing areas. Soil moisture was mostly adequate, except in the Southeast and southern Great Plains where moisture was adequate to surplus. Rain helped reduce the dry conditions along the west coast. Livestock was mostly good. Mild temperatures eased supplemental feeding.

**SMALL GRAINS:** Winter wheat was mostly good to fair across the Nation. Seeding continued in the Southwest and Southeast as weather permitted. Growers seeded wheat in western Oklahoma. Nitrogen leaching and disease were problems in the northwestern third of the States. If the mild winter continues, greenbug damage could be heavy. Light snow cover protected the dormant winter wheat crop in some areas of Colorado. Illinois' wheat was mostly good and benefited from mild temperatures. Winter wheat snow cover protection was poor in Montana. Wind damage was light, and cold temperatures caused little damage. Nebraska's wheat was mostly good to excellent. In North Dakota, snow cover was sufficient to protect about 70 percent (%) of the small grains. Above-normal temperatures have limited seeding loss. Excessive rain and cold temperatures hampered small grain growth and forced some fields into dormancy in Texas. Wetness prevented spraying for insect and disease and delayed fertilizer applications. Yellowing was becoming a problem across the State. Livestock was moved-off extremely wet fields to prevent damage.

**COTTON:** In Texas, cotton harvest was at a virtual standstill for several weeks in many areas because of wetness. Sufficient drying allowed some progress in a few areas in the Plains. Harvest reached 70% completion, compared with 94% in 1985 and the 92% 5-year average. This was 5 percentage points greater than the previous week. Yield and quality losses increased with harvest delays. In Oklahoma, cotton harvest was 45% finished, up 10 points from the previous week. Heavy rains continued delaying harvest. Harvest slowly progressed to 87% completion in New Mexico, up only 2 points from the previous week. Ninety-

eight percent of the acreage normally would be harvested by now. A few acres remain to be harvested in Arizona.

**OTHER CROPS:** Soybean harvest progressed slowly toward completion in the Southeast. In North Carolina, harvest reached 91% completion, compared with 95% normally. Soybean harvest approached completion in South Carolina. Some unharvested soybeans will be abandoned as deterioration continues. Farmers were busy gathering the remaining corn in Colorado, Indiana, Missouri, New Jersey, and Wyoming.

Soggy conditions limited fall plowing and fertilizer application in the Southeast and southern Great Plains. Rain restricted tobacco bed preparation in the Southeast.

**FRUIT AND NUTS:** Cool nights and days benefited Florida's citrus trees. Trees were very good, and new growth slowed. Processing harvest increased for all types of fruits. Fresh shipments were active in all areas. Seasonal practices continued in California's fruit and nut orchards. Dates were harvested, and grapes began budding. Citrus harvest progressed normally. Arizona's citrus groves were good. Valencia oranges matured well. Apple shipments continued but began winding down.

**VEGETABLES:** Spring vegetable planting was active in Florida. Vegetable harvest resumed to preholiday level. Volume leaders were tomatoes, green peppers, cabbage, and celery. Also, good quantities of cucumbers, sweet corn, squash, snap beans, iceberg and specialty lettuce, carrots, radishes, strawberries, eggplant, and endive were available. In the Rio Grande Valley, activity remained slow because of wet soils. Light volume of cabbage, celery, and some greens were harvested. Wetness hampered vegetable harvest in the San Antonio-Winter Garden area. In Arizona, spring vegetable planting moved ahead, including lettuce, broccoli, cauliflower, dry onions, potatoes, and mixed vegetables. Lettuce shipments were steady, and asparagus was cut. Seasonal packing of cauliflower, broccoli, and mixed vegetables continued. California lettuce harvest was fairly heavy in the Imperial Valley but began declining in the Palo Verde Valley. In the desert, carrot harvest increased. Broccoli harvest was active in the desert but moderate in other areas. Celery harvest decreased sharply along the central coast but remained active in other areas. Asparagus harvest started in the Coachella Valley.

**PASTURES AND LIVESTOCK:** Livestock was mostly good. Supplemental feeding eased in the northern half of the Nation. Mild temperatures allowed continued grazing of corn and soybean residue. Pastures were mostly fair. Additional moisture is needed in some western States.

## 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 between 1.00 to 2.00 in. extreme south, 0.50 in. or less elsewhere. Temperatures averaged 4 to 8° below normal. Livestock, poultry generally good.

**ARIZONA:** Variable high cloudiness with considerable sunshine prevailed. Some night fog over Little Colorado River Valley. Precipitation consisted of trace of snow at Winslow. Average temperatures varied from 2° below normal to 4° above.

Wheat, barley 75% planted, 65% 1985, 70% avg. Stands established 45%, crops good to excellent. Reduced plantings expected. Cotton harvest neared completion. Southeast growers resumed harvest after 2 weeks of wet conditions. Stalk shredding, plowdown mostly moderate to active, approaching completion west. Alfalfa hay cutting slowed or ceased. Sheep grazing moderate to heavy. Green chopping continued. Citrus harvests continued. Valencia oranges progressing well, all citrus groves good. Pecan harvest advanced. Apple shipping continued, although winding down. Lettuce shipments steady, asparagus cut. Seasonal packing of cauliflower, broccoli, mixed vegetables continued. Spring vegetable planting moved ahead, including lettuce, broccoli, cauliflower, dry onions, potatoes, mixed vegetables.

**ARKANSAS:** Week began on mild side, strong cold front moved through midweek bringing snow, sleet to northern two-thirds of State, rain southern third. Snow depths up to 9 in. measured near Missouri border otherwise 1 to 6 in. common. Temperature extremes 17°; 57°. Rainfall 0.25 to 1.52 in.

Soil moisture mostly adequate to surplus. Very little farming activity. Rust scouted in early planted winter wheat.

**CALIFORNIA:** High pressure dominated weather pattern over southern two-thirds resulted in fair skies with exception of central valley fog. Transient Pacific storms brushed north end of State producing as much as 2.00 in. of rain along north coast with lesser amounts inland. Temperatures slightly below normal over fog-persistent central valley, slightly above normal elsewhere.

Rains promoted growth of small grains, more rainfall needed. Planting of small grains continued as weather permitted. Cotton harvest complete. Sheeping-off alfalfa fields continued. Sugarbeet harvest continued. Seasonal practices continued. Dates harvested. Desert grapes budding. Citrus harvest continued. Artichokes moderate supply. Asparagus harvest started Coachella Valley. Broccoli harvest active desert; moderate other areas. Desert carrot harvest increased. Cauliflower harvest fairly heavy desert; light to moderate northern areas. Celery harvest active desert, south coast; decreased sharply central coast. Lettuce harvest fairly heavy Imperial Valley; decreasing Palo Verde Valley. Fall potato sheds operating less than full time due to holidays. Sweetpotato hotbed preparation neared completion. Range pasture continued poor; however, rain 3rd should improve conditions. More rain needed to replenish depleted stock water supplies, soil moisture. Supplemental feeding continued heavy most areas. Calving, lambing remained active. Sheep continued grazing crop residues.

**COLORADO:** Temperatures averaged 1 to 4° above normal. Precipitation amounts varied from traces to 0.80 in.

Harvest of remaining corn, sorghum continued under good conditions. Light snow cover some areas protecting dormant winter wheat crop. Supplemental feeding, crop residue grazing helped to maintain good livestock condition.

**FLORIDA:** Low pressure storm systems moving out of Gulf of Mexico, 30th, 31st, then again on 4th, produced rains totaling 2.00 to 5.00 in. statewide. Dry, cool conditions prevailed between storms as first widespread killing freeze, frost occurred north with mid and upper 20s inland northwest, low 30s elsewhere, north. Temperatures averaged 5° below normal north; 3° below south.

Soil moisture adequate, except surplus some low areas. Soybean, cotton harvest neared completion, few late fields to be harvested weather permitting. Small grains good growth. Sugarcane harvest active. Cool temperatures, late week frost northern areas further slowed growth warm season grasses but mostly favored winter pastures central, northern areas. Grazing poor to mostly fair except generally good lower Peninsula. Mole cricket damage noticeable in some Bahia pastures. Cattle, calves continued mostly good, western Panhandle, lower southern Peninsula; fair to good elsewhere. Rain 2 or more days citrus areas. Trees very good; cool days, cold nights beneficial. New growth slowed. Harvest for processing increasing all fruit types. Fresh shipments active all areas. Caretakers clean cultivated prior to harvest. Temperatures averaged 3 to 5° below normal over vegetable producing areas. Nighttime lows mostly upper 40s. Rain plentiful. Harvest resumed to pre-holiday level. Volume leaders: Tomatoes, green peppers, cabbage, celery. Also available good quantities: Cucumbers, sweet corn, squash, snap beans, iceberg, specialty lettuce, carrots, radishes, strawberries, eggplant, escarole-endive. Increasing supplies Chinese cabbage. Planting spring crops active.

**GEORGIA:** Temperatures 4 to 7° below normal. Coldest mostly 20s, teen in mountains to low, mid 30s over extreme southeast. First freeze of season over portions south. Warmest near 50s over north to mid 60s over southeast. Rain 1.00 to 3.00 in. common over central, south; 8.00 in. near Jesup, Doctortown. Rain totals north less than 0.50 in.

Soil moisture adequate north, north central; surplus central, southwest. Main activities small grain seeding, tobacco bed preparation, harvesting cotton, soybeans, pecans. Land preparation, cotton, soybean harvest delayed some areas due to continued rain, wet soils. Small grains fair to mostly good. Pastures fair to mostly good. Tobacco plants good. Cattle fair to good. Hogs good.

**HAWAII:** Conditions variable. Shower bands passed through islands caused sporadic, light rainfall. Northeasterly winds 5 to 15 mph. Temperatures ranged low 60s to mid 80s. Rainfall ranged none to 3.90 in.

Days suitable for fieldwork 7.0. Weather mostly favorable for crop development. Banana harvesting active, orchards fair to good. Papaya harvesting down slightly, spray programs controlling insects, diseases. Vegetables fair to good.

**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 6 to 10° above normal north and 1 to 2° above normal south. Precipitation 0.02 to 0.28 in.

Winter wheat mostly good, benefiting from mild temperatures. Livestock mostly good.

**INDIANA:** Temperatures well above normal most of State. Average lows ranged from mid 20s to near 30°. Highs averaged mid to upper 30s. Precipitation well below normal. Amounts less than 0.10 in. most areas. Heaviest amounts 0.30 to 0.40 in.

Wet fields continued to limit field activities. Plowing of land, finishing up harvesting activities where conditions permitted. Other activities included repairing machinery, feeding and care of livestock, hauling grain, preparing taxes, purchasing seed, chemicals and fertilizer, attending meetings.

**IOWA:** Warm, dry week. Temperatures averaged 10° above normal; precipitation measurable over only few eastern most counties. Snow cover limited to few northeastern counties.

Farm activities included machinery repair, bookkeeping, tax preparation, grain handling. Livestock mostly good, beef producers making good use of corn stalks, bean stubble.

**KANSAS:** Temperatures averaged 34 to 36°, ranging 4° above normal south central to 9° above normal northwest, north central. Light snow, 0.01 to 0.03 in. precipitation south and east, trace elsewhere.

Scattered late soybean harvest; some disking corn, sorghum grain stubble dryer areas. Soil moisture supplies adequate for wheat, no snow cover. Mild weather, livestock good gains.

**KENTUCKY:** Mostly cloudy skies, cool temperatures. Low temperatures mid 20s, lower 30s. High temperatures upper 30s, lower 40s. Mean temperatures 3 to 5° below normal. Precipitation light, averaged less than 0.10 in. Normal precipitation 0.75 to 1.00 in.

Minimal agricultural activity. Dusting of snow, little or no current cover. Soil moisture adequate. Freezing but dry conditions needed to firm soybean fields sufficiently to support combines. However, most areas harvesting generally complete. Livestock satisfactory.

**LOUISIANA:** Temperature 5 to 8° below normal. Temperature extremes mid 20s north; mid 60s southeast. Rainfall widespread; averaged 0.75 to 1.50 in.

Activities: Winter chores, caring for livestock.

**MARYLAND & DELAWARE:** Maryland: Temperatures averaged 1° above normal over State; lowest temperature 15° Hancock; highest temperature 48° Glen Dale. Precipitation averaged 0.89 in, ranging from 0.20 in. Hagerstown to 1.74 in. Royal Oak.

Days suitable for fieldwork 2.0. Topsoil moisture adequate. Subsoil moisture adequate.

Delaware: Temperatures averaged 1° above normal over State; lowest temperature 22° Dover; highest temperature 45° Dover. Precipitation averaged 1.38 in., ranging from 1.11 in. Wilmington to 1.64 in. Dover.

Days suitable for fieldwork 2.0. Topsoil moisture adequate. Subsoil moisture adequate.

**MICHIGAN:** Temperatures ranged 9 to 15° above normal. Temperature extremes 10°; 39°. Precipitation ranged from 0.04 to 0.36 in. across State.

Activities: Field cultivating, lime spreading southeast; pruning fruit trees, spreading manure, general farm and equipment maintenance, signing up at ASCS office for disaster relief and 1987 set aside program, moving grain to elevators, sugarbeet piling grounds being depleted. Beets keeping well in piles. Light snow cover statewide. Livestock good. Calving, farrowing underway. Feed supplies adequate.

**MINNESOTA:** Temperatures averaged 13 to 18° above normal for State. Temperature extremes -9°; 46°. Precipitation averaged near normal northwest, 0.09 to 0.21 in. below normal elsewhere. Snowfall averaged 1 in. or less northern one-third, generally trace elsewhere. Snow depth at weeks end averaged 1 in. northwest, 2 to 5 in. north central and northeast, trace or less elsewhere.

Mild temperatures continued to help livestock survive winter. No additional feeding reported. Uncovered winter grains may be damaged if no snow cover when cold weather returns.

**MISSISSIPPI:** Temperatures averaged 3 to 11° below normal; extremes 21°; 62°. High pressure for much of week, low pressure system on 3rd brought substantial rain. Rainfall averaged 1.00 to 2.00 in. south, less than 1.00 in. central.

Days suitable for fieldwork 2.0, 4.0 1986, 2.3 avg. Soil moisture surplus. Wheat 93% planted; good to fair. Pecans 97% harvested, 95% 1986.

**MISSOURI:** Precipitation averaged less than 0.25 in. north, 0.25 to 0.50 in. across south. Temperatures averaged 2 to 6° above normal except Bootheel below normal.

Harvesting progressing slowly. Harvesting of corn 95%, soybeans 87%, grain sorghum 94%. High moisture, muddy fields still hindrance. Topsoil moisture 38% adequate, 62% surplus. Wheat 7% very poor, 16% poor, 45% fair, 32% good. Livestock mostly fair. Losses generally normal. Supply of hay, roughage 3% short, 79% adequate, 18% surplus.

**MONTANA:** Continued mild. Temperatures west, southwest near to 5° above normal; plains 12 to 20° above normal. Significant precipitation confined to west, 0.10 to 0.75 in. Elsewhere no precipitation to less than 0.10 in. Windy most days central areas.

Winter wheat snow cover protection poor. Wind damage light, no cold temperature damage. Grazing mostly open. Livestock good. Feed supplies adequate.

**NEBRASKA:** Temperatures averaged 10° above normal. Precipitation in form of snow over western portions averaging less than 0.10 in. of moisture with only traces east. Temperature extremes 5°; 58°.

Mild temperatures extended grazing on crop residue, reduced demand for hay and silage feeding. Winter wheat mostly good to excellent. Lack of snow lays potential for winterkill, few reported incidences because of mild weather conditions. Shop work, farm chores, planning for current year main activities.

**NEVADA:** First major storm occurred end of period. Week started with slightly above normal temperatures, fog in some northern valleys. Mild winter weather pattern New Year's Day produced strong winds, general precipitation northern areas, up to 1 ft. snow northern Sierras. Strong winds again recorded end of week western areas, up to 3 ft. of additional snow ski areas Sierras. No precipitation central, southern areas. Temperature extremes -4°; 65°.

Livestock feeding requirements increased with cold, stormy weather. Snow accumulations made job difficult. Cold, windy weather hard on newborn lambs, calves.

**NEW ENGLAND:** Precipitation averaged 0.50 to 1.00 in. northern areas. Interior, coastal Maine, central Massachusetts, Rhode Island, Connecticut 1.50 to 2.00 in. Coastal Maine 2.00 to 2.75 in. Temperatures upper teens northern Maine, upper 30s coastal Connecticut. Near normal temperatures southern areas, 1 to 4° above normal north.

Major farm activities: Tending livestock, clearing snow, machinery repair.

**NEW JERSEY:** Temperatures near normal, averaging 29° north, 33° south, 37° coastal. Extremes 4°; 47°. Precipitation above normal, averaging 1.23 in. north, 1.75 in. south, 2.30 in. coastal. Heaviest 24-hour total 2.23 in. on 1st, 2nd. Heaviest 24-hour snowfall 6 in. on 2nd, 3rd. Depth of snow on ground 5th ranged from 6 in. north to none south.

Soil moisture ample to excessive. Few farmers unable to complete combining of soybeans, corn for grain. Solid ground freeze needed. Farmers caring for livestock, tending to normal winter chores.

**NEW MEXICO:** Weekly average temperatures 2 to 5° above normal northeastern plains, near normal elsewhere. Low pressure system near end of week brought limited amounts of precipitation to northern mountains, northeastern plains. No precipitation remainder of State.

Days suitable for fieldwork 5.3. Soil moisture 75% adequate, 25% surplus. Cotton 14% poor, 29% fair, 57% good; 87% harvested, 100% 1985, 98% avg. Barley 20% fair, 80% good. Irrigated wheat 20% fair, 80% good. Dryland wheat 100% fair. Sorghum harvest virtually complete. Pecans 20% fair, 80% good. Chile 75% fair, 25% good. Harvest nearly complete. Cattle 22% fair, 78% good. Sheep 14% fair, 86% good. Ranges 67% fair, 33% good.

**NEW YORK:** Temperatures averaged several degrees above normal, statewide. Over 1.00 in. precipitation southeast while only modest amounts northwest. Major storm on 2nd, 3rd brought mixed precipitation to extreme southeastern part of State.

Farmers spent much of week tending livestock, doing equipment repairs, maintenance.

**NORTH CAROLINA:** Temperatures 3° below normal across State. Temperature extremes 17°; 66°. Precipitation ranged from 0.13 to 4.35 in.

Days suitable for fieldwork 3.1. Soil moisture 2% short, 73% adequate, 25% surplus. Soybeans harvested 91%, 93% 1986, 95% avg.; wet conditions. Small grains fair to mostly good. Pasture 4% very poor, 11% poor, 49% fair, 36% good. Major farm activities: Harvesting soybeans; cutting firewood; tending livestock; preparing tobacco beds; seeding small grains; repairing equipment; spreading lime; soil sampling; conservation work; general farm maintenance.

**NORTH DAKOTA:** Last week of 1986 mild, relatively dry. Temperatures averaged well above normal, only light scattered precipitation reported. Temperature extremes ranged from -2° Jan. 1 to 52° Dec. 30. Temperatures averaged 16 to 20° above normal. Light precipitation reported, primarily north, west. Only northeast averaged above normal precipitation.

Statewide average snow depth 2 in., versus 15 in. 1985. Northeast, north central districts with heaviest snow, up to 12 in. Snow cover sufficient to protect 70% of fall-seeded winter wheat and rye, compared to 99% 1986. Above normal temperatures limited seedling loss to date. Insect problems in

grain storage on upswing, along with crusting and spoilage due to high moisture. Livestock continued to fare well, in mostly good to excellent condition. Respiratory problems increasing due to mild daytime temperatures, but feeding requirements much lower than normal. Hay, forage supplies plentiful for 45% of State, 55% adequate.

**OHIO:** Mild early week, much colder late week; average temperatures 2 to 6° above normal. Extremes upper 30s to low 40s and teens to low 20s. Precipitation 0.10 to 0.50 in. moving from west to east. Soil temperatures above freezing.

Some snow cover across northern areas, sustained cover not likely; soils wet. Livestock not stressed.

**OKLAHOMA:** Temperatures averaged 3° below normal southeast to 3° above normal southwest. Precipitation averaged none southwest to 0.64 in. southeast.

Topsoil moisture 20% short, 60% adequate, 20% surplus. Subsoil moisture 10% short, 90% adequate. Wheat 3% poor, 30% fair, 60% good, 7% excellent; 40% grazed. Growers still sowing wheat west. Freeze damage may cause heavy losses. Nitrogen leaching, disease problems northwest third. Greenbugs damaging if mild winter continued. Cotton 45% harvested, 90% 1985. Soybeans 90% harvested. Heavy fall rains delayed harvest. Pastures good; livestock good, marketings light to moderate.

**OREGON:** Entire State normal temperatures except Klamath Falls, Baker below normal. Precipitation along coast ranged from 3.90 to 7.00 in. Western interior 1.20 to 2.90 in. Eastern readings ranged from 0.01 to 1.40 in.

Soil moisture adequate to surplus. Grain, seed crops mostly good. Snow cover mainly in eastern mountains, mostly melted lower areas. Snowpack below normal. Orchard disease control spraying, pruning continued. Livestock, range, pastures good. Mild winter weather prolonged grazing on ranges, crop aftermath especially in east. Hay feeding remained slow.

**PENNSYLVANIA:** Temperatures across State averaged 29°, 2° above normal. Average precipitation 0.79 in., 0.12 in. above normal. Most of precipitation as snow on 1st and 2nd. Greatest amounts eastern section of State. High temperature 44° Philadelphia, low temperature 8° Slippery Rock.

Activities: Hauling manure; cutting firewood; machinery maintenance; caring for livestock.

**PUERTO RICO:** Island average rainfall 0.25 in., 0.65 in. below normal. Highest weekly total 1.57 in. Highest 24-hour total 1.00 in. Temperature averaged about 75 to 77° on coasts and 69 to 70° interior divisions. Mean station temperature ranged from 63 to 78°. Extremes 54°; 89°. San Juan mean temperature 77°. Total rainfall 0.07 in., plus 0.77 in.

**SOUTH CAROLINA:** Rainfall heavier than usual; 1.00 in. upstate, 3.00 in. coast. Snow, sleet northwestern part of State. Temperatures colder than usual. Intense coastal storm on 1st.

Cotton 98% harvested, 100% 1985, 100% avg. Dry weather needed for late small grain planting, soybean harvest. Soybean harvest approaching completion; some unharvested fields will be abandoned as deterioration continued.

**SOUTH DAKOTA:** Average temperatures 9 to 17° above normal. Extremes 3°; 57°. Black Hills low -12°. Precipitation 0.10 in. or less south, east.

Winter grains good. Operators concerned about lack of snow cover. Extremely cold temperatures,

wind could cause problems. Livestock good. Cattle on stalks. Feed, water supplies adequate.

**TENNESSEE:** Temperatures averaged 2 to 5° below normal. Highs averaged 40s, lows averaged mid to upper 20s. Extreme high 51°; low 18°. Precipitation more than 1.00 in. below normal. Snow upper east, localized west.

Livestock chores, supplemental hay feeding, main farm activities.

**TEXAS:** WEATHER DATA NOT AVAILABLE AT THIS TIME.

**Crops:** Grain sorghum harvest limited as wet soil conditions kept most equipment out of fields. Harvest should quickly finish continued open weather. Sorghum 99% harvested, 100% 1985, 100% avg. Wet condition kept cotton harvest at a virtual standstill for several weeks many areas. Sufficient drying allowed some progress few areas High, Low Plains. Yield, quality losses increased with harvest delays. Harvest will quickly resume if drying conditions continue. Cotton 70% harvested, 94% 1985, 92% avg. Excessive rain, cold temperatures hampered small grain growth, some fields dormant. Wetness prevented spraying for insects, rust; delayed fertilizer applications. Livestock removed off extremely wet fields to prevent damage. Some yellowing occurred across State. Wheat emerged 100%, 98% 1985, 100% avg. Oats 98% planted, 97% 1985, 99% avg. Peanut harvest virtually complete. Some remaining fields may be lost. Limited soybean harvest end of week. Soybeans 99% harvested, 97% 1985, 99% avg. Producers made some progress harvesting remaining sugarbeets High Plains despite wetness. Sunflowers 99% harvested, 99% 1985, 100% avg. Sugarbeets 90% harvested, 98% 1985, 100% avg. Pecans 94% harvested, 90% 1985, 94% avg.

**Commercial Vegetables:** Rio Grande Valley activity remained slow as field condition remained wet. Light volumes cabbage, celery, some greens available. Onions made normal growth with adequate moisture. Citrus fruit available. San Antonio-Winter Garden winter vegetable harvest hampered by wet conditions; light supplies cabbage, carrots, spinach available. Spinach growth good. Pecan harvest progressed slowly, wet conditions hampered progress. Yields varied considerably, generally affected by wet conditions.

**Range and Pasture:** Continued cold, wet conditions; supplemental feeding necessary across State. Small grains growth slowed, fields dormant; many areas too wet to graze. Ranges, native pastures good to excellent conditions, adequate moisture for cool season grasses. Lambing, calving continued.

**UTAH:** Precipitation light north. None elsewhere. Temperatures below normal west. Above normal east. Snow cover light valleys. Livestock feed adequate, livestock generally good. Major farm activities: Livestock chores, equipment maintenance, manure handling, marketing, year end tax accounting.

**VIRGINIA:** Mostly clear, seasonably cold weather. Snow west of mountains, rain east on 1st. Temperatures averaged 1° below normal. Precipitation 0.92 in.

Days suitable for fieldwork 1.7. Topsoil moisture 63% adequate, 37% surplus. Soybean harvest final stages. Pastures, livestock small activity. Livestock care, feeding main activity. Feed adequate overall, future shortage possible. ASCS disaster, program sign-up active. Equipment maintenance, tax and record keeping active.

**WASHINGTON:** Mild temperatures, rain; west. Cool, snow flurries; east. Snow accumulation less than normal.

Days suitable for fieldwork 3.5. Soil moisture 30% surplus, 50% adequate, 20% short. Snow flurries added several inches to snow pack on winter wheat. Crop good. Mild temperatures reduced demand for heavy feeding. Hay supplies excess statewide.

**WEST VIRGINIA:** Temperatures near normal in northeast; 3° below normal elsewhere. Extremes 53° Gary; 9° Greenbank, average 31°. Precipitation 0.33 in. below normal, average 0.40 in.

Soil moisture 11% short, 67% adequate, 22% surplus. Feed supplies 12% very short, 88% adequate.

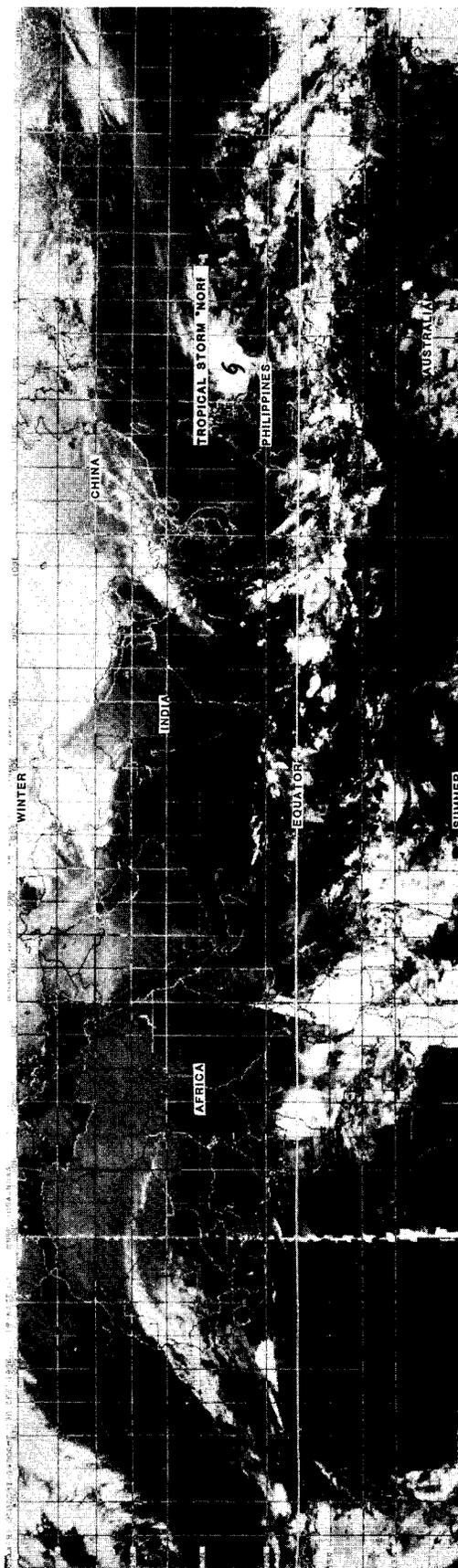
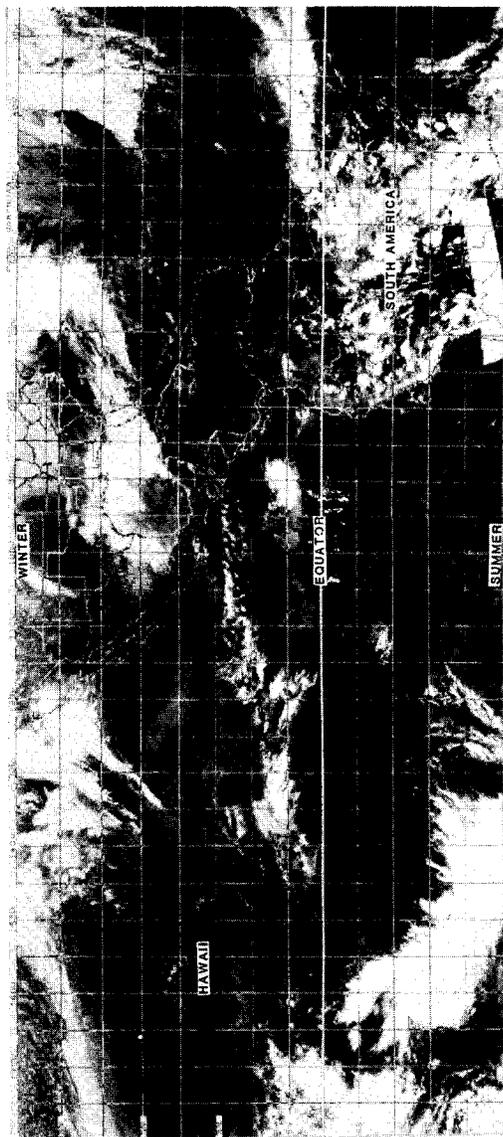
**WISCONSIN:** Temperatures unusually mild, low 13°, high 39°. Snowfall none to 2 in. Relatively dry. Average snow depth 2 in., unchanged from 19th, second lowest since 1961. Frost depth averaged 3.60 in., decreased 0.60 in. from 19th; much less than normal 7.20 in.

Soils remain wet.

**WYOMING:** Temperatures above seasonal normals with exception of northwest. Precipitation below normal over entire State.

Corn harvest neared completion. Winter wheat good, additional moisture needed for good development. Livestock good, some supplemental feeding.

# Global Weather Satellite Image December 30, 1986



International Weather and Crop Summary

December 1986

MONTHLY DATA FROM SELECTED FOREIGN CITIES  
CLIMATE ANALYSIS CENTER-NMC-NWS-NOAA  
\*\*\* = DATA NOT AVAILABLE

December 28, 1986 - January 3, 1987

HIGHLIGHTS:

UNITED STATES ... Mild temperatures deplete snow cover on small grains and winter wheat across much of the northern half of the Nation. Rain continues to hamper cotton harvest in Oklahoma, Texas, and New Mexico.

WESTERN U.S.S.R. ... Snow cover protects winter grains from extreme cold in most areas. Winter grains in the extreme south lack a protective snow cover.

EUROPE ... A warming trend occurs over much of the region. Mixed rain and snow, heavy at times, covers northern winter grains.

SOUTH ASIA ... Lingering showers in central India further improve moisture reserves for winter wheat but may also slow late cotton harvesting.

EASTERN ASIA ... Snow covers winter grains in Shandong and Henan.

SOUTH AMERICA ... Showers maintain wet field conditions throughout Brazil's soybean and corn regions. In Argentina, showers benefit summer crops while dry weather in Buenos Aires favors maturation and harvesting of wheat.

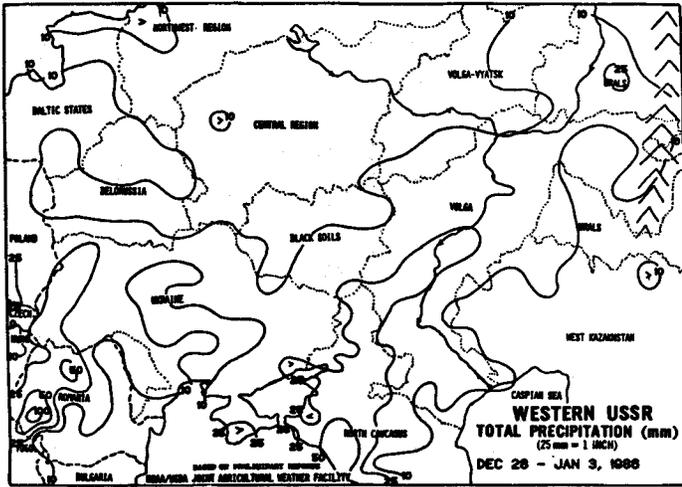
AUSTRALIA ... Heavy showers in eastern Australia bring relief to summer crops following recent hot, dry weather. Light rain in southernmost wheat areas slows harvesting.

SOUTH AFRICA ... Showers in the major grain areas increase soil moisture for corn as it nears reproduction.

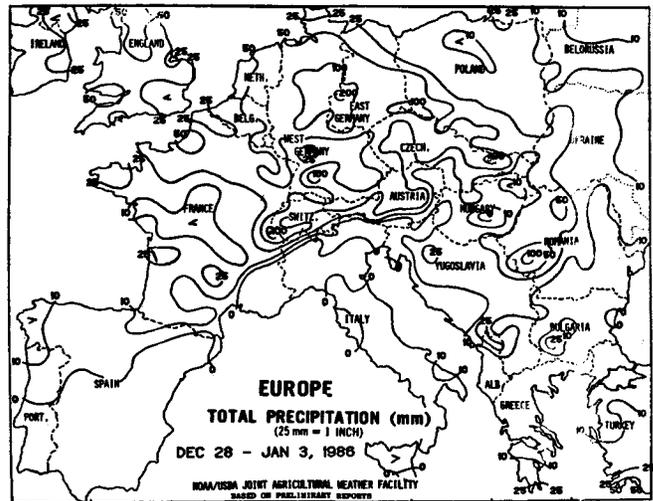
NORTHWESTERN AFRICA ... Most winter grains are in the early growth stages. Persistent dryness in Morocco depletes moisture supplies creating unfavorable conditions for winter grains. Moisture conditions continue favorable for crops in Algeria and Tunisia.

COUNTRY CITY	TEMPERATURE (C)					PRECIPITATION (MM)		
	AVG MAX	AVG MIN	HI	LO	DPART	F/NRM	TOTAL	F/NRM
NORWAY OSLO	-2	-5	8	-20	-4	1.1	110.2	41.9
SWEDEN STOCKHOLM	0	-3	10	-16	-2	-1.1	76.9	30.2
FINLND HELSINKI	-5	-10	7	-28	-7	-4.1	49.5	-6.7
U KING GLASGOW	7	3	13	-3	5	0.2	227.8	110.5
EDINBURGH	7	3	13	-2	5	0.7	129.0	70.6
BIRMINGHAM	9	4	14	-2	6	1.8	86.0	21.3
LONDON	9	4	14	-3	6	1.9	73.0	-3.7
IRELND DUBLIN	8	4	14	-2	6	0.3	71.3	-7.6
ICELND REYKJAVIK	1	-3	7	-11	-1	-1.2	102.5	26.4
DENMRK COPENHAGEN	4	1	11	-8	3	0.1	51.4	2.4
LUXEMB LUXEMBOURG	4	0	12	-8	2	0.6	130.0	53.6
SWITZL ZURICH	4	0	9	-9	2	1.2	84.5	9.4
GENEVA	5	0	10	-10	2	0.4	77.3	-3.1
FRANCE PARIS	9	3	14	-2	6	1.5	71.8	21.0
STRASBOURG	6	1	11	-10	3	1.3	39.4	6.5
BOURGES	8	2	15	-3	5	0.9	58.1	-2.8
BORDEAUX	11	4	18	-3	8	1.4	102.6	-1.3
TOULOUSE	11	4	17	-2	7	1.5	55.5	-3.3
MARSEILLE	11	4	16	-4	8	0.5	44.9	-18.1
SPAIN VALLADOLID	8	1	13	-6	4	0.3	30.0	-10.8
MADRID	11	-1	15	-6	5	-0.7	17.2	-28.7
SEVILLE	16	6	21	1	11	-0.2	12.0	-65.8
E GRMY LEIPZIG	4	0	12	-6	2	0.9	59.3	22.1
DRESDEN	4	0	14	-9	2	1.6	144.8	107.8
W GRMY HAMBURG	5	1	12	-7	3	0.8	124.7	54.0
BERLIN	4	1	12	-5	3	1.1	108.5	59.5
DUSSELDORF	6	3	14	-5	5	1.4	116.0	58.1
STUTTGART	5	-1	14	-16	2	1.3	50.8	4.5
NURNBERG	4	0	10	-6	2	1.7	49.3	-0.1
MUNICH	4	-2	14	-8	1	1.3	46.9	-5.0
AUSTRI VIENNA	2	-2	12	-15	0	-0.9	51.3	14.2
INNSBRUCK	4	-5	9	-12	-1	0.4	48.6	-3.3
CZECH PRAGUE	3	-2	11	-10	0	0.9	44.1	19.8
POLAND WARSAW	2	-2	12	-12	0	0.9	31.9	-0.4
LODZ	2	-2	12	-11	0	1.1	51.1	9.2
KATOWICE	2	-3	11	-14	-1	0.6	87.1	43.2
PRZEMYSL	0	-4	11	-22	-2	-1.3	34.9	-5.0
HUNGAR BUDAPEST	1	-3	10	-12	-1	-1.5	37.2	-3.1
YUGOSL SARAJEVO	1	-6	11	-16	-3	-2.2	29.3	-74.6
ROMANI BUCHAREST	3	-5	12	-18	-1	-1.8	45.2	-1.3
BULGAR SOFIA	2	-5	11	-15	-1	-1.5	19.3	-43.1
ITALY MILAN	7	-1	13	-8	3	0.7	4.7	-61.5
VERONA	6	-3	12	-8	2	0.1	34.0	-17.3
VENICE	7	-2	12	-7	3	-0.8	39.2	-26.9
GENOA	14	7	17	0	10	1.1	32.2	-75.2
ROME	13	3	18	-4	8	-0.8	76.6	-9.8
NAPLES	13	3	17	-4	8	-1.0	29.7	-89.0
GREECE THESSALONIKA	9	0	15	-5	4	-2.9	9.9	-44.8
LARISSA	9	-2	14	-12	4	-3.4	10.2	-46.5
ATHENS	14	7	18	1	11	-1.9	28.0	-39.9
TURKEY ISTANBUL	9	5	14	-2	7	-1.1	88.9	-2.1
ANKARA	5	-6	13	-15	-1	-2.4	65.9	36.9
CYPRUS LARNACA	18	8	20	4	13	-1.1	43.7	-59.4
USSR TALLINN	-4	-8	8	-23	-6	-3.3	106.3	58.8
LENINGRAD	-6	-10	7	-21	-8	-3.7	67.4	23.8
KAUNAS	-1	-4	9	-16	-2	0.2	56.8	12.3
MINSK	-3	-6	8	-19	-5	-0.8	52.3	9.6
KAZAN	-9	-15	2	-32	-12	-2.9	26.0	-7.4
MOSCOW	-5	-9	6	-27	-7	-1.4	73.3	29.5
SVERDLOVSK	-15	-22	-1	-33	-18	-6.7	14.5	-7.3
OMSK	-15	-21	-1	-35	-18	-3.5	27.0	10.4
KUSTANAY	-13	-21	2	-36	-17	-4.1	48.1	30.4
KRASNOYARSK	-11	-18	5	-40	-14	0.1	7.6	-16.5
NOVOSIBIRSK	-14	-21	2	-37	-17	-0.9	30.0	7.1
BARNAUL	-11	-17	3	-32	-14	-0.1	28.6	-3.6
KHABAROVSK	-12	-21	-2	-33	-17	1.3	7.2	-11.4
VLADIVOSTOK	-6	-11	6	-26	-8	1.1	5.7	-10.7
KIEV	-2	-6	12	-19	-4	-1.9	57.1	12.6
LVOV	0	-6	11	-23	-3	-1.3	49.3	-4.2
KIROVOGRAD	-1	-6	13	-17	-4	-1.5	25.6	-11.8

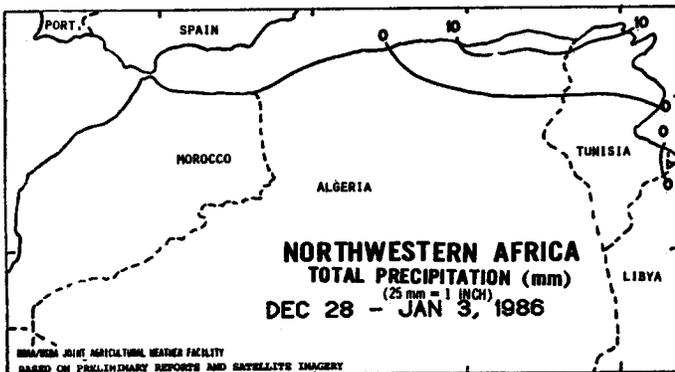
COUNTRY CITY	TEMPERATURE (C)								PRECIPITATION (MM)		COUNTRY CITY	TEMPERATURE (C)								PRECIPITATION (MM)	
	AVG	AVG	HI	LO	DPART	DPART	F/NRM	TOTAL	F/NRM	AVG		AVG	HI	LO	DPART	DPART	F/NRM	TOTAL	F/NRM		
	MAX	MIN	MAX	MIN	AVG	F/NRM				MAX		MIN	AVG	F/NRM	MAX	MIN				AVG	F/NRM
USSR ODESSA	2	-5	15	-18	-1	-2.8	41.1	-3.7		TANZAN DAR ES SALAAM	32	24	34	21	28	0.5	49.1	-51.7			
YALTA	8	2	16	-11	5	-1.0	96.3	16.3		GABON LIBREVILLE	29	23	30	21	26	-0.5	587.9	252.2			
VORONEZH	-4	-12	7	-87	-8	-2.9	42.2	-6.0		TOGO LOME	33	22	34	18	27	0.2	0.0	-9.0			
SARATOV	-6	-11	5	-24	-9	-1.5	60.7	29.6		B FASO OUAGADOUGOU	32	16	35	11	24	-1.6	0.0	0.0			
KHARKOV	-2	-6	9	-17	-4	-1.3	36.4	-8.6		IVRY C ABIDJAN	31	24	33	16	27	0.3	31.7	-69.6			
VOLGOGRAD	-3	-10	7	-20	-6	-1.3	41.8	-3.2		MOZAMB MAPUTO	30	22	38	17	26	0.6	111.6	25.5			
ROSTOV	0	-5	8	-13	-2	-1.0	76.9	13.8		ZAMBIA KABWE	28	17	30	15	23	1.4	72.6	-178.5			
ASTRAKHAN	1	-5	12	-14	-2	0.2	25.0	9.5		ZIMBAB HARARE	27	16	31	12	21	0.9	217.4	32.3			
KRASNODAR	5	-1	18	-9	2	0.2	76.5	1.5		S AFRI PRETORIA	28	17	32	13	23	1.2	171.8	60.6			
ORENBURG	-9	-15	2	-32	-12	-2.0	48.0	16.6		KROONSTAD	30	15	35	10	23	0.8	70.0	-25.0			
TSELINOGRAD	-11	-19	0	-34	-15	0.1	26.6	16.9		JOHANNESBURG	26	14	32	11	20	1.3	195.8	87.9			
KARAGANDA	-8	-16	1	-29	-12	-0.6	35.7	17.9		BETHAL	25	14	30	9	19	0.0	146.4	21.4			
TBILISI	6	0	13	-3	3	-0.6	1.9	-21.8		DURBAN	27	20	31	12	24	1.0	208.5	103.5			
TASHKENT	8	-1	17	-12	4	1.2	61.6	9.2		CAPE TOWN	25	16	33	11	21	1.5	13.4	-2.6			
ASHKABAD	11	1	24	-7	6	2.2	53.0	31.3		CANADA TORONTO	2	-4	4	-17	-1	2.1	67.3	2.6			
SYRIA DAMASCUS	13	1	19	-4	7	-1.2	13.1	-33.3		MONTREAL	-1	-9	4	-20	-5	2.2	109.1	22.5			
ISRAEL JERUSALEM	13	5	22	2	9	-2.0	80.6	-30.3		WINNIPEG	-6	-14	2	-26	-10	3.8	6.5	-12.7			
PAKIST KARACHI	26	9	32	1	17	-2.2	0.0	-7.7		REGINA	-3	-14	4	-27	-9	4.0	8.8	-7.9			
INDIA AMRITSAR	20	3	25	-2	12	-1.3	24.2	9.3		SASKATOON	-4	-13	3	-27	-9	4.7	7.1	-11.2			
NEW DELHI	22	7	26	4	15	-1.1	9.6	2.1		LETHBRIDGE	5	-7	13	-21	-1	4.9	3.9	-17.9			
AHMEDABAD	28	12	34	3	20	-1.2	21.0	19.1		CALGARY	5	-8	11	-16	-2	6.1	1.3	-15.2			
INDORE	26	9	30	2	18	-0.9	0.0	-9.2		EDMONTON	0	-9	6	-18	-5	5.7	2.9	-21.8			
CALCUTTA	27	16	30	11	21	0.9	5.0	2.0		VANCOUVER	8	2	11	-4	5	0.7	186.5	4.1			
VERAVAL	30	16	34	10	23	-0.1	0.4	-0.9		MEXICO GUADALAJARA	23	7	26	0	15	-0.8	0.4	-16.2			
BOMBAY	31	17	35	11	24	-0.6	3.7	2.8		MEXICO CITY	21	8	25	2	15	2.3	2.9	-13.4			
POONA	29	12	32	9	20	-0.4	39.2	34.7		ACAPULCO	31	22	35	19	27	0.0	0.0	-7.4			
BEGAMPET	29	17	31	11	23	1.7	15.8	10.2		BERMUD ST. GEORGES	21	18	26	14	20	0.7	229.8	113.7			
MADRAS	29	22	31	20	26	1.0	96.3	-43.1		BAHAMA NASSAU	28	19	30	13	24	2.0	98.9	51.0			
MANGALORE	33	22	36	12	28	0.8	17.0	-1.0		CUBA HAVANA	28	22	31	20	25	2.8	83.6	34.0			
H KONG HONG KONG	20	16	23	10	18	0.4	47.3	21.6		JAMAIC KINGSTON	31	22	33	15	27	0.6	8.9	-29.0			
N KREA PYONGYANG	3	-5	12	-16	-1	3.1	27.5	5.4		P RICO SAN JUAN	29	22	31	20	25	-0.1	76.8	-36.5			
S KREA SEOUL	5	-1	13	-10	2	3.4	33.0	1.0		GUADEL RAIZET	30	21	31	18	25	0.9	53.7	-47.6			
JAPAN SAPPORO	1	-4	7	-9	-2	0.1	115.0	13.6		MARTNQ LAMENTIN	29	23	30	18	26	1.4	57.4	-88.5			
NAGOYA	12	4	17	-1	8	1.9	91.5	43.6		BARBAD BRIDGETOWN	28	24	30	22	26	-0.1	39.5	-63.3			
TOKYO	12	5	18	1	9	1.4	117.5	61.3		TRINID PORT OF SPAIN	30	22	31	19	26	1.0	62.7	-72.6			
YOKOHAMA	12	5	20	1	9	1.0	111.0	52.3		COLOMB BOGOTA	19	6	22	-2	13	0.1	13.4	-27.5			
KYOTO	12	5	16	-1	8	1.9	71.0	25.7		VENEZU CARACAS	30	23	31	20	26	0.5	10.0	-53.8			
OSAKA	13	6	18	1	9	1.6	53.0	11.1		F GUIA CAYENNE	30	24	31	22	27	1.0	412.5	75.4			
THAILN PHETCHABUN	32	18	35	14	25	1.9	5.0	5.0		BRAZIL FORTALEZA	30	24	31	22	27	-0.4	62.5	13.4			
BANGKOK	31	21	33	19	26	0.3	10.5	-0.4		RECIFE	30	22	31	20	26	-0.4	26.7	-26.2			
MALAYS KUALA LUMPUR	32	23	34	21	27	1.2	181.0	-48.9		BELO HORIZONTE	27	19	34	17	23	0.5	438.9	158.0			
VIETNM HANOI	22	18	29	14	20	1.5	24.3	4.0		CAMPO GRANDE	30	21	35	18	25	0.8	251.8	60.8			
CHINA HARBIN	-7	-17	3	-33	-12	5.0	3.7	-2.1		FRANCA	26	18	30	15	22	1.3	306.7	36.7			
HAMI	-2	-13	5	-18	-8	0.2	3.6	3.1		RIO DE JANEIRO	29	24	35	22	26	1.2	244.7	107.8			
LANCHOW	3	-7	7	-10	-2	3.2	4.0	2.8		LONDRINA	29	20	31	18	24	1.0	232.5	16.8			
BEIJING	3	-6	10	-13	-1	1.0	4.3	1.7		SANTA MARIA	29	19	34	15	24	0.5	88.7	-34.2			
TIENTSIN	3	-4	10	-15	0	1.1	9.8	6.1		PORTO ALEGRE	28	21	36	16	25	1.1	78.7	-9.2			
LHASA	8	-7	13	-12	0	1.0	0.0	0.0		PERU LIMA	25	20	28	15	22	2.3	8.6	8.6			
KUNMING	16	4	19	1	10	1.7	5.4	-7.7		BOLIVI LA PAZ	13	4	16	0	8	-1.2	214.9	113.5			
CHENGCHOW	6	-2	16	-8	2	1.4	18.0	8.5		CHILE SANTIAGO	29	12	33	8	21	1.1	0.8	-1.6			
YEHCHANG	10	4	19	-2	7	-0.2	31.7	8.6		ARGENT IGUAZU	30	20	34	18	25	***	110.4	***			
HANKOW	10	3	20	-3	6	1.0	45.3	14.3		FORMOSA	31	22	35	19	26	-0.7	174.6	55.6			
CHUNGKING	12	8	15	5	10	-0.4	8.4	-17.4		CERES	31	20	36	15	25	0.6	76.0	-49.0			
CHIHKIANG	12	5	21	-1	9	1.3	7.9	-27.9		CORDOBA	29	19	37	11	24	1.1	120.3	-18.0			
SHANGHAI	11	4	18	-3	7	1.1	23.4	-17.6		RIO CUARTO	28	19	40	13	24	1.7	193.5	52.2			
NANCHANG	13	5	21	-1	9	1.1	15.0	-32.2		ROSARIO	29	18	34	12	23	0.8	80.5	-28.3			
TAIPEI	21	16	26	11	18	1.3	67.0	-6.9		BUENOS AIRES	28	17	32	10	22	0.5	80.2	-4.6			
CANTON	21	12	26	7	17	1.1	33.9	7.6		SANTA ROSA	30	18	39	10	24	1.4	59.3	-15.3			
NANNING	21	14	25	7	18	2.4	9.5	-17.0		TRES ARROYOS	25	15	36	8	20	0.8	32.9	-36.8			
CNRY I LAS PALMAS	22	16	24	12	19	0.8	4.3	-25.6		MIDW I MIDWAY ISLAND	24	19	29	15	22	1.3	45.2	-158.4			
MOROCC CASABLANCA	18	8	23	3	13	0.0	19.5	-78.1		N CALD NOUMEA	27	21	30	19	24	-0.9	253.4	189.0			
MARRAKECH	20	7	24	1	13	1.6	0.0	-32.6		FIJI NAUSORI	29	25	31	23	27	1.0	362.4	5.3			
ALGERI ALGER	17	7	21	1	12	0.0	171.8	50.0		SAMOA PAGO PAGO	30	25	33	23	28	0.7	475.4	115.8			
BATNA	9	2	15	-5	6	-0.4	27.9	-2.1		TAHITI PAPEETE	30	24	32	22	27	0.2	248.2	-6.7			
TUNISI TUNIS	16	7	19	1	12	-0.6	56.3	3.9		N ZEAL AUCKLAND	22	14	25	8	18	-0.3	136.1	48.5			
NIGER NIAMEY	31	17	35	14	24	-1.0	0.0	0.0		WELLINGTON	19	13	23	7	16	0.5	31.6	-63.6			
MALI TIMBUKTU	28	12	32	6	20	-2.0	0.0	0.0		PA N G PORT MORESBY	31	25	33	22	28	0.1	60.1	-84.1			
BAMAKO	31	19	36	14	25	0.3	0.0	0.0		AUSTRL DARWIN	33	27	34	23	30	1.1	203.5	-33.6			
MAURIT NOUAKHOTT	29	16	36	10	23	0.9	1.0	-5.5		MOREE	30	19	40	10	25	-0.7	19.8	-41.1			
SENEGL DAKAR	26	19	33	16	23	-0.1	0.0	0.0		BRISBANE	27	20	32	15	24	-0.5	65.8	-79.9			
CHAG A DIEGO GARCIA	31	26	33	23	28	1.1	418.3	153.7		PERTH	28	15	37	11	22	-0.7	16.8	4.9			
LIBYA TRIPOLI	16	8	21	3	12	-1.7	101.0	34.7		CEDUNA	24	16	41	9	20	-0.5	12.7	-4.3			
BENGHAZI	17	10	21	1	13	-0.8	123.1	57.9		ADELAIDE	23	15	33	9	19	-0.9	37.0	10.8			
EGYPT CAIRO	19	10	24	7	15	-0.5	3.3	-3.8		MELBOURNE	21	12	30	7	16	-1.8	40.1	-7.8			
ASWAN	21	9	26	5	15	-2.4	0.0	-0.1		WAGGA	25	14	33	8	20	-1.8	48.8	-0.2			
ETHIOP ADDIS ABABA	23	7	26	2	15	-1.1	3.0	-15.3		CANBERRA	23	11	32	5	17	-1.4	54.4	0.0			
KENYA NAIROBI	25	14	27	10	19	-0.1	79.4	8.1		INDONE DJAKARTA	31	25	32	22	28	0.4	290.7	134.4			
										PHILIP MANILA	31	22	33	19	26	0.4	12.5	-49.2			



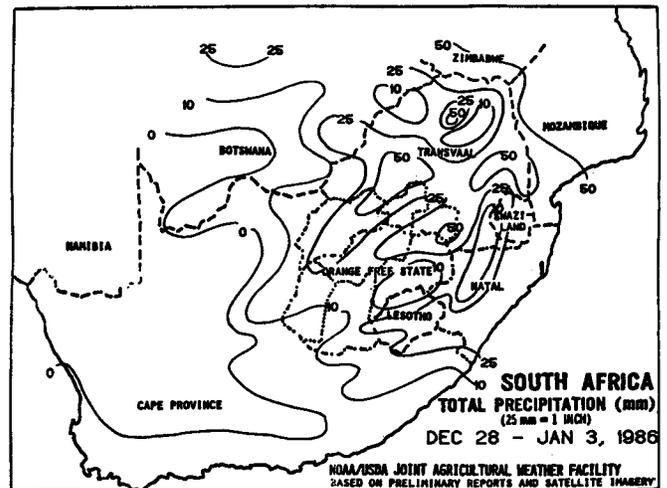
**WESTERN U.S.S.R.** ... Moderate to heavy snow fell eastward from the Ukraine, through the North Caucasus, into the Volga Valley. Mixed rain and snow occurred over crop areas near the Black Sea, especially around Krasnodar, where rainfall ranged from 25 to 53mm. Maximum temperatures during midweek in Belorussia, the Ukraine, and the North Caucasus rose to above freezing. Maximum temperatures remained above-freezing in the North Caucasus throughout the remainder of the week but fell sharply below freezing in Belorussia and the northern and western Ukraine by week's end. Coldest weather during the week covered northern winter grain areas with night lows dropping to around -25 degrees C by week's end. Most winter grain areas, except for warmer areas in the extreme south, had a protective snow cover.



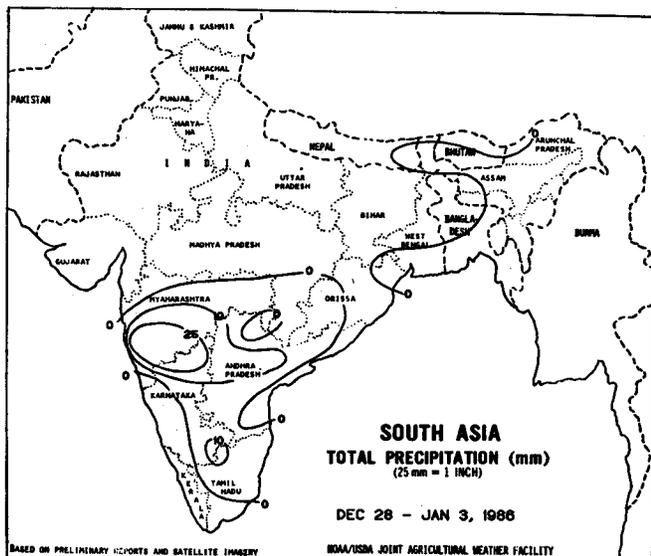
**EUROPE** ... Winter grains remained dormant everywhere, except for Mediterranean areas where the crop was in the early growth stages. A warming trend occurred over most of the region. Early-week heavy rain over winter grain areas in West and East Germany was followed by heavy snow. Precipitation amounts generally ranged from 50 to 100mm, with several locations in central West Germany reporting amounts in excess of 100mm. Mixed rain and snow (50 to 100mm) covered winter grains in Czechoslovakia and southern Poland. Rain (10 to 25mm) covered winter grains in England and France. Unfavorable dry weather over southern Spain continued a dry weather pattern, which has prevailed over winter grains for 7 weeks. In southeastern Europe, rain changed to snow in winter grain areas of Hungary, Romania, Yugoslavia, and Bulgaria. By week's end, bitter cold air crept westward into winter grain areas of Poland and Czechoslovakia.



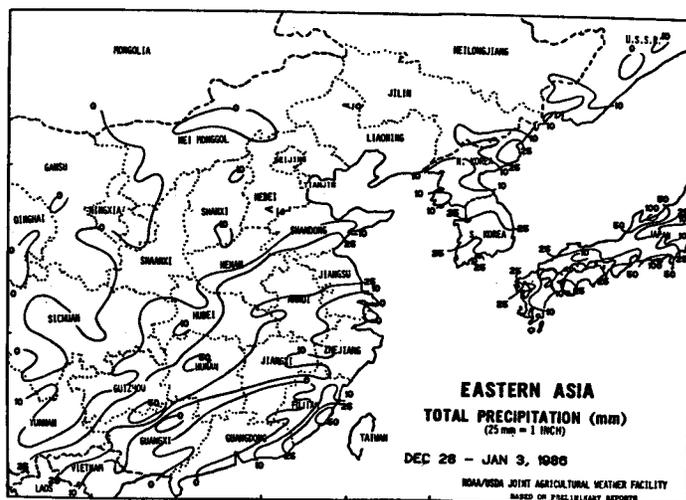
**NORTHWESTERN AFRICA** ... Winter grain planting is nearly complete, with most of the crop in the early growth stages. Light showers (4 to 10mm) fell over winter grains in northern Tunisia and northeastern Algeria, while dry weather covered Morocco and western Algeria. Continued dry weather over Morocco for the past 6 weeks has depleted moisture supplies and created unfavorable conditions for winter grains. Moisture supplies continued adequate for winter grains in Algeria and Tunisia.



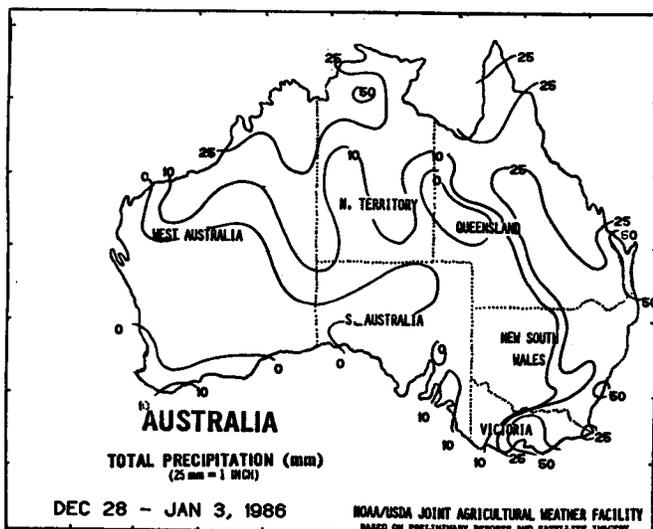
**SOUTH AFRICA** ... Rainfall ranging from 10 to more than 70mm covered South Africa's major grain areas, maintaining mostly favorable conditions for corn as it nears reproduction. Heaviest rain (more than 25mm) fell from northern Orange Free State to central and eastern Transvaal, and throughout most of Natal. Light rain (4 to 23mm) cooled temperatures and increased soil moisture somewhat in western Orange Free State. Recent weeks of dry weather in the western Maize Triangle had depleted soil moisture for corn's vegetative growth.



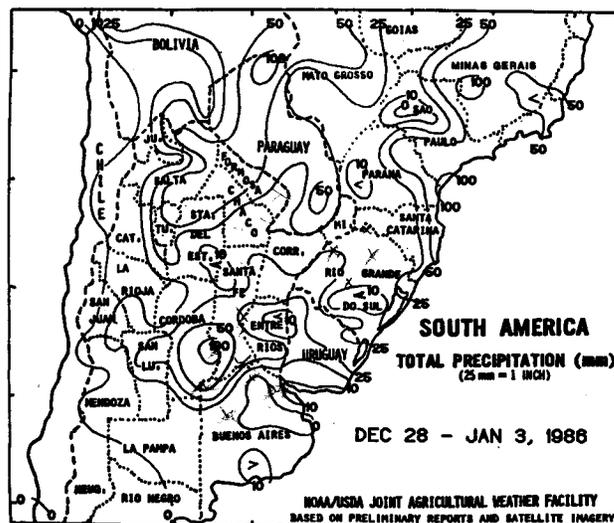
**SOUTH ASIA** ... Moderate showers (10 to 40mm) continued in central India, improving moisture reserves for winter wheat but likely slowing late cotton harvesting in Maharashtra. Dry weather continued in the winter grain regions of northern Pakistan and India's northern states. Normally, wheat in northern Pakistan and northern India is in the vegetative stage of development, while further south wheat is heading and grain filling. Summer rice planting progressed normally in southern India as scattered, light rain (less than 6mm) fell from Karnataka to the eastern states.



**EASTERN ASIA** ... Above-normal precipitation (25 to 50mm) spread northeastward from Gizhou and Hunan, through Hubei and Henan, into Shandong. Snow fell over winter grains in Shandong and Henan, increasing snow cover, while rain occurred further south. Weekly temperatures were generally above normal over the region.



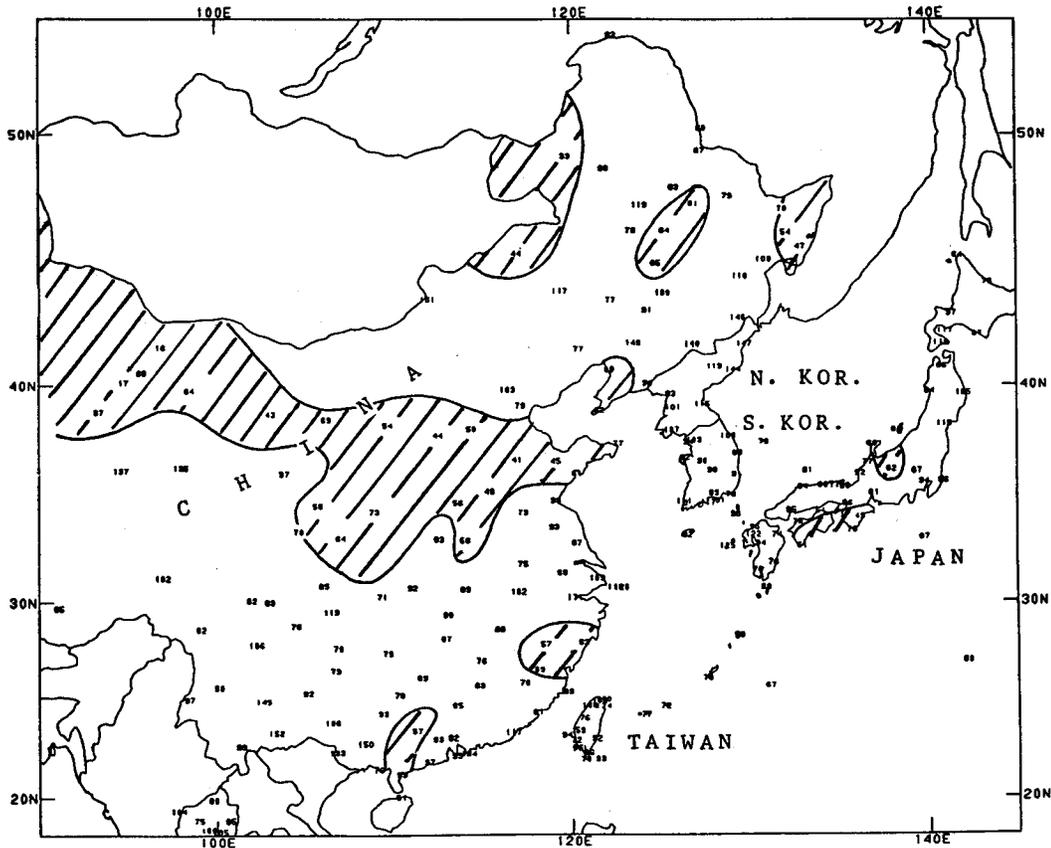
**AUSTRALIA** ... Moderate to heavy showers (20 to more than 40mm) brought relief to recently hot, dry summer crop regions of eastern Australia, ending nearly 2 weeks of dry weather in some areas. Early-week temperatures averaged 40 degrees C in southeast Queensland and northern New South Wales, depleting soil moisture and likely stressing grains as they approached reproduction. However, cooler temperature followed as a result of the rainfall. Light rain (2 to 11mm) in the winter grain regions of Western Australia, South Australia, western Victoria, and southern New South Wales briefly slowed wheat harvesting. Heavy showers (greater than 50mm) in central Victoria delayed wheat harvesting and may have caused a reduction in the quality of unharvested grain.



**SOUTH AMERICA** ... Moderate to heavy showers (25 to more than 100mm) maintained wet field conditions in corn and soybean regions of Brazil from Santa Catarina to Minas Gerais and in Mato Grosso do Sul. Lighter rain (10 to 25mm) fell in grain areas from Goias to Rio Grande do Sul. Early planted soybeans are flowering, and moisture is ample for crop development. Soybean planting, still lagging behind the normal pace, is over 90 percent complete. Moderate to heavy rainfall (25 to more than 100mm) covered summer crop areas in central Argentina, with heaviest rainfall centered in southern Cordoba and southern Santa Fe. Drier weather returned to the wheat areas of southern Buenos Aires, promoting maturation and harvesting of wheat. In Argentina, soybeans were over 50 percent planted, and wheat was over 50 percent harvested.

### Seasonal Rain Below Normal in Northern China

The map below shows percentage of normal precipitation for the April through November period, which spans the season of heaviest rain in most of China, the Koreaes, and Japan. Shading indicates approximately those areas where reported precipitation was less than 70 percent of normal. One of the most deficient areas was the argriculturally important North China Plain, to the south of Beijing, where seasonal rainfall was less than normal at some locations.



Percentage of normal precipitation, April 1 through November 30, 1986.  
(Shading indicates approximate areas of less than 70 percent normal)

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