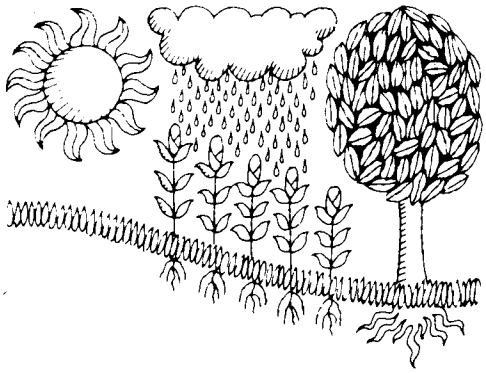


WEEKLY WEATHER AND CROP BULLETIN

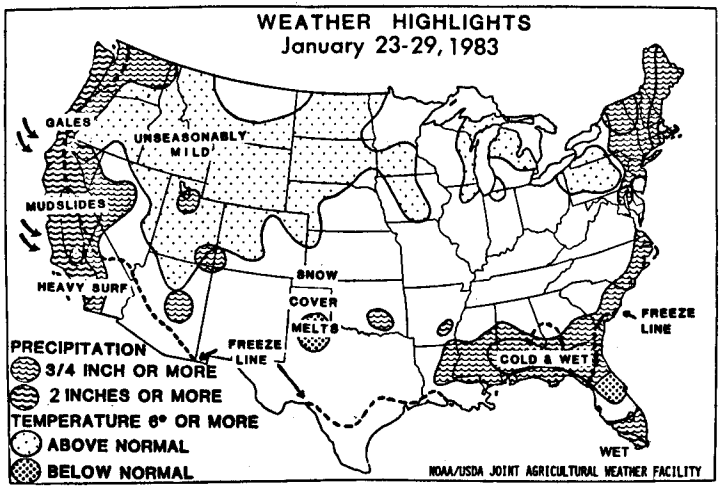
U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration, National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
Statistical Reporting Service and World Agricultural Outlook Board

Volume 70, No. 5 | WASHINGTON, D.C. | Feb. 1, 1983

National Weather Summary

January 23 to 29, 1983



HIGHLIGHTS ... A series of vigrous Pacific storms battered the west coast with heavy rains, gale winds, and rough surf. Beach erosion, mud and rock slides, and flooding caused considerable damage, especially along the immediate coast. The Southeast continued wet and cold. The cold also extended into the southern Plains. Temperatures across the rest of the Nation averaged unseasonably mild, especially in the northern Rockies where 12° to 14° above normal readings were reached. Dry weather covered the southern Plains and protective snow cover disappeared over most of the Plains wheatlands.

SUNDAY ... A major storm of the previous week, weakened as it moved into the Northeast, producing only light snow and rain. Meanwhile, frigid, arctic air crept into the northern Plains with blustery winds and light snow. A wet front stretched across Florida while another one with strong winds approached the West Coast. A fair weather, high pressure system dominated the southern Plains.

MONDAY ... Bitter cold air pushed further into the the north central third of the Nation as the weakening snow storm crossed into eastern Canada. A cold front moving from the Pacific States into the Great Basin triggered a few snow showers. Light snow lingered over the Northeast. Sunshine was abundant over the southern Plains and the Southeast, and helped moderate temperatures.

TUESDAY ... A major storm, drifting northward offshore, pounded the northern Pacific Coast with heavy rains and gale winds. Rain changed to snow in the inland, higher elevations. A reinforcing front moving through the northern Plains, kept temperatures bitter cold. Widespread rains, (some heavy) developed across the central Plains ahead of a low pressure system.

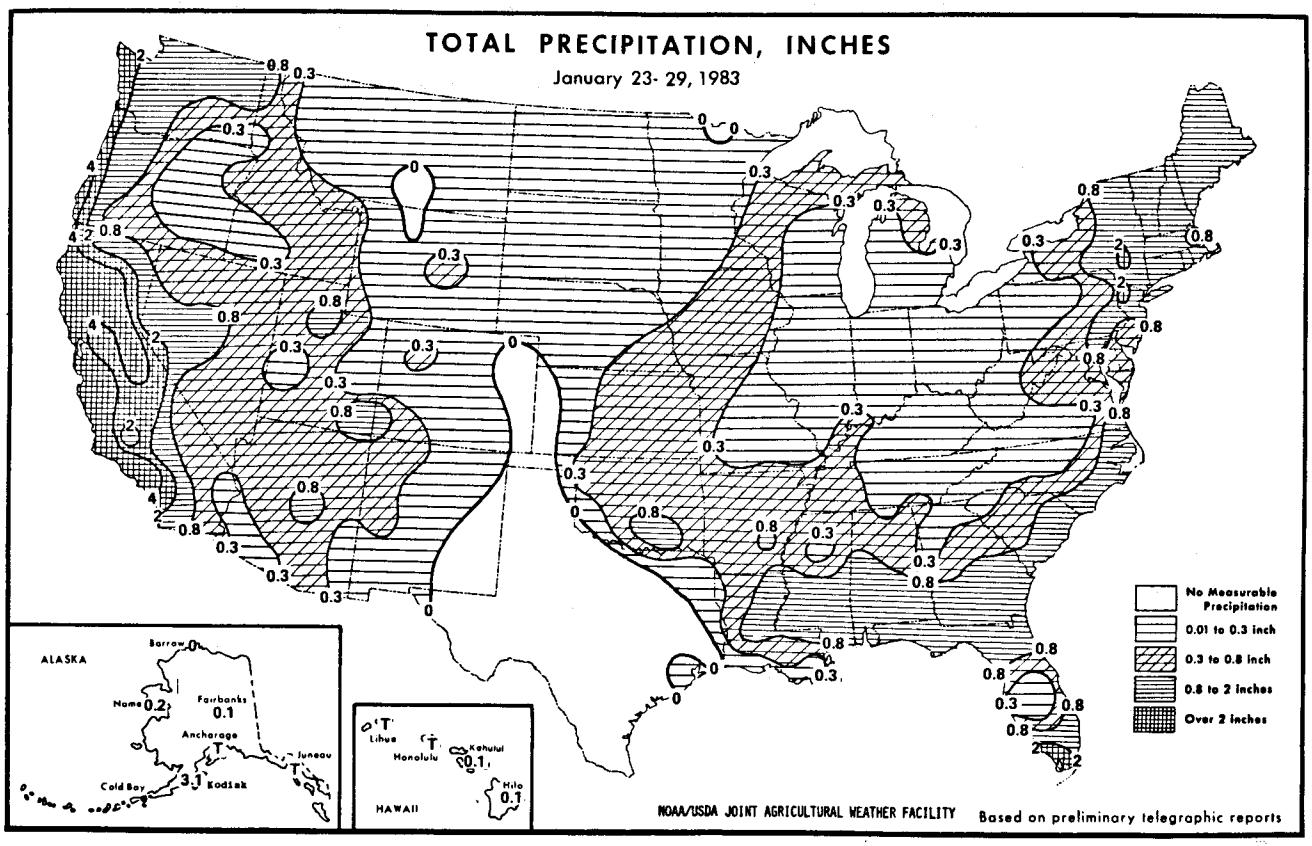
WEDNESDAY ... Another Pacific storm approached the West Coast with gusty winds and heavy rains. Rains falling over saturated hilly soils produced mudslides. Unseasonably cold weather pushed into the central Plains and the upper Northeast. A low-pressure frontal system over the southern Plains triggered rains eastward into the Mississippi Delta.

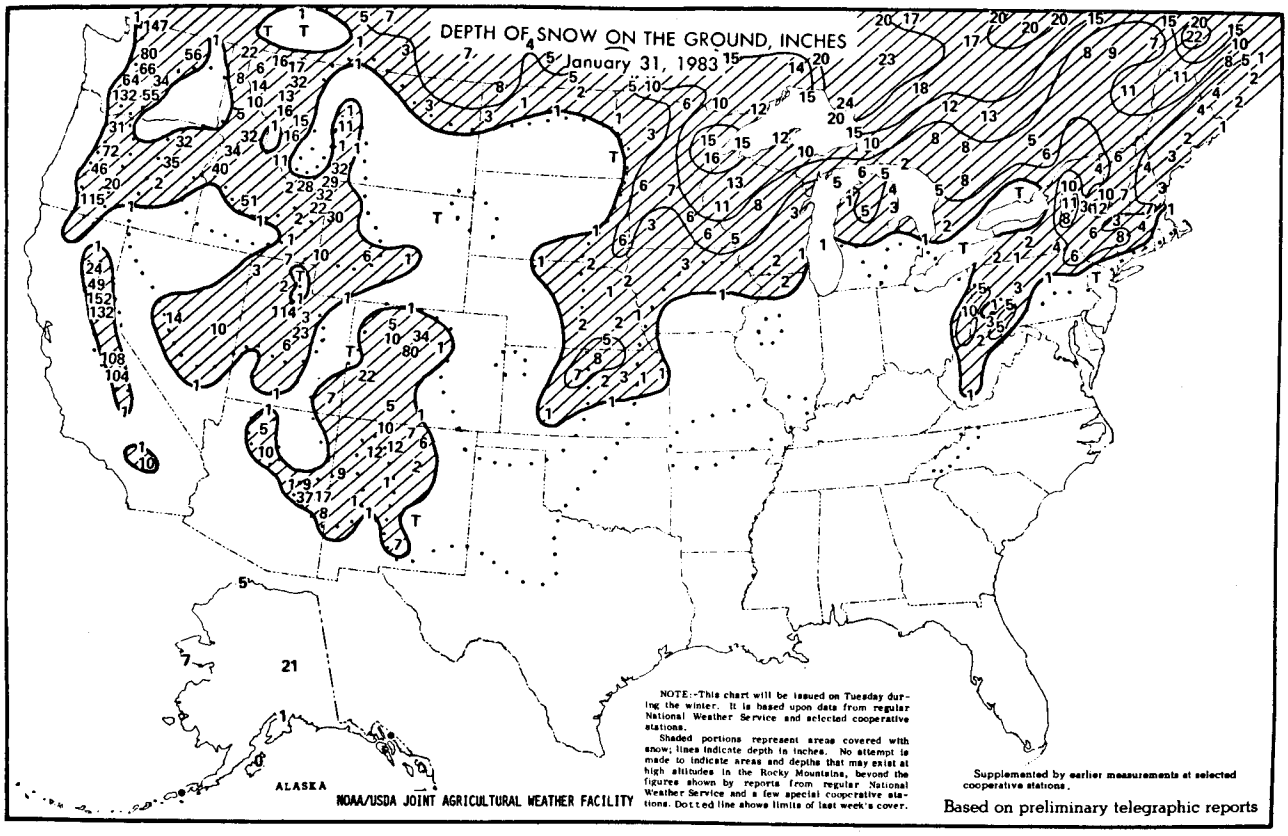
THURSDAY ... The rainy, low-pressure system intensified and moved into the northeastern coast of the Gulf of Mexico. Rains spread northward into the mid-Atlantic coastal States. A cold front dumped heavy rains along the Pacific coast wetting a long shoreline from southwestern Canada to northwestern Mexico. The northeastern quarter of the Nation remained very cold.

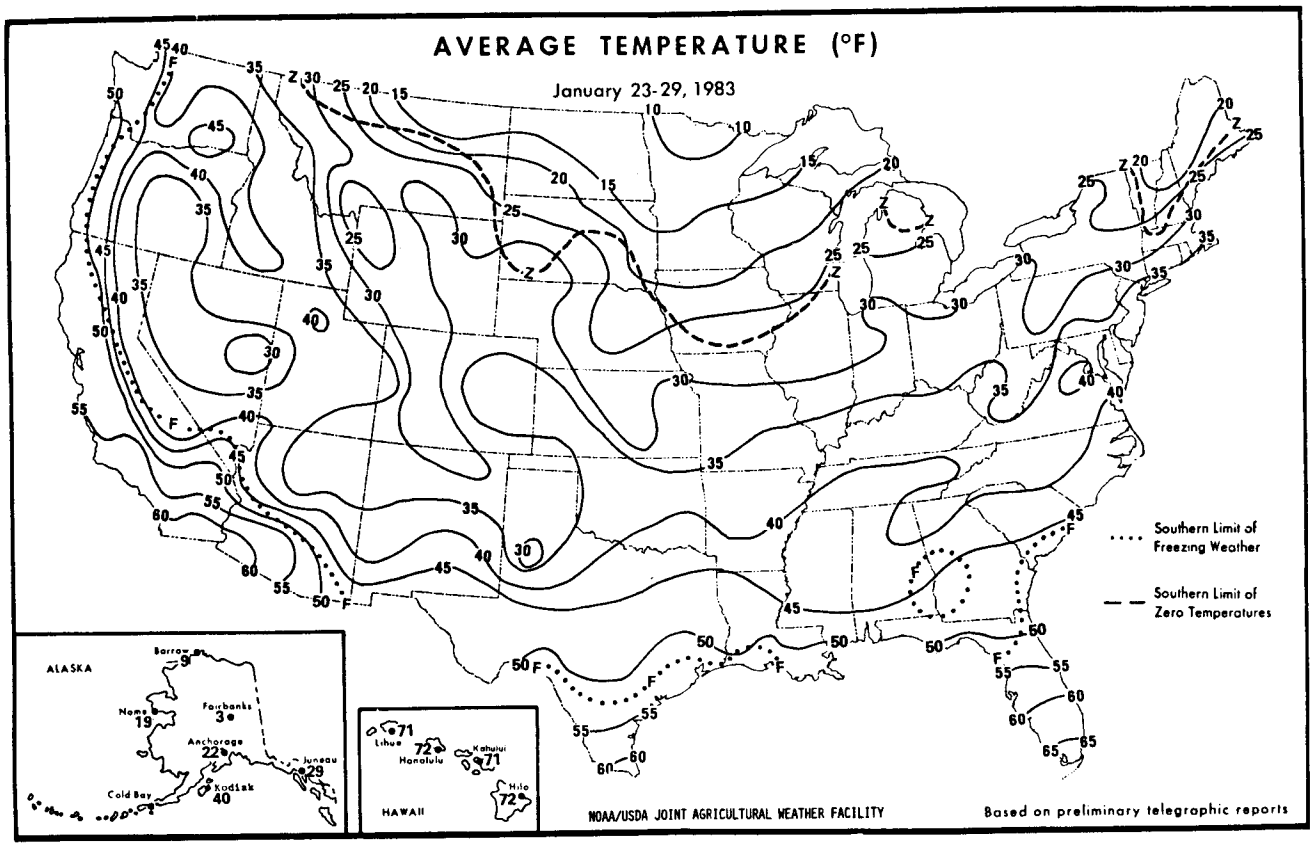
FRIDAY ... The western front moved into the Rockies, triggering precipitation over much of the eastern Great Plains. The unseasonably cold air over the East slowly moderated. The fourth in a series of Pacific storms began battering the California coast with rains and gale winds during the evening.

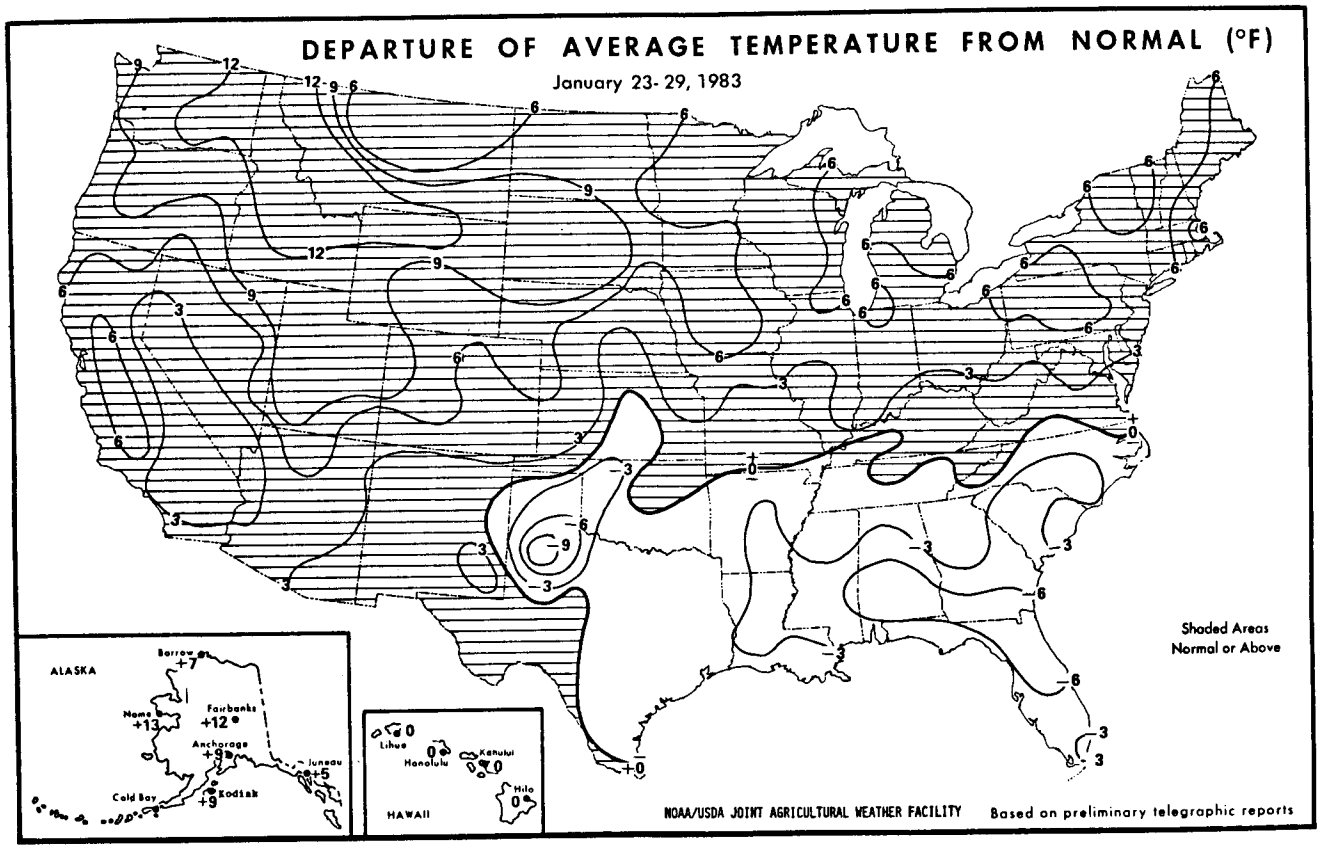
SATURDAY ... The California storm weakened as it moved eastward, producing mostly light rain and snow showers from Arizona to Idaho. An elongated low-pressure frontal system drifting through the eastern Great Plains generated widespread rain eastward to Florida and northward into Ohio. Sunny skies with moderating temperatures were welcomed along the east coast.

Contents


TOTAL PRECIPITATION, INCHES
January 23- 29, 1983
No Measurable Precipitation
0.01 to 0.3 inch
0.3 to 0.8 inch
0.8 to 2 inches
Over 2 inches
ALASKA
Barrow
Nome 0.2
Fairbanks 0.1
Anchorage
Juneau
Cold Bay
Kodiak
HAWAII
Lihue
Honolulu
Kahului 0.1
Hilo 0.1
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary telegraphic reports


DEPTH OF SNOW ON THE GROUND, INCHES
January 31, 1983
ALASKA
NOTE:-This chart will be issued on Tuesday during the winter. It is based upon data from regular National Weather Service and selected cooperative stations.
Shaded portions represent areas covered with snow; lines indicate depth in inches. No attempt is made to indicate areas and depths that may exist at high altitudes in the Rocky Mountains, beyond the figures shown by reports from regular National Weather Service and a few special cooperative stations. Dotted line shows limits of last week's cover.
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Supplemented by earlier measurements at selected cooperative stations.
Based on preliminary telegraphic reports


AVERAGE TEMPERATURE (°F)
January 23-29, 1983
Southern Limit of Freezing Weather
Southern Limit of Zero Temperatures
ALASKA
Barrow 9
Nome 19
Fairbanks 3
Anchorage 22
Juneau 29
Cold Bay
Kodiak 40
HAWAII
Lihue 71
Honolulu 72
Kahului 71
Hilo 72
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary telegraphic reports


DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)
January 23-29, 1983
Shaded Areas Normal or Above
ALASKA
Barrow +7
Nome +13
Fairbanks +12
Anchorage +9
Juneau +5
Cold Bay +9
Kodiak
HAWAII
Lihue 0
Honolulu 0
Kahului 0
Hilo 0
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary telegraphic reports

Weather Data for the Week Ending Jan. 29, 1983

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMPERATURE °F		PRECIPITATION	
	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 Nov. 28	PCT. NORMAL SINCE Nov. 28	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
	BIRMINGHAM	48	31	55	28	40	-5	.7	- .4	.3	18.5	178	3.2	68	93	60	0	4	3	0
	MOBILE	56	38	68	30	47	-5	.9	- .1	.7	14.8	135	5.8	129	94	58	0	2	2	1
	MONTGOMERY	51	31	63	27	41	-7	1.1	.2	.6	16.5	174	6.2	151	97	64	0	5	3	1
	ANCHORAGE	26	18	32	9	22	9	T	- .2	T	1.1	52	.3	33	81	59	0	7	0	0
	BARROW	-4	-13	1	-22	-9	7	0	- .1	0	.1	20	T	0	80	68	0	7	0	0
	FAIRBANKS	12	-7	21	-18	3	12	.1	0	.1	1.0	77	.3	50	68	45	0	7	1	0
	JUNEAU	35	23	44	10	29	5	T	- .8	T	5.2	60	4.0	108	89	57	0	7	3	0
	KODIAK	42	38	43	35	40	9	3.1	1.9	1.3	21.3	211	8.1	172	93	73	0	0	6	2
	NOME	29	10	34	0	19	13	.2	- .1	.2	2.3	135	.6	67	77	51	0	7	2	0
AZ	PHOENIX	66	46	78	45	56	5	.7	.5	.5	3.1	194	.7	88	81	37	0	0	2	0
	PRESCOTT	51	31	57	28	41	4	.7	.3	.5	3.4	100	.7	47	96	49	0	5	3	0
	TUCSON	65	41	72	37	53	2	.7	.5	.5	3.2	178	.9	113	78	29	0	0	2	1
	YUMA	71	50	75	46	61	5	.5	.5	.4	2.5	357	.5	167	60	30	0	0	2	0
AR	FORT SMITH	44	33	51	25	39	-1	.6	0	.3	7.0	125	.9	41	96	76	0	2	2	0
	LITTLE ROCK	44	32	55	28	38	-4	.6	- .3	.3	10.2	126	1.1	30	93	78	0	4	3	0
CA	BAKERSFIELD	65	47	73	44	56	7	1.0	.8	1.0	3.2	213	1.9	238	98	50	0	0	3	1
	EUREKA	60	49	63	45	54	6	5.9	4.3	2.6	21.5	151	8.4	122	89	65	0	0	7	6
	FRESNO	60	45	66	41	53	6	2.6	2.2	1.5	8.0	222	5.1	319	93	59	0	0	5	2
	LOS ANGELES	62	51	65	47	57	2	4.0	3.4	1.5	7.0	163	5.2	217	86	63	0	0	5	4
	RED BLUFF	56	47	60	44	52	5	5.3	4.3	2.5	13.1	154	7.7	188	95	71	0	0	6	3
	SACRAMENTO	57	46	62	42	52	6	3.7	2.8	1.1	9.5	140	4.9	144	90	63	0	0	6	3
	SAN DIEGO	65	57	67	55	61	5	1.7	1.3	.8	4.4	122	2.1	117	89	61	0	0	5	2
	SAN FRANCISCO	59	48	63	41	53	4	4.2	3.3	1.4	12.6	150	6.8	170	85	61	0	0	6	3
CO	DENVER	45	25	53	19	35	5	T	- .1	T	2.4	240	.1	20	82	39	0	7	1	0
	GRAND JUNCTION	43	30	48	27	36	9	.2	0	.1	.8	73	.5	100	93	63	0	7	3	0
	PUEBLO	48	23	61	13	35	5	T	0	T	.3	50	0	0	98	56	0	7	1	0
CT	BRIDGEPORT	40	30	49	25	35	5	1.0	.4	1.0	5.3	80	2.9	107	80	57	0	5	1	1
	HARTFORD	37	24	45	15	30	5	1.1	.4	1.1	7.6	99	5.3	171	80	49	0	6	1	1
DC	WASHINGTON	47	33	50	26	40	4	.5	- .1	.5	5.3	88	1.8	69	76	48	0	2	1	0
FL	APALACHICOLA	60	41	64	37	50	-4	1.0	.3	.8	10.3	161	4.2	150	89	55	0	0	2	1
	DAYTONA BEACH	63	41	75	37	52	-7	.7	.1	.5	4.5	107	2.6	130	88	59	0	0	2	0
	JACKSONVILLE	58	36	64	32	47	-8	1.6	.9	1.0	9.5	179	7.4	296	97	64	0	1	2	2
	KEY WEST	70	62	76	60	66	-5	4.8	4.3	4.7	18.0	581	17.7	1180	83	63	0	0	3	1
	MIAMI	72	57	82	52	65	-2	1.8	1.3	1.7	6.5	176	5.3	265	92	56	0	0	2	1
	ORLANDO	67	43	78	39	55	-6	.2	- .4	.1	3.1	74	2.1	95	94	46	0	0	2	0
	TALLAHASSEE	62	35	66	30	49	-4	.8	- .1	.7	9.7	117	3.9	108	93	48	0	3	3	1
	TAMPA	67	44	71	41	56	-5	.2	- .3	.2	2.5	56	1.2	57	99	56	0	0	2	0
	WEST PALM BEACH	70	53	81	45	62	-3	1.7	1.1	1.2	12.4	264	10.9	454	89	58	0	0	2	1
GA	ATLANTA	48	34	56	28	41	-2	.3	- .7	.2	10.2	116	3.0	73	92	62	0	3	3	0
	AUGUSTA	55	32	63	26	43	-3	.8	0	.8	9.8	138	4.1	128	91	54	0	4	3	1
	MACON	55	36	63	29	46	-2	.8	- .1	.4	12.1	151	4.6	131	97	62	0	1	3	0
	SAVANNAH	55	37	60	32	46	-4	.9	.3	.8	8.7	143	5.0	185	92	57	0	1	3	1
HI	HILO	81	62	87	58	72	0	.1	- 2.0	.1	8.5	33	.7	8	77	46	0	0	2	0
	HONOLULU	80	63	81	58	72	0	T	- .9	T	2.5	31	.1	3	90	55	0	0	1	0
	KAHULUI	79	63	81	55	71	0	.1	- .7	.1	5.4	82	.2	6	84	54	0	0	2	0
	LIHUE	79	63	82	57	71	0	T	- 1.3	T	5.4	42	.8	14	83	49	0	0	0	0
ID	BOISE	49	34	53	26	41	11	.2	- .2	.1	4.0	133	1.7	121	85	46	0	3	3	0
	LEWISTON	51	38	59	33	44	12	.1	- .2	.1	1.9	70	.9	75	83	55	0	0	1	0
	POCATELLO	41	29	47	24	35	11	.4	.2	.2	2.8	133	.5	50	89	56	0	5	6	0
IL	CHICAGO	32	23	41	13	27	4	.2	- .2	.1	8.7	256	.6	35	83	62	0	7	3	0
	MOLINE	32	22	37	4	27	5	.2	- .2	.1	5.9	174	.5	31	87	70	0	6	2	0
	PEORIA	32	24	35	10	28	4	.2	- .3	.1	6.7	181	.5	28	87	74	0	7	3	0
	QUINCY	32	25	35	16	28	5	.1	- .3	.1	9.1	253	.3	19	93	80	0	7	2	0
	ROCKFORD	31	21	37	4	26	6	.2	- .2	.2	4.8	130	.5	28	90	70	0	7	1	0
	SPRINGFIELD	33	26	35	16	29	2	.1	- .3	.1	9.8	258	.5	29	90	68	0	7	2	0
IN	EVANSVILLE	41	33	50	31	37	4	.4	- .4	.3	10.6	154	1.8	56	82	63	0	1	2	0
	FORT WAYNE	34	27	43	21	30	5	.2	- .4	.1	5.9	120	.9	38	94	78	0	6	3	0
	INDIANAPOLIS	35	27	42	19	31	3	.2	- .4	.2	7.6	133	1.0	37	91	75	0	6	2	0
	SOUTH BEND	35	27	44	21	31	7	.2	- .3	.1	4.5	92	.7	30	90	69	0	6	2	0
IA	DES MOINES	32	20	41	0	26	7	.8	.6	.4	5.3	221	1.3	118	90	75	0	7	4	0
	SIOUX CITY	28	15	36	-1	21	3	.1	0	.1	2.7	180	.2	50	94	78	0	7	2	0
	WATERLOO	30	15	39	-2	22	6	.4	.2	.4	4.6	209	.8	89	84	71	0	7	3	0
KS	CONCORDIA	33	21	38	6	27	0	.8	.7	.5	2.8	200	1.1	275	94	77	0	7	3	1
	DODGE CITY	42	27	50	19	35	3	.1	- .1	.1	1.2	133	.2	40	95	71	0	6	1	0
	GOODLAND	41	28	47	23	35	6	T	- .1	T	1.9	271	.1	33	90	65	0	6	0	0
	TOPEKA	39	26	45	4	32	4	.3	.1	.2	4.3	159	.5	50	84	64	0	5	3	0
	WICHITA	36	23	44	11	29	-2	.6	.4	.3	2.6	124	1.0	125	97	81	0	6	4	0
KY	BOWLING GREEN	41	32	52	27	36	-2	.2	- 1.0	.1	8.7	87	1.9	38	93	67	0	3	2	0
	LEXINGTON	39	32	53	28	35	2	.2	- .7	.1	6.2	82	1.2	32	91	72	0	4	2	0
	LOUISVILLE	40	32	52	29	36	2	.3	- .6	.2	7.2	104	1.6	48	88	67	0	5	2	0
LA	ALEXANDRIA	60	39	75	32	50	-3	.9	- .1	.6	20.4	213	3.6	88	76	48	0	2	2	1
	BATON ROUGE	60	38	72	29	49	-2	.4	- .6	.4	19.3	199	4.4	105	94	56	0	1	3	0
	LAKE CHARLES	59	40	75	32	49	-3	.2	- .7	.2	15.7	157	3.9	103	98	63	0	1	2	0
	NEW ORLEANS	61	42	72	30	51	-2	.3	- .8	.2	14.0	143	3.2	76	95	55	0	1	2	0

BASED ON PRELIMINARY REPORTS AND 1941-70 NORMALS

+100 = NORMAL & ACTUAL NEAR THE SAME

Weather Data for the Week Ending Jan. 29, 1983

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMPERATURE °F		PRECIPITATION	
	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 Nov. 28	PCT. NORMAL SINCE Nov. 28	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	55	37	71	27	46	-2	.2	- .7	.1	14.5	175	.8	22	95	62	0	2	3	0
ME CARIBOU	25	9	36	-7	17	6	1.1	.6	.8	5.6	117	2.8	140	90	66	0	7	3	1
PORTLAND	37	20	45	12	29	8	1.2	.5	1.1	5.5	73	4.0	133	85	50	0	6	2	1
MD BALTIMORE	43	30	46	21	37	3	.9	.3	.9	5.9	91	2.1	75	84	55	0	5	1	1
SALISBURY	46	31	57	25	39	1	.5	- .3	.5	6.8	97	2.0	59	95	61	0	5	2	1
MA BOSTON	40	28	46	23	34	5	.8	- .1	.8	6.0	73	4.1	117	76	48	0	6	1	1
CHATHAM	41	30	52	26	36	--	1.1	--	1.0	6.8	--	2.4	--	89	68	0	5	3	1
MI ALPENA	30	16	36	7	23	6	.4	0	.3	4.6	124	1.5	88	95	73	0	6	2	0
DETROIT	34	24	37	18	29	5	T	- .4	T	4.5	105	.6	33	85	63	0	6	1	0
FLINT	34	22	40	8	28	6	.2	- .2	.2	4.0	118	.8	47	89	60	0	5	2	0
GRAND RAPIDS	34	21	42	5	28	5	.3	- .2	.1	8.2	186	1.3	62	83	62	0	5	2	0
HOUGHTON LAKE	30	15	38	-7	23	6	.3	0	.3	4.3	119	1.1	73	87	69	0	7	3	0
LANSING	33	20	41	5	27	5	.2	- .3	.1	5.0	122	.9	47	93	72	0	5	2	0
MARQUETTE	26	10	35	-11	18	6	.3	- .1	.2	5.5	128	2.6	153	97	69	0	7	4	0
MUSKEGON	33	21	42	7	27	4	.1	- .4	.1	6.7	140	1.0	48	89	72	0	7	3	0
SAULT STE. MARIE	27	14	34	-2	21	7	.7	.2	.3	6.9	150	2.1	105	99	83	0	7	7	0
MN ALEXANDRIA	22	3	33	-13	12	5	.1	0	.1	1.6	123	1.0	200	88	53	0	7	2	0
DULUTH	20	2	33	-16	11	3	.2	0	.2	2.5	93	1.3	118	85	61	0	7	2	0
INT'L FALLS	18	-4	30	-24	7	5	T	- .1	T	.7	35	.3	43	87	60	0	7	0	0
MINNEAPOLIS	26	11	37	-7	18	6	.2	.1	.2	4.6	307	.7	140	93	72	0	7	2	0
ROCHESTER	25	10	34	-14	18	5	.5	.4	.5	4.0	267	.8	133	90	72	0	7	2	1
MS GREENWOOD	50	36	65	29	43	-2	.3	- .8	.2	21.5	207	4.1	93	86	62	0	1	2	0
JACKSON	53	34	65	23	44	-4	1.3	.2	.8	24.7	255	6.7	156	99	64	0	2	3	1
MERIDIAN	51	31	63	23	41	-6	1.0	0	.4	16.5	163	4.6	110	97	68	0	3	3	0
MO CAPE GIRARDEAU	39	32	46	30	36	0	.2	- .6	.2	12.1	168	.8	23	98	77	0	3	1	0
COLUMBIA	35	28	40	24	32	2	.2	- .2	.1	7.4	218	.3	21	100	84	0	7	2	0
KANSAS CITY	36	25	43	17	30	3	.4	.1	.2	4.6	164	.6	46	95	74	0	6	4	0
SAINT LOUIS	37	30	42	23	33	2	.1	- .3	.1	8.6	221	.6	35	96	78	0	5	2	0
SPRINGFIELD	40	30	46	21	35	2	.3	- .1	.1	9.5	238	.6	40	86	71	0	4	2	0
MT BILLINGS	39	24	49	14	32	9	T	- .1	T	1.2	80	.1	17	79	52	0	5	0	0
GLASGOW	20	7	32	-1	14	4	.1	- .1	T	1.3	130	.2	40	84	63	0	7	3	0
GREAT FALLS	38	13	57	-2	26	4	.1	- .1	.1	1.0	63	.1	13	86	52	0	6	2	0
HAVRE	23	7	43	-5	15	3	.1	- .1	T	.4	44	.1	20	96	76	0	7	2	0
HELENA	41	20	56	13	31	12	T	- .1	T	1.4	127	.2	50	86	49	0	6	1	0
KALISPELL	38	26	43	22	32	12	.2	- .1	.1	2.9	104	1.0	71	98	73	0	7	4	0
MILES CITY	32	17	44	5	25	9	T	- .1	T	1.1	138	.2	67	89	70	0	7	2	0
MISSOULA	42	29	45	21	35	14	.1	- .2	T	1.8	75	.7	64	92	60	0	7	2	0
NE GRAND ISLAND	29	19	35	12	24	2	.1	0	.1	2.3	288	.5	125	89	77	0	7	2	0
LINCOLN	32	21	38	12	27	4	.5	.4	.2	2.7	245	.7	175	94	76	0	7	3	0
NORFOLK	30	17	37	9	24	4	.1	- .1	.1	3.3	275	.8	133	89	76	0	7	2	0
NORTH PLATTE	37	21	43	11	29	5	.2	0	.1	1.4	140	.3	60	94	69	0	7	4	0
OMAHA	31	19	38	4	25	5	.7	.5	.3	3.3	206	1.2	200	92	77	0	7	4	0
SCOTTSBLUFF	46	22	56	18	34	8	.1	.1	.1	.8	114	.2	100	96	49	0	7	2	0
VALENTINE	41	20	57	12	30	10	T	- .1	T	.3	43	.1	25	79	53	0	7	1	0
NV ELY	39	18	44	8	29	4	.7	.5	.3	2.5	192	1.4	280	93	59	0	7	5	0
LAS VEGAS	53	39	56	34	46	1	.3	.2	.1	1.8	180	.4	100	89	53	0	0	4	0
RENO	45	26	60	21	35	2	1.3	1.0	.9	3.5	146	1.7	155	97	51	0	7	4	1
WINNEMUCCA	42	28	47	19	35	5	.5	.3	.3	3.0	143	1.3	144	86	55	0	5	3	0
NH CONCORD	36	16	43	4	26	6	1.0	.5	1.0	4.9	82	3.6	150	91	53	0	7	2	1
NJ ATLANTIC CITY	44	28	54	19	36	4	.5	- .3	.5	7.4	91	2.5	71	97	58	0	6	1	0
NM ALBUQUERQUE	48	24	53	19	36	0	T	- .1	T	1.3	144	.5	167	94	42	0	7	1	0
CLOVIS	47	26	55	19	37	-1	0	- .1	0	1.4	140	.8	200	87	56	0	6	0	0
ROSWELL	58	30	61	24	44	4	0	- .1	0	1.9	238	.4	133	68	33	0	5	0	0
NY ALBANY	35	18	42	6	26	5	1.3	.8	1.3	5.2	96	3.5	167	85	55	0	6	1	1
BINGHAMTON	33	22	40	15	27	5	.9	.4	.8	4.8	92	2.4	109	90	60	0	6	3	1
BUFFALO	34	22	46	12	28	5	.1	- .6	.1	5.1	81	1.2	43	86	61	0	6	4	0
NEW YORK	41	32	50	28	37	5	1.7	1.1	1.7	5.9	89	3.6	138	76	51	0	4	1	1
ROCHESTER	35	24	46	17	29	6	.4	- .1	.4	4.0	83	1.3	62	86	56	0	5	3	0
SYRACUSE	33	19	39	8	26	3	.7	.1	.5	4.9	83	1.7	71	96	63	0	7	4	1
NC ASHEVILLE	47	29	57	25	38	0	T	- .7	T	8.8	126	3.4	106	92	56	0	6	2	0
CHARLOTTE	49	30	55	27	39	-4	.5	- .3	.4	7.0	97	2.5	76	90	53	0	5	2	0
GREENSBORO	47	27	53	22	37	-2	.2	- .6	.1	5.9	91	1.4	45	93	57	0	7	2	0
HATTERAS	51	37	64	29	44	-1	1.3	.3	.8	15.1	168	9.1	233	97	72	0	3	3	1
NEW BERN	52	35	58	29	44	-2	1.3	.4	1.0	9.4	121	3.7	106	93	59	0	3	3	1
RALEIGH	48	28	55	23	38	-3	.1	- .7	.1	6.6	100	1.9	59	94	53	0	5	1	0
WILMINGTON	53	35	56	29	44	-3	1.3	.5	.7	10.8	157	4.5	145	87	54	0	2	3	2
ND BISMARCK	25	8	43	-15	16	8	.1	- .1	.1	.7	70	.2	40	85	66	0	7	2	0
FARGO	20	3	34	-14	11	5	.1	0	.1	.6	60	.5	100	86	65	0	7	3	0
GRAND FORKS	20	2	35	-16	11	7	T	- .1	T	.7	58	.3	50	76	57	0	7	1	0
WILLISTON	25	4	41	-29	15	6	.1	- .1	T	1.9	173	.4	80	86	68	0	7	2	0
OH AKRON-CANTON	36	25	42	14	30	4	.1	- .5	.1	5.6	108	1.2	44	91	69	0	6	3	0
CINCINNATI	38	28	50	22	33	2	.1	- .6	.1	6.7	106	1.5	48	88	70	0	5	2	0
CLEVELAND	36	26	45	17	31	4	T	- .5	T	4.8	98	.5	21	82	64	0	5	1	0
COLUMBUS	37	28	47	21	33	4	.1	- .5	.1	5.8	109	.9	35	93	71	0	5	2	0

BASED ON PRELIMINARY REPORTS AND 1941-70 NORMALS

Weather Data for the Week Ending Jan. 29, 1983

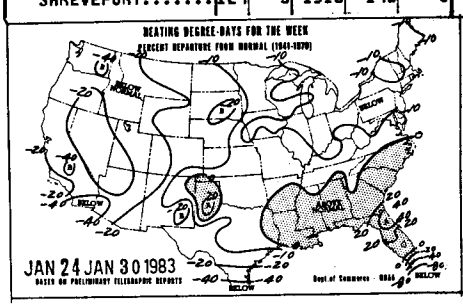
STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMPERATURE °F		PRECIPITATION	
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Nov. 28	PCT. NORMAL SINCE Nov. 28	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
DAYTON	36	26	46	19	31	3	.1	- .5	.1	5.7	108	1.3	50	89	69	0	7	3	0
TOLEDO	33	23	40	15	28	3	T	- .4	T	4.8	107	.6	30	91	70	0	7	1	0
YOUNGSTOWN	36	27	43	17	32	7	.1	- .5	.1	4.4	79	.7	26	81	66	0	5	1	0
OK OKLAHOMA CITY	47	29	54	17	38	0	.7	.4	.5	3.1	124	1.2	109	93	69	0	5	3	0
TULSA	44	32	47	27	38	1	.4	.1	.4	4.2	131	.8	62	85	63	0	4	3	0
OR ASTORIA	56	44	63	38	50	9	2.8	.6	1.1	28.5	138	13.3	146	91	61	0	0	6	3
BURNS	29	27	43	17	28	1	.1	- .3	T	3.4	94	.9	53	--	--	0	4	3	0
MEDFORD	55	36	57	32	46	8	.6	- .2	.2	7.1	95	1.0	29	97	52	0	1	5	0
PENDLETON	52	37	56	32	45	11	.2	- .1	.1	3.0	100	.8	53	83	45	0	2	4	0
PORTLAND	54	43	58	36	49	10	1.6	.4	.7	15.3	125	6.1	111	91	57	0	0	6	1
SALEM	54	40	58	30	47	8	1.3	- .2	.7	16.5	118	5.8	89	91	64	0	1	6	1
PA ALLENTOWN	39	29	44	20	34	6	1.4	.8	1.4	4.9	74	2.7	96	88	58	0	6	1	1
ERIE	37	25	46	16	31	7	.1	- .5	T	4.9	88	1.2	48	83	59	0	5	3	0
HARRISBURG	41	30	45	23	36	6	.7	.1	.7	3.7	63	1.9	76	88	61	0	5	1	1
PHILADELPHIA	42	29	47	22	36	4	.8	.1	.8	5.8	92	2.7	100	86	54	0	5	1	1
PITTSBURGH	37	29	46	25	33	5	.1	- .5	.1	4.4	83	.9	33	92	66	0	6	3	0
SCRANTON	36	26	41	16	31	5	.5	0	.4	2.9	62	1.1	55	84	62	0	6	3	0
RI PROVIDENCE	39	29	46	25	34	6	1.6	.8	1.6	5.7	73	3.0	94	84	50	0	6	2	1
SC CHARLESTON	55	38	59	32	47	-2	1.2	.5	.9	9.4	152	5.0	179	92	57	0	1	3	1
COLUMBIA	54	31	60	26	43	-4	.5	- .3	.5	8.2	124	3.6	116	91	50	0	5	3	0
FLORENCE	54	33	58	28	44	-2	1.2	.5	.6	8.6	146	3.4	131	96	53	0	3	3	2
GREENVILLE	49	31	55	26	40	-3	.1	- .9	T	9.9	116	2.6	68	94	58	0	4	2	0
SD ABERDEEN	27	10	37	-8	18	9	.2	0	.1	.3	27	.2	40	91	70	0	7	2	0
HURON	31	16	40	3	24	11	T	- .1	T	.7	88	0	0	94	71	0	7	3	0
RAPID CITY	41	23	58	14	32	9	.1	- .1	.1	.5	63	.2	50	86	59	0	6	3	0
SIOUX FALLS	27	11	35	-6	19	5	.1	- .1	T	2.6	186	.6	100	96	80	0	7	4	0
TN CHATTANOOGA	47	31	56	26	39	-2	.3	- .9	.2	13.6	127	2.6	52	88	59	0	4	3	0
KNOXVILLE	48	32	60	24	40	-1	.1	- 1.0	.1	7.1	75	1.6	36	91	59	0	3	1	0
MEMPHIS	46	35	57	33	41	-1	.5	- .6	.3	16.2	165	2.3	50	90	69	0	0	2	0
NASHVILLE	44	35	56	33	40	1	.2	- .9	.2	9.8	105	2.6	59	87	65	0	0	2	0
TX ABILENE	57	31	69	21	44	0	T	- .3	T	2.8	140	1.1	122	85	41	0	5	0	0
AMARILLO	41	22	56	11	32	-5	T	- .1	T	2.0	167	1.3	325	99	67	0	6	0	0
AUSTIN	60	36	73	30	48	-2	0	- .5	0	4.0	95	1.8	100	93	45	0	3	0	0
BEAUMONT	60	41	74	32	50	-2	T	- .9	T	20.8	229	3.3	89	100	64	0	1	0	0
BROWNSVILLE	74	47	81	39	61	0	0	- .4	0	3.8	136	1.1	85	99	44	0	0	0	0
CORPUS CHRISTI	70	42	81	34	56	-1	0	- .4	0	1.5	47	.8	53	95	38	0	0	0	0
DEL RIO	67	37	78	33	52	0	0	- .2	0	1.5	150	.6	120	88	30	0	0	0	0
EL PASO	60	31	65	26	45	1	T	- .1	T	2.9	290	.2	50	80	29	0	6	1	0
FORT WORTH	54	33	64	24	44	-1	T	- .5	T	3.2	86	.4	25	89	52	0	3	0	0
GALVESTON	60	47	75	38	53	-1	.1	- .6	.1	9.2	133	3.2	114	92	64	0	0	1	0
HOUSTON	63	39	74	30	51	-1	T	- .8	T	7.3	95	1.5	45	91	49	0	1	1	0
LUBBOCK	41	18	53	3	29	-10	0	- .1	0	4.4	400	2.3	460	97	72	0	6	0	0
MIDLAND	59	30	65	23	45	0	T	- .1	T	2.3	256	1.1	275	83	34	0	5	0	0
SAN ANGELO	62	31	69	22	47	0	0	- .2	0	2.9	193	2.0	286	84	32	0	4	0	0
SAN ANTONIO	65	35	76	30	50	-1	0	- .4	0	3.8	123	1.5	100	83	35	0	2	0	0
VICTORIA	66	40	78	35	53	-1	T	- .4	T	2.4	63	1.7	106	96	47	0	0	0	0
WACO	57	34	70	25	45	-2	0	- .5	0	2.9	73	.8	42	95	55	0	4	0	0
WICHITA FALLS	51	29	61	22	40	-2	T	- .3	T	3.0	120	1.1	110	97	59	0	5	0	0
UT BLANDING	40	23	46	16	31	3	.9	.7	.5	3.3	143	1.6	160	96	69	0	7	4	0
CEDAR CITY	47	30	54	25	39	9	.8	.6	.5	2.0	143	.8	160	84	49	0	5	4	0
SALT LAKE CITY	47	33	52	30	40	11	.8	.5	.3	3.6	129	1.1	100	91	53	0	3	6	0
VT BURLINGTON	32	16	39	3	24	8	.9	.5	.8	5.2	127	2.9	181	89	53	0	6	3	1
VA NORFOLK	47	36	58	29	41	1	1.0	.2	.5	7.1	104	2.3	70	86	54	0	3	3	1
RICHMOND	47	31	51	26	39	1	.2	- .5	.2	5.5	89	1.6	59	94	62	0	4	1	0
ROANOKE	45	29	54	23	37	0	.1	- .6	.1	5.1	85	1.3	50	83	54	0	5	1	0
WA COLVILLE	40	33	45	27	37	12	1.4	1.0	.8	6.7	156	2.9	145	95	85	0	1	5	1
QUILLAYUTE	51	39	55	34	45	6	2.1	- 1.1	.7	28.1	91	13.5	99	98	71	0	0	6	2
SEATTLE-TACOMA	54	44	56	38	49	10	1.4	.2	.6	14.8	124	6.9	130	91	51	0	0	5	1
SPOKANE	45	34	50	29	40	13	.9	.4	.4	5.4	108	1.8	75	94	66	0	2	5	0
YAKIMA	48	33	53	25	40	12	.7	.4	.4	4.2	156	2.0	154	90	61	0	2	4	0
WV BECKLEY	40	29	53	27	34	2	.1	- .7	.1	3.2	45	.5	15	99	72	0	7	1	0
CHARLESTON	41	30	56	22	36	1	.1	- .7	.1	4.6	68	1.1	33	89	65	0	4	2	0
HUNTINGTON	41	31	55	23	36	1	.2	- .5	.1	5.4	87	1.4	47	87	64	0	4	2	0
PARKERSBURG	38	32	50	30	35	5	.1	- .7	.1	5.5	87	1.2	36	94	71	0	5	3	0
WI GREEN BAY	28	15	34	-6	21	6	.1	- .2	.1	3.7	137	.8	67	88	65	0	7	1	0
LA CROSSE	27	13	35	-7	20	4	.4	.2	.4	3.0	158	.7	88	95	72	0	7	1	0
MADISON	28	16	34	-6	22	5	.1	- .2	.1	4.5	155	.5	42	94	70	0	7	2	0
MILWAUKEE	31	22	40	7	26	7	.2	- .2	.1	5.2	149	.8	47	89	65	0	6	3	0
WAUSAU	26	9	34	-15	18	5	.2	- .1	.2	3.9	170	.9	82	87	60	0	7	1	0
WY CASPER	42	22	52	15	32	8	.4	.3	.4	4.2	467	.5	125	91	50	0	6	4	0
CHEYENNE	43	22	57	15	33	6	T	- .1	T	.9	100	0	0	82	40	0	7	1	0
LANDER	38	19	53	15	29	8	.1	- .1	.1	1.7	170	.1	20	82	48	0	7	1	0
SHERIDAN	44	25	48	17	34	13	T	- .2	T	.8	62	0	0	82	49	0	6	2	0
PR SAN JUAN	87	72	91	70	79	4	T	- .8	T	7.5	86	.7	20	84	55	1	0	0	0

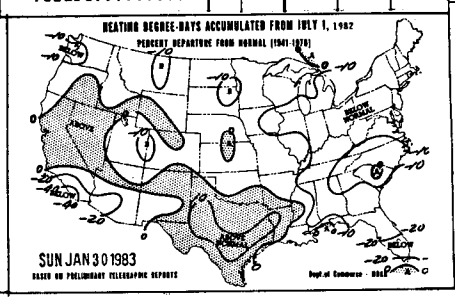
BASED ON PRELIMINARY REPORTS AND 1941-70 NORMALS

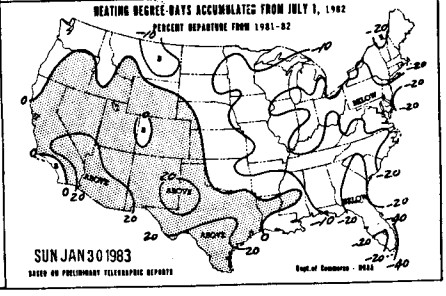
HEATING DEGREE DAYS (BASE 65°) FOR WEEK ENDING JAN. 30, 1983.

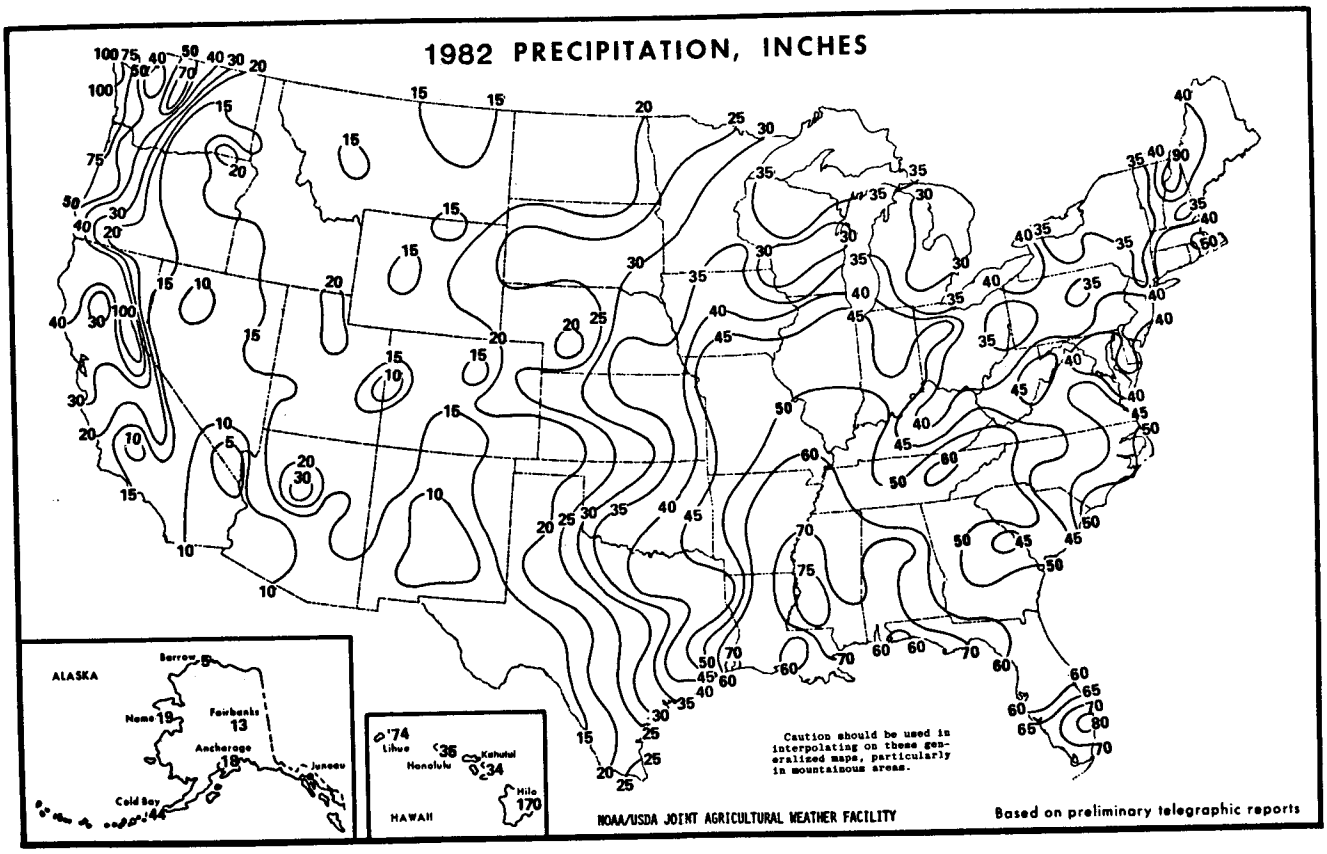
BASED ON 1941-70 NORMALS. +ACCUMULATION FROM JULY 1, 1982

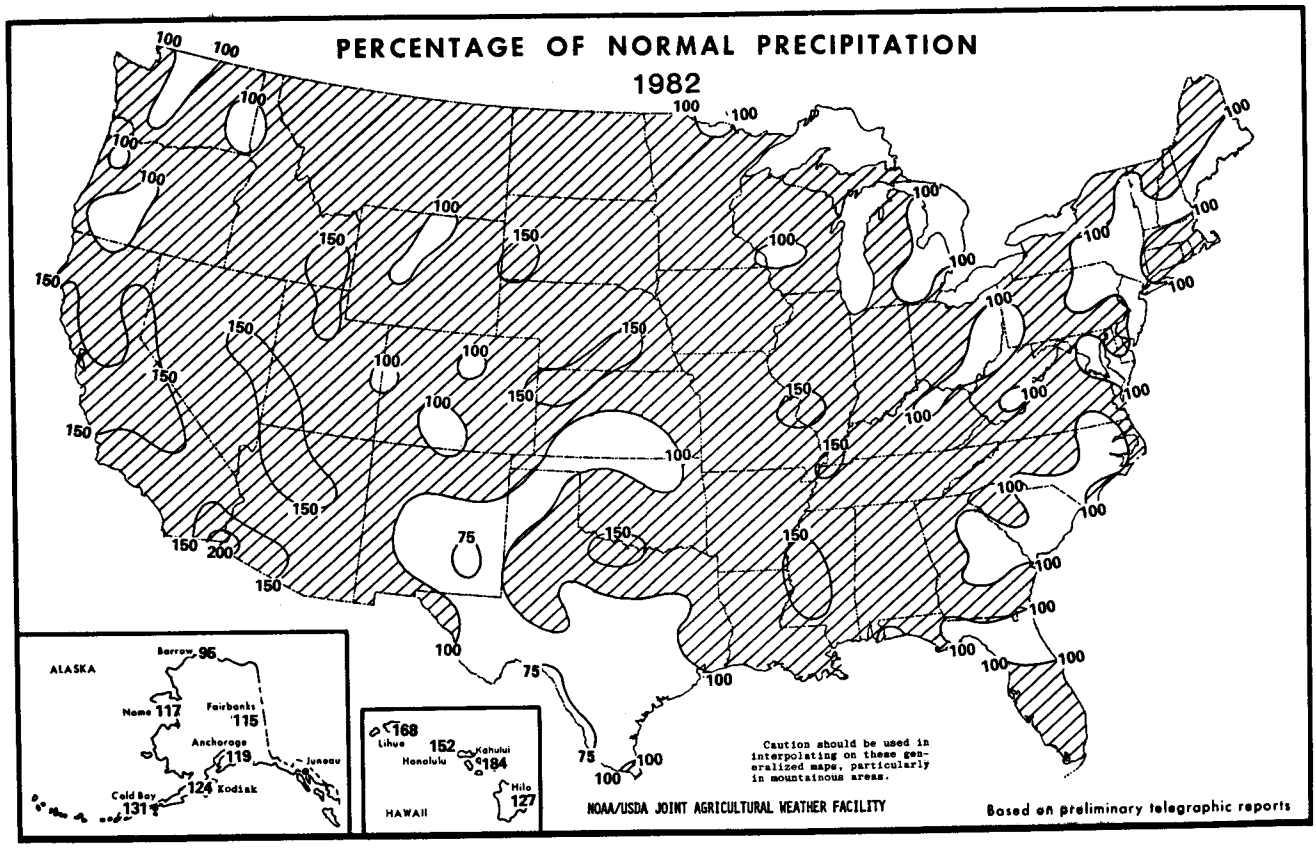
STATES AND STATIONS	WEEKLY TOTAL	WEEKLY DEPARTURE*	SEASONAL ACCUMULATION + TOTAL	SEASONAL ACCUMULATION + DEPARTURE*	SEASONAL ACCUMULATION + DEPARTURE FROM 1981-82
ALA. BIRMINGHAM	162	16	1613	169	240
MOBILE	111	13	1077	5	19
MONTGOMERY	154	29	1185	265	261
ARIZ. FLAGSTAFF	232	25	4033	36	614
PHOENIX	60	33	687	315	126
TUCSON	83	15	1056	26	207
WINSLOW	165	49	2858	88	310
YUMA	30	35	535	148	126
ARK. FORT SMITH	171	6	2091	7	234
LITTLE ROCK	177	3	1894	187	126
CALIF. BAKERSFIELD	68	45	1584	195	386
EUREKA	83	36	2020	518	330
FRESNO	89	40	1658	35	51
LOS ANGELES	62	11	569	321	42
RED BLUFF	91	38	1596	2	96
SAN DIEGO	30	40	428	338	33
SAN FRANCISCO	82	30	1682	35	11
STOCKTON	85	50	1814	149	272
COLO. DENVER	211	32	3562	208	668
GRAND JUNCTION	193	67	3058	337	287
PUEBLO	207	31	3122	35	337
CONN. BRIDGEPORT	214	31	2762	122	623
HARTFORD	245	35	3163	397	519
DEL. WILMINGTON	188	43	2382	412	815
D.C. WASHINGTON	171	32	2032	420	542
FLA. APALACHICOLA	86	5	709	146	170
DAYTONA BEACH	81	25	477	65	208
FORT MYERS	32	1	206	73	2
JACKSONVILLE	110	33	851	17	65
KEY WEST	0	7	35	3	14
LAKELAND	57	14	333	76	163
MIAMI	11	3	78	40	29
ORLANDO	58	8	362	79	125
TALLAHASSEE	99	8	864	142	313
TAMPA	57	8	347	89	171
WEST PALM BEACH	24	3	132	48	108
GA. ATLANTA	153	1	1722	177	393
AUGUSTA	141	8	1474	133	614
MACON	124	5	1232	198	357
SAVANNAH	124	19	1061	178	251
IDAHO. BOISE	167	75	3376	28	21
LEWISTON	150	76	2957	281	132
POCATELLO	217	67	4059	15	125
ILL. CAIRO	186	10	2127	207	564
CHICAGO	258	36	3279	412	901
MOLINE	272	29	3267	437	874
PEORIA	258	28	3065	477	600
ROCKFORD	273	40	3425	504	934
SPRINGFIELD	251	15	2981	270	604
IND. EVANSVILLE	194	30	2277	489	603
FORT WAYNE	239	38	2988	541	959
INDIANAPOLIS	231	28	2868	371	717
SOUTH BEND	238	49	3039	592	899
IOWA. BURLINGTON	263	29	3136	441	883
DES MOINES	276	41	3380	503	634
DUBUQUE	302	26	3718	471	933
SIOUX CITY	299	26	3889	172	533
KANS. CONCORDIA	259	5	3306	14	99
DODGE CITY	210	23	2798	164	87
GOODLAND	214	42	3336	159	93
TOPEKA	228	24	2934	184	292
WICHITA	234	3	2810	2	215
KY. LEXINGTON	201	23	2446	330	585
LOUISVILLE	196	21	2340	399	568
LA. BATON ROUGE	92	6	970	110	51
LAKE CHARLES	96	5	967	14	20
NEW ORLEANS	83	8	873	63	41
SHREVEPORT	124	3	1516	143	0
MAINE. CARIBOU	343	40	5042	301	268
PORTLAND	256	52	3739	351	460
MD. BALTIMORE	199	19	2452	261	655
MASS. BOSTON	220	32	2745	300	650
MICH. ALPENA	275	61	3973	634	842
DETROIT	246	37	3221	370	777
FLINT	254	47	3295	401	1019
GRAND RAPIDS	261	33	3270	497	721
HOUGHTON LAKE	289	47	4043	557	693
LANSING	259	42	3376	461	881
MARQUETTE	333	38	4948	330	523
MUSKEGON	265	28	3434	311	666
S. STE. MARIE	308	54	4965	12	536
MINN. DULUTH	384	12	5322	140	421
INTERNATL FALLS	413	27	5535	516	435
MINNEAPOLIS	333	38	4192	486	712
ROCHESTER	345	19	4255	436	867
ST. CLOUD	366	26	4777	303	520
MISS. JACKSON	133	7	1480	33	11
MERIDIAN	146	20	1237	292	172
MO. COLUMBIA	232	13	2777	216	494
KANSAS CITY	241	20	3025	149	404
ST. LOUIS	222	10	2574	239	564
SPRINGFIELD	194	26	2482	237	401
MONT. BILLINGS	237	58	3596	495	525
GLASGOW	358	30	4832	294	357
GREAT FALLS	271	34	4113	175	453
HAVRE	354	17	4510	496	664
HELENA	241	78	4396	342	9
KALISPELL	239	75	4696	248	214
MILES CITY	277	67	4290	261	473
MISSOULA	211	90	4404	213	174
NEBR. GRAND ISLAND	277	17	3724	11	320
LINCOLN	259	35	3412	235	550
NORFOLK	282	37	3782	259	469
NORTH PLATTE	249	36	3870	23	99
OMAHA	272	20	3476	22	718
VALENTINE	245	63	3890	263	451
NEV. ELY	259	25	4299	16	462
LAS VEGAS	130	7	1683	12	343
RENO	206	15	3596	171	382
WINNEMUCCA	212	36	3806	30	455
N.H. CONCORD	270	43	3777	341	748
N.J. ATLANTIC CITY	213	18	2583	179	522
TRENTON	202	29	2515	257	656
N. MEX. ALBUQUERQUE	188	12	2825	196	402
ROSWELL	140	40	2307	54	420
N.Y. ALBANY	279	29	3552	321	848
BINGHAMTON	262	39	3539	472	784
BUFFALO	256	38	3244	499	725
NEW YORK	198	33	2427	256	579
ROCHESTER	246	44	3188	474	889
SYRACUSE	268	26	3527	115	531
N.C. ASHEVILLE	178	11	2368	140	413
CHARLOTTE	168	13	1917	51	416
GREENSBORO	185	3	2258	52	432
HATTERAS	151	11	1200	280	641
RALEIGH	172	4	1959	163	432
WILMINGTON	138	7	1387	92	482
N. DAK. BISMARCK	351	45	4771	417	449
FARGO	300	23	4947	369	700
WILLISTON	352	43	5046	231	236
OHIO. AKRON-CANTON	238	35	2952	534	692
CINCINNATI	219	17	2502	437	917
CLEVELAND	229	39	2801	600	911
COLUMBUS	224	28	2848	439	829
DAYTON	233	24	2925	313	650
TOLEDO	256	24	3275	336	831
YOUNGSTOWN	230	50	2966	611	952
OKLA. OKLAHOMA CITY	176	16	2118	138	225
TULSA	178	15	2010	245	361
OREG. ASTORIA	107	59	2418	451	134
BURNS	226	44	4565	469	112
MEDFORD	143	48	2661	165	5
PENDLETON	144	78	2985	124	19
PORTLAND	123	59	2353	370	31
SALEM	130	47	2569	142	152
PA. ALLENTOWN	219	45	2898	396	733
ERIE	231	53	2806	873	922
HARRISBURG	199	44	2529	503	903
PHILADELPHIA	202	29	2486	270	669
PITTSBURGH	221	36	2923	465	895
SCRANTON	242	31	3224	323	605
R.I. PROVIDENCE	224	35	2835	406	804
S.C. CHARLESTON	119	5	1132	205	447
COLUMBIA	149	16	1660	29	246
GREENVILLE	163	9	1863	78	491
S. DAK. ABERDEEN	333	54	4346	627	656
HURON	294	72	4044	604	588
RAPID CITY	242	56	3851	220	345
SIOUX FALLS	319	34	4317	218	333
TENN. CHATTANOOGA	172	2	1967	190	396
KNOXVILLE	167	1	2078	42	367
MEMPHIS	165	3	1739	261	351
NASHVILLE	169	13	1961	292	466
TEXAS. ABILENE	129	15	1686	44	224
AMARILLO	215	16	2679	199	320
AUSTIN	103	2	1225	114	325
BEAUMONT	79	12	920	48	15
BROWNSVILLE	24	25	414	9	90
CORPUS CHRISTI	52	15	698	96	139
DEL RIO	76	16	1055	7	185
EL PASO	126	16	1789	13	221
FORT WORTH	136	1	1555	71	43
GALVESTON	68	15	703	30	33
HOUSTON	88	3	1006	90	137
LUBBOCK	221	41	2463	294	510
MIDLAND	129	15	1864	192	357
SAN ANGELO	116	9	1629	180	144
SAN ANTONIO	93	5	1179	157	208
VICTORIA	72	12	835	52	64
WACO	127	4	1378	74	44
WICHITA FALLS	154	4	1818	5	55
UTAH. SALT LAKE CITY	174	76	3401	76	384
VT. BURLINGTON	287	56	3656	705	932
VA. LYNCHBURG	184	12	2187	315	789
NORFOLK	168	7	1762	229	494
RICHMOND	173	16	2043	293	576
ROANOKE	180	16	2434	97	664
WASH. QUILLAYUTE	135	45	3132	119	76
SEATTLE-TACOMA	112	70	2610	297	73
SPOKANE	181	87	3847	142	25
WALLA WALLA	123	91	2696	221	42
YAKIMA	167	85	3503	135	159
W. VA. BECKLEY	209	22	2921	314	669
CHARLESTON	199	11	2399	311	611
HUNTINGTON	199	11	2376	341	654
PARKERSBURG	202	22	2265	539	986
WIS. GREEN BAY	308	42	4203	336	594
LACROSSE	314	29	3952	314	755
MADISON	307	29	4096	295	589
MILWAUKEE	273	45	3520	600	1054
WYO. CASPER	235	54	4105	81	41
CHEYENNE	228	38	3974	15	249
LANDER	256	54	4614	131	565
SHERIDAN	217	86	3985	347	112

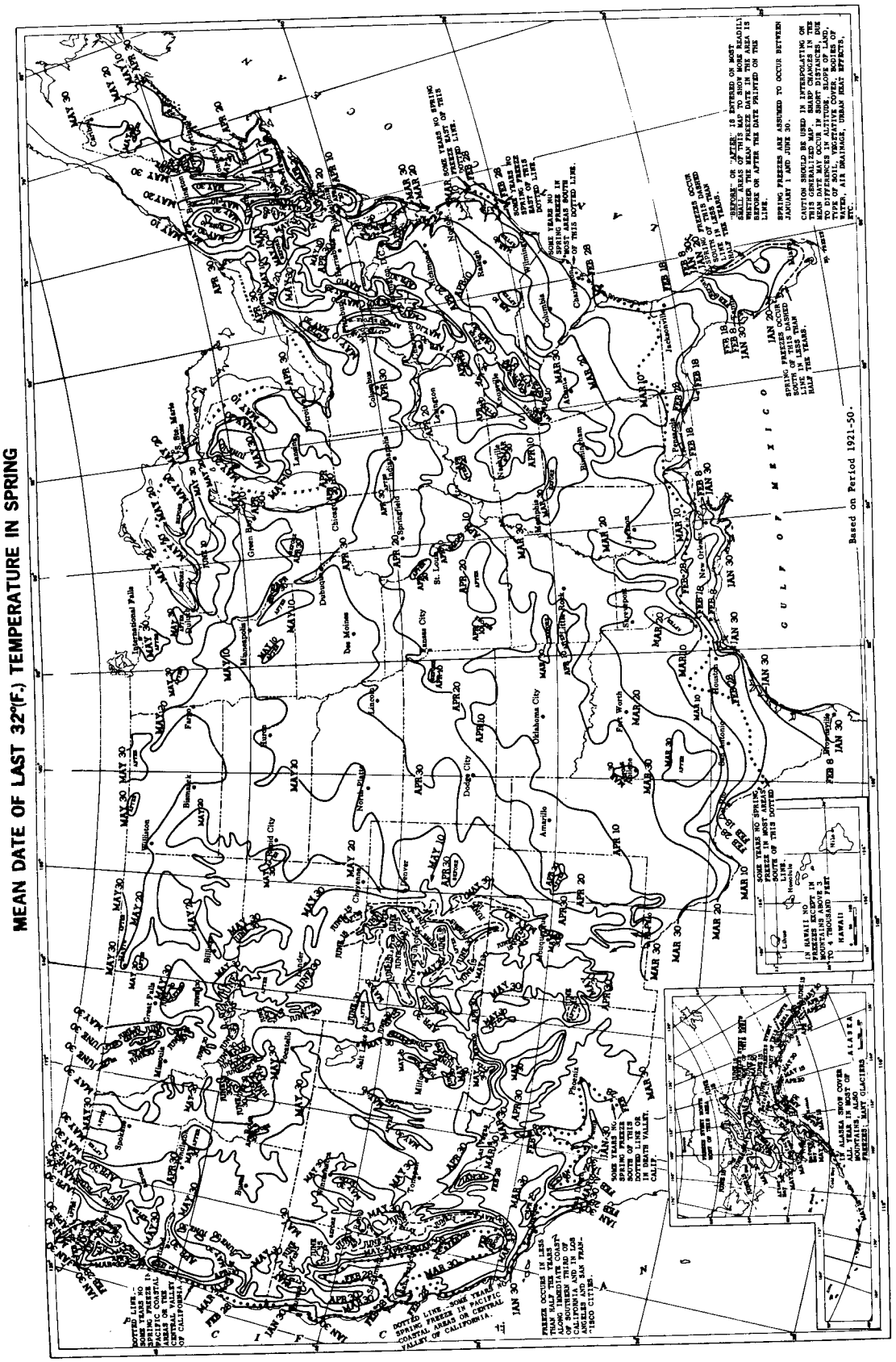







1982 PRECIPITATION, INCHES
ALASKA
Barrow 5
Nome 19
Fairbanks 13
Anchorage 18
Juneau
Cold Bay 44
HAWAII
Lihue 74
Honolulu 36
Kahului 34
Hilo 170
Caution should be used in interpolating on these generalized maps, particularly in mountainous areas.
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary telegraphic reports


PERCENTAGE OF NORMAL PRECIPITATION
1982
ALASKA
Barrow 96
Nome 117
Fairbanks 115
Anchorage 119
Juneau
Kodiak 124
Cold Bay 131
HAWAII
Lihue 168
Honolulu 152
Kahului 184
Hilo 127
Caution should be used in interpolating on these generalized maps, particularly in mountainous areas.
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary telegraphic reports


MEAN DATE OF LAST 32°(F.) TEMPERATURE IN SPRING
Based on Period 1921-50.
GULF OF MEXICO
CANADA
MEXICO
HAWAII
ALASKA

INSECTS

by
E. Arlo Richardson
Utah State Climatologist

When most of us think of insects, it is generally with the thought in mind that we should kill them. The reasons for this thought being uppermost in our minds is varied. How many have purchased a sack of flour or a package of cereal only to find it infested with additional protein in the form of small, creepy, crawley things that make the purchase quite unappetizing. Such an activity alone would make most of us detest insects and have a desire to kill.

Insects also eat such things as our furniture, rugs, clothing, and books; prey upon domesticated animals and may even damage our homes. Insects have been known to eat such unique materials as cured tobacco, petroleum, horn, beeswax, rubber insulation, and even plastic barrels.

In addition, they are known to carry disease to crops, forests, and domestic animals as well as man. All of these activities of insects have stimulated a definite dislike in the minds of most humans and motivated the philosophy that the only good insect is a dead one.

However, lets look at the problems involved with eradication. Scientists estimate that there are somewhere between 500,00 and 1,000,000 insect species on the earth today. Most of these have an amazing reproductive capacity which would put even a pair of rabbits to shame. This capacity is never fully realized, however, because all of these species live in a precarious balance with their predators, parasites, and their own limited food supply.

Modern agriculture often interferes with these natural relationships by creating environmental conditions that favor abnormal increases of insect populations. Large areas planted to a single crop--monoculture--offer certain insects a large supply of high-quality food, reduce the number of predators and parasites and, in short, do almost everything imaginable to insure an ideal environment for increased reproduction.

A good example of this environmental modification is found on the range where ranchers are seeding hundreds of acres of native range with a monoculture of crested wheat grass. This grass is loved by insects called black grass bugs which invade these seeded areas by the millions. Such seeded areas do not attract the predators of the black grass bug since they prefer shrubs as a place to live. Without the predator control, the black grass bugs reproduce by the thousands and the end result is the destruction of the food which was planted for the use of cattle and sheep on the range.

Greenhouses further accentuate these advantages by providing an environment free of predators but also an almost ideal temperature, humidity, and light. Thus, white flies and other insects become a serious problem to owners of greenhouses, and exceptional care must be taken to control these insects.

It is easy to kill an individual insect since we are bigger, stronger, and smarter. Further, most insects (other than wasps and their relatives) cannot defend themselves. On the other hand, it is not easy to kill a hundred or a million insects, Their smallness which makes them so vulnerable on an individual basis proves an asset when they are in large groups because it is almost impossible to kill all of them. A few will always get away ready to reproduce and further plague mankind.

In reality, mankind only wishes to prevent insects from doing damage. We are not really that bloodthirsty.

In principle there are three basic strategies for controlling damage from insects. The first is to increase the death rate of the undesirable species with minimal impact on desirable species, second is to decrease the birthrate of the undesirable species, and third is to prevent the insect from eating. The best method of control varies with the species under consideration. However, when selecting the most desirable method, we must consider the entire ecosystem and evaluate the impact of the specific method of control on the total system not just the impact on the undesirable species.

the best approach to solution of the problem is to isolate the unique characterisitics of the species and then search for weak spots in their defenses which make them vulnerable to some specific method of control.

In general, insects are small, cold-blooded creatures, encased in external skeletons made of a special protein, impregnated, and sealed with fats. Insects have very complex enzyme systems that can neutralize many poisons and some species have the capability of gradual adaptation to certain poisons. At first, for example, a poison may be quite effective as a control; but with continued use of the poison, greater and greater concentrations are required for effective control. The insect species may become quite immune to its effects.

On the negative side, these same poisons may be killing the predators which, in a natural system, have kept the undesirable species under a fair amount of control. The end result of the treatment may be an increase in the number of undesirable species because they have become immune to the poison.

Within an enclosed space such as a greenhouse, chemical piosons can be quite effective, since we do not need to be as concerned with the effect of the poison on beneficial insects. However, we must take precautions to make certain that the poison being used is not also harmful to man.

In a direct conbat with man, the numerical superiority of a species may more than compensate for the small size of each individual member. Doubters, need only step on a hornets nest or sit on an anthill to painfully recognize this fact.

Let's look at some characteristics of the insects. These characteristics may be considered weaknesses and make one or more of the three methods of control listed below possible. First, the small size of many insects creates a large surface area in comparison to the volume of each insect. Thus, if the exterior shell cracks, the insect is very apt to die of dehydration. Thus, any chemical that can destroy the water-holding capacity of this exterior shell will provide a method of destroying a large mass of insects.

Further, most insects lack lungs. Air enters their cells directly by way of small tubes and tubules. Thier blood does not usually contain hemoglobin and is not involved in respiration. These are some examples of the weaknesses in the defenses of insect species which have been used by the chemical industry to develop controls. However, for many centuries there was a lack of recognition of need for careful study of the entire ecosystem before widespread use of synthetic controls. Home gardeners should recognize this problem since they frequently use control methods which are detrimental to the overall ecosystem of which their own gardens are an integral part.

THE MAGIC IN A SEED

by
E. Arlo Richardson
Utah State Climatologist

At this time of the year, many gardeners are anxiously watching each delivery of the mail for the latest seed catalog from which they will make their selections for planting this spring. Pictures in most catalogs portray colorful images of beautiful flowers, luscious fruits and berries, and delicious looking vegetables. There is seldom any indication of the shape and size of the seeds from which these products grow and develop. It is only after we purchase the seeds that we note the characteristic spherical shape of the radish; the elongated, flat, dark seed of the watermelon; the wrinkled pea, or the lance shaped lettuce. Yet, enclosed within the irregular shape of each seed lies all of the genetic controls required to produce a long, orange carrot or a short, dainty fingerling carrot; a purple, yellow, or green snap bean; a sugar pea or a regular garden pea; a small cherry tomato or a large beefstake variety.

Have you ever looked at your seeds and asked yourself why they have developed the specific characteristics that they show? Scientists are familiar with how chromosomes, DNA, and other factors serve as controls for the shape, size, and rate of development of each individual species. However, certain climatic and other environmental factors which may modify the growth pattern of each individual seed are not as well understood. Why, for example, do peach seeds which are 1 to 1½ inches long require only 800 hours exposure to temperatures near 43° F before they germinate, while the tiny apple seed requires exposure of nearly 1,300 hours at a similar temperature.

Why do certain desert plants develop a tough seed coating which requires large amounts of moisture to dissolve or the abrasive action of a flash flood before they begin to grow? How did these seeds learn that they must grow and mature very rapidly in their arid environment in order to mature before their water supply was used up? Why does the seed of the giant Saguaro Cactus require exposure to certain wavelengths of far red light before they will germinate? How does this exposure relate to protecting the survival of the species in the same desert environment?

The above questions are a few that researchers are trying to answer. Many solutions will be found only by extensive studies in the greenhouse and growth chamber, but another part of the answer awaits a better understanding of the physical principles involved in the growth processes.

One method of obtaining a better understanding of the physical principles involved in the growth processes is to make an analysis in more detail of the environmental conditions under which the original plants in the species developed. The processes of adaptation to local environmental factors over the centuries has imposed on each species certain limiting environmental temperatures, moisture regimes, and light requirements. Several times in the past, we have emphasized the fact that plants which origintated in Mediterranean or desert types of climate cannot be successfully grown in opposite types of climate because the temperature, moisture, and sunshine requirements are not similar. Those which developed, for example, in the Sahara Desert near the equator simply will not survive the shade and excessive moisture found in the adjacent jungles near the same latitude.

Many of our common houseplants will survive the more stressfull conditions found in the home only because they can adapt to a rather wide range of conditions in which they can grow and mature.

As we look at the seeds which we intend to plant, it might be very beneficial and instructive to analyze the nature of the seeds; do a little research into the geographic origin of the species; and study the climate, sunshine, and other environmental conditions under which they will grow most readily.

State Summaries (continued from p. 17)

WISCONSIN: The week started mild with the high temperature being 40° at Iola and Oshkosh. Temperatures turned colder on 25th reaching the most frigid point 27th morning with the low for the week of -30° recorded at Lake Thompson. Temperatures recovered by late week and into the weekend. A slow moving storm system produced freezing rain and snow late 28th and into 29th. One to six in. of snow was recorded across the State on 29th. The heaviest amounts of 6 in. were reported in Eau Claire County.

WYOMING: Temperatures just short of being 10° above normal. About half of normal precipitation reported with no wet areas.

Winter wheat mostly good condition. Livestock mostly good condition. Hay supplies adequate most areas. Winter mild.

National Agricultural Summary

January 24-30, 1983

HIGHLIGHTS: Moderate temperatures and light precipitation decreased livestock stress. The moderate weather improved weight gains. Melting snow helped replenish soil moisture but left most winter wheat on the Great Plains vulnerable to possible winterkill. Adequate to surplus soil moisture across the Nation limited field activities. Growers in the Southeast had only 1 to 2 days suitable for fieldwork due to frequent rain. The winter wheat crop generally continued in fair to good condition. Snow cover was limited. Texas stands showed some new growth as temperatures rose. Cotton picking was delayed in Texas by wet fields. Gins were actively processing harvested modules. Pruning of orchards and maintenance of equipment were the major farm activity. Herdsmen continued supplemental feeding; feed supplies were adequate in all areas. Calving and lambing gained momentum.

SMALL GRAINS: Winter wheat remained dormant across the Great Plains. The crops rated mostly good in Kansas and Oklahoma while other major production areas were generally in fair to good condition. Southern producers applied topdressing as the weather permitted. Warm weather melted the snow cover on the Plains, leaving winter wheat vulnerable to possible winterkill.

Precipitation from rain and snow replenished soil moisture in parts of Kansas and Oklahoma leaving wheat in good condition. Heavy snow on the Texas High Plains provided necessary moisture to promote growth. The warm weather dried wet fields in the Blacklands and northern half of the State. Wheat and oats showed new growth. Spraying for greenbugs increased as fields dried. Statewide, wheat condition was fair to good. Wind damage remained light in Montana with most areas having little or no snow cover. Rains slowed seeding of small grains in California and Arizona. Early planted fields showed good growth and color.

OTHER CROPS: Growers waited for field conditions to improve before resuming land preparation for the 1983 crops. Wet conditions continued to delay final cotton harvesting in Texas. Ginning was active--eliminating the backlog of harvested cotton. Some abandonment and loss of quality is expected to occur in the late harvested fields. Picking was completed in Arizona. Growers were actively shredding and plowing cotton stalks to meet the February 1 plowdown date. Seedbed preparation for the 1983 cotton crop was increasing. Cotton stalk plowdown neared completion in the Desert area of California. Sugarcane harvesting and milling operations remained steady in the Rio Grande Valley of Texas. Young cane was in fair to good condition in Florida; harvesting was active. Tobacco growers in the Southeast continued seed bed preparation and seeding. Burley tobacco markets were closing in Kentucky.

FRUITS AND NUTS: Citrus groves continued in very good condition, with most trees in near dormant condition across Florida. Early orange harvesting was active and grapefruit picking increased.

Low prices slowed the citrus harvest in the Lower Rio Grande Valley of Texas, but some Valencia oranges were picked. Arizona citrus groves were in good condition. Harvesting was seasonally slow with limited picking of all fruit.

Grapefruit harvesting increased in California's Desert area. Rain continued to delay picking in the San Joaquin Valley; some citrus droppage were experienced.

Orchards and Vineyards continued pruning and tying canes in the Pacific Northwest. Mild weather caused some early bud expansion. Pecan harvesting resumed at an active pace in New Mexico.

VEGETABLES: Total shipments of Florida's vegetables increased slightly from the previous week. Harvest of most crops continued steady or increased in volume; exceptions were snap beans, lettuce, okra, Southern peas and tomatoes. Strawberry yields increased. Size and quality were generally good. Land preparation was slow due to wet fields.

Producers in the Lower Rio Grande Valley of Texas were harvesting cabbage, carrots, cauliflower, broccoli, red peppers and lettuce. Onion stands were in excellent condition and sizing well across the State. Onion planting was active in East Texas. Vegetable harvesting resumed as fields dried in the San Antonio-Winter Garden area.

Rains delayed the harvest of fall lettuce and cauliflower in Arizona. Spring lettuce planting was virtually completed.

Heavy showers delayed vegetable harvesting in California. Cutting of Asparaqus, brussels sprouts and artichokes progressed slowly. Broccoli and cauliflowers harvesting was active when the weather permitted. Celery and Lettuce harvesting was active in all winter areas with variable quality in the Desert area. Ground preparation for planting of processing tomatoes continued in the northern San Joaquin Valley. Some planting was completed on the west side of the Valley.

PASTURES AND LIVESTOCK: Pastures were generally rated fair to good across the South. Recent moisture improved range and pasture conditions in Texas but heavy snow in the West increased the need for supplemental feeding and diminished hay supplies in some areas. Moderate temperatures and the absence of snow cover in many areas of the Nation, reduced livestock stress and resulting weight loss. Supplemental feeding continued steady. Adequate feed supplies were available in all areas. Calving and lambing gained momentum.

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 SRS State Offices in cooperation with the National Weather Service.

ALABAMA: Temperatures 3° below normal. Rainfall less than 1.00 in. at most stations, occurring late in the week.

ARIZONA: Two major winter storms last part of week, heavy rain, snow. Snow level 6,000 feet. Snowfall over Mogollon Rim varied 1 to 8 in., 5 to 15 in. over White Mountains. Heavy rain over Central Basin area, southeast corner State amounts mostly between 1 and 2 in. Average temperatures varied from normal to 6° above normal.

Cotton harvest complete Yuma, Mohave, Greenlee Counties. Pinal, Pima, Maricopa Counties nearly finished harvest, actively shredding, plowing cotton stalks to meet February 1 plowdown date. Cotton farmers Graham, Cochise Counties winding down harvest. Rains delayed progress last half week. Yuma, Graham Counties began preparing seedbeds, pre-irrigation activities for 1983 cotton crop. Wheat, barley crop ranged various stages from preplanting activities to reaching established stands. Crop development mostly average Statewide. Growers applying herbicides to control canary grass, wild oat, broad-leaved weeds. Insecticides also applied as needed. Western, central areas still planting wheat, barley. Earlier planted fields progressing normally with stands well established. Southern, southeastern counties made about same progress although planting slightly behind with rains slowing progress. Alfalfa haying mostly shut down Statewide. Some activity occurred Yuma County, slight rain damage reported to cut hay. Safflower planted on limited scale Yuma County. Fall lettuce, cauliflower harvest strong both Maricopa, Yuma Counties although slight rain delays. Other cool season vegetables harvested as field conditions permitted. Spring lettuce planting virtually complete except Willcox area. Immature vegetables for later harvest made good progress. Citrus activities continued seasonally slow. Most harvest activities focused on tangerines, tangelos, sweet oranges. Grapefruit, lemons, Navel oranges picked on limited scale. Valencia orange harvest gets underway next week Yuma County. Citrus groves good condition.

ARKANSAS: Cool week with slightly below normal temperatures and rainfall. Highest normal 46°, lowest 37°. Highest mean 45°, lowest 35°. Highest temperature 71°, lowest 21°. All departures from normal ranged from -5 to +2°. Most rainfall 0.80 in., least 0.05 in.

No field preparation yet. Winter wheat in fair to good condition with some browning of leaves. Pastures average to slightly above, providing some grazing. Cattle and poultry continue in good condition.

CALIFORNIA: Several significant storms moved through State bringing near record amounts of precipitation. St. Helena reported just over 8.00 in. with a one day total of 3.75 in. on the 27th. All reporting stations had at least 1.00 in. of rain, except the southeast interior and it was warmer than normal. The northern two-thirds of the State averaged about 5° above normal. Huntington Lake reports over 45.00 in. of rain. That is roughly three times their normal for this time of year.

Land preparation activities were severely curtailed in the North Coast and Sacramento Valley regions due to heavy rain. Fertilizing and herbicide applications continued between breaks in the weather. Small grains southeastern interior showed good growth and color. Wheat planting complete in Merced County. Warm nights and beneficial rains are insuring heavy tonnage for initial alfalfa cuttings in Riverside County. Weed control continues for alfalfa and sugarbeet fields. Rain plagued those with field corn and milo still standing in Fresno County's Clovis district. Cotton stalks plowdown nears completion in the Desert. Heavy rains halted fieldwork. Standing water a problem in orchards and vineyards. Some breakdown in avocados from rain. Limited pruning and spraying in stone fruits. Desert peaches breaking dormancy. Vineyard operators fertilized, tied canes, weather permitting. Citrus harvest delayed, rain. Some citrus droppage and fog caused rind damage, San Joaquin Valley. Some fruit scarring from wind. Desert grapefruit movement increasing. General rains delayed vegetable work. Harvest of brussels sprouts and artichokes continued with rains slowing production. Asparagus harvest light Coachella and Imperial Valleys. Harvest expected soon South Coast. Broccoli harvest active Desert, South and Central Coast and San Joaquin Valley. Cauliflower harvest active Desert and Central Coast, weather permitting. Carrot harvest moderate Desert. Celery and lettuce harvest active all winter areas with variable quality in Desert. Spring lettuce looking good Palo Verde Valley. Weeding and thinning major activity San Joaquin Valley. Winter potato harvest continues good to fair quality and Perris-Hemet area. Packing of potatoes from storage continues Tulelake-Butte Valley areas. Green onion crop plagued by mildew San Joaquin Valley. Ground preparation for processing tomato planting continue northern San Joaquin with planting reported on westside of valley. Feed conditions excellent recent rainfall, mild temperatures. Local flooding. Supplemental feeding continues. Livestock good condition.

COLORADO: Generally light snowfall in the mountains morning of 24th and again 25th with water content 0.10 to 0.20 in. However, most precipitation fell on 28th and 29th with 0.20 to 0.30 in. of moisture. One to four in. of new snow was fairly common over mountains and west of Continental Divide. Precipitation east of Divide was mostly less than 0.01 in. Temperatures averaged 4 to 8° above normal.

FLORIDA: Fair weather early week gave way to rainy weather midweek as low pressure system moved across northern Peninsula. Temperatures ranged from much below normal, Panhandle to near normal southern Peninsula. A strong warming trend on the 30th. Rainfall amounts averaged 1.00 to 2.00 in. Panhandle, northern Peninsula but generally less than 1.00 in. elsewhere.

Soil moisture mostly adequate, a little excessive, southeast coast. Land preparation slow due to rain, cold weather. Tobacco plant beds seeded. Sugarcane harvest continues active, young cane fair to good condition. Fertilizer being applied to winter grazing crops and wheat. Pasture conditions, good to excellent in the south, poor to fair north, and in the Panhandle. Pasture growth remains slow while supplemental feeding continues many areas. Cattle are fair to good Statewide. Citrus groves very good condition, excellent surface moisture due to rains, 27th. Most trees continue in near dormant condition. Central and northern citrus counties had frost, colder locations. Early-mid orange harvest active. Grapefruit movement picking up all areas. Cool temperatures with

mostly partly cloudy to cloudy skies prevailed in vegetable areas. Rainfall variable, moderate to heavy showers occurred Pompano area; other areas mostly light. Dade County drying out from flooding caused by heavy rains during previous weekend. Rains resulted in some disease problems. Total shipments increased slightly from previous week. Crops gaining in volume were cabbage, cauliflower, celery, Chinese cabbage, sweet corn, eggplant, escarole, parsley, peppers, potatoes, squash and strawberries. Supplies about steady carrots, cucumbers and radishes. Volume declined snap beans, lettuce, okra, Southern peas and tomatoes. Very limited supplies of fall watermelons continue available. Strawberry harvest active. Quality, size good, yields increasing.

GEORGIA: Cloudy and cold, but fair midweek. Average temperatures 4 to 7° below normal. Drizzle, light rain early in week, thundershowers extreme southeast. Heavier rain and showers late in week. Heaviest rainfall in southeast, where 2.00 to 3.00 in. fell, compared to 1.00 in. elsewhere. Weekend of 29th and 30th above average temperatures. Light rain late 29th and early 30th, amounts less than 0.50 in.

Soil moisture adequate to mostly surplus. Rain continues to delay field activities, land preparation slightly behind last year southern third. Small grains condition fair to good, with applications of nitrogen topdressing in few areas. Tobacco plants condition fair to good. Pastures condition fair to good. Cattle and hogs good condition.

HAWAII: Dry weather conditions continued to prevail over much of the State as rainfall remained light and sporadic. Due to the month-long dry spell, water rationing programs have begun in some crop areas dependent on natural rainfall. Low nighttime temperatures persisted all week with a record low on 29th. Most crop fields in fair to good condition but making slow progress due to the cool temperatures. Heavy cabbage and moderate lettuce production are expected to continue. Most other vegetable crops have light production. Papaya production down seasonally.

IDAHO: Temperatures mild with many stations reporting temperatures from 5 to 10° above normal. Lewiston set a new record high of 59° while Stanley reported the coldest temperature of 7°. Light precipitation fell across most of the State with amounts generally higher in the southern half. Precipitation totals ranged from a trace to nearly 1.00 in. Higher elevations received from 2 to 6 in. of snow.

The warm weather allowed crop marketing to continue. Preparing tax statements and routine chores were also major activities. Calving and lambing expanded into a few more areas of the State. Feed supplies remain adequate.

ILLINOIS: Temperatures averaged from 1 to 5° below normal across most of the State. One area in the northwest was normal to 2° above normal. At midweek, minimum readings were near zero in some northern areas. Precipitation was light and ranged from 0.05 to 0.40 in. Two inches of snow fell in northern areas on the 29th.

Winter wheat and livestock in mostly good condition.

INDIANA: Cold, damp week limited most outside work. Activities included cutting wood, butchering, cleaning fence rows and barns, working on taxes, studying farm programs, attending meetings, moving grain, caring for livestock, and usual chores.

IOWA: A mild week. Precipitation fell the 25th, 26th and 28th, 29th with amounts heavy from southwest to northeast and diminishing to less than normal northwest and southeast. Snow cover at weekend 2 to 7 in. northern half State; little or none south. Temperatures ranged from -7° at Spencer, Mason City, and Storm Lake the 27th to 42° the 28th at Shenandoah and Lamoni.

KANSAS: Moisture averaged 0.50 in. east and north central, 0.25 in. south central and traces to a few hundredths west. Temperatures averaged 27 to 31° central, 31 to 34° east and 34 to 40° west. These were about normal north central, 1° below normal south central, 2 to 3° above normal east and 4 to 8° above normal west.

Wheat good condition. Precipitation form of snow or rain helpful. Temperatures mild but crop still dormant. Livestock on pastures require supplemental feed. Mild temperatures with absence of blizzards have helped in care of livestock. Feed and roughage supplies adequate. Farmers preparing tax forms and rounding up seed supplies for spring planting.

KENTUCKY: Temperatures averaged 1 to 2° above normal. Rainfall averaged 0.10 to 0.30 in., mostly as showers over weekend.

All but 15 burley markets now closed. Gross sales to date 541.3 million pounds with average price $182.56 per cwt.

LOUISIANA: Rainfall 0.25 to 1.50 in. Temperatures ranged 2 to 3° below normal. High 76°; low 25°.

Main activities: Picking cotton, harvesting crawfish, topdressing pastures, and plowing fields for spring plantings. Fieldwork increasing as soils dry from late December and early January rains. A few farmers were planting potatoes and preparing hot beds for tomatoes and green peppers. Winter pastures wet and in poor condition. Supplemental cattle feeding continues active.

MARYLAND AND DELAWARE: Milder than normal. Temperatures averaged mostly 3 to 5° above normal. High temperatures averaged in the low to mid 40's in Western Maryland and mid 40's to low 50's elsewhere. Low temperatures were in the teens in Western Maryland to the low 20's to upper 20's elsewhere. Precipitation ranged from 0.50 in. in Frederick to 1.34 in. in Oakland. The Eastern Shore of Maryland received from 0.53 in. in Cambridge to 1.06 in. in Wilmington, Delaware. Saturday the 29th was sunny, clear and fair with high temperatures in the mid 40's and low temperatures in the low to mid-20's with no precipitation. Sunday the 30th was cloudy all day with scattered showers and high temperatures in the mid 40's and lows in the low to mid 20's.

MICHIGAN: Temperatures averaged 5° above normal across the State. Precipitation well below normal. Snowfall was light over both the lower and upper Peninsula. Area covered by snow is at a minimum.

MINNESOTA: Temperatures averaged 1 to 4° above normal. Extremes were -26° at Itasca and 40° at Browns Valley. Precipitation averaged near normal. Extremes 0.15 to 0.30 in. above normal southeast. Precipitation totals less than 0.25 in., except 0.25 to 0.31 in. northeast and 0.24 to 0.49 in. south central and southeast. Snowfall was less than 2 in. except 2 to 3 in. northeast and 2 to 4 in. southeast. Snow depth was less than 4 in. northwest, 4 to 8 in. elsewhere, except 8 to 16 in. northeast.

MISSISSIPPI: An upper level disturbance moved across the State 25th and many locations received rain. Cloudy skies and moist air from the Gulf of Mexico accompanied a low pressure system in the northern Gulf on 26th and 27th. Strong south winds on 28th brought fog, drizzle and clouds to the State as the low pressure system moved east. A weak cold front triggered showers and thunder-

showers on the 29th. The warmest temperature was 68° in Yazoo City, Poplarville and Mobile on 30th. The coolest temperature was 21° in both State University and Cleveland on 29th. Average temperatures were 5° below normal in most locations across the State. The greatest one day rainfall was 1.10 in. in Forest on 27th.

Soil moisture surplus. Fieldwork limited to 1.0 days suitable. Livestock feeding and making plans for 1983 crop were main farm activities. Winter wheat, pastures and livestock in fair condition. Hay and roughage and feed grain supplies adequate.

MISSOURI: Temperatures ranged from near normal in southeast to 5° above normal in northwest. Precipitation less than 0.50 in., averaging around 0.25 in.

MONTANA: Very mild week. West of Divide temperatures 15° above normal. Southwest, central, south central and southeast temperatures 12° above normal. Cold air settled in for a few days early in week north central and northeast holding temperatures more near normal. Northeast temperatures averaged 7° above normal and 3° above north central. Highest 57° Great Falls, lowest -5° Havre and Wisdom. Precipitation light.

Winter wheat condition fair, snow cover protection none to poor, wind damage light. Cattle and calves 90% receiving supplemental feed, sheep 95%. Livestock losses less than average. Grazing open.

NEBRASKA: Temperatures 4 to 10° above normal. Widespread precipitation in form of rain and snow averaged 0.10 to 0.20 in. except in southeast where moderate rain showers produced 0.50 to 0.75 in. toward end of week.

Wheat good. Snow depth 2 in. average, ranged from trace amounts in Panhandle to over 6 in. in northeast. Hay supplies adequate or above in all parts of State.

NEVADA: A series of cold fronts swept across State during week. Moderate to heavy precipitation reported most areas. Early storms started as rain changing to snow later. Snow generally confined to mountains and higher valleys. Temperatures 5° above seasonal normals. Extremes: 63 and 8°.

Caring for and feeding livestock made more difficult by inclement weather. Early lambing starting to gain momentum.

NEW ENGLAND: The week was relatively warm, generally 3 to 8° above normal. Highest reading was 50° 25th at Milton, MA. Coldest reading was 10° below 0 early 28th. Greatest weekly precipitation measurement was 0.91 in. at Fort Kent, Maine. Drizzle and snow occurred 28th in southern New England.

NEW JERSEY: Temperatures near normal, averaging 30° north, 34° south and 35° coastal areas. Extremes 11° at Newton and 53° at Hammonton. Precipitation below normal, averaging 0.20 in. north, 0.15 in. south and 0.18 in. coastal sections. The heaviest 24-hour total reported 0.33 in. on 30th to 31st at Long Branch.

Farmers caring for livestock and tending to other normal winter chores.

NEW MEXICO: Average temperatures above normal at most locations. Total precipitation amounts generally less than 0.50 in.

Open weather prevailed in most areas except the northern and western parts of the State. Soil moisture adequate across the State, with surpluses in some areas. Winter wheat and barley are in good condition. Grazing about normal. Pecan harvest active. Early season onions in good condition. Planting of mid-season onions getting underway. Ranges in fair to good condition, some areas are completely snow covered, making supplemental feeding a necessity. Cattle and sheep remain in good condition, even though the cold and snow have caused some weight loss.

NEW YORK: First half of week unseasonably mild, cold second half. Moderate temperatures again by weekend. Most precipitation early in week. Precipitation ranged from 0.25 to 1.00 in., except 2.00 in. in Catskills.

NORTH CAROLINA: Temperatures 1 to 4° below normal Statewide. Precipitation varied widely across the State, heaviest in Piedmont region.

Soil moisture 48% adequate and 52% surplus. Days suitable for fieldwork: 2.3. Conditions: Wheat, oats, barley and rye fair to mostly good. Harvest: Soybeans 99%, 1981 100%, average 100%. Hay and feed grain mostly adequate to surplus. Major farm activities: Soybean harvest, cutting of firewood, leasing tobacco allotments, preparing and seeding tobacco beds, machine maintenance and other indoor chores.

NORTH DAKOTA: Temperatures 5 to 10° above normal. Extremes from 45° south central on 28th to -32° north central 26th. Precipitation averaged from near normal to 0.10 in. below normal.

Above normal temperatures continued to be a boon to livestock care. Feed consumption has been below normal, leaving supplies adequate to plentiful. Livestock shrinkage below normal. Calving started in a few areas. Average snow depths range from a maximum of 6 in. northwest to virtually none in many southern areas. Winter wheat and rye survival is still a concern. Both crops in mostly fair condition as of 30th. Farmers busy evaluating "Payment in Kind" program and planning for 1983 crop season.

OHIO: Temperatures averaged near normal. Highs mid to upper 30's, climbing to 40's and 50's most areas, lowest readings upper teens to low 20's. Light precipitation widespread early week, drying midweek then continuing on weekend. Totals between 0.20 to 0.50 in. below normal. Soil temperature 4 in. depth, ranged from freezing north, north central areas to 1 to 2° above normal south. Frost penetration shallow--absent in parts of south.

Winter wheat remains in good to excellent condition, no reported water damage. Moderate temperatures prevented stress. Milk production remains high. Farm activities included caring for livestock, cleaning barns, chopping wood, purchasing fertilizer, repairing machinery, studying the Pik program, etc. Greenhouse activities focused on seeding vegetables.

OKLAHOMA: Precipitation amounts averaged 0.01 to 0.66 in. across State. Temperatures averaged near normal to 2° below normal.

Wheat pasture in dormant stage. Some cotton still being harvested in southwest. Cattle remain in generally good condition.

OREGON: Temperatures again were mild as weekly averages were 5 to 10° above normal. Rainfall amounts were heaviest along the coast with some stations receiving up to 5.40 in. Interior Valleys received 0.60 to 1.70 in.; other areas received up to 0.50 in.

Soil moisture supply surplus in west, adequate in east. Fall seeded grain and grass seed crops in good shape. Pruning in orchards and berries continuing. Livestock in generally good condition. Lambing underway. Range and pastures fair to good. Mild weather providing some feed growth which allowed less supplemental feeding in some areas. Hay supplies tight.

PENNSYLVANIA: Temperatures slightly above normal with precipitation falling just short of the State normal of 0.62 to 0.42 in. The week was mostly cloudy with a sunny day occurring on 29th. There was more seasonal weather late 29th into 30th with rain, snow and sleet occurring.

PUERTO RICO: Island average rainfall 0.15 or 0.58 in. below normal. Highest weekly total 0.70 in. Highest 24-hour total 0.56 in. Temperatures averaged about 77° on coasts and 71 to 70° Interior Divisions. Mean station temperatures ranged from 79.4 to 64.1°. Extremes 91 and 50°.

SOUTH CAROLINA: Temperatures averaged cooler than usual. General rain fell 27th, amounts range from 0.50 to nearly 2.00 in.

Main activities included caring for livestock, testing and liming soils and pruning fruit trees.

SOUTH DAKOTA: Temperatures averaged 1 to 11° above normal. Extremes: -15 and 60°. Precipitation widespread but light. Up to 0.42 in. reported but mostly under 0.25 in. Southeast and east central near or above normal precipitation for the year. Remainder of State below normal.

TENNESSEE: The week began with high pressure over the State. Low pressure building across the Gulf coast area brought rain on 26th. A cold front brought more rain on 29th. Generally rainfall averaged less than 0.50 in. Temperatures averaged near normal. Temperatures ranged from 24 to 57°.

TEXAS: A series of Pacific cold fronts moved through State producing only light showers. Temperatures averaged 1 to 4° above normal over State, except High Plains where temperatures normal. Precipitation below normal across State.

Range and livestock: Some improvement of range and pasture conditions resulted from recent moisture. Heavy snowfall West Texas provided needed moisture, but remained several days, increasing need supplemental feeding. Remainder State, warm days and cool nights benefitted growth winter forage and small grains. With heavy supplemental feeding, livestock mostly good condition, but hay supplies becoming short some areas.

Commercial vegetables: Lower Rio Grande Valley, harvest cabbage, carrots, cauliflower, broccoli, red peppers and lettuce active as weather permitted; volumes remained fair. Onions continued good progress with most stands excellent condition. Citrus harvest continued, but with low prices movement slow. Some Valencia oranges harvested. Laredo onions good progress. Onions sizing well, little or no disease or insect problems. San Antonio-Winter Garden harvest resumed as fields dried. Shipment carrots, cauliflower, lettuce, spinach, green onions and parsley active. Trans-Pecons, wet ground delayed most seeding activity. Fall-seeded onions reached the 5 to 6 in. stage. East Texas onion planting active. Land preparation underway planting other spring vegetables. Potato planting begin soon.

Crop: Harvest remaining cotton and other fieldwork remained standstill as soils dry out. Heavy snowfall West Texas provided needed planting moisture, helped replenish moisture supplies small grains. As growers waited field conditions to improve, considerable time devoted analyzing PIK farm. Interest widespread, farmers try finalize planting intentions before resuming land preparation for 1983 crops. Cotton harvest remained standstill, since most fields too wet to support harvest equipment. Delay allowed gins to catch up on backlog of harvested cotton. Because continued delay in final harvest, some additional abandonment and loss of quality occurred. Small grains benefitted from snow and rain of recent weeks. High Plains heavy snow provided needed moisture to promote forage growth as temperatures warmed. Blacklands and northern half of State, wet fields beginning to dry out with warm temperatures; wheat and oats new growth. Greenbugs problem, but ground spraying limited because wet fields. Spraying increase as fields dry. Powdery mildew and rust causing some problems across the State. Wheat conditions across the State is 69% of normal, unchanged from a year ago. Some 5% is reported as excellent; 32% good; 55% fair; and 8% poor. Rio Grande Valley, sugarcane harvest active and milling operations remained steady.

UTAH: Recurring periods rain and snow all areas. Accumulated amounts moderate to heavy. Average temperatures about 6° above normal, ranging between 1° below and 11° above.

Care and feeding livestock major farm activity. Some local movement of potatoes. Some apple producers have finished marketing the 1982 crop. Onion quality very low.

VIRGINIA: The week started cloudy and wet as a frontal system moved slowly across the State. Most regions received precipitation with the system. By midweek fair mild weather prevailed, but clouds and precipitation were prevalent over the western sections of the State again by 28th. Clouds and precipitation ended 29th as another frontal system moved across the State with warm sunny weather for 30th. Temperatures averaged slightly above normal 1 to 2° for all but the southern division which reported 1 to 3° below normal.

Days suitable for fieldwork less than 2 days. Topsoil moisture at 77% adequate and 23% surplus. Livestock care (lambing, calving and feeding) remains very active. Record keeping, tax preparation and educational meetings are keeping many farmers busy. The percent of roughage secured from grazing dropped 6 points in the past 2 weeks to 19%. Winter grains and grazing crops are still reported in excellent conditions. Other activities include: Liming and fertilizing, building and machinery repair, cutting firewood, pruning fruit trees, preparing tobacco for market and tobacco bed preparation.

WASHINGTON: A large low pressure system entered over the Gulf of Alaska and a relatively weak high pressure system to the east of the State produced a moderate to strong southwesterly flow of warm, moist marine air for the entire week. As a result, temperatures and precipitation values were above normal west of the Cascades and considerably above normals to the east. Colville reported 1.58 in. of rainfall as compared with a normal of only 0.44 in. Walla Walla's weekly mean temperature of 51° was 18° above the normal.

West: Mild, wet conditions prevailed. Pruning of blueberries continues. Raspberry canes still being tied. Warm, mild weather causing early bud expansion. Harvest of forced rhubarb in full swing. Cabbage seed fields look good, but open to frost and water damage. Christmas tree growers continue to plant. Cattle were on feed. Hay supplies adequate.

East: Unseasonably warm weather conditions. Winter grains in above average condition with good soil moisture. Soil testing and field fertilization underway. Orchard and vineyard pruning continues. Livestock in good condition. Calving and lambing in progress. Ranges and pastures in good condition. Hay supplies adequate. Main activities include attending meetings, talking to bankers about financing, and making arrangements for seed and fertilizer.

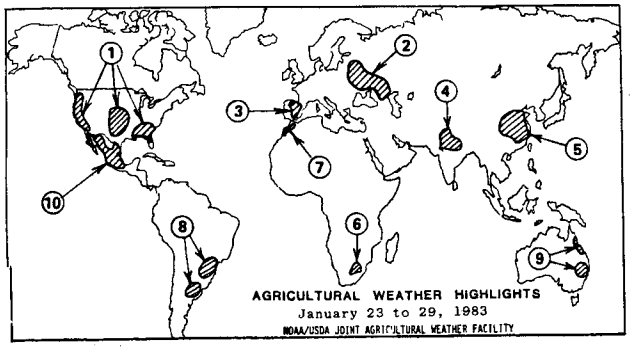
WEST VIRGINIA: Temperatures slightly above normal across the State. High 57°, low 13°. Precipitation slightly below normal 0.32 to 0.03 in.

Soil moisture adequate. Days worked 3.9. Hay supplies adequate. Grain and other feeds also adequate.

(continued on p. 11)

International Weather and Crop Summary

January 23 to 29, 1983



1. UNITED STATES ... Wetness slows field work over the Southeast and California. Cold keeps orchards dormant in much of the Southeast, while unseasonable mildness causes buds to swell over the west coast. Protective snow cover melts or evaporates over most of the central and southern Plains wheatlands.

2. WESTERN USSR ... Unseasonably warm weather accompanied by showers, followed a brief cold snap. Increasing precipitation and freeze-thaw conditions are creating the potential for frost heaving.

3. EUROPE ... Continued dry weather in Spain is reducing winter grain yield prospects.

4. SOUTH ASIA ... Showers benefit winter grain which are in the reproductive stage.

5. EASTERN ASIA ... Cold, dry weather covers dormant winter grains.

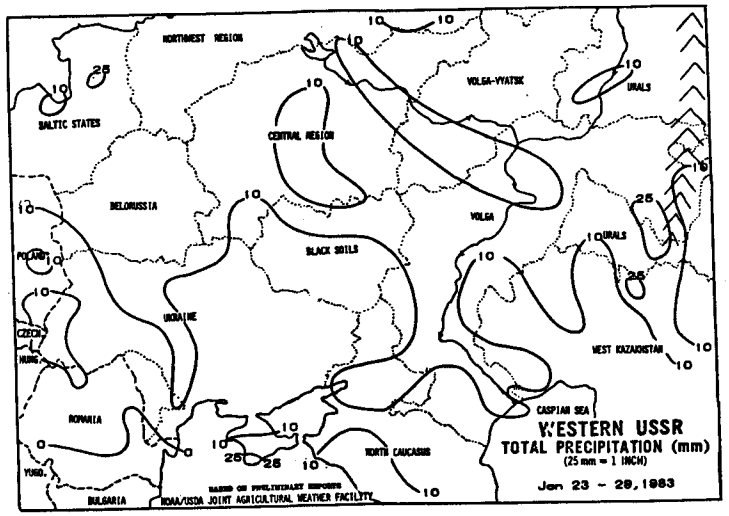
6. SOUTH AFRICA ... Some showers help corn growth in Orange Free State, but prolonged hot, dry weather is seriously affecting crop potential in the Maize Triangle.

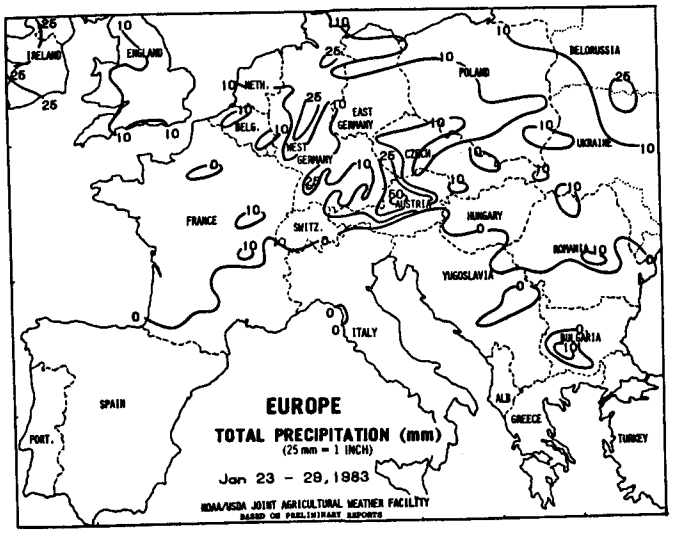
7. NORTHWESTERN AFRICA ... It is too dry for favorable early establishment of winter grains in Morocco; more rain is needed.

8. SOUTH AMERICA ... Beneficial rains fell in Argentina and Brazil, aiding grain filling and soybean flowering.

9. AUSTRALIA ... Tropical showers aid sugarcane growth but only scattered light rains fell in sorghum area of eastern Australia.

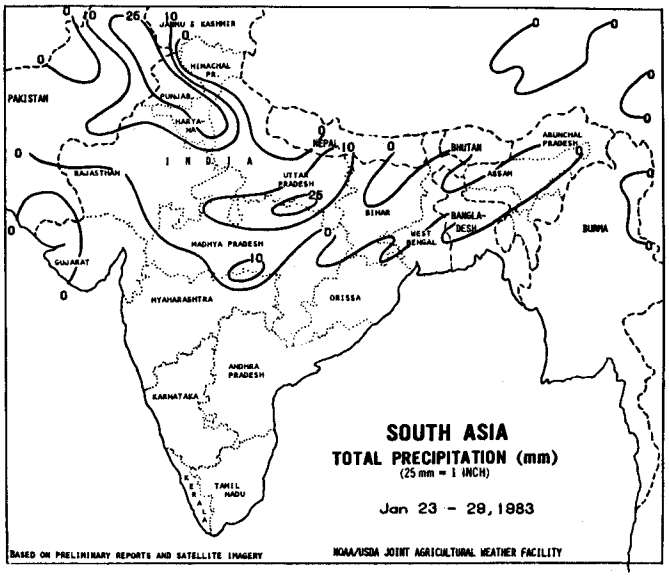
10. MEXICO ... General widespread sunshine favored land preparation and early planting. Fringes of major storms battered upper Baja California with rain, wind, and high coastal waves.



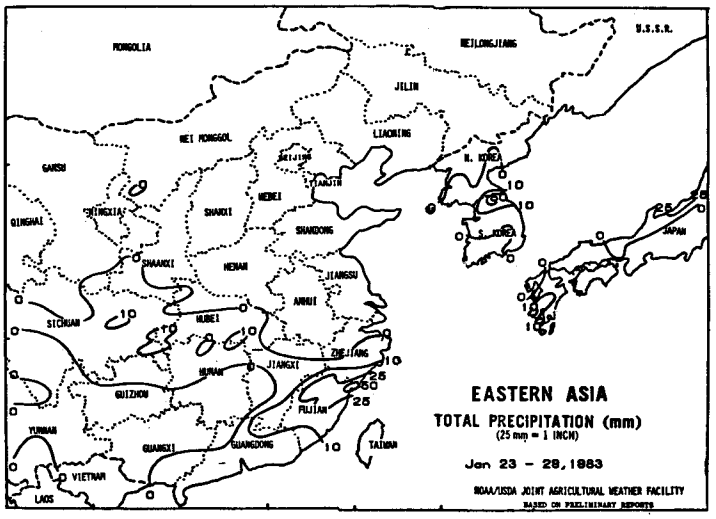


WESTERN USSR ... Light snow and sub-freezing temperatures covered most winter grain areas early in the week. Minimum temperatures around -15°C reached as far south as the eastern Ukraine and the North Caucasus, producing the potential for winterkill. However, the cold snap was brief, and little if any winterkill resulted. Temperatures rose to above normal by the end of the week with light rain covering southern and western winter grain areas. The increase in moisture during the past couple of weeks has improved topsoil moisture in the driest areas of the Ukraine and North Caucasus. However, this increase in soil moisture along with continued freeze-thaw conditions is increasing the likelihood for frost heaving and subsequent winterkill.

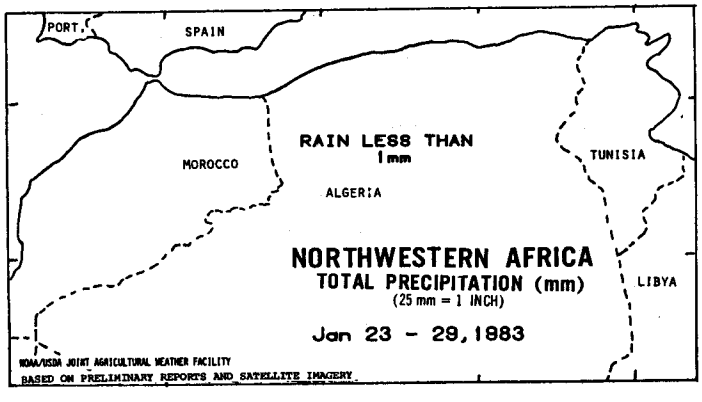
EUROPE ... Mostly dry weather covered the southern half of the region while the northern half received light amounts of precipitation. In the southern area of Spain, continued dry weather since early November has hindered planting progress and likely produced spotty emergence. In northern and central Spain, moisture conditions in November and early December were generally favorable for winter grain planting and emergence. However, dry weather since mid-December covered these areas and is now producing crop stress. Elsewhere, Poland and East Germany continued to receive beneficial precipitation, improving topsoil moisture. Weekly temperatures were above normal over most of Europe.



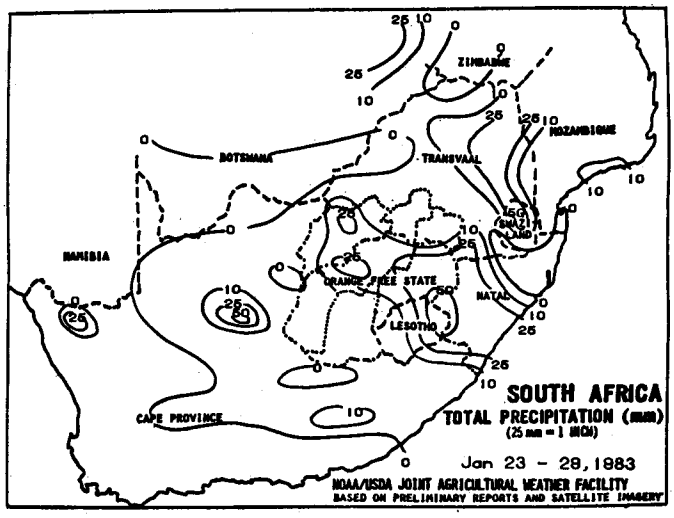
SOUTH ASIA ... Beneficial showers fell on the principal winter grain producing areas in Punjab, Haryana, Uttar Pradesh, and northern Madhya Pradesh. Rainfall totals around 10 mm were the first significant amounts since last December. Winter grains in these areas are normally in the heading stage. Yield prospects in unirrigated areas improved somewhat, but more rain is needed. Elsewhere, mostly dry weather covered the remainder of India, Bangladesh, most of southern Pakistan, and Burma.



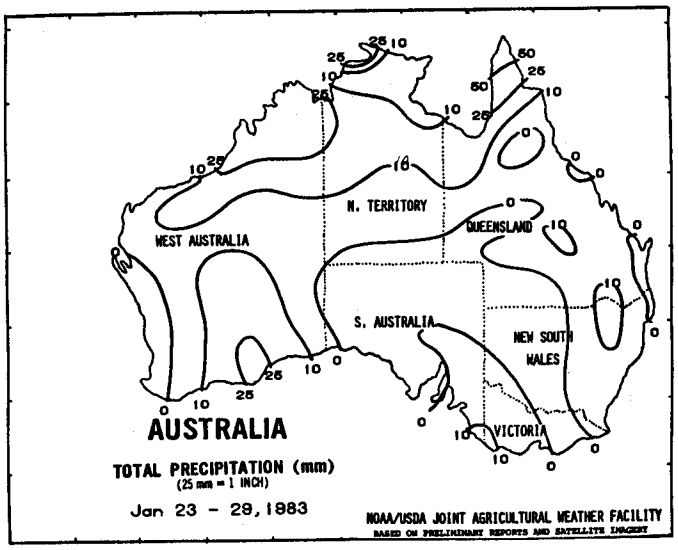
EASTERN ASIA ... Mostly dry weather covered winter grain areas of China while grains in South Korea received light precipitation. Cold temperatures kept crops dormant in most areas. Light precipitation continued in extreme southern China providing favorable pre-planting moisture conditions.



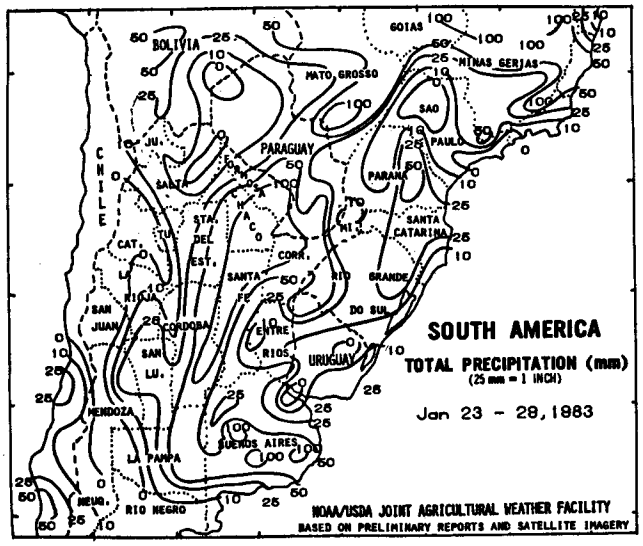
NORTHWESTERN AFRICA ... Mostly dry weather covered the region. Moisture conditions in eastern Algeria and Tunisia should still be favorable for winter grains in the vegetative stage. In contrast, dry weather for the past several weeks in northern Morocco and western Algeria has reduced soil moisture to unfavorably low levels. In southern Morocco, persistent dryness since planting likely resulted in spotty germination and poor early plant establishment.



SOUTH AFRICA ... Showers helped corn growth in northern portions of the Orange Free State; however, only light rain fell elsewhere in the Maize Triangle. Corn is being severely stressed by above-average temperatures, especially in the dry western and southern crop areas. Maximum temperatures remained above the optimum range for corn growth as the crop progresses from the reproductive to the kernel development period. High evapotranspiration rates caused by the hot weather have reduced the effectiveness of any rainfall in the area and, in turn, has limited the growth potential of the crop. Irreversible damage has already occurred due to the untimely hot, dry weather as the corn crop advanced through the weather-sensitive reproductive cycle. Widespread rains are needed immediately to alleviate the unfavorable growing conditions.



AUSTRALIA ... Tropical showers produced substantial rain across northern portions of the continent, but only light scattered rain fell in summer crop areas of southeastern Queensland and northern New South Wales. Weekly amounts remained below the seasonal average throughout most areas. Thus, crop development was further hampered by limited moisture supplies. Sorghum, cotton, sugarcane, and grazing areas of eastern Australia are all affected by the severe moisture shortage. In southern Australia, light showers covered portions of Victoria, southeastern South Australia, and much of Western Australia. However, substantial rains are needed in upcoming months to alleviate the severe drought.



SOUTH AMERICA DECEMBER MONTHLY MAPS WERE IN ERROR. THE PRECIPITATION MAP SHOULD HAVE BEEN THE PERCENT PRECIPITATION AND THE PERCENT PRECIPITATION SHOULD HAVE BEEN THE PRECIPITATION MAP.

SOUTH AMERICA ... Widespread rains covered the crop areas of Argentina and Brazil. Significant rainfall in Argentina soaked numerous corn/soybean areas which were becoming too dry. Furthermore, cooler weather moved into the region following the rains and reduced potential stress conditions. Some dryness may still persist for corn in eastern Buenos Aires where less than 10 mm of rain fell. Elsewhere, showers provided necessary moisture for corn and first-crop soybeans both in the filling period, and aided vegetative growth of second-crop soybeans. In Brazil, showers in the south aided soybean growth with about 50 percent of Rio Grande do Sul's crop in the flowering period. In Parana, where the soybeans are generally more advanced in the growth cycle, heavy showers fell in the west while light showers covered the eastern half of the state. Presently, adequate moisture is available in nearly all of Brazil's soybean area.

MEXICO ... Abundant sunshine was widespread across the country except over the upper Baja California. The open weather favored land preparation for spring crops and even some planting in the warmer coastal sections. Fringes of major storms pushed across upper Baja California, producing rain, strong winds, and high waves battering the coast. Temperatures averaged near normal over the northeastern citrus area and kept trees generally dormant in the more cold-sensitive northernmost orchards.

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