

WEEKLY WEATHER AND CROP BULLETIN

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

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National Agricultural Statistics Service and World Agricultural Outlook Board

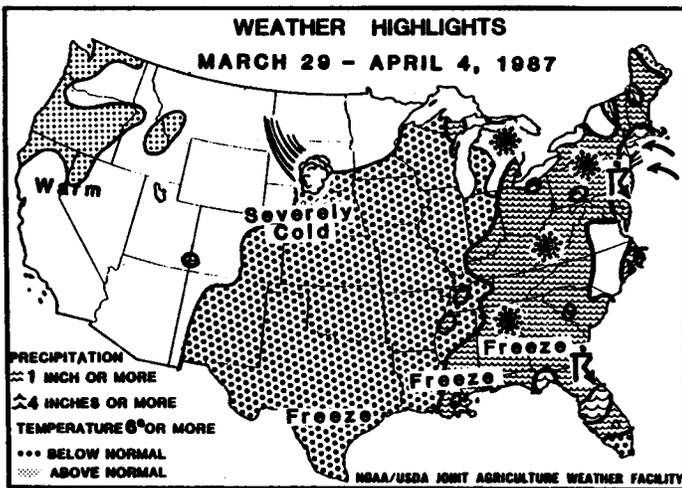
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National Weather Summary

March 29 to April 4, 1987



TUESDAY...The arctic air covered most of the Nation from the Intermountain region in the West to the ridge of the Appalachians and through the South. Blooming fruit trees and early crops were affected in much of the South. Moderate showers covered most of the Northeast and snow fell through the Great Lakes and middle and lower Appalachians.

Wednesday...The weather in the Plains warmed, but freezing temperatures reached to all but the extreme east coast and into northern Florida. Snow fell from the central Mississippi Valley through the Great Lakes, the central Appalachians, and the upper Ohio Valley. Moderate rain continued in much of New England.

THURSDAY...Temperatures moderated in the East but freezing temperatures were reported throughout the Appalachians. Snow fell in the Appalachians and from the upper Ohio Valley and eastern Great Lakes to New England. Light rain covered the Piedmont. It was unusually warm in the West and a few showers developed along the coast.

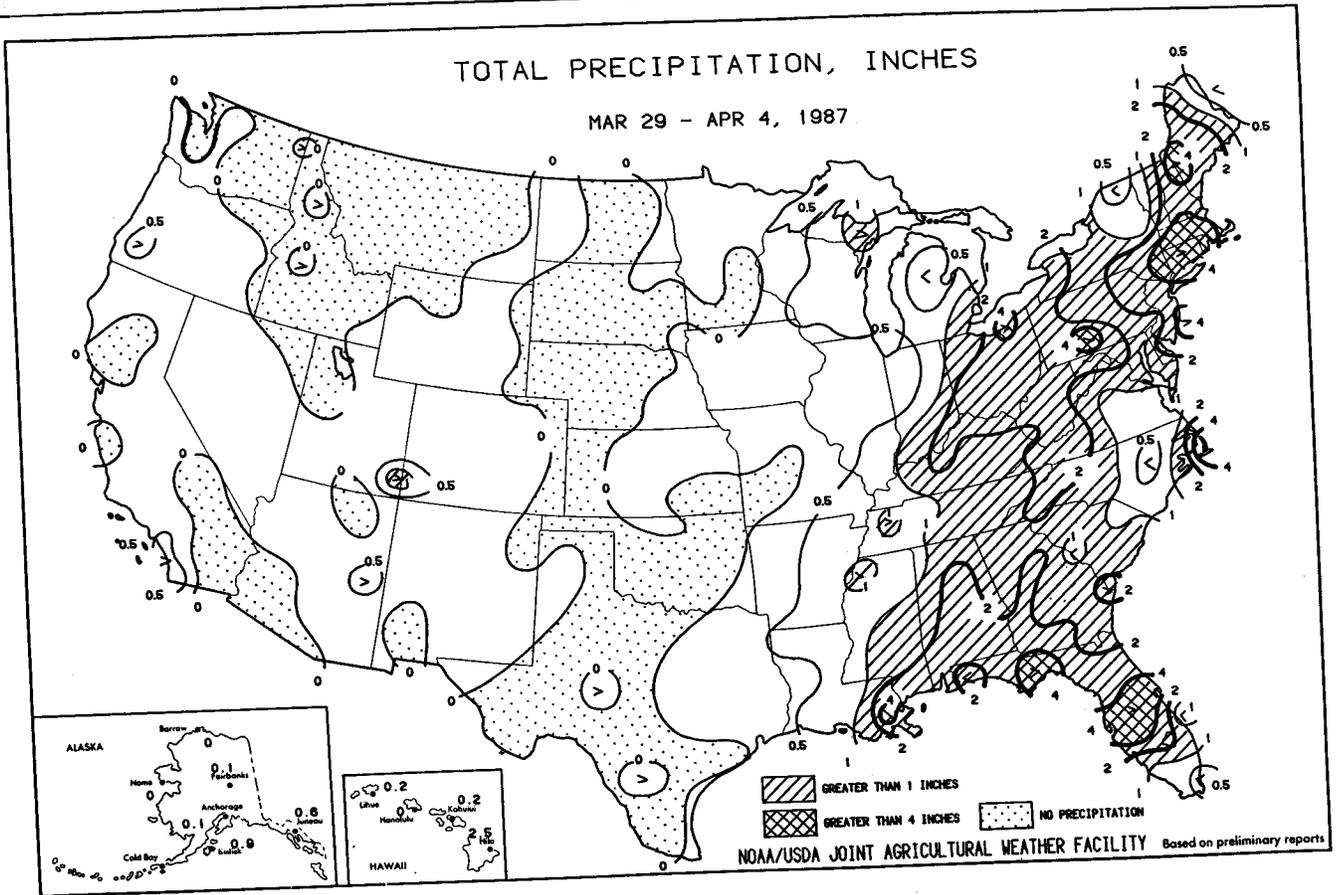
FRIDAY...After a brief moderation, more cold air spread into the Plains. Freezing temperatures persisted along the ridge of the Appalachians. Wet snow continued in the mountains, and melting snow fell as far south as Mobile, Alabama. Light rain-showers covered the lower Mississippi Valley and northeastward to New England. (continued to p. 7)

HIGHLIGHTS: An arctic outbreak early in the week spread cold air throughout the East, setting the scene for some of the most unusual weather for this time of year. Freezing temperatures reached to the gulf coast, into northern Florida, and almost to the southeastern coast. Snow fell as far south as Mobile, Alabama. Heavy, wet snow piled deep in the Appalachians from the southern tip into New England. Many record-cold temperatures were set east of the Rocky Mountains, while record warmth spread in the West. The cold, snowy weather persisted for most of the week in and near the Appalachians.

SUNDAY...Severely cold weather plunged southward, covering the Great Plains to northern and western Texas, and eastward into the Midwest. The blizzard over the central High Plains moved eastward then abated, but heavy snow continued from eastern Kansas and Nebraska to the western Great Lakes. Severe weather east of the cold air included tornadoes across the South and showers and thunderstorms through the Ohio Valley and the Mid-Atlantic.

MONDAY...Arctic air dropped temperatures to the single digits in the central High Plains, with the leading edge reaching through the Great Lakes, Arkansas, and most of Texas. Severe weather continued in the Southeast. Moderate to heavy rain reached from central Tennessee through the eastern Great Lakes and along the east coast from Cape Hatteras to New England.

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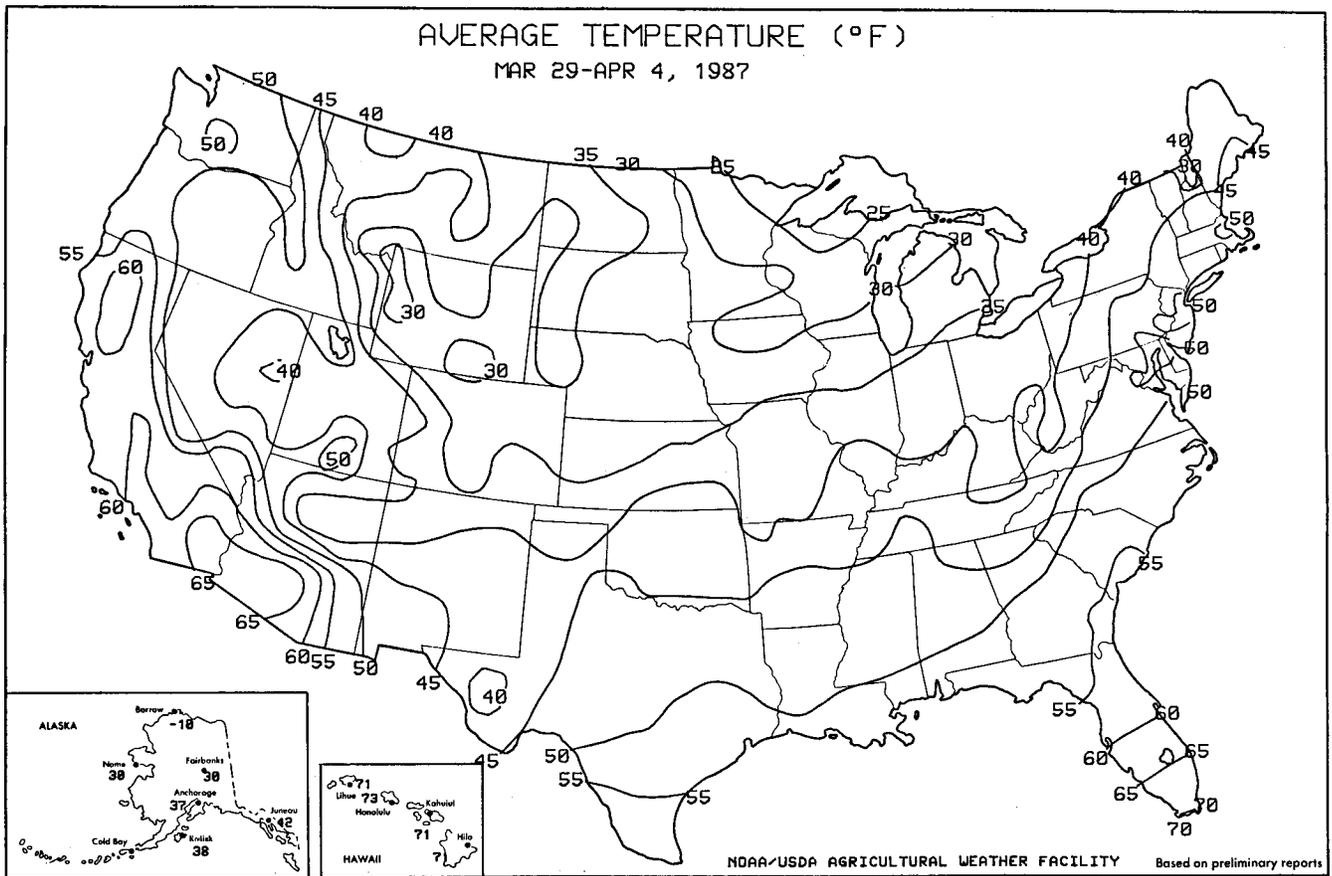
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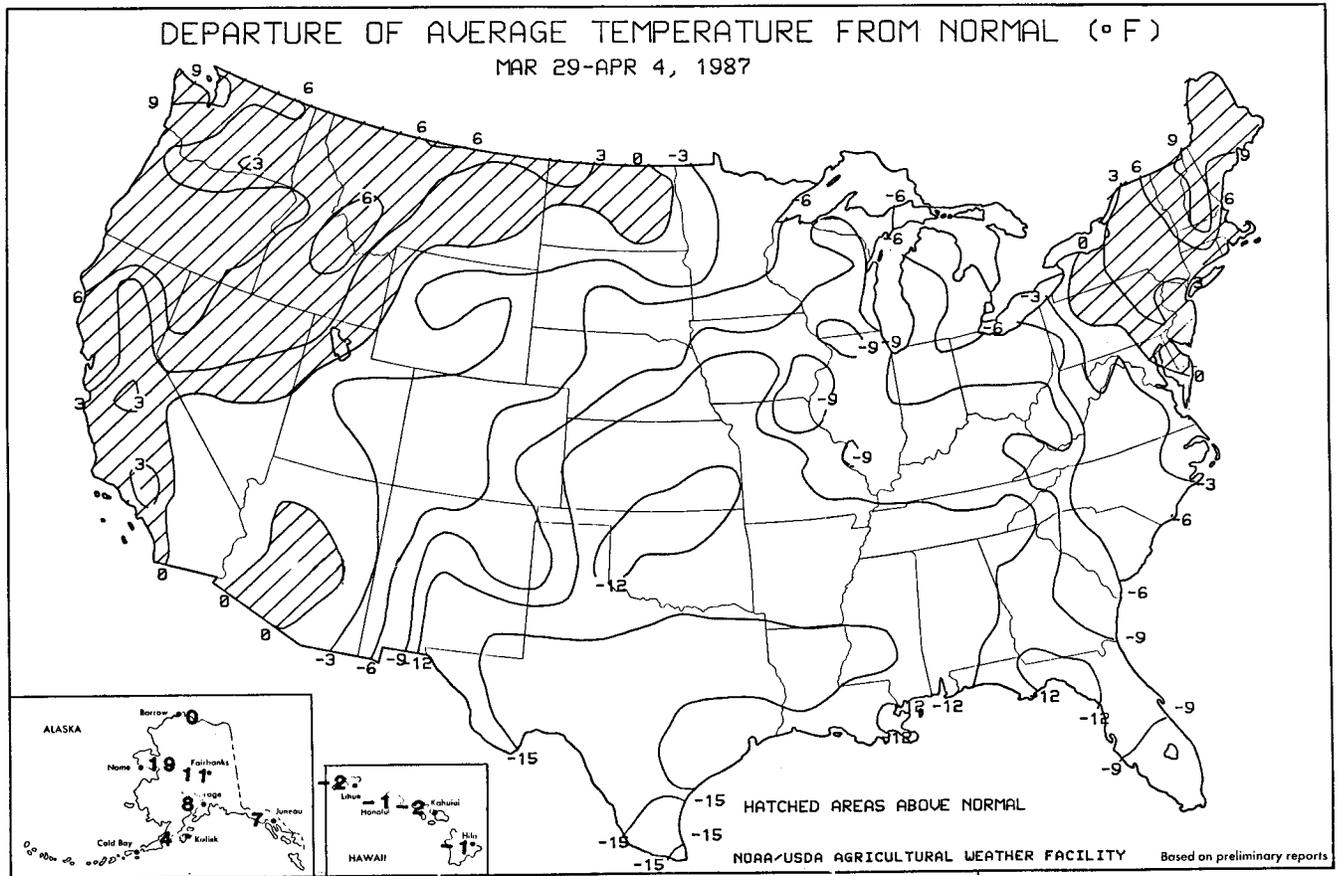
HEAVY SNOWFALL COVERS THE OHIO VALLEY AND CENTRAL AND SOUTHERN APPALACHIANS WHILE HEAVY RAIN FALLS OVER MUCH OF THE NORTHEAST AS A STORM MOVES UP THE EASTERN SEABOARD.

A LARGE HIGH-PRESSURE SYSTEM CENTERED IN THE MIDDLE MISSISSIPPI VALLEY BRINGS FRIGID AIR INTO THE EAST, AS FAR SOUTH AS THE GULF COAST.

RAINSHOWERS ARE OVER THE CENTRAL AND SOUTHERN PLATEAU.



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



PAN EVAPORATION: Guide to Crop Water Use and Reservoir Evaporation

The map, "Pan Evaporation," is issued to depict the weekly amount of water evaporated from standard National Weather Service Class A pans. The Class A pans are generally of monel or galvanized metal, unpainted, 4 feet in diameter, 10 inches deep, and mounted on a platform a few inches above the surrounding soil. The data is of interest in water and crop management, especially during droughts or when crop irrigation is being expanded to maintain a reliable supply of agricultural commodities for national and world needs.

Pan evaporation data can be used to estimate consumptive use by crops and evaporation from lakes and stock ponds. It also serves as a general climatic index incorporating temperature, humidity, wind, and solar radiation.

When multiplied by appropriately-derived coefficients, pan evaporation can be used to estimate the water use by a crop. The coefficients, ratio of crop water use to pan evaporation, change throughout the growing season. An example of the relationship between water use by corn during its various development stages and pan evaporation are shown in Fig. 1. The relationship for sugarcane is depicted in Fig. 2.

Pan evaporation values for the map in this Bulletin will be listed in inches per week to coincide with the accompanying weekly precipitation map.

The difference between the crop water needs and rainfall can be made up by irrigation in some areas; otherwise, crop yields may be lowered when moisture is short, especially during the critical crop stages of flowering and early maturation.

A main use of pan evaporation is to estimate the evaporation from lakes particularly those of interest to the Army's Corps of Engineers, Water Resource Departments, and reservoir managers. The coefficient for conversion of evaporation from the Class A pan to that of a shallow lake or free water surface averages around .7 but varies across the country. The coefficient is generally smaller in arid regions and larger in the humid ones.

Don Haddock

Figure 1. The ratio of evapotranspiration from corn to open-pan evaporation throughout the growing season (from Denmead and Shaw, The Agronomy Journal, Vol. 51, 725-726, 1959)

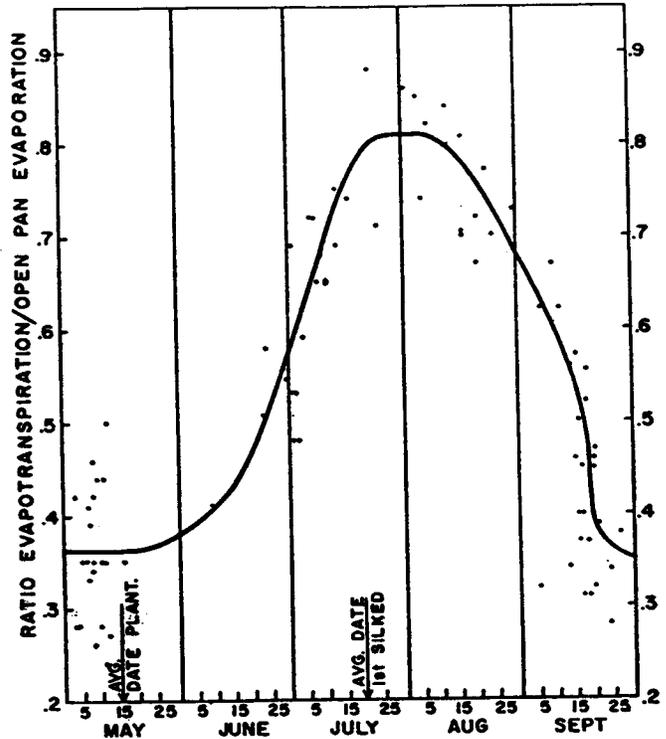
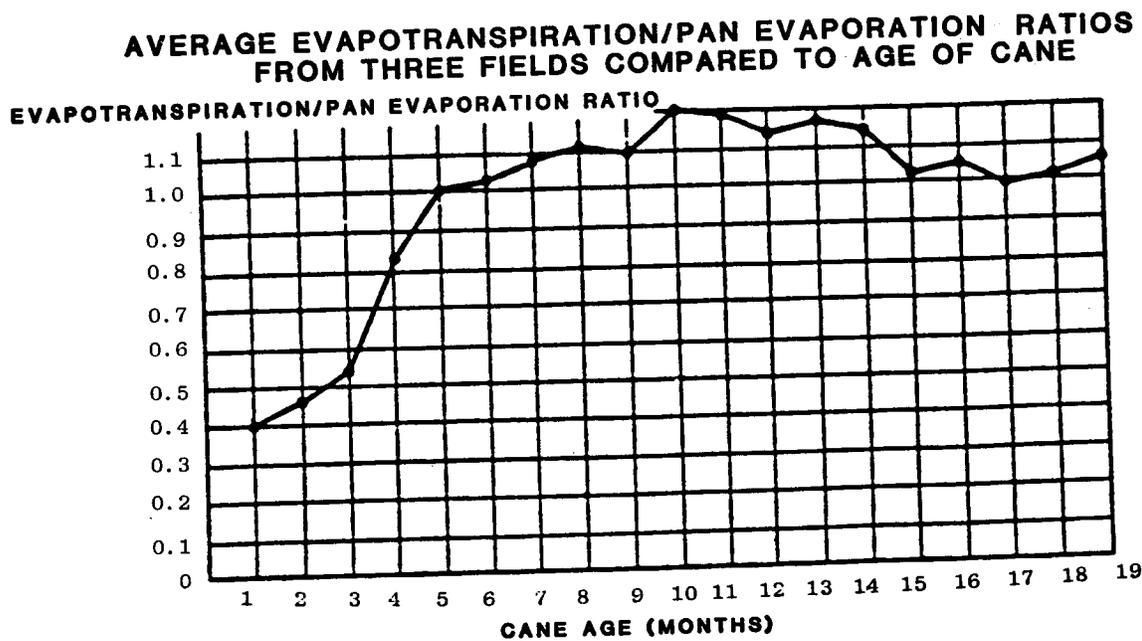
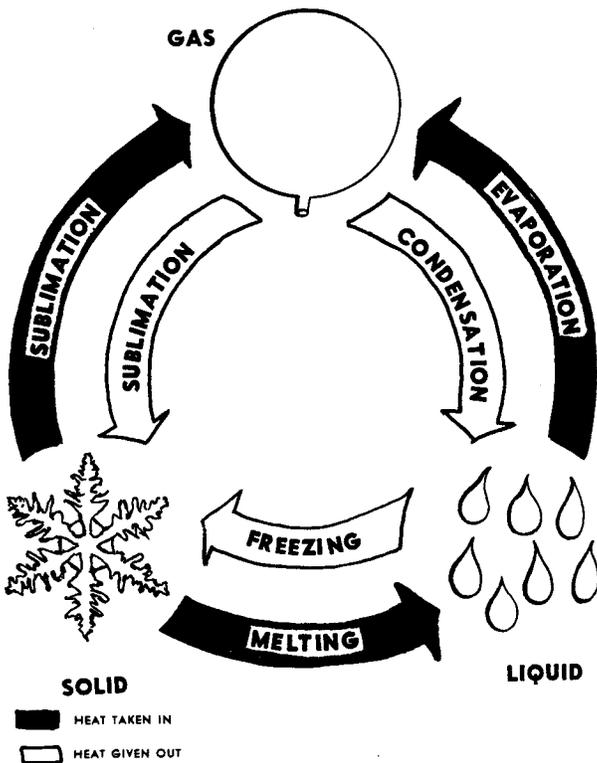
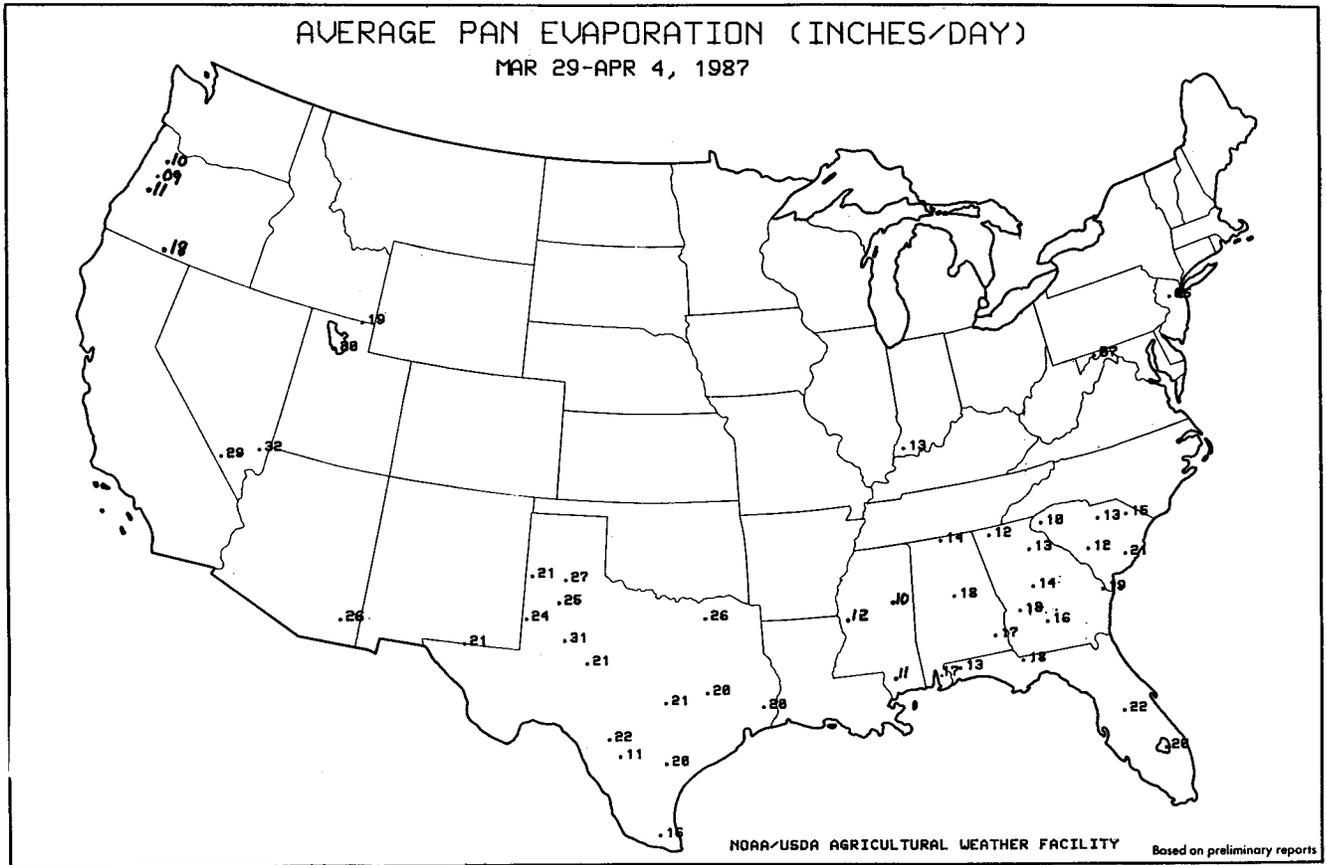


Figure 2. Ratio of average evapotranspiration or consumptive water use to pan evaporation for three fields by age of sugarcane. (Redrawn from Chang, Jen-Hu. Microclimate of Sugarcane, Hawaii Planter Rec. 56(3): 195-225, 1961)





CHANGES OF STATE

In the change of water from a liquid to a gas, molecules escape from the surface of the liquid and enter the air as water vapor. The rate of their escape increases as the temperature at the liquid's surface increases. This is a simplified explanation of "evaporation," the process through which water vapor enters the atmosphere from liquid water.

Any change of state involves a heat transaction. In breaking away from the attraction of the other molecules, the escaping water molecules must do work and use energy, thus cooling the remaining liquid. The heat required for the evaporation process is not lost, but remains hidden or latent in the water vapor. When the vapor changes back to liquid water, this heat reappears. The more rapid the rate of evaporation, the greater is the cooling of the surface from which the heat is drawn.

During a period of high temperatures, light winds, and high humidity, weather conditions tend to become oppressive. At such times, the body's perspiration evaporates very slowly and therefore produces little cooling. When we use a fan for cooling purposes, it moves away vapor-laden air near the skin, replacing it with drier air. As moisture in the skin evaporates into the drier air, much of the heat necessary to evaporate this moisture is removed from the skin, thus cooling the body more effectively.

Heat is also required to melt ice or snow into

liquid water. Upon freezing, the same heat is released. Thus evaporation and melting both cool the air, or at least retard temperature increases that may be produced by other processes occurring simultaneously. Conversely, condensation (change of water vapor to liquid) and freezing raise the temperature of the air, or at least retard its rate of temperature decrease.

It is possible for ice to change directly to water vapor without passing through the liquid state. Many of us have at times observed the disappearance of snow on the ground with no melting. This process, called "sublimation," is somewhat like evaporation, but more heat energy is required for the escape of molecules from solid surfaces than from liquid surfaces. The heat required to sublimate a given amount of ice is the sum of the heat required to melt it and that required to evaporate the liquid water (even though no melting or evaporation takes place). Solid forms of precipitation, in addition to snow and ice surfaces, supply water vapor through the sublimation process. The amount of water vapor added to the atmosphere by the sublimation process is small compared to that added through evaporation.

Ice can form directly from water vapor. This process, which is the reverse of that described in the preceding paragraph, is also called sublimation, and is exemplified by the formation of frost on a cold, clear night.

MAGIC IN A DROP OF WATER

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In oceans, ice fields, lakes and rivers, we find one of the most common substances known to man, water. Estimates of 324 million cubic miles of water are in these bodies. Beneath the surface of the earth, lies some 2 million cubic miles more in ground water. Also, the atmosphere holds another 3,100 cubic miles, mostly in water vapor. This abundance of water was present when the earth was created. Today, life as we know it could not exist without it. A few organisms on the earth can exist without air but none without water.

As a substance, water is odorless, tasteless, and colorless. Yet, it plays a dominant role in the affairs of the world. As a chemical, it is a compound of unusual stability. Water is one of the most universal solvents known and a powerful source of chemical energy. Water draws away from most organic substances but is strongly attracted to most inorganic materials including itself. Its molecules cling together more strongly than those of some metals.

Water has a few other unique characteristics. When frozen into a solid mass, it expands instead of contracts as most other substances. Thus, the lighter solid floats on the heavier liquid with some very astonishing consequences. Water can absorb and release more heat per unit mass of the substance than most other common materials. Water requires about 80 calories of heat energy to melt a gram of ice and 540 calories to convert a gram of water to vapor without any change in the temperature of the substance. A gram is roughly a teaspoon of water. Nearly all of these unique characteristics are a vital part of life processes.

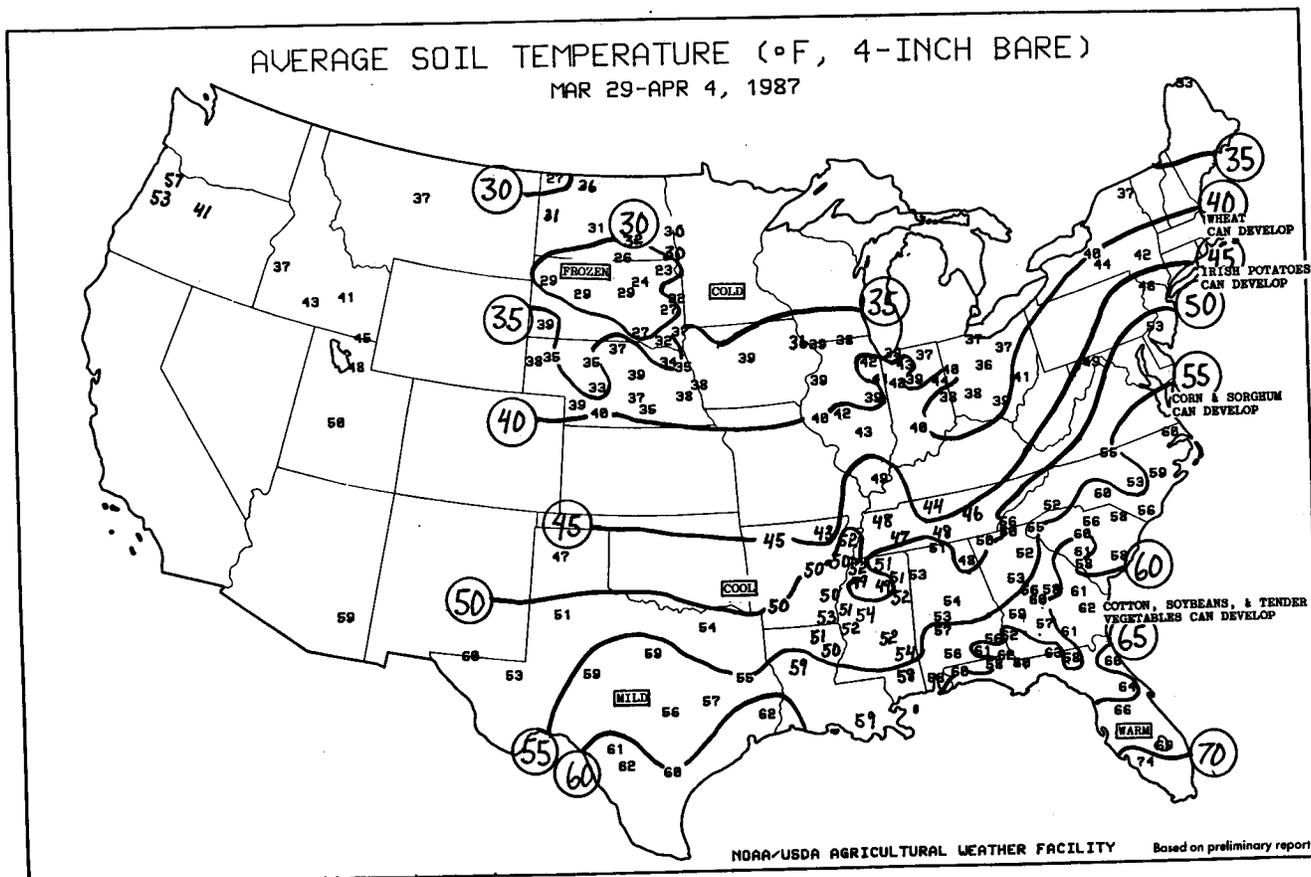
Most known substances tend to contract or become more dense as the temperature decreases. Water follows this rule as a vapor and as a liquid for 96 percent of the way down the temperature range from the point that vapor becomes a liquid. But at 39 degrees F something happens. As cooling

continues, water expands and becomes less dense. Also, as water freezes at 32 degrees F, it becomes lighter still until it has increased in volume by about 9%.

This increase in volume, with decreasing temperature below 39 degrees, causes some severe problems for the homeowner faced with burst water pipes in the middle of the winter, but it is indeed fortunate for most creative processes. If water behaved like other freezing liquids, there would soon be no life on the earth. Almost all water would soon be locked up in the eternal ice or on the beds of seas, lakes and streams.

When winter comes, the ice forms and floats on the surface of the liquid water and protects the water beneath from further freezing. If the ice were heavier than water, it would sink to the bottom and gradually build up from there. Before long, the lakes and Arctic seas, which are now covered with ice on their surface, would be frozen solid, with perhaps thin layers of liquid water over the ice where it melted during the warmer seasons. If such were the situation, most of the world's water supply would be unavailable for use by living organisms including plants, animals and man.

As the situation now exists, the water reaches its maximum density while still in the liquid state. This heavier water sinks to the bottom of the ocean, lake or reservoir carrying with it the oxygen, carbon dioxide and minerals which it has obtained as part of the hydrologic cycle. This transfer occurs twice each year and is known as "seasonal overturn." The process helps to maintain the liquid state of the water by transferring energy throughout the system and supplying organisms with the oxygen, carbon dioxide and nutrients that they need to grow and survive in the depths of the oceans and lakes. This process also helps to maintain the water in a liquid state.



National Weather Data for Selected Cities

Weather Data for the Week Ending April 4, 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 MAR. 1	PCT. NORMAL SINCE MAR. 1	TOTAL, IN., SINCE JAN. 1	PCT. NORMAL SINCE JAN. 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE °F		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	57	34	80	27	46	-13	2.6	1.3	1.5	5.4	73	17.2	99	90	44	0	4	4	2
MOBILE	62	40	76	32	51	-14	2.2	.8	1.6	6.6	92	21.1	126	94	45	0	1	4	1
MONTGOMERY	61	38	76	28	49	-12	2.9	1.6	1.8	5.5	84	22.5	148	90	45	0	2	4	2
AK ANCHORAGE	44	30	46	25	37	8	.1	0	.1	.3	35	2.1	88	86	45	0	6	3	0
BARROW	-4	-16	16	-23	-10	0	0	0	0	0	20	.2	40	82	68	0	7	0	0
FAIRBANKS	40	20	51	12	30	11	.1	0	.1	.1	11	.8	57	75	34	0	7	1	0
JUNEAU	47	36	52	31	42	7	.6	-.1	.3	2.8	75	10.0	90	92	60	0	2	4	0
KODIAK	43	32	46	26	38	4	.9	-.1	.5	6.6	150	21.5	141	93	60	0	3	5	1
NOME	34	25	39	16	30	19	0	-.1	0	.5	73	1.9	100	81	59	0	7	0	0
AZ PHOENIX	81	54	91	46	67	3	0	-.1	0	.3	36	3.0	136	38	13	1	0	1	0
PRESCOTT	65	29	74	20	47	2	.3	0	.2	.7	40	4.2	86	68	15	0	5	3	0
TUCSON	76	46	87	38	61	0	.2	.2	1.0	135	3.2	145	42	15	0	0	1	0	0
YUMA	81	53	91	50	67	7	0	0	0	0	4	50	46	14	1	0	0	0	0
AR FORT SMITH	56	28	78	24	42	-14	.1	-.9	.1	3.9	89	9.9	114	83	27	0	6	1	0
LITTLE ROCK	56	34	73	30	45	-13	.6	-.6	.4	3.2	60	11.5	88	72	40	0	4	3	0
CA BAKERSFIELD	77	47	83	45	62	2	0	-.1	0	1.1	114	3.6	120	72	24	0	0	1	0
EUREKA	66	48	76	47	57	9	0	-.9	0	6.1	111	16.0	90	76	50	0	0	0	0
FRESNO	74	47	80	43	60	3	0	-.3	0	2.4	136	5.7	100	86	32	0	0	1	0
LOS ANGELES	70	52	80	48	61	2	0	-.3	0	.9	49	2.9	39	90	41	0	0	1	0
REDDING	74	45	81	40	60	3	0	-.9	0	7.0	128	19.0	94	78	27	0	0	0	0
SACRAMENTO	73	44	78	38	59	3	0	-.4	0	3.2	139	8.6	95	89	35	0	0	0	0
SAN DIEGO	71	51	78	48	61	1	.8	.5	.4	1.8	104	5.0	94	86	52	0	0	2	0
SAN FRANCISCO	69	50	74	46	59	6	0	-.5	0	2.0	70	8.3	78	84	41	0	0	1	0
CO DENVER	51	20	63	7	36	-7	.2	-.1	.2	1.6	112	3.5	135	80	25	0	7	3	0
GRAND JUNCTION	57	27	70	16	42	-5	.1	-.1	.1	2.0	244	3.5	175	64	18	0	6	1	0
PUEBLO	55	18	69	5	37	-9	.1	-.1	.1	.6	74	2.6	200	95	23	0	7	1	0
CT BRIDGEPORT	55	40	62	31	48	4	4.3	3.4	2.7	6.3	143	11.6	108	88	60	0	1	3	2
HARTFORD	60	37	68	27	49	6	4.1	3.1	2.4	5.9	126	12.5	110	89	45	0	2	4	2
DC WASHINGTON	60	40	70	29	50	-2	1.6	.9	.5	2.4	62	9.4	102	90	46	0	2	4	2
FL APALACHICOLA	63	44	72	36	53	-11	4.2	3.3	2.6	10.8	238	20.9	179	95	55	0	0	3	2
DAYTONA BEACH	66	46	76	37	56	-11	3.0	2.4	1.9	8.0	242	16.8	191	95	52	0	0	4	2
JACKSONVILLE	66	44	74	34	55	-10	1.6	.9	1.3	6.4	167	17.0	165	92	47	0	0	3	1
KEY WEST	76	62	84	48	69	-7	.7	.5	.7	9.7	709	11.2	220	91	56	0	0	3	1
MIAMI	77	59	86	48	68	-6	.5	0	.5	3.9	180	7.4	119	82	45	0	0	1	1
ORLANDO	67	51	75	42	59	-10	5.6	5.0	2.5	11.4	314	14.4	162	91	51	0	0	4	3
TALLAHASSEE	64	38	74	29	51	-13	4.1	3.0	2.6	9.7	158	22.3	141	95	46	0	0	3	2
TAMPA	66	50	74	41	58	-11	5.4	4.8	2.7	12.2	329	17.0	191	91	52	0	0	4	2
WEST PALM BEACH	75	56	83	46	66	-7	1.6	1.0	1.0	7.8	257	10.2	123	82	48	0	0	2	2
GA ATLANTA	55	36	69	27	46	-11	1.8	.6	.7	6.3	96	18.0	113	86	49	0	3	4	2
AUGUSTA	64	39	78	28	52	-8	1.0	.1	.4	4.5	84	20.7	154	89	42	0	1	3	0
MACON	62	39	75	29	51	-11	1.3	.3	.8	4.6	80	18.5	128	89	48	0	2	3	1
SAVANNAH	66	45	77	32	55	-7	2.1	1.4	1.0	5.5	129	18.5	176	88	41	0	1	4	2
HI HILO	76	65	78	62	71	-1	2.5	-.6	1.2	7.2	47	20.5	54	91	57	0	0	5	3
HONOLULU	80	66	84	63	73	-.1	0	-.6	0	.2	5	1.4	14	76	46	0	0	0	0
KAHULUI	79	64	84	57	72	-2	.2	-.2	.2	.8	25	5.0	51	80	47	0	0	1	0
LIHUE	75	67	78	64	71	-2	.2	-.7	.2	2.1	43	6.0	40	80	55	0	0	1	0
ID BOISE	66	34	79	20	50	5	0	-.3	0	2.0	175	4.0	105	62	19	0	3	0	0
LEWISTON	66	36	75	23	51	5	0	-.3	0	.9	79	1.9	54	66	28	0	2	0	0
POCATELLO	60	23	72	9	42	2	0	-.2	0	.8	79	2.6	87	64	16	0	6	0	0
IL CHICAGO	43	23	52	17	33	-10	.3	-.6	.2	1.6	50	4.3	72	83	43	0	7	2	0
MOLINE	43	23	53	17	33	-10	0	-.8	0	2.6	81	4.4	72	85	37	0	7	1	0
PEORIA	46	24	54	19	35	-10	.4	-.4	.4	2.0	60	4.3	67	82	41	0	7	2	0
QUINCY	47	27	55	22	37	-10	0	-.8	0	1.5	40	3.7	58	80	41	0	6	1	0
ROCKFORD	42	22	52	16	32	-9	.3	-.5	.3	2.0	63	3.7	66	82	38	0	7	1	0
SPRINGFIELD	46	27	57	21	37	-10	.5	-.4	.4	2.2	61	4.4	65	79	42	0	6	2	0
IN EVANSVILLE	50	29	69	23	39	-11	1.1	-.1	.5	2.5	48	6.7	60	88	43	0	6	3	1
FORT WAYNE	46	27	72	19	37	-7	0	-.1	.3	1.5	43	4.1	55	88	44	0	6	3	0
INDIANAPOLIS	47	28	70	22	38	-9	.9	0	.7	1.9	46	4.7	52	87	45	0	6	3	1
SOUTH BEND	42	25	62	18	34	-9	.5	-.4	.3	1.5	43	5.2	65	94	51	0	6	5	0
IA DES MOINES	41	21	54	12	31	-12	.4	-.3	.3	3.0	118	4.8	104	82	43	0	7	2	0
SIUX CITY	44	21	55	12	32	-10	.1	-.4	.1	5.9	301	6.5	186	89	41	0	7	1	0
WATERLOO	41	19	54	10	30	-10	.2	-.5	.2	2.5	95	3.9	89	91	42	0	7	1	0
KS CONCORDIA	45	24	55	9	34	-13	.1	-.4	.1	8.3	394	9.8	272	81	44	0	6	1	0
DODGE CITY	50	24	71	8	37	-11	0	-.3	0	4.3	263	6.3	242	86	42	0	6	1	0
GOODLAND	44	20	54	2	32	-11	0	-.2	0	2.5	221	3.8	200	88	48	0	7	0	0
TOPEKA	48	25	61	20	36	-12	0	-.6	0	5.9	232	9.7	216	89	41	0	6	1	0
WICHITA	51	26	73	19	39	-12	0	-.5	0	4.1	176	8.9	228	80	36	0	6	0	0
KY BOWLING GREEN	53	31	77	26	42	-10	1.9	.7	1.2	2.5	40	9.3	63	89	46	0	5	5	1
LEXINGTON	48	31	77	25	40	-10	1.9	.8	.8	3.5	65	8.4	69	90	53	0	6	6	2
LOUISVILLE	50	31	77	26	41	-11	2.0	1.0	1.2	3.6	68	8.8	74	84	46	0	5	5	1
LA ALEXANDRIA	59	36	72	30	47	-16	.4	-.8	.3	6.3	109	20.8	132	80	42	0	1	4	0
BATON ROUGE	64	38	78	32	51	-14	1.0	-.2	.6	6.3	119	21.3	143	92	37	0	1	3	0
LAKE CHARLES	62	37	73	31	50	-15	.5	-.2	.4	4.9	138	17.5	152	93	38	0	1	3	0
NEW ORLEANS	63	42	73	34	53	-13	2.1	1.0	1.7	4.7	88	20.9	136	90	47	0	0	4	1

Based on 1951-80 normals.

(continued from p. 1)

SATURDAY...Heavy snow continued to fall in much of the southern and central Appalachians. Unheard-of snow fell in much of the deep South. Some of the snow changed to rain, and heavy rain fell in the

Mid-Atlantic States. Rainshowers fell in all of the East Coast States. Freezing temperatures again spread nearly to the gulf coast and to central Georgia. Rainshowers covered the west coast and spread to the central and southern Plateau.

Weather Data for the Week Ending April 4, 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 MAR. 1	PCT. NORMAL SINCE MAR. 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
SHREVEPORT	60	32	77	24	46	-16	.6	-.3	.4	1.8	40	11.8	100	95	35	0	4	2	0
ME CARIBOU	52	34	62	28	43	12	.4	-.2	.4	1.5	55	4.1	57	96	60	0	4	3	0
PORTLAND	52	37	61	29	44	7	3.5	2.5	2.8	4.9	110	10.2	86	95	64	0	2	3	2
MD BALTIMORE	59	38	70	25	48	0	1.0	.2	.5	1.7	40	9.7	96	91	45	0	2	4	0
SALISBURY	59	39	67	30	49	0	1.9	1.1	.7	4.3	95	13.7	121	94	44	0	1	4	2
MA BOSTON	55	40	62	32	47	4	3.9	3.0	1.9	6.3	136	14.4	117	88	59	0	1	4	3
CHATHAM	51	39	59	32	45	4	2.0	1.1	.9	5.5	120	15.7	120	90	75	0	1	4	2
MI ALPENA	36	20	43	14	28		.6	0	.3	1.4	64	3.2	62	95	60	0	7	3	0
DETROIT	44	27	70	21	36		1.8	1.1	.7	2.9	99	5.8	91	92	55	0	6	5	1
FLINT	43	25	67	19	34		.8	.2	.4	2.0	78	3.6	65	96	58	0	6	3	0
GRAND RAPIDS	42	23	59	18	33		.6	.2	.4	1.6	51	2.6	40	84	47	0	6	3	0
HOUGHTON LAKE	37	22	48	18	30		.3	-.2	.2	1.0	45	2.7	54	88	52	0	6	3	0
LANSING	42	24	64	18	33		.5	-.2	.2	1.3	46	2.6	45	88	53	0	6	4	0
MARQUETTE	32	14	48	7	23	-11	1.9	1.4	1.0	3.2	134	6.2	109	96	50	0	7	5	2
MUSKOGON	39	23	50	12	31	-8	.7	0	.3	1.9	65	4.1	59	89	51	0	7	4	0
SAULT STE. MARIE	34	21	47	14	27	-4	.5	0	.4	1.3	55	3.8	61	90	48	0	7	4	0
MN ALEXANDRIA	42	19	57	10	30	-3	.4	-.4	.4	1.3	91	2.6	87	88	42	0	7	0	0
DULUTH	38	14	60	7	26	-6	.2	-.2	.2	1.3	51	1.6	39	81	31	0	7	2	0
INT'L FALLS	37	12	62	6	25	-5	.1	-.2	.1	1.0	81	1.7	61	84	34	0	7	1	0
MINNEAPOLIS	44	22	58	16	33	-5	.4	-.4	.4	1.3	63	1.4	39	69	32	0	7	0	0
ROCHESTER	39	18	54	11	29	-8	.1	-.4	.1	1.3	63	2.2	61	83	33	0	7	1	0
MS GREENWOOD	59	33	74	28	46	-13	.8	-.6	.4	5.4	77	15.0	90	90	38	0	3	4	0
JACKSON	58	33	75	27	46	-15	1.0	-.3	.4	5.9	93	20.8	133	98	53	0	2	4	1
MERIDIAN	51	35	77	28	48	-13	1.7	.3	1.1	4.3	58	24.4	144	95	44	0	4	4	1
MO CAPE GIRARDEAU	62	31	69	25	42	-	.9	-.3	.6	2.6	46	6.7	58	91	46	0	4	1	0
COLUMBIA	48	26	62	21	37	-13	.4	-.9	.4	1.8	48	4.8	65	89	47	0	6	0	0
KANSAS CITY	48	24	58	18	36	-14	.1	-.6	.1	2.9	94	5.9	107	82	39	0	5	1	0
SAINT LOUIS	49	29	64	24	39	-11	.2	-.7	.2	2.2	58	5.5	72	74	38	0	5	0	0
SPRINGFIELD	48	25	73	19	37	-14	.4	-.9	.4	4.0	100	11.3	147	84	38	0	7	0	0
MT BILLINGS	55	25	69	-5	40	1	.4	-.3	.4	1.4	111	1.9	66	66	26	0	4	0	0
GLASGOW	50	26	68	7	38	2	.4	-.1	.4	1.3	346	1.5	150	84	42	0	6	0	0
GREAT FALLS	56	28	74	-1	42	5	0	-.3	.4	1.8	170	2.1	75	65	28	0	3	0	0
HAVRE	57	26	72	3	42	5	0	-.2	.4	1.0	163	1.3	76	82	27	0	5	0	0
HELENA	59	21	75	-2	40	3	0	-.2	.4	1.2	149	1.2	63	83	26	0	7	0	0
KALISPELL	57	25	69	8	41	4	0	-.2	.4	3.0	307	4.2	117	86	27	0	6	0	0
MILES CITY	52	26	70	7	39	1	0	-.2	.4	.9	119	1.0	53	76	30	0	6	0	0
MISSOULA	62	23	73	9	42	3	0	-.2	.4	1.3	137	1.9	61	79	24	0	7	0	0
NE GRAND ISLAND	41	20	51	2	30	-13	.4	-.4	.4	6.6	366	7.4	239	88	51	0	7	1	0
LINCOLN	43	20	54	10	32	-12	.1	-.5	.1	6.5	289	7.1	182	87	45	0	7	1	0
NORFOLK	44	21	56	11	33	-9	.4	-.4	.4	7.3	412	8.3	277	89	40	0	7	0	0
NORTH PLATTE	48	19	66	7	34	-7	.4	-.3	.4	1.7	132	3.4	155	88	31	0	7	0	0
OMAHA	41	21	53	11	31	-14	.2	-.3	.2	4.2	189	4.9	129	82	48	0	7	2	0
SCOTTSDUFF	51	18	64	7	35	-6	.4	-.3	.4	1.7	149	3.9	205	86	26	0	7	0	0
VALENTINE	45	19	60	4	32	-7	.4	-.3	.4	2.5	246	3.9	229	78	32	0	7	0	0
NV ELY	57	21	66	10	39	2	.1	-.1	.1	1.0	100	2.4	100	76	25	0	6	1	0
LAS VEGAS	71	43	83	33	57	-2	.1	.1	.1	.6	142	2.2	157	43	14	0	0	2	0
RENO	66	31	75	22	49	5	.3	.1	.3	1.1	133	2.3	79	73	18	0	5	1	0
WINNEMOCCA	65	27	77	17	46	5	.4	-.2	.3	1.3	181	2.4	104	75	18	0	4	1	0
NH CONCORD	59	34	65	21	47	0	2.9	2.2	2.3	4.1	122	7.1	83	91	51	0	3	4	2
NJ ATLANTIC CITY	56	37	63	28	46	0	4.0	3.1	2.3	6.1	136	14.0	124	94	54	0	2	4	3
NM ALBUQUERQUE	54	27	65	15	41	-10	.5	.4	.5	.6	100	1.8	138	63	19	0	5	1	0
CLOVIS	59	29	74	16	44	-8	.1	-.1	.3	4.3	2.2	147	63	20	0	5	1	0	0
CLOWIS	59	27	77	14	43	-13	.2	.1	.1	.3	74	2.6	217	72	23	0	4	2	0
ROSWELL	56	35	70	23	46	5	1.0	.3	.6	2.4	70	6.9	86	94	51	0	2	5	1
NY ALBANY	52	33	71	20	43	5	2.0	1.3	1.3	3.5	104	7.2	89	86	49	0	4	4	1
BINGHAMTON	48	29	77	22	39	-1	2.8	2.1	1.2	4.7	139	8.4	97	98	57	0	6	4	3
BUFFALO	57	41	62	32	49	2	3.9	3.0	1.6	6.6	143	12.8	120	86	52	0	1	4	2
NEW YORK	48	29	74	19	39	-1	1.8	1.2	.6	2.8	97	5.2	69	97	57	0	4	5	2
ROCHESTER	54	34	74	24	44	4	1.3	.6	.6	2.7	77	6.4	74	90	54	0	3	5	1
SYRACUSE	54	34	74	24	44	4	1.3	.6	.6	2.7	77	6.4	74	90	54	0	3	5	1
NC ASHEVILLE	50	31	68	22	40	-11	2.1	1.1	1.3	4.2	79	13.8	118	91	53	0	5	4	2
CHARLOTTE	61	41	71	30	51	-5	1.2	.3	.8	3.8	72	13.9	108	90	43	0	1	5	1
GREENSBORO	58	39	69	27	49	-5	1.1	.3	.5	3.7	85	12.2	109	89	47	0	2	3	1
HATTERAS	62	45	68	34	53	-2	6.6	5.8	2.6	11.1	253	26.0	195	99	59	0	0	4	3
NEW BERN	65	43	72	35	54	-4	1.1	.4	.5	4.2	105	15.3	128	92	45	0	0	4	1
RALEIGH	61	40	70	26	51	-4	.7	0	.3	3.2	79	15.3	139	88	43	0	1	4	0
WILMINGTON	64	43	71	32	54	-5	.9	.1	.3	2.9	65	13.9	121	94	48	0	1	4	0
ND BISMARCK	47	24	61	13	35	1	.4	-.2	.4	1.3	161	3.1	172	87	37	0	5	0	0
FARGO	43	21	59	11	32	-2	.4	-.3	.4	.5	49	1.6	84	88	44	0	7	1	0
GRAND FORKS	41	23	57	13	32	0	.4	-.2	.4	.4	46	1.9	86	89	52	0	7	1	0
WILLISTON	49	27	66	14	38	4	.4	-.2	.4	1.7	251	2.2	138	84	42	0	5	1	0
OH AKRON-CANTON	45	27	75	17	36	-7	3.5	2.7	1.6	4.7	124	6.9	81	96	61	0	6	6	2
CINCINNATI	47	29	77	24	38	-10	3.0	2.1	1.4	5.0	114	7.5	74	89	51	0	6	5	2
CLEVELAND	44	27	76	15	36	-7	4.2	3.4	1.9	5.2	154	7.7	96	95	62	0	6	7	3
COLUMBUS	46	29	78	21	38	-8	2.6	1.9	1.3	2.8	76	4.5	53	94	57	0	6	6	2

Based on 1951-80 normals.

Weather Data for the Week Ending April 4, 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 MAR. 1	PCT. NORMAL SINCE MAR. 1	TOTAL, IN., SINCE JAN. 1	PCT. NORMAL SINCE JAN. 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	72 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	45	29	76	24	37	-9	2.2	1.4	1.5	2.5	70	4.5	55	93	58	0	6	4	1
TOLEDO	46	27	76	19	36	-6	1.4	.7	.7	2.2	75	4.6	68	91	51	0	6	4	1
YOUNGSTOWN	46	27	76	17	37	-5	3.2	2.4	1.2	4.4	118	6.8	79	95	61	0	7	6	3
OK OKLAHOMA CITY	54	31	77	22	43	-12	T	-.5	T	2.3	98	8.9	193	68	32	0	4	0	0
TULSA	53	32	80	25	43	-13	0	-.8	0	2.2	61	9.3	139	64	26	0	5	0	0
OR ASTORIA	65	42	72	37	53	7	.1	-.4	.1	8.6	273	24.1	232	85	44	0	0	2	0
BURNS	61	28	70	15	45	5	.1	-.1	.1	1.7	144	3.9	95	85	27	0	5	2	0
MEDFORD	72	37	79	31	55	7	.3	0	.2	1.7	86	6.8	91	85	27	0	2	3	0
PENDLETON	63	37	72	22	50	3	0	-.2	0	1.4	117	3.5	80	71	35	0	0	0	0
FORTLAND	67	41	79	33	54	7	.3	-.4	.3	5.2	130	14.7	105	83	34	0	1	1	1
SALEM	68	36	78	29	52	6	T	-.7	T	4.0	84	15.1	93	87	37	0	2	1	0
PA ALLENTOWN	58	36	70	25	47	3	2.9	2.0	1.5	4.1	93	9.1	85	95	48	0	3	5	2
ERIE	46	29	75	24	37	-2	3.3	2.5	1.5	4.8	144	8.0	103	95	61	0	7	4	2
HARRISBURG	56	38	73	26	47	0	1.3	.5	.3	2.2	56	7.5	78	90	50	0	2	5	0
PHILADELPHIA	62	40	70	29	51	3	1.9	1.0	1.1	2.4	56	8.2	80	80	45	0	1	4	1
PITTSBURGH	47	28	78	20	38	-7	2.9	2.1	1.4	4.5	112	7.4	80	86	49	0	5	5	2
SCRANTON	55	35	70	24	45	2	3.1	2.5	1.9	3.6	118	6.9	95	91	49	0	3	5	2
RI PROVIDENCE	57	38	66	27	48	5	5.3	4.3	3.1	7.6	159	12.7	101	96	57	0	1	4	2
SC CHARLESTON	66	45	78	33	55	-5	1.7	1.0	1.1	5.6	118	17.5	154	92	42	0	0	4	1
COLUMBIA	64	42	77	28	53	-6	1.2	.2	.6	5.5	96	19.2	136	93	38	0	1	4	1
FLORENCE	67	43	77	30	55	-4	.5	-.3	.4	3.2	70	13.8	120	89	38	0	1	3	0
GREENVILLE	57	37	70	27	48	-9	1.9	.6	1.3	5.4	81	17.4	114	89	46	0	2	4	1
SD ABERDEEN	46	22	60	12	34	-2	T	-.3	T	1.7	141	2.9	126	91	37	0	7	1	0
HURON	47	23	62	15	35	-3	T	-.4	T	4.8	335	6.1	235	89	36	0	7	0	0
RAPID CITY	49	22	64	7	35	-3	T	-.3	T	1.1	95	2.9	132	87	32	0	7	0	0
SIOUX FALLS	45	18	60	12	32	-7	T	-.4	T	3.3	179	3.7	112	88	33	0	7	1	0
TN CHATTANOOGA	54	33	69	26	43	-12	1.8	.6	.9	5.5	79	19.0	112	89	48	0	4	4	2
KNOXVILLE	52	31	78	22	41	-13	1.5	.4	.8	3.9	63	13.2	89	94	53	0	4	4	1
MEMPHIS	54	34	67	29	44	-14	.9	-.5	.4	3.4	56	11.0	73	87	44	0	3	3	0
NASHVILLE	55	32	82	26	43	-11	.6	-.5	.4	1.2	19	7.6	52	90	46	0	5	3	0
TX ABILENE	59	32	78	22	46	-15	T	-.4	T	1.6	117	5.6	170	67	26	0	3	0	0
AMARILLO	55	23	73	12	39	-12	T	-.2	T	1.0	102	3.1	155	80	25	0	6	2	0
AUSTIN	63	37	77	30	50	-15	T	-.5	T	1.4	68	5.2	87	78	27	0	1	1	0
BEAUMONT	67	37	76	29	52	-13	.2	-.6	.1	1.1	30	16.9	143	92	30	0	2	2	0
BROWNSVILLE	70	44	76	34	57	-15	T	-.2	T	.6	97	5.3	156	85	39	0	0	1	0
CORPUS CHRISTI	78	39	80	30	54	-15	.1	-.2	.1	.5	52	8.8	220	81	32	0	1	1	0
DEL RIO	66	38	80	32	52	-16	0	-.3	0	.8	94	4.4	200	0	0	0	1	0	0
EL PASO	63	29	79	16	46	-14	.1	0	.1	.5	144	1.0	83	69	21	0	5	1	0
FORT WORTH	60	33	80	28	46	-15	.1	-.7	.1	1.7	60	6.6	103	73	29	0	4	1	0
GALVESTON	64	43	72	36	53	-12	.3	-.2	.3	.7	27	9.4	122	79	39	0	0	2	0
HOUSTON	66	35	78	30	51	-15	T	-.7	T	.9	29	7.6	77	86	31	0	2	1	0
LUBBOCK	58	28	78	16	43	-12	T	-.2	T	4	42	2.4	126	74	23	0	4	0	0
MIDLAND	60	29	77	17	45	-15	T	-.1	T	1.2	224	3.3	220	75	24	0	3	0	0
SAN ANGELO	61	31	77	23	46	-16	T	-.2	T	1.8	190	6.9	288	72	26	0	5	1	0
SAN ANTONIO	65	35	78	31	50	-16	T	-.4	T	1.1	69	7.0	140	78	26	0	2	0	0
VICTORIA	67	40	78	33	54	-14	T	-.4	T	.4	27	7.1	125	77	27	0	0	0	0
WACO	61	33	81	30	47	-16	.1	-.5	.1	1.7	70	5.6	92	79	28	0	5	1	0
WICHITA FALLS	58	32	80	23	45	-14	0	-.5	0	1.9	90	7.8	195	74	29	0	4	0	0
UT BEAVER CREEK	55	26	67	13	40	-2	1.3	1.2	1.3	1.9	218	4.5	141	75	34	0	6	1	1
CEDAR CITY	58	26	69	15	42	-1	.1	-.2	.1	2.0	164	3.7	142	80	23	0	5	1	0
SALT LAKE CITY	58	32	73	22	45	0	T	-.5	T	1.5	77	4.4	96	69	23	0	3	0	0
VT BURLINGTON	53	32	67	20	43	7	.6	0	.3	1.6	62	4.0	66	90	50	0	4	3	0
VA NORFOLK	61	42	69	34	52	-2	.7	0	.4	2.7	65	15.8	141	88	46	0	0	4	0
RICHMOND	60	38	70	28	49	-4	.9	.2	.3	2.1	53	10.2	99	89	46	0	2	4	0
ROANOKE	54	38	67	30	46	-6	2.8	2.0	1.2	5.1	124	14.2	141	91	51	0	4	4	3
WA COLVILLE	63	33	73	24	48	7	0	-.2	0	3.3	246	5.5	110	75	42	0	3	0	0
QUILLAYUTE	66	37	81	29	51	7	T	-.2	T	13.3	101	35.7	90	90	39	0	0	0	0
SEATTLE-TACOMA	67	44	82	38	56	10	.3	-.4	.2	5.8	146	13.8	97	80	32	0	2	0	0
SPOKANE	61	32	68	20	47	5	0	-.3	0	2.2	146	4.6	84	77	29	0	4	0	0
YAKIMA	66	32	74	19	49	4	0	-.1	0	1.4	209	3.2	114	80	25	0	4	0	0
WV BECKLEY	45	29	65	20	37	-9	2.1	1.2	.9	3.1	70	10.0	90	94	66	0	5	5	2
CHARLESTON	50	32	78	27	41	-9	2.3	1.4	.8	2.7	61	9.3	85	95	55	0	4	5	3
HUNTINGTON	50	31	80	26	41	-10	2.6	1.7	1.1	3.7	82	9.5	90	96	53	0	5	5	3
PARKERSBURG	48	31	78	23	40	-9	2.6	1.8	1.0	3.3	84	6.4	67	97	56	0	5	5	2
WI GREEN BAY	37	19	50	9	28	-9	.8	-.2	.5	1.7	79	2.6	59	89	47	0	7	3	1
LA CROSSE	41	21	56	13	31	-9	.7	-.2	.7	2.2	100	3.6	90	79	33	0	7	1	1
MADISON	39	19	52	11	29	-10	.5	-.1	.5	2.0	79	3.3	72	87	44	0	7	3	0
MILWAUKEE	40	25	52	20	33	-6	.6	-.2	.5	1.8	60	4.2	71	81	43	0	7	2	1
WAUSAU	37	17	53	6	27	-9	.5	0	.4	1.1	51	1.8	44	83	35	0	7	3	0
WY CASPER	48	22	65	1	35	-2	.1	-.2	.1	1.5	128	4.3	195	82	32	0	6	2	0
CHEYENNE	45	19	56	3	32	-5	T	-.2	T	1.3	114	2.3	121	80	31	0	7	0	0
LANDER	47	19	58	-4	33	-4	.1	-.3	0	2.3	170	4.9	196	75	30	0	6	2	0
SHERIDAN	51	18	65	-10	35	-2	T	-.3	T	1.5	116	2.7	96	81	32	0	7	1	0
PR SAN JUAN	86	71	91	69	79	1	T	-.6	T	5.2	202	7.6	100	86	68	2	0	0	0

Based on 1951-80 normals.

HEATING DEGREE DAY DATA WEEKLY SUMMARY
CLIMATE ANALYSIS CENTER-NWS-NOA
ASSESSMENT AND INFORMATION SERVICES CENTER-NESDIS-NOA

LAST DATE OF DATA COLLECTION PERIOD IS 4-4-1987
ACCUMULATIONS ARE FROM JULY 1
** = NORMAL LESS THAN 10% OR RATIO INCALCULABLE

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

March Weather and Crop Summary

MARCH WEATHER SUMMARY

HIGHLIGHTS: Precipitation was below normal in most of the area east of the Mississippi Valley except for Florida and most of the east coast. Precipitation was ample in the central Great Plains and most of the northern Plains. Although many storms moved through the Southwest, precipitation was generally much below normal and was spotty in the rest of the West. Two arctic outbreaks created blizzards in the central High Plains, severely stressing livestock. March temperatures were mild over much of the Nation but, at month's end, severe cold pushed into the Plains and moved eastward to the Appalachians. Freezing temperatures reached deep into the South, threatening fruit trees and early vegetables.

FIRST WEEK...Rain spread through the Northeast and snow fell from the Great Lakes to western New England. Showers covered the east coast. Cooler air moved into the upper Mississippi Valley and spread to the east coast. Freezing temperatures reached to the lower Appalachians and over the Piedmont. A storm in the West brought strong wind and heavy rain through the Cascades and Sierras and lighter showers to the central Plateau and northern Rockies. The storm brought unusually warm air to the West and to the central Great Plains. At week's end, showers spread over the eastern gulf coast and through Florida.

SECOND WEEK...A strong surge of arctic air plunged into the Plains, spreading over the East and most of the South. A warming trend began after midweek through the Plains. Pacific storms continuously pounded the west coast with wind, rain, and snow in the Sierras, Cascades, and northern Rockies. Gulf moisture triggered showers and thunderstorms in southern Texas that spread across the South. Rain covered much of the Southeast and snow or sleet reached from the Tennessee Valley through the lower Appalachians and, finally along the east coast from Maryland to New England.

THIRD WEEK...A parade of Pacific storms moved into the West, through the mountains, and into the Great Plains. Then a blocking ridge of high pressure pushed the storms southward. Rain covered the west coast, and snow was heavy in the mountains and Plateau region. Cold rain mixed with wet snow lingered in the central and northern High Plains, while snow covered the northern Plains. Thunderstorms triggered heavy rain from eastern Texas and Oklahoma to western Georgia. Moderate to heavy rain fell from the lower Mississippi Valley to eastern South Dakota and in Kentucky and the central Appalachians.

FOURTH WEEK...Storms in the Great Plains caused blizzards in the High Plains and moderate to heavy rain from eastern Oklahoma to Minnesota. Showers and thunderstorms covered most of the Mississippi Valley, the South, and along the east coast from Florida to southern New England. Lighter showers covered most of the East. Another arctic air mass pushed into Montana by week's end, and plunged southward and eastward. Snow and strong, gusty wind accompanied the severely cold air, causing another blizzard in the High Plains from Kansas to South Dakota. Temperatures were unusually warm in the East, but much colder air was advancing southward and eastward.

During the last 3 days of the month, the cold air moved into the South and slowly eastward.

Freezing temperatures reached deep into the South and, as the month ended, spilled over the Appalachians into highly productive orchards. Heavy rain preceded the cold air throughout the East. Snow fell in the Plains and Great Lakes region.

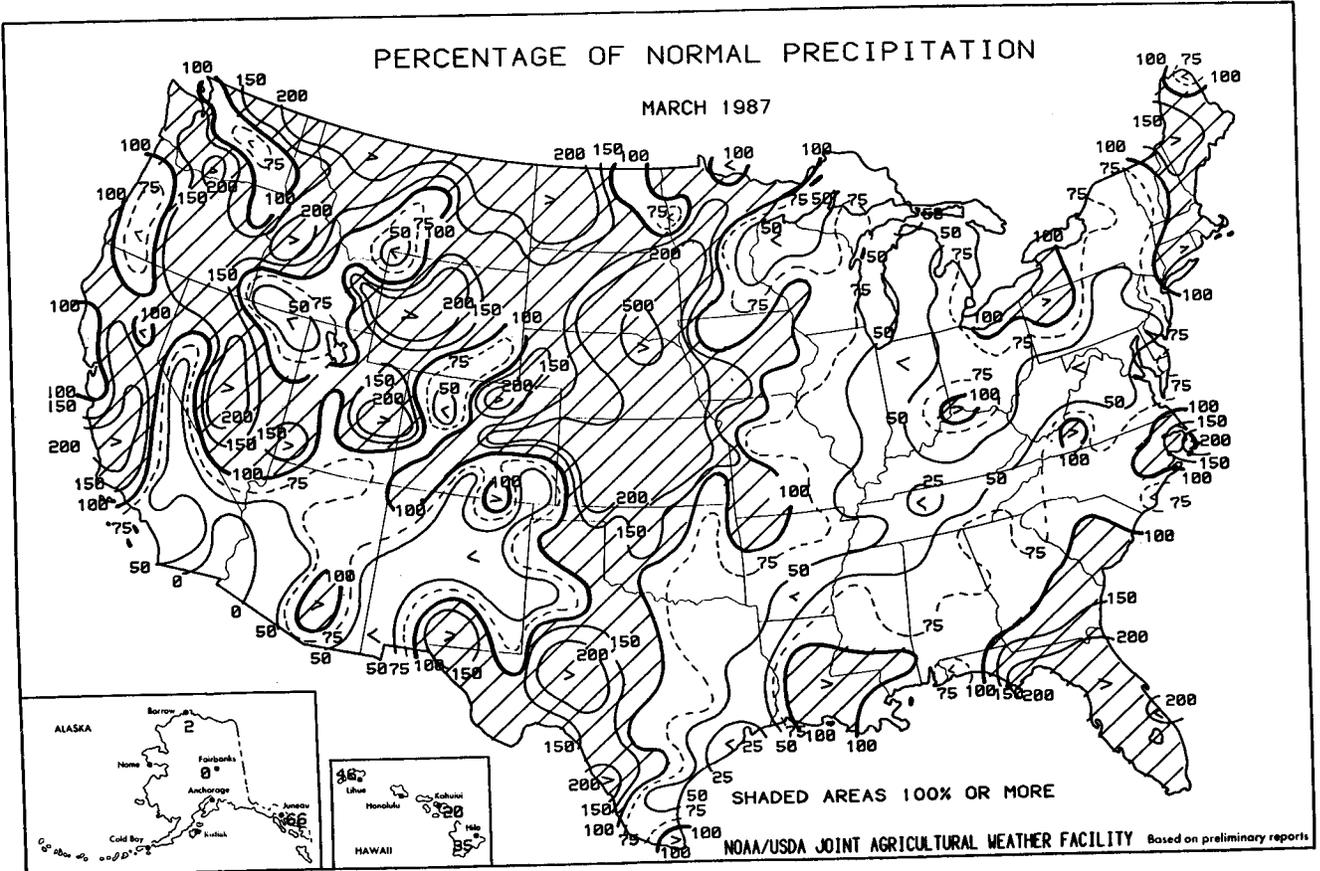
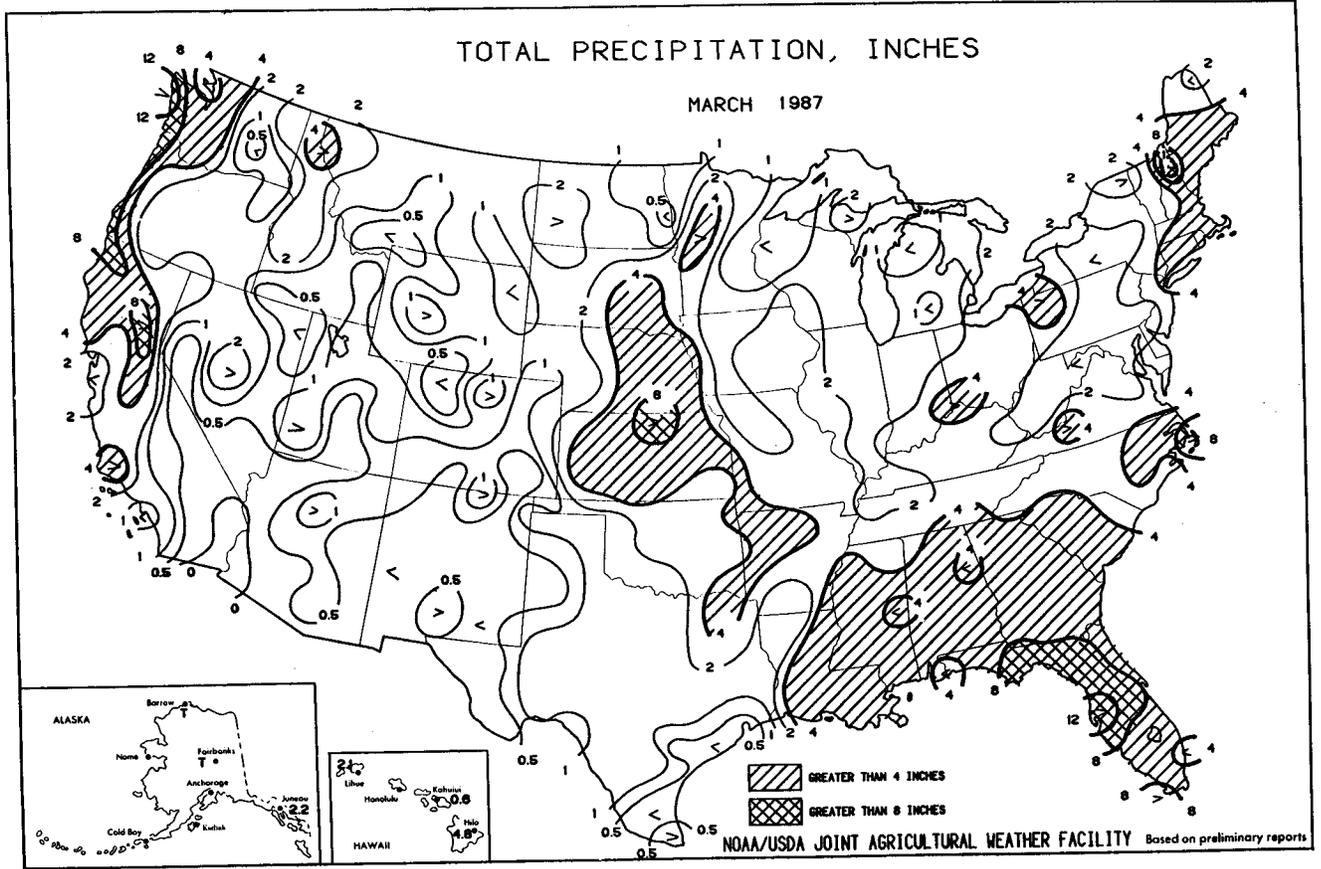
MARCH FIELDWORK

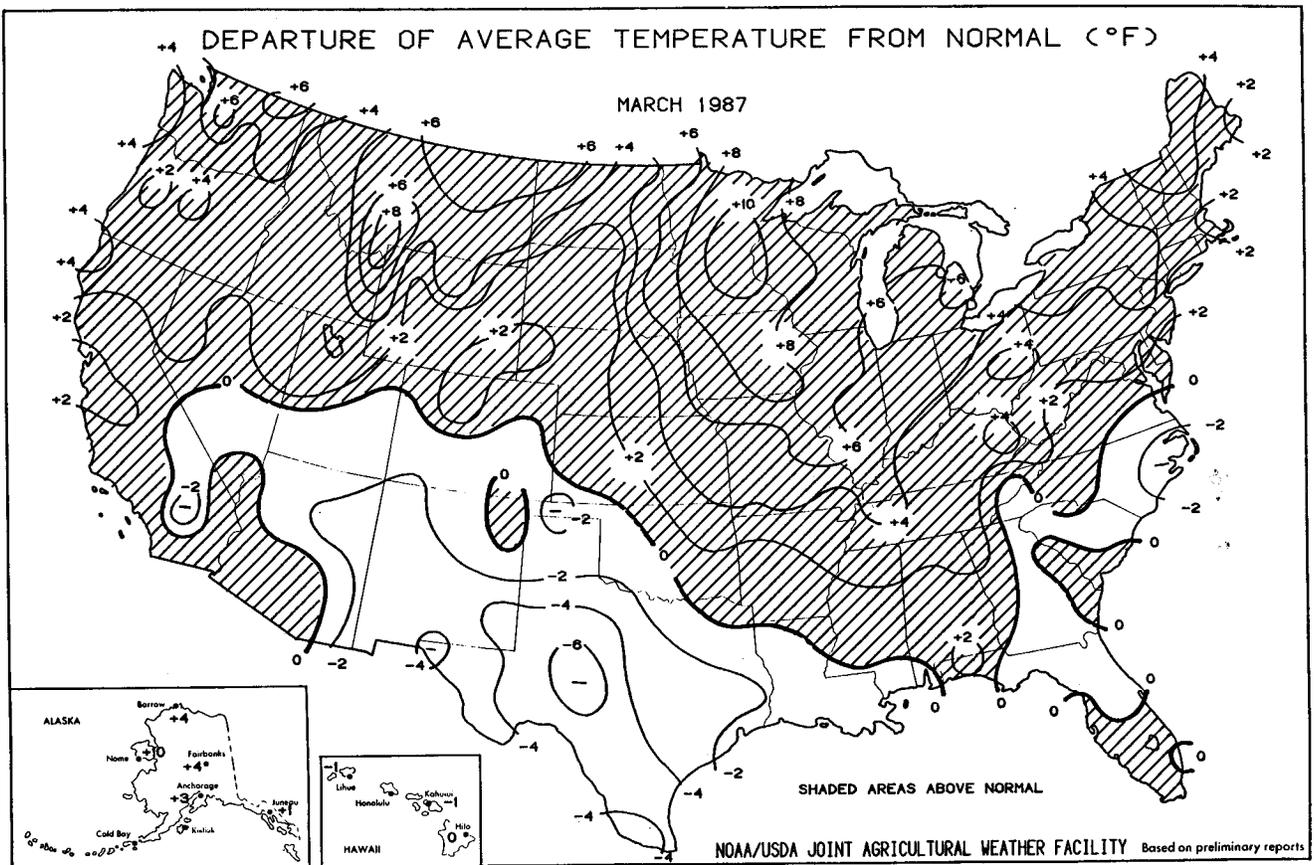
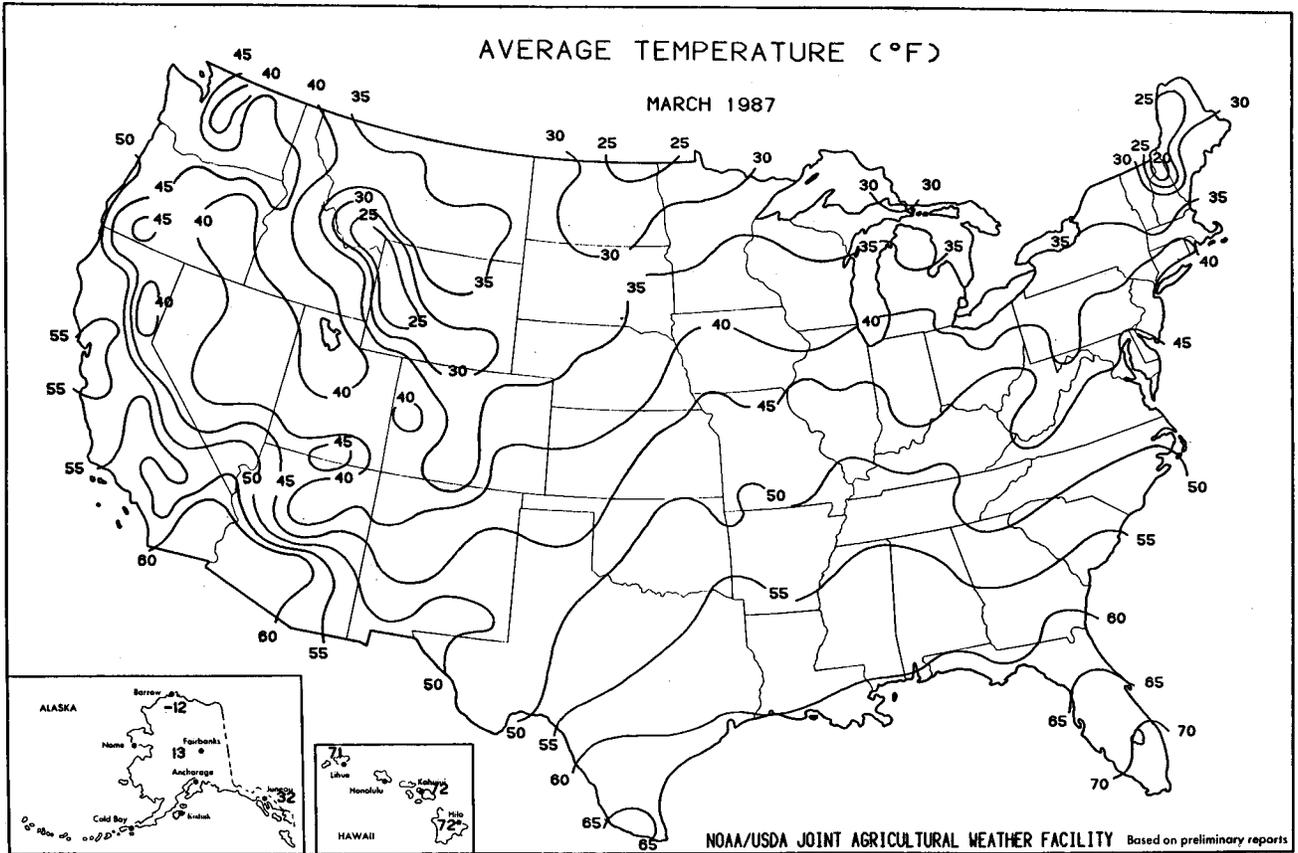
At the beginning of March, spring plowing moved as far north as Minnesota and Montana and was gaining momentum in the central Great Plains and Corn Belt. Dry soils accelerated land preparation until midmonth from the Delta to the northern Great Plains and through the Corn Belt. Snow and coldness limited fieldwork in the central and northern Great Plains. Rain hampered planting and land preparation in the southern Plains and Delta during the rest of March. March's rain and wetness hampered land preparation and seeding in the Southeast. Land preparation was active in the Southwest but low soil temperature curtailed planting periodically in Arizona and California.

Corn planting was underway at the beginning of March in Alabama, Georgia, Louisiana, Mississippi, and Texas. By month's end, corn planting was underway in Ohio. Seeding was behind normal in all Southeastern States except Alabama. Seeding was 2 points behind normal in Texas and 43 points below the average in Louisiana. Twenty-seven percent of Georgia's corn acreage was seeded, compared with 52 percent in 1986 and the 51 percent average. Mississippi seeding was 14 percent finished, nearly two times slower than normal. The cold, wet weather restricted sorghum seeding in Texas, where 30 percent of the acreage was seeded. Seeding normally moves into Oklahoma and spreads across the Delta by the month's end. Low soil temperatures delayed cotton seeding in California. By the end of March, 15 percent was seeded in Arizona. Seeding in Texas was slightly ahead of normal but near completion in some Coastal Bend areas. Rice was 14 percent planted in Texas, 7 points below the average. Louisiana's rice was 12 percent seeded and 6 percent emerged, both below normal. Tobacco transplanting was underway in Florida and Georgia. Areas from Virginia to Tennessee were actively seeding and preparing seedbeds.

WINTER WHEAT

Winter wheat was mostly good to fair during March but was mostly fair to good in the Delta and Southeast. Unusually warm weather and adequate moisture promoted growth in most areas early in the month. Greening was underway in Montana, and wheat was jointing in Texas. Wheat was heading in Louisiana by midmonth. Snow and cold temperatures in the last half of March threatened winter wheat from Texas to North Dakota and in some Rocky Mountain States. The snow provided moisture and protection, holding damage to a minimum. The cold weather slowed growth in the Great Plains and Rocky Mountain States. Despite adequate moisture, wheat development lagged behind normal in the Delta and Southeast. Early fields began heading-out in California, and 35 percent of Arizona's acreage reached the heading stage by March 29. Winter wheat experienced disease problems in Kansas, Oklahoma, Arkansas; and Texas, but none were severe.





Temperature and Precipitation Data for MARCH 1987

States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
AL BIRMINGHAM	55	1	4.8	-1.9	BATON ROUGE	59	-1	6.0	1.4	DAYTON	43	4	2.2	-1.1
MOBILE	59	-1	6.1	-0.4	LAKE CHARLES	59	-2	4.5	1.5	TOLEDO	39	4	1.8	-0.8
MONTGOMERY	57	0	4.8	-1.1	NEW ORLEANS	60	-1	4.4	-0.3	YOUNGSTOWN	39	3	3.2	-0.1
AK ANCHORAGE	27	3	0.2	-0.5	SHREVEPORT	56	-1	1.5	-2.3	OK OKLAHOMA CITY	50	1	2.3	0.3
BARROW	-12	4	T	-0.1	ME CARIBOU	28	4	1.1	-1.4	TULSA	51	2	2.2	-0.9
FAIRBANKS	13	4	T	-0.4	OR PORTLAND	34	2	4.4	0.4	ASTORIA	48	4	8.5	1.2
JUNEAU	32	1	2.2	-1.1	MD BALTIMORE	46	3	1.0	-2.7	BURNS	39	2	1.5	0.6
KODIAK	35	3	5.7	1.7	MA SALISBURY	45	1	3.7	-0.4	MEDFORD	48	3	1.4	-0.4
NOME	17	10	0.5	-0.1	MA BOSTON	38	0	4.2	0.1	PENDLETON	47	3	1.4	0.3
AZ FLAGSTAFF	33	-2	1.7	-0.4	MI CHATHAM	37	0	4.4	-0.4	PORTLAND	49	3	4.8	1.2
PHOENIX	63	3	0.3	-0.5	MI ALPENA	32	6	0.9	-1.1	PA SALEM	48	3	3.9	-0.4
PRESCOTT	42	-1	0.6	-0.9	DETROIT	40	5	2.2	-0.4	ALLENTOWN	42	4	2.1	-1.8
TUCSON	58	0	0.8	0.2	FLINT	38	6	1.4	-0.8	ERIE	37	4	4.3	1.4
WINSLOW	43	-2	0.4	-0.1	GRAND RAPIDS	37	4	1.2	-1.3	HARRISBURG	44	3	1.4	-2.4
YUMA	65	1	T	-0.2	HOUGHTON LAKE	34	6	0.8	-1.1	PHILADELPHIA	46	4	1.2	-2.7
AR FORT SMITH	52	2	3.9	0.0	LANSING	37	4	0.9	-1.4	PITTSBURGH	42	3	2.5	-1.1
LITTLE ROCK	54	2	3.2	-1.7	MARQUETTE	30	7	2.1	-0.8	SCRANTON	40	4	1.2	-1.5
CA BAKERSFIELD	57	0	1.1	0.2	MUSKEGON	37	4	1.4	-1.1	RI PROVIDENCE	40	2	5.7	1.4
EUREKA	53	4	6.1	1.0	SAULT STE. MARI	30	6	1.1	-0.9	SC CHARLESTON	57	0	5.6	1.2
FRESNO	56	1	2.4	0.8	MN ALEXANDRIA	34	10	1.3	0.1	COLUMBIA	53	-1	5.4	0.2
LOS ANGELES	59	1	0.9	-0.8	DULUTH	32	9	0.6	-1.2	FLORENCE	54	-1	3.1	-1.1
REDDING	52	-2	7.0	2.0	INT'L FALLS	30	9	1.0	-0.1	GREENVILLE	50	-1	5.0	-0.9
SACRAMENTO	54	1	3.2	1.1	MINNEAPOLIS	39	9	0.6	-1.1	SD ABERDEEN	33	5	1.9	0.9
SAN DIEGO	59	0	1.0	-0.6	ROCHESTER	36	8	1.3	-0.4	SD HURON	36	7	4.8	3.6
SAN FRANCISCO	55	2	2.0	-0.7	ST. CLOUD	36	10	0.7	-0.7	RAPID CITY	33	0	1.1	0.1
STOCTON	54	0	2.8	1.0	MS GREENWOOD	56	1	5.1	-1.2	SIOUX FALLS	38	8	3.3	1.7
CO DENVER	39	1	1.3	0.1	JACKSON	56	-1	5.5	-0.4	TN CHATTANOOGA	52	2	5.1	-1.2
GRAND JUNCTION	40	-2	1.9	1.2	MERIDIAN	57	1	4.0	-2.7	49	-1	3.0	-2.5	
PUEBLO	40	-1	0.5	-0.2	WO COLUMBIA	47	6	1.8	-1.4	MEMPHIS	55	3	3.3	-2.1
CT BRIDGEPORT	42	3	4.8	0.9	KANSAS CITY	47	6	2.9	0.4	NASHVILLE	52	3	1.1	-4.4
HARTFORD	40	3	4.4	0.3	SAINT LOUIS	49	5	2.2	-1.1	TX ABILENE	52	-4	1.5	0.4
DC WASHINGTON	48	2	1.5	-1.9	SPRINGFIELD	49	4	4.0	0.5	AMARILLO	45	-2	0.9	0.1
FL APALACHICOLA	60	0	10.5	6.7	MT BILLINGS	38	4	1.4	0.3	AUSTIN	58	-3	1.4	-0.3
DAYTONA BEACH	63	-1	7.9	5.0	GLASGOW	33	7	1.3	0.9	BEAUMONT	60	-1	0.9	-2.0
FT. MYERS	70	1	5.9	3.0	GREAT FALLS	36	5	1.8	0.9	BROWNSVILLE	64	-4	0.6	0.1
JACKSONVILLE	60	-2	6.3	2.6	HAVRE	35	6	1.0	0.5	CORPUS CHRISTI	62	-4	0.4	-0.4
KEY WEST	73	-1	9.7	8.4	HELENA	37	5	1.2	0.5	DEL RIO	59	-4	0.8	0.1
MIAMI	72	0	3.9	2.0	KALISPELL	36	4	3.0	2.1	EL PASO	51	-4	0.5	0.2
ORLANDO	66	-1	11.4	8.1	MILES CITY	37	5	0.9	0.3	FORT WORTH	54	-2	1.7	-0.7
TALLAHASSEE	59	-1	9.4	3.8	MISSOULA	38	4	1.3	0.4	GALVESTON	61	-1	0.4	-1.7
TAMPA	66	0	12.0	8.6	NE GRAND ISLAND	39	3	6.6	5.0	HOUSTON	59	-2	0.9	-1.8
WEST PALM BEACH	70	0	7.8	5.1	LINCOLN	42	5	6.5	4.6	LUBBOCK	48	-2	0.4	-0.5
GA ATLANTA	53	1	5.4	-0.5	NORFOLK	39	6	7.3	5.7	MIDLAND	50	-5	1.2	0.7
AUGUSTA	54	0	4.3	-0.6	NORTH PLATTE	37	2	1.7	0.6	SAN ANGELO	51	-6	1.8	1.0
MACON	56	-1	4.3	-0.9	OMAHA	42	7	4.2	2.2	SAN ANTONIO	58	-4	1.1	-0.2
SAVANNAH	58	0	5.3	1.5	SCOTTSDUFF	33	-2	1.7	0.7	VICTORIA	61	-2	0.4	-0.9
HI HILO	72	0	4.8	-8.8	VALENTINE	33	1	2.5	1.7	WACO	55	-3	1.7	-0.3
HONOLULU	74	0	0.2	-3.3	INV ELKO	38	2	1.1	0.2	WICHITA FALLS	51	-2	1.9	0.1
KAHULUI	72	-1	0.6	-2.4	ELY	35	2	0.9	0.0	UT BLANDING	38	-1	0.6	-0.2
LIHUE	71	-1	2.1	-2.4	LAS VEGAS	55	0	0.5	0.1	CEDAR CITY	38	-1	1.9	0.9
ID BOISE	44	3	2.0	1.0	RENO	44	3	0.8	0.1	MILFORD	37	-1	1.4	0.4
LEWISTON	47	4	0.9	-0.1	WINNEMUCCA	40	2	1.3	0.7	SALT LAKE CITY	43	2	1.5	-0.2
POCATELLO	39	4	0.8	-0.1	NH CONCORD	34	2	3.5	0.6	VT BURLINGTON	33	4	1.3	-0.9
IL CAIRO	52	4	2.2	-2.8	NJ ATLANTIC CITY	42	1	3.4	-0.6	VA NORFOLK	47	-1	2.3	-1.6
CHICAGO	41	5	1.6	-1.0	NM ALBUQUERQUE	44	-2	0.1	-0.5	RICHMOND	47	0	1.7	-1.9
MOLINE	42	6	2.6	-0.2	CLOVIS	47	0	0.2	-0.4	ROANOKE	46	0	4.0	0.3
PEORIA	44	7	2.0	-0.9	ROSWELL	49	-4	0.2	-0.1	WA COLVILLE	43	6	3.3	2.1
QUINCY	46	7	1.5	-1.7	NY ALBANY	38	4	2.0	-1.0	QUILLAYUTE	46	4	13.4	2.1
ROCKFORD	40	6	2.0	-0.6	BINGHAMTON	38	7	1.8	-1.2	SEATTLE-TACOMA	49	5	5.5	1.9
SPRINGFIELD	45	6	2.1	-1.0	BUFFALO	38	5	3.6	0.6	SPOKANE	42	4	2.2	0.8
IN EVANSVILLE	48	3	2.1	-2.5	NEW YORK	45	4	4.5	0.4	WALLA WALLA	50	5	1.1	-0.3
FORT WAYNE	41	4	1.3	-1.6	ROCHESTER	37	4	1.9	-0.7	YAKIMA	44	2	1.4	0.7
INDIANAPOLIS	44	4	1.7	-1.9	SYRACUSE	38	5	1.8	-1.3	WV BECKLEY	42	1	1.9	-2.2
SOUTH BEND	40	4	1.2	-1.9	ASHEVILLE	46	0	2.8	-2.3	CHARLESTON	47	2	1.2	-2.8
IA DES MOINES	43	8	3.0	0.8	NC CHARLOTTE	51	1	3.5	-1.3	ELKINS	40	1	1.5	-2.2
DUBUQUE	38	6	2.1	-0.8	GREENSBORO	48	0	3.1	-0.7	HUNTINGTON	47	2	2.4	-1.7
SIOUX CITY	41	7	5.9	4.2	HATTERAS	48	-3	9.6	5.6	PARKERSBURG	45	2	1.7	-2.3
WATERLOO	39	8	2.4	0.3	NEW BERN	51	-2	3.8	0.2	WI GREEN BAY	35	7	1.5	-0.4
KS CONCORDIA	44	4	8.2	6.3	RALEIGH	49	-1	2.9	-0.8	LA CROSSE	39	8	2.2	0.2
DODGE CITY	43	1	4.2	2.7	WILMINGTON	52	-2	2.7	-1.3	MADISON	37	6	2.0	-0.2
GOODLAND	38	0	2.5	1.5	ND BISMARCK	28	2	1.3	0.6	MILWAUKEE	38	6	1.6	-1.0
TOPEKA	47	5	5.9	3.7	FARGO	31	7	0.4	-0.4	WAUSAU	35	8	1.0	-0.9
WICHITA	47	3	4.0	2.0	GRAND FORKS	27	5	0.4	-0.4	WY CASPER	32	1	1.4	0.4
KY BOWLING GREEN	49	3	2.2	-3.3	WILLISTON	32	7	1.6	1.0	CHEYENNE	33	0	1.3	0.3
JACKSON	49	8	1.9	-2.7	OH AKRON-CANTON	40	3	2.8	-0.5	LANDER	32	0	2.2	1.0
LEXINGTON	47	3	3.1	-1.7	CINCINNATI	45	3	4.7	0.7	SHERIDAN	36	4	1.5	0.4
LOUISVILLE	48	3	3.1	-1.7	CLEVELAND	39	2	3.8	0.8	PR SAN JUAN	78	0	5.2	2.9
LA ALEXANDRIA	56	-3	6.0	0.8	COLUMBUS	44	4	2.0	-1.2					

Heating Degree Days (Base 65° F.)

March 1987

ALA. Birmingham	302	MAINE, Caribou	1140	OKLA. Okla. City	450
Mobile	193	Portland	955	Tulsa	413
Montgomery	249	MD. Baltimore	576	OREG. Astoria	519
ALASKA, Anchorage	1176	MASS. Boston	814	Burns	804
Barrow	2382	Chatham	859	Medford	524
Fairbanks	1594	MICH. Alpena	1002	Pendleton	571
Nome	1494	Detroit	776	Portland	495
ARIZ. Flagstaff	990	Flint	826	Salem	544
Phoenix	95	Grand Rapids	849	PA. Allentown	688
Tucson	225	Houghton Lake	963	Erie	844
Winslow	687	Lansing	846	Harrisburg	643
Yuma	58	Marquette	1075	Philadelphia	591
ARK. Fort Smith	405	S. Ste. Marie	1086	Pittsburgh	712
Little Rock	331	MINN. Duluth	1027	Scranton	779
CALIF. Bakersfield	262	Internatl Falls	1084	R.I. Providence	772
Eureka	377	Minneapolis	809	S.C. Charleston	272
Fresno	282	Rochester	888	Columbia	362
Los Angeles	190	St. Cloud	899	Greenville	441
Red Bluff	408	MISS. Jackson	297	S. DAK. Aberdeen	978
Stockton	323	Meridian	258	Huron	889
San Diego	178	MO. Columbia	539	Rapid City	997
San Francisco	309	Kansas City	548	Sioux Falls	835
COLO. Denver	805	St. Louis	501	TENN. Chattanooga	399
Grand Junction	765	Springfield	505	Knoxville	483
Pueblo	756	MONT. Billings	841	Memphis	322
CONN. Bridgeport	727	Glasgow	975	Nashville	401
Hartford	773	Great Falls	888	TEX. Abilene	396
D.C. Washington	527	Havre	928	Amarillo	624
FLA. Apalachicola	161	Helena	862	Austin	228
Ft. Myers	---	Kalispell	890	Beaumont	181
Jacksonville	189	Miles City	888	Brownsville	65
Key West	2	Missoula	828	Corpus Christi	122
Miami	6	NEBR. Grand Island	789	Del Rio	235
Orlando	48	Lincoln	713	El Paso	420
W. Palm Beach	10	Norfolk	783	Fort Worth	343
Tallahassee	203	North Platte	868	Galveston	132
Tampa	42	Omaha	692	Houston	196
GA. Atlanta	359	Valentine	977	Lubbock	519
Augusta	319	NEV. Ely	914	Midland	484
Macon	285	Las Vegas	316	San Angelo	417
Savannah	231	Reno	661	San Antonio	233
IDAHO, Boise	639	Winnemucca	763	Victoria	148
Lewiston	570	N.H. Concord	939	Waco	308
Pocatello	792	N.J. Atlantic City	705	Wichita Falls	419
ILL. Cairo	394	N. MEX. Albuquerque	653	UTAH, Milford	869
Chicago	742	N.Y. Albany	842	Salt Lake City	679
Moline	701	Binghamton	816	VT. Burlington	975
Peoria	640	Buffalo	837	VA. Lynchburg	564
Rockford	781	New York	623	Norfolk	538
Springfield	599	Rochester	858	Richmond	550
IND. Evansville	528	Syracuse	831	Roanoke	562
Fort Wayne	737	N.C. Asheville	567	WASH. Colville	671
Indianapolis	627	Charlotte	426	Quillayute	582
South Bend	766	Greensboro	524	Seattle-Tacoma	491
IOWA, Des Moines	687	Hatteras	508	Spokane	711
Dubuque	816	Raleigh	484	Walla Walla	456
Souix City	752	Wilmington	395	Yakima	642
KANS. Concordia	633	N. DAK. Bismarck	1144	W. VA. Beckley	676
Dodge City	669	Fargo	1036	Charleston	549
Goodland	845	Williston	1012	Huntington	555
Topeka	560	OHIO. Akron-Canton	765	WIS. Green Bay	915
Wichita	549	Cincinnati	612	Madison	857
KY. Lexington	559	Cleveland	795	Milwaukee	839
Louisville	526	Columbus	637	WYO. Casper	1003
LA. Baton Rouge	201	Dayton	664	Cheyenne	1002
Lake Charles	200	Toledo	778	Lander	1008
New Orleans	168	Youngstown	802	Sheridan	896
Shreveport	286				

National Agricultural Summary

March 30 to April 5, 1987

HIGHLIGHTS: Below-normal temperatures throughout the Central, South, and South Atlantic States hurt or slowed crop development. Freezing temperatures damaged some small grains and fruit prospects in the South but the amount of injury has not been determined. Colder-than-normal temperatures also stressed livestock and increased supplemental feeding in many areas. Snow fell on the eastern half of the Nation as far south as Alabama. Accumulation was minimal except in the Appalachian mountains. The West, East, and Gulf coastal areas were the only areas escaping freezing temperatures. Fieldwork averaged 3.5 days or less in most of the central to eastern States.

Wheat and small grains were mostly fair to good. Below-normal temperatures hurt some fields in the central and southern parts of the Nation. Early maturing varieties in the joint stage were most susceptible to damage. Corn planting still lags behind normal in most States, with some fields hurt by freezing temperatures in the South. Cotton planting continued progressing but cold, wet weather in the South hampered seedbed preparation. Rice planting lagged behind normal from adverse weather. Tobacco plantings were behind normal in most States as cold, wet weather limited field activity.

SMALL GRAINS: Small grains were mostly fair to good as below-normal temperatures hurt or delayed growth. In Kansas, 25% of the wheat was jointed, compared with the 5% average. Freeze damaged some stands in the jointing stage in central and western areas, but the extent of damage has not been determined. Nebraska's winterkill was minimal. Montana's winter wheat remains mostly good, with only 19% still dormant. Winter wheat in Illinois, Iowa, and Indiana continues mostly good. Wheat continues to green-up in the North but freezing temperatures hurt wheat in the South. Record-breaking cold temperatures in Texas covered wheat areas. Temperatures were lowest in the High Plains but most wheat should survive (early, ungrazed fields were most susceptible). Damage and injury were more severe in the Blacklands and southern areas, where the crop was more advanced. Crops in Alabama and Arkansas, and early varieties in Oklahoma also had some freeze damage. About 83% of Mississippi's wheat was jointing, Louisiana's wheat was 26% headed.

OTHER CROPS: Corn planting continues slowly. Alabama planted 48%, 5 points ahead of average. Freezing temperatures damaged early emerged fields in Alabama and Florida. Georgia plantings reached 35%, compared with the 63% average. South Carolina planted 14% of their acreage, 33 points behind normal. Mississippi planted 18%, about half of normal progress. Louisiana planted 13 percent of their corn, compared with their 64% average. Adverse weather slowed Texas' corn planting, but remained 3 points ahead of the average at 54%. Missouri planted 1% of their corn. Cotton planting increased in California as soil temperatures improved. Texas planted 10%, compared with an 8% average. Arizona and Georgia planted 35% and 2%, respectively. Oklahoma prepared 10% of their cotton seedbeds, 15 points below average.

Texas rice planting continued along the coast to 24% (9 points below average), but cool weather slowed activity. Louisiana rice was 18% planted and 11% emerged, both behind normal.

Sorghum planting in Texas was 41% complete, 10 points behind the average.

Georgia tobacco was fair to good at 12% transplanted, compared with a 48% average. South Carolina planted 3%--plants were fair. North Carolina tobacco is mostly fair to good. Virginia plantbeds are almost completely seeded. Kentucky tobacco was 82% seeded and 22% emerged. Tennessee reached 80% seeded with 30% of the plants emerged.

FRUIT AND NUTS: Freezing temperatures damaged fruit blossoms throughout the South; most areas are still trying to assess the damage. Freeze damage was heavy in some Georgia areas. South Carolina's damage appeared light but York County had heavy losses. Freeze damage also occurred in Alabama, Mississippi, Kentucky, Tennessee, and Arkansas. Florida's peaches were severely damaged. Citrus groves remained wet and some orchards were pumped to remove excess water. Uniform blooming continued in most areas. Early orange harvest was almost complete. Valencia harvest increased. Grapefruit moved mostly from the lower east coast. Temple harvest slowed. Texas continues to assess peach tree damage. There seems to be substantial bloom loss across the western half of the State. East Texas had less severe losses. The cold weather slowed pecan tree budding. Citrus trees escaped damage as heavy irrigation continued. Oklahoma's apple and peach blooms were damaged. Arizona citrus fruit harvest continued on a limited scale. Grapes were good. California apples, apricots, cherries, plums, and prunes bloomed. Other stone fruit leafed-out. Vineyard growth is vigorous. The almond set was good. Early walnuts were blooming. Valencia orange harvest increased. Desert grapefruit and lemon harvests continued. Strawberry picking was active along the south coast. Oregon apples and pears were sprayed in Hood River. Strawberries and caneberries developed ahead of normal in the Willamette Valley. Frost damaged occurred in some Washington orchards.

VEGETABLES: Heavy rain and low temperatures hampered fieldwork in Florida's north central vegetable areas. Frost damaged watermelons. Harvest was active, especially for tomatoes, cucumbers, potatoes, celery, cabbage, lettuce, and squash. Frost nipped vegetables in the Rio Grande Valley, causing leaf burn and some cucumber losses. Carrot and cabbage harvest continued. The Winter Garden area continued planting peppers, cabbage, and cucumbers. Freeze damaged early planted vegetables. Frozen tomatoes and peppers in the Trans-Pecos area need replanting. Early vegetables in east Texas were severely injured and need to be replanted. Arizona's cool season vegetable harvest was near completion. Lettuce packing advanced in the central areas and slowed in the West. Asparagus and artichokes were harvested. Active harvests include romaine, leaf, and Boston lettuce; beets; bok choy; endive; and broccoli. California continued to harvest artichokes, asparagus, broccoli, carrots, cauliflower, celery, and lettuce. Tomatoes for processing and fresh market were being planted Statewide.

PASTURES AND LIVESTOCK: Snow and freezing temperatures stressed livestock in the eastern half of the Nation. Most Nebraska and Kansas livestock are fair as calf losses from last week's storm were variable. Calving and lambing continued. Freezing temperatures slowed pasture growth in most areas.

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 mostly under 0.50 in.; near 1.00 in. few areas southeast; 5 to 9 in. snow central, northeast. Temperatures averaged 15 to 19 below normal.

Days suitable for fieldwork 2.8. Fieldwork progress continued behind schedule. Soil moisture 38% adequate, 62% surplus. Freezing temperatures damaged peach crop, other fruits; extensive some areas. Wheat, corn crops damaged. Producers still accessing magnitude of lost. Corn planted 48%, 49% 1986, 43% avg. Wheat headed 21%, 13% 1986; 53% fair, 45% good, 2% excellent. Pastures fair to good. Pasture feed supply adequate to short. Livestock good to fair. Primary activities: Land preparation, spring planting when weather permitted; applying fertilizer, lime to cropland, pastures; machinery, fence repairs; soil testing; spraying fruit trees; providing supplemental feed, general care livestock, poultry.

ARIZONA: Mostly sunny skies, warming trend prevailed 30th, 31st. Abundant sunshine 1st. Temperatures peaked 2nd with 90s southwestern deserts, 70s, at 5,000 ft., 60s high country. Clouds, gusty winds statewide 3rd prior to cold weather disturbance originating Pacific northwest. Showers, thunderstorms moved across State, continued 4th. Precipitation ended west late 4th. One to 6 in. snow above 6,500 ft. Moisture amounts traces southwest to 0.50 in. White Mountains. Maximum temperatures 4th, 15 to 30° lower than 2nd. Average temperatures 6° below normal to 3° above.

Cotton 35% planted, 55% 1986, 45% avg. Cool temperatures, heavy winds caused unfavorable conditions; some growers to postpone planting until warmer weather. Planting expected to be active 6th to 10th if temperatures increase. Acreages planted earlier need irrigation, winds have dried soils, caused crusting. Crop good, except fair Yuma. Wheat, barley good; 98% jointing, 50% heading, none turning color. Alfalfa 38% fair, 38% good, 24% excellent. Market strong. Harvest advanced west, curing conditions good, except during excessive wind. Central growers first cutting, fields sheeped-off earlier coming up. Corn planting continued, some cultivated, crop good. Lettuce packing advanced central, slowed west. Few artichokes packed Parker-Poston, asparagus deal almost complete. Shipments Salt River Valley included romaine, leaf lettuce, boston lettuce, beets. Shipments Yuma included romaine, leaf lettuce, bok choy, endive; broccoli, asparagus packing slow. Harvest cool season vegetables neared completion. Spring melon planting complete, crop good. Citrus fruit harvest continued limited scale. Grapes good.

ARKANSAS: Unusual, unseasonably cold week statewide as cold high pressure dominated State. Light rainfall primarily during early part of week. Temperature extremes 17°; 78°. Rainfall 0.01 to 0.95 in.

Wheat damage hard to assess. Tomato setting behind due to cold weather, limited damage. Peaches, blueberries, apples hurt. Strawberries saved south, not susceptible to damage north. Pasture growth slowed, fair to good. Livestock good.

CALIFORNIA: Early week warm temperatures, dry conditions. Some record highs broken along north coast. By weekend showers over most areas.

Warm, open weather aided crop development. Small grains matured rapidly. Most early boot to soft dough stage. Green-chopping small grains, forage

mixes, alfalfa active. Ground preparation, pre-irrigation, seeding, corn, cotton increased as soil temperatures improved. Sugarbeet seeding progressed. Early plantings excellent growth. Rice soil preparation active. Still many fields to burn. Alfalfa hay harvest active. Some treatment weeds, weevils. Apples, apricots, cherries, plums, prunes bloomed. Other stonefruits leafed out. Vineyard growth vigorous. Almond set good. Early walnuts bloomed. Valencia orange harvest increased. Desert grapefruit, lemon harvests continued. Artichokes moderate, improved quality, Salinas. Asparagus harvest continued, Sacramento Valley, Delta, Firebaugh District; excellent quality. Harvest winding down, desert. Strawberry picking active, south coast, good quality. Broccoli moderate, Salinas; light, Santa Maria; good quality. Packing continued Fresno, Oxnard, Patterson-Newman. Carrot digging active, good quality; desert, south coast, Perris-Hemet, Kern-Tulare. Cauliflower fairly light Salinas; light, Santa Maria; good quality. Westside harvest expected to start 20th. Celery harvest active; Oxnard, Los Angeles-Orange County; good quality. Plantings south coast, growing well. Cucumber plantings south coast, showed good growth. Land prepared for planting summer crop, Fresno. Lettuce packing San Joaquin Valley moderate but increasing; variable weight, quality. Volume Los Angeles-Orange County light, but quality good. Harvest Huron District continued very good quality. Harvest winding down Palo Verde Valley. Cantaloup planting active, Westside; emergence in earlier planted fields. Melons planted desert, progressing normally. Onion plantings making good progress, Kern-Tulare. Fall potato packing sheds Tulelake-Butte Valley, operating part time. Growers working fields, applying fertilizer. Winter potato harvest finished; Kern, Riverside; spring potato planting continued, Kern. Planting tomatoes for processing, fresh market continued statewide. Hot caps being removed, plants being staked, Kern-Tulare. Warm weather enhanced range, pasture grass growth. Livestock weight gains improved with the stronger feed. Supplemental feeding declined. Stock ponds below normal levels. Bees moved from almond into fruit orchards.

COLORADO: Temperatures averaged 4 to 14° below normal. Precipitation widespread, amounts varied mostly less than 0.50 in.

Days suitable for fieldwork 2.0. Small grain seeding, emergence slowed by cold wet weather. Winter wheat, livestock good. Highly stressed calving, lambing continued.

FLORIDA: Heavy rains north, central early week with daily totals nearly 2.00 in. common; lesser amounts south. First of month marked by record cold. Freeze, near freeze occurred each night, north with areas of frost as far south as Lake Okeechobee. Average temperatures 5 to 9° below seasonal normals.

Soil moisture adequate extreme western Panhandle, lower southern Peninsula areas; mostly surplus elsewhere. Freezing temperatures delayed plantings. Early corn damaged; recovery expected. Winter wheat fair to good. Peach crop damaged severely. Sugarcane harvest virtually completed. Heavy rains extending through first of week flooded lowland pastures. Cooler temperatures slowed forage growth. Western Panhandle pastures fair; southern Peninsula, good to excellent; elsewhere fair to good. Cattle fair to good. Citrus soils remained wet; some pumping to remove excess water.

Bloom continued; past peak. Some petal drop, uniform bloom most areas. Early orange harvest almost completed; Valencias increased. Grapefruit movement mostly from lower east coast. Temple harvest slowed. Caretakers busy all areas with spring activities. Heavy rains early week north central vegetable producing areas, followed by abnormally low temperatures rest of week. Some frost damage, mostly watermelons. Harvest active. Volume leaders: Tomatoes, cucumbers, potatoes, celery, cabbage, lettuce, squash. Good supplies snap beans, carrots, sweet corn, escarole, radishes, green peppers. Poor weather reduced strawberry supplies.

GEORGIA: Unseasonably cold. Temperatures 15° below normal. Freezing temperatures over most of State. Mountain locations reported freezing temperatures on 6 days. Coldest temperatures upper teens to low 20s mountains, mid 30s extreme southeast. Warmest temperatures on 30th, highs 60s north, mostly 70s central, south. Heavy snow extreme north; northwest night of 2nd, morning of 3rd; some locations 5 to 7 in. Rain 1.00 to 2.00 in. except some of east, south less than 1.00 in.

Days suitable for fieldwork 2.0. Soil moisture 88% adequate, 12% surplus. Land preparation, planting, transplanting delayed by wet soils. Corn 8% poor, 31% fair, 61% good; 35% planted, 70% 1986, 63% avg. Cotton 2% 1986, 2% avg. Tobacco 1% poor, 50% fair, 49% good; 12% transplanted, 49% 1986, 48% avg. Watermelons good to very poor, mostly fair; some freeze damage. Wheat 34% fair, 63% good, 3% excellent; 81% jointing, 87% 1986, 83% avg.; 31% boot, 45% 1986, 44% avg.; 5% headed, 17% 1986, 18% avg. Rye good to fair; some freeze damage. Other small grains good to fair. Apples good to poor; 19% blooming, 42% 1986, 44% avg. Peaches freeze damage heavy some areas statewide extent will not be fully assessed for several days; 10% very poor, 43% poor, 32% fair, 15% good; 95% blooming, 100% 1986, 95% avg. Pasture mostly good to fair. Cattle mostly good to fair. Hogs mostly good. Main activities: Fertilization, planting, spraying fruit trees as weather permitted.

HAWAII: Intermittent showers throughout week. Occasionally heavy down pours disrupted farming activities. Gusty winds bruised some exposed crops. No major damage to agriculture from rain or winds. Overall crop fair. Gusty trade winds 10 to 35 mph. Temperatures ranged mid 60s to low 80s. Rainfall ranged none to 6.00 in.

Days suitable for fieldwork 7.0. Banana production steady. Papaya production increased. Chinese cabbage harvest continued, some shipped to mainland. Light to moderate production for other vegetables.

IDAHO: No precipitation. Temperatures near normal north, southwest, 5° below normal southeast.

Days suitable for fieldwork 6.0. Spring wheat 24% seeded, 28% 1986, 16% avg. Sugarbeet 48% planted, 31% 1986, 20% avg. Onions 60% planted, 49% 1986, 40% avg. Winter wheat good. Livestock good.

ILLINOIS: Temperatures averaged 7 to 10° below normal north, 10 to 13° below normal south. Precipitation mostly less than 0.10 in., heavier extreme south.

Winter wheat mostly good to fair. Livestock mostly good.

INDIANA: Temperatures well below average. Lows teens north, highs upper 50s. Precipitation widespread, generally light, from 0.25 in. northeast to 1.50 in. south.

Fieldwork averaged 3.2 days. Topsoil moisture 35% short, 58% adequate, 7% surplus. Subsoil

moisture 45% short, 52% adequate, 3% surplus. Wheat 1% poor, 44% fair, 52% good, 3% excellent. Wheat 4 in. high, 4 in. 1986, 4 in. avg.; 3% jointed, 4% 1986, 3% avg. Oats 56% seeded, 40% 1986, 35% avg. Clover 68% seeded, 56% 1986, 48% avg. Pastures mostly fair.

IOWA: Cold, dry week. Temperatures subnormal. Snow cover north, west. Temperature 5° Clarion, Humboldt, Onawa, Red Oak 30th. Weekend snow melt; temperatures 60s 5th, 67° Spencer, Sioux City.

Days suitable for fieldwork 0.4. Topsoil moisture 60% adequate, 40% surplus; subsoil moisture 78% adequate, 22% surplus. Winter wheat 3% poor, 22% fair, 65% good, 10% excellent. Oats 10% sown, 32% 1986, 14% avg. Seedbed preparation 30% completed; fertilizer application 30% completed. Livestock good to excellent. Some limited losses to calves during early week snow, freezing temperatures western one-third. Some limited field activity past weekend.

KANSAS: Temperature averaged 37° northwest, near 40° elsewhere; 10° below normal. Second March blizzard left snow drifts with accumulated moisture 0.50 to 0.75 in. north, west, northeast. Other areas 0.10 in. or less as snow or rain.

Days suitable for fieldwork 0.5. Soil moisture 35% adequate, 65% surplus. Wheat 11% poor, 18% fair, 50% good, 21% excellent; 25% jointing, 20% 1986, 5% avg. Freeze damage central, west, extent not known but stands jointing stage hardest hit. Disease, insect problems still light. Oat, barley planting 80% complete. Seedbed preparation at standstill. Ranchers, locating, rounding up, feeding, doctoring livestock. Losses vary but calf crop, cows suffer most. Feed grain, hay ample supply, snow drifts, closed roads delay feeding efforts. Some hay air lifted worst localities.

KENTUCKY: Wet, cold. Heavy snow west, central, northeast early week. Latter week, very heavy snow blanketed east. Some rain. Rain and water equivalent of snow averaged around 1.00 in. west, 2.00 in. central, 3.00 in. east. Amounts near normal west, 1.00 to 2.00 in. above normal central and east. High temperatures averaged mostly in 40s with lows around freezing mark. High and low temperatures, 5 to 10° below normal.

Days suitable for fieldwork 1.6. Fieldwork on schedule. Soil moisture 20% short, 70% adequate, 10% surplus. Snow, rain replenished moisture supplies. Tobacco beds 82% seeded, 87% 1986, 74% avg. Plants emerged 22% of beds. Wheat good; average height 8 in. Fruit trees budding, blooming. Freeze damage last week. Pastures fair to mostly good. Hay feeding accelerated.

LOUISIANA: Temperature 13 to 17° below normal. Temperature extremes 24°; 78°. Rainfall averaged 0.27 to 2.13 in.

Days suitable for fieldwork 2.6. Soil moisture 33% adequate, 67% surplus. Spring plowing 23% complete, 76% 1986, 57% avg. Corn poor to fair; 13% planted, 80% 1986, 64% avg.; 7% emerged, 63% 1986, 48% avg. Rice 18% planted, 36% 1986, 26% avg.; 11% emerged, 19% 1986, 15% avg. Rice 12% poor, 50% fair, 38% good. Winter wheat fair; 26% headed, 52% 1986, 33% avg. Sugarcane, pastures, livestock fair to good. Vegetables poor to fair. Main activities: Spring plowing; planting corn, rice, and gardens; applying fertilizers.

MARYLAND & DELAWARE: Maryland: Temperatures averaged near normal to 3° above normal. Low temperatures mostly mid 20s to near 30s, highs in high 60s to low 70s. Precipitation averaged 1.19 in.

Main farm activities caring for livestock, some ground preparation, tax work.

Delaware: Temperatures averaged mostly 1 to 2° above normal. Low temperatures in high 20s, highs mid to upper 60s. Precipitation averaged 1.75 in. ranging from 1.08 to 2.23 in.

Main farm activities tending livestock, some land preparation, machinery maintenance.

MICHIGAN: Temperatures ranged 5 to 9° below normal. Temperature extremes 7°; 70°. Precipitation ranged from 0.12 to 1.94 in. across State. Northern lower Peninsula, upper Peninsula heavy snow.

No snow cover southern lower Peninsula. Winter wheat continued greening. Activities: Spreading manure, attending farm auctions, pruning fruit trees, burning brush, completing tax forms, buying spring supplies, marketing grain, livestock, fruits, vegetables. Livestock remained excellent. Feed supplies adequate.

MINNESOTA: Temperatures averaged near normal to 6° below normal. Temperature extremes 2°; 68°. Precipitation averaged 0.22 to 0.54 in. below normal. Snowfall averaged 3 to 5 in. for northeast and north central; trace elsewhere. Snow depth averaged trace or less.

Weekend warming trend encouraged fieldwork. Some planting underway southern part of State.

MISSISSIPPI: Temperatures 13 to 17° below normal; extremes 21°; 84°. Cold high pressure system first part week, cold front second part produced snow. Rainfall amounts ranged from 0.40 to 3.08 in. with heaviest rainfall in south.

Days suitable for fieldwork 1.9, 6.2 1986, 3.0 avg. Soil moisture 30% adequate, 59% surplus, 11% excessive. Corn 18% planted, 54% 1986, 35% avg.; 5% emerged, 29% avg.; 32% poor, 49% fair, 19% good. Wheat 83% jointing, 86% 1986, 74% avg.; 4% heading, 13% 1986; 3% very poor, 4% poor, 39% fair, 51% good, 3% excellent. Watermelons 24% planted, 33% 1986, 28% avg.

MISSOURI: Temperatures averaged 13° below normal, reports of 10s and low 20s common. Precipitation light averaging 0.33 in. north, 0.75 in. southeast. Conditions dry southwest. Several inches snow Botheel early in period.

Days suitable for fieldwork 1.4. Topsoil moisture 3% short, 54% adequate, 43% surplus. Cold weather, wet fields limited fieldwork. Oats 56% sown, 79% 1986, 36% avg. Corn 1% planted, 9% 1986, 2% avg. Tillage for spring planted crops 34%, 50% 1986, 41% avg. Wheat 5% very poor, 10% poor, 45% fair, 34% good, 6% excellent. Pastures fair to good.

MONTANA: Week started cold then warmed. Dry entire period. Temperatures near normal east and south, about 5° above normal rest of State. Record highs some locations.

Days suitable for fieldwork 1.0, limited by wet soils. Topsoil moisture 3% short, 67% adequate, 30% surplus. Subsoil moisture 6% short, 78% adequate, 16% surplus. Winter wheat 27% fair, 64% good, 9% excellent. Crop 19% dormant, 74% greening, 7% green. Field tillage 58% not started, 40% just started, 2% well underway. Spring wheat less than 1% planted, 6% 1986, 2% avg. Barley less than 1% planted, none 1986, 5% avg. Sugarbeets planted none, 2% 1986, none avg. Oats none planted, 11% 1986, 2% avg. Calving 62% complete, 64% 1986, 66% avg. Lambing 51% complete, 54% 1986, 54% avg.

NEBRASKA: Week cool, dry; much snow melted from previous weekends heavy snowfall. Average temperatures ranged 3° below normal west to 10° below east. Traces of precipitation common. Temperature extremes 2°; 67°.

Winter wheat 32% fair, 58% good, 10% excellent. Virtually no winterkill evident. Some losses to erosion, flooding from recent snow melt. Calving full swing. Calf losses central, eastern counties higher than normal. Some feed lot cattle losses also. Feed grain, hay, forage supplies surplus. Range, pasture adequate.

NEVADA: High pressure ridge produced sunny skies early half. Trough moved into west bringing rain, snow then moved east, south end of period. Precipitation widespread all areas. Snowfall 1 to 5 in. above 6,000 ft. Temperatures well above normal early, slipped to below normal west, east, south.

Good progress fieldwork beginning of period. Rain, snow, gusty winds remainder. Marketing potatoes about completed.

NEW ENGLAND: Warm, wet week. Average precipitation included rainfall, snow melt; 1.00 to 2.00 in. northern Maine, western and northeastern Vermont, 2.00 to 3.00 in. coastal Maine, northern New Hampshire, southeastern Vermont, 3.00 to 4.00 in. southern interior Maine, southern New Hampshire, 5.00 to 6.00 in. Massachusetts, Rhode Island, coastal Connecticut, 6.00 to 7.50 in. central and northwestern Connecticut. Temperatures averaged 3 to 6° above normal south, 5 to 10° above normal north.

Major farm activities: Machinery repair, tending livestock, moving crops from storage, maple sugaring.

NEW JERSEY: Temperatures averaged near normal north, below normal central, south. Extremes 23°; 70°. Rainfall averaged 5.18 in. north, 4.13 in. central, 3.55 in. south. Heaviest 24-hour total 3.23 in. on 3rd, 4th. Estimated soil moisture percent field capacity averaged 100% north, 99% central, 99% south. Four inch soil temperatures averaged 47° north, 49° central, 51° south. 2 to 3 in. snowfall southern third of State on 6th.

Wet soils delayed preparation, early spring planting. Peach bloom began southern areas. Growth started fall sown grains, hay, pastures. Wintered over spinach growth started. Some flowering shrubs, fruits show evidence of freeze damage.

NEW MEXICO: Temperatures averaged 5 to 12° below normal statewide. Rain, snow occurred late in week. Received 0.50 in. precipitation mountains, central valleys.

Days suitable for fieldwork 4.8. Soil moisture 82% adequate, 18% surplus. Alfalfa growth retarded some areas due to record low temperatures; 33% fair, 56% good, 11% excellent. Barley generally good. Wheat generally good, growth slowed due to cold weather. Russian wheat aphid infestation increased rapidly, spraying underway. Fruit damage light to severe from unseasonally low temperatures. Cattle 33% fair, 67% good; calving past peak. Sheep 22% fair, 78% good; lambing, shearing progressed normally. Ranges generally fair to good, weeds developing rapidly; some livestock losses from mustard weed, snakeweed poisoning.

NEW YORK: Temperatures ranged within 5° of average. Mainly in 40s. Precipitation above normal; flooding along streams, rivers.

Producers continued spring cleanup, planned fieldwork.

NORTH CAROLINA: Temperature 5 to 7° below normal. Temperature extremes 13°; 78°. Precipitation ranged from 0.50 to 7.21 in. across State.

Days suitable for fieldwork 3.6. Soil moisture 53% adequate, 47% surplus. Small grains mostly good. Irish potatoes 84% planted, 98% 1986, 83%

avg.; 43% fair, 43% good, 14% excellent. Pasture fair to good. Tobacco plantbeds 3% poor, 27% fair, 70% good. Hay, roughage, feed grain supplies: mostly adequate to short. Major farm activities: Land preparation; tobacco plantbed care; tending livestock; topdressing small grains, pastures; transplanting Christmas trees; pasture renovation, maintenance; planting spring Irish potatoes, cabbage; general farm maintenance.

NORTH DAKOTA: Cold, high pressure followed by warmup. Temperatures 6° above normal northwest, 2° below northeast. Extremes 1°; 68°. Some light snow.

Fieldwork at least week away. Topsoil moisture 56% adequate, 44% surplus. Soil, secondary roads very wet. Warm, dry weather improved calving, lambing conditions. Many reports of scours. Winter wheat loss 26% below normal, 64% normal, 10% above normal. Calving 58% complete, lambing 76%. Calves, lambs 83% good or better. Pastures 57% open. Procuring supplies, preparing for fieldwork main activities.

OHIO: Average temperatures 6 to 9° subnormal north, 11 to 15° subnormal south. Extremes ranged teens to 60s. Precipitation widespread, heavy. Water equivalents 1.00 to 3.00 in. Heavy snowfall 4th, rapid melt 5th.

Snows early, late week limited fieldwork. Fruit crops southern areas possibly sustained freeze damage. Rain, snow provided needed topsoil moisture to winter wheat.

OKLAHOMA: Temperatures averaged 6° below normal Panhandle to 11° below normal southeast. Precipitation averaged none eastern two-thirds to 0.03 in. southwest.

Days suitable for fieldwork 4.0. Warm, sunny days needed to advance fieldwork. Topsoil moisture 45% adequate, 55% surplus. Subsoil moisture 100% adequate. Wheat 45% fair, 55% good; 50% jointing, 70% 1986, 45% avg. Cold weather hampered growth. Early varieties received some freeze damage. Weed spraying continued. Sorghum 10% seedbed prepared, 50% 1986, 35% avg. Cotton 10% seedbed prepared, 50% 1986, 25% avg. Sub-freezing temperatures significantly reduced peach, apple production. Pastures good to fair; cattle good. Marketings, prices stable.

OREGON: Temperatures above normal except Hermiston 1° below normal. Most of west 5° or more above normal; greatest departure 9° above normal south coast. Eastern areas 2 to 6° above normal; central area 8° above normal. Several stations recorded high temperatures for dates early April. Precipitation light, 0.50 in. or less throughout State.

Soil moisture 16% short, 84% adequate. Barley 73% seeded, 45% 1986, 61% 1985. Spring fieldwork, grain seeding underway throughout State except highest elevations east. Fall seeded crops look very good, developed ahead of normal, fertilizing mostly completed. Orchard frost protection required March 19th to 30th eastern fruit areas, damage to date limited. First spray finished on pears, apple sprays applied Hood River; also fertilizing continued. Cherry trees began to bloom at The Dalles. Stonefruit in bloom Willamette Valley. Strawberries, canberries developed ahead of normal. Pears in full bloom Medford. Early potatoes planted, none emerged Hermiston-Boardman, other areas prepared seedbeds. Onions planted all growing areas. Land prepared for vegetable crops, green peas planted Willamette Valley. Early asparagus cutting started Hermiston area. Livestock mostly good to excellent. Calf, lamb crops wintered well. Western pastures good to excellent with rapid grass growth. Eastern ranges

fair to good, greening up ahead of normal along Columbia Basin; other areas quite dry.

PENNSYLVANIA: Week started wet, warm; ended wet, cold. Average temperature 42°, 1° below normal. Temperature extremes 9°; 78°. Average precipitation 2.70 in., 1.89 in. above normal.

Activities: Hauling manure; machinery maintenance; caring for livestock; early spring activities.

PUERTO RICO: Island average rainfall 0.08 in., 0.67 in. below normal. Highest weekly total 1.59 in. Highest 24-hour total 1.46 in. Temperature averaged about 75 to 78° on coasts and 70 to 72° interior divisions. Mean station temperature ranged from 63 to 79°. Extremes 51°; 94°. San Juan mean temperature 78°, 1° below normal. Total rainfall none to 0.62 in. below normal.

SOUTH CAROLINA: Temperatures began warm, ended unseasonably cold. Low 20s upstate, snow in mountains. Precipitation ranged from 1.00 to 2.75 in. across State.

Days suitable for fieldwork 2.5. Soil moisture 68% adequate, 32% surplus. Wet, cold conditions limited field activity. Corn fair; 14% planted, 57% 1986, 47% avg. Tobacco fair; 3% planted, 7% 1986, 12% avg. Watermelons fair; 37% planted, 50% 1986, 49% avg. Tomatoes fair; 81% planted, 89% 1986, 83% avg. Small grains good; growing well. Freeze damage to fruit being assessed; early indication light damage most areas, heavy damaged York County low lying areas.

SOUTH DAKOTA: Average temperatures 3°, 11° below normal. Extremes 1°; 65°. Black Hills low -14°. Precipitation light. Yearly precipitation average above normal. Soil temperatures range 27 to 49°.

Early spring seeding began where dry enough. Grass, winter grains greening. No major problems reported from large storms. Calving, lambing began. Livestock good.

TENNESSEE: Temperatures averaged 10 to 20° below normal. Extremes 22°; 73°. Widespread rain, snow; 30th, 3rd. Snow 5 to 15 in. covered northeast 4th. Precipitation totals ranged downward from over 1.00 in. east to 0.50 in. middle, with west in between.

Days suitable for fieldwork 2.0. Soil moisture 2% very short, 21% short, 65% adequate, 12% surplus. Corn 3% planted, 19% 1986, 5% avg. Tobacco 80% beds seeded, 85% 1986, 87% avg.; 30% plants up, 42% 1986. Wheat 20% jointed, 28% 1986; 2% very poor, 3% poor, 46% fair, 40% good, 9% excellent. Fruit trees 65% budding, 65% 1986; 50% blooming, 45% 1986. Frost damaged peach tree blooms most localities. Pastures mostly fair. Cattle mostly fair to good. Cold weather, snow stressed some herds.

TEXAS: Record breaking cold temperatures occurred over State. Temperatures moderated midweek as warmer air returned on southerly breezes. New cold front 2nd, little precipitation. Clouds increased Trans-Pecos; cloudiness, along with scattered light rain, spread over State. Temperatures well below normal. Precipitation below normal, except south Rio Grande Valley above normal.

Crops: Small grains set back hard freeze covered most wheat area. High Plains temperatures lowest most wheat expected survive, but early ungrazed most susceptible to damage. More severe damage, injury Blacklands, southern areas where crop more advanced. Additional time fully evaluate potential loss. Russian wheat aphids, rust problem. Both wheat, oats grazing. Some damage oats expected. Wheat 5% headed, 18% 1986, 6% avg. Corn, grain sorghum planting slowed by adverse conditions early week, operations accelerated

toward weekend as temperatures warmed. Some replanting necessary isolated areas south. Extent of damage not known until later. Growth slow, leaf burn general most eastern half State where crop emerged. Corn 54% planted, 65% 1986, 51% avg. Sorghum 41% planted, 57% 1986, 51% avg. Cotton planting advanced slowly as cold temperatures kept equipment idle. Most planting Coastal Bend, Rio Grande Valley. Germination, growth hindered by cold temperatures. Land preparation continued High, Low Plains as conditions allowed. Cotton 10% planted, 9% 1986, 8% avg. Rice planting continued along coast. Cool temperatures slowed planting activity, emergence later than normal. Rice 24% planted, 63% 1986, 33% avg.; none emerged, 5% 1986, 5% avg. Other field crops: Peanuts none planted, 1% 1986, 1% avg. Sugarbeets none planted, 6% 1986, 26% avg.

Commercial Vegetables: Rio Grande Valley vegetables nipped by frost leaf burn watermelons, cantaloups, tomatoes. Some cucumbers lost. Onion harvest expanded with good yields. Supplies cabbage, carrots available. Citrus trees escaped damage, heavy irrigation continued. San Antonio-Winter Garden planting peppers, cabbage, cucumbers continued. Some early planted vegetables freeze damaged, replanting necessary. Trans-Pecos tomatoes, peppers froze; replanted. Most onions look good. East early vegetables injured, killed by freeze. Replanting necessary. High Plains transplanting onions, planting potatoes underway. Some damage onion transplants. Damage peach trees assessed. Early observations indicate substantial loss bloom across western half State. Eastern half loss less severe, freezing temperatures natural thinning. More time needed to fully evaluate loss. Pecan trees break buds, slowed by cold temperatures.

Range and Pasture: Ranges, pastures set back with freezing temperatures. Growth weeds, grasses slowed, some forage killed. Livestock generally survived adverse conditions, supplemental feeding increased. Calving, lambing continued. Auction prices favorable cattle, sheep.

UTAH: Precipitation none to light. Temperatures 4 to 7° below normal.

Livestock feed adequate. Livestock generally good to excellent. Major farm activities: Equipment maintenance, calving, lambing, shearing, livestock care, hauling manure.

VIRGINIA: Spring like weather beginning, mid period. Colder weather developing over weekend. Temperatures near normal during period. Range 18 to 79°. Precipitation above normal.

Days suitable for fieldwork 2.9. Topsoil moisture 82% adequate, 18% surplus. Crop preparation included liming, fertilizing, plowing, weed control. Most tobacco plantbed seeding nearly complete. Cold forced some plantbed coverings. Corn planting begun. Potato planting continued, delayed by rain. Pasture, barley, wheat, apple crops good to excellent. Some peach blossom damage Piedmont, Tidewater. Blooming delays reported mountains. Fruit trees being pruned, sprayed. Some livestock marketed.

WASHINGTON: Spring like weather prevailed. Skies clear, days warm. Temperature extremes 13°; 82°. Precipitation below normal.

Soil moisture 10% short, 70% adequate, 20% surplus. Spring wheat 70% planted. Fall crops look good. Some frost damage in orchards, especially cherry. Fruit growers nervous. Range, pastures 80% adequate, 20% surplus. Stockmen turn out livestock soon.

WEST VIRGINIA: Average temperature 37°, 9 to 14° below normal. Extremes 14° Circleville; 73° Gary. Precipitation averaged 2.51 in., 1.40 to 2.00 in. above normal.

Soil moisture 21% short, 79% adequate. Feed supplies mostly adequate.

WISCONSIN: Temperatures averaged 32°, 6° below normal, low -12°; high 66°. Precipitation trace to 0.20 in. Snowfall 1 to 4 in. northeast on 1st.

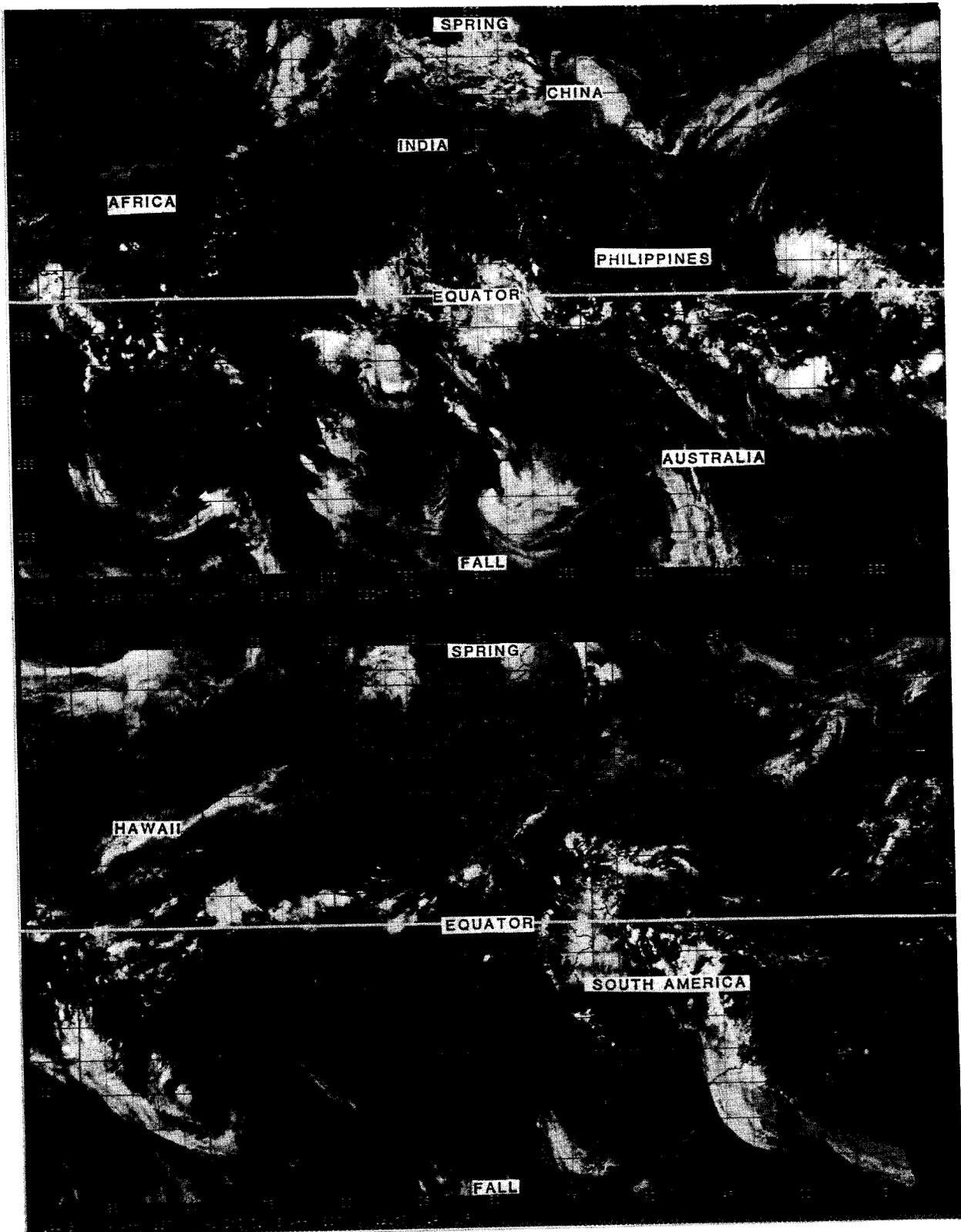
Days suitable for fieldwork less than 1.0. Soil moisture 11% short, 80% adequate, 9% surplus. Spring plowing 6% complete, 6% 1986, 2% avg. Oats planting minimal. Other farm activities: Manure hauling, fertilizer spreading, disking corn stalks.

WYOMING: Temperatures below normal. Precipitation below normal.

Days suitable for fieldwork 2.0. Topsoil moisture 9% short, 74% adequate, 17% surplus. Subsoil moisture 98% adequate, 2% surplus. Spring wheat small amount planted 10% 1986, 10% avg. Oats small amount planted 15% 1986, 10% avg. Barley 10% planted, 30% 1986, 30% avg. Sugarbeets none planted, 15% 1986, 5% avg. Alfalfa prospects good. Winter wheat mostly good. Light to moderate wind, freeze damage. Livestock good. Spring calves born 50%, 55% 1986, 60% avg. Death losses light to normal. Farm flock: Ewes lambbed 55%, 55% 1986, 60% avg.; shorn 50%, 55% 1986, 55% avg. Range flock: Ewes lambbed 25%, 20% 1986, 25% avg.; shorn 25%, 20% 1986, 30% avg. Death losses light to normal. Ranges, pastures fair to good.

Global Weather Satellite Image

APRIL 4, 1987



International Weather and Crop Summary

March 29 to April 4, 1987

HIGHLIGHTS:

UNITED STATES ... Below-normal temperatures throughout the Central, South, and South Atlantic States hurt or slow crop development. Freezing temperatures damage some small grains and fruit prospects in the South but the amount of injury has not been determined. Colder-than-normal temperatures also stress livestock and increase supplemental feeding in many areas.

WESTERN U.S.S.R. ... Gradual warming slowly melts snow. Snow remains in some southern areas, about 1 month later than usual.

EUROPE ... Showers increase over most crop areas.

SOUTH ASIA ... Warm, dry weather in central India helps winter wheat mature and favors harvesting.

SOUTHEAST ASIA ... Rain continues in northeast Thailand. Moderate rain in the Philippines covers southern Luzon and easternmost central islands.

EASTERN ASIA ... Widespread rain in central and southern China continues relieving earlier dryness. Rain is needed in northern areas of the North China Plain for vegetative wheat and summer crop planting.

SOUTH AMERICA ... Wet weather again slows crop harvesting in Argentina and south-central Brazil. Late-week drier weather improves fields.

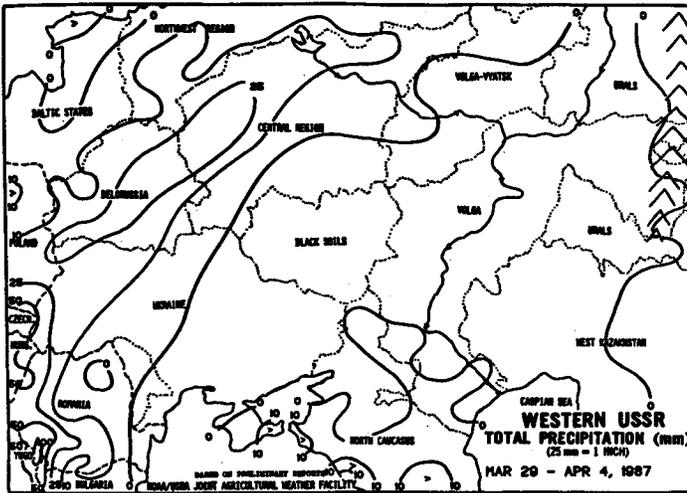
AUSTRALIA ... Dry weather covers Australia's summer crop region. Variable showers persist in coastal Queensland's sugarcane regions.

SOUTH AFRICA ... Dry, warm weather stresses reproductive corn in South Africa's primary growing areas.

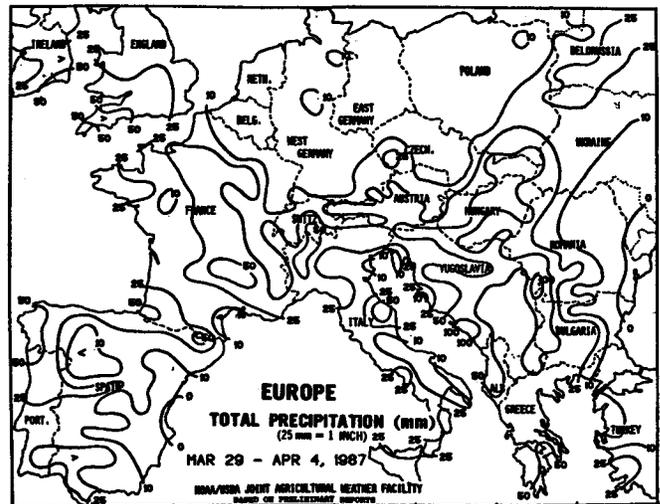
NORTHWESTERN AFRICA ... Following chronic dryness, light rain brought temporary relief to Moroccan winter grains in the heading stage. Scattered frost covers winter grains in Algeria.

COUNTRY	CITY	TEMPERATURE (C)					PRECIPITATION (MM)		
		AVG MAX	AVG MIN	HI	LO	DPART	TOTAL	DPART	
NORWAY	OSLO	-1	-12	8	-27	-7	-4.1	91.8	51.7
SWEDEN	STOCKHOLM	0	-8	10	-20	-4	-3.7	28.8	6.0
FINLND	HELSINKI	-2	-11	6	-24	-6	-3.3	27.1	-3.0
U KING	GLASGOW	8	1	12	-8	4	-1.7	104.1	33.0
	EDINBURGH	8	1	13	-8	4	-1.1	54.9	13.2
	BIRMINGHAM	7	1	13	-5	4	-1.3	53.5	2.0
	LONDON	8	1	12	-8	4	-1.2	61.3	3.9
IRELND	DUBLIN	9	3	15	-3	6	-0.6	52.9	2.8
ICELND	REYKJAVIK	3	-1	9	-10	1	-0.5	92.9	20.4
DENMRK	COPENHAGEN	2	-5	11	-14	-2	-3.4	20.1	-11.9
LUXEMB	LUXEMBOURG	5	-2	13	-12	1	-3.3	77.0	20.3
SWITZL	ZURICH	5	-1	15	-10	2	-2.8	65.7	-2.8
	GENEVA	8	1	16	-7	4	-1.2	51.1	-22.9
FRANCE	PARIS	8	2	15	-6	5	-1.7	64.2	21.1
	STRASBOURG	8	0	15	-8	4	-1.9	34.6	0.4
	BOURGES	9	2	14	-6	5	-1.6	44.3	-13.7
	BORDEAUX	13	4	18	-3	9	0.0	75.3	1.4
	TOULOUSE	12	4	20	-3	8	-0.4	72.9	16.0
	MARSEILLE	12	5	17	-2	8	-1.7	36.0	-8.3
SPAIN	VALLADOLID	15	4	21	-3	9	1.5	19.0	-24.7
	MADRID	17	4	24	-3	11	1.1	6.6	-40.7
	SEVILLE	22	10	28	5	16	2.1	17.9	-56.7
E GRMY	LEIPZIG	3	-4	13	-17	-1	-4.2	29.5	-5.0
	DRESDEN	3	-4	13	-14	-1	-3.7	33.3	-3.7
W GRMY	HAMBURG	4	-3	12	-13	0	-2.9	29.3	-14.2
	BERLIN	4	-3	13	-11	0	-3.4	27.7	-4.8
	DUSSELDORF	7	-1	14	-10	3	-2.9	106.1	65.2
	STUTT GART	5	-2	14	-15	1	-3.0	39.3	-2.0
	NURNBERG	4	-4	14	-17	0	-4.0	66.8	24.4
	MUNICH	4	-5	17	-16	0	-3.5	72.9	19.4
AUSTRI	VIENNA	3	-4	17	-19	-1	-5.6	53.4	22.4
	INNSBRU4@@	6	-3	17	-11	2	-2.8	95.5	48.9
CZECH	PRAGUE	2	-6	14	-18	-2	-4.6	22.1	-6.0
POLAND	WARSAW	1	-6	11	-17	-2	-3.7	20.9	-2.6
	LODZ	2	-6	12	-15	-2	-4.0	15.2	-20.9
	KATOWICE	2	-6	16	-17	-2	-4.3	27.7	-10.4
	PRZEMYSL	0	-6	13	-20	-3	-4.8	56.0	24.9
HUNGAR	BUDAPEST	4	-3	17	-15	1	-4.5	49.5	23.5
YUGOSL	SARAJEVO	5	-4	18	-14	0	-3.7	90.6	6.5
ROMANI	BUCHAREST	5	-4	20	-16	1	-3.4	22.0	-10.4
BULGAR	SOFIA	5	-3	19	-15	1	-4.1	23.9	-13.6
ITALY	MILAN	10	1	16	-6	5	-2.5	14.0	-65.6
	VERONA	9	0	16	-7	4	-3.6	25.0	-31.3
	VENICE	9	0	17	-6	5	-3.3	8.2	-54.5
	GENOA	12	6	18	1	9	-2.3	19.4	-67.5
	ROME	13	3	18	-5	8	-2.8	19.6	-44.3
	NAPLES	13	3	19	-4	8	-2.4	39.4	-45.4
GREECE	THESSALONIKA	9	2	19	-6	5	-4.1	102.0	60.4
	LARISSA	9	0	21	-7	5	-4.8	118.8	77.4
	ATHENS	12	5	19	-2	8	-4.2	84.3	49.9
TURKEY	ISTANBUL	7	1	22	-7	4	-2.6	82.0	19.0
	ANKARA	4	-6	19	-18	-1	-5.9	48.1	21.1
CYPRUS	LARNACA	16	6	20	2	11	-2.3	150.1	111.0
USSR	TALLINN	-2	-11	6	-25	-6	-3.6	9.7	-14.3
	LENINGRAD	-1	-9	17	-22	-5	-1.4	19.9	-9.6
	KAUNAS	-1	-10	8	-24	-5	-4.3	20.7	-9.1
	MINSK	-2	-10	5	-26	-6	-3.8	59.9	25.3
	KAZAN	-4	-13	2	-20	-9	-2.6	6.3	-15.1
	MOSCOW	-1	-10	7	-23	-6	-2.3	17.8	-18.1
	SVERDLOVSK	0	-17	8	-27	-9	-3.9	6.3	-10.9
	OMSK	-4	-15	2	-25	-10	-0.1	7.8	-3.6
	KUSTANAY	-7	-21	4	-29	-14	-4.8	10.1	-4.7
	KRASNOYARSK	-5	-16	3	-30	-11	-3.1	11.4	-2.1
	NOVOSIBIRSK	-5	-13	1	-22	-9	2.4	12.0	-3.2
	BARNAUL	-5	-13	2	-22	-9	-0.9	6.3	-15.2
	KHABAROVSK	-3	-14	3	-23	-8	-0.9	15.6	-2.5
	VLADIVOSTOK	-1	-6	7	-15	-3	-0.7	21.2	-4.6
	KIEV	-2	-10	5	-24	-6	-6.4	32.2	-6.8
	LVOV	0	-8	13	-25	-4	-4.3	51.1	12.5
	KIROVOGRAD	-4	-12	4	-24	-8	-7.6	45.7	21.7

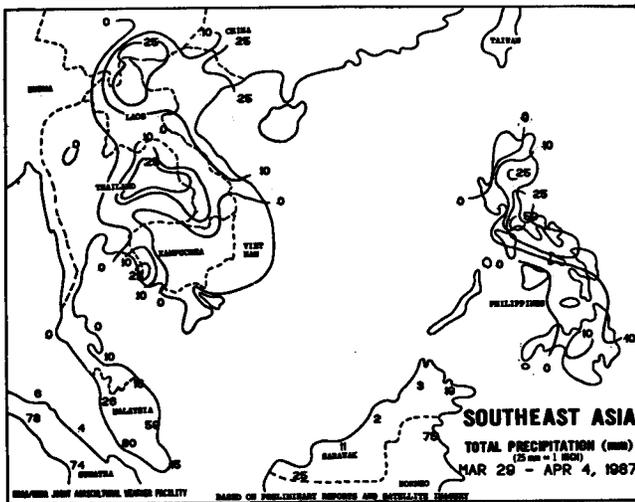
COUNTRY CITY	TEMPERATURE (C)					PRECIPITATION (MM)			COUNTRY CITY	TEMPERATURE (C)					PRECIPITATION (MM)				
	AVG	AVG	HI	LO	DPART	DPART	DPART	AVG		AVG	HI	LO	DPART	DPART	DPART				
	MAX	MIN	MAX	MIN	AVG	F/NRM	TOTAL	F/NRM		MAX	MIN	MAX	MIN	AVG	F/NRM	TOTAL	F/NRM		
USSR	ODESSA	-1	-6	9	-16	-3	-5.6	15.7	-12.0	TANZAN	DAR ES SALAAM	33	23	36	18	28	0.7	485.3	351.0
	YALTA	5	0	11	-6	2	-3.8	87.5	45.6	GABON	LIBREVILLE	31	24	33	22	27	0.4	451.9	46.8
	VORONEZH	-4	-12	2	-26	-8	-4.9	20.2	-10.7	TOGO	LOME	33	25	35	21	29	1.1	42.0	-28.1
	SARATOV	-6	-12	-1	-19	-9	-3.8	11.8	-8.5	B FASO	OUAGADOUGOU	38	24	40	19	31	-0.3	12.9	6.8
	KHARKOV	-4	-11	3	-23	-7	-6.2	42.3	14.0	IVRY C	ABIDJAN	32	25	39	15	29	0.9	104.2	-10.8
	VOLGOGRAD	-5	-10	0	-17	-8	-4.6	15.7	-14.7	MOZAMB	MAPUTO	31	23	35	20	27	1.9	84.6	-4.1
	ROSTOV	-3	-7	2	-14	-5	-5.9	45.2	9.9	ZAMBIA	KABWE	27	18	30	18	24	2.9	2.8	-110.5
	ASTRAKHAN	0	-7	6	-17	-4	-4.2	81.8	65.5	ZIMBAB	HARARE	28	17	31	15	22	2.6	122.4	35.8
	KRASNODAR	5	-2	14	-9	1	-2.2	31.0	-24.8	S AFRI	PRETORIA	28	17	31	12	22	2.2	121.9	47.2
	ORENBURG	-5	-15	4	-22	-10	-4.2	2.2	-19.7		KROONSTAD	28	14	32	9	21	0.7	73.9	-11.2
	TSELINOGRAD	-6	-16	2	-27	-11	-0.3	6.9	-2.3		JOHANNESBURG	25	14	29	10	20	2.1	254.6	174.6
	KARAGANDA	-5	-13	5	-24	-9	-1.5	15.7	-1.6		BETHAL	24	13	29	10	18	0.5	134.4	47.3
	TBILISI	9	1	17	-5	5	-1.7	37.2	4.9		DURBAN	28	21	32	18	25	1.1	109.5	-16.0
	TASHKENT	14	7	20	2	11	2.6	39.8	-39.3		CAPE TOWN	25	15	30	8	20	1.0	13.3	-1.1
	ASHKhabAD	13	6	23	2	10	0.3	105.4	60.8	CANADA	TORONTO	8	-4	18	-15	2	2.6	43.6	-17.6
SYRIA	DAMASCUS	14	3	24	-2	9	-3.1	51.2	28.3		MONTREAL	5	-5	17	-20	0	2.2	65.0	-8.6
ISRAEL	JERUSALEM	13	5	22	0	9	-3.3	108.8	18.0		WINNIPEG	0	-9	10	-26	-5	3.1	13.5	-9.2
PAKIST	KARACHI	31	20	37	12	26	0.9	0.0	-11.1		REGINA	2	-6	17	-23	-2	5.5	21.7	3.9
INDIA	AMRITSAR	26	12	29	6	19	-0.8	40.0	11.1		SASKATOON	0	-9	11	-22	-4	3.8	16.1	-0.7
	NEW DELHI	30	17	35	12	23	0.6	24.3	8.2		LETHBRIDGE	5	-6	21	-21	0	1.7	37.3	13.1
	AHMEDABAD	36	19	40	-23	28	0.1	6.0	6.0		CALGARY	4	-7	21	-18	-1	2.6	20.2	4.1
	INDORE	34	17	39	13	26	0.6	5.0	2.1		EDMONTON	-1	-9	14	-18	-5	0.3	23.8	5.3
	CALCUTTA	33	21	39	16	27	-0.4	11.5	-10.5		VANCOUVER	11	5	14	1	8	2.1	147.5	46.5
	VERAVAL	31	20	37	16	26	0.8	0.0	0.0	MEXICO	GUADALAJARA	27	8	32	2	17	-2.0	2.0	-4.4
	BOMBAY	33	22	40	18	28	1.1	0.0	-0.1		MEXICO CITY	24	11	30	1	18	1.5	9.0	0.4
	POONA	35	17	39	11	26	-0.7	0.0	-5.0		ACAPULCO	32	22	34	19	27	0.8	2.0	2.0
	BEGAMPET	35	21	37	16	28	0.1	61.9	51.0	BERMUD	ST. GEORGES	20	15	22	11	17	-0.3	211.4	98.6
	MADRAS	33	23	35	20	28	-0.2	17.7	14.5	BAHAMA	NASSAU	26	18	29	12	22	-0.2	41.6	11.2
	MANGALORE	33	23	39	21	28	0.2	0.0	-8.9	CUBA	HAVANA	27	20	31	16	23	0.2	240.1	196.8
H KONG	HONG KONG	23	20	27	13	22	3.4	232.9	178.1	JAMAIC	KINGSTON	31	23	33	20	27	0.9	4.1	-15.7
N KREA	PYONGYANG	6	-4	12	-15	1	-1.5	19.4	-31.7	P RICO	SAN JUAN	29	22	32	20	26	0.2	131.1	72.4
S KREA	SEOUL	9	1	18	-8	5	1.1	34.7	-21.2	GUADEL	RAIZET	30	21	31	18	25	1.0	32.4	-14.9
JAPAN	SAPPORO	3	-3	11	-7	0	0.4	88.0	10.0	MARTINQ	LAMENTIN	30	21	32	17	26	1.4	5.7	-64.1
	NAGOYA	13	5	20	-2	9	1.2	195.0	96.8	BARBAD	BRIDGETOWN	29	24	30	19	26	0.5	17.3	-20.8
	TOKYO	13	6	21	0	10	1.1	99.3	-2.9	TRINID	PORT OF SPAIN	33	22	35	18	27	1.9	0.0	-32.1
	YOKOHAMA	13	6	21	-1	10	1.3	127.0	8.2	COLOMB	BOGOTA	20	6	23	1	13	-0.3	64.0	8.6
	KYOTO	13	5	21	-1	9	1.1	102.5	-5.8	VENEZU	CARACAS	30	23	38	20	27	1.8	12.4	-18.7
	OSAKA	13	6	21	-1	9	1.0	121.5	21.3	F GUIA	FAYENNE	30	23	32	21	27	1.1	54.7	-348.4
THAILN	PHETCHABUN	35	22	39	19	28	0.1	72.4	25.9	BRAZIL	FORTALEZA	30	23	32	22	27	-0.2	357.1	24.0
	BANGKOK	34	25	37	20	30	0.3	41.0	18.5		RECIFE	30	23	32	22	27	0.1	409.0	157.1
MALAYS	KUALA LUMPUR	33	24	36	21	28	1.5	369.9	140.6		BELO HORIZONTE	29	19	33	17	24	1.1	224.5	88.2
VIETNM	HANOI	26	22	33	16	24	4.1	114.2	76.1		CAMPO GRANDE	30	19	33	8	24	0.6	143.2	3.2
CHINA	HARBIN	-1	-12	9	-23	-7	-0.1	12.4	1.0		FRANCA	27	17	30	7	22	1.2	148.4	-38.5
	HAMI	12	-2	19	-10	5	0.3	0.3	-1.0		RIO DE JANEIRO	28	23	33	22	26	0.0	63.3	-79.9
	LANCHOW	13	0	21	-5	7	1.6	9.4	1.1		LONDRINA	30	18	33	9	24	0.4	96.5	-36.6
	BEIJING	9	-1	17	-5	4	-0.4	13.3	4.6		SANTA MARIA	29	18	35	11	24	0.7	186.5	77.5
	TIENTSIN	10	1	18	-3	5	0.5	7.8	1.4		PORTO ALEGRE	30	20	37	13	25	1.9	78.5	-10.4
	LHASA	12	-3	19	-9	5	-0.1	0.3	-3.1	PERU	LIMA	29	22	31	19	25	3.2	0.0	0.0
	KUNMING	21	6	30	2	14	1.1	1.6	-12.3	BOLIVI	LA PAZ	13	3	17	0	8	-1.2	57.8	-19.4
	CHENGCHOW	11	2	23	-2	7	-1.4	33.8	7.0	CHILE	SANTIAGO	28	12	33	9	20	2.4	14.6	11.8
	YEHCHANG	14	7	25	3	10	-0.8	82.8	21.0	ARGENT	IGUAZU	30	18	35	7	24	***	27.8	****
	HANKOW	13	6	24	0	9	-0.7	122.3	19.1		FORMOSA	31	21	36	10	26	0.9	33.1	-123.9
	CHIHKIANG	14	8	28	2	11	0.0	56.9	-26.7		CERES	29	18	37	8	23	0.7	116.2	-18.6
	SHANGHAI	11	5	23	-2	8	0.0	135.7	57.5		CORDOBA	27	16	38	7	21	1.1	164.0	51.8
	NANCHANG	13	8	27	1	11	-0.2	214.7	51.6		RIO CUARTO	25	16	35	8	20	0.8	134.3	23.4
	TAIPEI	23	17	30	10	20	3.0	265.7	91.7		ROSARIO	27	18	34	8	22	1.3	153.3	-14.0
	CANTON	24	18	29	10	21	3.5	151.9	71.3		BUENOS AIRES	27	17	35	8	22	1.6	124.7	25.4
	NANNING	25	17	36	9	21	3.8	20.9	-33.7		SANTA ROSA	24	14	34	4	19	-0.4	100.3	15.4
CNRY I	LAS PALMAS	24	16	31	13	20	2.1	23.4	12.9		TRES ARROYOS	23	14	31	4	18	0.4	101.9	5.9
MOROCC	CASABLANCA	20	11	24	7	15	0.6	35.1	-24.9	MIDW I	MIDWAY ISLAND	22	17	24	13	20	0.6	65.7	-66.3
	MARRAKECH	25	12	33	7	18	3.2	11.0	-18.6	N CALD	NOUMEA	28	22	33	19	25	-0.4	73.0	-45.7
ALGERI	ALGER	19	8	27	3	14	0.5	14.2	-55.9	FIJI	NAUSORI	29	23	32	20	26	-0.3	526.1	153.7
	BATNA	14	4	21	-3	9	0.3	12.7	-30.2	SAMOA	PAGO PAGO	31	26	32	23	28	0.8	241.3	-37.4
TUNISI	TUNIS	16	7	25	2	12	-1.7	40.1	-10.7	TAHITI	PAPEETE	32	25	34	24	29	1.6	91.3	-62.4
NIGER	NIAMEY	38	24	43	17	31	0.6	82.1	78.9	N ZEAL	AUCKLAND	21	14	24	9	17	-1.4	137.0	55.1
MALI	TIMBUKTU	36	20	40	14	28	0.2	0.0	0.0		WELLINGTON	17	12	22	8	15	-1.1	112.4	16.9
	BAMAKO	38	24	40	21	31	0.8	1.4	-2.4	PA N G	PORT MORESBY	30	24	32	23	27	0.0	134.7	-68.3
MAURIT	NOUAKCHOTT	34	18	40	15	26	1.9	0.0	-1.8	AUSTRL	DARWIN	32	26	35	23	29	0.7	103.6	-198.7
SENEGL	DAKAR	27	18	36	16	23	1.8	0.0	0.0		MOREE	29							



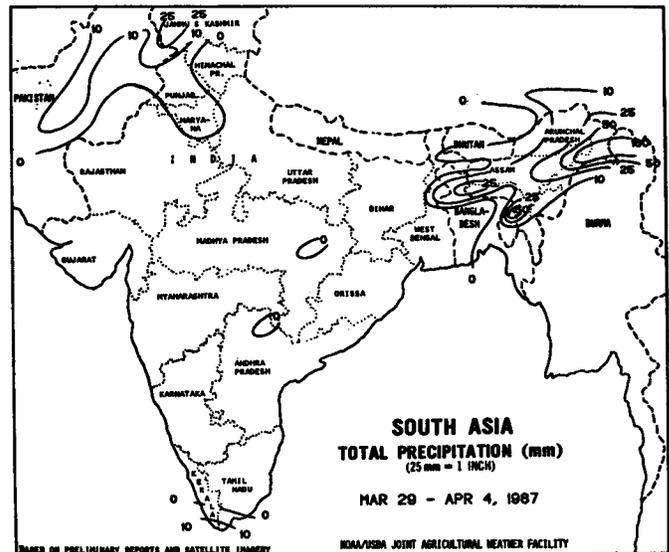
WESTERN U.S.S.R. ... Gradual warming continued. Most of the region's precipitation fell as rain. The most rain (14 to 33mm) fell over crop areas in central Belorussia and in the western portion of the Central Region. The southern snow cover boundary continued to slowly retreat northward and eastward. Moderate to deep snow covered the northern half of the Ukraine, northern North Caucasus, and the lower Volga, about 1 month later than usual. Average weekly temperatures were below normal in the southeast, near normal in the southwest and northeast, and above normal in the northwest. Winter grains remained dormant over the region, but warm weather promoted greening in crop areas adjacent to the Black Sea coast.



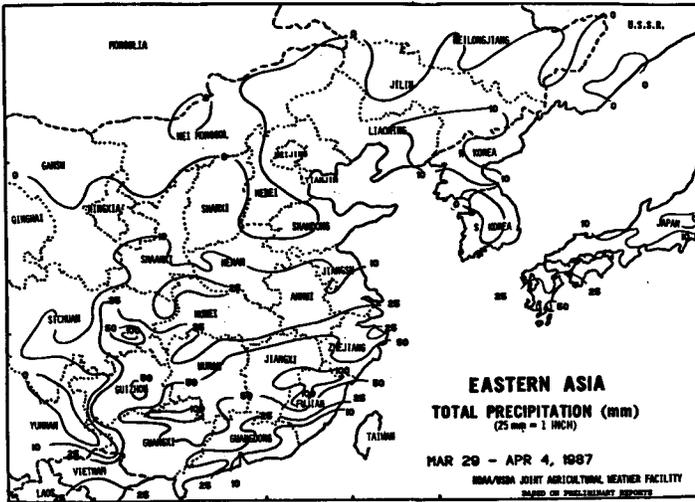
EUROPE ... An early-week storm brought widespread rain to winter grain areas in England, France, and Spain. The rain in England and France increased soil moisture for early wheat growth but drier weather is needed for spring fieldwork. Timely rains in southern Spain (10 to 34mm) benefited winter grains entering the heading stage. Generally dry weather in north-central Europe favored early spring fieldwork. Moderate rain (20 to 50mm) over northern Italy, Hungary, eastern Yugoslavia, and western Romania, boosted soil moisture for the upcoming growing season. The rain further provided abundant topsoil moisture for winter wheat in the early vegetative stage. Gusty winds during thunderstorms accompanied moderate rain in Greece and on the western Turkish coast.



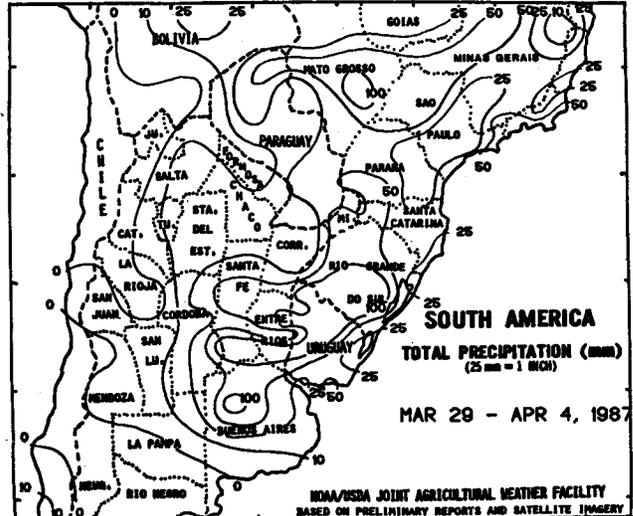
SOUTHEAST ASIA ... Scattered showers (5 to 38mm) continued in rainfed crop areas of northeast Thailand. Minimal rain (less than 3mm) persisted in upland crop regions of eastern Thailand. More rain is needed throughout Thailand to prepare for the upcoming corn and rice planting. Rain in the Philippines increased (10 to more than 80mm) in southern Luzon and the eastern most central islands. More rain is needed in northern Luzon for rainfed rice and corn planting. Seasonal tropical showers covered Indonesia and Malaysia.



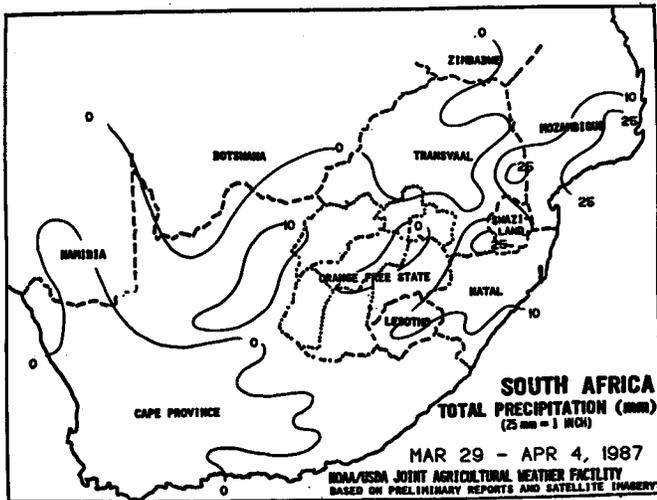
SOUTH ASIA ... Warm, dry weather in central India helped winter wheat mature and favored harvesting. Light rain (2 to 13mm) maintained irrigation reserves in northern Pakistan and northern India for filling grains and early planted cotton. Dry weather continued in southeast India's summer rice regions.



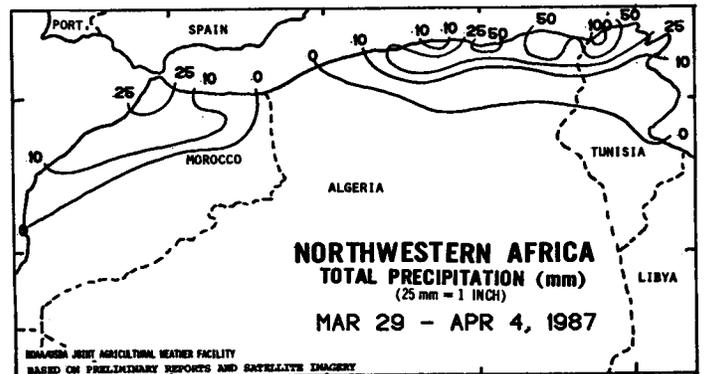
EASTERN ASIA ... Mid-week widespread rain spread from central and southern China into Manchuria. Winter wheat areas in Shanxi, Hebei, and Shandong experienced dry weather. Following 2 weeks of inundating rain, drier weather came to early double-crop rice areas of Guangdong and southern Jiangxi. Moderate to heavy rain (50 to 100mm) in Guangxi relieved persistent dryness. Widespread showers in Hunan, Jiangxi, Hubei, Anhui, and Zhejiang maintained favorable moisture for early rice growth. Additional rain (12 to 50mm) fell over crop areas in Sichuan. Early-week temperatures dropped briefly below freezing in the North China Plain, but subsequent warming boosted average weekly temperatures above normal. Soil moisture is limited in northern Shaanxi, Shanxi, northern Henan, Hebei, and Shandong where rain is needed for winter wheat in the vegetative stage and summer crop planting.



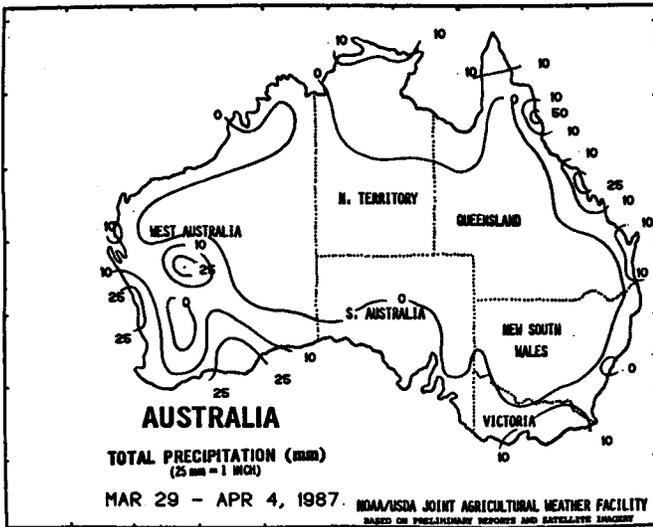
SOUTH AMERICA ... Early-week rain over Argentina's primary summer crop areas continued to delay harvesting. Locally heavy showers and thunderstorms produced 25 to 120mm in northern Buenos Aires, southern Santa Fe, and southern Cordoba before skies cleared by mid-week. Fair weather late in the week improved fields, allowing the harvest pace to increase by the weekend. Showers diminished over Argentina's northern cotton areas, allowing late-week harvesting. The storms moved northeastward into south-central Brazil and, by mid-week, inundative rain (100 to 150mm) again fell over southern Rio Grande do Sul. Locally heavy showers (50 to 100mm) fell over soybean areas of western Rio Grande do Sul, southwestern Parana, and into northern crop areas, further delaying harvests in the south and slowing harvests in northern soybean areas.



SOUTH AFRICA ... Light rain (less than 10mm) covered South Africa's primary corn areas. Temperatures reached 32 to 36 degrees C by week's end in all growing areas, stressing reproductive corn. Moisture is limited in the northern Transvaal and southern Maize Triangle. Moisture is becoming limited in parts of the Orange Free State and southern Transvaal where a dry trend recently occurred. Corn is grain-filling to maturing throughout South Africa. Harvesting is usually underway by early April and lasts through July.

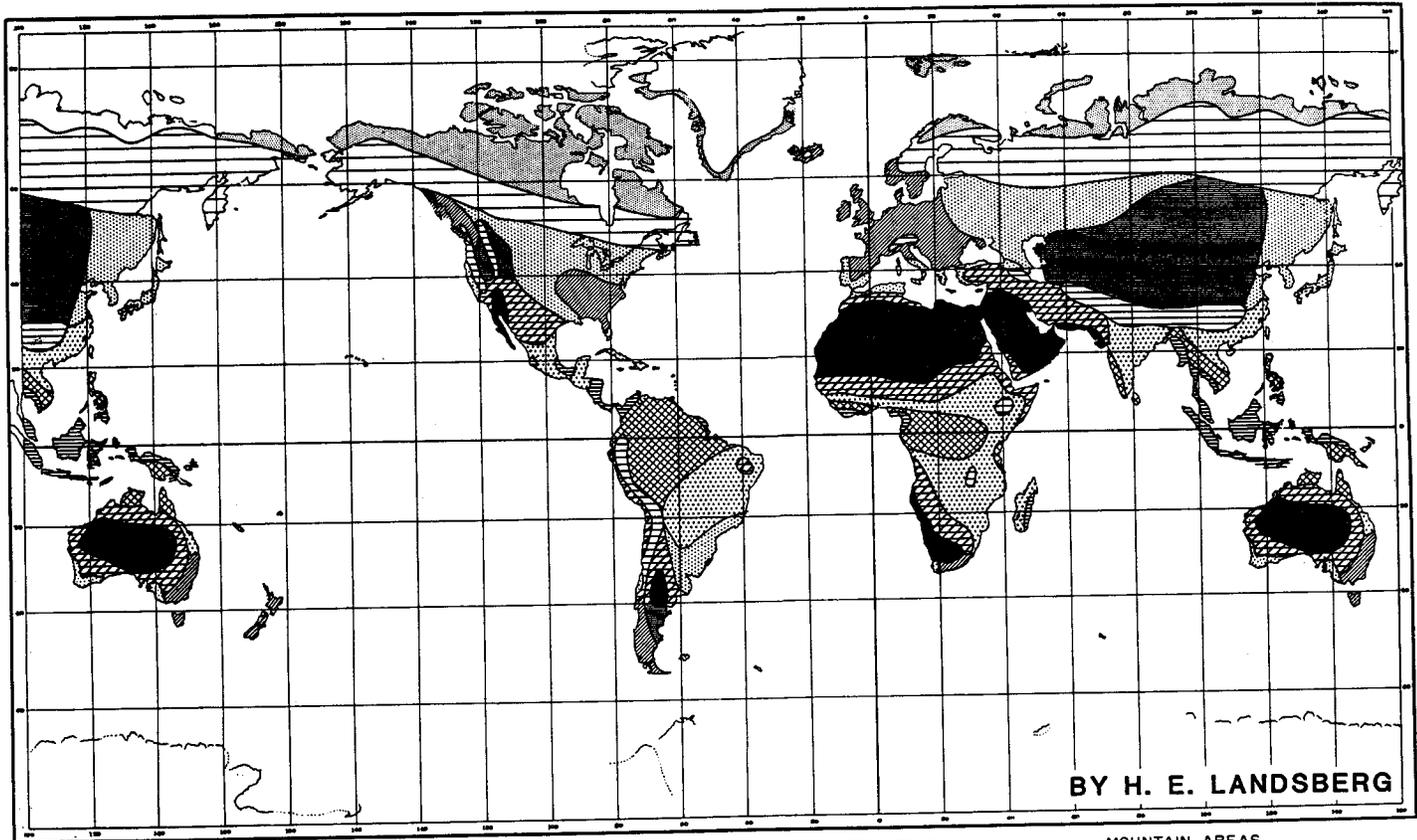


NORTHWESTERN AFRICA ... Following chronic dryness, light rain temporarily relieved Moroccan winter grains in the heading stage. Rainfall in northern crop areas ranged from 12 to 20mm, while rainfall further south was lighter (3 to 16mm). Dry weather in Algeria continued stressing winter grains in minor producing areas in the west. Light to moderate rain (10 to 69mm) benefited winter grains in central and eastern crop areas. However, the weather was unseasonably cold. Scattered frost (minimum temperatures around -1°C) on April 2 in eastern crop areas may have hurt the crop in the highly weather-sensitive heading stage. Light to moderate rain in Tunisia continued benefiting winter grains.



AUSTRALIA ... Dry weather covered eastern Australia's summer crop regions. Below-normal rainfall since February has limited moisture for Queensland's unirrigated crops. Cotton and grains in Queensland are maturing while crops further south are mostly filling. Variable showers (3 to 36mm) benefited vegetative sugarcane over a small area along Queensland's coast. Moisture reserves are still low in some southern sugarcane areas due to this season's weak monsoon circulation. Light rain (2 to 17mm) covered Western Australia's grain areas, but rainfall averaged only 2mm in South Australia and Victoria. Winter wheat planting usually begins by April and lasts until late June throughout Australia.

MAJOR CLIMATIC SUBDIVISIONS OF THE EARTH'S LAND AREAS



BY H. E. LANDSBERG

- | | | | |
|--|--|--|---|
| <p>COLD AREAS</p> <ul style="list-style-type: none"> GLACIATED COLD - TUNDRA (NO TREES) SHORT SUMMERS WITH CHANCE OF FROST IN ANY MONTH | <p>MODERATE AREAS</p> <ul style="list-style-type: none"> COLD WINTERS - RAINFALL GENERALLY ADEQUATE FOR CROPS DISTINCT WINTER SEASON GENERALLY AMPLE RAINFALL MILD MODERATE RAINFALL (USUALLY WINTER) COOL ARID OR SEMIARID REGIONS | <p>WARM AND HOT AREAS</p> <ul style="list-style-type: none"> HOT AND RAINY THROUGHOUT YEAR HOT WITH SEASONAL VARIATION OF RAINFALL WARM WITH DISTINCT RAINY SEASON WARM DESERT WARM SEMIARID REGION | <p>MOUNTAIN AREAS</p> <ul style="list-style-type: none"> WITH MARKEDLY DIFFERENT CLIMATE FROM SURROUNDINGS, ACTING AS CLIMATIC BARRIER |
|--|--|--|---|

Note: Boundaries between areas should be regarded as broad transition zones.

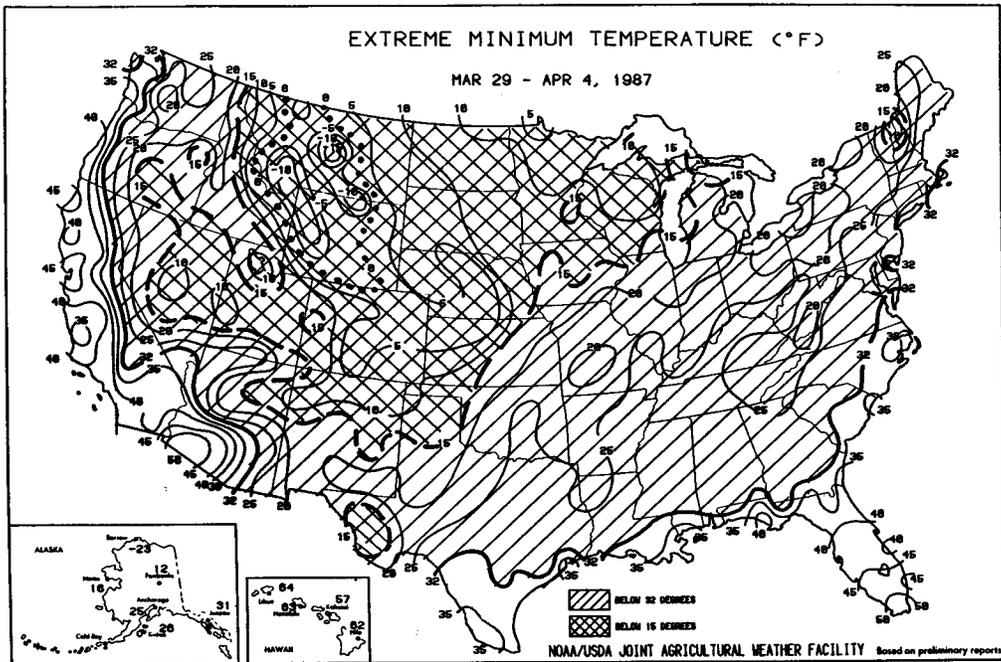
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