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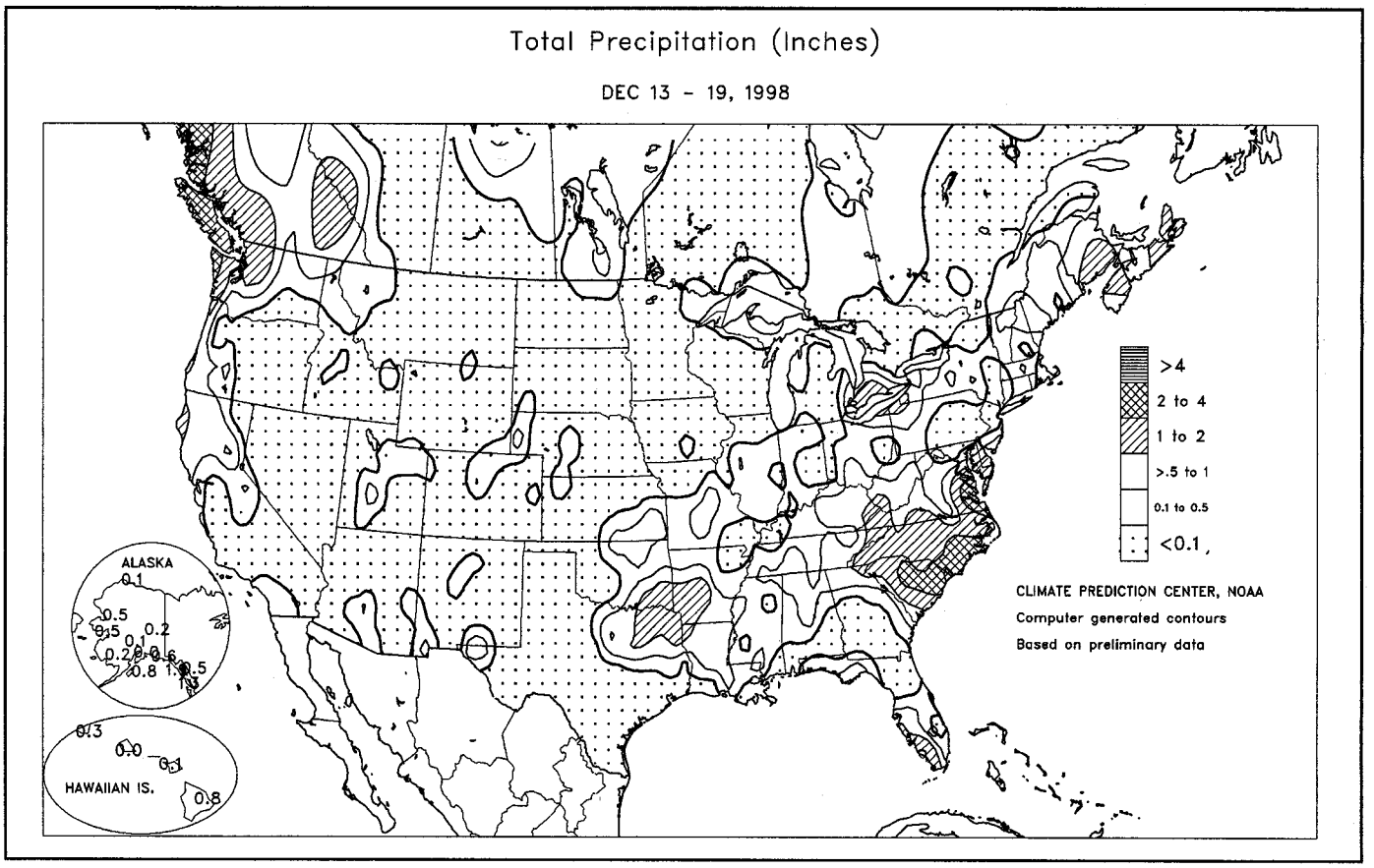
WEEKLY WEATHER AND CROP BULLETIN

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

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service
and World Agricultural Outlook Board



HIGHLIGHTS

December 13 - 19, 1998

A late-week Arctic blast abruptly ended a month-long run of unseasonably mild weather. By week's end, cold air was in place across the **northern and central Plains** and the **Northwest**, with even more frigid air poised to spread southward. Light snow blanketed portions of the **northern and central Plains** prior to the arrival of the coldest air, helping to insulate hard red winter wheat. No snow fell, however, across soft white winter wheat areas of the **Northwest**, although the crop had achieved dormancy. Warmth in advance of the Arctic intrusion boosted weekly temperatures 4 to 14°F above normal across the **Plains** and **Midwest**. Readings averaged as much as 10°F above normal

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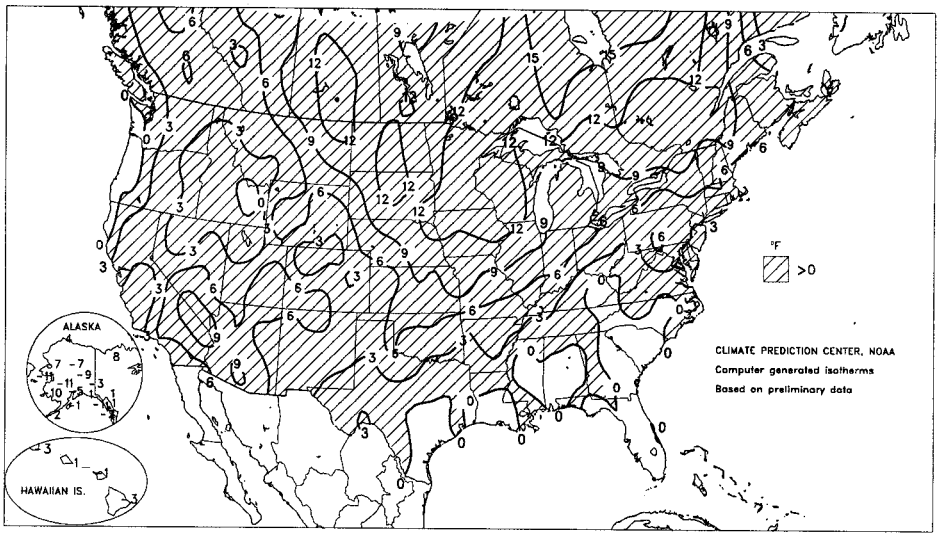
in the **Southwest** and up to 7°F above normal in the **Northwest** and **Northeast**. Near-normal temperatures prevailed from **southern Texas** to the **Southeast**. Significant rain was confined to portions of the **Southeastern States**. From **eastern Virginia** to the **Carolinas**, early-week showers eased long-term drought and improved soil moisture for fall-sown crops.

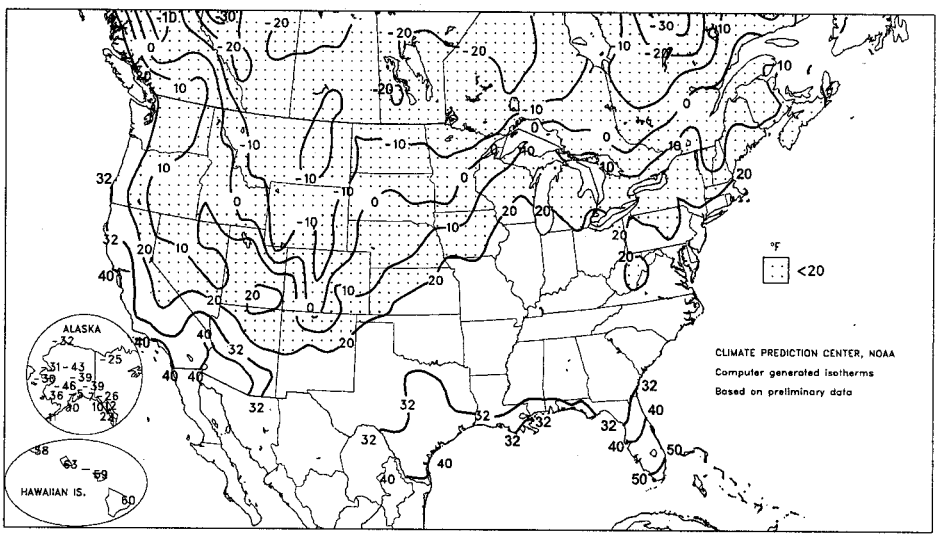
Departure of Average Temperature from Normal (°F)

DEC 13 - 19, 1998



Extreme Minimum Temperature (°F)

DEC 13 - 19, 1998



Warmth preceding the Arctic blast resulted in more than six dozen daily-record highs, mostly from the **West Coast States** to the **Midwest**. On Sunday, **Bakersfield, CA** posted a daily-record high of 79°F. A day later, highs of 55°F in **Minneapolis, MN**, 62°F in **Dickinson, ND**, and 70°F in **Valentine, NE** were among more than three dozen records. **Death Valley (Furnace Creek), CA** registered a December-record high of 88°F on the 16th, breaking a record that had stood since December 6, 1927. Elsewhere in **California**, consecutive daily-record highs were established on December 16-17 at **Oakland** (78 and 71°F) and downtown **San Francisco** (71 and 69°F). On the latter date, **Miles City, MT** (64°F) tallied a daily-record high.

In the **Midwest** and **East**, a gradual cool-down helped to cold-harden winter wheat and ended some impressive streaks related to lack of snow and cold. On December 16, the season's first trace of snow was observed in **Detroit, MI**, breaking their record of November 30, 1918 and 1963. **Detroit's** snow-free period of 267 days (March 24 to December 15), eclipsed their 1946 standard by nearly 2 weeks. Two days later in **Indiana**, the latest first measurable snowfall on record occurred in **Fort Wayne** and **South Bend**. Also on Friday, **Atlanta, GA** (28°F) marked their latest first freeze, breaking a record set on December 11, 1994. Meanwhile in **New York, Albany's** high temperature of 30°F and low of 19°F tied records set in 1923 for their latest first occurrences of a sub-freezing maximum and sub-20°F minimum. On Saturday, as Arctic air drove southward through the **Plains**, temperatures dipped below normal in **Sioux Falls, SD** for the first time since November 20, ending a 28-day span during which readings averaged 15°F above normal. **Omaha, NE** (14°F) logged their first sub-20°F low temperature on December 19, shattering a record set on December 13, 1915. Light snow accompanied the sharply colder weather into the **Plains**, delivering **Omaha's** first measurable precipitation (0.02 inch on December 20) since November 10.

In the **Southeast**, early-to midweek rainfall totaled more than 2 inches in some locations from **eastern Virginia** to the **Carolinas**. Late-week showers produced more than 1 inch in the **Arklatex region**. In **eastern Maine**, late-week snowfall totaled a half-foot or more in a few areas, accompanied by wind gusts in excess of 50 mph along the coast. Heavy snow developed across the **Intermountain West** at week's end in conjunction with the Arctic outbreak. In **southern Utah**, 24-hour snowfall (December 19-20) included 15 inches in **Milford** and 11 inches in **Richfield**.

Below-normal temperatures prevailed in most of **Alaska**, with departures reaching -11°F in western areas. **Cold Bay** logged a daily-record low (11°F) on Sunday, and **Kodiak** noted a daily-record snowfall (11.0 inches) on Monday. Nevertheless, milder-than-normal conditions continued on **Alaska's North Slope**. On Saturday, **Prudhoe Bay's** daily-record high of 33°F contrasted sharply with highs in **western Montana** of -10°F in **Butte** and -8°F in **Great Falls**.

National Weather Data for Selected Cities

Weather Data for the Week Ending December 19, 1998

Data Provided by Climate Prediction Center (301-763-8000 EXT. 7503) and the Southern Regional Climate Center

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	53	36	59	28	44	-1	0.52	-0.64	0.40	2.46	80	62.94	120	92	52	0	3	2	0
	HUNTSVILLE	53	34	58	26	44	1	0.38	-0.97	0.33	3.54	98	42.18	77	95	52	0	4	3	0
	MOBILE	63	41	78	33	52	-1	0.08	-1.13	0.05	1.29	40	85.58	138	97	53	0	0	2	0
	MONTGOMERY	58	38	63	27	48	-1	0.10	-1.09	0.06	0.57	18	46.97	91	93	41	0	3	3	0
AK	ANCHORAGE	18	6	24	-5	12	-5	0.00	-0.25	0.00	0.79	118	11.13	72	91	56	0	7	0	0
	BARROW	-1	-15	28	-32	-8	3	0.14	0.11	0.12	0.33	471	4.82	113	74	64	0	7	2	0
	FAIRBANKS	-7	-25	14	-39	-16	-9	0.15	-0.04	0.11	0.44	86	10.56	100	84	71	0	7	2	0
	JUNEAU	33	24	41	12	29	1	0.47	-0.52	0.25	3.95	147	62.79	120	95	74	0	6	4	0
	KODIAK	34	24	40	10	29	-2	0.82	-0.72	0.53	3.90	97	105.61	163	89	56	0	5	4	1
	NOME	2	-10	34	-30	-4	-11	0.52	0.33	0.35	0.75	144	24.07	165	90	69	0	7	3	0
AZ	FLAGSTAFF	47	26	50	17	36	7	0.00	-0.55	0.00	0.52	35	27.48	125	75	34	0	5	0	0
	PHOENIX	73	51	79	46	62	8	0.44	0.22	0.42	0.88	147	10.72	147	73	25	0	0	2	0
	TUCSON	72	48	77	44	60	8	0.09	-0.16	0.00	0.58	91	13.74	119	57	21	0	0	1	0
	YUMA	73	50	80	44	61	5	0.06	-0.05	0.02	0.17	63	4.64	156	70	28	0	0	2	0
AR	FORT SMITH	56	32	58	27	44	4	0.39	-0.30	0.39	2.79	138	44.46	111	96	46	0	5	1	0
	LITTLE ROCK	56	36	66	29	46	4	0.92	-0.18	0.47	3.08	99	40.70	83	86	42	0	1	2	0
CA	BAKERSFIELD	64	38	79	33	51	4	0.01	-0.13	0.01	0.57	154	13.24	243	94	44	0	0	1	0
	EUREKA	54	35	64	28	45	-4	1.69	0.36	1.37	5.13	136	63.42	180	99	57	0	2	3	1
	FRESNO	58	36	69	34	47	2	0.10	-0.21	0.05	0.65	78	17.28	174	99	45	0	0	2	0
	LOS ANGELES	70	52	82	48	61	4	0.04	-0.32	0.04	0.85	88	25.90	229	80	37	0	0	1	0
	REDDING	63	40	77	31	51	7	0.60	-0.64	0.57	2.13	64	61.20	197	77	31	0	1	2	1
	SACRAMENTO	57	36	62	33	47	2	0.09	-0.46	0.07	0.59	40	28.74	175	100	59	0	0	2	0
	SAN DIEGO	67	51	79	47	59	2	0.03	-0.33	0.02	0.69	71	15.78	169	93	45	0	0	1	0
	SAN FRANCISCO	58	46	70	41	52	3	0.20	-0.48	0.17	0.89	50	32.59	178	91	56	0	0	2	0
CO	ALAMOSA	47	4	51	-1	26	8	0.00	-0.11	0.00	0.00	0	6.84	93	82	22	0	7	0	0
	CO SPRINGS	48	20	63	4	34	4	0.02	-0.09	0.02	0.17	57	16.24	101	70	24	0	7	1	0
	DENVER	48	19	65	-3	34	3	0.07	-0.07	0.04	0.12	29	16.04	106	76	26	0	6	2	0
	GRAND JUNCTION	49	20	54	18	35	6	0.00	-0.14	0.00	0.02	5	8.86	105	82	32	0	7	0	0
	PUEBLO	53	15	65	10	34	3	0.04	-0.05	0.04	0.12	43	11.56	105	86	28	0	7	1	0
CT	BRIDGEPORT	44	29	48	25	37	2	0.20	-0.59	0.20	0.45	21	41.38	102	81	48	0	6	1	0
	HARTFORD	43	25	50	20	34	5	0.06	-0.82	0.06	0.29	12	44.81	105	82	46	0	6	1	0
DC	WASHINGTON	49	36	55	30	42	3	0.49	-0.23	0.49	1.48	76	35.67	95	68	37	0	1	1	0
DE	WILMINGTON	47	32	54	27	40	4	0.14	-0.66	0.12	0.56	26	36.08	91	88	48	0	4	2	0
FL	DAYTONA BEACH	69	49	82	39	59	-1	0.54	-0.04	0.53	0.91	58	40.08	85	89	53	0	0	2	1
	JACKSONVILLE	64	42	77	29	53	-2	0.03	-0.58	0.02	0.09	6	56.52	113	97	58	0	1	2	0
	KEY WEST	75	66	82	57	70	-1	0.80	0.36	0.71	1.22	96	37.57	97	88	64	0	0	3	1
	MIAMI	74	60	83	53	67	-2	0.16	-0.25	0.05	0.83	73	69.13	125	86	50	0	0	3	0
	ORLANDO	71	50	81	40	61	-1	0.59	0.11	0.35	0.60	45	44.70	94	94	53	0	0	2	0
	PENSACOLA	64	43	76	37	54	0	0.28	-0.70	0.28	2.48	97	66.49	110	90	52	0	0	1	0
	TALLAHASSEE	65	39	75	26	52	-1	0.28	-0.88	0.28	0.35	11	57.57	90	94	42	0	4	1	0
	TAMPA	69	52	76	43	61	-2	0.39	-0.11	0.39	0.39	30	54.64	127	94	59	0	0	1	0
	WEST PALM BEACH	74	57	84	46	65	-2	0.12	-0.42	0.12	1.49	91	65.08	109	86	49	0	0	1	0
GA	ATHENS	53	34	63	26	44	-1	0.12	-0.80	0.05	0.68	28	49.17	102	91	46	0	2	4	0
	ATLANTA	52	37	61	28	45	1	0.24	-0.74	0.11	0.79	30	45.03	92	91	43	0	1	3	0
	AUGUSTA	57	34	73	22	46	-1	0.40	-0.38	0.18	0.48	24	46.76	108	98	41	0	3	3	0
	COLUMBUS	60	40	67	30	50	1	0.11	-1.03	0.11	1.23	41	32.83	67	84	36	0	1	1	0
	MACON	59	37	70	25	48	-1	0.12	-0.87	0.12	0.73	29	42.55	99	88	39	0	2	1	0
	SAVANNAH	61	42	73	26	51	0	0.45	-0.22	0.35	0.71	42	47.87	100	95	52	0	1	2	0
HI	HILO	76	64	78	60	70	-2	0.80	-1.91	0.39	7.73	100	106.03	85	99	71	0	0	5	0
	HONOLULU	80	66	82	63	73	-1	0.00	-0.87	0.00	0.37	16	4.00	19	88	55	0	0	0	0
	KAHULUI	82	64	84	59	73	0	0.06	-0.67	0.05	0.34	18	5.93	30	91	47	0	0	2	0
	LIHUE	76	64	78	58	70	-3	0.33	-0.82	0.16	1.48	48	25.66	62	93	66	0	0	4	0
ID	BOISE	39	23	54	14	31	2	0.00	-0.30	0.00	0.50	60	15.56	135	90	47	0	7	0	0
	LEWISTON	41	28	54	12	35	0	0.03	-0.25	0.02	0.33	44	17.10	142	78	46	0	6	2	0
	POCATELLO	33	10	43	-8	22	-3	0.06	-0.19	0.04	0.47	70	13.23	113	93	62	0	7	1	0
IL	CHICAGO/O'HARE	46	30	53	25	38	11	0.00	-0.56	0.00	1.10	68	37.44	107	85	50	0	6	0	0
	MOLINE	46	27	55	21	37	12	0.03	-0.48	0.00	0.86	60	47.93	125	88	50	0	6	1	0
	PEORIA	47	28	55	24	37	11	0.22	-0.34	0.13	1.57	99	42.28	119	85	49	0	5	2	0
	ROCKFORD	44	26	50	20	35	11	0.00	-0.46	0.00	0.84	63	39.87	112	90	54	0	7	0	0
	SPRINGFIELD	47	28	56	21	37	8	0.28	-0.35	0.16	0.52	30	44.80	131	89	47	0	6	2	0
IN	EVANSVILLE	49	31	51	22	40	5	0.26	-0.58	0.13	0.81	35	41.01	98	95	48	0	5	3	0
	FORT WAYNE	44	26	50	21	35	7	0.22	-0.45	0.15	0.59	32	37.91	113	93	54	0	6	3	0
	INDIANAPOLIS	46	29	51	22	38	7	0.15	-0.61	0.01	0.46	22	48.83	126	91	44	0	6	3	0
	SOUTH BEND	46	27	52	21	37	8	0.30	-0.46	0.24	1.73	82	34.94	92	94	53	0	7	4	0
IA	BURLINGTON	48	33	59	23	40	--	0.00	0.00	0.00	1.38	107	52.19	148	76	51	0	2	0	0
	CEDAR RAPIDS	44	26	53	21	35	13	0.02	-0.33	0.02	0.10	10	45.34	137	89	52	0	7	1	0
	DES MOINES	44	25	55	15	35	11	0.00	-0.30	0.00	0.07	8	39.61	121	89	49	0	6	0	0
	DUBUQUE	42	27	50	21	34	13	0.00	-0.44	0.00	0.12	9	43.30	115	86	54	0	7	0	0
	SIOUX CITY	46	22	59	12	34	13	0.00	-0.17	0.00	0.03	6	30.96	121	87	43	0	7	0	0
	WATERLOO	42	25	55	17	33	13	0.04	-0.26	0.04	0.05	6	44.59	134	88	52	0	6	1	0
KS	CONCORDIA	50	27	58	18	38	9	0.00	-0.19	0.00	0.10	18	33.17	116	83	44	0	7	0	0
	DODGE CITY	52	26	62	21	39	7	0.00	-0.14	0.00	0.18	43	21.66	102	84	37	0	7	0	0
	GOODLAND	48	20	67	6	34	5	0.08	0.00	0.08	0.08	31	18.28	102	79	34	0	7	1	0
	TOPEKA	52	29	59	25	41	10	0.00	-0.32	0.00	1.19	128	42.14	121	83	40	0	6	0	0

Based on 1961-90 normals

Weather Data for the Week Ending December 19, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	52	29	57	24	41	8	0.25	-0.03	0.25	1.05	133	34.66	120	94	51	0	6	1	0
KY	JACKSON	44	31	51	26	37	-1	1.10	0.11	0.80	3.75	137	51.98	108	95	53	0	5	4	1
	LEXINGTON	44	29	49	22	37	1	0.82	-0.10	0.58	2.30	92	48.70	113	99	60	0	6	3	1
	LOUISVILLE	47	33	52	27	40	3	0.64	-0.19	0.47	1.36	59	46.21	107	96	52	0	5	3	0
	PADUCAH	51	32	53	25	42	5	0.20	-0.89	0.14	1.94	65	54.20	114	92	46	0	4	2	0
LA	BATON ROUGE	62	39	71	31	51	-2	0.35	-0.92	0.35	1.11	33	54.03	92	96	46	0	2	1	0
	LAKE CHARLES	65	39	76	32	52	-1	0.03	-1.13	0.03	2.13	69	55.10	104	98	45	0	1	1	0
	NEW ORLEANS	64	45	80	38	54	0	0.00	-1.32	0.00	0.94	27	77.72	130	90	45	0	0	0	0
	SHREVEPORT	61	38	65	30	49	2	0.82	-0.10	0.82	4.92	192	49.29	111	91	42	0	1	1	1
ME	CARIBOU	30	16	41	4	23	9	0.30	-0.43	0.20	1.02	50	35.27	100	88	55	0	7	3	0
	PORTLAND	41	23	51	18	32	6	0.45	-0.58	0.26	0.71	24	54.17	127	83	44	0	7	2	0
MD	BALTIMORE	48	30	55	23	39	3	0.35	-0.42	0.35	0.90	43	34.02	86	83	40	0	4	1	0
MA	BOSTON	45	31	52	25	38	4	0.25	-0.66	0.25	0.68	27	52.53	131	81	46	0	4	1	0
	WORCESTER	41	28	50	21	34	7	0.25	-0.66	0.25	0.77	30	45.89	99	74	41	0	6	1	0
MI	ALPENA	40	23	50	12	31	8	0.29	-0.17	0.13	1.09	85	32.74	117	91	61	0	6	3	0
	GRAND RAPIDS	44	24	48	19	34	7	0.02	-0.63	0.00	0.94	51	31.98	91	89	51	0	7	1	0
	HOUGHTON LAKE	39	19	47	12	29	7	0.15	-0.29	0.10	0.95	76	24.30	88	97	70	0	7	4	0
	LANSING	44	20	51	14	32	5	0.04	-0.50	0.00	1.01	66	28.38	95	91	57	0	7	1	0
	MARQUETTE	35	19	49	8	27	10	2.55	1.98	2.26	0.95	58	18.51	67	87	60	0	7	3	2
	MUSKEGON	43	26	50	20	34	6	0.07	-0.62	0.07	1.20	63	28.19	90	90	55	0	6	1	0
MN	DULUTH	33	17	49	-3	25	13	0.17	-0.11	0.12	0.74	94	32.85	111	91	56	0	7	3	0
	INT'L FALLS	28	11	47	-20	19	13	0.18	-0.01	0.13	0.28	54	22.46	93	87	61	0	7	2	0
	MINNEAPOLIS	39	21	55	9	30	12	0.07	-0.17	0.03	0.31	44	32.96	118	87	63	0	7	2	0
	ROCHESTER	39	22	52	9	30	13	0.04	-0.19	0.02	0.04	6	31.94	109	93	66	0	7	2	0
	ST. CLOUD	37	18	53	1	28	14	0.06	-0.13	0.05	0.82	152	24.83	92	91	63	0	7	2	0
MS	JACKSON	59	36	72	28	47	-1	0.51	-0.84	0.51	3.97	110	49.29	93	97	43	0	4	1	1
	MERIDIAN	58	35	63	26	47	-2	0.31	-1.10	0.31	1.93	52	52.22	96	95	44	0	3	1	0
	TUPELO	55	33	62	26	44	1	0.41	-1.02	0.40	5.30	139	48.69	91	91	48	0	4	2	0
MO	COLUMBIA	49	30	58	26	39	8	0.70	0.13	0.62	1.11	68	44.86	117	87	48	0	5	2	1
	KANSAS CITY	51	30	58	24	40	10	0.00	-0.36	0.00	0.83	82	49.16	133	84	46	0	5	0	0
	SAINT LOUIS	50	31	58	28	41	7	0.23	-0.47	0.18	0.53	27	43.32	119	86	41	0	4	2	0
	SPRINGFIELD	51	29	57	23	40	5	0.74	0.02	0.54	1.32	63	48.43	115	89	43	0	5	2	1
MT	BILLINGS	41	22	60	-8	31	6	0.05	-0.12	0.01	0.56	124	14.25	96	80	45	0	5	2	0
	BUTTE	31	7	48	-26	19	2	0.28	0.17	0.14	1.21	432	15.32	128	89	56	0	7	2	0
	GLASGOW	36	17	50	-6	26	11	0.08	0.00	0.03	0.28	127	14.51	135	88	57	0	7	3	0
	GREAT FALLS	37	16	57	-16	26	3	0.10	-0.09	0.07	0.10	20	16.52	111	74	46	0	6	3	0
	KALISPELL	35	19	47	-2	27	4	0.11	-0.28	0.03	0.49	47	19.53	124	86	51	0	7	4	0
	MILES CITY	40	18	63	-9	29	10	0.04	-0.10	0.01	0.10	27	13.54	98	88	45	0	7	2	0
	MISSOULA	34	18	47	-5	26	3	0.38	0.11	0.19	0.85	125	21.38	164	88	52	0	7	3	0
NE	GRAND ISLAND	48	21	57	9	35	10	0.00	-0.17	0.00	0.01	2	25.90	105	83	37	0	7	0	0
	LINCOLN	49	22	58	15	36	10	0.00	-0.20	0.00	0.03	5	34.06	122	84	40	0	7	0	0
	NORFOLK	47	23	58	9	35	12	0.00	-0.17	0.00	0.02	4	35.05	141	84	40	0	7	0	0
	NORTH PLATTE	47	18	62	6	32	8	0.01	-0.10	0.00	0.01	3	22.44	117	87	34	0	7	1	0
	OMAHA	47	25	57	17	36	11	0.00	-0.22	0.00	0.02	3	39.53	134	87	42	0	7	0	0
	SCOTTSBLUFF	47	13	64	-1	30	4	0.50	0.36	0.36	0.60	162	16.99	113	90	35	0	7	2	0
	VALENTINE	48	18	70	2	33	11	0.00	-0.08	0.00	0.00	0	24.08	133	83	31	0	7	0	0
NV	ELY	46	17	59	5	32	7	0.06	-0.11	0.02	0.38	84	12.29	123	89	31	0	7	1	0
	LAS VEGAS	66	44	73	36	55	10	0.00	-0.08	0.00	0.04	18	6.96	177	55	25	0	0	0	0
	RENO	50	22	61	16	36	4	0.09	-0.13	0.04	0.15	25	12.13	171	88	29	0	7	1	0
	WINNEMUCCA	39	17	48	8	28	-1	0.00	-0.19	0.00	0.19	34	15.31	193	95	55	0	7	0	0
NH	CONCORD	40	19	51	12	30	6	0.15	-0.57	0.11	0.47	23	35.10	99	90	46	0	7	2	0
NJ	NEWARK	46	32	50	26	39	3	0.02	-0.75	0.02	0.26	12	42.69	100	82	45	0	3	1	0
NM	ALBUQUERQUE	53	27	56	23	40	5	0.00	-0.11	0.00	0.23	77	9.85	114	78	27	0	6	0	0
NY	ALBANY	40	25	46	19	33	7	0.13	-0.54	0.13	0.50	27	38.43	109	87	51	0	7	1	0
	BINGHAMTON	37	25	46	21	31	5	0.14	-0.54	0.09	0.55	29	38.06	106	88	54	0	7	2	0
	BUFFALO	42	30	48	21	36	7	0.28	-0.56	0.17	0.38	16	33.66	90	94	60	0	4	3	0
	ROCHESTER	42	29	53	23	36	7	0.59	-0.03	0.32	0.86	49	41.21	133	88	54	0	5	4	0
	SYRACUSE	42	27	54	22	34	6	0.37	-0.36	0.21	0.83	40	36.29	96	85	52	0	6	4	0
NC	ASHEVILLE	50	29	57	22	39	0	0.90	0.10	0.61	2.11	96	46.87	101	89	41	0	5	3	1
	CHARLOTTE	52	32	63	23	42	0	1.10	0.31	0.57	1.21	58	38.98	93	91	45	0	3	5	1
	GREENSBORO	49	32	61	27	40	0	2.22	1.45	1.30	4.05	198	47.02	114	89	48	0	4	5	2
	HATTERAS	58	44	67	31	51	2	2.48	1.47	1.50	2.54	93	60.57	111	85	62	0	1	4	1
	RALEIGH	50	31	60	24	41	-2	1.69	0.96	0.95	1.90	97	51.09	127	95	52	0	4	5	1
	WILMINGTON	61	39	69	31	50	1	1.31	0.49	0.66	1.74	80	61.39	116	89	51	0	1	5	2
ND	BISMARCK	39	13	61	-7	26	12	0.04	-0.07	0.01	0.13	43	23.60	154	88	54	0	7	1	0
	DICKINSON	41	15	62	-7	28	11	0.01	-0.07	0.01	0.01	5	24.63	155	87	44	0	7	1	0
	FARGO	31	13	48	-7	22	11	0.01	-0.13	0.00	0.01	3	31.55	164	94	68	0	7	1	0
	GRAND FORKS	27	10	41	-10	19	9	0.17	0.03	0.17	0.18	49	23.73	131	93	77	0	7	1	0
	JAMESTOWN	33	14	53	-7	24	11	0.07	-0.04	0.01	0.07	23	21.72	130	94	66	0	7	2	0
	WILLISTON	37	15	53	-6	26	13	0.04	-0.10	0.03	0.27	77	17.36	129	89	54	0	7	2	0
OH	AKRON-CANTON	41	26	47	19	34	3	0.44	-0.23	0.23	0.55	29	38.68	108	99	60	0	6	3	0
	CINCINNATI	45	28	49	20	36	3	0.33	-0.38	0.15	1.11	55	48.66	121	98	53	0	6	3	0
	CLEVELAND	44	28	51	22	36	5	0.69	-0.02	0.40	0.88	44	31.78	90	93	56	0	6	4	0
	COLUMBUS	44	29	49	24	37	5	0.23	-0.42	0.16	0.63	34	34.94	94	98	53	0	5	3	0
	DAYTON	44	29	50	24	36	5	0.10	-0.57	0.08	0.41	22	37.51	105	86	50	0	6	2	0
	MANSFIELD	42	27	48	22	34	5	0.17	-0.53	0.05	0.33	16	36.26	94	96	53	0	6	3	0

Based on 1961-90 normals

Weather Data for the Week Ending December 19, 1998

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	44	25	52	18	35	7	0.06	-0.62	0.04	0.14	7	32.07	100	92	53	0	7	3	0
	YOUNGSTOWN	41	27	48	17	34	4	0.53	-0.14	0.28	0.67	36	35.89	99	94	54	0	6	4	0
OK	OKLAHOMA CITY	56	34	63	30	45	6	0.09	-0.22	0.09	1.84	180	35.35	107	91	46	0	4	1	0
	TULSA	56	33	62	26	45	6	0.52	0.04	0.49	1.84	115	48.60	117	90	40	0	3	2	0
OR	ASTORIA	47	37	57	26	42	0	0.89	-1.50	0.55	9.02	139	81.63	131	95	67	0	2	6	1
	BURNS	43	18	56	4	31	6	0.08	-0.18	0.05	0.73	100	15.89	166	85	42	0	7	4	0
	EUGENE	43	33	54	24	38	-3	0.18	-1.77	0.18	4.02	75	45.88	100	99	78	0	4	1	0
	MEDFORD	40	31	58	23	36	-2	0.22	-0.54	0.13	0.97	47	28.46	162	99	70	0	5	3	0
	PENDLETON	44	30	56	12	37	3	0.00	-0.36	0.00	0.76	75	13.82	120	84	51	0	6	0	0
	PORTLAND	46	35	57	25	40	0	0.30	-1.11	0.28	3.32	88	42.65	126	91	59	0	2	2	0
	SALEM	45	32	56	23	38	-1	0.18	-1.36	0.17	4.01	95	46.27	126	96	71	0	4	2	0
PA	ALLENTOWN	44	25	48	19	35	3	0.03	-0.76	0.03	0.37	17	39.44	93	86	47	0	7	1	0
	ERIE	43	30	51	18	36	5	0.91	0.09	0.34	1.27	54	31.30	78	88	53	0	4	4	0
	MIDDLETOWN	47	31	52	22	39	6	0.02	-0.71	0.02	0.18	9	45.82	117	81	40	0	4	1	0
	PHILADELPHIA	47	34	54	27	41	5	0.13	-0.64	0.09	0.48	23	31.32	78	75	39	0	2	2	0
	PITTSBURGH	43	28	49	23	36	4	0.28	-0.38	0.10	0.44	24	32.84	92	88	51	0	6	3	0
	WILKES-BARRE	40	26	47	19	33	3	0.03	-0.53	0.03	0.34	21	34.23	97	87	53	0	7	1	0
	WILLIAMSPORT	41	24	45	18	32	2	0.12	-0.56	0.08	0.31	16	39.56	100	89	47	0	6	3	0
RI	PROVIDENCE	45	28	51	24	37	4	0.08	-0.91	0.08	0.30	11	51.63	118	86	50	0	5	1	0
SC	BEAUFORT	60	42	71	28	51	-1	0.31	-0.42	0.28	0.54	29	48.04	96	95	48	0	1	2	0
	CHARLESTON	60	41	71	29	51	0	1.53	0.82	1.16	1.96	106	65.47	130	95	48	0	1	5	1
	COLUMBIA	56	37	72	25	46	0	1.36	0.55	1.08	1.46	69	45.65	94	90	35	0	1	3	1
	GREENVILLE	51	33	62	25	42	-1	1.72	0.78	1.03	2.22	88	49.96	101	91	46	0	3	3	1
SD	ABERDEEN	37	17	55	-3	27	12	0.11	0.03	0.05	0.17	65	28.50	155	92	59	0	7	4	0
	HURON	40	20	64	-1	30	12	0.00	-0.11	0.00	0.05	17	25.03	126	91	49	0	7	0	0
	RAPID CITY	47	18	70	-1	33	9	0.04	-0.07	0.00	0.06	20	21.10	128	79	32	0	7	1	0
	SIOUX FALLS	41	19	57	3	30	12	0.00	-0.16	0.00	0.06	13	30.96	131	93	46	0	7	0	0
TN	BRISTOL	49	28	53	21	38	0	1.15	0.38	1.00	3.82	185	42.43	109	97	50	0	5	3	1
	CHATTANOOGA	54	34	59	26	44	3	0.85	-0.34	0.48	3.67	115	51.44	100	90	42	0	4	2	0
	KNOXVILLE	49	32	54	25	40	0	0.59	-0.45	0.27	4.02	145	51.98	115	93	52	0	4	3	0
	MEMPHIS	53	38	60	32	45	2	0.30	-1.03	0.28	3.48	95	52.09	104	89	50	0	1	2	0
	NASHVILLE	52	31	59	24	41	1	0.36	-0.70	0.20	5.84	201	50.04	110	93	48	0	4	2	0
TX	ABILENE	61	35	64	29	48	3	0.07	-0.15	0.05	1.39	214	13.89	58	91	38	0	3	2	0
	AMARILLO	56	28	64	24	42	6	0.00	-0.08	0.00	0.43	159	17.17	89	78	34	0	6	0	0
	AUSTIN	64	43	67	37	53	2	0.05	-0.37	0.05	1.49	125	39.03	125	88	43	0	0	1	0
	BEAUMONT	66	41	78	34	54	-1	0.03	-1.04	0.03	2.33	80	57.30	104	95	38	0	0	1	0
	BROWNSVILLE	75	46	82	39	61	-1	0.01	-0.27	0.01	0.37	49	20.02	77	96	43	0	0	1	0
	CORPUS CHRISTI	70	43	79	38	57	-1	0.01	-0.27	0.01	0.41	55	30.31	102	97	48	0	0	1	0
	DEL RIO	68	38	76	32	53	1	0.00	-0.14	0.00	0.38	97	29.19	162	93	36	0	1	0	0
	EL PASO	60	35	64	24	48	4	0.10	-0.04	0.08	0.37	103	6.80	78	80	39	0	2	2	0
	FORT WORTH	59	38	66	33	49	2	0.66	0.25	0.66	4.50	391	34.31	104	91	47	0	0	1	1
	GALVESTON	65	49	76	44	57	1	0.01	-0.76	0.01	3.33	153	51.61	126	94	50	0	0	1	0
	HOUSTON	67	40	77	33	53	0	0.08	-0.69	0.01	3.96	186	54.74	122	96	40	0	0	1	0
	LUBBOCK	58	27	65	24	43	3	0.00	-0.11	0.00	0.27	77	13.08	71	88	32	0	6	0	0
	MIDLAND	59	32	63	27	45	1	0.02	-0.12	0.02	0.60	162	5.17	35	93	42	0	6	1	0
	SAN ANGELO	62	33	66	28	48	2	0.04	-0.13	0.03	0.48	98	12.98	64	97	39	0	5	1	0
	SAN ANTONIO	66	38	74	33	52	0	0.02	-0.31	0.01	0.40	41	42.11	138	90	36	0	0	2	0
	VICTORIA	67	41	75	36	54	-2	0.10	-0.35	0.00	3.42	271	46.19	126	100	47	0	0	1	0
	WACO	60	37	66	33	49	1	0.68	0.27	0.67	4.08	343	35.08	112	99	54	0	0	2	1
	WICHITA FALLS	58	35	63	31	47	4	0.09	-0.21	0.09	1.97	240	23.07	81	92	45	0	1	1	0
UT	SALT LAKE CITY	38	23	44	19	30	1	0.02	-0.31	0.02	0.97	108	23.50	149	94	56	0	7	1	0
VT	BURLINGTON	38	25	47	14	32	9	0.16	-0.38	0.11	0.44	28	50.50	150	83	52	0	7	3	0
VA	LYNCHBURG	46	29	50	21	38	-1	0.79	0.05	0.01	2.41	119	46.77	118	83	47	0	5	2	1
	NORFOLK	51	39	60	34	45	1	2.48	1.75	1.91	3.38	177	52.80	122	96	61	0	0	4	1
	RICHMOND	49	33	56	26	41	1	1.98	1.24	1.81	3.63	181	45.39	108	80	46	0	3	5	1
	ROANOKE	50	31	59	23	41	3	0.57	-0.10	0.50	1.75	95	44.46	111	78	39	0	4	2	1
	WASH/DULLES	49	31	55	19	40	5	0.41	-0.32	0.41	1.19	59	37.09	95	81	37	0	3	1	0
WA	HANFORD	43	26	57	14	35	--	0.03	--	0.03	0.21	--	6.22	--	83	51	0	6	1	0
	OLYMPIA	44	32	56	22	38	0	0.80	-1.02	0.56	6.49	130	51.85	109	100	73	0	3	5	1
	QUILLAYUTE	45	34	53	23	40	0	4.41	0.91	1.87	16.57	174	99.52	100	94	73	0	3	5	2
	SEATTLE-TACOMA	45	36	54	22	41	0	1.34	0.00	1.18	4.66	127	39.68	114	94	69	0	1	5	1
	SPOKANE	36	24	48	5	30	3	0.30	-0.25	0.21	2.02	135	16.50	106	87	57	0	6	2	0
	YAKIMA	43	24	54	15	33	4	0.12	-0.21	0.12	0.45	52	8.46	113	90	49	0	6	1	0
WV	BECKLEY	43	26	50	19	35	1	0.89	0.15	0.63	3.33	166	47.61	120	95	55	0	5	4	1
	CHARLESTON	43	28	50	25	36	-1	0.73	-0.04	0.35	2.22	104	47.40	115	99	54	0	6	4	0
	ELKINS	44	22	51	15	33	1	0.32	-0.48	0.14	1.22	56	45.32	104	95	41	0	7	4	0
	HUNTINGTON	44	29	49	23	37	0	0.70	-0.07	0.41	2.39	114	43.33	108	93	55	0	5	4	0
WI	EAU CLAIRE	40	22	54	9	31	14	0.11	-0.14	0.08	0.11	16	29.06	93	93	53	0	7	3	0
	GREEN BAY	42	22	51	19	32	12	0.00	-0.34	0.00	0.06	6	28.53	101	86	49	0	7	0	0
	MADISON	44	26	52	21	35	14	0.00	-0.42	0.00	0.22	18	39.87	132	83	50	0	6	0	0
	MILWAUKEE	43	27	50	20	35	11	0.02	-0.51	0.02	0.77	51	34.52	107	83	53	0	6	1	0
WY	CASPER	41	16	55	-10	29	5	0.18	0.04	0.08	0.20	47	14.61	119	75	34	0	6	2	0
	CHEYENNE	43	17	58	-8	30	3	0.19	0.11	0.10	0.34	126	10.69	75	80	33	0	7	2	0
	LANDER	42	15	58	-9	28	8	0.12	-0.02	0.07	0.24	65	17.30	135	82	38	0	7	2	0
	SHERIDAN	41	15	66	-10	28	6	0.06	-0.11	0.04	0.12	27	17.36	122	88	39	0	7	2	0

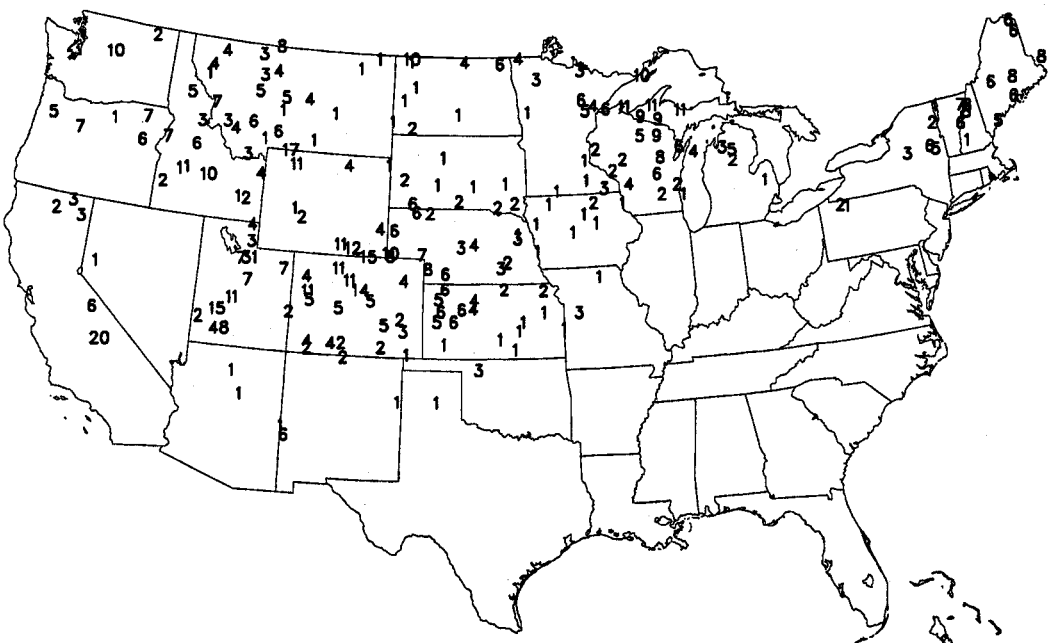
NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

National Agricultural Summary

December 14 - 20, 1998

HIGHLIGHTS

A frigid blast of Arctic air pushed southward late in the week, bringing the lowest temperatures of the winter to the Northwest, northern halves of the Rockies and Great Plains, and the western Corn Belt. Most winter wheat fields in the northern Plains had some snow cover, providing some protection from the sudden cold, windy conditions. In the southern Plains, daytime temperatures were warm enough to promote growth until the cold air arrived near the end of the week. The colder weather did not hinder fieldwork, as scattered fertilizing and tillage activities continued in the Great Plains, Corn Belt, Mississippi Delta, and Southeast. In South Dakota, soils were firm enough to allow farmers to harvest most of the remaining corn and sorghum crops. Dry weather also aided harvest efforts in the southern Plains, where a few cotton and sorghum fields remained unharvested. Northern Florida experienced below-freezing readings, but vegetable and fruit crops in central and southern areas of the state were not affected. In California, growers were harvesting vegetables in the Imperial and Coastal Valleys, pruning orchards in the Sacramento Valley, and planting winter wheat and oats in the San Joaquin Valley. Mild temperatures aided winter wheat development in the Sacramento Valley and vegetable crops were developing well in the San Joaquin valley.



Experimental product based on preliminary data

The NWS co-operative network is the principal source of the snow depth reports.

NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

International Weather and Crop Summary

December 13 - 19, 1998

HIGHLIGHTS

FSU-WESTERN: A warming trend ended a prolonged period of unseasonable cold, improving overwintering conditions for winter grains.

EUROPE: Rain and mild weather diminished snow cover in the north, while prolonged dryness in Spain continued to hamper winter grain emergence and establishment.

NORTHWESTERN AFRICA: Topsoils in Morocco remained unfavorably dry for winter grain emergence and establishment.

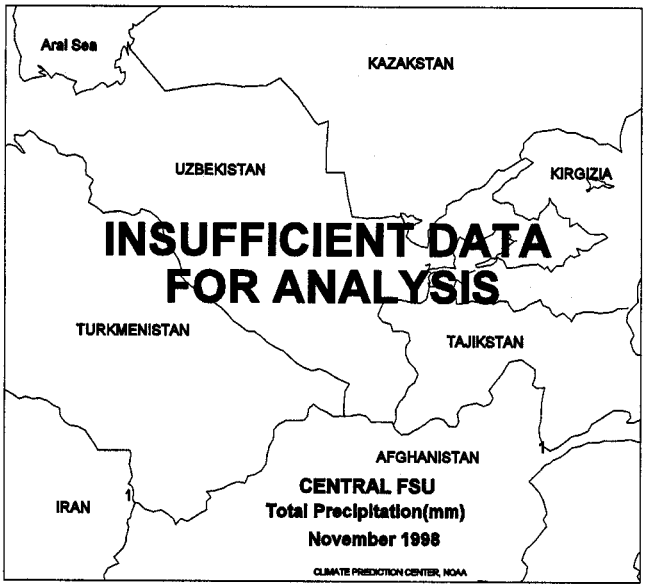
AUSTRALIA: Late-week rain disrupted winter grain harvests in the west and southeast.

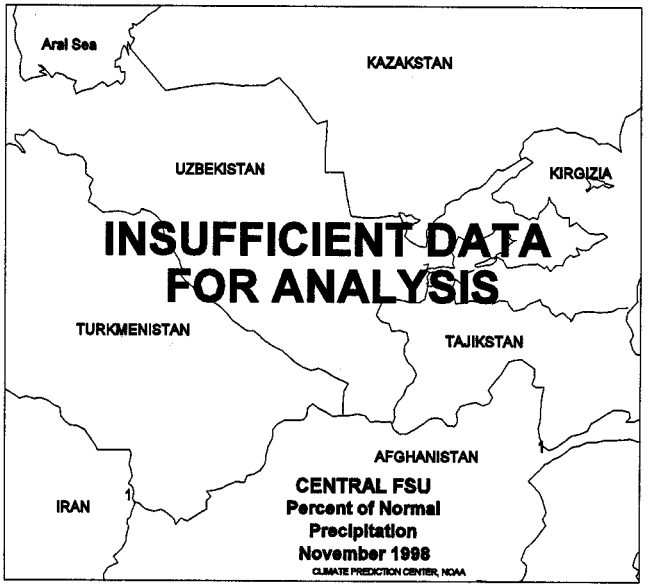
SOUTH AFRICA: Locally excessive rain developed over important agricultural areas of Western Cape before spreading eastward to the main summer crop areas.

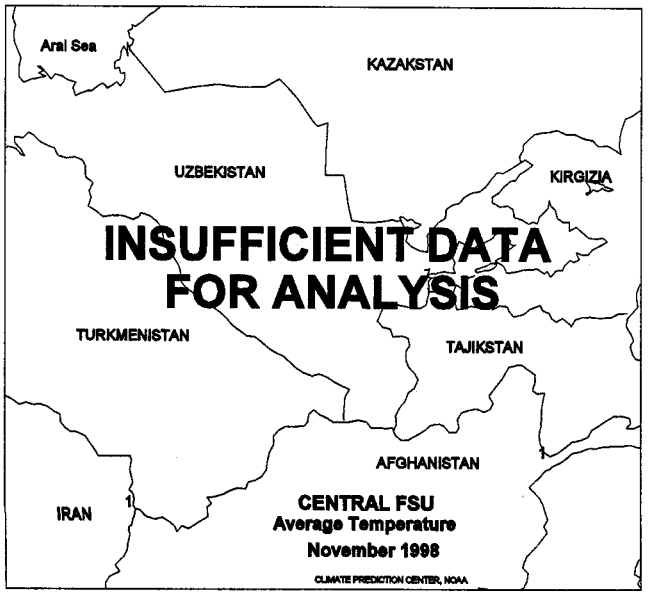
SOUTHEAST ASIA: Wetness continued to plague main-season rice harvesting in the Philippines.

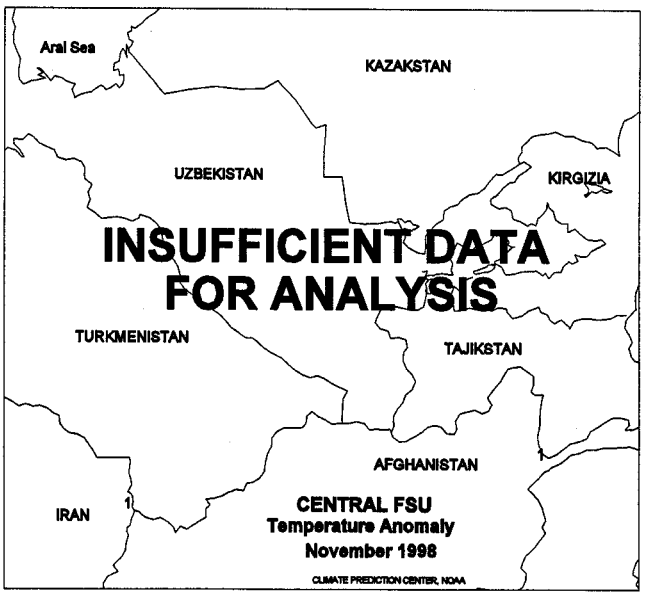
EASTERN ASIA: Mild weather caused winter wheat to lose some winter hardiness in the North China Plain.

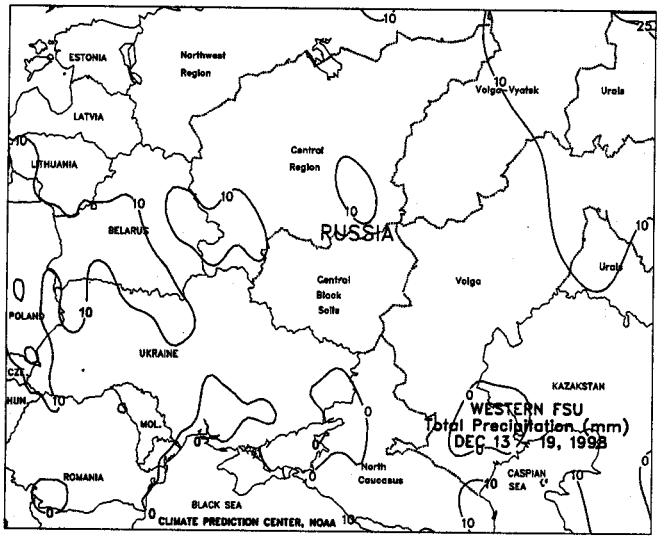
SOUTH AMERICA: Timely widespread showers eased dryness and favored summer crops in extreme southern Brazil and central Argentina.





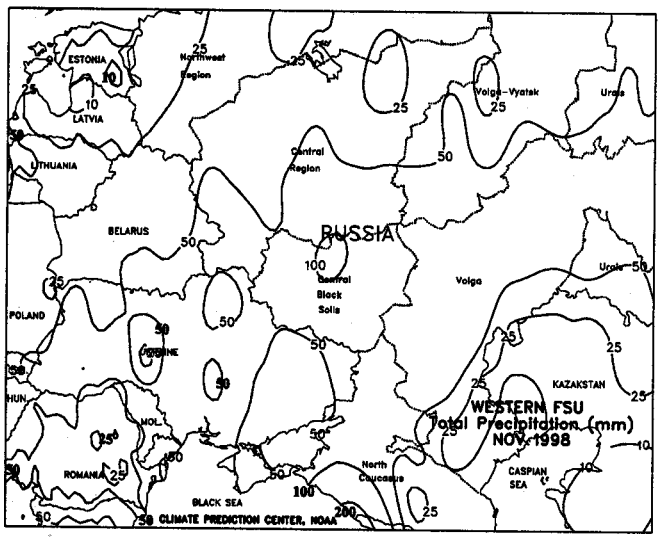


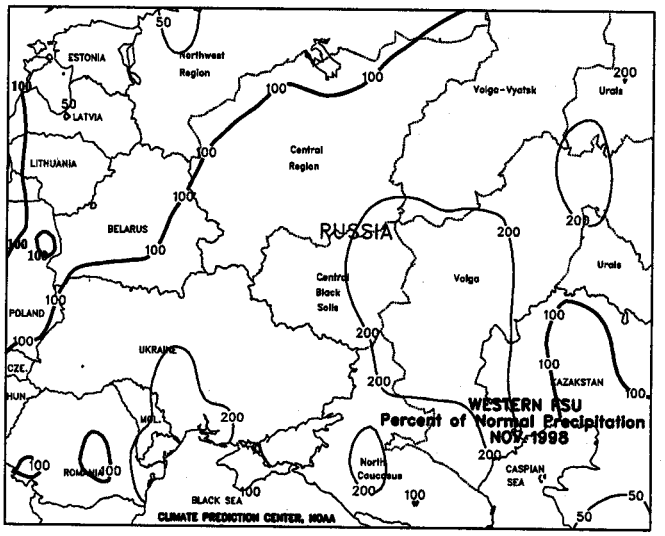


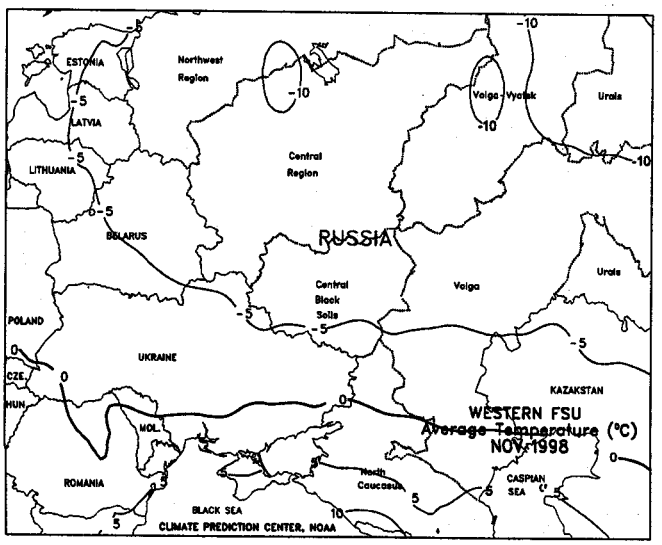


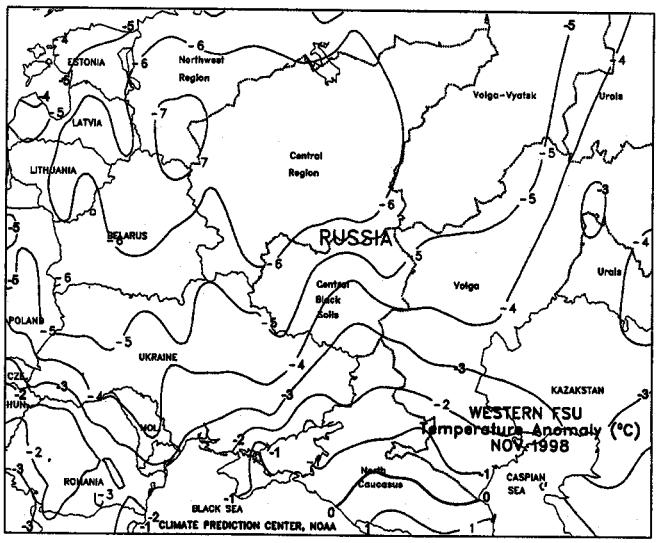
FSU-WESTERN

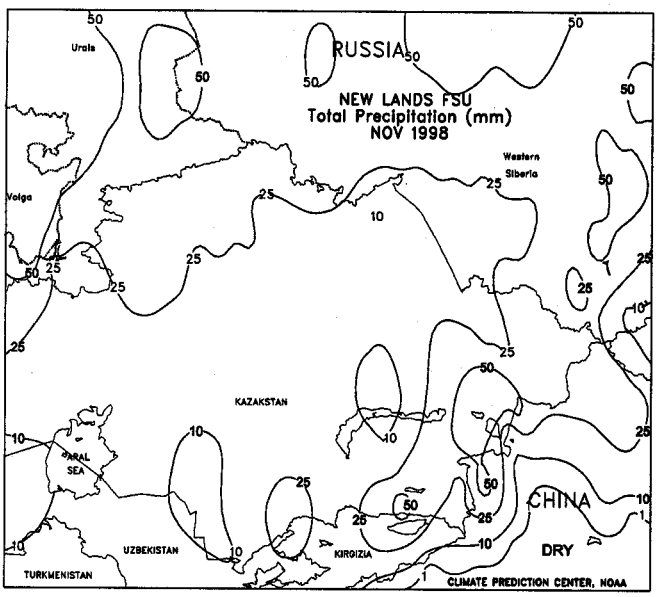
A warming trend spread eastward across the region, improving overwintering conditions for winter grains but melting some protective snow cover. During the last half of the week, maximum temperatures from 1 to 4 degrees C were observed at most locations. By week's end, most winter wheat areas in the southern Ukraine and the North Caucasus region in Russia lacked a protective snow cover. However, a moderate to deep snow cover persisted over remaining areas. Weekly temperatures averaged 2 to 4 degrees C above normal in the Baltics, Belarus, Ukraine, and southern Russia. Most of Russia, Ukraine, and the Baltics received light precipitation (generally less than 10 mm), with greatest amounts of moisture (10-21 mm) falling in western Belarus. In November, unseasonably cold, snowy weather spread rapidly southward over winter grain areas in Russia, Ukraine, Belarus, and the Baltics early in the month, ending a period of unseasonable warmth. The wintry weather halted further growth of poorly established winter grains in eastern Ukraine and southern Russia and induced crops into dormancy. As a result of fall drought and the sharp drop in temperatures in early November, winter wheat in primary growing areas of eastern Ukraine and southern Russia (southern Black Soils region, lower Volga Valley, and the North Caucasus region) entered dormancy poorly established, making the crop more susceptible to potential winterkill conditions. In the Baltics, Belarus, and northern Russia (Central Region, Volga Vyatsk, northern Black Soils region, and the upper Volga Valley) the cold weather was accompanied by moderate to heavy snow. The snow protected winter grains from periods of bitterly cold weather. However, the snow fell on mostly unfrozen soils, increasing the risk of fungal development if the snow were to persist for a sufficient amount of time.

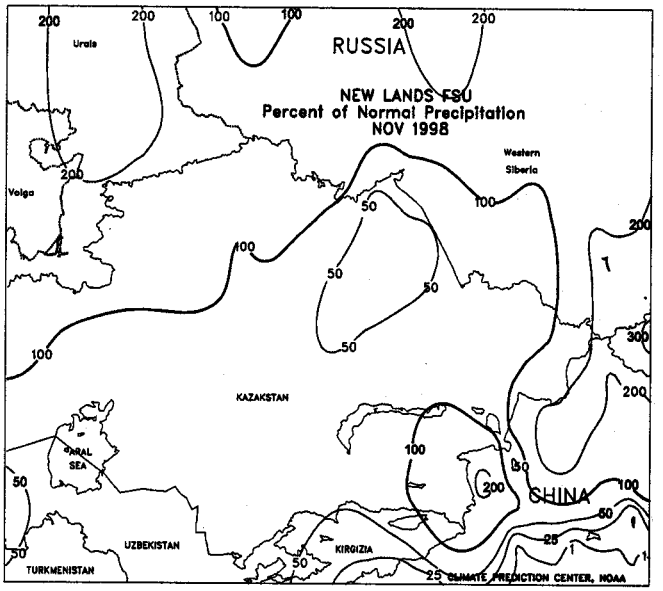


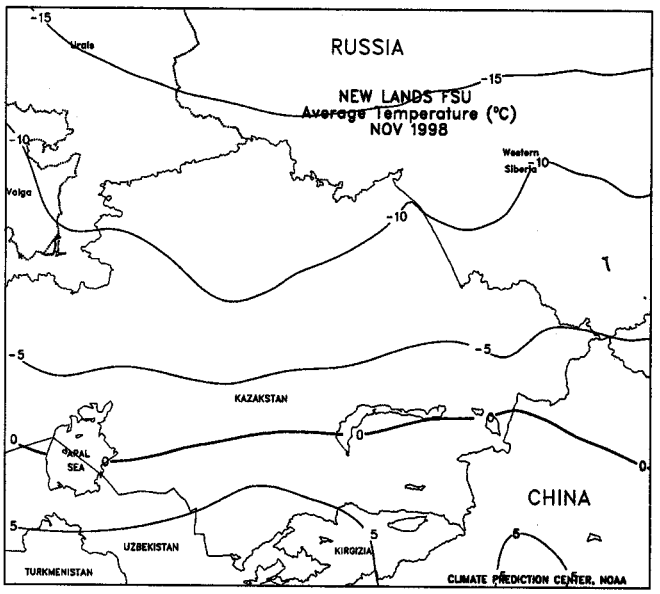


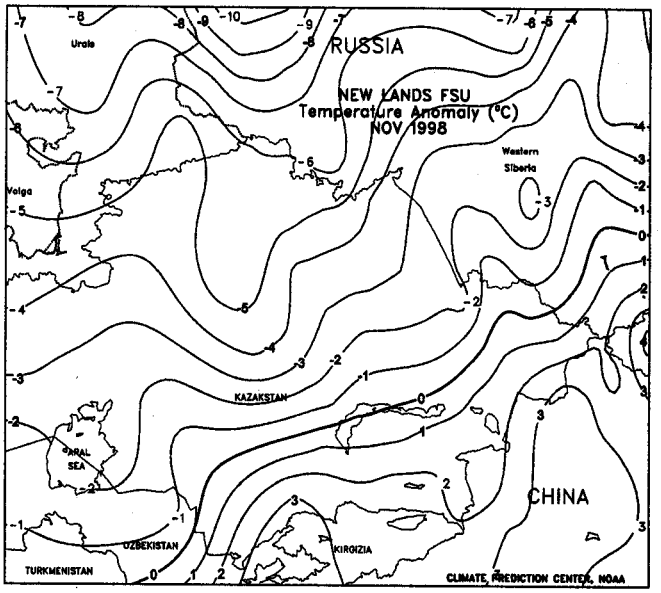





NEW LANDS FSU
Total Precipitation (mm)
NOV 1998
RUSSIA
Urals
Volga
Western Siberia
KAZAKSTAN
ARAL SEA
UZBEKISTAN
TURKMENISTAN
KIRGIZIA
CHINA
DRY
CLIMATE PREDICTION CENTER, NOAA

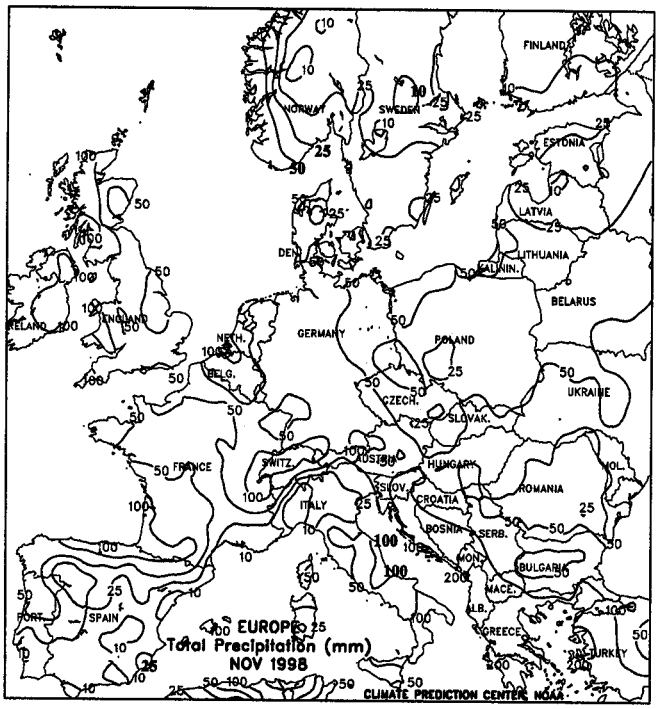

NEW LANDS FSU
Percent of Normal Precipitation
NOV 1998
RUSSIA
Urals
Volga
Western Siberia
KAZAKSTAN
ARAL SEA
UZBEKISTAN
TURKMENISTAN
KIRGIZIA
CHINA
CLIMATE PREDICTION CENTER, NOAA

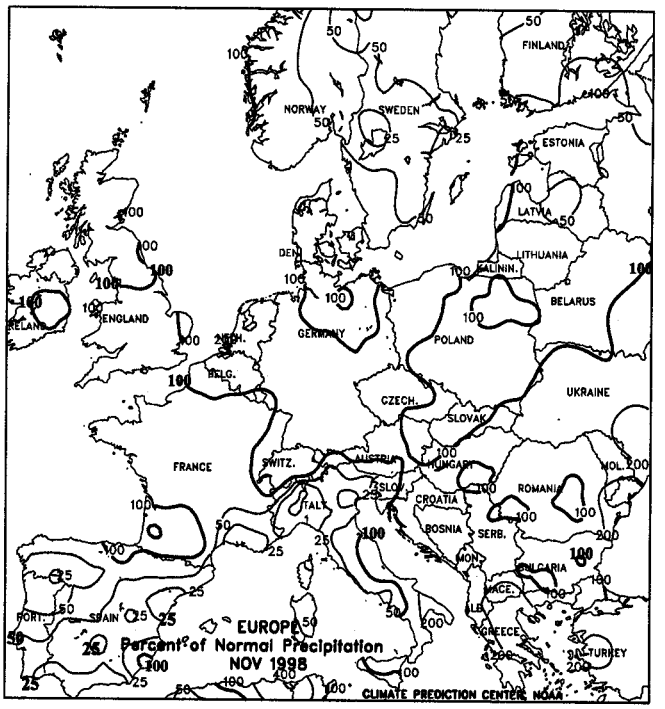

NEW LANDS FSU
Average Temperature (°C)
NOV 1998
RUSSIA
Urals
Volga
Western Siberia
KAZAKSTAN
ARAL SEA
UZBEKISTAN
TURKMENISTAN
KIRGIZIA
CHINA
CLIMATE PREDICTION CENTER, NOAA

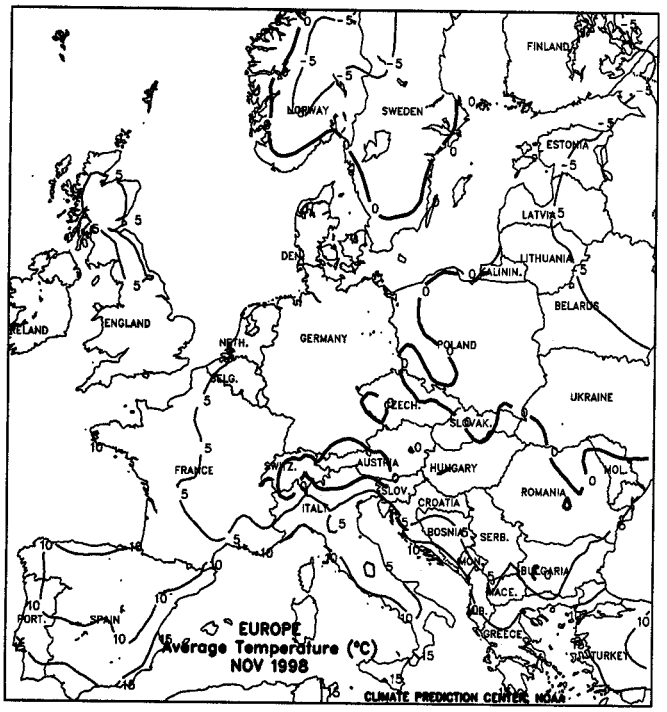

NEW LANDS FSU
Temperature Anomaly (°C)
NOV 1998
RUSSIA
Urals
Volga
Western Siberia
KAZAKSTAN
ARAL SEA
UZBEKISTAN
TURKMENISTAN
KIRGIZIA
CHINA
CLIMATE PREDICTION CENTER, NOAA

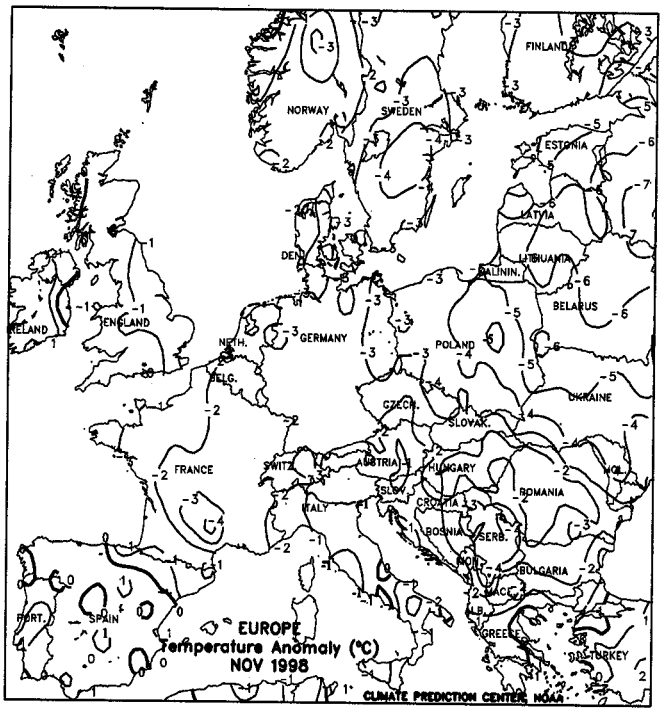
EUROPE

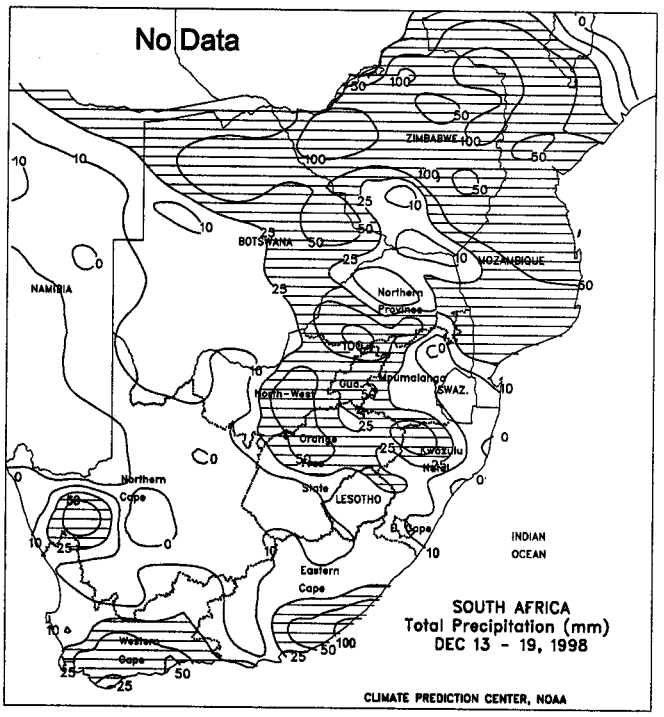
A warming trend developed across Europe during the week and was accompanied by widespread rain (10-40 mm) that spread from England eastward across northern Germany into Poland. Little or no precipitation fell over the southern half of Europe. Weekly temperatures averaged 2 to 4 degrees C above normal in most areas, except in the southeast and Italy, where temperatures averaged slightly below normal. The mild weather in Germany, Poland, the Czech Republic, and Slovakia improved overwintering conditions for dormant winter grains, but melted most of the snow cover. In Spain, prolonged dryness continued in central and southern areas, hampering the emergence and establishment of unirrigated winter grains. Rain is needed soon to improve emergence prospects and to prevent further deterioration in crop conditions. In November, above-normal precipitation fell over the Netherlands and Belgium, delaying sugar beet harvesting. Below-normal precipitation helped late season fieldwork from France and Spain eastward into northern Italy. However, little, if any, precipitation fell in central and southern Spain, creating a lack of topsoil moisture for winter grain planting. During the middle of November, unseasonably cold weather spread westward across Europe and persisted until month's end. The cold weather caused winter grains in western Europe to enter dormancy earlier than usual and maintained dormancy in winter grains in northern and eastern areas. An adequate snow cover in central and eastern Europe protected winter crops from very cold weather.





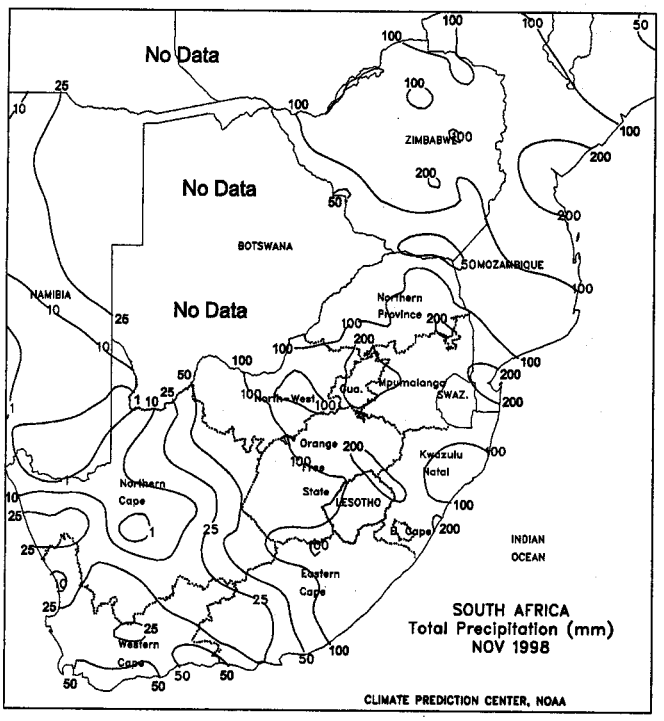






SOUTH AFRICA

Unseasonably heavy rain (25-50 mm or more) overspread important agricultural areas in Western and Eastern Cape Provinces. Although ending a brief heat wave, the unusual event may have lodged some unharvested wheat and subjected viticulture to excessive soil moisture levels. Shower activity pushed eastward late in the week, fostering the return of heavy rain (25-50 mm or more) to northern and central sections of the corn belt. Prior to the rainfall, warmer, drier conditions aided development of corn, sugarcane, and other summer crops following weeks of persistent wetness. In fact, temperatures reached the low to middle 30's C in many major summer crop areas. In November, frequent, near- to above-normal rainfall maintained adequate to abundant moisture reserves for the establishment of corn and other summer crops. November temperatures were generally favorable for early crop growth, with just a few occurrences of summer heat in the western corn belt. In Western Cape, a few outbreaks of unseasonable rainfall during the month hampered wheat harvests.


No Data
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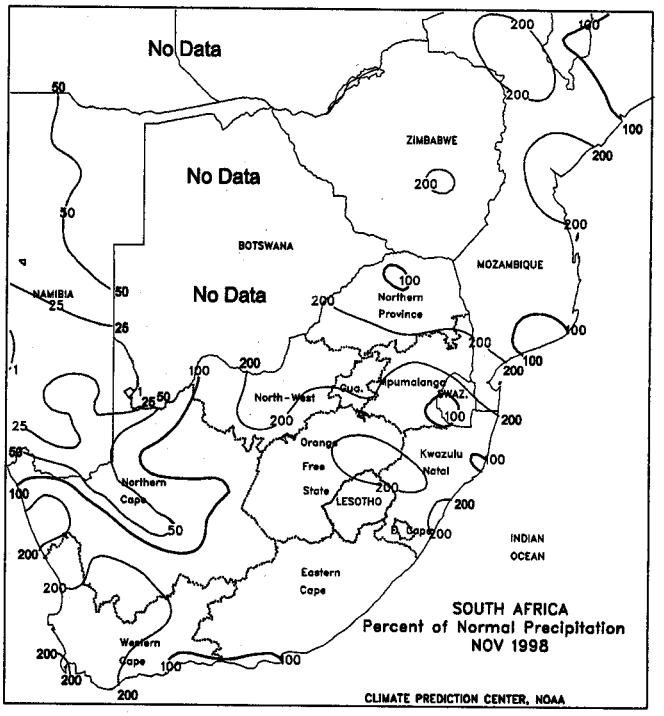
ZIMBABWE
BOTSWANA
MOZAMBIQUE
NAMIBIA
Northern Province
North-West
Gua.
Mpumalanga
SWAZ.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
B. Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Total Precipitation (mm)
NOV 1998
CLIMATE PREDICTION CENTER, NOAA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Northern Province
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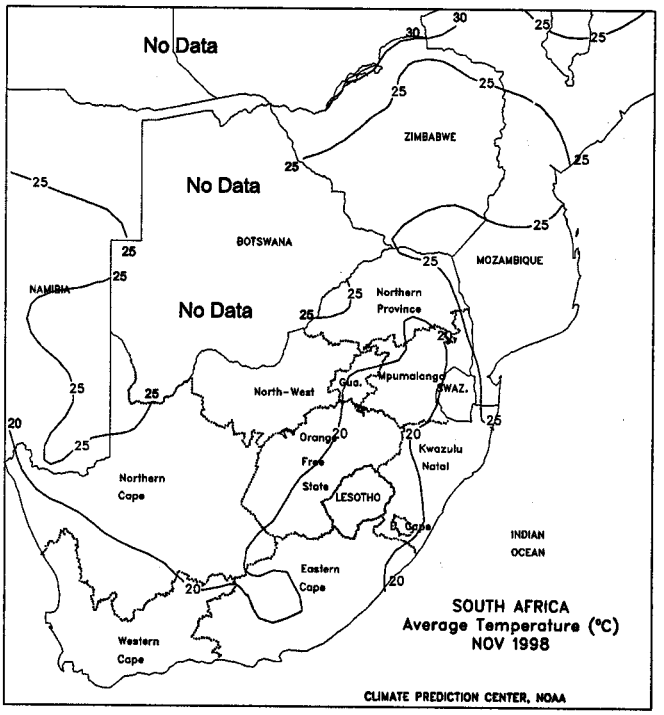
Mpumalanga
SWAZ.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
B. Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Percent of Normal Precipitation
NOV 1998
CLIMATE PREDICTION CENTER, NOAA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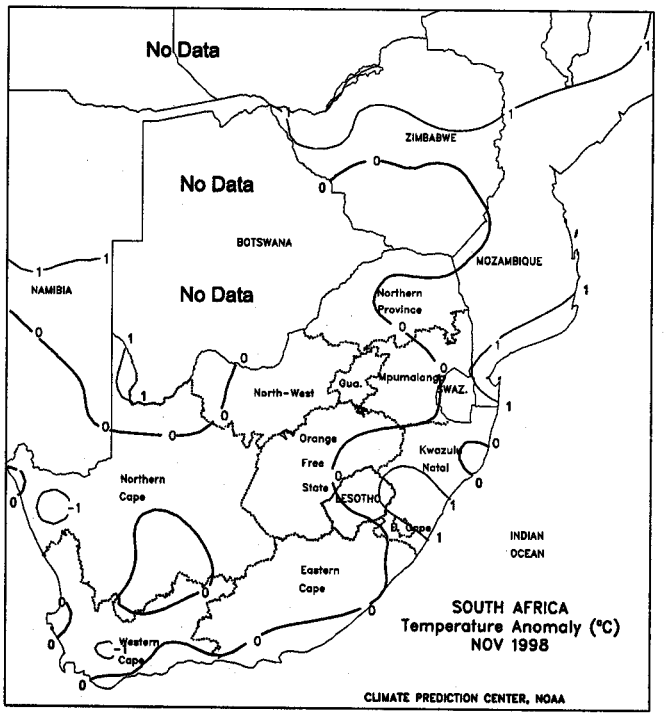
ZIMBABWE
BOTSWANA
MOZAMBIQUE
NAMIBIA
Northern Province
North-West
Gua.
Mpumalanga
SWAZ.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
B. Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Average Temperature (°C)
NOV 1998
CLIMATE PREDICTION CENTER, NOAA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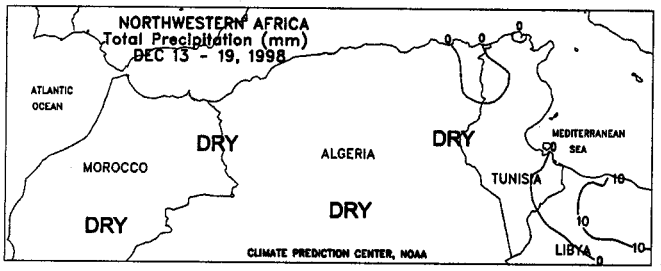
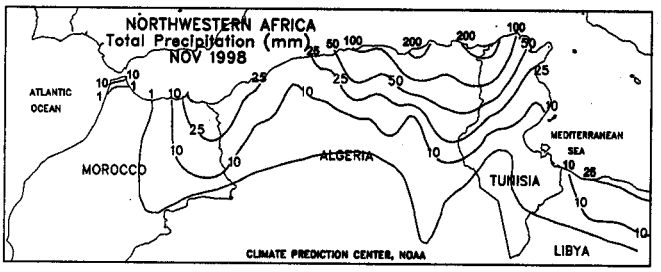
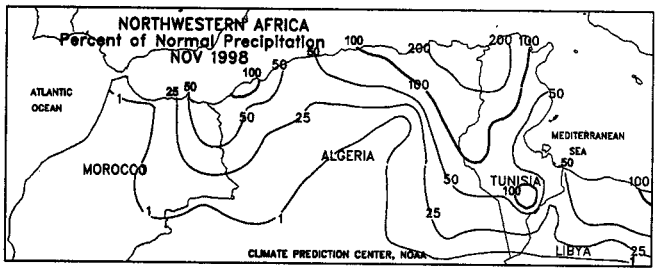
ZIMBABWE
BOTSWANA
MOZAMBIQUE
NAMIBIA
Northern Province
North-West
Gua.
Mpumalanga
SWAZ.
Orange Free State
Kwazulu Natal
LESOTHO
Northern Cape
B. Cape
Eastern Cape
Western Cape
INDIAN OCEAN
SOUTH AFRICA
Temperature Anomaly (°C)
NOV 1998
CLIMATE PREDICTION CENTER, NOAA

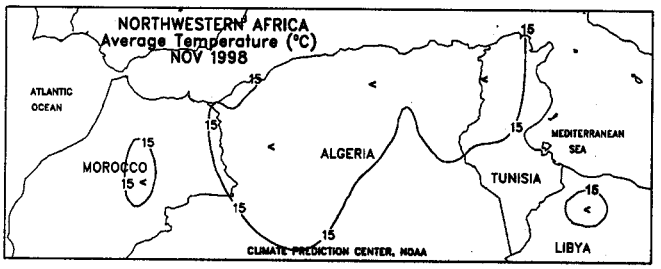


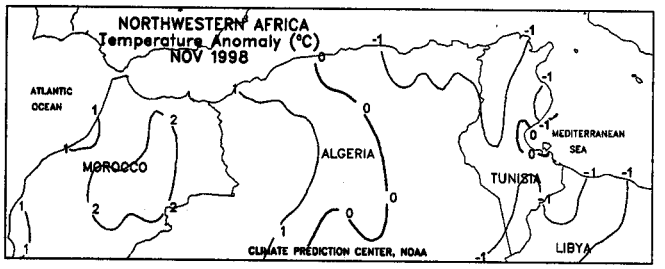
NORTHWESTERN AFRICA

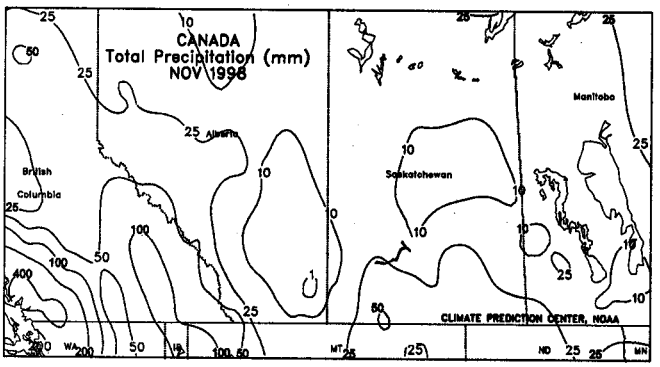
Dry weather prevailed over winter grain areas in Morocco, where a lack of moisture continued to hamper emergence and early establishment. There has been only 1 week with significant precipitation in Morocco since the planting season began in early November. The chronic dryness in Morocco has depleted moisture supplies and created unfavorable conditions for winter grain emergence and plant establishment. Timely rains will be needed during the remainder of the growing season to prevent serious declines in yield prospects. Farther east, although mostly dry weather prevailed over winter grain areas in Algeria and Tunisia, moisture reserves were adequate for newly emerged crops. Weekly temperatures averaged 1 to 3 degrees C above normal in Morocco, Algeria, and Tunisia. In November, dry weather slowed winter grain planting in Morocco as growers waited for rain. Farther east, above-normal precipitation fell in eastern Algeria and northern Tunisia, providing abundant moisture for winter grain planting and emergence.

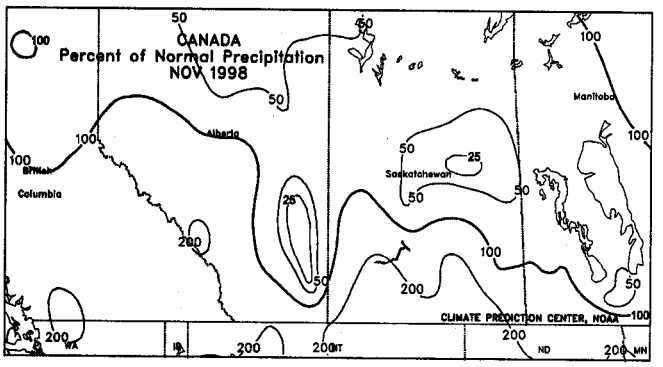


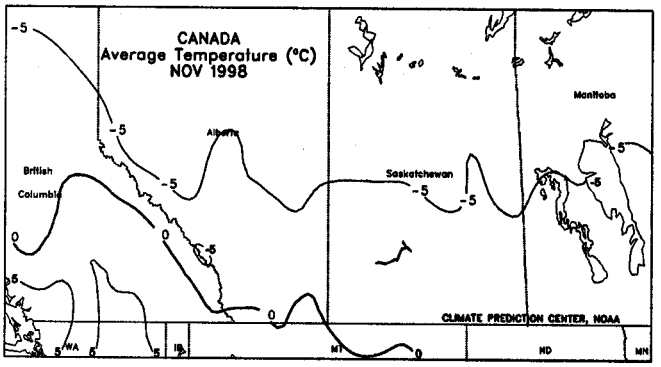


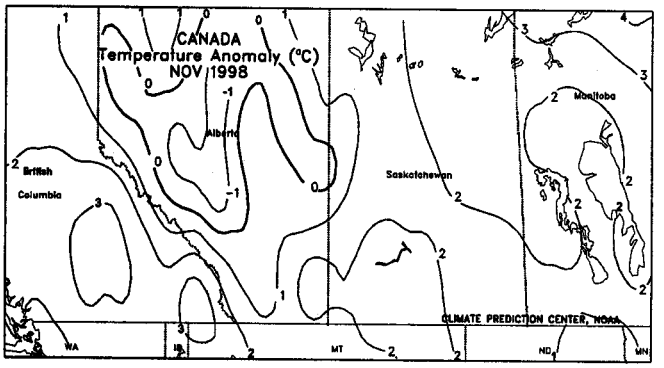


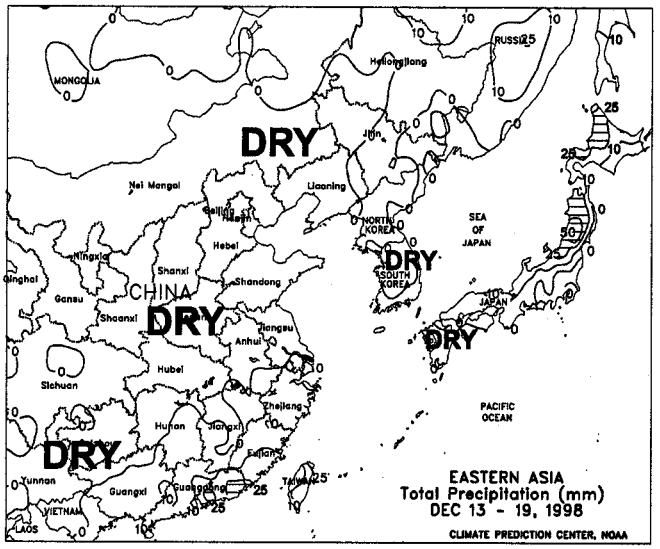






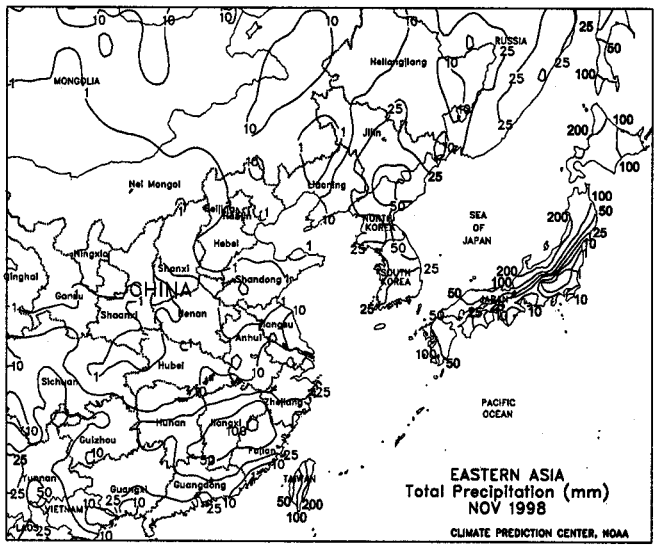


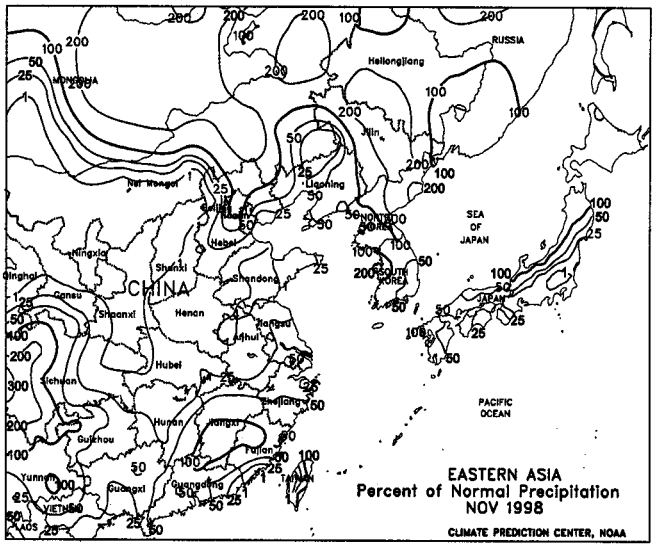


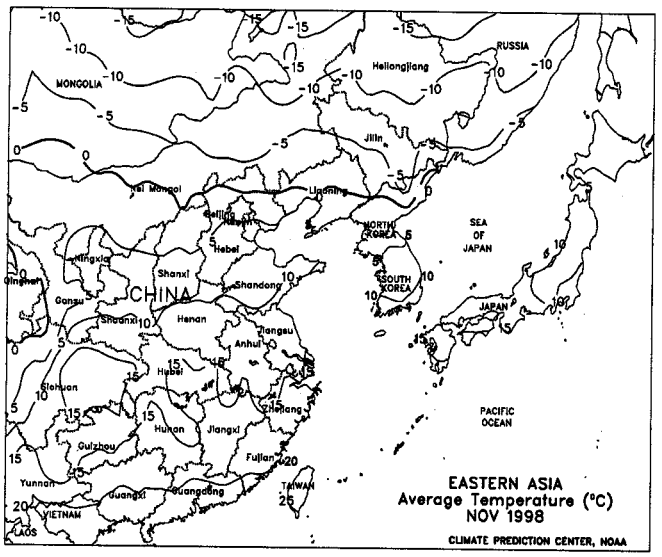


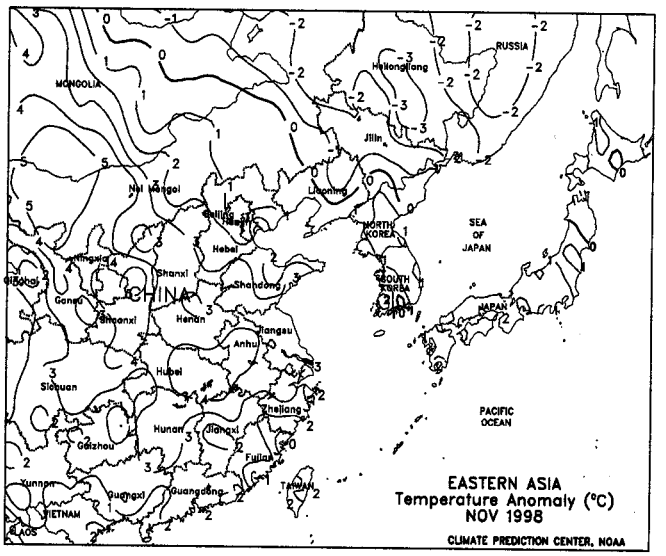
EASTERN ASIA

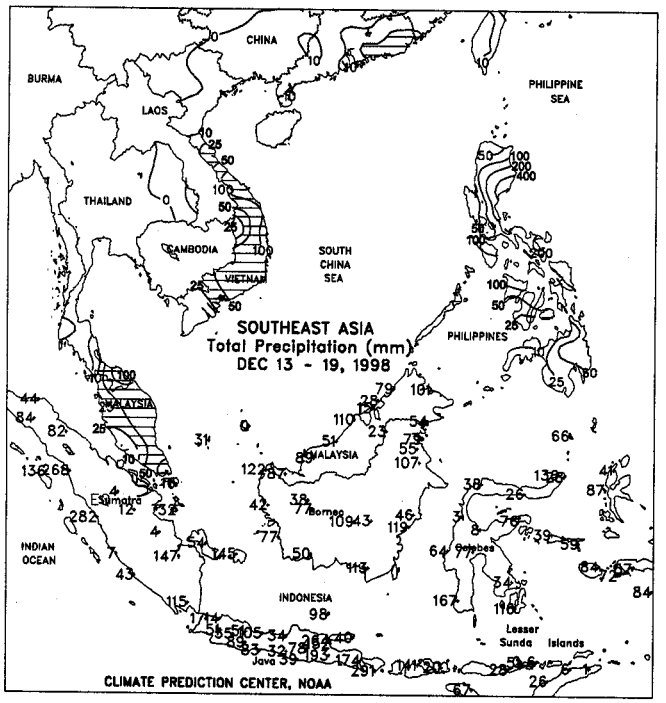
Warmer weather (temperatures 5-8 degrees C above normal) caused dormant winter wheat to lose some winter hardiness in the North China Plain. Dry weather prevailed across the Yangtze Valley, allowing winter grain and oilseed planting to near completion. During November, continued below-normal rainfall limited soil moisture for rainfed winter wheat in North China Plain. Adequate irrigation supplies exist for irrigated winter wheat. Below-normal November rainfall favored rice harvesting in south-central China, the Korean peninsula, and most of Japan.





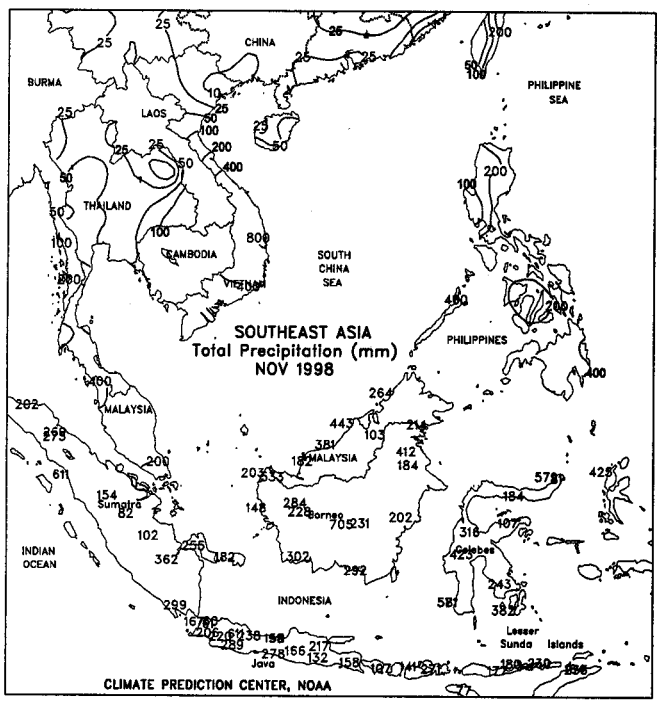


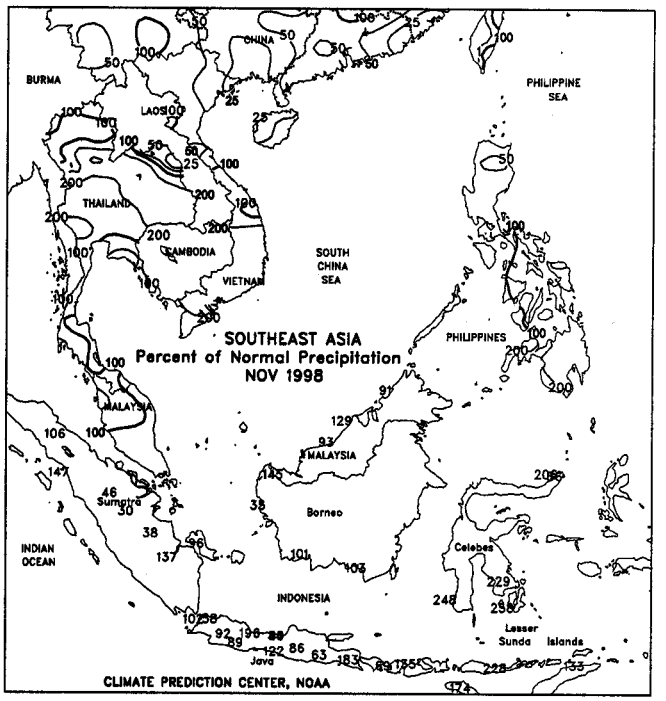


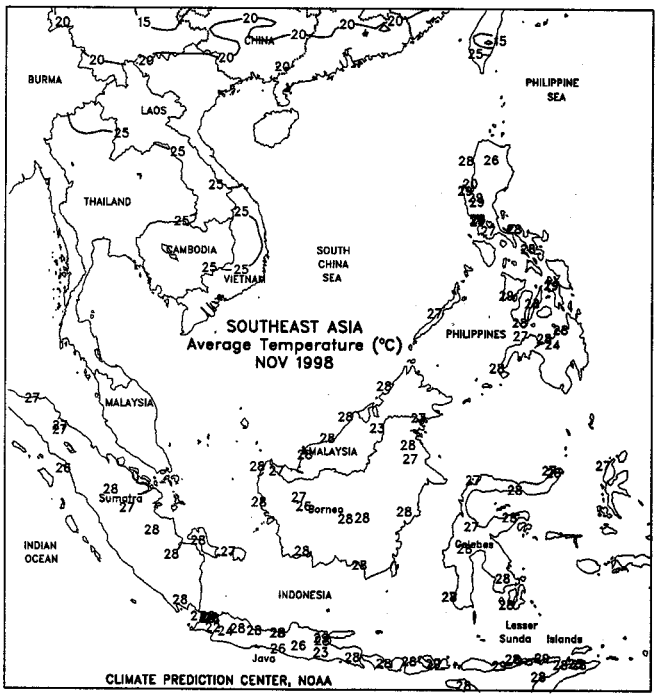


SOUTHEAST ASIA

Unseasonable showers (60-200 mm, with isolated amounts greater than 300 mm) covered the north-central Philippines (southern Luzon and central Islands), causing flooding and possible damage to mature rice while slowing rice harvesting. In Indochina, the landfall of Typhoon Faith early in the week produced heavy showers (70-180 mm) in central Vietnam. In contrast, seasonably dry weather favored main-season rice harvesting in Thailand. Farther south, showers (10-60 mm) increased moisture supplies for oil palm across peninsular Malaysia. In Java, widespread showers (20-100 mm) boosted moisture for main-season rice planting. During November, three tropical cyclones (Chip, Dawn, and Elvis) brought above-normal rainfall to southern Vietnam, slowing rice harvesting and causing possible quality reduction in coffee. Above-normal rainfall also slowed rice harvesting in northeastern Thailand. Near-normal November rainfall maintained adequate moisture for main-season grains in Java, second-season grains in the Philippines, and oil palm across peninsular Malaysia.


SOUTHEAST ASIA
Total Precipitation (mm)
NOV 1998
CLIMATE PREDICTION CENTER, NOAA
BURMA
CHINA
LAOS
THAILAND
CAMBODIA
VIETNAM
SOUTH CHINA SEA
PHILIPPINE SEA
PHILIPPINES
MALAYSIA
Sumatra
Borneo
Celebes
INDIAN OCEAN
INDONESIA
Java
Lesser Sunda Islands


SOUTHEAST ASIA
Percent of Normal Precipitation
NOV 1998
CLIMATE PREDICTION CENTER, NOAA
BURMA
CHINA
LAOS
THAILAND
CAMBODIA
VIETNAM
SOUTH CHINA SEA
PHILIPPINE SEA
PHILIPPINES
MALAYSIA
Sumatra
Borneo
Celebes
INDIAN OCEAN
INDONESIA
Java
Lesser Sunda Islands


SOUTHEAST ASIA
Average Temperature (°C)
NOV 1998
CLIMATE PREDICTION CENTER, NOAA
BURMA
CHINA
LAOS
THAILAND
CAMBODIA
VIETNAM
SOUTH CHINA SEA
PHILIPPINE SEA
PHILIPPINES
MALAYSIA
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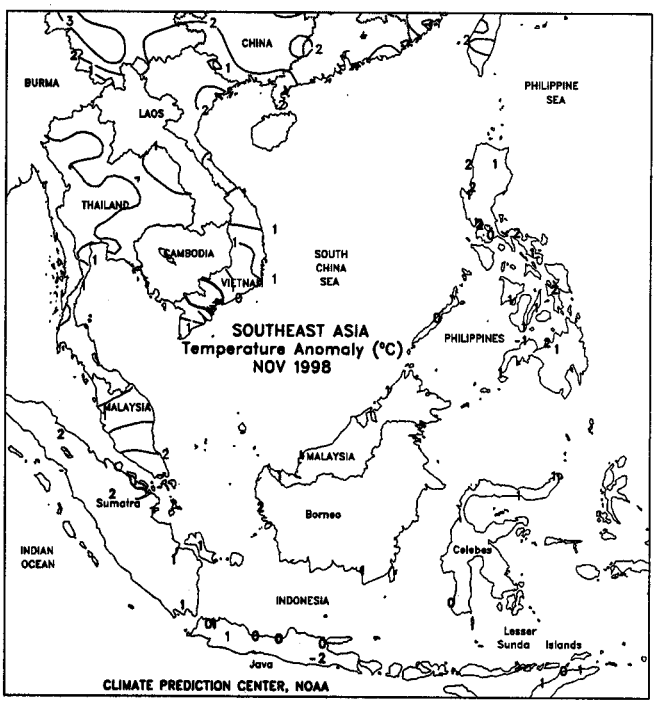
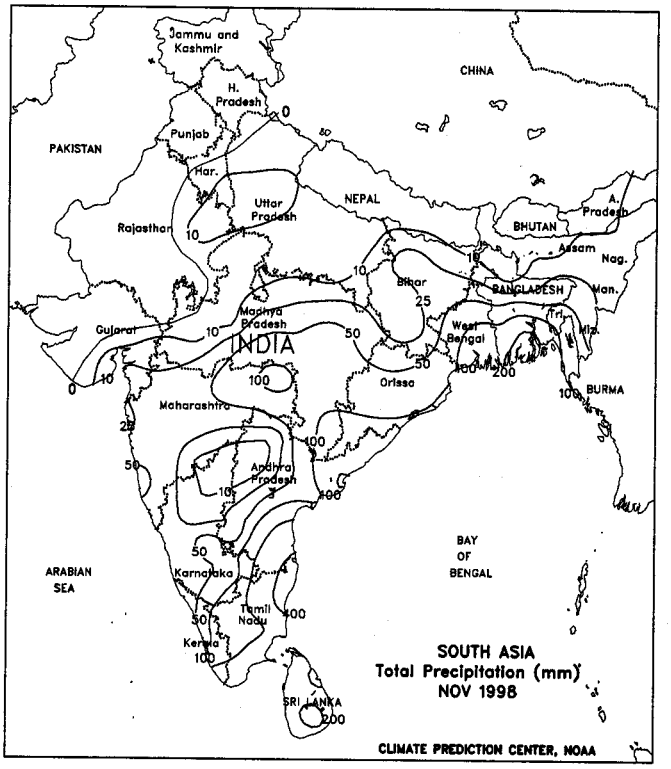
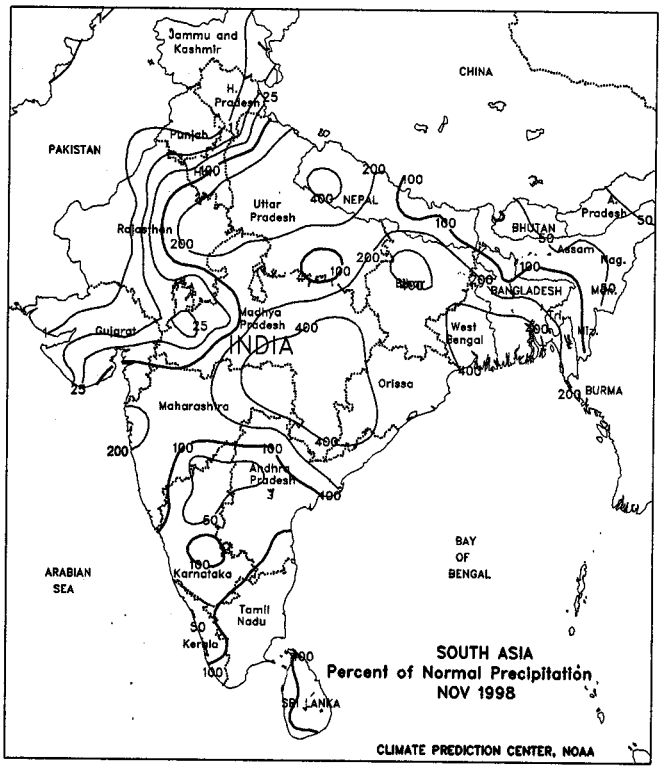
Borneo
Celebes
INDIAN OCEAN
INDONESIA
Java
Lesser Sunda Islands

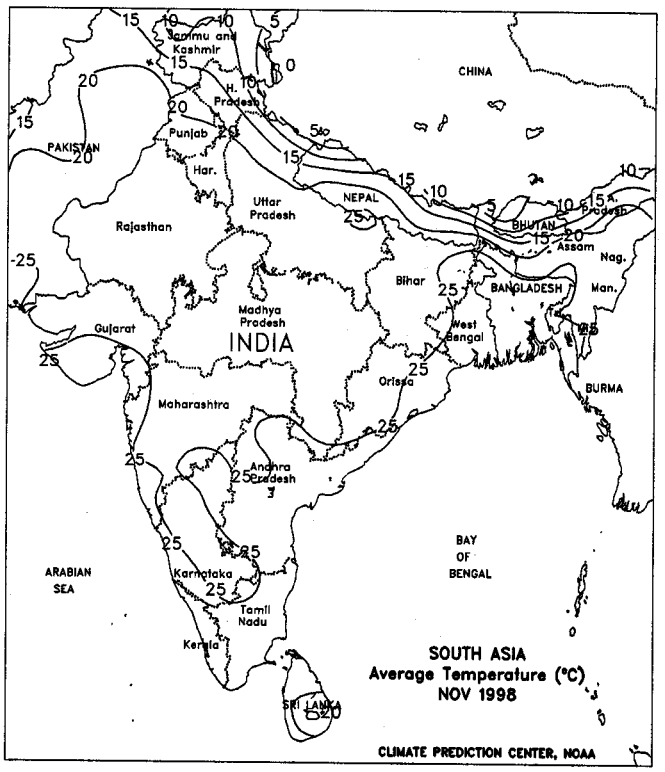

SOUTHEAST ASIA
Temperature Anomaly (°C)
NOV 1998
CLIMATE PREDICTION CENTER, NOAA
BURMA
CHINA
LAOS
THAILAND
CAMBODIA
VIETNAM
SOUTH CHINA SEA
PHILIPPINE SEA
PHILIPPINES
MALAYSIA
Sumatra
Borneo
Celebes
INDIAN OCEAN
INDONESIA
Java
Lesser Sunda Islands

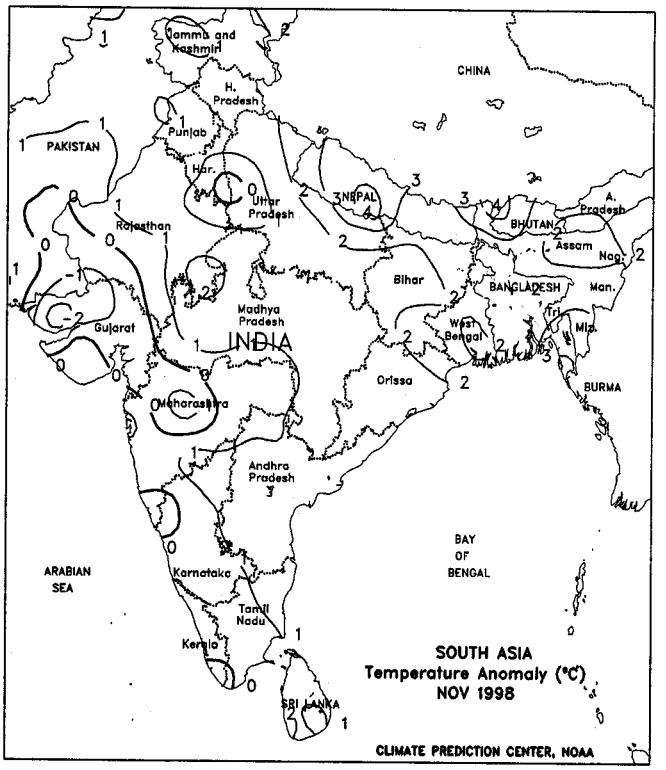
SOUTH ASIA

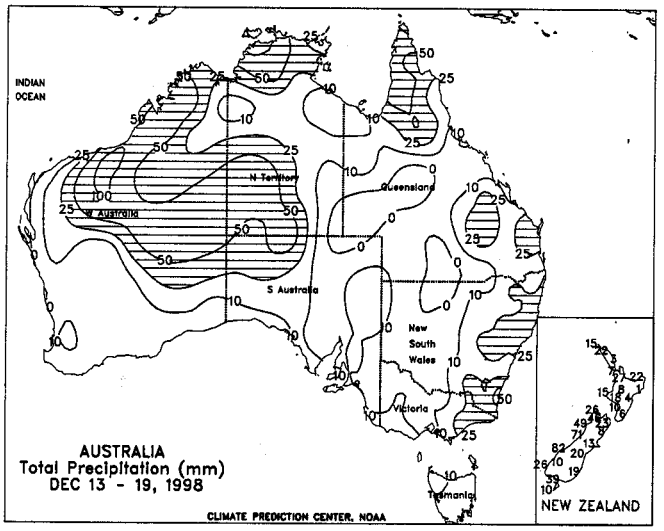
In November, unfavorably heavy rainfall was recorded in coastal rice areas of southern and eastern India. Two cyclones struck the southeast coast at mid-month, generating locally heavy rain and high winds that likely caused some damage to rice. Rain in southern India during November may have affected quality of unharvested cotton but maintained generally favorable moisture reserves for autumn-planted crops. Seasonably drier weather across the north benefited mature summer grains, oilseeds, and cotton and promoted planting of winter grains and oilseeds.





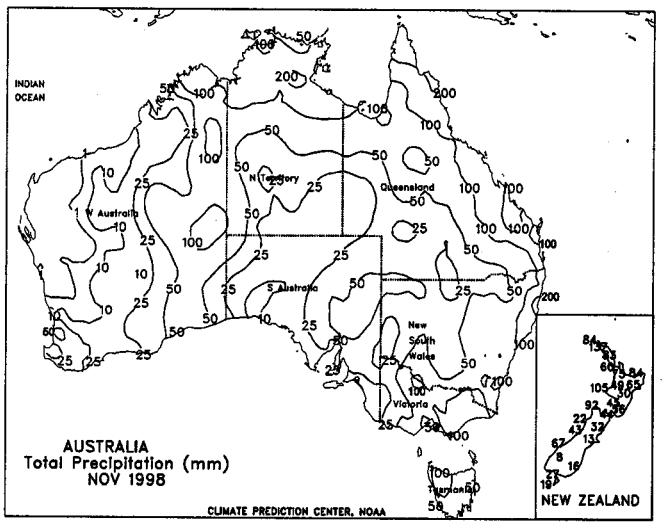


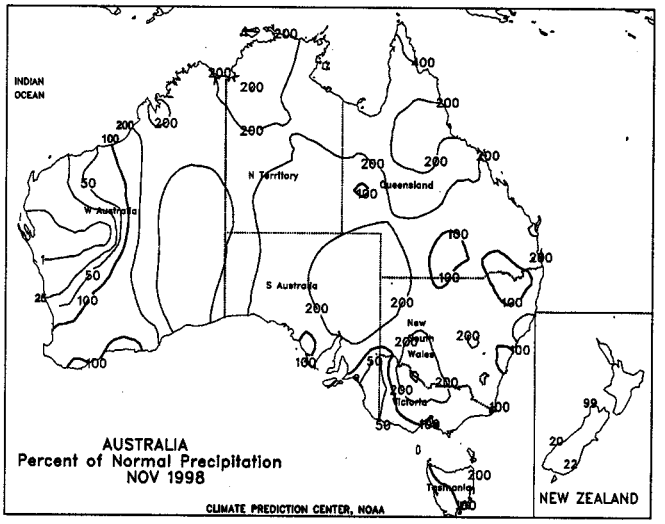


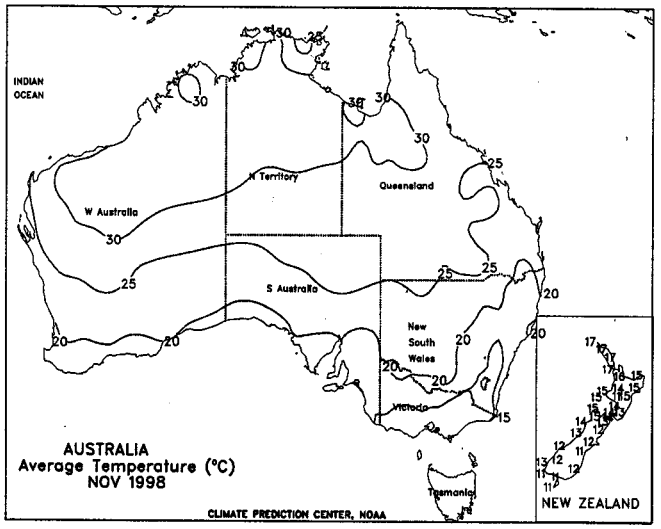


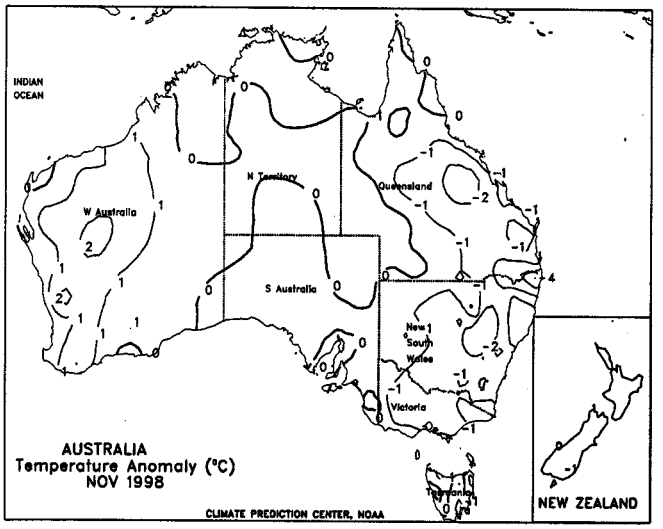
AUSTRALIA

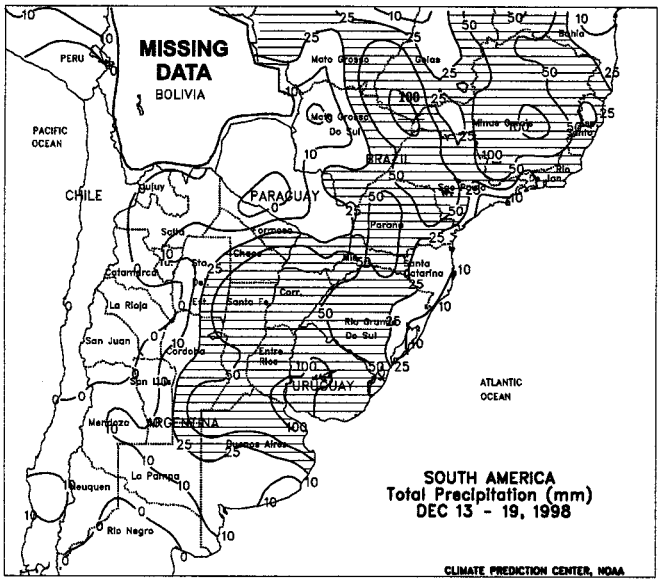
Scattered, mostly light showers (10 mm or less) in western and southeastern winter grain areas caused minor harvest delays. In northern New South Wales and Queensland, light to moderate rain (10-35 mm) maintained abundant moisture reserves for cotton and sorghum. Light to moderate rain also reached coastal sugarcane areas by week's end. During November, rainfall was near to above normal in most major agricultural districts. The cool, showery weather in Queensland and northern New South Wales kept unharvested winter grains unfavorably wet and slowed early development of cotton, sorghum, and sugarcane. Reports of wheat quality degradation and reduced sugar content of sugarcane were common. In the southeast, early-month rainfall improved moisture reserves but came too late to significantly improve yield prospects. Conditions remained generally favorable in Western Australia for filling to maturing wheat and barley.





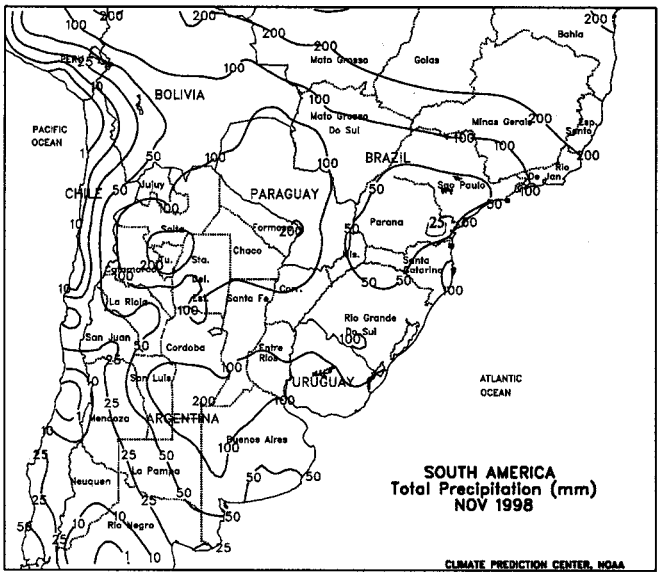


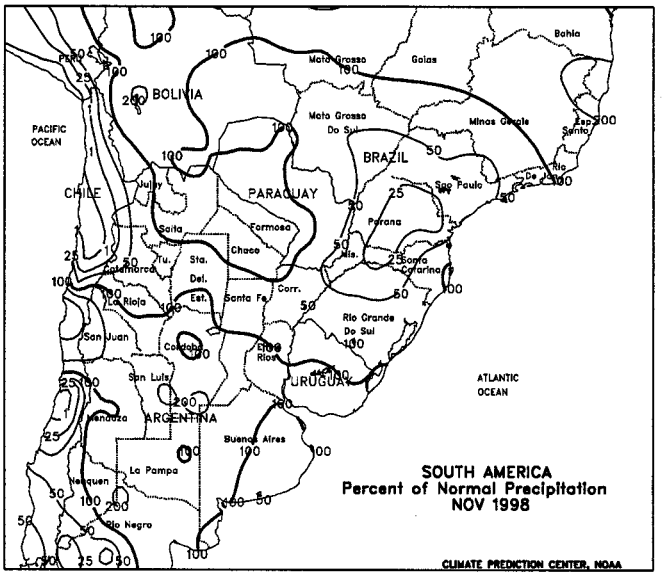


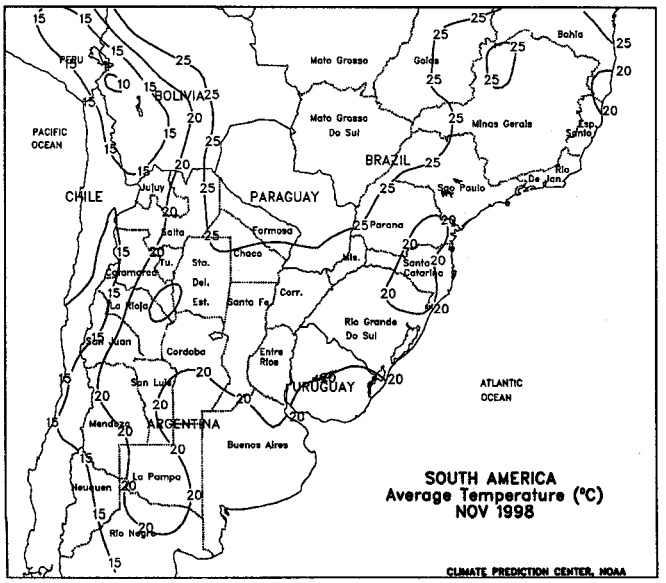


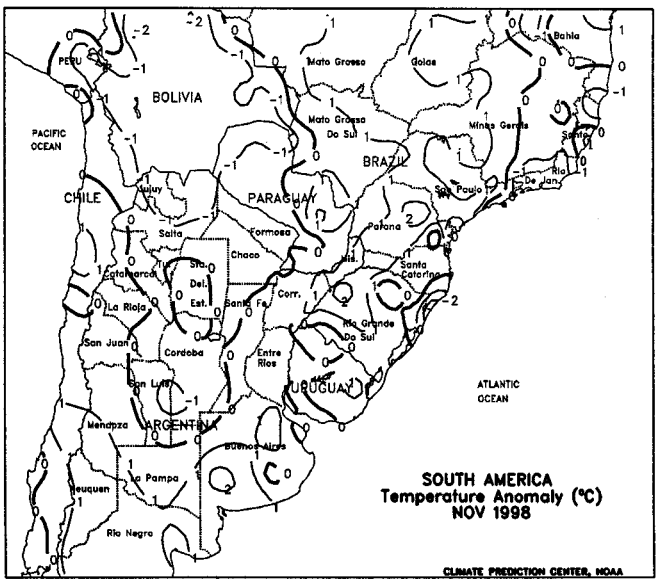
SOUTH AMERICA

Widespread rain (25-60 mm, with isolated amounts greater than 80 mm) covered the main summer crop areas of central Argentina. The rain boosted soil moisture for vegetative corn and germinating soybeans, but slowed winter wheat harvesting. Rain (10-24 mm) also boosted soil moisture in southern Buenos Aires, but came too late to improve winter wheat crop prospects. Moderate showers (50-77 mm) favored germinating cotton in northern Argentina. According to reports as of December 11, corn was 88 percent planted versus 88 percent last year, sunseed was 97 percent planted versus 94 percent last year, and soybeans were 77 percent planted versus 74 percent a year ago. Wheat harvesting was 42 percent completed. In southern Brazil, widespread showers (25-75 mm) continued to ease dryness in Rio Grande do Sul and Parana, benefiting germinating soybeans and corn in the vegetative stage. Farther north, widespread showers (10-75 mm) maintained favorable soil moisture for summer crop development. In southern Paraguay, significant rain (17-80 mm) boosted topsoil moisture. In November, below-normal rainfall stressed germinating soybeans and vegetative corn in extreme southern Brazil and central Argentina. Near-normal rainfall maintained adequate soil moisture elsewhere in southern Brazil. Below-normal rainfall stressed reproductive winter wheat in southern Buenos Aires.









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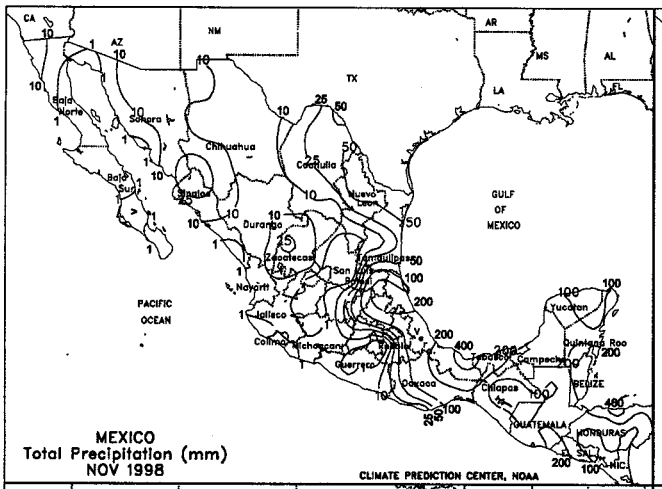

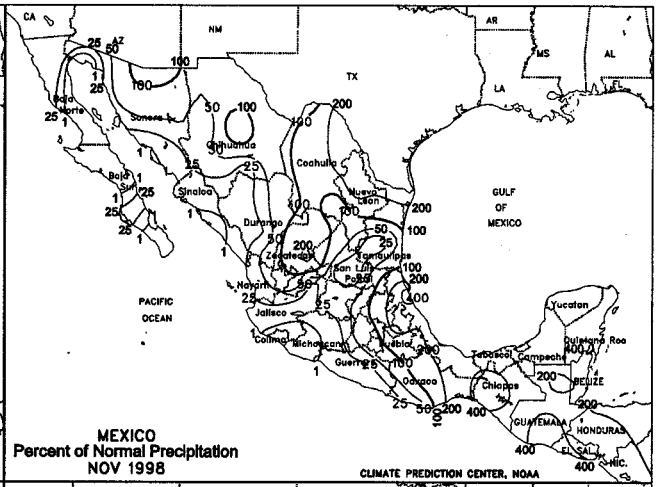

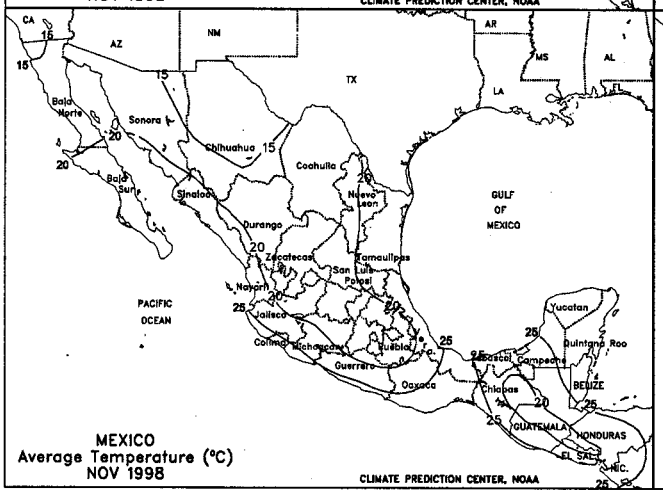

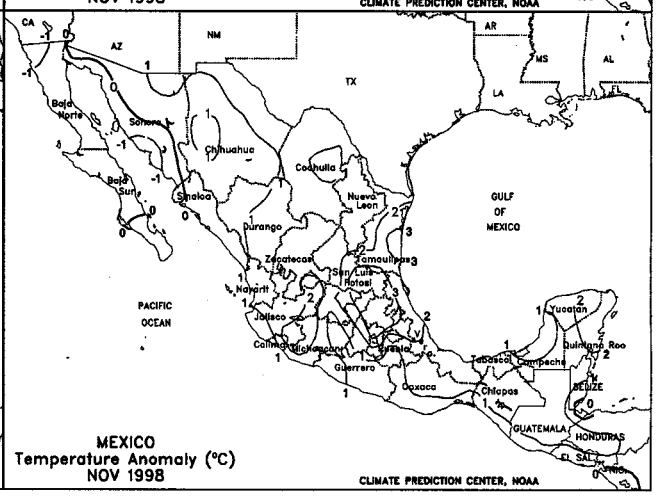

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