

# WEEKLY WEATHER AND CROP BULLETIN

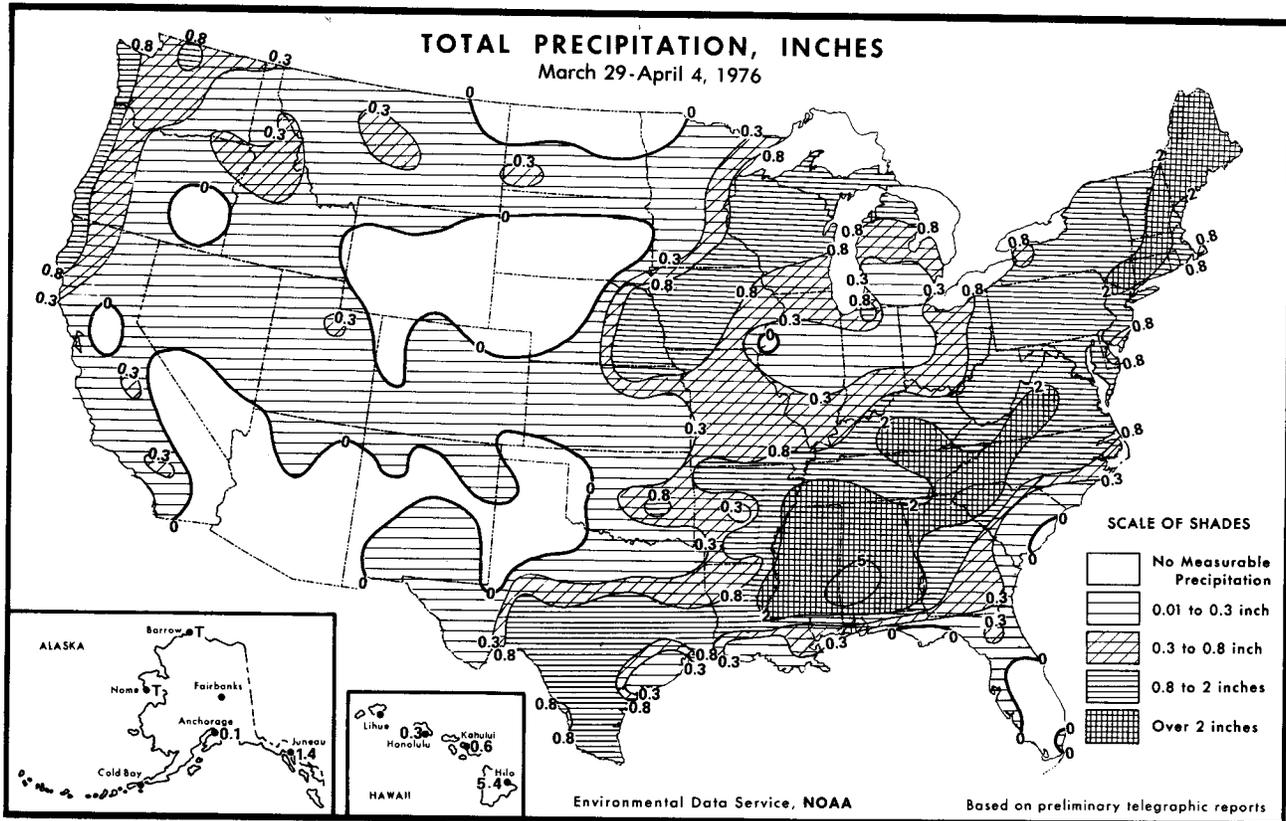
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## National Weather Summary

For the week of March 29 - April 4

**HIGHLIGHTS:** Highlighting the national weather week, a complex frontal system sent raging storms across the lower Mississippi Valley and adjacent areas, where tornadoes resulted in a dozen deaths and scores of injuries. Heavy rains preceded the front as it pushed across the Southeast. Rain in southeast Texas only caused dry soils in the area to thirst for more. Average national temperatures wavered only slightly from normal. Passage of the cold front offset previous warm readings in the central Plains.

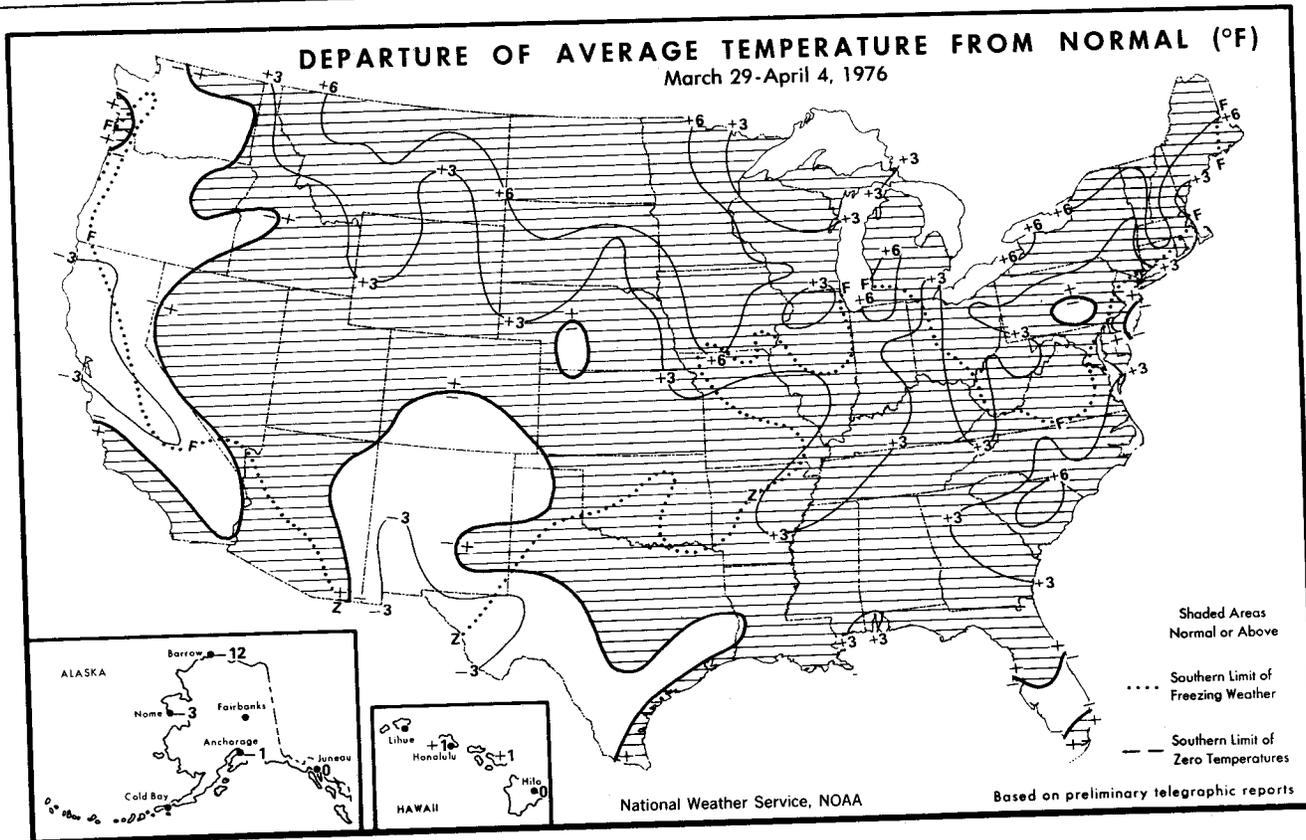
Though Monday's low pressure center seemed to lose momentum as it moved slowly across the Plains, the complex system still managed to create a large area of thunderstorms and showers. Heaviest activity thundered from Kansas into eastern Texas.

Storms raging across a seven-State area spawned more than 30 tornadoes, two-thirds of which struck

Arkansas and in Cabot, in the central part of the State, caused three fatalities and dozens of injuries. Eight tornadoes singled out Mississippi, where Canton reported three deaths and 150 injuries. Targets of other touchdowns: Illinois, Missouri, Kansas, Oklahoma, and Tennessee.

At the end of the day areas from the central Plains into the middle and lower Mississippi Valley breathed more easily as the deceptive frontal system accelerated eastward. Nighttime thundershowers persisted from the middle and lower Mississippi Valley into northern Georgia and the western Carolinas. Rain extended from the Great Lakes region through the eastern Ohio Valley into the middle Atlantic States.

Following yesterday's outbreak of tornadoes in the lower Mississippi Valley and adjacent areas, strong thunderstorms came to life on Tuesday in southern Texas. Tornadoes--accompanied by 1 1/2 inch hail--caused eight injuries at Center Point.



Parts of Louisiana, Mississippi, and Alabama also took a beating from moisture-laden storms in the central and southern Mississippi Valley regions. Golf ball size hail and winds above 85 mph contributed to the severe weather, which focused on central Louisiana and southwest Mississippi.

During March forecasters tallied about 190 tornadoes across the U.S. That's nearly 150 above average and tops the previous March 1961 record number of tornadoes by 63.

Behind the thunderstorm area, cold, windy weather swept across the Plains during the day. Rain and snow showers appeared over parts of the upper Mississippi Valley, east central Plains, eastern New Mexico, and northwest Texas.

Daytime temperatures in the 80's dubbed southern Florida the Nation's hot spot. Readings in the low 70's warmed lower Michigan and the upper 70's edged the lower Great Lakes region. In New York, Buffalo measured a new record high of 71°.

Tuesday's tornadoes put the final count for March at 211 on Wednesday, the last day of the month. Early morning thundershowers associated with the frontal system ranged from the Louisiana Delta to the western Carolinas. To the north of the storm area, general rain and drizzle drifted into the Appalachians and eastern Great Lakes.

During the day the eastern front moved lazily towards the Coast. Multiple lines of thunderstorms accompanied the system across Georgia and South Carolina. Widespread rains encompassed the northern and middle Atlantic Coast States.

At midweek colder air settled across central U.S., threatening vegetation that emerged ahead of schedule with the unusually warm spring.

On Thursday rainfall in northern New England, especially sections of Vermont and New Hampshire, pushed rivers and streams to flood level. The area of precipitation extended into the neighbor-

ing Appalachians and Great Lakes region.

Most of the Mississippi Valley, Plains, and southern half of the Rockies fared under sunny skies. Rapid snowmelt from warming temperatures throughout these areas encouraged portions of the Red River of the North to rise.

Though Friday's weather map traced little widespread precipitation, snow continued over Montana, where Lewistown collected 4 inches; Wyoming; and Idaho. In the Northeast rainshowers were scattered from the lower Great Lakes region into the Virginias and through New England.

Daytime temperatures remained cold in the northern Rockies and northern High Plains; readings halted in the 30's in the western Dakotas, southeast Montana, and northern Wyoming. At the other end of the scale, many temperatures in the central Plains soared into the mid to upper 80's in parts of Kansas and Missouri. In central Kansas, Hutchinson, 92°, claimed the highest national reading.

Temperatures took a nosedive on Saturday morning, however, following passage of the cold front across the central Plains. The arrival of cold air in central Kansas slashed Hutchinson's winning 92° on Friday to less than half. The mercury dipped into the teens in southeast Wyoming and into the 20's from the Nebraska Panhandle through the western Dakotas.

Friday's warm readings in the Plains shifted into the Ohio Valley. Soon after the central Plains returned to normal--in the 50's and 60's--reports of the low 80's came from Kentucky.

Evening showers and thundershowers that developed from eastern Texas into Arkansas and Oklahoma headed eastward on Sunday morning. Weekend rains measured up to 4 inches in southeast Texas --just enough to tease the parched soils in the area.

## National Agricultural Summary

For the Week of March 29 - April 4

**HIGHLIGHTS:** Land preparations were as much as 4 weeks ahead of normal. Mild temperatures that dominated most of the Nation extended the unseasonably mild weather to 8 weeks in some areas. These favorable conditions permitted farmers to plant much more spring wheat and oats than normally would be seeded by this time of the year. Heavy rains in some eastern areas temporarily halted fieldwork. Winter wheat was in good to excellent condition, except in the southern Great Plains where a few light showers failed to relieve persistent dryness. Deciduous orchards were in good condition and appeared to sustain only limited frost damage in Appalachian areas. Pastures greened farther north because of mild temperatures but in most of the ranges in the Great Plains and in the mountains moisture and warm weather are needed to provide adequate grazing.

**SMALL GRAINS:** Spring seeding advanced far ahead of normal and extended into North Dakota and Minnesota. The South Dakota spring wheat crop was 26% seeded compared with 1% in 1975 and 3% average. Oats were 23% seeded compared with none seeded last year and on the average. In Missouri 84% of the oats crop was sown, putting it 3 weeks ahead of normal.

The dryland winter wheat crop was in poor condition on the southern Great Plains and lacked the soil moisture necessary to promote growth. In Kansas the western two-thirds of the State needs rain. Severe blowing occurred in the extreme southwestern areas. Wheat was in very poor condition in the southwest quarter and fair to good elsewhere.

On the Texas High and Low Plains the dryland crop deteriorated but irrigated stands were in fair to good condition. Fields were heading on short stalks from the Low Plains southward. The Oklahoma winter wheat crop improved in the east but remained fair to poor in the west. Wheat received light rainfall but has a critical need for added moisture. Over half the acreage was jointing and a few fields heading in the extreme south, about average for this date.

In New Mexico, dryland winter wheat was in poor condition. Irrigated small grains were in fair condition in eastern areas and good elsewhere. The Colorado winter wheat was in poor condition and suffered light to moderate wind damage.

The winter wheat crop was in good to excellent condition east of the Mississippi River. The crop was beginning to head in Mississippi and Georgia. About 70% of the Mississippi crop was jointing.

**OTHER CROPS:** Corn planting began in Missouri and Tennessee and continued in Virginia. This early activity was a week ahead of normal. In Florida corn planting was nearly complete. Some areas of the Southeast were too wet for field activity but the Louisiana crop was 30% planted and the Mississippi crop 17%, one point less than last year. In Texas planting made good progress in the south and was just beginning on the High Plains. Planting was 31% complete compared with 47% in 1975 and a 40% average. Early stands and growth were satisfactory.

The Texas cotton crop made good progress from the Blacklands southward although cool weather slowed growth. Planting was 11% complete compared with 10% in 1975 and the average of 7%. Planting began in Georgia and Nevada. In Arizona

preplanting irrigation continued. Final seedbed preparation was underway in the Yuma area. Good stands developed from early plantings. In Arkansas land preparations and herbicide applications were active. In California planting activity increased.

In Texas sorghum planting made rapid progress from the Low Plains southward. Planting was nearly complete in some areas and early plantings showed excellent germination and growth. About 45% of the crop was planted, compared with 34% in 1975 and 35% average. Land preparations were underway in Arizona.

The Louisiana rice crop was 24% seeded, compared with 37% in 1975 and 23% average. In Texas seeding progressed along the Upper Gulf Coast and South Central regions. A few early rice fields were seeded in Arkansas.

The tobacco crop was in fair to good condition. Transplanting was nearly complete in Florida and land preparations for setting plants were underway in Virginia. In South Carolina transplanting was 38% complete. Farmers in Ohio, Kentucky, and Tennessee seeded plant beds. Kentucky seeding was 87% complete and in Ohio 45% was sown, the same as a year earlier but 15 points above average.

**FRUITS AND NUTS:** Peach trees bloomed in New Jersey and Oregon. In southern production areas only slight evidence of frost damage appeared but was mostly restricted to the Appalachian area. Peaches were in good condition nationally. Orchard pruning and cleanup were restricted to the most northern producing areas of Washington and Michigan. The citrus bloom was nearly complete in Florida and grapefruit harvest was active. The Texas citrus harvest was nearly finished. Harvest of navels continued in California. Pecan trees began leafing out in southern Texas and were breaking dormancy in Oklahoma.

**VEGETABLES:** In Florida vegetable volume moving to market increased 8%. Spring crops came into production. Dry conditions were a problem. Watermelon should be available from Florida by mid-April. The Georgia watermelon crop was putting out runners. Early vegetable harvest extended into New Jersey. In South Carolina farmers were busy transplanting tomatoes and seeding cucumbers. In Arizona the lettuce harvest was active and warm weather forced large lettuce shipments from California. In Texas onion, carrot, and cabbage harvests were active in southern regions. On the High Plains onion planting rapidly neared completion. Melon crops were blooming and vining in the Coastal Bend, and elsewhere made satisfactory progress. Field set tomatoes showed good progress and transplanting continued in East Texas.

**PASTURES AND LIVESTOCK:** Pastures greened in response to mild temperatures and provided as much as half the roughage requirements in the East Central States. Pastures were good in the eastern half of the Nation but elsewhere short soil moisture slowed growth. In some areas of the Great Plains cattle were moved back on wheat pasture. In California some herds were moved from ranges to irrigated pasture. Livestock were in fair to good condition. Lambing and calving passed the halfway mark and mild weather reduced the normal number of losses.

Temperature and Precipitation Data for the Week Ending Midnight, 1st., April 4, 1976

Table with columns for States and Stations, Temperature (Average, Departure), and Precipitation (Total, Departure). Rows list various cities across different states like ALA, ARIZ, ALASKA, CALIF, CONN, D.C., FLA, HAWAII, IDAHO, ILL, IND, IOWA, KANS, KY, and OKLA.

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## State Summaries of Weather and Agriculture

These summaries provide brief descriptions of crop and weather conditions important on a national scale. More detailed data are available in Weather and Crop Bulletins published each Monday by SRS State offices in cooperation with the National Weather Service, NOAA.

**ALABAMA:** After a warm rainy start week ended with seasonal temperatures and fair skies. Temperatures 1° above normal. Extremes: 84 and 35°. Heavy rainfall 30th with local amounts over 6 in. recorded in 24 hours in west central.

Rain and wet fields limited fieldwork to 2 days. Some corn planted south. Small grains continue to make good growth. Pastures providing grazing but some hay fed.

**ARIZONA:** Dry low humidity. Scattered snow mountains 29th. Precipitation 0.75 in. with 10 in. snowfall. Temperatures 5 below to 4° above normal.

Preirrigation, planting cotton continue. In Yuma County final seedbed preparation, planting continue. Emergence of early plantings satisfactory. Sorghum preparation underway. Irrigation, application of fertilizer and some insect control for wheat and barley. Sugarbeets good tap root development. Foliar disease symptoms persist. Harvest of alfalfa hay began in Yuma County. Central lettuce harvest increasing. Western area seasonal volume. Harvest miscellaneous vegetables continued. Cantaloups good progress. Deciduous fruit trees grape vines good progress. Picking grapefruit, valencias active. Desert foothill ranges poor to fair mountains good. Annuals started well, rain needed. Water supplies mostly adequate. Condition cattle, calves fair. Cattle shipments moderate, fat lamb shipments slaughter active.

**ARKANSAS:** Rain varied from near 3.00 in. to less than 0.50 in. Temperatures normal.

Fieldwork progressing well but slowed by rains last week. Soil moisture adequate in west, surplus in east. Fertilizer and fuel and supplies adequate. Cotton farmers preparing land, applying fertilizer and preplant herbicides as ground dries. Some rice fields already seeded. Soybean land disked and fertilized. Small grains topped with nitrogen and making excellent growth with warm weather. Some reached boot stage, some heading. Good fruit set for peaches with some frost damage. Apples and strawberries blooming. Grape prospects excellent. Most pastures adequate. Alfalfa weevil infestation heavy. Livestock receiving supplemental feeding where needed. Lice, face flies, ticks prevalent.

**CALIFORNIA:** Light precipitation northwest early week, north portion on 31st and south and central coast by weekend. Warming with highs near 80° central valley and coastal valleys midweek and cooling to 60's and low 70's end of week. Southeast desert highs 75 to 85° with lows mostly 45 to 55°. Lows 25 to 30° low valleys north and central coast range end of week otherwise mostly above freezing low valleys. Weekly averages mostly 5° below normal extreme north, slightly below most other areas, except near normal south coast.

Many small grain fields past recovery due lack of moisture. Situation critical in other areas. Field preparation very active. Cotton planting increasing. Cutting and baling alfalfa. New crop sugarbeets ready for digging Imperial Valley. Fruit passed peak bloom, leafing rapidly, irrigation continues. Weed control, twig borer, thrip sprays being applied. Apple thinning delayed. Desert table grapes progressing normally. Navels, quality good, some granulation, larger sizes.

Avocado harvest light. Lemons need rain. Vegetable harvest moderate. Main activities planting and ground preparation with some harvesting in southern areas. Warm southern weather forced large lettuce shipments. Range feed conditions poor except north and higher elevations. Grasses short showing stress lack moisture. Grass feed short supply. Sheep and cattle moved off ranges to irrigated pasture. Herds and flocks culled heavily. Supplemental feeding continues. Livestock fair condition. Supplemental feeding. Calving continues some predator depredation. Soil moisture short. Stock water fair to critically short. Turkey poults moved onto ranches and brooder houses central valley.

**COLORADO:** Midweek storm deposited up to 10 in. snow eastern foothills. Light rain and snow showers east portion. Temperatures near normal beginning week above end of week. Highs in low 80's southeast.

Winter wheat condition generally poor. Light to moderate wind damage past week. Oats 25% seeded 17% last year, 24% average. Spring barley 25% seeded, 7% last year, 20% average. Sugarbeets 3% seeded, 5% last year, 7% average. Contract dispute curtailing planting. Livestock good condition.

**FLORIDA:** Warm first half of period, slight cooling by 2d. Temperatures few degrees above normal. Rains in Panhandle up to 2.50 in. other areas less than 0.25 in. as cold front moved through on 2d.

Soil moisture adequate west and north short to very short elsewhere. Spring planting and land preparation active. Corn mostly planted. Peanut planting underway. Transplanting tobacco nearing completion. Land prepared for soybeans and cotton. Sugarcane harvest about complete. New cane good growth. Pastures in Panhandle good to excellent. Central and south poor to fair. Moisture shortage limited growth permanent pasture in peninsula. Cattle, calves good to excellent Panhandle north poor to fair elsewhere. Citrus grove condition good. Rain needed, irrigating all areas. Bloom finished fruit set started. Grapefruit harvest active. Vegetable volume rose 8%. Crops increasing were snap beans, cucumbers, eggplant, lettuce, squash, tomatoes and potatoes. Crops holding steady were sweet corn, cabbage, chinese cabbage, escarole-endive and peppers. Declining in volume were carrots, celery, radishes and strawberries. Steady supplies expected most crops week of 5th. Cucumbers and eggplant showed large increases as spring crops come into production. Dry conditions becoming problem some areas. Particularly affected are cucumbers, peppers and melons in southwest and watermelons in north. First watermelon supplies expected mid-April.

**GEORGIA:** Temperatures 3 to 6° above normal. Warm first followed by cooler last of week with frost and freezing temperatures extreme north. Rainfall heavy north averaging 3 to 6 in. extreme north to under 1 in. southeast. Rain and thunderstorms north on 27th and over State 29th and 30th ending northwest on 31st.

Soil moisture surplus north and west central, adequate elsewhere. Days fieldwork 3-5 south and east central, 0-2 north, average 3. Tobacco fair to mostly good, transplanting 65% complete, last year 52%, average 56%. Corn fair to mostly

good, 36% planted, last year and average 12%. Cotton planting just underway. Only few fields peanuts and soybeans planted. Small grains fair to mostly good, wheat and oats heading south, top-dressing near complete north. Apples good. Peaches mostly good to excellent. Watermelons fair to mostly good, 69% planted, last year 44%, some putting out runners. Pastures fair to mostly good. Cattle fair to mostly good, hogs good.

HAWAII: Weather cloudy to partly cloudy. Showers frequent all islands.

Spraying for disease and insect control. Vegetable supplies: Head and mustard cabbage and semi-head lettuce. Production Supplies: All others light to moderate. Banana, papayas, pineapple light. Sugar almost all mills in operation. Pastures good condition.

IDAHO: Temperatures 2 to 8° below normal. Extremes: 4 and 72°. Precipitation spotty with the greatest amounts in northern and central mountains.

Fieldwork active lighter soils. Seeding small grains many areas south. Sugarbeet planting active southwest. Livestock good condition. Supplemental feeding active. Hay supplies adequate.

ILLINOIS: Temperatures 2 to 5° above normal; warm period continued 8th week. Precipitation 0.25 in to 0.75 in. most areas; 1.75 in. extreme southeast.

Oats 75% seeded, 16% 1975, average 21%. Corn and soybean acreage 86% plowed, 61% 1975, average 51%. Winter wheat 31% excellent, 67% good, 2% fair. Alfalfa 18% excellent, 73% good, 9% fair. Pastures mostly good supplying 35% livestock roughage requirements. Livestock mostly good condition. Soil moisture mostly adequate. Fieldwork: 2.5 days suitable.

INDIANA: Warm dry sunny but frost on 5th. Temperatures dropped to middle 20's. Rainfall 0.10 to 0.30 in. central and south up to 1.00 in. north. Soil temperatures 4° above normal. Sunshine 65% of possible.

Fieldwork averaged 2 days. Topsoil moisture adequate to surplus. Subsoil mostly adequate to surplus. Corn and soybean land 60% plowed, 9 days ahead of 1975. Oats 35% seeded, week ahead of 1975. Vegetative development 7 days ahead of average. Wheat 5 in. high, 3 in. in 1975. Pastures fair to good. Peach buds 80% alive. First bloom March 29.

IOWA: Mild week temperatures 1 to 3° above normal. Precipitation ranged 0.40 in. southeast to 1.40 in. west central, central.

Fieldwork slowed by cool damp weather but well ahead of normal. Little work in north, rapid progress in south. Farmers in south waiting for soil to warm to plant row crops. Main fieldwork oats seeding, preparation for row crops. Plowing 75% complete, 60% last year, 47% average. Oats seeding 54% complete, most advanced since 1968. No oats seeded last year, average 9%. Winter wheat condition fair to good, some thin stands. Pasture condition fair to good, need warm temperatures for growth. Topsoil moisture improving, 8% short, 90% adequate, 2% surplus. Fieldwork: 3 days suitable.

KANSAS: Temperatures 3 to 5° above normal. Precipitation over most sections 29th, largely bypassed drier southwest. Moisture 0.10 in. southwest, 1.00 in. north central, 0.20 in. to 0.30 in. elsewhere. Local hail east, north central.

Moisture badly needed western two-thirds. Severe blowing extreme southwest. Wheat condition very poor southwest quarter. Fair to good else-

where. Greenbugs, army cutworms reported across State. Alfalfa weevils increasing. Oats 85% planted, 25% last year, 60% normal. Barley 85% planted, 25% last year, 50% normal.

KENTUCKY: Heavy rain first of week with greater than 4.00 in. south central. Little or no rain after 30th. Near normal temperatures in the mid 50's.

Fieldwork limited to 2.5 days. Soil moisture mostly surplus southern half, mostly adequate elsewhere. Spring work to date exceptionally well along. Spring plowing 64% complete, 87% tobacco beds seeded. About 20% peaches and 10% apples damaged from cold weather. About 6% legume loss from winterkill. Pastures 94% of normal--providing 50% roughage requirements. Fertilizer supplies adequate.

LOUISIANA: Temperatures near normal. Extremes: 84 and 38°. Widespread thunderstorms 29th and 30th. Heaviest 1-day rainfall, 3.17 in. 30th.

Soil moisture mostly surplus. Days suitable for fieldwork 2.0. Main activities fertilizing pastures. Repairing machinery, working cattle, opening field drains. Rice 24% planted, 27% last year, 23% average. Corn over 30% planted, slightly ahead of last year. Sugarcane stands generally good. Strawberry harvest active; size and quality good. Sweetpotato transplanting underway. Small grains good. Pastures improved. Cattle condition mostly fair.

MARYLAND & DELAWARE: Temperatures 1 to 6° above normal. Highs upper 70's; lows, upper 20's. Precipitation ranged from a trace to 2.90 in., heaviest in north central. Weekend cool with rain on 4th.

Farmwork ahead of normal. Farmers plowing and preparing to plant spring crops. Livestock in good condition with plenty of feed.

MICHIGAN: Temperature 6° above normal across the northern Thumb region to northwest and southwest. Lower then decreasing to 4° above normal elsewhere over Lower. Across Upper the departures ranged from zero over the south central portion to 3° above elsewhere. Temperatures mainly in mid 30's over Upper and around 40° to the mid-40's over Lower. Precipitation fell during middle of week. Total ranged between less than 0.50 in. across southeast and central Lower to near 1.00 in. over most of Upper. Some tornado damage.

Pruning fruit trees, feeding livestock and normal farm chores main agricultural activities as field conditions too wet to permit fieldwork.

MINNESOTA: Another warm week. Temperatures 5° above normal east to 7° above normal west. Extremes: 76 to 14°. Precipitation 0.25 to 0.75 in. above the 0.50 in. normal east third to about 0.25 in. below the 0.40 in. normal central and western thirds.

Ground preparation beginning southern, west central areas. Some small grain fields seeded. Winter wheat, rye greening.

MISSISSIPPI: Temperatures near normal. Extremes: 85 and 32°. Weather Damage: 3 dead, 150 to 200 injured, \$10 million in property.

Soil moisture surplus to excessive. Fieldwork: 0.6 days suitable. Plowing 49% completed, corn 17% planted, 18% 1975. Irish potatoes 90% planted, 67% 1975. Winter wheat 70% jointed, 54% 1975; 5% headed. Oats 65% jointed, 56% 1975; 4% headed. Winter wheat, oats, and pastures in fair to good condition. Livestock in fair condition.

MISSOURI: Temperatures normal East Ozarks, 3 to 4° above normal elsewhere. Precipitation averaged 0.50 in. northwest, West Ozarks, 1.00 in. to 1.50 in. elsewhere.

Fieldwork: 3 days suitable. Plowing 78% complete, 4 weeks ahead of normal. Oats 84% sown, 3 weeks ahead of normal. Corn planting light, 4% complete, 1 week ahead of normal. Wheat condition good. Pasture condition fair to good. Soil moisture adequate.

MONTANA: Temperatures unseasonably warm by 31st. Turning much colder 1st with gusty winds and snow-fall western half. Warming 2d with some snow east. Temperatures 3° above normal south central to 9° above normal north central.

Farmwork starting. Some soils too wet to farm although topsoil moisture short many localities. Winter wheat condition ranges fair to good. Wind damage to winter wheat varies none to heavy. West of Divide none to light. East of Divide damage light to moderate, some scattered heavy. Calving about 50% done, lambing and shearing 40%. Calving and lambing losses lighter than normal.

NEBRASKA: Fieldwork slowed by snow and rain. Topsoil moisture short 36%, adequate 62% and surplus 2%. This compares to 39% short last year. Subsoil moisture reported short 90%, compared with 91% last year. Winter wheat 10% good, 69% fair, 21% poor. Pasture and range feed supplies short. Weather continues good for calving.

NEVADA: Dry early, scattered showers later. Temperatures mixed but near normal. Extremes: -2 and 82°. Precipitation light most areas.

Little progress fieldwork north. Some seedbed progress for cotton Pahrump Valley. Normal progress calving and lambing. Range, pasture feed prospects fairly poor.

NEW ENGLAND: Temperatures mild northern areas; 10° above normal. Many streams and rivers near or above flood stage. Rain west 31st. Heavy 1st as frontal system moved across. Rainfall 1.00 to 2.00 in. Light rain or snow flurries northern and eastern Maine through 3rd. Fair elsewhere.

Maple tapping continues, syr. o quality generally good.

NEW JERSEY: Temperatures near normal. Extremes: 26 and 67°. Weekly rainfall averaged 1.72 in. north, 1.13 in. central and 1.07 in. south. Estimated soil moisture, in % of field capacity: 99% north, 100% central and south. Four in. soil temperature: 42° north, 44° central and 48° south.

Soil preparation and early planting continue. White potato planting well advanced. Early planted onions up. Harvest of spinach, dandelions and broccoli rabe underway. Peaches in bloom south. Planting spring oats. Spraying and fertilizing fall sown grains.

NEW MEXICO: Cloudy, cool, and windy early week with scattered showers and light snows. Widely scattered showers eastern plains 4th.

Soil moisture short, ranges mostly fair but many poor. Livestock fair, calving and lambing continue. Dryland winter wheat poor - irrigated wheat and barley fair in eastern areas. Wheat and barley good elsewhere. Durum wheat good. Land preparation near completion.

NEW YORK: Precipitation above normal. Temperatures above normal except St. Lawrence Valley

and southeastern area where near normal. Early week dry, midweek wet. Cooler, drier trend developed into weekend.

NORTH CAROLINA: Temperatures slightly above normal. Scattered showers--heaviest amounts in mountains.

Fieldwork: 3.1 days suitable. Soil moisture mostly adequate to surplus. Small grains and pastures mostly good. Tobacco plant beds, Irish potatoes and vegetables fair to good. Tobacco in fields and peaches mostly fair. Corn planting 7% complete. Farmwork: Land preparation, fertilizer application, planting corn, equipment repair.

NORTH DAKOTA: Temperatures above normal. Extremes: 9 to 3°. Precipitation below normal. Range 0.26 in. below normal central to 1.00 in. below normal southwest. Weekend snow showers southern half, 3rd.

Calving and lambing problems minimal. Southwest beginning to start fieldwork. Some seeding started. Fieldwork being done to prevent wind erosion in southwest.

OHIO: Record high temperatures 30th. High 84° southeast; low 26° northwest. Precipitation ranged 0.27 in. northwest to 1.25 in. southeast.

Winter wheat condition poor to fair northwest, mostly good elsewhere. Plowing for corn and soybeans 75% complete, 60% 1975 and 50% normal. Planting completion: Oats, 30%, 5% 1975 and 10% normal; potatoes, 5%, 5% 1975 and normal; sugarbeets not started, 5% 1975, and normally have begun. Tobacco 45% sown, 45% 1975 and 30% normal. Soil moisture: 4% short, 70% adequate, and 26% surplus. Suitable for fieldwork: 3 days.

OKLAHOMA: Temperatures 1° below normal to 2° above normal. Precipitation trace west central to 1.17 in. east central. Weekend mild and mostly dry except few showers southern half. Wheat condition improved in the east, but western conditions remained fair to poor, rainfall amounts light. Wheat reached critical state for moisture. Brown mites causing damage, greenbug and army-worm activity abates. Over half acreage jointing, ahead last year but about average; occasional field heading extreme south. Nearly one-third oats and barley jointing, week earlier than year ago. Corn planting active east, preplant irrigation panhandle. Field preparation other row crops well advanced. Outlook cotton and sorghums only fair, but good for peanuts and soybeans. Heavy weevil infestation in alfalfa, spraying active. Pecans coming out of dormancy. Range growth slow west, good east. Cattle condition shows little damage. Marketings active.

OREGON: Temperatures 3 to 7° below normal. Extremes: 60's, 30's west; 70's, 12 east. Precipitation 1.50 in. along coast, 0.80 in. Willamette Valley, 0.10 to 0.33 in. eastern Oregon.

Spring land preparation main field activity. Spring grain seeding underway. Fall grains in fair to good condition. Fertilizing, spraying fall grains. Orchard crops developing normally. Elberta peaches in full bloom. Delayed dormant, brown rot blossom blight sprays being applied. Cherries in popcorn stage. Berry crops developing normally. Strawberry tillage beginning. Early green peas look good. Onion planting nearly finished, Ontario area, about to begin

Willamette Valley. Potatoes being planted Hermiston area. Livestock in fair to good condition. Pastures and range land greening slowly. Hay supplies tight in some areas. Calving continuing, lambing finishing.

**PENNSYLVANIA:** Cool and wet all except beginning of period. Temperatures near seasonable levels. Extremes: 78 and 19°. Midweek storm produced 0.50 to 2.00 in. rainfall in showers and thunderstorms. Weekly precipitation from 0.50 in. western mountains to 2.50 in. lower Susquehanna Valley with most other areas 1.00 to 2.00 in. Wettest week since February. Traces to 1.00 in. snowfall many areas last half. Small amount of fieldwork done. Activities included hauling manure, top dressing and some sowing of oats. Considerable greening has occurred.

**PUERTO RICO:** Very dry week. Rainfall 0.30 in. or 0.39 in. below normal. Temperatures 74° on coasts and 68° interior. Extremes: 89 and 50°

Warm days and fresh nights favored maturity of sugar cane. High sucrose content benefited by dry weather. Harvest active. Coffee trees blossoming. Fertilizing interrupted due lack of rainfall. Tobacco harvest and drying in the shed main activities. Dry weather hindering development of pastures and food crops. Rains insufficient for planting food crop.

**SOUTH CAROLINA:** Temperatures considerably above normal but dropped sharply end of week. Rainfall moderate to heavy northwest, trace central, eastern portions.

Rainfall slowed activities some areas. Land preparation, application of fertilizer, herbicides, lime most areas. Corn planted 38%; 12% 1975. Tobacco transplanted 38%; 10%, 1975. Watermelons planted 59%; 30%, 1975. Peach trees fair to good condition. Transplanting tomatoes, planting cucumbers, limited harvesting of winter vegetables southeastern coastal region.

**SOUTH DAKOTA:** Temperatures above normal third straight week. Extremes: 82 and 10°. Light precipitation southeast, northeast and northwest. Amounts less than 0.20 in.

Fieldwork far ahead of normal. Spring plowing 15% complete, 1975 1%, normal 3%. Spring wheat 26% seeded, 1975 1% normal 3%. Oats 23% seeded, 1975 0%, normal 0%. Barley 20% seeded, 1975 0% normal 2%. Livestock in good condition. Feed supplies adequate. Early lambing nearly complete with excellent results. Calving coming into full swing with similar success. Pasture growth slow--need moisture.

**TENNESSEE:** Slow frontal system caused widespread rainfall through midweek. Heaviest amounts across north portions of west and through Cumberland Plateau. Rainfall 2.50 in. to 3.00 in., locally 5 in. Temperatures above normal averaged from 2 to 4° above east to 7° above west.

Heavy rains delayed farming activities. Fieldwork less than 1.50 days suitable. Limited plowing, disking, fertilizing, tobacco bed seeding, and corn planting accomplished. Spraying 2-4-D on wheat, spraying alfalfa fields for alfalfa weevil, alfalfa seeding and fertilizing pastures were accomplished. Frost damage to pear and peach trees in middle and east. Rains flooded lowlands delaying soil preparation.

**TEXAS:** Showers, thundershowers all sections with heaviest South Texas. Rainfall 1.00 in.

northeast to 0.25 in. southwest. Temperatures near normal from mid-50's northwest far west to low 70's south.

Wheat oats making satisfactory progress where moisture available. Most areas short of moisture and crop prospects below normal. Planting cotton, corn, sorghum, peanuts, rice underway southern areas; progress on schedule. Planting moisture available, but additional moisture needed to maintain growth rates. Wheat on High Low Plains fair to good growth where irrigation water available, but dryland prospects deteriorate. Fields heading Low Plains southward but most stands short. Oats excellent progress central and eastern areas where moisture abundant. Elsewhere prospects poor. Cotton planting good progress from Blacklands southward. Stands established many localities, but growth slow. Planting 11% complete, 10% last year, average 7%. Sorghum planting making rapid progress from Low Plains southward, several areas rapidly nearing completion. Early stands excellent growth. Planting 45% complete, 34% last year, average 35%. Corn planting making good progress southern half just starting High Plains. Early stands satisfactory growth Blacklands south. Planting 31% complete, 47% last year, average 40%. Rice seeding making good progress along Upper Gulf Coast South-central Texas. Sugarbeet seeding 68% complete compared 60% last year, average 46%.

Commercial vegetables: Lower Rio Grande Valley: Onion harvest in full swing. Cantaloups, honeydews, cucumbers, tomatoes and peppers making satisfactory progress. Supplies of carrot and cabbage available. Coastal Bend: Watermelon and cucumbers vining and blooming. Rains improved outlook of dryland cukes and melons. Laredo: Onion harvest nearing completion. San Antonio-Winter Garden: Carrots and cabbage harvested. Onions, cantaloups, and potatoes making satisfactory progress. Some isolated hail damage to pickling cucumber and lettuce. Watermelons making good growth. Central Texas: Most tomatoes field set and showing satisfactory progress. East Texas: Tomatoes continue to be field set. Planting of early watermelons underway. North Texas: Tomato planting underway. Knox-Haskell: Irish potato crop making satisfactory progress. Trans-Pecos: Onions, lettuce, and cabbage making normal progress. High Plains onion and potato planting rapidly nearing completion. Pecans: Breaking bud in north. Southern half most trees leafing with catkins appearing on many early varieties. Citrus: Harvest near completion.

Excellent moisture boost range livestock conditions central eastern sections. Other sections, ranchers feed to maintain livestock as drought conditions extend another month. Some livestock moved back to wheat fields because shortage grazing on native pastures. Confirmed screwworm cases South Texas and predator losses above normal.

**UTAH:** Storm front of moderate intensity brought light to locally moderate accumulations of moisture in northwestern portion. Little or no moisture elsewhere. Temperatures 2 to 10° below normal.

Spring land preparation in progress. Soil moisture good most areas. Irrigation water stored major reservoir about average. Spring runoff not yet started. Range calving well along. Sheep shearing and lambing underway western ranges.

**VIRGINIA:** Temperatures slightly above normal. Extremes: 79 and 27°. Rainfall moderate;

averaged 1.54.

Fieldwork: 2.4 days suitable. Topsoil moisture 55% adequate, 45% surplus. Corn planting 1% complete, more than week ahead of normal, average about 1%. Pasture, small grains in good condition. Some livestock moved to grazing areas. Potato planting virtually complete. Plowing, fertilizing, liming very active. Tobacco plant beds in good condition; preparing land for transplanting. Fruit not severely damaged by freeze; prospects good for late blooming varieties. Topdressing pastures, seeding oats. Beginning to shear sheep. Repairing fences for grazing, preparing machinery for spring planting. Season about 2 weeks ahead of normal.

WASHINGTON: West: Temperatures 7° subnormal. Precipitation much above normal.

Sorting certified strawberries. Planting: early vegetables, some seed fields. Hoeing cabbage, plowing on lighter soils. Fall turnip fields began to flower. Dairy cows inside. Some beef animals being let out. Pastures short.

East: Readings 10° to 15° subnormal. Precipitation above normal.

Blossom degrees in fruit areas slightly below normal. Apricots blooming. Activities in orchards: pruning, clean-up, spraying for mites, scale, pear psylla. Seeding: potatoes, green peas, sugarbeets, spring wheat. Some reseeded of sugarbeets and spring wheat from last week's wind. Other activities in the Basin: fertilizing, stringing hops. Winterkill and snow mold in some wheat fields. Warm weather needed for wheat development and relief of

depleted hay supplies. Some cattle moved to summer ranges.

WEST VIRGINIA: Temperatures above normal in low 50's. Precipitation above normal.

Fieldwork; suitable 3.6 days. Soil moisture mostly adequate. Small grains looking good. Majority of plowing done and supplies for planting ordered. Livestock in good condition.

WISCONSIN: Wet until midweek. Mixture rain and snow 29th to 1st. Precipitation near 1.00 in. north, 1.00 to 1.30 in. central, .50 to .80 in. south. Temperatures normal or slightly above. Cooler midweek when cloud cover prevailed but sunny and mild again 2d with highs in 60's. Cloudiness developed northwest 3rd, moved southeast with light rain and snow. Rapid clearing and sunny 4th.

Fieldwork stopped during wet weather but resumed again on weekend.

WYOMING: Temperatures 3 to 5° above normal east of Divide to near normal west. Highest temperatures ranged from 60's and low 70's east to upper 50's west. Lowest temperatures mostly in teens. Precipitation 0.33 in. in Big Horn Basin and Powder. Little Missouri & Tongue Drainage. Elsewhere little precipitation.

Major activities: Feeding livestock, calving, lambing, seedbed preparations. Planting ahead of past years. Spring wheat 18% seeded, oats 11%, barley 24%. Moisture generally short. Calving 45% completed. Farm flocks 53% lambing; range flocks 9%. Farm flocks 50% shorn; range sheep 25%. Winter wheat growing.

## World Weather and Crop Update

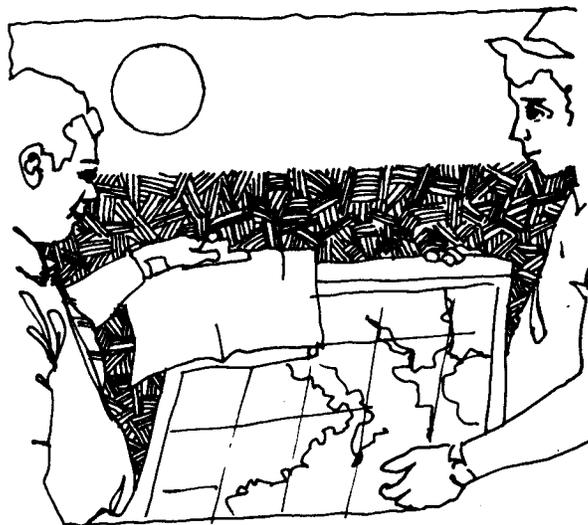
Late March precipitation ranging from 1/3 to 1 inch in the Sung-Liao or Manchurian Plain of the People's Republic of China (PRC) was greatly needed for establishing spring wheat. General precipitation in the southern PRC benefited early rice and corn.

Rain in parts of India and Sri Lanka was the first significant moisture in several months. Following an unusually dry winter rain also fell in West Europe, particularly Portugal, Spain, and France.

Snow cover vanished from most of the USSR winter wheat region. Eastern wheat areas experienced high winds and blowing dust March 26-27 but rain on March 30-31 settled conditions. In the Canadian Prairie Provinces, Saskatchewan and Manitoba were wetter than usual in March while precipitation tended to be below normal in Alberta.

Some rain helped crops in northwest Mexico in early April but didn't materially improve irrigation prospects. Shortage of water may cause a shift of some acreage to cotton and away from the wheat/soybean rotation.

In Argentina, reports suggest only minor damage from the late March frost.



## What's Ahead for Weather and Agriculture in 1976

The 1976 growing season is barely underway in many parts of the country and weather is already a primary factor in trying to evaluate the prospects for this year's crop. Total production is the result of the interaction of genetic composition and potential with the environment. The environment of the plant includes more than just the weather: management practices, levels of disease and pest activity, weed control, dates of planting and others. However, the weather plays a significant role in each of these areas.

The role of weather in determining what 1976 production will be then becomes a very important question. When one is concerned about the food situation in other parts of the world, it is also realized that the weather in all the major grain producing areas of the world needs to be watched.

Can we forecast what agricultural production will be based on weather information? Within limits the answer is yes, but the problem arises in trying to forecast what the weather will be during the coming months. At the present time the National Weather Service, NOAA makes 30-day forecasts for temperature and precipitation which appear regularly in the Bulletin and the Average Monthly Outlook. Since harvest is 3 to 6 months away it is not possible to reasonably estimate what the weather is going to be.

However, by studying past and current weather conditions in the agricultural environment, it is possible to get some insight into the potential for 1976 or the general direction the outlook is

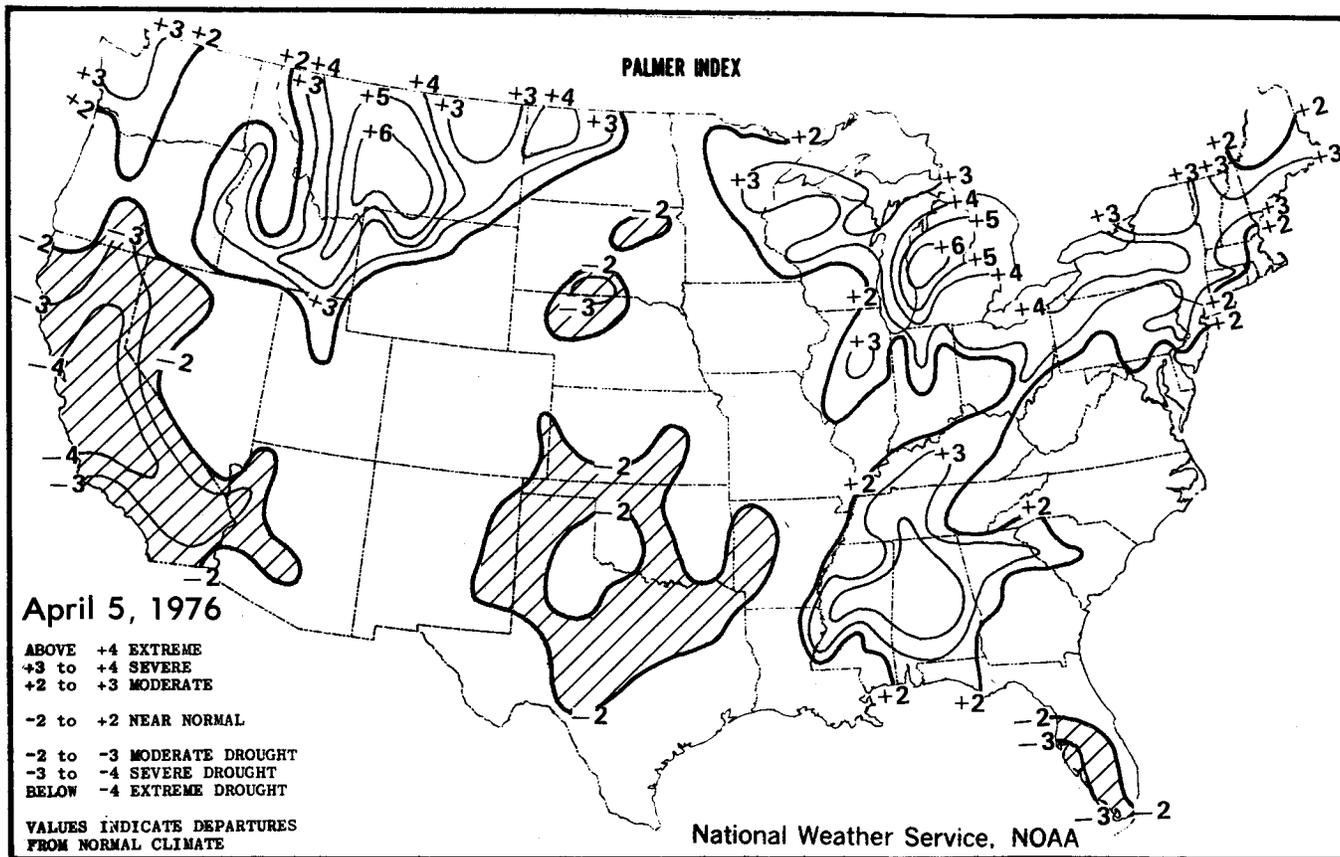
taking. Past and present weather conditions can set into motion a chain of events which future conditions can do relatively little to avert or change. The key comes in understanding the impact of weather on production, particularly at critical times of the life cycle, i.e., certain stages of development of the crop.

### Key Weather Factors

While there are a number of weather factors that play a significant role in production, temperature and precipitation are two of the most important. It is fortunate that these factors are also the easiest to get information about.

Plants grow, develop, and produce best within certain limits of temperature. Above or below these limits, the additional heat or cold hinders the productivity of the plant, and under extremes, results in the death of the plant. Within the range of temperatures that plants can grow there is an optimum range. For corn and soybeans, the optimum range is about 86°F. As temperatures fall below 86°F., the growth and development decreases down to a temperature of approximately 50° F., where growth stops, although the plant can sustain itself. The Growing Degree-Day system used in the Bulletin is based on this relationship.

Crops receive the moisture they need through either precipitation or irrigation. This moisture is stored in the soil and is taken up by the plant as required. A good reserve of moisture is important because often times the demand for



moisture during the growing season is more than the total precipitation during that period. If a good moisture reserve is available, it can carry the crop through the deficit period.

Nearly 99% of the water that a plant takes up from the soil is lost to transpiration through the leaves. Approximately 1% is used to hydrate the plant, maintaining turgor pressure and making growth possible. Only 0.1% of the water taken up is chemically bound in the plant.

While weather is important everyday in the life of a crop, there are a number of critical periods in the development of the crop where weather plays an even more important role in determining total production.

**What is Drought?**

Drought has been a keyword so far in 1976. Blowing soil this winter has brought back haunting memories of the dust-bowl days and questions of their recurrence. Drought is a difficult term to define quantitatively because the meaning is dependent upon the context in which it is being used.

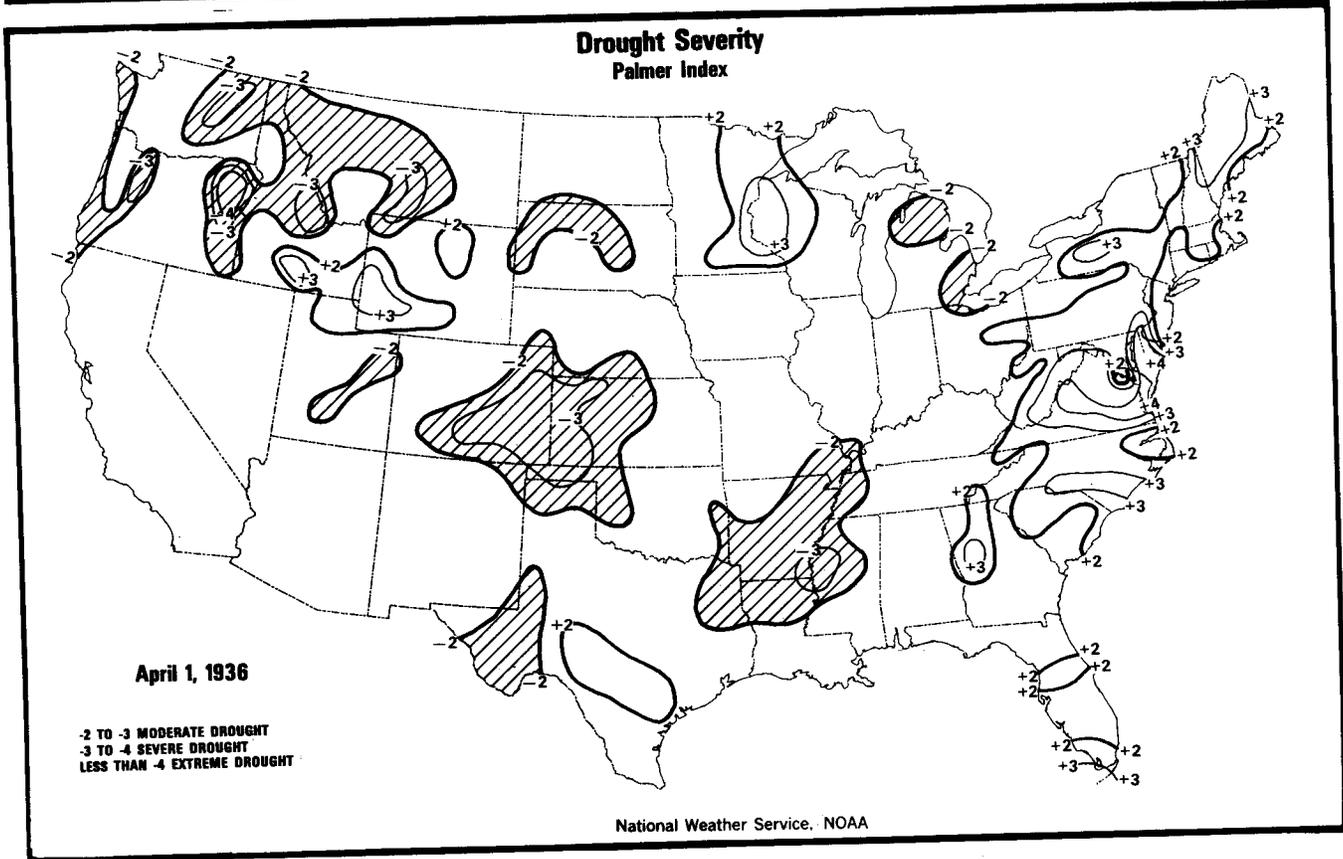
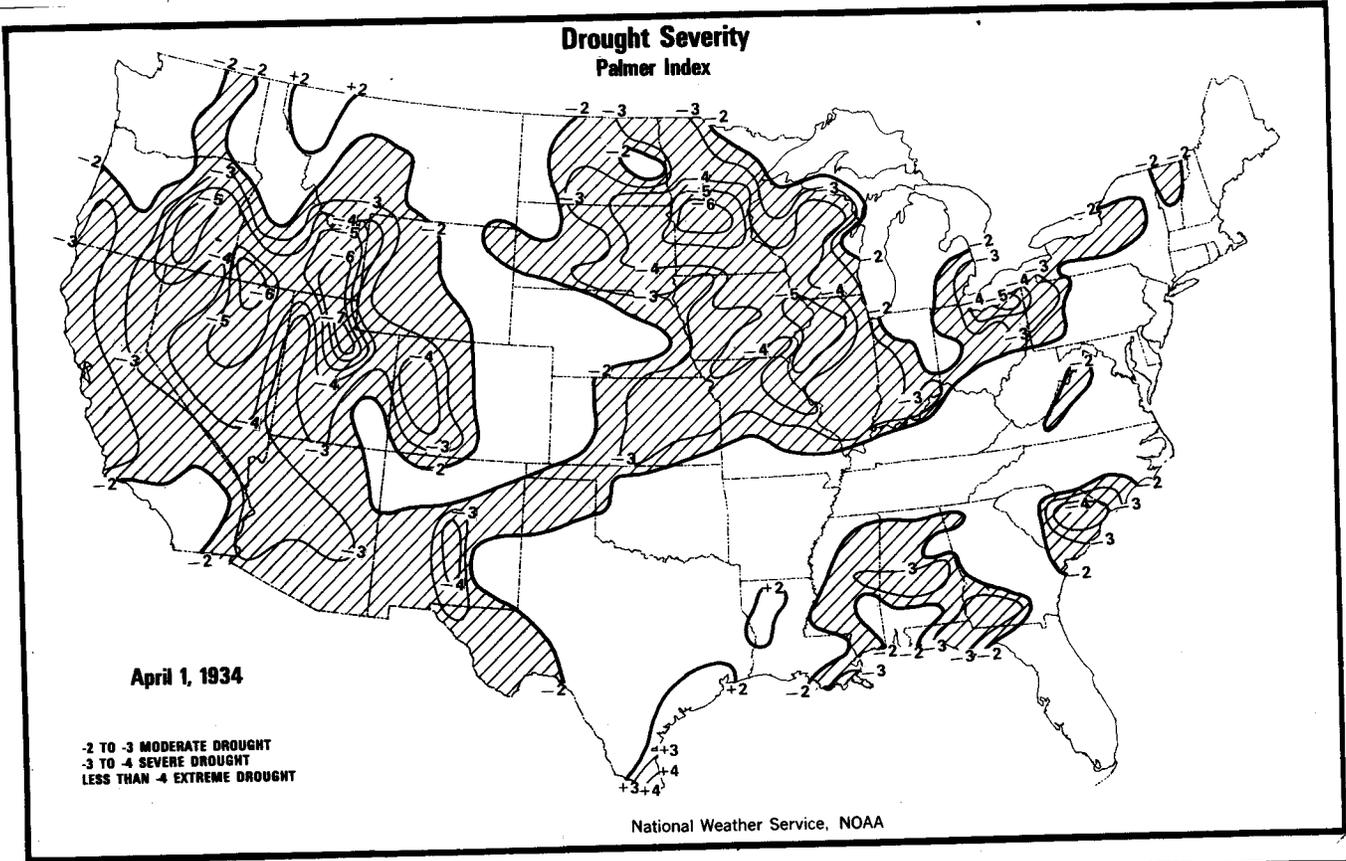
For purposes of computing the Palmer Drought Index, drought is defined as a prolonged period of abnormal moisture deficiency. "Prolonged" and "abnormal" are not specifically defined because they are relative to each other. If precipitation falls far below normal and temperatures remain above normal, evidence of drought soon appears as the stored soil moisture is used up. However,

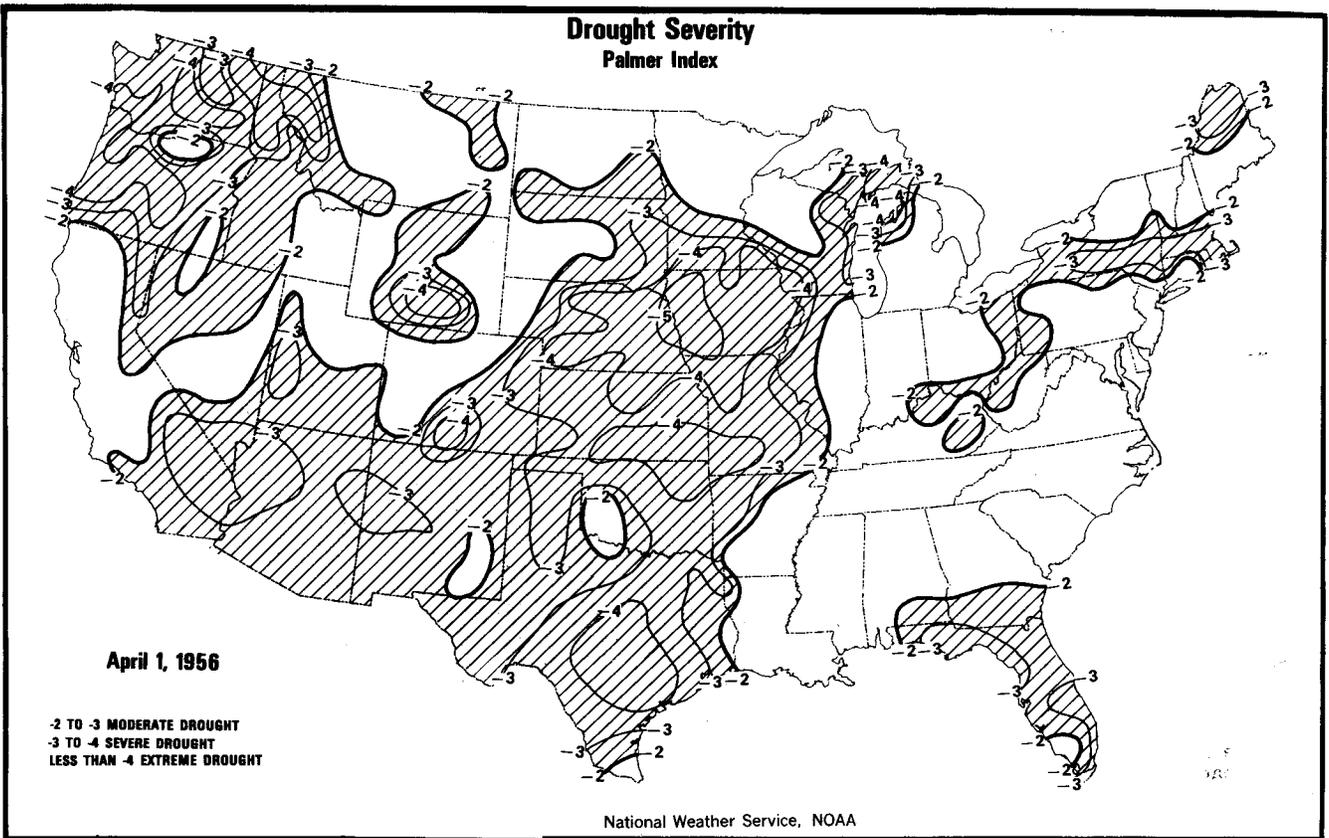
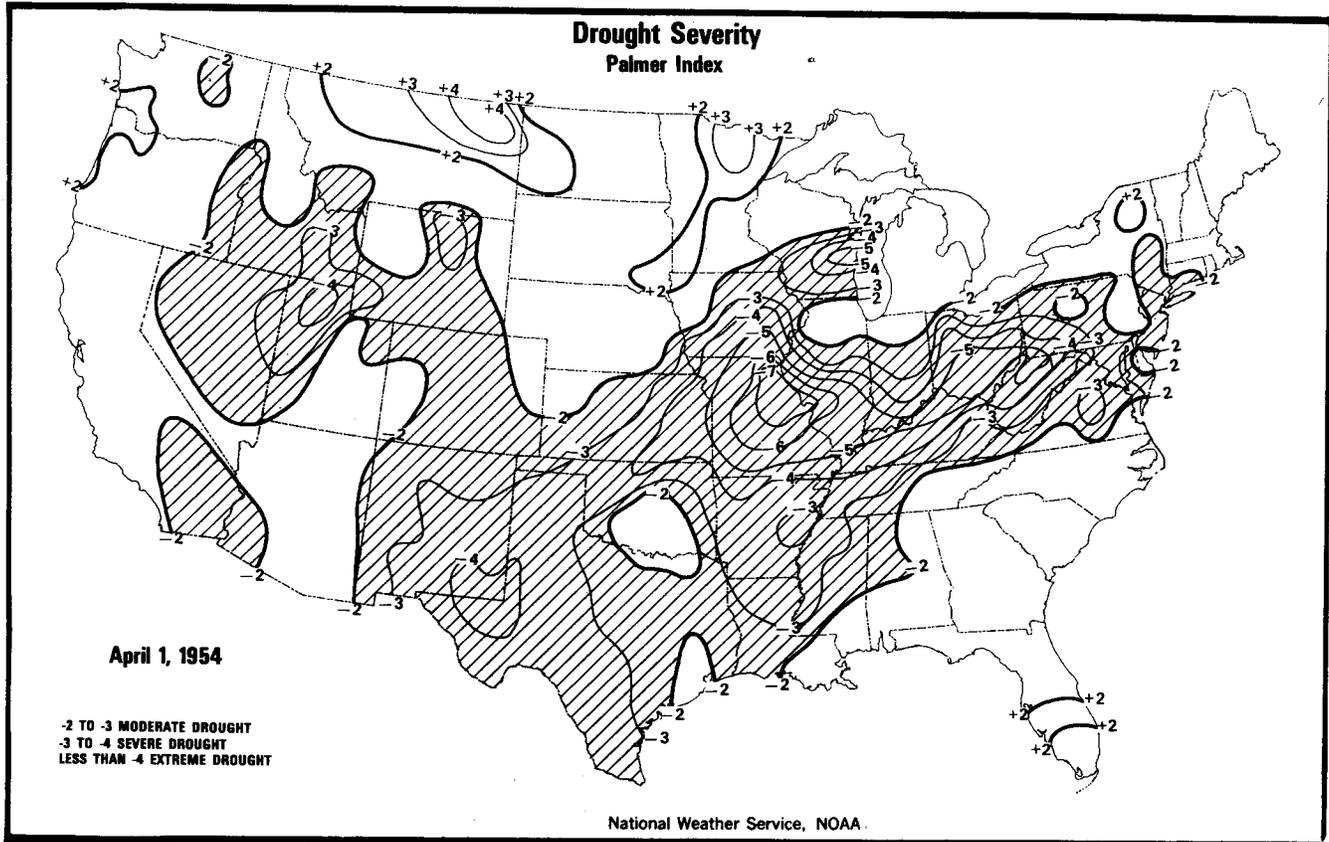
if rainfall is only slightly less than demand and continues deficient, conditions worsen until it's finally recognized that a drought began some time before. Depending on the activity affected by the lack of water, though, the definition of drought may vary.

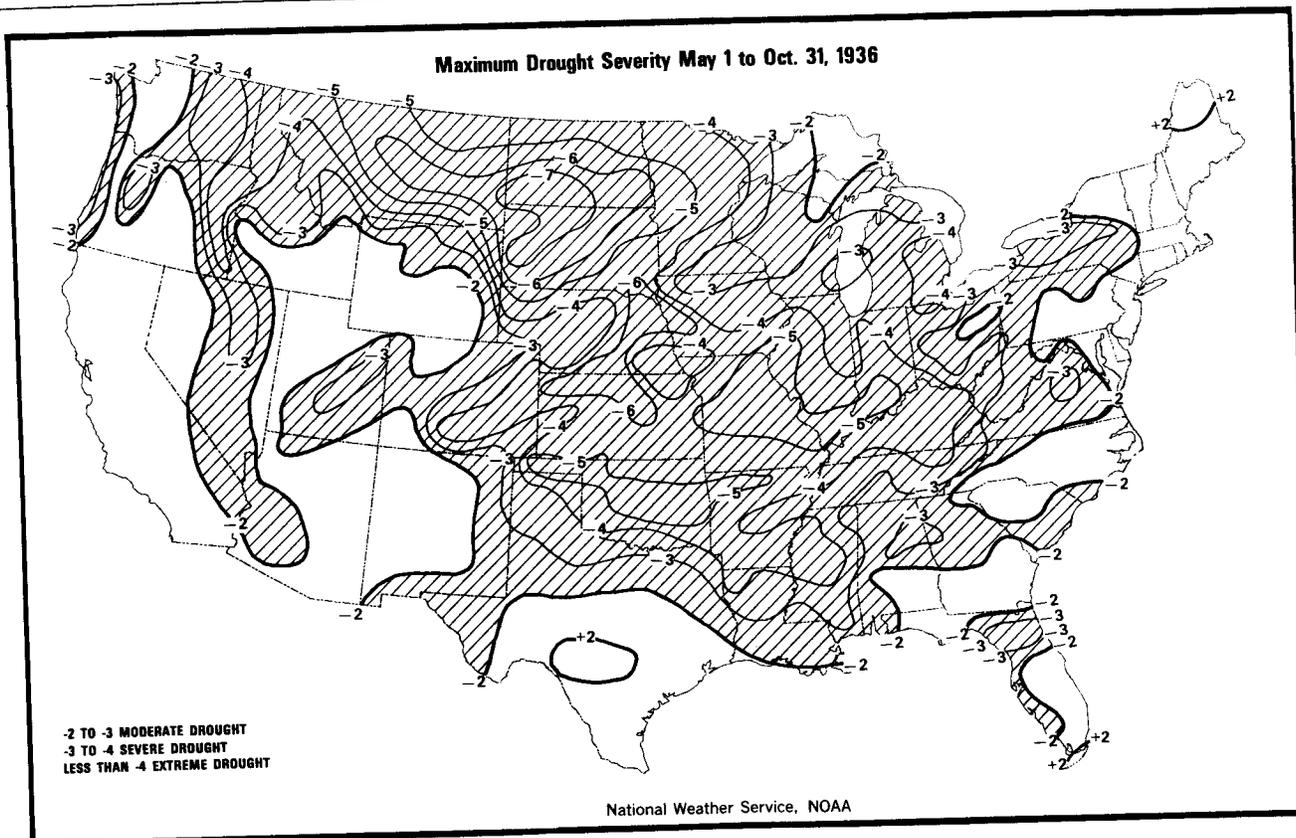
To the farmer drought usually means a shortage of moisture in the root zone of growing crops. However, the distribution of precipitation may cause conditions that will be called drought. When seeds are sown in dry topsoil and expected rainfall does not occur, the seed will not germinate. The period for expected rainfall may be relatively short as, for example, the time before the onset of cool weather when seeds do not sprout because winter has set in. Poor distribution of rain also causes drought when soil moisture is low and there has been just enough rain to support a crop during a low demand period; then the crop enters a high demand period, such as the propagation period of corn, and rain remains light or ceases. The crop suffers immediate stress and may fail even though subsequent rain is adequate. Both of these conditions may be worsened by intense heat, insects, crop disease, high winds, or a combination of several factors.

Usually drought first is felt by agriculture, but it is not until streamflow, reservoir levels, and snowpack becomes short that drought concerns the hydrologist.

Of course, the weather is sometimes too wet for crops just as it is sometimes too dry. Too wet







often means soils are too wet to permit timely field operations or rains have been so heavy that fields are actually flooded. In the weekly analysis of the Palmer Drought Index, heavy rains in excess of the maximum weekly water use by the crops produce positive values of R (soil moisture recharge) until the soils reach field capacity; then any excess water shows up in the RO (runoff) term. These two measures of "excess" moisture are combined into a wetness index that is always positive.

#### Palmer and Crop Moisture Indexes

In order to have a means for evaluating the moisture situation the Palmer and Crop Moisture Indexes have been developed. The Palmer Index was designed to evaluate the scope, severity, and frequency of prolonged periods of abnormally wet or dry weather. For this purpose it works reasonably well. However, it does not measure the current status of agricultural drought which concerns the effects of short periods of very dry weather. For this reason the Crop Moisture Index was developed to respond rapidly to changes in the soil moisture situation and takes into account only those moisture aspects that affect vegetation and field operations.

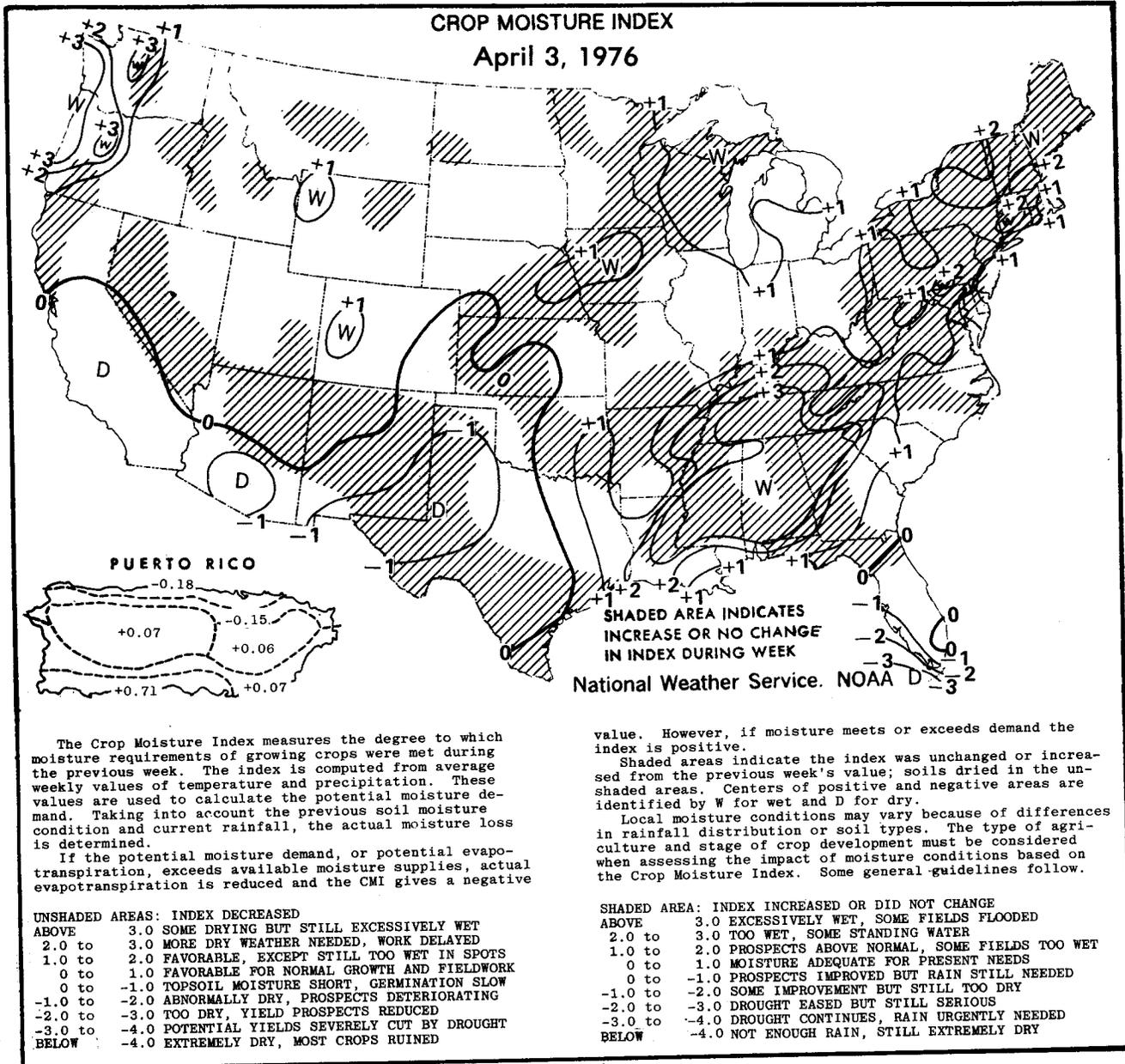
The Palmer Index provides the best evaluation of the overall soil moisture situation, since it integrates the effects of the past weather over weeks and even months. However, the Crop Moisture Index best indicates the availability of moisture to meet current demands. For example, a recent rain might have replenished the soil sufficiently to meet the current demands. However, the overall soil moisture situation may be very poor, which would be reflected in a highly negative Palmer Index reading.

In its simplest terms agricultural drought is a transpiration deficit. However, using the

computed potential evapotranspiration as an estimate of the moisture need causes the subhumid and semiarid regions to have evapotranspiration deficits much of the time during the summer months. Maps drawn on the basis of such computations reflect climate as much or more than they show weather. These maps mean more when based on the abnormal evapotranspiration deficit.

The Palmer Drought Index provides a measure of the weekly abnormal evapotranspiration deficit for each climatological division. This is a computed value, an estimate of the amount by which the actual weekly evapotranspiration falls short of the expected weekly evapotranspiration. The actual evapotranspiration takes into account the actual temperature and precipitation during the week as well as the computed amount of soil moisture, both topsoil and subsoil, existing at the start of the week. The expected evapotranspiration is an adjusted normal value; which means the long-term mean value is adjusted upward or downward depending on the departure of the week's temperature from normal. Successive weekly values of this computed abnormal evapotranspiration deficit have been combined into a measure of the cumulative severity of agricultural drought. In other words, as the accumulated evapotranspiration deficit gradually increases from week to week during dry weather, the crop moisture situation becomes progressively more serious. The maps shown on the top of pages 11 and 15 are the final products of this effort, translating the computed evapotranspiration anomaly index into a picture of the scope and severity of the agricultural drought situation at the present time.

The maps on pages 12 and 13 show how the Palmer Index maps appeared at this time in years when severe drought did develop: 1934, 1936, 1954, and 1956. From these maps it is apparent.



The Crop Moisture Index measures the degree to which moisture requirements of growing crops were met during the previous week. The index is computed from average weekly values of temperature and precipitation. These values are used to calculate the potential moisture demand. Taking into account the previous soil moisture condition and current rainfall, the actual moisture loss is determined.

If the potential moisture demand, or potential evapotranspiration, exceeds available moisture supplies, actual evapotranspiration is reduced and the CMI gives a negative

value. However, if moisture meets or exceeds demand the index is positive.

Shaded areas indicate the index was unchanged or increased from the previous week's value; soils dried in the unshaded areas. Centers of positive and negative areas are identified by W for wet and D for dry.

Local moisture conditions may vary because of differences in rainfall distribution or soil types. The type of agriculture and stage of crop development must be considered when assessing the impact of moisture conditions based on the Crop Moisture Index. Some general guidelines follow.

that conditions were more severe than they are in 1976. The map on the top of page 14 shows how serious the situation became before the summer of 1936 was over.

#### What to Look For

**WHEAT:** The warm winter of 1975/76 encourage vegetative growth earlier than usual when the probability of killing temperatures is still relatively high in the Great Plains States.

Virtually all of the increase in dry weight in wheat after heading is associated with grain filling. Water stress, which can reduce photosynthesis, can lead to significant reductions in yield. Moisture stress also hastens maturity, thus reducing the length of the filling period.

Because grain filling is a relatively rapid process, any reduction in photosynthesis may affect grain production. With wheat, however, it has been

shown that under favorable conditions, surplus photosynthate can be produced. It follows that a reduction in photosynthesis may not lead to reduced grain weight until any surplus photosynthate is eliminated, provided the stress occurs early in the filling period.

Prolonged stress throughout grain filling, even at moderate levels, almost invariably reduces grain weight.

Watch harvest weather conditions. Once harvest begins, a period of dry weather is ideal. The situation in 1974 is an excellent example. While the wet spring raised havoc with corn and soybeans it provided excellent moisture for wheat, and the ensuing dry weather provided excellent harvest conditions.

**CORN:** Watch for delays in corn planting. Planting has been late in 1973 and 1974 and about average

in 1975. In 1973 the summer was close to ideal and record crops were harvested. In 1974, unfavorable weather followed planting and the results have been well documented. Under normal summer conditions, yields will be reduced. A general rule is that yields are reduced about 1 bushel per day for each day after the 10th of May the crop is planted.

Cold wet weather immediately after planting will slow germination and enhance disease and weed problems.

Corn is relatively tolerant to stress from moisture during the vegetative stage. Above normal temperatures during May and June encourage good development and high yields.

Weather conditions during tasseling and silking are extremely important to yields. 1974 is an excellent example. Stress results in fewer grains per ear, or barrenness. Extreme heat during late June and the first 3 weeks of July caused extensive barrenness. Yield reductions of over 50 percent can result from relatively brief periods of wilting.

Grain filling, which usually begins in late July and carries into September is less sensitive to weather than silking and tasseling, but it is still very important. Below normal temperatures and above normal precipitation encourage maximum filling.

Stress hastens maturity, shortening the filling period.

**SOYBEANS:** Soybeans are normally planted after corn planting is completed. Any delay in corn planting is usually passed onto beans. Late planting pushes

the flowering period into late July and August which is hotter and drier.

Soybeans do not tolerate stress as well as corn, particularly after flowering. The same amount of stress from heat or lack of moisture causes a greater reduction in yield when it occurs after flowering than before flowering. Stress reduces both the number of beans per pod and bean size.

Stress during the filling period reduces both the rate of filling and the length of the filling period.

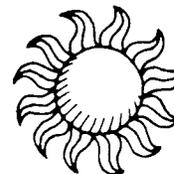
Watch harvest weather. Wet, windy weather causes the greatest problems.

**COTTON:** Because cotton is in the ground somewhere in the United States almost 12 months of the year, it is particularly vulnerable to the effects of the weather.

Watch weather during the planting season. Soil temperature is critical to germination. Normally, planting is started after the soil temperature has averaged 68° for at least 5 days and the outlook for continued warm weather is favorable.

Good rainfall just prior to blooming usually gives yields a good boost. However, prolonged cloudiness during the bloom period causes excessive shedding of blooms and small bolls. Sudden changes in weather conditions from cool to hot also causes bloom drop.

Moisture during the harvest season causes disease problems and reduces quality. In the Deep South, normal planting results in boll opening and harvest in early and mid-October, when the probability of precipitation is at a minimum.



### World Weather Developments

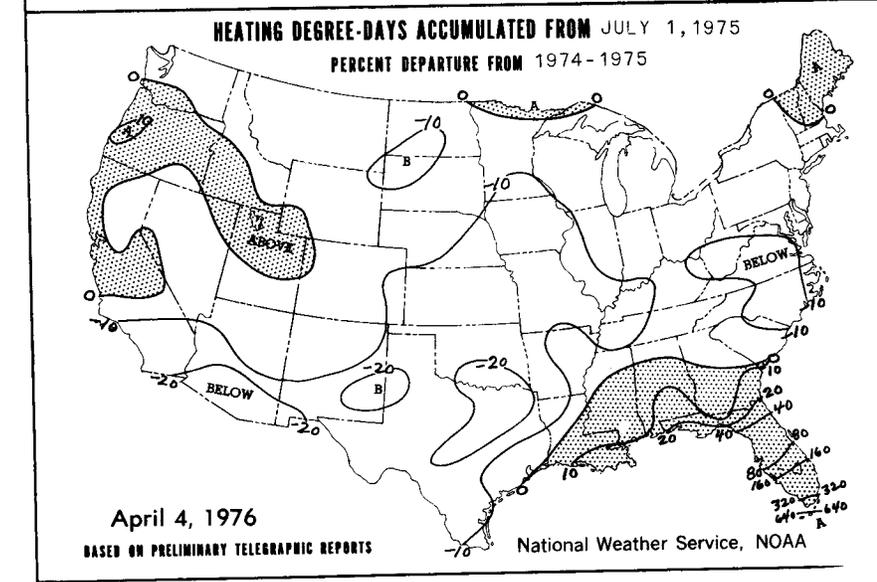
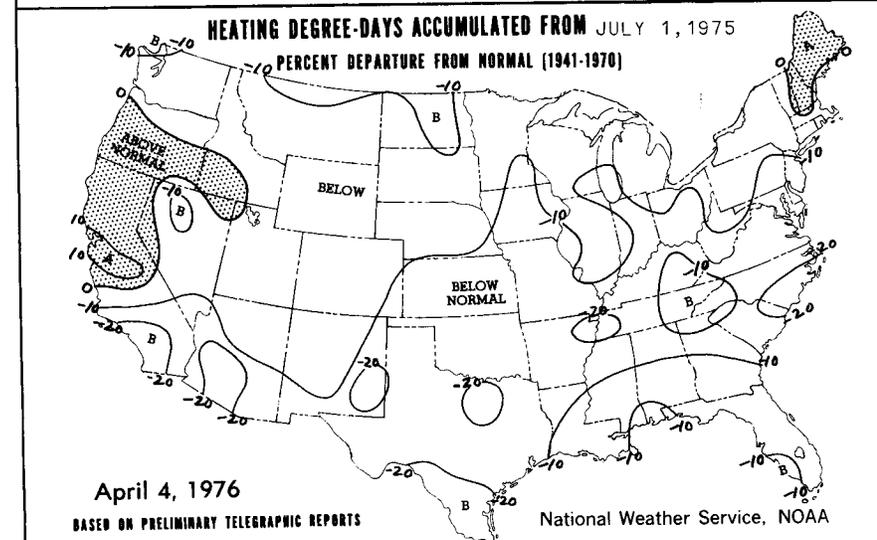
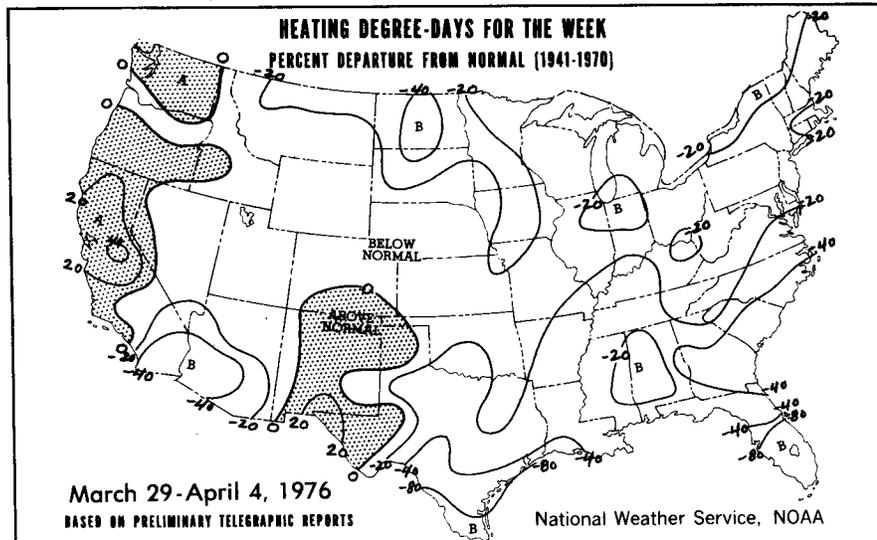
Production around the world has a significant impact on the supply and price situation in the United States. As the new crop year gets underway, it is important to watch these areas as well as weather in the United States. Here's a brief summary of several of these areas.

Winter across much of Europe was relatively dry, however, moisture in early spring brightened prospects for an excellent grain crop. Good moisture will be needed as the season progresses.

The USSR experienced a very difficult start for its winter grains. Conditions were very dry last fall when seeding occurred. Good moisture fell during November, December, and January accompanied by mild temperatures. This should have enhanced the soil moisture situation. However, very cold temperatures occurred in early and late February. Reports indicate that about 25% of the winter grain suffered winterkill; normally about 16 to 18% is lost each year. However, there should be excellent moisture for spring reseeding. Overall soil moisture profiles are still below desired levels.

The summer monsoon will be the key to food production in India. Scheduled to start in early June, it provides the necessary moisture to carry the summer harvested crops to maturity. Currently harvest of spring crops is producing very good yields despite a dry winter season so far.

In a turnaround from last year's situation, moisture conditions are excellent for seeding winter wheat in Australia.



## Heating Degree Days (Base 65° F.)

## March 1976

ALA. Birmingham . . . . .	213	MAINE, Caribou . . . . .	1302	OKLA. Okla. City . . . . .	406
Mobile . . . . .	95	Portland . . . . .	1030	Tulsa . . . . .	407
Montgomery . . . . .	197	MD. Baltimore . . . . .	518	OREG. Astoria . . . . .	651
ALASKA, Anchorage . . . . .	1260	MASS. Boston . . . . .	733	Burns U. . . . .	948
Barrow . . . . .	2501	Chatham . . . . .	812	Medford . . . . .	679
Fairbanks . . . . .	1631	MICH. Alpena . . . . .	1061	Pendleton . . . . .	679
Juneau . . . . .	----	Detroit . . . . .	757	Portland . . . . .	632
Nome . . . . .	----	Flint . . . . .	809	Salem . . . . .	693
ARIZ. Flagstaff . . . . .	912	Grand Rapids . . . . .	835	PA. Allentown . . . . .	713
Phoenix . . . . .	134	Houghton Lake . . . . .	1054	Erie . . . . .	804
Tucson . . . . .	221	Lansing . . . . .	826	Harrisburg . . . . .	639
Winslow . . . . .	687	Marquette U . . . . .	1128	Philadelphia . . . . .	572
Yuma . . . . .	100	S. Ste. Marie . . . . .	1299	Pittsburgh . . . . .	605
ARK. Fort Smith . . . . .	353	MINN. Duluth . . . . .	1325	Scranton . . . . .	737
Little Rock . . . . .	284	Internatl Falls . . . . .	1475	R. I. Providence . . . . .	798
CALIF. Bakersfield . . . . .	243	Minneapolis . . . . .	1031	S. C. Charleston . . . . .	146
Eureka U. . . . .	569	Rochester . . . . .	1021	Columbia . . . . .	176
Fresno . . . . .	385	St. Cloud . . . . .	1207	Greenville . . . . .	345
Los Angeles U . . . . .	148	MISS. Jackson . . . . .	201	S. DAK. Aberdeen . . . . .	1063
Red Bluff . . . . .	406	Meridian . . . . .	236	Huron . . . . .	1043
Stockton . . . . .	417	MO. Columbia . . . . .	566	Rapid City . . . . .	940
San Diego . . . . .	148	Kansas City . . . . .	616	Sioux Falls . . . . .	929
San Francisco . . . . .	427	St. Louis . . . . .	505	TENN. Chattanooga . . . . .	323
COLO. Denver . . . . .	859	Springfield . . . . .	460	Knoxville . . . . .	380
Grand Junction . . . . .	807	MONT. Billings . . . . .	1015	Memphis . . . . .	238
Pueblo . . . . .	814	Glasgow . . . . .	1099	Nashville . . . . .	300
CONN. Bridgeport . . . . .	767	Great Falls . . . . .	1030	TEX. Abilene . . . . .	296
Hartford . . . . .	759	Havre . . . . .	1055	Amarillo . . . . .	567
D. C. Washington . . . . .	415	Helena . . . . .	1064	Austin . . . . .	173
FLA. Apalachicola . . . . .	85	Kalispell . . . . .	1028	Beaumont . . . . .	128
Ft. Myers . . . . .	5	Miles City . . . . .	999	Brownsville . . . . .	23
Jacksonville . . . . .	79	Missoula . . . . .	929	Corpus Christi . . . . .	45
Key West . . . . .	0	NEBR. Grand Island . . . . .	814	Dallas . . . . .	----
Lakeland U. . . . .	17	Lincoln . . . . .	792	Del Rio . . . . .	76
Miami . . . . .	0	Norfolk . . . . .	854	El Paso . . . . .	278
Orlando . . . . .	18	North Platte . . . . .	956	Fort Worth . . . . .	222
Daytona Beach . . . . .	34	Omaha . . . . .	757	Galveston U. . . . .	82
Tallahassee . . . . .	110	Valentine . . . . .	970	Houston . . . . .	155
Tampa . . . . .	18	NEV. Ely . . . . .	1058	Lubbock . . . . .	392
GA. Atlanta . . . . .	265	Las Vegas . . . . .	357	Midland . . . . .	261
Augusta . . . . .	167	Reno . . . . .	831	San Angelo . . . . .	237
Macon . . . . .	168	Winnemucca . . . . .	841	San Antonio . . . . .	142
Savannah . . . . .	134	N. H. Concord . . . . .	1019	Victoria . . . . .	95
IDAHO, Boise . . . . .	858	N. J. Atlantic City . . . . .	667	Waco . . . . .	204
Lewiston . . . . .	738	Trenton U . . . . .	606	Wichita Falls . . . . .	318
Pocatello . . . . .	999	N. MEX. Albuquerque . . . . .	634	UTAH, Blanding R . . . . .	851
ILL. Cairo U. . . . .	328	Roswell . . . . .	334	Salt Lake City . . . . .	826
Chicago . . . . .	674	N. Y. Albany . . . . .	871	VT. Burlington . . . . .	972
Moline . . . . .	731	Binghamton . . . . .	910	VA. Lynchburg . . . . .	443
Peoria . . . . .	648	Buffalo . . . . .	853	Norfolk . . . . .	361
Rockford . . . . .	813	New York . . . . .	618	Richmond . . . . .	386
Springfield . . . . .	601	Rochester . . . . .	858	Roanoke . . . . .	438
IND. Evansville . . . . .	417	Syracuse . . . . .	872	WASH. Colville . . . . .	932
Fort Wayne . . . . .	656	N. C. Asheville . . . . .	439	Omak . . . . .	----
Indianapolis . . . . .	564	Charlotte . . . . .	321	Quillayute . . . . .	770
South Bend . . . . .	658	Greensboro . . . . .	357	Seattle-Tacoma . . . . .	731
IOWA, Burlington . . . . .	701	Hatteras R. . . . .	244	Spokane . . . . .	922
Des Moines . . . . .	780	Raleigh . . . . .	300	Walla Walla U. . . . .	660
Dubuque . . . . .	877	Wilmington . . . . .	183	Yakima . . . . .	795
Sioux City . . . . .	881	N. DAK. Bismarck . . . . .	1163	W. VA. Beckley . . . . .	533
KANS. Concordia . . . . .	707	Fargo . . . . .	1296	Charleston . . . . .	427
Dodge City . . . . .	631	Williston U . . . . .	1247	Huntington . . . . .	422
Goodland . . . . .	815	OHIO. Akron-Canton . . . . .	666	Parkersburg U. . . . .	474
Topeka . . . . .	599	Cincinnati U. . . . .	558	WIS. Green Bay . . . . .	1057
Wichita . . . . .	575	Cleveland . . . . .	614	Madison . . . . .	967
KY. Lexington . . . . .	468	Columbus . . . . .	573	Milwaukee . . . . .	877
Louisville . . . . .	405	Dayton . . . . .	570	WYO. Casper . . . . .	813
LA. Baton Rouge . . . . .	118	Toledo . . . . .	717	Cheyenne . . . . .	1017
Lake Charles . . . . .	122	Youngstown . . . . .	672	Lander . . . . .	1006
New Orleans . . . . .	98			Sheridan . . . . .	1040
Shreveport . . . . .	202				

Preliminary reports from airport locations, except those marked U for urban and R for rural.

\*Estimated.

Heating Degree Days (Base 65°) For Week Ending April 4, 1976

States and Stations	Weekly		Seasonal Accumulation			States and Stations	Weekly		Seasonal Accumulation			States and Stations	Weekly		Seasonal Accumulation		
	TOTAL	Departure*	TOTAL	Departure*	Departure From 1974-75		TOTAL	Departure*	TOTAL	Departure*	Departure From 1974-75		TOTAL	Departure*	TOTAL	Departure*	Departure From 1974-75
ALA. Birmingham . . .	45	9	2472	-265	61	Portland . . .	166	-25	6401	-48	199	Tulsa . . .	63	-15	3088	430	-571
Mobile . . .	11	14	1393	-264	113	MD. Baltimore . . .	103	-11	3692	-650	-236	OREG. Astoria . . .	127	-8	4089	117	158
Montgomery . . .	33	6	2098	-108	226	MASS. Boston . . .	114	-35	4443	-524	-354	Burns . . .	176	1	6555	476	542
ARIZ. Flagstaff . . .	172	17	5770	-290	-325	MICH. Alpena . . .	193	-28	6923	-366	-64	Medford . . .	134	10	4238	26	188
Phoenix . . .	7	19	1037	-469	-437	Detroit . . .	140	-22	5376	-341	-457	Pendleton . . .	123	-2	3136	-1461	-845
Tucson . . .	24	9	1371	-278	-645	Flint . . .	144	-33	5559	-636	-420	Portland . . .	116	-5	3776	260	170
Winslow . . .	94	18	4418	109	-360	Grand Rapids . . .	134	-39	5707	-321	-711	Salem . . .	137	13	4165	127	376
Yuma . . .	4	9	864	-124	-218	Houghton Lake . . .	172	41	6821	-442	-258	PA. Allentown . . .	138	-6	4742	501	-291
ARK. Fort Smith . . .	57	1	3029	-192	-418	Lansing . . .	141	-32	5826	-293	-312	Erie . . .	132	8	4314	482	-488
Little Rock . . .	41	24	2715	-513	-212	Marquette . . .	196	19	6805	-284	-52	Harrisburg . . .	86	-36	3863	580	-255
CALIF. Bakersfield . . .	45	2	1911	-138	-45	Muskegon . . .	145	-35	5417	-602	-551	Philadelphia . . .	130	-13	4876	462	-146
Eureka . . .	131	19	3930	328	277	S. Ste. Marie . . .	213	-22	7751	-73	-121	Pittsburgh . . .	130	-16	5024	603	-177
Fresno . . .	81	21	2776	335	197	MINN. Duluth . . .	210	-23	8390	-26	-324	Scranton . . .	140	-16	4963	272	-113
Los Angeles . . .	57	1	1035	-434	-197	Internatl Falls . . .	210	-33	9175	-73	71	R. I. Providence . . .	125	-24	1776	316	-54
Red Bluff . . .	85	17	2593	157	-161	Minneapolis . . .	147	-50	6641	-805	-789	S. C. Charleston . . .	14	-34	1776	468	-138
San Diego . . .	24	18	921	-335	-214	Rochester . . .	155	-43	6594	-757	-978	Columbia . . .	16	-29	2058	468	-138
San Francisco . . .	96	19	2755	290	167	St. Cloud . . .	163	-47	7767	-145	-442	Greenville . . .	64	0	2815	209	-217
Stockton . . .	95	27	2688	140	-41	MISS. Jackson . . .	30	10	2035	-206	62	S. DAK. Aberdeen . . .	153	-48	6899	809	-418
COLO. Denver . . .	151	11	4916	-332	-511	Meridian . . .	35	5	2328	5	282	Huron . . .	177	-12	6759	479	-446
Grand Junction . . .	126	5	5376	255	2	MO. Columbia . . .	100	-16	4233	-466	-861	Rapid City . . .	153	-38	5908	457	-642
Pueblo . . .	139	3	4745	-143	-194	Kansas City . . .	100	-17	4332	-456	-836	Sioux Falls . . .	153	-33	6544	506	-583
CONN. Bridgeport . . .	135	17	4433	-366	-186	St. Louis . . .	89	-15	4054	-367	-699	TENN. Chattanooga . . .	53	-16	3224	102	-234
Hartford . . .	120	41	5152	-519	-308	Springfield . . .	90	13	3774	-476	-658	Knoxville . . .	67	3	3239	57	24
DEL. Wilmington . . .	112	13	4018	-482	-256	MONT. Billings . . .	166	-21	6028	-265	-463	Memphis . . .	30	-33	2490	618	-267
D. C. Washington . . .	81	17	3149	-779	-325	Glasgow . . .	172	-43	7235	-692	-122	Nashville . . .	53	-22	2914	601	-317
FLA. Apalachicola . . .	14	5	1347	6	364	Great Falls . . .	162	-38	6312	-274	-401	TEX. Abilene . . .	35	-14	2203	318	-528
Daytona Beach . . .	13	0	848	-39	303	Havre . . .	156	-59	6582	-1189	-636	Amarillo . . .	107	9	3382	489	-777
Ft. Myers . . .	0	0	397	-60	251	Helena . . .	171	-30	6788	-250	-388	Brownsville . . .	17	-10	1381	326	-318
Jacksonville . . .	10	8	1361	49	235	Kalispell . . .	171	-31	6732	-559	-454	Corpus Christi . . .	4	0	740	190	-122
Key West . . .	0	0	57	-5	50	Miles City . . .	169	-21	6549	-449	-230	Del Rio . . .	5	-12	1175	340	-273
Lakeland . . .	0	7	625	-48	256	Missoula . . .	149	-36	6440	-363	-97	El Paso . . .	56	-12	2334	278	-451
Miami . . .	0	0	202	-4	143	NEBR. Grand Island . . .	136	-20	5428	-393	-823	Fort Worth . . .	31	-13	1816	501	-462
Orlando . . .	0	7	609	-40	278	Lincoln . . .	133	-14	5197	-494	-991	Galveston . . .	4	-16	985	229	57
Tallahassee . . .	20	0	1582	42	97	Norfolk . . .	144	-25	5832	-496	-662	Houston . . .	24	4	1303	118	-9
Tampa . . .	2	5	668	-45	279	North Platte . . .	173	3	6329	317	-63	Lubbock . . .	56	-22	2771	597	-698
W. Palm Beach . . .	0	0	306	7	197	Omaha . . .	162	-24	6205	-276	-346	Midland . . .	53	4	2138	411	-322
GA. Atlanta . . .	41	23	2644	-314	-81	Valentine . . .	188	-9	6377	-128	-84	Beaumont . . .	15	-9	1339	158	-79
Augusta . . .	18	27	2081	-390	-429	NEV. Ely . . .	39	-11	2202	-290	-231	San Angelo . . .	26	-12	1999	187	-310
Macon . . .	22	15	2020	-167	52	Las Vegas . . .	156	3	5235	146	-26	San Antonio . . .	16	-7	1392	159	-209
Savannah . . .	15	17	1690	-216	211	Reno . . .	159	-10	4992	-627	-539	Victoria . . .	8	-9	994	226	-10
IDAHO. Boise . . .	149	8	5140	57	264	Winnemucca . . .	160	-25	6843	397	91	Waco . . .	30	-5	1618	402	-659
Lewiston . . .	127	3	4465	-315	-59	N. H. Concord . . .	136	7	4381	-97	69	Wichita Falls . . .	34	-22	2282	527	-644
Pocatello . . .	162	12	5966	-129	-194	N. J. Atlantic City . . .	116	-10	3989	-509	-270	UTAH. Salt Lake C . . .	137	-8	5170	95	325
ILL. Cairo . . .	52	27	3090	-571	-589	Trenton . . .	109	9	4143	136	-240	VT. Burlington . . .	152	-46	6669	263	-6
Chicago . . .	118	31	4974	-548	-590	N. MEX. Albuquerque . . .	66	9	2717	-816	-752	VA. Lynchburg . . .	94	-1	3568	372	-408
Moline . . .	126	23	5203	-634	-751	Roswell . . .	149	-21	5766	-387	-523	Norfolk . . .	59	-25	2701	554	-205
Peoria . . .	114	28	5142	-421	-547	N. Y. Albany . . .	158	-29	5998	-387	-524	Richmond . . .	67	-20	3094	602	-560
Rockford . . .	144	19	5847	-322	-417	Binghamton . . .	141	-43	5559	-485	-151	Roanoke . . .	95	-4	3441	536	-520
Springfield . . .	104	24	4560	-561	-556	Buffalo . . .	115	-15	3974	-463	-268	WASH. Quillayute . . .	81	-17	3149	779	-325
IND. Evansville . . .	75	25	3837	-483	-342	New York . . .	146	-31	5508	-412	-321	Seattle-Tacoma . . .	137	3	3948	344	-166
Fort Wayne . . .	117	35	5037	-546	-575	Rochester . . .	139	-34	5669	-228	-205	Spokane . . .	166	3	5836	52	-265
Indianapolis . . .	108	22	4620	-472	-476	Syracuse . . .	87	-10	3690	-207	3	Walla Walla . . .	123	11	4012	291	-79
South Bend . . .	117	42	4912	-853	-458	N. C. Asheville . . .	41	-31	2035	-500	-108	Yakima . . .	151	14	5098	190	88
IOWA. Burlington . . .	120	24	5012	-612	-804	Hatteras . . .	47	17	2727	-346	-349	W. VA. Beckley . . .	109	-20	4297	718	-628
Des Moines . . .	119	41	5163	-958	-951	Charlotte . . .	59	-22	3048	-559	-315	Charleston . . .	82	-20	3646	590	-798
Debuque . . .	143	29	6050	-501	-765	Greensboro . . .	52	-21	2789	-536	-532	Huntington . . .	72	-31	3617	644	-515
Sioux City . . .	139	24	5823	-523	-734	Raleigh . . .	19	-28	1820	-534	-302	Parkersburg . . .	93	-18	4013	417	-353
KANS. Concordia . . .	120	12	4548	-594	-743	Wilmington . . .	99	-114	7226	-814	-988	WIS. Green Bay . . .	172	-25	6851	291	-366
Dodge City . . .	106	18	4031	-603	-635	N. Dak. Bismarck . . .	163	-54	7726	-553	-493	LaCrosse . . .	158	-17	6323	399	-553
Goodland . . .	151	8	4756	-691	-827	Fargo . . .	162	-56	7848	-275	-152	Madison . . .	144	-44	6089	785	-551
Topeka . . .	96	25	4322	-527	-699	Williston . . .	135	-21	4891	-657	-324	Milwaukee . . .	153	-31	5656	843	-639
Wichita . . .	98	7	3973	-398	-654	OHIO. Akron-Canton . . .	119	-38	4966	-496	-358	WYO. Casper . . .	184	-15	6304	158	-558
KY. Lexington . . .	89	-18	4023	-348	-210	Cleveland . . .	111	-24	4633	-536	-239	Cheyenne . . .	184	-14	5987	159	-512
Louisville . . .	68	-35	3559	-746	-466	Columbus . . .	101	-16	4167	-479	-485	Lander . . .	176	-21	6783	1	-103
LA. Baton Rouge . . .	18	5	1546	-103	129	Cincinnati . . .	114	-22	4535	-589	-378	Sheridan . . .	170	-25	6324	307	-642
Lake Charles . . .	12	-10	1399	-84	93	Dayton . . .	137	-20	5450	-254	-275						
New Orleans . . .	18	3	1426	-21	177	Toledo . . .	131	-30	5247	-453	-366						
Shreveport . . .	22	-15	1769	-347	-415	Youngstown . . .	62	-17	2931	-590	-681						
MAINE. Caribou . . .	194	-48	8508	233	127	OKLA. Okla. City . . .											

\* Based on 1941-70 Normals. July 1,

Agricultural Climatology Service Office  
South Building Mail Unit  
U. S. Department of Agriculture  
Washington, D.C. 20250

# IMMEDIATE - U. S. Weather Report

This Report Will be Treated in All Respects as Letter Mail

## FIRST CLASS MAIL

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

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