

WEEKLY WEATHER AND CROP BULLETIN

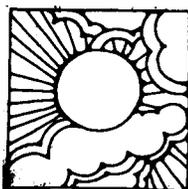
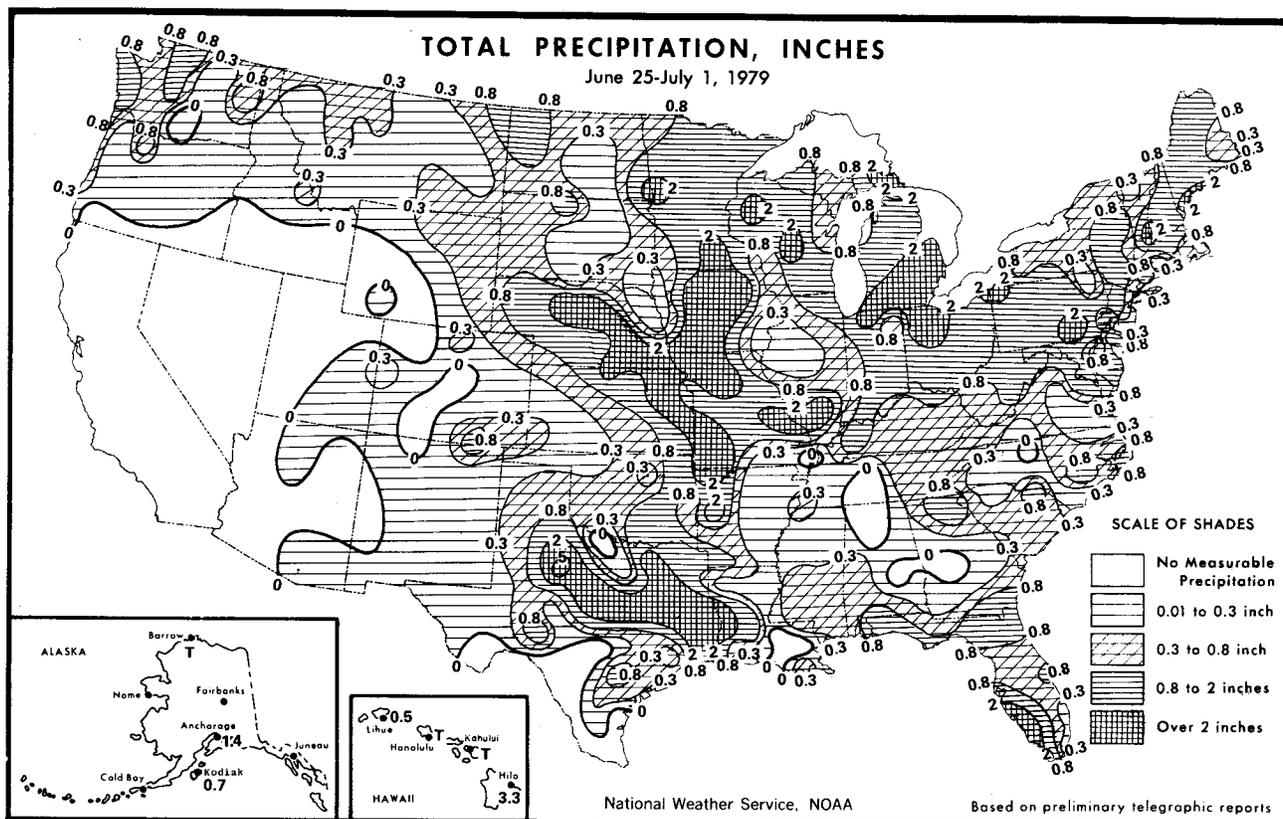
U.S. DEPARTMENT OF COMMERCE
National Weather Service, NOAA

U.S. DEPARTMENT OF AGRICULTURE
Economics, Statistics, and Cooperatives Service

Volume 66, No. 27

Washington, D.C.

July 3, 1979



National Weather Summary

June 25 - July 1

HIGHLIGHTS: A frontal system edging off the East Coast was followed by a slow-moving system, which triggered severe weather. Hail, rain, and tornadoes zeroed in on Iowa and Minnesota. Flash flooding became a problem in some portions of the north central United States.

A new system headed over the Pacific Northwest bringing moisture to the coastal areas and higher elevations. Light rain fell in the dry sections of Idaho and Montana.

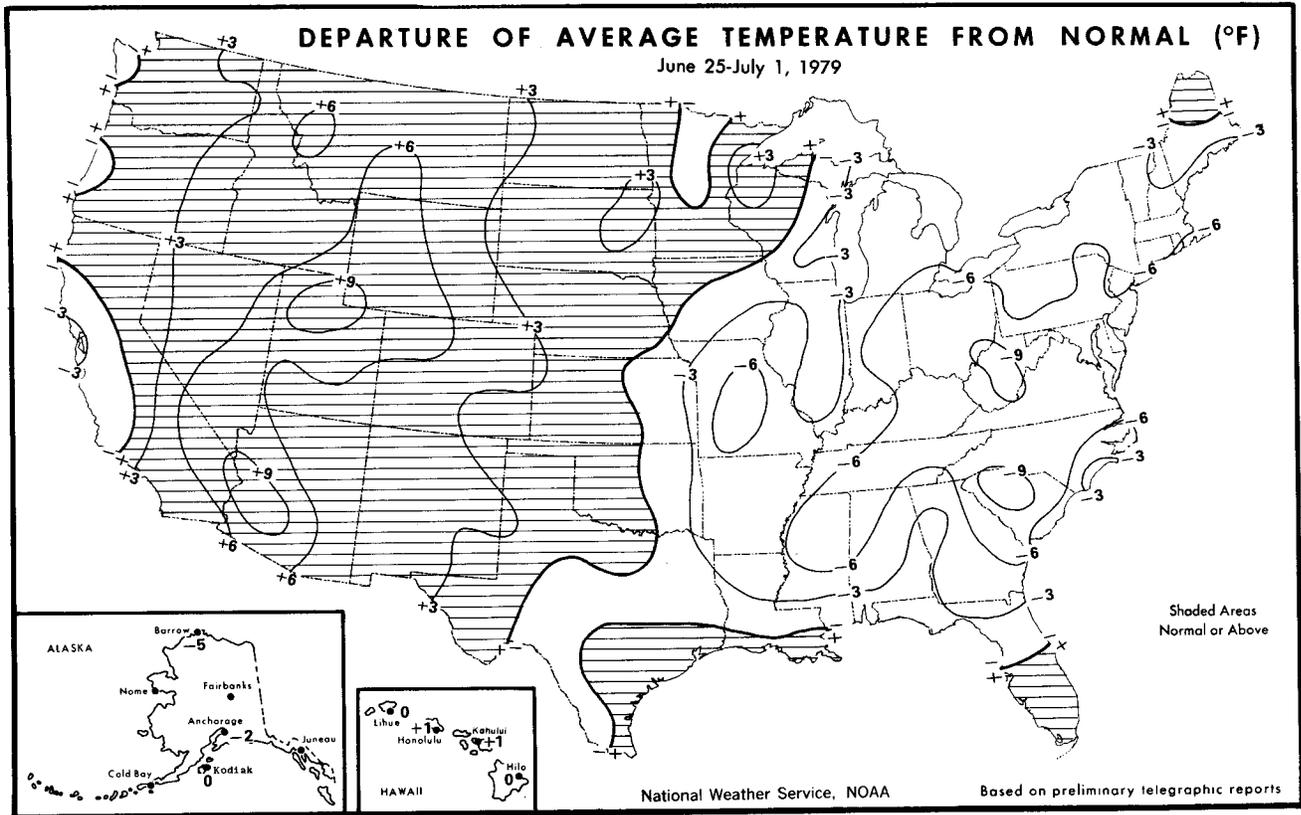
Temperatures ranged cooler than normal over the eastern half of the country---average temperatures were 9 to 10 degrees cooler for the week,

setting dozens of record low readings. Temperatures increased by the same amount in the Southwest and Plateau Region. A wave of warm air caused record hot readings in the southern Plains at week's end.

Monday dawned unseasonably cool from the Midwest to the Atlantic Coast; nearly 50 temperature records were set or equaled.

The heaviest rain of the day fell in parts of northern and western Texas and the eastern half of Oklahoma. Three inches fell in the Fort Worth vicinity, and 2.5 inches of rain and a tornado were reported near Abilene; 1.5 inches soaked an area near Oklahoma City. By evening, one-half to 2 inches fell over sections of Georgia, Florida, and Minnesota.

On Tuesday morning, thunderstorms once again rumbled over the lower Panhandle of Texas; some stations scored 4 to 5 inches. Later in the day, storms also formed over eastern Texas and the Midwest from Iowa to Michigan. While Port Arthur, Tex., measured 2 inches of rain, about 1.5 inches



fell on Waterloo, eastern Iowa; Eau Claire, western Wisconsin; and Sault Ste. Marie, on Michigan's Peninsula.

Record low readings again ranged from the Great Lakes southward to the Gulf of Mexico and eastward to the Atlantic Seaboard. Nearly 35 cities noted new marks. By contrast, temperatures soared well past the century mark in the Southwest; Phoenix hit a record high 114°.

Showers spread from the northern half of the Plains to New England on Wednesday; a sampling of totals showed 1.2 inches at Williston, northwestern North Dakota; 2.2 inches at Des Moines; and a third of an inch at Muskegon, western Michigan. Late in the day, tornadoes and hail were reported in eastern Wyoming and the west central Plains. Lexington, south central Nebraska, was awash in 2 inches of rain in one-half hour.

Record low readings chilled the East Coast; some new marks included 55° at Raleigh, N.C., 53° at Norfolk, Va., and Baltimore's 50°. Meantime, the heat wave continued in the Southwest, where both Phoenix and Tucson notched record-equaling temperatures of 116° and 108°.

An outbreak of severe weather ripped through the Nation's midlands on Thursday. Tornadoes touched down in the eastern portions of Wyoming and Colorado as well as Arkansas, but the most damage hit the southern half of Minnesota and northern Iowa when 40 twisters struck.

Heavy rainfall drenched parts of Nebraska and Kansas; 4 to 5 inches soaked parts of the two States pushing the Blue River near bankfull. By day's end, 4 to 5 inches fell on Randall, central Minnesota. In Florida, heavy rain dumped 3 inches on Fort Myers and an inch and one-quarter on Tampa.

Charleston, S.C. awoke to a record low 54°, and at 117°, another record high reading baked Phoenix.

On Friday, a deepening low pressure system over Wisconsin triggered severe weather from the upper

Midwest to the Ohio Valley. Tornadoes and hail plagued an area from west central Minnesota to Ohio. Two inches of rain covered South Bend, northern Indiana; Cincinnati accumulated an inch and one-half; and a bit more than an inch dampened Elkins, northern West Virginia.

Morning temperatures chilled the Southeast; Columbia, S.C., established a record low 55° while record-tying marks indicated 56° at Augusta, eastern Georgia, and 64° at Jacksonville, northeastern Florida. Texas's Dallas/Fort Worth area, at 103°, topped its 1956 mark by 3 degrees.

Thunderstorms cropped up over several sections of the country on Saturday. The heaviest rain amounted to one to 2 inches in parts of the Southeast.

Tornadoes were sighted in Florida, Kentucky, Wyoming, and Montana.

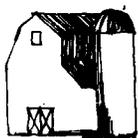
Record-breaking heat persisted in the Southeast; Phoenix again opened the record books, when the mercury soared to 115°. Wichita Falls, northern Texas, broke its 1956 record by three with 108°.

On Sunday, storms formed over several sections of the Nation. A stationary front lay from the Great Lakes over the East Coast and back through the South setting off numerous rainstorms. More than 2 inches soaked Portland, on Maine's coast. Lesser amounts dotted other States. In Mississippi, hail, high winds, and tornadoes battered an area in a 50-mile radius from Biloxi.

Severe weather ranged over the Plains and Delta Region; one to 2 inches fell from the Dakotas to Arkansas.

The State of Washington experienced an unusual variety of weather; depending upon the section, rain, snow, hail, and a tornado stirred through the State.

The withering heat persisted in Texas; Wichita Falls managed another record at 105°, and Lubbock reached a new peak at 103°.



National Agricultural Summary

June 25 - July 1

HIGHLIGHTS: Subnormal temperatures in the eastern half of the Nation slowed crop development. Rains improved soil moisture in the eastern half of the country and particularly in the Corn Belt. Most areas of the Nation had more than 5 days suitable for fieldwork. Winter wheat harvest stood at 25%, lagging 1978's 36% and the 46% average. Winter wheat harvest became more widespread in Kansas; the crop colored in northern production areas. Corn rated good with some of the southern crops moving into the dough stage. Corn growth generally exceeded last year but lagged the average. Soybean planting was complete in northern areas and ranged from 85 to 95% complete across the South. Cotton planting neared completion, as squaring became more widespread and boll set was underway. Grain sorghum planting was about done; Texas growers harvested early fields in the lower Rio Grande Valley. Rice seeding was complete; heading ranged up to 47% in Texas. Pastures generally rated good and improving in eastern areas. Dry soils caused western stands to deteriorate. Deciduous fruit harvests continued, including peaches, sweet cherries, and other selected crops from California. Vegetable harvests became more widespread, although subnormal temperatures slowed development in northern areas. The availability of trucks delayed some fruit and vegetable shipments, but the situation improved from the previous week. Fuel supplies continued to tighten; LP gas rated 13% tight, 84% adequate, and 3% surplus. Diesel fuel rated 5% deficient, 45% tight, and 50% adequate. Gasoline supplies rated 5% deficient, 41% tight, and 54% adequate.

SMALL GRAINS: Winter wheat harvest was 25% complete, falling well behind the 36% last year and the 46% average. Among the major producing States where combining was underway, only Illinois exceeded last year; none of the States surpassed the average. Harvesting advanced further into Kansas, although rains in some areas delayed progress. Winter wheat began turning color throughout northern production areas. Rains improved growing conditions in the Pacific Northwest, however, some fields remained stressed by dry soils.

Spring wheat heading ranged from 10 to 55% complete, lagging far behind previous years in North Dakota and Minnesota but near the average in other major producing States.

CORN: Corn generally rated good throughout the Nation. Frost nipped some northern stands but should not damage the crop at this stage of development. In the South, silking advanced actively, and some of the crop moved into the dough stage. Florida harvested a few fields.

Corn growth in the eastern north central States ranged from 16 to 35 inches on the average. This growth generally exceeded last year but fell 3 to 4 inches below normal. In the western north central States, corn growth attained 14 to 29 inches, falling short of both last year and average.

SOYBEANS: Soybean planting neared completion in the north central States and ranged from 85 to 95% complete in the South where farmers planted late stands following small grains. In the eastern north central States, average growth ranged from 9 to 11 inches, ahead of last year but equal to the average. Early fields began blooming. In the western north central States, farmers planted a few remaining fields and, in Minnesota, they replanted hail-damaged acreage.

COTTON: Cotton planting was virtually complete in Texas and Oklahoma. Squaring in the Southeast ranged from 47 to 96%; boll set ranged from 6 to 58%. In the Delta States, squaring scored from 32 to 70%, generally lagging last year and the average. Boll set in the Delta just got started. In Texas, 24% of the crop showed squares, 11% set bolls, and 1% had open bolls. The first bale of cotton for the 1979 season was ginned in the lower Rio Grande Valley, but general harvesting remained 2 to 3 weeks away. Arizona cotton ranged from bloom to mature bolls. California cotton was 85% squared and 9% setting bolls. Good weather speeded New Mexico cotton growth, but development remained 2 to 3 weeks late.

OTHER CROPS: Grain sorghum seeding advanced beyond 95% complete in the seven major producing States. Most of the crop was up to stand. In Texas, 51% of the crop was headed, 31% colored, 9% mature, and 1% harvested. Last year, Texas sorghum harvest stood at 7% and on the average 5%. Rice planting was virtually complete. Heading ranged from 30% in Louisiana to 47% in Texas; 2% of the Texas crop began coloring.

FRUITS & NUTS: Peach harvest slowly advanced northward through the Carolinas and into south-side Virginia. Peach picking progress ranged from 29% in South Carolina and Mississippi to 18% in North Carolina and 62% in Georgia. Peaches were sizing well further north. Apple harvest continued in southern areas, while fruit sized in northern areas; Washington growers continued to hand-thin the crop. Sweet cherry picking advanced into Pennsylvania and reached 20% complete in Oregon. Apricots colored in Washington. California growers harvested peaches, nectarines, plums, and grapes.

Florida citrus groves rated good; afternoon thundershowers held soil moisture adequate. Valencia harvest was almost done. Texas citrus growers sprayed groves. The Arizona citrus rated good. The California citrus harvest advanced on schedule.

VEGETABLES: Vegetable growers in northern production areas harvested green peas. Growers in the middle Atlantic States harvested a wide variety of summer vegetables including sweet corn, tomatoes, peppers, eggplant, lettuce, cucumber, and snap beans. The melon harvest advanced northward into the Carolinas. Florida vegetable picking declined seasonally with only light volumes of sweet corn, cucumbers, eggplant, peppers, and tomatoes. Texas growers harvested a wide range of crops; volume declined from southern areas but increased farther north. Insects and diseases plagued some parts of Texas. California growers harvested some broccoli, melons,

(continued on page 15)

Temperature and Precipitation Data for the Week Ending Midnight, 1.s.t., July 1, 1979

| States and Stations | Temperature °F | | Precipitation Inches | | States and Stations | Temperature °F | | Precipitation Inches | | States and Stations | Temperature °F | | Precipitation Inches | |
|--------------------------|----------------|-----------|----------------------|-----------|---------------------------|----------------|-----------|----------------------|-----------|-------------------------|----------------|-----------|----------------------|-----------|
| | Average | Departure | Total | Departure | | Average | Departure | Total | Departure | | Average | Departure | Total | Departure |
| ALA. Birmingham . . . | 74 | - 5 | 0 | - 1.1 | LA. Baton Rouge . . . | 81 | - 1 | T | - 1.1 | Youngstown . . . | 63 | - 7 | .9 | + .1 |
| Mobile . . . | 80 | - 1 | .6 | - 1.2 | Lake Charles . . . | 82 | 0 | .4 | - .9 | OKLA. Okla. City . . . | 79 | - 0 | .5 | + .3 |
| Montgomery . . . | 76 | - 4 | 0 | - 1.1 | New Orleans . . . | 83 | + 2 | .7 | - 1.3 | Tulsa . . . | 79 | - 1 | .2 | + .8 |
| ALASKA Anchorage . . . | 55 | - 2 | 1.4 | + 1.0 | Shreveport . . . | 79 | - 3 | .1 | - .6 | OREG. Astoria . . . | 59 | + 1 | .9 | + .4 |
| Barrow . . . | 33 | - 5 | T | - .1 | MAINE. Caribou . . . | 64 | + 1 | 1.2 | + .4 | Burns . . . | 66 | + 3 | .1 | - .1 |
| Fairbanks . . . | --- | --- | --- | --- | Portland . . . | 61 | - 4 | 2.4 | + 1.7 | Medford . . . | 69 | + 1 | T | - .1 |
| Juneau . . . | --- | --- | --- | --- | MD. Baltimore . . . | 69 | - 6 | .5 | - .4 | Pendleton . . . | 71 | + 2 | .1 | - .1 |
| Kodiak . . . | 52 | 0 | .7 | - .2 | MASS. Boston . . . | 68 | - 3 | .4 | - .3 | Portland . . . | 67 | + 3 | .2 | - .1 |
| Nome . . . | --- | --- | --- | --- | Chatham . . . | 61 | --- | .5 | - .- | Salem . . . | 64 | 0 | .1 | - .1 |
| ARIZ. Flagstaff . . . | 65 | + 3 | T | - .3 | MICH. Alpena . . . | 59 | - 5 | 1.4 | + .8 | PA. Allentown . . . | 67 | - 5 | .6 | - .3 |
| Phoenix . . . | 97 | + 9 | T | - .1 | Detroit . . . | 65 | - 6 | 2.2 | + 1.4 | Erie . . . | 63 | - 4 | 2.4 | + 1.6 |
| Tucson . . . | 90 | + 5 | .2 | - 0 | Flint . . . | 65 | - 4 | 2.7 | + 1.9 | Harrisburg . . . | 67 | - 8 | 2.2 | + 1.4 |
| Winslow . . . | 79 | + 4 | T | - .1 | Grand Rapids . . . | 67 | - 3 | 1.8 | + 1.0 | Philadelphia . . . | 69 | - 6 | .1 | - .8 |
| Yuma . . . | 95 | + 5 | 0 | - 0 | Houghton Lake . . . | 61 | - 4 | 1.4 | + .6 | Pittsburgh . . . | 66 | - 5 | .9 | + .1 |
| ARK. Fort Smith . . . | 76 | - 4 | .7 | - .1 | Lansing . . . | 65 | - 5 | 3.7 | + 2.9 | Scranton . . . | 63 | - 8 | .2 | - .7 |
| Little Rock . . . | 76 | - 4 | .1 | - .7 | Marquette . . . | 60 | - 2 | .6 | - .4 | R.I. Providence . . . | 64 | - 6 | .4 | - .2 |
| CALIF. Bakersfield . . . | 80 | 0 | 0 | - 0 | Muskegon . . . | 64 | - 4 | 1.2 | + .6 | S.C. Charleston . . . | 75 | - 4 | .4 | - 1.3 |
| Eureka . . . | 56 | 0 | 0 | - .1 | S. Ste. Marie . . . | 58 | - 4 | 3.1 | + 2.4 | Columbia . . . | 71 | - 10 | .7 | - .4 |
| Fresno . . . | 77 | 0 | 0 | - 0 | MINN. Duluth . . . | 66 | + 4 | .9 | - .1 | Greenville . . . | 68 | - 10 | .3 | - .7 |
| Los Angeles . . . | 74 | + 4 | 0 | - 0 | Internatl Falls . . . | 62 | - 2 | 1.0 | - 0 | S.D. Aberdeen . . . | 71 | + 2 | .1 | - .7 |
| Red Bluff . . . | 79 | 0 | 0 | - .1 | Minneapolis . . . | 70 | 0 | 1.6 | + .7 | Huron . . . | 76 | + 5 | .1 | - .7 |
| San Diego . . . | 72 | + 5 | T | - 0 | Rochester . . . | 71 | + 2 | 1.4 | + .4 | Rapid City . . . | 70 | + 2 | .4 | - .4 |
| San Francisco . . . | 59 | - 3 | T | - 0 | St. Cloud . . . | 67 | - 1 | 1.3 | + .3 | Sioux Falls . . . | 73 | + 2 | .2 | - .7 |
| Stockton . . . | 72 | - 2 | 0 | - 0 | MISS. Jackson . . . | 76 | - 5 | .4 | - .5 | TENN. Chattanooga . . . | 73 | - 5 | .1 | - .9 |
| COLO. Denver . . . | 75 | + 5 | T | - .4 | Meridian . . . | 75 | - 6 | .5 | - .5 | Knoxville . . . | 71 | - 6 | .3 | - .7 |
| Grand Junction . . . | 78 | + 3 | .3 | + .2 | MO. Columbia . . . | 70 | - 6 | 1.1 | + .1 | Memphis . . . | 77 | - 4 | .4 | - .4 |
| Pueblo . . . | 76 | + 2 | T | - .4 | Kansas City . . . | 72 | - 4 | .6 | - .7 | Nashville . . . | 73 | - 6 | T | - .8 |
| CONN. Bridgeport . . . | 67 | - 4 | .6 | - 0 | St. Louis . . . | 74 | - 3 | 1.1 | + .1 | TEX. Abilene . . . | 82 | - 1 | 1.7 | + 1.1 |
| Hartford . . . | 67 | - 4 | T | - .8 | Springfield . . . | 69 | - 7 | 3.4 | + 2.4 | Amarillo . . . | 77 | 0 | .4 | - .4 |
| D. C. Washington . . . | 72 | - 5 | .9 | + .1 | MONT. Billings . . . | 73 | + 6 | T | - .5 | Austin . . . | 84 | + 1 | T | - .6 |
| FLA. Apalachicola . . . | 80 | - 1 | 1.2 | - .4 | Glasgow . . . | 70 | + 4 | .2 | - .4 | Beaumont . . . | 82 | 0 | 2.7 | + 1.5 |
| Daytona Beach . . . | 79 | - 1 | .3 | - 1.4 | Great Falls . . . | 68 | + 3 | .3 | - .3 | Brownsville . . . | 84 | 0 | 0 | - .5 |
| Ft. Myers . . . | 83 | + 1 | 3.5 | + 1.2 | Havre . . . | 71 | + 5 | .2 | - .3 | Corpus Christi . . . | 84 | 0 | 0 | - .5 |
| Jacksonville . . . | 77 | + 3 | .9 | - .8 | Helena . . . | 67 | + 4 | .3 | - .2 | Del Rio . . . | 85 | - 1 | 0 | - .4 |
| Key West . . . | 85 | + 1 | 2.8 | + 1.7 | Kalispell . . . | 65 | + 5 | .2 | - .3 | El Paso . . . | 86 | + 4 | .1 | - .1 |
| Lakeland . . . | --- | --- | --- | --- | Miles City . . . | 73 | + 4 | T | - .7 | Fort Worth . . . | 85 | + 2 | .2 | - .4 |
| Miami . . . | 83 | + 1 | .1 | - 1.9 | Missoula . . . | 69 | + 7 | T | - .4 | Galveston . . . | 83 | 0 | .3 | - .7 |
| Orlando . . . | 81 | 0 | .3 | - 1.6 | NEBR. Grand Island . . . | 74 | 0 | 1.2 | + .3 | Houston . . . | 82 | 0 | T | - 1.0 |
| Tallahassee . . . | 77 | - 4 | .4 | - 1.5 | Lincoln . . . | 75 | 0 | 1.8 | + .7 | Lubbock . . . | 83 | + 4 | .5 | - .1 |
| Tampa . . . | 82 | 0 | 1.3 | - .5 | Norfolk . . . | 75 | + 2 | .1 | - .9 | Midland . . . | 82 | 0 | .2 | - .2 |
| W. Palm Beach . . . | 81 | - 0 | T | - 1.9 | N. Platte . . . | 72 | + 1 | 1.4 | + .6 | San Angelo . . . | 81 | - 2 | T | - .4 |
| GA. Atlanta . . . | 75 | - 2 | .2 | - .8 | Omaha . . . | 74 | + 1 | .2 | - .9 | San Antonio . . . | 85 | + 1 | 0 | - .5 |
| Augusta . . . | 73 | - 7 | .1 | - .9 | Valentine . . . | 72 | + 1 | .3 | - .5 | Victoria . . . | 84 | + 1 | .8 | + .1 |
| Macon . . . | 76 | - 6 | T | - 1.0 | NEV. Ely . . . | 68 | + 6 | 0 | - .2 | Waco . . . | 82 | - 2 | 2.8 | + 2.3 |
| Savannah . . . | 75 | - 5 | .6 | - 1.0 | Las Vegas . . . | 94 | + 8 | 0 | - .1 | Wichita Falls . . . | 85 | + 1 | 0 | - .7 |
| HAWAII. Hilo . . . | 75 | 0 | 3.3 | + 1.7 | Reno . . . | 67 | + 2 | 0 | - .1 | UTAH. Blanding . . . | 74 | + 4 | T | - .1 |
| Honolulu . . . | 81 | + 1 | T | - .1 | Winnemucca . . . | 70 | + 4 | 0 | - .2 | Salt Lake City . . . | 81 | + 10 | T | - .2 |
| Kahului . . . | 79 | + 1 | T | - .1 | N. H. Concord . . . | 64 | - 4 | 1.2 | + .4 | VT. Burlington . . . | 65 | - 3 | .3 | - .5 |
| Lihue . . . | 78 | 0 | .5 | + .1 | N. J. Atlantic City . . . | 67 | - 6 | .5 | - .3 | VA. Lynchburg . . . | 67 | - 8 | .3 | - .5 |
| IDAHO. Boise . . . | 73 | + 4 | 0 | - .2 | Trenton . . . | 68 | - 6 | .7 | - .2 | Norfolk . . . | 69 | - 8 | .1 | - .9 |
| Lewiston . . . | 72 | + 3 | .2 | - .1 | N. MEX. Albuquerque . . . | 81 | + 4 | T | - .2 | Richmond . . . | 70 | - 7 | .3 | - .7 |
| Pocatello . . . | 70 | + 4 | 0 | - .2 | Roswell . . . | 81 | + 2 | .2 | - .1 | Roanoke . . . | 66 | - 8 | .2 | - .6 |
| ILL. Cairo . . . | 77 | - 3 | T | - .9 | N. Y. Albany . . . | 67 | - 3 | .2 | - .5 | WASH. Colville . . . | 68 | + 4 | .3 | - 0 |
| Chicago . . . | 70 | - 3 | 1.1 | + .1 | Binghamton . . . | 61 | - 7 | .2 | - .6 | Omak . . . | 70 | + 3 | T | - .2 |
| Moline . . . | 70 | - 3 | .1 | - 1.0 | Buffalo . . . | 66 | - 3 | .7 | + .1 | Quillayute . . . | 56 | - 1 | .8 | + .1 |
| Peoria . . . | 70 | - 4 | .2 | - .7 | New York . . . | 69 | - 6 | .3 | - .4 | Seattle-Tacoma . . . | 62 | 0 | .7 | + .4 |
| Rockford . . . | 69 | - 2 | 1.7 | + .6 | Rochester . . . | 66 | - 4 | .7 | + .1 | Spokane . . . | 67 | + 2 | .8 | + .6 |
| Springfield . . . | 73 | - 2 | T | - 1.0 | Syracuse . . . | 66 | - 4 | .5 | - .2 | Walla Walla . . . | 74 | + 3 | .1 | - .1 |
| IND. Evansville . . . | 73 | - 4 | .4 | - .4 | N. C. Asheville . . . | 66 | - 6 | .2 | - .8 | Yakima . . . | 69 | + 1 | T | - .1 |
| Ft. Wayne . . . | 65 | - 7 | .7 | - .2 | Charlotte . . . | 70 | - 8 | T | - 1.0 | W. VA. Beckley . . . | 61 | - 9 | .3 | - .7 |
| Indianapolis . . . | 68 | - 6 | 1.5 | + .6 | Greensboro . . . | 69 | - 7 | 0 | - 1.0 | Charleston . . . | 66 | - 8 | .5 | - .4 |
| South Bend . . . | 69 | - 2 | 2.4 | + 1.5 | Hatteras . . . | 71 | - 5 | .9 | - .4 | Huntington . . . | 67 | - 7 | .5 | - .3 |
| IOWA. Burlington . . . | 71 | - 3 | T | - 1.1 | Raleigh . . . | 70 | - 6 | .3 | - .7 | Parkersburg . . . | 65 | - 9 | .8 | - .2 |
| Des Moines . . . | 72 | - 1 | 2.5 | + 1.5 | Wilmington . . . | 77 | - 2 | .2 | - 1.4 | WTSC. Green Bay . . . | 65 | - 2 | .5 | - .3 |
| Dubuque . . . | 69 | - 1 | .6 | - .6 | N. DAK. Bismarck . . . | 68 | + 1 | .2 | - .6 | La Crosse . . . | 70 | - 1 | .5 | - .5 |
| Sioux City . . . | 74 | + 1 | .2 | - .8 | Fargo . . . | 71 | + 3 | 1.5 | + .7 | Madison . . . | 65 | - 4 | 1.3 | + .3 |
| KANS. Concordia . . . | 75 | - 1 | 1.4 | + .4 | Williston . . . | 70 | + 4 | 1.6 | + .9 | Milwaukee . . . | 66 | - 2 | .9 | - 0 |
| Dodge City . . . | 79 | + 2 | T | - .8 | OHIO. Akron-Canton . . . | 64 | - 7 | 1.0 | + .2 | WYO. Casper . . . | 70 | + 4 | .2 | - .1 |
| Goodland . . . | 76 | + 3 | .3 | - .4 | Cincinnati . . . | 66 | - 8 | 1.8 | + .8 | Cheyenne . . . | 69 | + 4 | .2 | - .3 |
| Topeka . . . | 74 | - 2 | 2.6 | + 1.3 | Cleveland . . . | 64 | - 6 | 1.2 | + .4 | Lander . . . | 72 | + 6 | T | - .3 |
| Wichita . . . | 79 | 0 | .4 | - .7 | Columbus . . . | 66 | - 7 | 1.3 | + .3 | Sheridan . . . | 69 | + 4 | .3 | - .3 |
| KY. Lexington . . . | 68 | - 7 | .6 | - .5 | Dayton . . . | 67 | - 7 | 1.7 | + .8 | P. R. San Juan . . . | 84 | + 3 | 2.6 | + 1.3 |
| Louisville . . . | 71 | - 5 | .4 | - .5 | Toledo . . . | 64 | - 7 | 2.4 | + 1.6 | | | | | |

Based on 1941-70 normals

Publication of the Weekly Weather and Crop Bulletin began in 1872 as the Weekly Weather Chronicle. It is issued under general authority of the Act of January 12, 1895 (44USC 213), 53d Congress, 3d Session. Contents of the Bulletin may be reprinted freely, with proper credit.

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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 ESCS State offices in cooperation with the National Weather Service.

ALABAMA: Temperatures 4° below normal. Slight showers on 30th, otherwise dry.

Fieldwork: 5.7 days suitable. Soil moisture short. Hay, wheat, potatoes harvested. Soybeans fair to good; 95% planted, 95% 1978 and average. Sorghum fair; 82% planted, 85% 1978. Corn fair; 57% silked, 49% 1978, 44% average. Cotton fair to good; 48% squaring, 48% 1978, 58% average. Peanuts good; 26% pegging, 34% 1978, 39% average. Wheat 90% harvested, 83% 1978, 88% average. Pastures fair to good.

ALASKA: Temperatures below normal. Rainfall above normal.

Rain and cooler temperatures limited farm activities and slowed crop growth throughout railbelt. Sunny, dry conditions late week provided excellent weather for making hay. Harvest first crop hay 10% complete in Matanuska Valley. Height earliest grain fields reached 19 in., average 10 in. Most fields in preboot stage. Height of potatoes 2 to 10 in. Vegetables made good growth. Topsoil moisture adequate. Fuel supplies adequate.

ARIZONA: Record-breaking hot weather. Temperatures 3 to 9° above normal. Widely scattered showers, thundershowers eastern two-thirds.

Cotton good progress. Development ranges mature bolls in west to heavy blooming southeast. Harvest small grains virtually complete central, west; just beginning southeast. Corn, sorghum, safflower seasonal progress. Alfalfa haying full swing. Sugarbeet harvest tapering off. Lettuce harvest complete southeast. Harvest cantaloupe, watermelons increasing. Dry onion harvest virtually complete. Harvest fresh market potatoes virtually complete. Harvest chipping potatoes continued. Picking early variety grapes tapering off, harvest of Thompsons not yet peak. Citrus groves good condition. Diesel fuel, gasoline fairly adequate central, south; adequate to tight north. LP gas adequate. Range, pasture conditions generally good. Stock water, soil moisture adequate. Normal quantity feed on ranges. Cattle, calves good condition.

ARKANSAS: Temperatures near normal southwest; several degrees below normal elsewhere. Rainfall light, isolated, moderate to heavy amounts occurring during thunderstorms. Highest normal 82°; lowest 77°. Highest mean 81°; lowest 70°. Extremes: 99 to 50°.

Soil moisture adequate to short. Fieldwork: 5.7 days suitable. Fuel supplies mostly unchanged; diesel 57% tight, 37% adequate; gasoline 46% tight, 48% adequate; LP gas 91% adequate. Soybeans good to fair; planting 91%, 91% 1978, 93% average. Cotton fair condition; 32% squaring, 7% with bolls. Rice made good progress; fair condition, planting virtually completed. Corn and sorghum fair to good. Corn planting virtually completed. Sorghum planting 93%, 93% 1978, 97% average. Wheat harvest 98%, 94% 1978, 98% average. Oat harvest 95%, 98% 1978, 100% average. Tomatoes excellent. Apple harvest continued, quality excellent. Pastures fair. Cattle making good gains.

CALIFORNIA: Fair weather prevailed with no precipitation and above normal temperatures.

Barley 66% harvested, 80% last year. Wheat 60% harvested, 75% last year. Cotton 85% squared, 65% bloom, 9% setting bolls. Corn 38% tassel stage. Rice good growth. Fruit and nut crops progress normal. Spray programs on schedule. Peach harvest active June Lady, Coronet, Flavorcrest, Redtop. Early Sungrand and Independence nectarines picked. Santa Rosa plum harvest active. Thompson seedless harvest for table increased sharply. Perlette, Beauty seedless harvests over. Thinning late cling peaches. Citrus and avocado harvests normal. Sonoma Gravenstein apple harvest to begin week to 10 days. Transportation continues short, some easing from last week. Artichokes seasonally light. Broccoli slowing temporarily. Cantaloups peaking Blythe, started San Joaquin Valley. Celery harvest decreasing south coast, steady central coast. Sweet corn complete Coachella Valley, increasing other areas. Lettuce movement steady Salinas, Watsonville. Potato movement Kern district restricted due lack of cars. Strawberry fields being disced south coast as season ending. Market tomato harvest increasing, hampered by lack of transportation. Processing tomato harvest peaking desert, should start this week San Joaquin Valley. Watermelon harvest heavy Blythe, increasing San Joaquin Valley. Movement cattle summer locations completed. Ranges good, adequate stock water. Fuel situation unchanged.

COLORADO: Abundant supply of moisture fell east of Divide early week. Dry conditions prevailed mountains and west. Scattered thunderstorms along eastern foothills and plains with high winds and large hail. Temperatures near normal in Arkansas, Kansas, Rio Grande River Valleys; 2 to 4° above normal Platte, Colorado River Valleys.

Winter wheat condition good, headed 94%, 100% 1978, 100% average; turning color 63%, 85% 1978, 81% average. Corn condition good; average height 16 in., 20 in. 1978. Sorghum seeded 96%, 100% 1978, 97% average; emerged 89%, 96% 1978. Dry beans seeded 97%, 100% 1978, 99% average; emerged 86%, 94% 1978, 88% average. Sugarbeets thinned 92%, 100% 1978. Alfalfa hay first cutting 74%, 82% 1978. Ranges and pastures good to very good condition. Livestock very good condition. Gasoline and diesel fuel supplies tight to adequate. LP gas supplies adequate.

FLORIDA: Scattered to locally numerous showers, thundershowers. Rainfall averaged near 1.50 in. most areas with a few amounts exceeding 3.00 in. Temperatures moved into 90's most areas. Soil moisture short to adequate depending on thundershower activity. Corn poor condition dry areas, fair other areas; early harvest underway. Peanuts, soybeans fair condition. Sugarcane good condition. Tobacco and hay harvests active. Pastures improved; mostly good condition; however, some central area pastures only fair. Condition varied depending upon rainfall. Cattle, good condition. Citrus groves good condition, locally heavy afternoon thundershowers beneficial. Soil moisture adequate. Harvest about complete. Season essentially complete for spring vegetable crop. Watermelons moving in good volume north,

Panhandle but trucks reported in short supply. Zellwood continued to provide sweet corn but harvest declining seasonally. Light supplies cucumbers, eggplant, peppers available. Tomatoes moving in fair to good volume from Gadsden area when trucks available.

GEORGIA: Temperatures 2 to 8° below normal. Averages ranged from 67 to 78°. Rainfall generally light with only southeast and Calhoun reporting over 1.00 in.

Soil moisture varied; southern third short to mostly adequate, northern two-thirds mostly short to adequate. Fieldwork: 5 days suitable. Corn fair to good, needs moisture. Tobacco fair to good; 18% harvested, last year 14%, average 25%. Soybeans fair to mostly good; 95% planted, last year 94%. Peanuts good; 91% blooming, last year 88%; pegging 70%, last year 58%. Cotton good; 96% squaring, last year 80%; 58% setting bolls, last year 36%. Sorghum 88% planted, last year 80%. Wheat 99% combined, last year 95%. Oats 99% combined, 97% last year. Watermelons fair to mostly good; trucking shortage easing; 36% picked, last year 27%. Peaches fair to mostly good; 62% picked, last year 53%, average 69%. Apples fair to mostly good. Vegetables fair to good. Pastures fair to mostly good. Cattle and hogs good. LP gas 91% adequate, 8% tight; diesel 10% surplus, 54% adequate and 34% tight; gasoline 65% adequate, 32% tight.

HAWAII: Weather variable. Generally wetter on Island Hawaii. Some leafy crops suffered spoilage losses Kamuela, Hawaii. Other areas rains beneficial. Most leeward sections dry.

Vegetable supplies adequate, cutting active for head cabbage, quality good. Tomato supplies increasing. Wet conditions causing some spoilage chinese cabbage. Banana supplies light. Papaya supplies increasing, orchard condition fair to good. Adequate moisture. Pineapple harvest heavy. Sugar harvest steady. Pastures generally fair to good; rains keeping moisture adequate. Fuel supplies adequate.

IDAHO: Hot and dry. High 103°; low 33°. Precipitation light and spotty.

Winter wheat 85% headed, 5% turned; 85% headed 1978 and 10% turned. Spring wheat and spring barley 50% headed, same as 1978. Virtually all potatoes emerged; 67% at least 6 in. high. First crop hay 65% completed. Fieldwork: 6.6 days suitable. Soil moisture short. Farm fuel supplies adequate to tight.

ILLINOIS: Temperatures 1 to 3° above normal north, 2 to 4° below normal south. Precipitation scattered, varied 1.50 in. to less than 0.10 in.

Soil moisture short. Corn good; average height all fields 35 in., 30 in. 1978, 38 in. average; height advanced fields 50 in., 50 in. 1978, 55 in. average. Soybeans good; blooming started. Wheat 90% ripe, 61% 1978, 92% average; 35% combined, 24% 1978, 49% average. Oats 85% filled, 55% 1978, 80% average; 25% turning yellow, 12% 1978, 36% average; 6% ripe, none 1978, 10% average; conditions fair to good. Second cutting alfalfa hay 35% complete, 24% 1978, 24% average; good condition. Red clover 91% cut, 86% 1978, 89% average. Pastures good to fair. Fieldwork: 6.3 days suitable.

INDIANA: Cool, sunny. Temperatures 3° below normal and ranged from 42 to 89°. Showers averaged 1.20 in. west central and northeast;

other areas averaged 0.60 to 0.90 in. Humidities low and soil temperatures above normal.

Fieldwork averaged 6 days. Topsoil moisture short to adequate. Subsoil moisture short to mostly adequate. Wheat 5% combined, 1978 5%, average 20%; 40% ripe, 1978 15%, average 65%; 100% turned color. Corn mostly good condition; 31 in. high, 1978 24 in., average 33 in. Soybeans fair to mostly good; 9 in. high, 1978 6 in., average 9 in. Rye 10% combined, 1978 10%. Clover hay 95% harvested, 1978 90%, average 75%. Alfalfa hay 35% cut twice, 1978 25%. Fuel supplies generally adequate, but diesel and gasoline getting tighter.

IOWA: Temperatures near normal; precipitation quite variable from negligible amounts in eastern and westernmost areas to moderate heavy thunderstorms in other areas falling mostly on nights of 26th and 28th.

Fieldwork: 4.6 days favorable. Topsoil and subsoil moisture adequate. Corn 97% cultivated first time; height averaged 29 in., last year 31 in. Soybeans 78% cultivated first time. Oats headed 91%, 1978 90%, normal 93%. First crop clover hay harvested 82%, 1978 76%, normal 73%. Crop conditions: Corn, beans, pasture, clover hay, alfalfa hay and wheat improved; oats condition unchanged. Livestock market movement slowed, transport problems.

KANSAS: Precipitation 0.25 to 0.50 in. south and west central to near 2.00 in. north central, although amounts quite variable. Temperatures averaged from mid-70's east to low 80's southwest; 2 to 5° above normal west to around 2° below normal east.

Wheat harvesting slow, 10% cut, 35% last year, 55% average. Wheat 45% ripe, 35% last year, 75% average. Sorghum planting 95%, 100% last year, 95% average. Soybeans 90% planted, equals last year, 85% average. Second cutting alfalfa 35%, last year and average 45%. Diesel fuel and LP gas supplies tightened, gasoline supply unchanged.

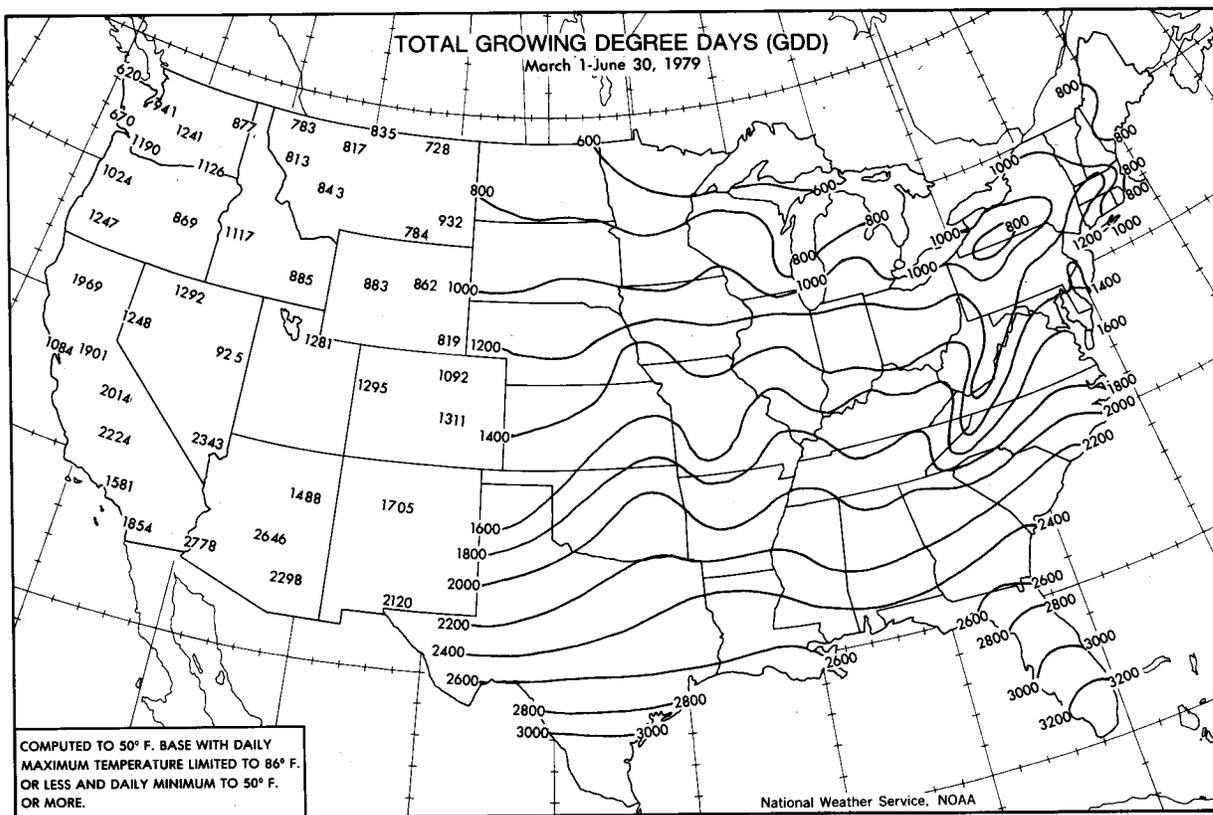
KENTUCKY: Soil moisture adequate. Fieldwork: 4.5 days suitable. Motor fuel supplies tightened; nearly half gasoline and 4 out of 10 diesel reports indicated tight supplies with several deficits. Corn 5% tasseling, last year 12%, average 16%. Emerged soybeans averaged 9 in., with planting of double crop beans continuing. Wheat harvest 67% complete. Burley mostly satisfactory condition, with about half 6 to 12 in., and 25% over 12 in. tall. Haying active, about 40% second crop alfalfa cut.

LOUISIANA: Temperatures normal to 1° above normal. Extremes: 101 and 60°.

Fieldwork: 6.0 days suitable. Soil moisture short to adequate. Soybeans fair to good; 98% planted, 99% last year; 95% emerged. Cotton fair; 41% squaring, 60% last year. Rice good; 30% headed, 36% last year. Sugarcane good. Corn fair to good; 87% tasseled, 92% last year; 45% dough. Sorghum fair to good; 93% planted, 98% last year; 90% emerged. Sweet-potatoes fair to good; 98% transplanted, 98% last year. Peach, vegetable harvests active. Hay, pasture fair to good. Cattle good.

MARYLAND & DELAWARE: Temperatures averaged 6° below normal. Highs in upper 70's to low 80's and lows in mid to upper 50's. Precipitation light, about 0.50 in.

Fieldwork: 6.5 days suitable. Soil moisture supplies adequate. Fuel supplies adequate to tight. Corn stands good. Soybean planting over



85%, 92% normal, 89% last year. Barley harvest nearly 70% complete. Haymaking continued at rapid pace, second cuttings underway. Tobacco fields virtually complete. Fruit crop prospects good.

MICHIGAN: Temperatures well below normal ranging from 1 to 7° below normal. Frost northern Lower and Upper 25th morning. Precipitation varied from 1.80 to over 3.00 in. Precipitation heavy resulting from showers and thunderstorms occurring during latter part of week. Fieldwork: 5 days suitable. Short soil moisture supplies replenished with weekend rains. Pasture feed supplies average. Corn height 16 in., 22 in. last year, 20 in. normal. Dry bean planting virtually complete, but some replanting, 97% last year, 93% normal. Wheat 45% turning yellow, 27% last year, 48% normal. Oats 50% headed, 56% last year, 54% normal. First cut hay 80% complete, 76% last year, 70% normal. Strawberry harvest 67% complete. Apple, peach, and pear sizing about average. Vegetable development catching up to normal.

MINNESOTA: Temperatures near normal to slightly above normal. Extremes: 95 and 41°. Precipitation below normal except east central and southeast which averaged up to 0.50 in. above normal. Precipitation totals generally 1.00 in. or less except for central and east central which had up to 2.50 in.

Crop conditions mostly fair to good but wide variations within areas. Topsoil moisture mostly adequate northern and southern third, surplus central third. Large acreage of hail-damaged soybeans replanted. Wet fields slowed cultivation and hay making. Height: Corn 14 in., 1978 27 in., normal 29 in.; soybeans 6 in., 1978 10 in., normal 10 in.

Heading: Spring wheat 10%, 1978 48%, normal 55%; oats 22%, 1978 56%, normal 64%; barley 7%, 1978 66%, normal 61%. Turning color: Winter wheat 3%, 1978 22%, normal 34%; rye 7%, 1978 28%, normal 37%. Flax 4% blooming, 1978 29%, normal 35%. First crop alfalfa hay 73% cut, 1978 85%, normal 85%.

MISSISSIPPI: Temperatures 4 to 8° below normal. Extremes: 53 and 96°. Scattered rain early week and again weekend. Soil moisture mostly adequate delta, central, and northern third; mostly short east central and southern third. Fieldwork 5.5 days suitable. Soybean planting, wheat harvest nearing completion. Weed control main farm activity. Soybeans 96% planted, 95% 1978, 88% average; 85% up to stand, 83% 1978, 80% average; condition good to fair. Cotton 70% squaring, 76% 1978, 63% average; 8% blooming, 10% 1978; less than 1% setting bolls; 1% 1978; 12% average; condition fair to good. Corn 60% silked, 63% 1978, 49% average; 23% dough stage, 22% 1978; condition good to fair. Sorghum 95% planted, 89% 1978, 86% average. Sweetpotatoes 98% planted, 97% 1978, 92% average. Wheat 96% harvested, 96% 1978, 96% average. Hay crops 43% harvested, 44% 1978, 38% average. Peaches 29% harvested, 29% 1978, 45% average. Watermelon 10% harvested, 6% 1978. Rice condition good. Pastures mostly good condition. Diesel supplies mostly tight; gasoline tight to adequate; LP gas adequate.

MISSOURI: Temperatures ranged 4° below normal Bootheel to 7° below normal West Ozarks. Rain variable, ranging from about 0.33 in. East Ozarks to 1.50 in. Northwest Prairie. Fieldwork: 4.2 days suitable. Grain sorghum 95% planted, last year 93%, normal 92%. Soybeans 96% planted, last year 94%, normal 93%. Wheat

turning color 100% complete, last year 97%, normal 100%; 72% ripened, last year 65%, normal 95%; 29% harvested, last year 34%, normal 60%. Second cutting alfalfa 29% complete, last year 20%, normal 42%. Other hay 73% harvested, last year 65%. Condition of corn, wheat, pasture mostly fair to good. Cotton condition mostly poor to fair. Soil moisture supplies mostly adequate. LP gas supplies mostly adequate. Gasoline and diesel fuel supplies mostly tight to adequate.

MONTANA: Few heavy thunderstorms across central and eastern sections end of week. Tornadoes, hail and strong winds accompanied some weekend thunderstorms. Temperatures 5 to 8° above normal.

Topsoil moisture short. Subsoil moisture adequate. Small grains mostly in fair condition. Sugarbeets, corn, potatoes fair to good. Fieldwork: 7 days suitable. Winter wheat 0% turning, 0% 1978, 15% average. Spring wheat 0% headed, 15% 1978, 30% average. Barley 15% headed, 15% 1978, 30% average. Oats 5% headed, 15% 1978, 30% average. Sugarbeets thinned 70%, 1978 100%, average 80%. First cutting alfalfa hay 35%, 1978 40%, average 35%. Wild hay cut 15%, 1978 25%, average 20%. Current and prospective irrigation water supplies adequate.

NEBRASKA: Temperatures 5 to 10° above normal Panhandle, near normal elsewhere. Precipitation general, 1.00 in. west, 1.50 in. central and northeast, 2.50 in. southeast. Exception was southwest with only 0.40 in.

Corn mostly good condition. Sorghum emerged 100%, year ago 100%; condition mostly good. Soybeans emerged 100%, year ago 100%; condition mostly good, a few stands uneven. Wheat turning 70%, year ago 75%, normal 90%; less than 5% ripe, year ago 20%, normal 40%; none harvested, year ago less than 5%; normal 10%; condition good to fair. Diesel fuel 20% adequate, 75% tight, 5% deficit. Gasoline 50% adequate, 45% tight, 5% deficit. LP gas adequate. Fieldwork: 3.9 days suitable.

NEVADA: Warm, high pressure pattern through most of week. Cooler end of period. Temperatures 6° above normal. Extremes: 112 and 30°. No precipitation.

Dry weather ideal for hay harvest. Warm weather also favored small grain and potato development.

NEW ENGLAND: Dry weather continued with only .50 to 1.50 in., 30th and 1st. Record low temperatures early week with readings 15 to 20° below normal, returning to normal by 28th.

Cool dry weather slowed crop development. Conditions excellent for haying. Most first cuttings hay complete. Corn fields suffer from lack of moisture, cut worms and frost. Potatoes starting into bloom stage. Some commercial vegetable growers irrigating. Irrigation becoming very costly. Transportation to off farm storage a problem. Soil moisture and available grazing very short to adequate. Fuel supplies deficit to adequate.

NEW JERSEY: Temperatures averaged 5 to 10° below normal. Extremes: 38 and 84°. Rainfall averaged 0.86 in. north, 0.52 in. central and 0.38 in. south. Soil moisture in percent of field capacity 73% north, 66% central and 63% south. Soil temperature 70° north, 72° central and south.

Fieldwork: 5.9 days suitable. Severe weekend thundershowers accompanied by hail in some scattered areas increased soil moisture. Harvest

of sweet corn, tomatoes, peppers and eggplant begun. Cabbage, cucumbers, lettuce, snap beans, escarole and "greens" moving in increasing volume. Blueberry harvest increasing. Peaches and apples sizing. Grain combining and hay making interrupted by showers. LP gas supplies adequate. Gasoline and diesel adequate to deficit.

NEW MEXICO: Warm with little day to day temperature variation. Temperatures up to 5° warmer than normal. Spotty afternoon showers mostly light but a few rain totals more than 1.00 in.

Hot dry weather conducive growth of young crops, and maturing small grains. Cotton, chile responding good growth but still 2 to 3 weeks behind normal. Alfalfa hay well along second cut, into third cut extreme south. Wheat, barley harvest past peak, slowing down major eastside. Sorghum grain mostly up to good stands. Onion harvest slowed by lack of trucks. Other crops good condition. Spraying range grasshoppers completed southeast starting northeast corner. Ranges, livestock good.

NEW YORK: Temperatures below normal, some frost in mountain valley areas. Rainfall locally heavy but averages subnormal.

Good fieldwork conditions. Dry conditions and cool temperatures slowing crop growth. Wheat, oat condition good. First cutting alfalfa 75% done, clover-timothy haying 60% done, grass silage 80% in, all same as 1978. Strawberry harvest continued. Onion, sweet corn, cabbage in good condition. Lettuce harvest starting. Apple condition good. Sweet cherry harvest underway in Hudson Valley. Pears developing well.

NORTH CAROLINA: Temperatures 6° subnormal. Precipitation subnormal.

Fieldwork: 5.5 days suitable. Soil moisture adequate. Condition: Corn, cotton, peanuts, soybeans, hay crops, Irish potatoes, sweetpotatoes, apples, peaches and pasture fair to mostly good. Tobacco fair to good. Vegetables good. Planted: Burley tobacco complete; soybeans 94%, 1978 94%, average 92%; sorghum 93%, 1978 85%, average 97%; sweetpotatoes complete, 1978 94%, average 95%. Harvested: Wheat 78%, 1978 70%, average 80%; oats 86%, 1978 83%, average 84%; barley 92%, 1978 89%, average 88%; rye 87%, 1978 83%, average 84%; peaches 18%, 1978 20%, average 32%; hays 54%, 1978 64%, average 59%; Irish potatoes 51%, 1978 63%, average 63%. Corn silking 40%. Cotton squared 47%.

NORTH DAKOTA: Warm temperatures and scattered showers prevailed. Highs mostly 80's, lows mostly 50's with averages 3 to 5° above normal. Extremes: 91 and 41°. Rain varied from trace several locations to over 0.30 in. northwest.

Scattered showers improved conditions parts of drier west, but areas receiving little or no precipitation still need general rain. Warm temperatures led to rapid crop development south and east where additional moisture will soon be needed southeast. Crop conditions generally good except drier areas where late crop emergence poor. Grasshopper presence increasing with spraying central and east. Cutworm and beetles also problem in sunflowers.

OHIO: Cool weather and abundant rain. Temperatures 2 to 6° below normal. Rainfall from 0.40 to 2.00 in. with average near 1.00 in. Growing degree day accumulations fell by 20 to 40 units.

Finishing hay making, cultivation, second cutting hay underway. Corn considerably ahead of normal. Beans variable from poor to excellent. Corn height 30 in., 24 in. 1978, 23 in. average. Soybean height 11 in., 7 in. 1978, 11 in. average. Wheat ripe 10%, 10% 1978, 35% average. Wheat harvested 1%, 0% 1978, 10% average. Clo-tim hay cut 85%, 80% 1978, 85% average. Oats ripe 5%, 5% 1978, 5% average. Oats turning 95%, 95% 1978, 95% average. Fieldwork: 6 days favorable. Pasture condition good. Soil moisture adequate.

OKLAHOMA: Temperatures averaged from 2 to 4° above normal west and south but 1 to 3° below normal elsewhere. All divisions reported precipitation but amounts light. Largest average 0.47 in. south central.

Wheat harvest active northern two-thirds; wind-up stage south. Wheat harvested 75%, 90% 1978, 95% average. Sorghum planted 100%, 100% 1978, 100% average; up to stand 90%, 75% 1978, 80% average. Cotton planted 100%, 100% 1978, 100% average; up to stand 90%, 95% 1978, 90% average. Fieldwork: 5.6 days suitable.

OREGON: Maximum temperatures low 70's to mid-90's. Minimum temperatures generally mid-30's to upper 40's. Temperatures about 6° above normal. Little rain. North central, south central and northeast, only areas with precipitation, each with 0.10 in. Weekend brought additional rain to many areas.

Soil moisture mostly short with some areas adequate. Scattered weekend rains brought relief to many areas. Winter wheat 98% headed, 78% turning color. Wheat harvest underway in a few isolated fields in Morrow-Umatilla area. Many spring wheat fields showing stress due to hot, dry weather. Some winter barley being harvested. Grass seed windrowing well underway with weekend rains causing some concern. First cutting hay about complete with good quality. Second cutting alfalfa hay underway. Grasshoppers main problem in many eastern areas. Weather holding up spray programs. Most damage to range lands, although reports of some crop damage. Strawberry harvest essentially complete. Bushberry and cherry harvests underway. Cherry splitting evident in many orchards. Other tree fruit and nut crops progressing normally. Vegetables generally look good. Beans starting to bloom. Cucumbers approaching vining stage. Pea harvest nearing completion in Umatilla County. Potatoes showing good growth in most areas. Livestock mostly good condition. Range and pastures vary from fair to good condition depending on soil moisture.

PENNSYLVANIA: Third consecutive cooler than normal week. Daytime temperatures 60's and 70's beginning, 70's to low 80's weekend. Nighttime readings 30's and 40's early week, 50's and 60's latter half. Extremes: 84 and 30°. Dry first half, showers and thunderstorms latter half. Some locally damaging winds, heavy rain and hail. Temperatures 4 to 7° below normal. Rainfall variable; over 2.50 to under 0.25 in.

Fieldwork: 6 days suitable. Soil moisture adequate to short. Activities: Spraying; cultivating; making hay; filling silos; combining barley and wheat; picking cherries and raspberries. Corn height 17 in., 15 in. last year. Tobacco transplanting virtually complete. Barley 18% harvested, last year 5%. Wheat 30% headed, 64% turning yellow; last year 45% turning. Oats 69% headed, last year 60%. Alfalfa first cut 88% complete; second cutting alfalfa 7% complete. Clo-tim 77% complete. Hay quality good.

PUERTO RICO: Island average rainfall 2.06 in. or 0.87 in. above normal. Temperatures averaged about 82° on coasts and 76° interior. Extremes: 95 and 60°.

SOUTH CAROLINA: Temperatures below normal, ranging from considerably below normal midweek to near normal end of period. Daily record low temperatures established on two days. Scattered showers at beginning, end of week with scattered hail 30th.

Soil moisture adequate. Fieldwork: 5.4 days suitable. Percent of reports with tight fuel supplies: LP gas 14%; diesel 37%; gasoline 35%. Corn condition good, rains needed this week; 3% mature; dough stage 40%, same as last year. Cotton fair to good in cool weather, 6% setting bolls, 11% last year. Peanuts fair to good. Soybeans good condition, 96% seeded, 93% last year, 94% average. Tobacco condition generally good, few slow in topping; 83% topped, 55% last year. Peaches good to excellent condition, sizing well with favorable moisture, most areas starting irrigation. Shipments delayed some by trucking strike. Peaches harvested 29%, 26% last year, 36% average. Tomatoes 56% harvested, some left in fields due to truck strike, condition good. Watermelons 20% harvested, same as 1978, some vine disease problems due to cool, damp weather; generally good condition.

SOUTH DAKOTA: Temperatures near normal. Rainfall spotty. Precipitation 0.38 in. northeast, 0.36 in. southeast, 0.49 in. central and west.

Topsoil moisture supplies short portions of north and west, adequate to surplus elsewhere. Fieldwork: 4.5 days suitable. Farm fuel supplies tight to adequate. Grasshoppers remain problem west. Crops improved west and north central; good to excellent elsewhere. Winter wheat 97% headed, 1978 100%, average 100%. Rye 100% headed, 1978 100%, average 100%. Oats 66% headed, 1978 66%, average 82%. Spring wheat 55% headed, 1978 54%, average 75%. Barley 65% headed, 1978 71%, average 83%. Winter wheat 24% turning color, 1978 58%, average 61%. Rye 21% turning color, 1978 61%, average 63%. Flax 21% blooming, 1978 26%, average 44%. Corn 86% cultivated 1st time, 1978 89%, average 95%. Corn height 14 inches, 1978 17 inches, average 20 in. Alfalfa 1st cutting 70% harvested, 1978 89%, average 87%. Wild hay 11% harvested, 1978 23%, average 19%.

TENNESSEE: Fair weather most of week. Showers early week; amounts averaged 1.00 in. Temperatures 4 to 8° below normal.

Soil moisture adequate. Fieldwork: 5.1 days suitable. Soybeans planted 94%, 1978 94%, average 86%. Corn silked 7%, 1978 17%, average 21%. Cotton squaring 21%, 1978 31%, average 50%. Wheat harvested 85%, 1978 76%, average 75%. Oats harvested 75%, 1978 67%, average 65%. Barley harvested 83%, 1978 79%, average 78%. Corn and cotton fair condition. Soybeans, small grains, and pastures good condition. Fuel supplies tightening.

TEXAS: Precipitation below normal across High Plains region; much below normal East Texas, coast, south central Texas, South Texas, and Lower Valley; near normal Blacklands, Cross-Timbers, and Edwards Plateau regions; above normal elsewhere.

Summer weather promoted rapid growth all crops. First bale cotton crop ginned in lower Rio Grande Valley June 24. Cotton planting complete by weekend. Good stands prevail. American Pima cotton blooming in west while bolls being set in upland fields as far north as Blacklands. Harvesting acti-

vities several weeks away in lower Rio Grande Valley. Grain sorghum planting nearing completion. Insect damage medium to light with midge control measures in east and younger fields south. Harvesting operations began south and valley. Wheat harvest centered on High Plains at weekend. Soybean planting winding down. Fuel for farming continued recent trend toward tighter supplies. Cotton planted 100%, 100% 1978, 99% average; squaring 24%; setting bolls 11%; open bolls 1%. Rice headed 47%; turning color 2%. Sorghum planted 99%, 99% 1978, 98% average; headed 51%; turning color 31%; mature 9%; harvested for grain 1%, 7% 1978, 5% average. Wheat harvested 68%, 79% 1978, 87% average. Barley harvested 78%, 95% 1978, 95% average. Oats for grain 98%, 98% 1978, 99% average. Peanuts planted 94%, 94% 1978, 92% average. Soybeans planted 96%, 83% 1978, 88% average.

Lower Rio Grande Valley cantaloup, honeydew melon, watermelon harvests near completion. Supplies bell peppers, tomatoes continued to market. Onion harvest complete. Insect spraying active among citrus. Coastal Bend watermelon, cucumber harvests winding down. Laredo watermelon movement slowed by shortage of trucks. Eagle Pass harvest of cantaloups, cucumbers active. San Antonio-Winter Garden onion, cucumber, cabbage, tomato, cantaloup harvests active. Watermelon harvest in full swing although truck availability limited. East Texas harvests tomatoes, sweet corn, peas, beans, onions, potatoes, early watermelons active. Insects and disease plague most areas. Central Texas tomato harvest active. Although behind schedule, watermelons making favorable progress. Grasshopper populations on increase. North Texas cantaloups, watermelons making good progress. Grasshoppers increasing. High Plains harvest of few early onion and potato fields underway. Trans-Pecos onion, cabbage harvest at El Paso. At Pecos, cantaloups making good progress. Peach harvest mid-season varieties in full swing throughout central and east. Hill Country freestones in good supply. Pecans making good progress as nutlets continued to size. Aphid infestations increasing in north, central, and south central.

Hot, dry conditions over most of State while scattered rainfall brought relief to rangeland, pastures some areas of High Plains, Central Texas. Available forage supplies above average, however additional moisture needed many areas to maintain range and pasture conditions. Grasshopper populations continued increase from High Plains, across north into central. Livestock condition ranged from fair to excellent.

UTAH: Few isolated showers extreme northwest forepart period and few thunderstorms, generally dry, over weekend. Accumulated moisture generally very light. Rising trend temperatures with averages ranging from 1 to 8° above normal.

Soil moisture deficit many ranges and dryland farms becoming quite serious. First cutting alfalfa nearing completion. Fieldwork: 7 days suitable. Winter wheat 85% headed, little ripening. Spring planted small grains 60% headed. Grasshoppers and cutworms problem some areas. Vegetable prospects good. Green peas 50% harvested. Blight some tomatoes. Sweet cherries 20% picked. Livestock good condition; insects, fleas, mosquitoes, a problem. Feed supplies deteriorating especially lower elevation. Fuel supplies generally adequate but diesel and gasoline along Wasatch front.

VIRGINIA: Cool first half followed by warming trend with average temperatures several degrees below normal. Extremes: 90 and 40°. Rainfall

moderate; averaged 0.50 in. occurring mainly last half of period.

Topsoil moisture mostly adequate. Fieldwork: 5.3 days available. Fuel supplies tightening. Corn 7% silked, 8% 1978, 13% average. Soybeans 85% planted, 79% 1978. Small grain combining: Wheat over 50%, 36% 1978, 56% usual; barley 80%, 72% 1978, 83% average; oats over 25%, 37% 1978, 60% usual. Pasture, corn, soybeans, tobacco in good condition. Peanuts in fair condition. Blue mold developing on tobacco in southside areas. Orchardgrass seed harvested. Sorghum planted. Peaches picked southside. Eastern Shore: Potato digging continued, some relief from truck shortage; cucumbers, snapbeans harvested; sweetpotatoes set.

WASHINGTON: West: Temperatures 3° below normal to 4° above normal. Precipitation well below normal. Sunny skies prevailed until weekend showers hit.

Weekend rain welcome to many fields with low moisture supply. Some hay down when rain fell. Strawberry picking winding down. Raspberry harvest started, quality good but yields down due to winter injury. Green pea, other vegetable harvests active. Spinach roguing continued. Hay harvest in full swing.

East: Temperatures 2 to 9° above normal. Precipitation much below normal. Hot, dry weather until weekend rain.

Cherry harvest in full swing. Hand thinning apples continued. Apricots coloring. Green pea harvest continued. Walla Walla sweet onion harvest in full swing, showing good quality. Potatoes looking good. Asparagus cutting done, farmers working fields. Alfalfa seed crops in bloom. Honey bees suffering pesticide damage. Rains helped dryland crops. Wheat turning color. Grasshoppers continue to plague rangeland, reported moving to cropland. Spraying active. Haying progressing with poor prospects for second cutting. Farmers working summerfallow, preparing for harvest. Wheat headed 95%, 1978 93%.

WEST VIRGINIA: Temperatures well below normal. Extremes: 88 and 32°. Precipitation below normal. Frost 26th, eastern mountains.

Fieldwork: 4.6 days suitable. Soil moisture adequate to surplus. Main farm activities: haying, corn planting, harvesting barley. Barley harvested 8%, 13% 1978. Wheat 14% ripe, harvest beginning. Oats 45% preheaded, 42% headed, 12% ripe, 1% harvested. Corn good condition, planting virtually complete. Tobacco 77% set, 83% 1978; condition fair. Hay good condition; 1st cutting 66%, 75% 1978; 2d cutting less than 10%. Pastures good. Fuel supply adequate to tight.

WISCONSIN: Week began with cool morning temperatures 25th, frost in low areas. Temperatures averaged near normal north and west, below normal south and east. Highs 70's and 80's. Extremes: 88 and 36°. Scattered thunderstorms extreme northwest 25th to 26th. Showers and thunderstorms 28 to 29th, heaviest amounts 1.00 to 2.00 in. central and southeast. Some severe storms evening 29th, several funnel clouds but no damage. Scattered showers 30th but sunny and pleasant 1st.

Good haying progress. Fieldwork: 6 days suitable. First crop hay 80% harvested, 1978 80%, normal 65%. Little demand for surplus hay. Second crop growth coming better after rains. Corn and soybeans helped by needed moisture southern half. Corn 20 in. height, 1978 24 in., normal 22 in. Early corn well over knee high south but not knee high north. Corn nipped by

frost low areas south. Oats 35% headed, 1978 55%, normal 55%. Oats mostly headed south, behind north due to late planting. Small grains look good, winter wheat starting to change color. Pastures in good condition. Potatoes and cranberries in bloom. Tobacco plants off to good start with latest moisture. Sweet corn and other vegetables fair to good. Topsoil moisture short south, adequate north.

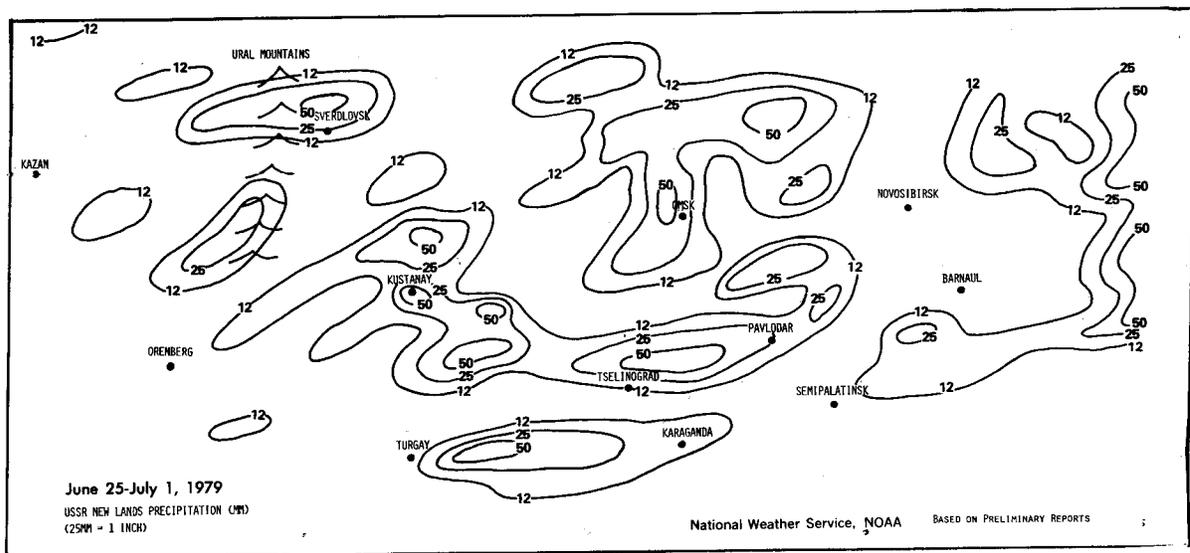
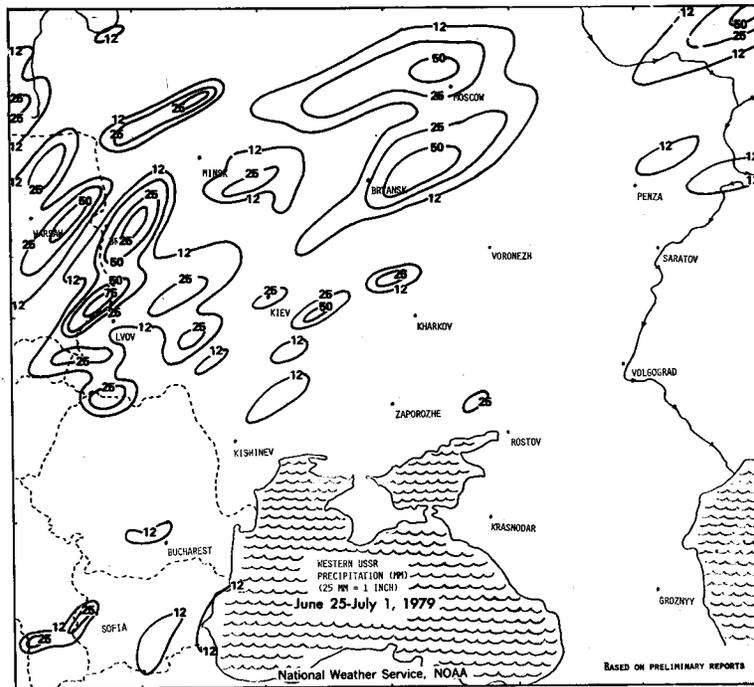
WYOMING: Temperatures above normal. Precipitation generally below normal. Topsoil and subsoil moisture short to adequate. Percent headed: Winter wheat 89%, spring wheat 44%, barley 56%, oats 34%. Sugarbeets 90% thinned. Hay harvested: Alfalfa 36%, other 14%. Fieldwork: 6 days suitable. Some hail damage. Ranges, pastures fair to good condition. Stock water supplies mostly adequate. Livestock moving to mountain ranges.

World Weather and Crop Update

June 25 - July 1

USSR. The main winter grain areas of the Soviet Union were generally dry again this week with another major sukhovei (hot, dry wind) sweeping over the lower Volga River region, the eastern Ukraine and parts of the southern Urals, beginning on Wednesday. A cool weather system moved through the Ukraine over the weekend but produced no moisture in the hardest hit areas. The system did

help to bring another week of good moisture to the extreme western Ukraine, Belorussia, and the Balkan States. The winter grain harvest is underway in parts of the southern Ukraine---10 to 14 days ahead of normal. The spring grain areas of the New Lands received good moisture again this week. Soil moisture levels are unusually high for this normally semi-arid region.

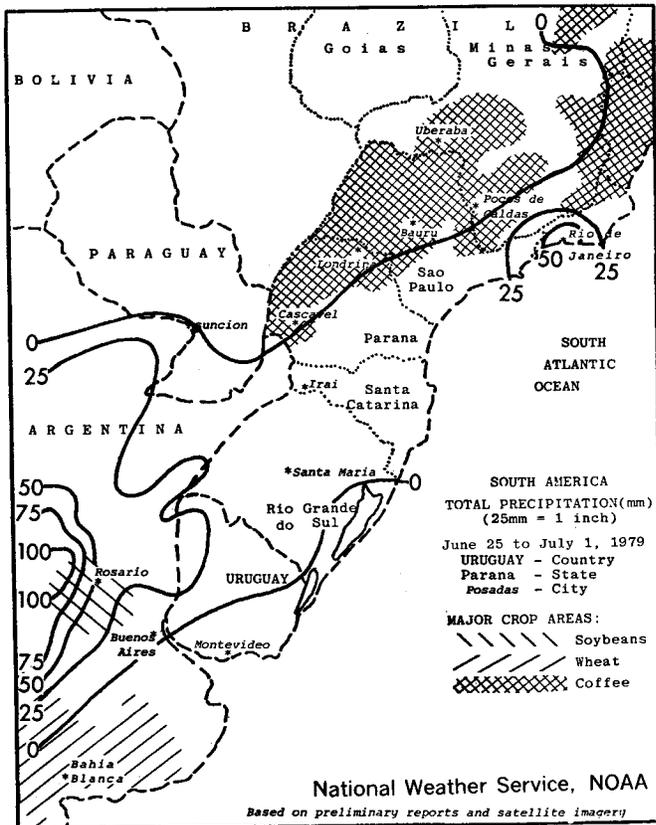
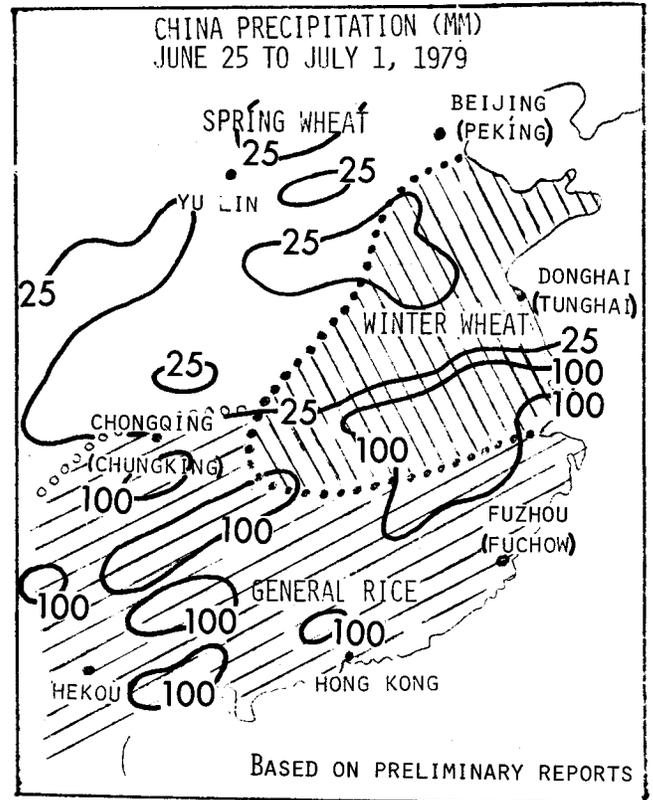


CHINA. Heavy rains drenched eastern China with amounts of 100 to 200 mm in an area centered around Anhui. Considerable flooding has been reported. Anhui is an important producer of both wheat and rice, although the wheat harvest is likely completed. The winter grain harvest is nearing completion in all areas with activity limited to northern producing areas. Nearly 25 mm fell over the region this past week, and this may have interfered with harvest progress.

AUSTRALIA. Near-normal rains (6 to 15 mm) fell over the main winter grains areas of Australia. Grains should be in generally good condition as they enter dormancy.

INDIA-SOUTHEAST ASIA. Monsoon rainfall penetrated well northward for the first time this past week, pushing rainfall amounts close to expected monthly normals. However, activity was very light over some south central and southeastern states, although it was picking up over the weekend. Planting of the main rice crop, which is one to 3 weeks behind schedule, should now be able to move forward at a good pace. Good rains also continued over Bangladesh, but slackened markedly over the remainder of Southeast Asia. With the good rains of recent weeks, crops throughout the region should be in excellent condition.

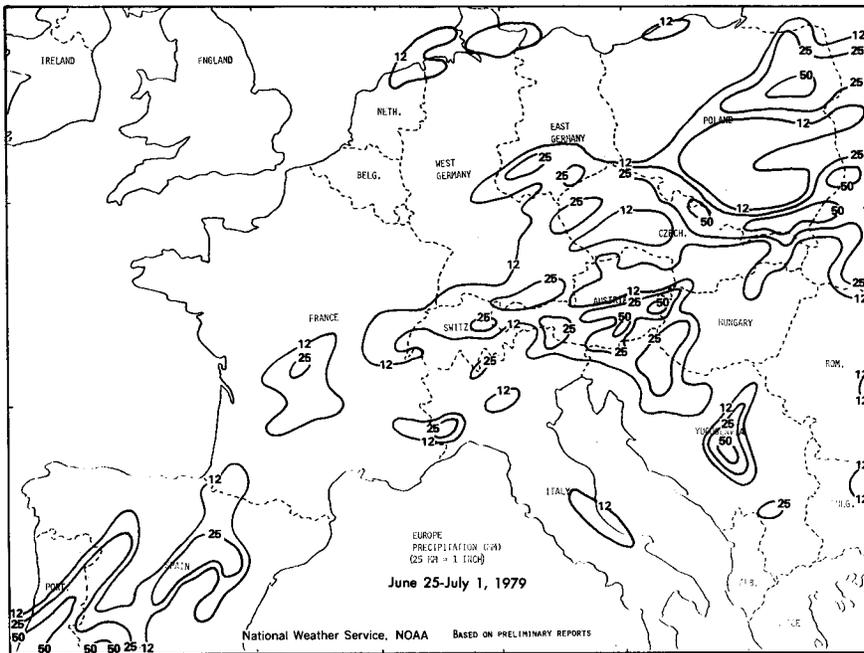
CENTRAL AFRICA. Rainfall across central Africa tapered off this week with well-below-normal amounts in most areas. Upper Volta and northern Togo stood as the only exceptions, where near-normal amounts of 30 to 50 mm fell. Crops should be in generally good condition given the good rainfall patterns of recent weeks.



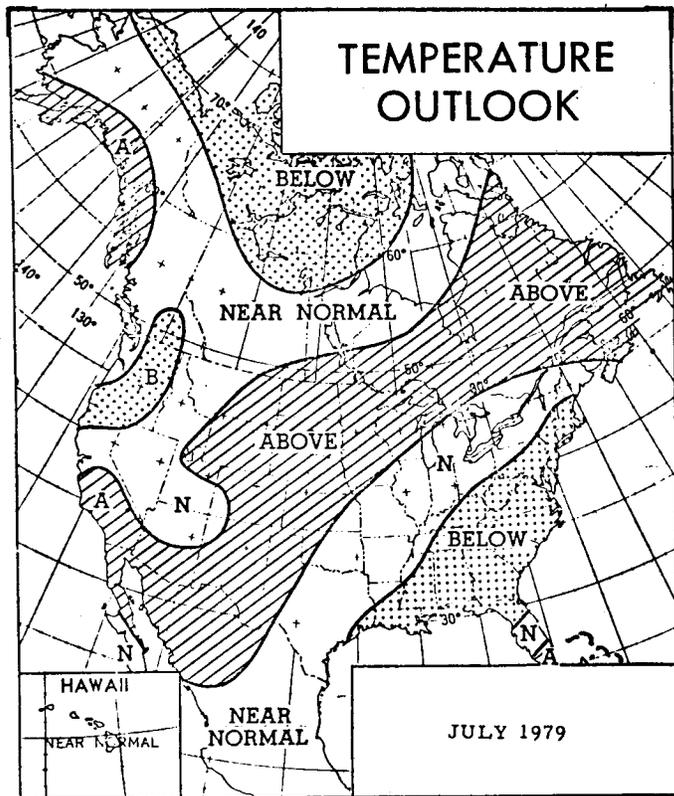
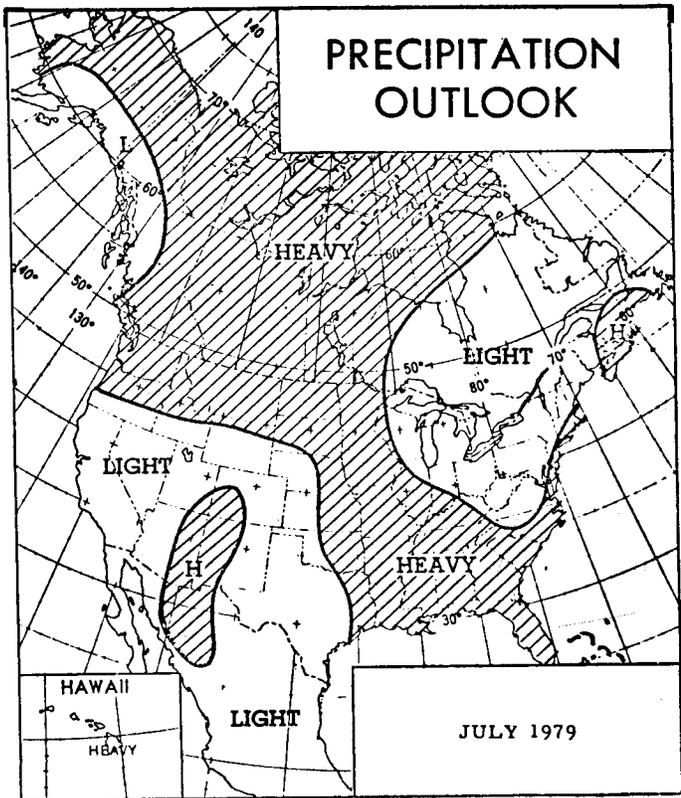
SOUTH AMERICA. Brazilian coffee areas held warm and dry this past week with temperatures well above freezing. The coffee harvest should be proceeding smoothly. In Argentina, the bulk of the winter grains area remained dry for the fourth consecutive week. Areas to the northwest did receive good rains with 50 to 100 mm falling---about equal to monthly normals.

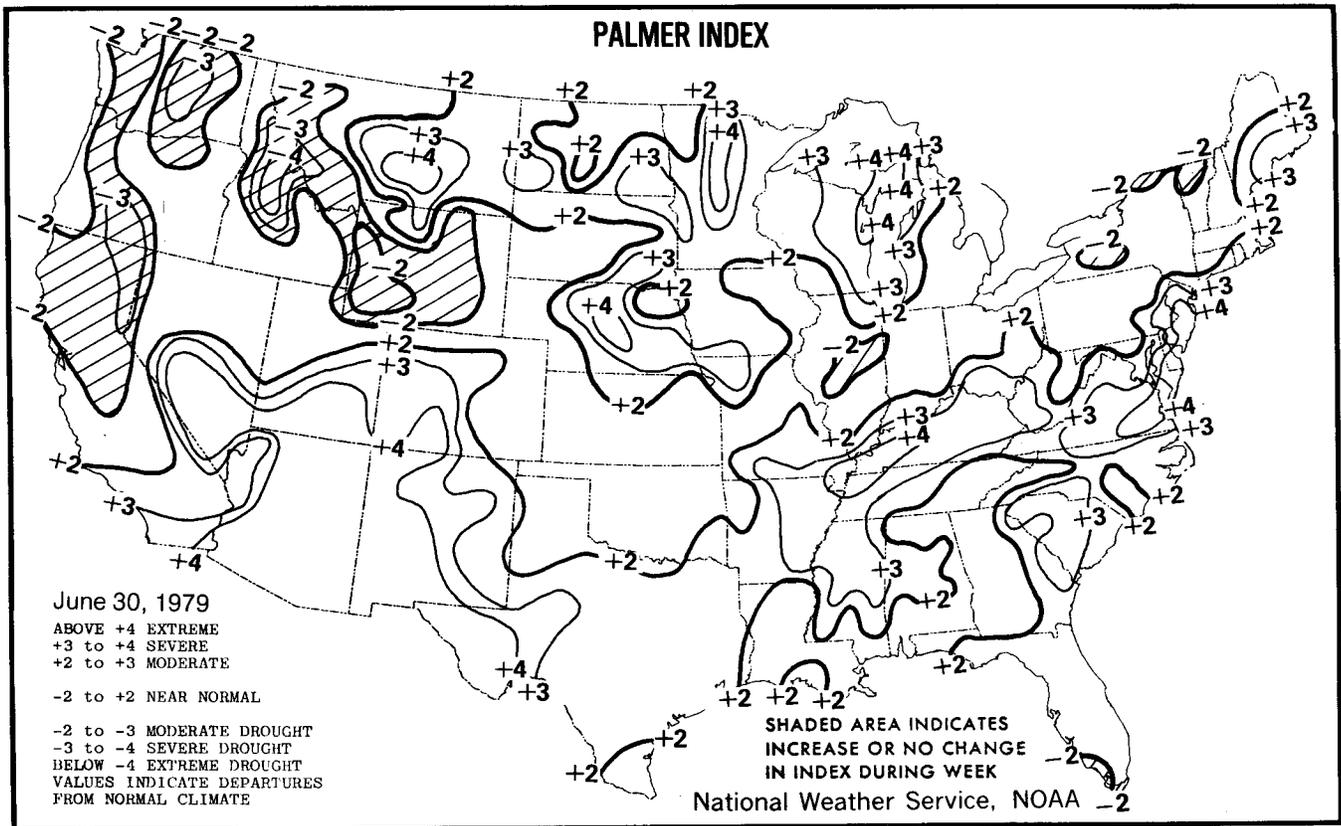
EUROPE. Rainfall across most of Europe fell well below normal this week, except in portions of central and eastern Europe. Near-normal moisture (15 to 30 mm) dampened most of Austria, northern Yugoslavia, southern Germany, western Hungary, and western Czechoslovakia. In Poland, near-normal to above-normal amounts (15 to 25 mm) covered the

eastern areas, but central areas, which were driest, received below-normal amounts (5 to 15 mm). Western Europe was generally dry, but the wet spring and near-normal moisture in recent weeks should be providing a good soil moisture base for crop development.



Average Monthly Weather Outlook





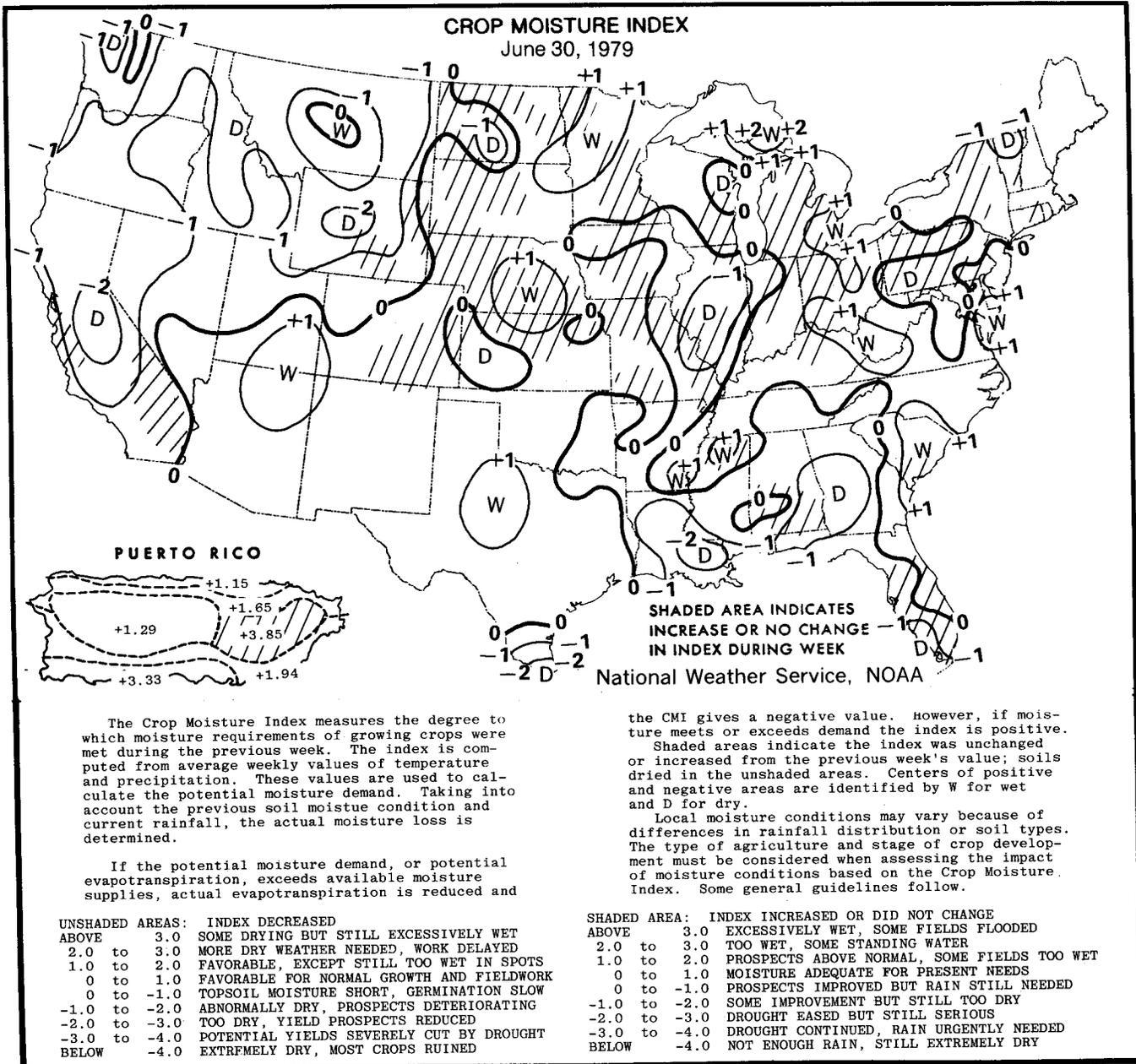
The Palmer Index

The Palmer Index is an index of meteorological drought, which may be defined as a prolonged and abnormal moisture deficiency. The general concept is one of supply and demand. Supply is represented by precipitation and stored soil moisture. Demand is the combination of potential evapotranspiration, the amount needed to recharge the soil moisture, and the runoff needed to keep the rivers, lakes, and reservoirs at a normal level. The results of this water balance accounting produce a positive or negative anomaly which is then weighted by a climate factor. The final product is an index that expresses the abnormality for that particular place for the period of time being computed. This manipulation allows the index to have a reasonably comparable local significance in space and time, that is, a certain index value obtained for a division in New York would have the same local significance as a like value in the more arid areas of western Kansas. This monthly increment is added to a portion of the previous month's index to include the duration of the anomaly in the final index.

The Palmer Index was designed as a climatological indicator of the scope and severity of past droughts. Using the Palmer Index on a real-time basis presents difficulties. A day or so of normal or better rainfall is certainly welcome in an area that has experienced a long drought, but one cannot know whether it indicates the end of the drought or just a brief respite. In order to

make the program have some real-time value, a system of computing a "probability" that a weather spell has ended was devised. This is not entirely satisfactory, but does allow one to assign a definite index value at times when there may be some doubt as to whether it should be positive (wet) or negative (dry).

Another aspect of using the Palmer Index is that one must remember that the demand part of the computations includes three parameters---potential evapotranspiration, recharge of soil moisture, and runoff, any one of which may produce a negative index. For instance if only enough rain fell to satisfy most of the expected evapotranspiration, but not enough to supply the expected recharge and runoff, then a negative index would result. If such a situation continued then one might find that agriculture was progressing at a near normal pace but the Palmer Index would be indicating a worsening drought. In this situation the drought would cause shallow wells and springs to go dry and the levels of rivers, lakes and reservoirs to fall below normal and, if this odd situation continued long enough, would cause serious economic stress to the livestock industry and eventually to other industries and cities. Then if rainfall fell below the minimum needed for agriculture, crops would suffer drastic and rapid decline because there would be no reserve water in the soil. Such a situation, to some extent, occurred during the Northeast drought in the 1960's when New York City almost ran out of water.



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.

COOL WEATHER AND LIGHT SHOWERS IN SOUTHERN ALABAMA HAVE SLIGHTLY IMPROVED THE CROP MOISTURE IN THAT AREA, BUT A LARGE PART OF GEORGIA REMAINS DRY. THE SOUTHERN PORTION OF THE ABNORMALLY DRY AREA IN ILLINOIS HAD SOME LIGHT SHOWERS. BUT MOST OF THE REGION IS BECOMING DRIER. WESTERN NORTH DAKOTA'S CROP MOISTURE HAS IMPROVED SLIGHTLY AND THE SHOWERS ARE CONTINUING. THE LARGE DRY AREA IN THE WEST IS HURTING PASTURE LANDS BUT IRRIGATION WATER IS AMPLE FOR CROPS.

(continued from page 3)

celery, sweet corn, lettuce, and both fresh market and processing tomatoes. The availability of trucks caused some delays in shipments, but the situation eased from the previous week.

PASTURES & LIVESTOCK: Pastures generally rated fair to good throughout the Nation. Rain improved growth throughout the northeast quarter. Dry soils and above-normal temperatures con-

tinued to deteriorate western rangeland, although herds found adequate forage available. Good haying weather prevailed throughout most of the Nation except in some of the Northwest, the Corn Belt, and the Northeast. Grasshoppers continued to infest grasslands in the Great Plains and parts of the West. Some reports indicated grasshoppers were moving from grasslands to cropland. Livestock rated good.

Agricultural Weather Facility
USDA South Bldg. Room 1248
Washington, DC 20250

IMMEDIATE - U. S. Weather Report

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HARVEST PROGRESS

FOR WEEK ENDING JULY 1

CROP DEVELOPMENT

| | WINTER WHEAT | | |
|-----------|--------------|------|------|
| | 1979 | 1978 | AVG. |
| CALIF | 60 | 75 | NA |
| COLO | 0 | 0 | 0 |
| IDAHO | 0 | 0 | 0 |
| ILL | 35 | 24 | 49 |
| IND | 5 | 5 | 20 |
| KANS | 10 | 35 | 55 |
| MO | 29 | 34 | 60 |
| MONT | 0 | 0 | 0 |
| NEBR | 0 | 1/ | 10 |
| OHIO | 1 | 0 | 10 |
| OKLA | 75 | 90 | 95 |
| OREG | 1/ | NA | NA |
| S DAK | 0 | 0 | 0 |
| TEX | 68 | 79 | 87 |
| WASH | 0 | 0 | 0 |
| 15 STATES | 25 | 36 | 46 |

THESE 15 STATES PRODUCED 95%
OF THE 1978 WINTER WHEAT

| | COTTON SQUARING | | |
|-------|-----------------|------|------|
| | 1979 | 1978 | AVG. |
| ALA | 48 | 48 | 58 |
| ARIZ | NA | NA | NA |
| ARK | 32 | NA | NA |
| CALIF | 85 | NA | NA |
| GA | 96 | 80 | NA |
| LA | 41 | 60 | NA |
| MISS | 70 | 76 | 63 |
| MO | NA | NA | NA |
| N MEX | NA | NA | NA |
| NC | 47 | NA | NA |
| OKLA | 0 | 0 | 0 |
| SC | NA | NA | NA |
| TENN | 21 | 31 | 50 |
| TEX | 24 | NA | NA |

NA NOT AVAILABLE
1/ LESS THAN 5%