

# WEEKLY WEATHER AND CROP BULLETIN

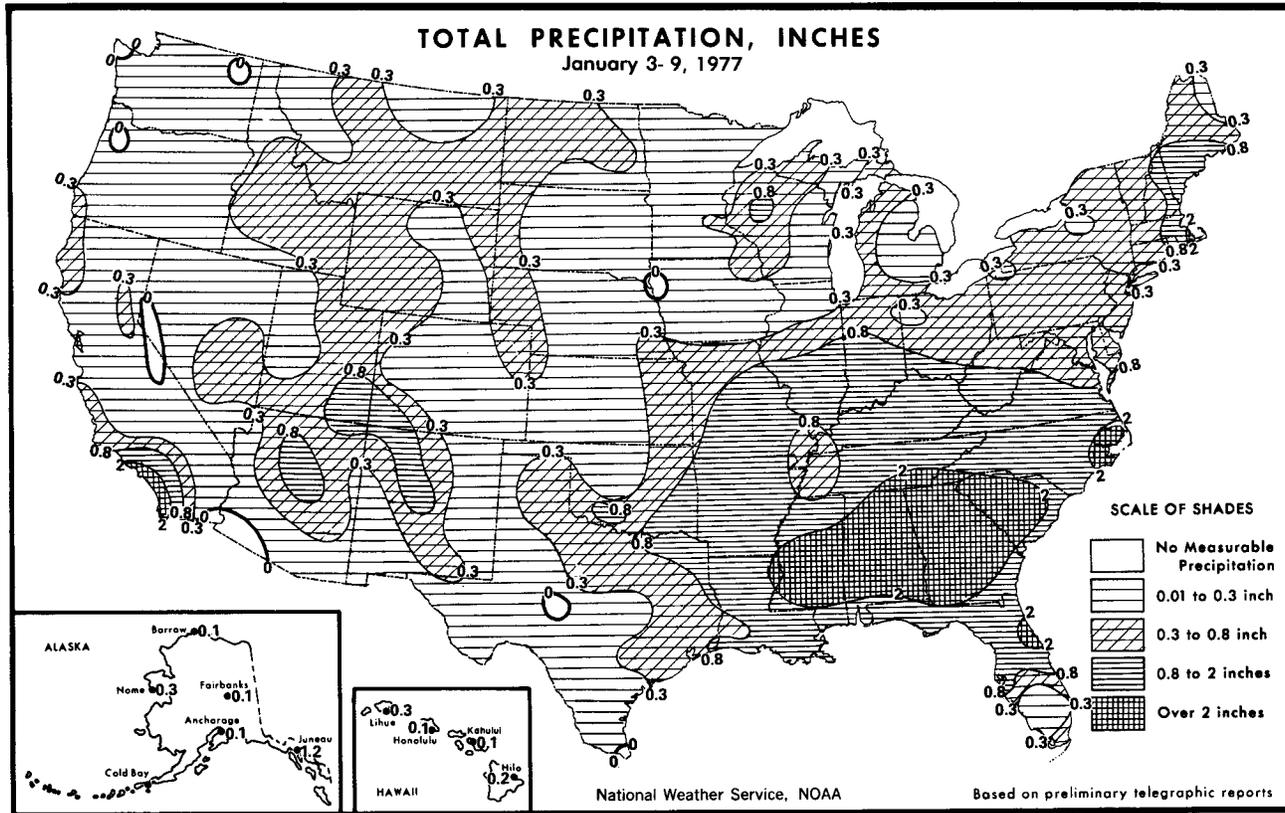
U.S. DEPARTMENT OF COMMERCE  
National Weather Service, NOAA

U.S. DEPARTMENT OF AGRICULTURE  
Statistical Reporting Service

Volume 64, No. 2

Washington, D.C.

Jan. 11, 1977



## National Weather Summary

For the Week of January 3-9

**HIGHLIGHTS:** Snow and more snow was undoubtedly the highlight of the week. All but the Deep South and the West Coast had some snow. Even in the South, Jackson and Meridian, Miss. reported traces of snow. Temperatures were below normal in nearly all of the U.S. Average temperatures were 15 to 18° below normal in the northern Plains and Rockies. The colder than normal winter continues.

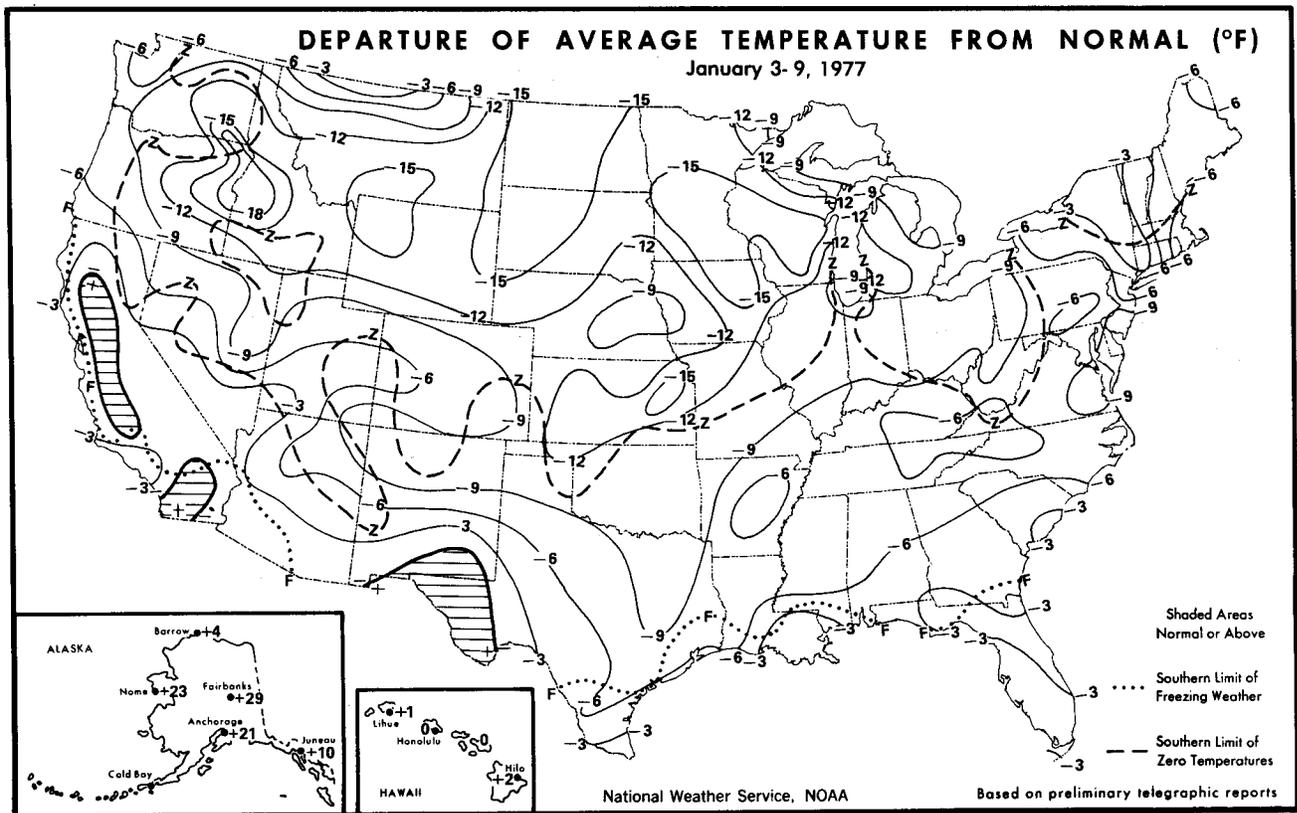
A major winter storm was raging over the Rocky Mountain region on Monday. Heavy snow fell across much of the Rockies and intermountain area adding as much as two feet of snow in some places. Rainshowers and a few thundershowers were scattered through the Southwest and much of California. A low pressure system moving eastward along the Gulf Coast spread a mixture of snow, freezing rain and rain across the lower Mississippi Valley and the Southeast. Snow continued

over the Great Lakes and the north portion of the Atlantic Coast.

Subzero weather was reported in the northern Plains Monday morning. The freezing line was well into the Southern States and westward to the Sierra Mountains.

The Rocky Mountain storm spread into the Plains and eastward on Tuesday. Snow was widespread across northern Kansas and Missouri, Iowa, the Dakotas and the northern Rockies. Later in the day it moved over the middle and lower Mississippi Valley and the west portion of the Ohio Valley. Freezing rain or drizzle fell across the south portion of Kansas and Missouri. Snow and rain mixed was scattered along the coast of New England and rainshowers were widely scattered along the Pacific Northwest Coast.

Cold air continued to pour into the northern Plains but warming occurred in the Southeast and the middle Atlantic States.



On Wednesday the midwest storm headed for the mid-Atlantic States. Snow fell from Illinois into the upper Ohio Valley, central Appalachians and the middle Atlantic States leaving behind some heavy accumulations. Later, snow was falling over the upper Mississippi Valley and the Great Lakes region and snow mixed with rain persisted along the Virginia and North Carolina Coasts. Snow started again over parts of the southern Plateau and Rockies and was spreading to central Kansas and Oklahoma. A large high pressure system extended from the Pacific Northwest to the southeast States bringing cold weather to the bulk of the U.S.

Snow was whitening the central and southern Plains again on Thursday. Although a large high pressure system was located over the central part of the Nation snow was falling over much of Kansas, Oklahoma, Missouri and Arkansas due to a disturbance in the upper atmosphere moving eastward. Later, a low pressure center formed in the Gulf of Mexico at the southern end of this trough. Rain in the South and snow in the middle Mississippi Valley and Ohio Valley moved rapidly eastward to the Appalachians. As the low center moved off the south Atlantic Coast and northward at the end of the day, snow spread into the middle Atlantic States. Rain tracked the storm from the Gulf to the Atlantic and became freezing rain in northern Georgia and turned to snow in North Carolina. Scattered showers and thunderstorms continued in southern California with snow at higher elevations.

On Friday morning the storm center was in the Atlantic off the North Carolina Coast. Snow was falling from the Great Lakes and eastern Ohio Valley across the Appalachians into the northern and middle Atlantic States. Rain and drizzle were falling over southeast Virginia and eastern

North Carolina. As the storm moved northward, heavy snow was dumped over New England.

Elsewhere, a low center in southwest South Dakota was ushering frigid arctic air into the northern Rockies and Plains. Blizzard conditions existed as winds gusted to 50 and 60 mph and temperatures skidded. These extreme conditions were moving southward through the mountains and eastward into the Plains.

The cold air was moving rapidly southward through the Plains and Rocky Mountains on Saturday. Gusty winds along the front were creating considerable blowing snow. Temperatures in parts of North Dakota and Minnesota reached 30° below zero. International Falls, Minn. recorded 36° below zero.

Snow was falling from the Great Lakes into the central Rockies. A low pressure center in New Mexico was bringing snow to a portion of Arizona and New Mexico. To make things more complex, another low center developed over the Texas coast and was moving northeastward. Rain-showers extended from southwest Texas into south Oklahoma and eastward into north Mississippi.

Sunday morning observers saw a severe winter storm brewing in the lower Mississippi Valley. The very cold arctic air had moved southward behind the newly formed low center and warmer air was being displaced ahead of it. Early Sunday, snow was falling from Texas to Illinois and rainfall increased in the lower Mississippi Valley. Temperatures fell to new record lows from Idaho to the Great Lakes. Thunderstorms and tornadoes occurred in the Southern States along with heavy rain. The storm system moved northward to Kentucky by midnight. Heavy snow was falling from the middle Mississippi Valley through the Ohio Valley, the southern and middle Appalachians and the middle Atlantic States.

## National Agricultural Summary

For the Week of January 3-9

**HIGHLIGHTS:** Temperatures plunged throughout most of the United States to as much as 17° below normal increasing the feeding requirements for livestock. Previous precipitation improved stock water supplies in some western States but additional moisture is needed. Snow cover improved over most of the Nation and especially the winter wheat areas, but in parts of some States the cover remained light and winds bared other areas. Farmers finished most row crop harvests and only a little cotton acreage remains in a few States.

**SMALL GRAINS:** Most of the Nation's winter wheat crop acquired a protective blanket of snow although areas of some States have only an inch or two while in some localities strong winds exposed the crop again. Generally the crop rated only fair for this time of the year. In Oklahoma the winter wheat condition was mostly fair after another period of dry, cold weather. Snow cover provided protection from the near zero temperature. Winds whipped snow into drifts reducing the effectiveness of the snow. Snow fell throughout Kansas but high winds swept some fields clean of the insulating blanket. The snow protected the crop but brought only limited moisture. Snows provided some protection and at least some moisture to Nebraska and Missouri. In Texas cold weather slowed winter wheat growth. Fields on the northern High Plains lie dormant but also need moisture. Farmers irrigated where water was available. The dry cold weather limited grazing forcing herdsmen to move cattle from small grain pastures.

In Montana winter wheat rated poor to fair. Snow cover protection improved but high winds blew many areas bare. Snows did not improve the soil moisture. In Wyoming the winter wheat crop suffered from both a shortage of moisture and some wind damage. In New Mexico dryland winter wheat scored poor to fair and the irrigated crop was only fair also. Some cattlemen put herds on wheat fields.

In California small grain prospects improved but need more rain and warmer temperatures. In Washington snow cover in dryland winter wheat fields varies. Very little winterkill is expected unless the crop becomes subjected to dry winds. The available soil moisture reached a record low. In Oregon the eastern winter wheat crop needs moisture. Stands showed no improvement and the affects of frosty weather remained unassessed.

In Ohio the snow provided protection for the fall sown grains. In Indiana soil moisture shortages concerned farmers. In Illinois the winter wheat crop rated fair. In Virginia winter wheat and grazing crops rated 72% of normal. North Carolina small grains were mostly fair to good. The Florida small grain crop, slowed by cold temperatures, was good.

**COTTON:** Growers harvested the last remnants of the 1976 cotton crop although wet weather dampened picking activity in some States. Texas cotton growers stripped 99% of the cotton crop, the same as the previous year and 3 points ahead of average. Gins on the Low Plains ran behind but those on the High Plains caught up. Farmers abandoned a few cotton fields in the north to wet field conditions.

Oklahoma growers finished harvesting the 1976 crop. In Arkansas wet fields halted scrapping operations with a few fields yet to be scrapped. Arizona growers harvested some cotton but it was mostly ground cotton. Cotton harvest was also nearly complete in South Carolina, Georgia, and California.

**OTHER CROPS:** Row crop harvests of corn, soybeans and sorghum were complete throughout the Nation with the exception of small acreages in the Southeast and Southwest.

Tobacco markets reopened in Kentucky for the new year. Virginia growers prepared tobacco for market. Indiana farmers stripped tobacco. In the southeastern States of Florida, Georgia and South Carolina tobacco growers prepared plant beds.

In Florida the sugarcane harvest was in progress. The early Arizona sugarbeet crop grew well.

**FRUITS AND NUTS:** Deciduous orchardists pruned, weeded and sprayed orchards in South Carolina, California and Oregon. In Washington fruit trees reached their hardest state and should withstand temperatures to -15° before injury.

In Florida the citrus crops and groves were in excellent condition thanks to adequate moisture and no frosts. Growers picked an increasing volume of oranges. Texas and Arizona growers harvested their citrus crops. Rain slowed the California citrus harvest. Wind damaged some citrus in Santa Barbara County. Navel orange quality and maturity was good.

**VEGETABLES:** In Florida vegetable movement regained momentum following the holiday lull. Increased shipments of snap beans, cabbage, carrots, chinese cabbage, celery, sweet corn, eggplant, escarole-ndive, lettuce, radishes, squash and tomatoes moved to market. Cucumber supplies held steady while green pepper shipments declined. Potato harvest began in the Everglades area. A light strawberry harvest was underway. Cool temperatures slowed growth and maturity but crop conditions were good and steady to increasing supplies are expected.

In Texas wet field conditions slowed activities in southern and coastal areas. Some growers used manual labor to harvest crops where soils could not support machinery. Growers harvested cabbage, lettuce, carrots, spinach, and broccoli. Crops being planted included onions and spring potatoes. Arizona growers harvested lettuce, broccoli, and cabbage. California growers harvested broccoli, cauliflower, cabbage, brussels sprouts, celery, carrots, and lettuce. Most vegetable production came from Santa Maria, Oxnard, and desert areas.

**PASTURES AND LIVESTOCK:** Rains improved southwestern United States pastures but many areas need more moisture especially where livestock depend on ponds for water. Winter wheat pastures provided very little grazing this year. In southern areas where winter grains grew, fields were too wet to support cattle. In some northern areas of the United States cattle required extra care and feed to combat the cold temperatures. In South Dakota some herds remained on crop stubble.



## 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:** Temperatures 6° below normal. Rain most days. Freezing rain and snow in north.

Soil moisture adequate to surplus. Farm activities limited to care and feeding of livestock and poultry and indoor work. Small grains and livestock fair condition.

**ARIZONA:** Winter storms continued. Snow, rain brought precipitation totals many places well above normal. Temperatures 1 to 10° below normal.

Major activities: Wrapping up cotton, sorghum grain harvest, harvest fruits, vegetables. Cotton harvest continues, mostly ground cotton. Planting wheat, barley. Early plantings well advanced, good stands, early spring sugarbeets good growth, tap root development. Haying stopped, alfalfa fields grazed by sheep. Some safflower planting. Harvest lettuce, broccoli, cabbage. Wet fields caused delays. Planting mixed spring vegetables continues. Lemons, navel oranges, tangerines, grapefruit being harvested. Recent rains improved top soil moisture, lower elevation ranges need more precipitation, deeper moisture penetration. Livestock fair to good condition, poor to fair northeast. Stock water, soil moisture about adequate current use.

**ARKANSAS:** Temperatures 5 to 12° below normal. Extremes: 60 and 11°. Precipitation widespread with 0.50 in. or more at most places.

Wet fields halted cotton scrapping operations. Few acres yet to be scrapped. Near blizzard conditions in some areas stopped all weekend activity. Livestock feeding all supplemental.

**CALIFORNIA:** Much needed precipitation fell over the entire State. Greatest amounts in the mountain areas and the coastal areas. Southern San Joaquin Valley temperatures averaged several degrees above normal, elsewhere below normal.

Fieldwork stopped by rain. Small grain prospects improved but need more rain and warmer weather. Cotton harvest near complete. Pruning, weed control, other orchard and vineyard operations slowed by rain. Rain ended irrigation most areas. Dormant spraying increase with moisture. Avocado, citrus harvests slowed by rain. Some wind damage citrus and avocados. Some avocados salvageable. Navel orange quality and maturity good. Some frost damage showing Fresno, Tulare, Madera areas. Damage scattered and minimal. Broccoli, cauliflower, cabbage harvest continued. Brussels sprouts, celery and carrot harvest increased. Lettuce harvest light Imperial Valley. Most vegetable production now coming from Santa Maria, Oxnard, and desert areas. Rains improved rangeland conditions, more rain needed. Cold weather, some areas, slowed growth of grass. Supplemental feeding continues. Higher elevations snow covered forage. Sheep graze alfalfa fields, some areas. Stock water supplies improved but dry soils have taken up most water.

**COLORADO:** Heavy snow southwest, early week with up to 1 in. at lower elevations and 24 in. mountains. Storm also dropped 1 to 6 in. remainder of mountains and extreme east central and northeast. Light snow 7th and 8th. Amounts varied from trace to 2 in. Temperatures averaged below zero mountains and east, near normal western valleys. Arctic air on 8th dropped readings 45° east with nighttime lows near or below zero.

**FLORIDA:** Cool, wet early week, again on 7th as cold fronts, preceded by showers, moved south. Midweek and weekend generally fair, cool. Temperatures averaged 2 to 5° below normal. Rainfall mostly moderate to heavy averaging 0.75 to 2.00 in.

Soil moisture adequate south, central, surplus north, west. Sugarcane harvest active, yields good. Land preparation spring planting restricted because of wet conditions. Small grains good condition but growth slow due to cold. Tobacco plant beds being prepared and planted. Rainfall during past two weeks has provided adequate moisture to pastures. However, surplus moisture exists Panhandle and some low lying, poorly drained areas, central, south. Grasses, small grains show little growth, because of repeated cold fronts. Overall pasture conditions fair. Most farmers, ranchers feeding hay heavily. Cattle, calves maintaining good condition. Calving activity should increase through month. Citrus tree condition excellent, moisture adequate, no new growth. General fruit condition excellent. Orange harvest increasing. Vegetable movement regained momentum following holiday lull. Crops showing increased shipments include snap beans, cabbage, carrots, chinese cabbage, celery, sweet corn, eggplant, escarole-endeive, lettuce, radishes, squash, tomatoes. Cucumber supplies held steady, green pepper shipments declined. Light potato harvest underway Everglades. Tomato harvest increasing Dade County. Continued cool temperatures slowed growth, maturity, however, crop conditions mostly good. Steady to slightly increasing, supplies expected. Light strawberry harvest underway.

**GEORGIA:** Temperatures 8 to 11° below normal north, 5 to 7° below normal south. Rainfall 1.00 in. north to 1.75 in. south. Snow over mountains early on the 3rd totaling 2 in.

Cold, wet weather hampered fieldwork. Soil moisture excessive. Corn, cotton, pecan, soybean harvest near completion. Tobacco bed preparation active. Condition pastures fair, cattle mostly fair to good.

**HAWAII:** Weather mostly dry. Few light showers mainly higher elevations.

Irrigation water use prohibited some sections Maui as of 7th because of dry weather. Irrigation water still available most sections but dwindling. Need more rain. Vegetable supplies adequate. Banana supplies heavy. Papaya supplies light to moderate. Sugar mills started to grind. Pastures leeward poor, windward good.

**IDAHO:** Average temperatures well below normal. Extremes: -22 and 44°. Precipitation, maximum 0.77 in. All stations had precipitation.

Farm activities at standstill except tending livestock.

**ILLINOIS:** Temperatures 8 to 14° below normal. Precipitation moderate, 0.10 to 1.00 in. southern third. Soil moisture mostly short. Winter wheat and other small grains mostly fair. Livestock doing well most areas; feed consumption up. Main farmwork: Caring for livestock, chores, hauling water some areas.

**INDIANA:** Bitter cold. Weekend snowstorm with

6 to 12 in. snow, up to 24 in. near Lake Michigan. Temperatures 12° below normal and lowest -6° 7th. Lack of moisture continues to be a concern. Farm activities included caring for livestock, maintaining equipment, and other routine chores. Some tobacco stripped.

IOWA: Cold and dry. Temperatures 7 to 10° subnormal from southwest to northeast respectively. Bitter cold weekend set daily record lows in some localities. Occasional light snowfalls over northeast and moderate snowfall over south on 4th produced or increased snow cover to 3 or 4 in. over most south and east areas but central and northwest reported little or no snow cover.

KANSAS: Snows produced water equivalents from 0.25 in. extreme west and portions south central to 0.50 to 0.75 in. east. Temperatures ranged from only 16 to 18° west and north to 23° south-east or 10 to 14° below normal.

Snowfall across State. High winds 8th caused some snow to be moved off fields. Snow will supply some cover to the crop but only limited moisture. Cattle received extra care over weekend due to extreme cold winds and snows.

KENTUCKY: Temperatures several degrees below normal with several below zero readings 8th. Snow fell every day except 8th. Snowfall totals in excess of 10 in. common.

Farm activity limited due to snow cover. Tobacco markets reopened 3d.

LOUISIANA: Temperatures 4 to 8° below normal. Extremes: 73 and 11°. Rain with cold fronts on 5th, 6th and 9th.

Farm activity mainly feeding and care of livestock.

MARYLAND & DELAWARE: Temperatures near to slightly below normal. Precipitation in form of snow.

Farmers limited to winter chores and inside work.

MICHIGAN: Temperatures 4 to 13° below normal. Temperatures began week in 20's then cooled off to below zero values near the end of the period. Precipitation moderate over western Lower Michigan near Lake Michigan and locally heavy along the Lake Superior shore in Upper Michigan. Amounts generally light in eastern and southern Lower Peninsula as well as the south half of Upper Peninsula.

Farm activity limited to necessary chores and feeding livestock.

MINNESOTA: Very cold. Temperatures averaged 12 to 16° below normal. Extremes: 25 and -43°. Precipitation averaged 0.20 to 0.35 in. south-east and portions of west central and northwest; 0.10 to 0.15 in. northeast and southwest. New snow 4 to 5 in. central and southeast. Snow on ground 6 to 10 in. except trace to 3 in. southwest and extreme northwest.

MISSISSIPPI: Temperatures 10 to 15° subnormal. Extremes: 5 and 69°.

Soil moisture mostly surplus. Fieldwork 0.4 days suitable. Winter wheat and oats in mostly poor condition. Pastures in mostly poor condition. Livestock in fair to poor condition. Hay and roughage supplies mostly short. Feed grain supplies short to adequate.

MISSOURI: Cold weather prevailed as temperatures ranged from 7 to 9° below normal. Precipitation ranged from 0.25 to 0.75 in. with every station reporting snow at some time ranging from 1 to 7 in.

Because of the cold weather and heavy snows, livestock required extra care. Farmers are thankful, however, for the much needed precipitation.

MONTANA: Snow and cold. Temperatures 4 to 10° below normal. Precipitation well above normal except below northwest and northeast. New snow fell most days. Maximum temperatures below freezing except midweek. Blizzard east of Divide 8th.

Winter wheat poor to fair. Snow cover protection improved but high winds blew many areas bare. Snows not enough to improve soil moisture. Livestock condition good. Supplemental feeding increased due to blizzard conditions.

NEBRASKA: Temperatures 10 to 15° below normal. Precipitation general. Generally less than 0.25 in. Snowfalls 4 to 6 in. common southern third.

NEVADA: Precipitation early week. Cold, northerly winds kept temperatures well below average. Extremes: -26 to 55°.

Light or no snow cover easy on livestock. Water and feed supplies ample.

NEW ENGLAND: Temperatures averaged below normal except on mornings of 4th and 5th when temperatures 10° above normal. On 7th a storm dumped up to 20 in. snow in northeastern Massachusetts, 10 to 15 in. south coastal Maine, southern New Hampshire and rest of eastern Massachusetts. In general up to 8 in. east of the Connecticut River, 2 to 4 in. fell in far northern Maine, western Vermont, and southwest Connecticut and 6 to 12 in. over Cape Cod. Another major storm with heavy snow in most interior sections and heavy snow changing to rain along south coastal sections arrived on 9th.

NEW JERSEY: Cold temperatures 9° below normal, averaging 20° north, 24° south and 26° coastal areas. Extremes: 2 and 49°. Precipitation well above normal, averaging 0.50 in. north, 1.30 in. south and 1.72 in. coastal sections.

Farmers caring for livestock and tending to winter chores.

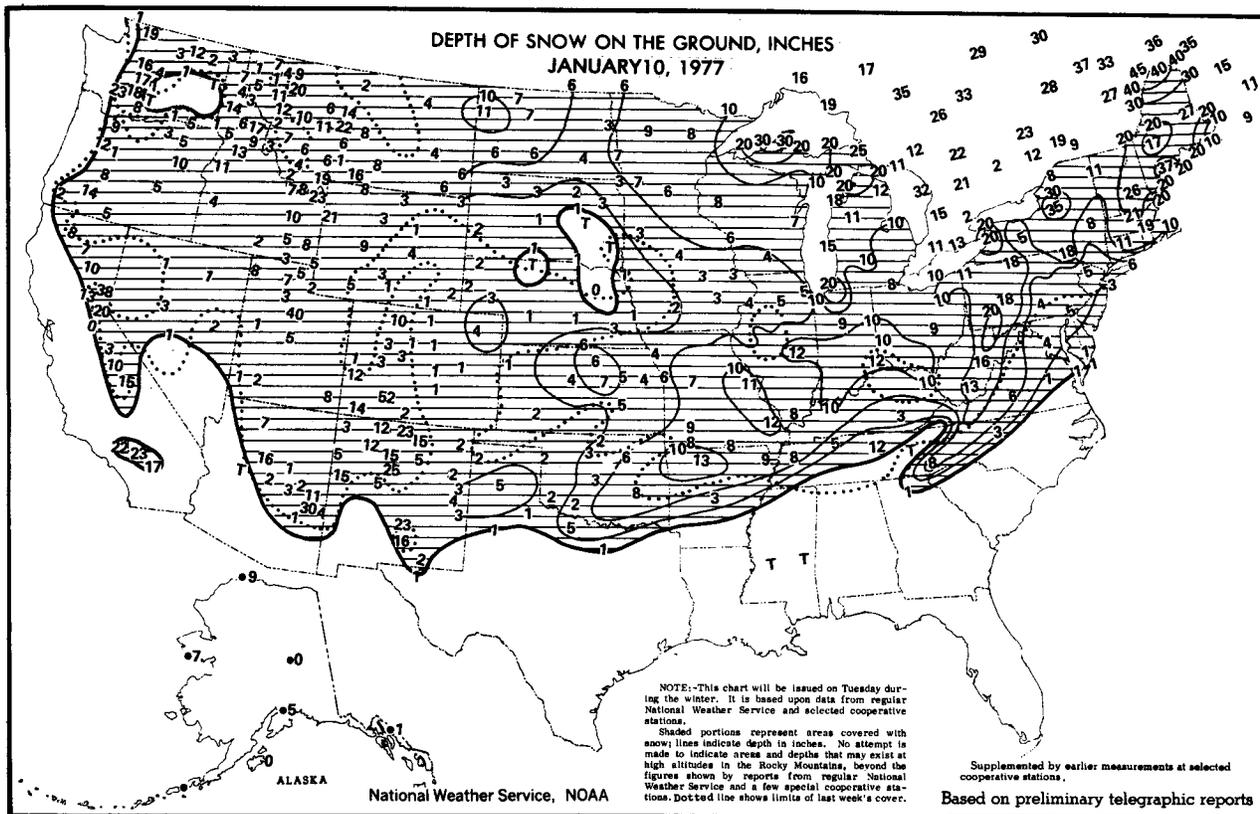
NEW MEXICO: General snow cover with depths over northern sections from 4 to more than 20 in. Water equivalent 0.50 in. to more than 1.00 in. most mountain sections and north. Quite cold last half with temperatures averaging more than 10° below normal north to near normal southern border. Soil moisture short north, short to adequate south. Ranges poor to fair north, good south. Livestock fair north, good south. Fieldwork proceeded in areas with light precipitation. Dry-land winter wheat poor to fair, irrigated crop fair. Winter barley fair. No durum wheat plantings to date. Wheat grazing moderate. Pecan harvest proceeded well behind normal.

NEW YORK: Temperatures near normal east, 3 to 7° below normal west. Extremes: -20 and 40°. Precipitation totaled 0.25 to 0.50 in.

NORTH CAROLINA: Temperatures 5 to 10° below normal. Precipitation above normal. Snow in mountains, rain elsewhere.

Fieldwork: 1.0 day suitable. Soil moisture 40% adequate, 60% surplus. Pastures 35% poor, 45% fair, 20% good. Small grain conditions mostly fair to good. Hay and roughage supplies short to mostly adequate. Feed grain supplies mostly adequate.

NORTH DAKOTA: Temperatures 8 to 15° below normal.



**Extremes:** 38° and -31°. Precipitation ranged from 0.46 in. above normal to 0.07 in. below normal. Snow cover ranged from 3 to 11 in. with heaviest accumulation in west. Partly cloudy skies, light snow and cold temperatures continued through weekend.

Livestock remain good condition. Farm activity limited by cold weather.

**OHIO:** Temperatures much below normal. Frequent snow. Major winter storm on 9th. Snow depths averaged from 6 to 12 in.

Snow should provide protection for fall sown grains. Caring of livestock primary duty. Heavy amounts of hay being fed.

**OKLAHOMA:** Temperatures 8 to 16° below normal. Snow with depths 2 to 10 in. Precipitation ranged from few hundredths to about 1.50 in.

Wheat condition mostly fair, following another dry, cold week. Weekend temperatures of near zero could have caused damage to the crop but snow cover provided some protection, in spite of heavy drifting. Row crop harvest complete. Main farm activity: Feeding livestock. Cattle condition mostly fair, as ranges and wheat crop provide only light part of roughage. Stock water a problem where ponds are used as supply. Top-soil moisture short.

**OREGON:** First of week wet with near normal temperatures. Rainfall in 0.25 to 0.50 in. range over interior and from 0.75 to 1.50 in. coast. By end of week drying and cooling so temperatures averaged 5 to 10° below normal. Extremes: Mid 50's, high teens west; low 50's, subzero east. Soil moisture supply short. Western orchard some spraying and pruning continue. Good growth on ryegrass fields and more sheep moving into

fields to feed. In east winter wheat crop needs moisture. No reports of impact of continued freezing conditions. No improvements in stand conditions. Livestock in good condition. Feeding heavy in many areas. Freezing weather hurting dairy and poultry men. Feed supplies remain adequate.

**PENNSYLVANIA:** Cold with frequent snow flurries. Temperatures averaged 6 to 14° below normal. Extremes: 38 and 13°. Frequent and rapid moving storms deposited 3 to 14 in. new snow usually followed by strong gusty northerly winds causing extensive drifting. Melted precipitation from 0.25 in. extreme northwest to 1.00 in. extreme southeast with 0.50 in. to 0.75 in. common most other places.

Farmers doing usual winter chores.

**PUERTO RICO:** Very dry. Island average rainfall 0.10 in. or 0.77 in. below normal. Temperatures averaged about 75° on coasts and 69° interior. Extremes: 90 and 49°.

**SOUTH CAROLINA:** Temperatures colder than normal. Extremes: 57 and 14°. Rainfall above average. Snow, sleet, freezing rain in northern, western areas.

When weather permitted: Harvesting cotton, soybeans; pruning fruit trees; preparing tobacco beds.

**SOUTH DAKOTA:** Extremely cold. Temperatures 13 to 20° below normal. Below zero nighttime temperatures all areas. Extremes: -32 and 43°. Snows light, under 1 in. Up to 3 in. snow cover north, trace south.

Livestock good condition. Stubble fields still providing feed. Large portion of stock water hauled from wells.

**TENNESSEE:** Succession of fronts alternately caused precipitation then intrusions of cold air. Temperatures averaged about 7° below normal, except Knoxville was a few degrees above. Normal range from 32° in the east to near 40° in the southwest. Precipitation of over 1.00 in. at most places which is above seasonal normal, except southwest where amounts less than 1.00 in. or below normal.

Most farm activities halted by 1 to 4 in. of snow. Feeding livestock and machinery repair were major activities.

**TEXAS:** Arctic cold front brought snow, freezing rain and bitter cold. Readings on Edward's Plateau and Lower Rio Grande Valley 2 to 3° below normal while those elsewhere 5 to 9° below normal. Normal ranges from lower 40's in northern third to lower 50's elsewhere. Precipitation below normal over Edward's Plateau and south, normal elsewhere. Normal 1.00 in. Panhandle, far west and eastern third.

Bitter cold limited grazing, forced supplemental feeding to continue. Cotton stripping continued on High Plains, where clear, windy weather ruled. Cotton stripping now 99% complete, equal last year and points ahead of average. Gins on Low Plains still running behind, but those on High Plains caught up. Few remaining fields in north abandoned, as wet fields caused harvesting delays. Sunflower combining completed last week, over 1 month behind last year's completion date. Wheat slowed by continuing cold. Fields on northern High Plains dormant, but generally very dry and need moisture. Dry, cold limited grazing, forcing stockers to begin feeding remaining cattle, much ahead of average date. Irrigation common, wherever water available. On Low Plains greenbugs increasing, but infestations do not yet warrant control measures. Oats restricted by cold. Late planted fields hit hard by freezing weather in north and east. Continued wet in south and east made pastures muddy, limited grazing. Warm, dry needed to allow recovery.

In Lower Rio Grande Valley harvest of citrus, cabbage, lettuce, carrots increasing as weather improves. Some areas utilize hand labor to harvest cabbage as soils will not support machinery. Land preparation for bell peppers and melons underway. On Coastal Bend most work at standstill due to wet. Land preparation for spring behind schedule. At Laredo very little activity. Some fields prepared for spring planting. At Eagle Pass spinach and broccoli harvest active. In San Antonio-Winter Garden area planting spring potatoes underway. Planting onions continues. Cabbage harvest active. Severe freeze damage in some fields. In East Texas preparation for spring continues. On High Plains plowing and fertilizer application active.

Ranges about average. Cold limited grass growth, supplemental feeding continues. Pastures east, central and south extremely wet, but wheat on northern High Plains short of moisture. Cattle moved off pastures. Cattle generally good west central, but fair other areas. Internal parasites increasing in east.

**UTAH:** Recurring periods of snow. Locally moderate to heavy accumulation of moisture. First

big snow of season many locations but moisture accumulation for year still much below normal. Average temperatures extremely variable ranging from 10° below to 5° above.

Frigid temperatures slowed outside work. Some sorting, grading and marketing of potatoes, apples and onions continues. Ranchers maintain livestock condition by feeding hay. Water hauling still necessary on some operations.

**VIRGINIA:** Temperatures 6 to 12° below normal. Extremes: 48 and 0°. Precipitation 0.50 in. including average snowfall of 5 in.

Fieldwork: 0.7 days suitable. Topsoil moisture 47% adequate, 49% surplus, 4% short. Winter grain and grazing crops 72% of normal. Pastures supplying 11% of forage for dairy cattle, 18% for beef cattle, 19% for sheep. Snow and cold putting strain on feed supplies. Feed, care of livestock primary activity. Calving, lambing continue. Other activities include routine chores, repair work, and preparing tobacco for market.

**WASHINGTON:** West: Temperatures 7° subnormal. Precipitation well below normal.

Cold weather stopped grass growth. Heavier winter feeding livestock necessary. No freeze damage detected. Hay moved into area.

East: Temperatures 10° subnormal. Precipitation from 0.25 in. below normal in central basin and Okanogan to 0.50 in. below normal northeast and Palouse.

Fruit trees reached hardest state and can withstand temperatures to -15° before injury. Bare topsoil frozen but 6 in. down is 32°. Lack of mountain snow pack could result in irrigation water shortage next summer. Snow cover in dryland wheat fields varies. Little or no winterkill is anticipated unless dry winds blow. Moisture low. Winter calving, lambing started.

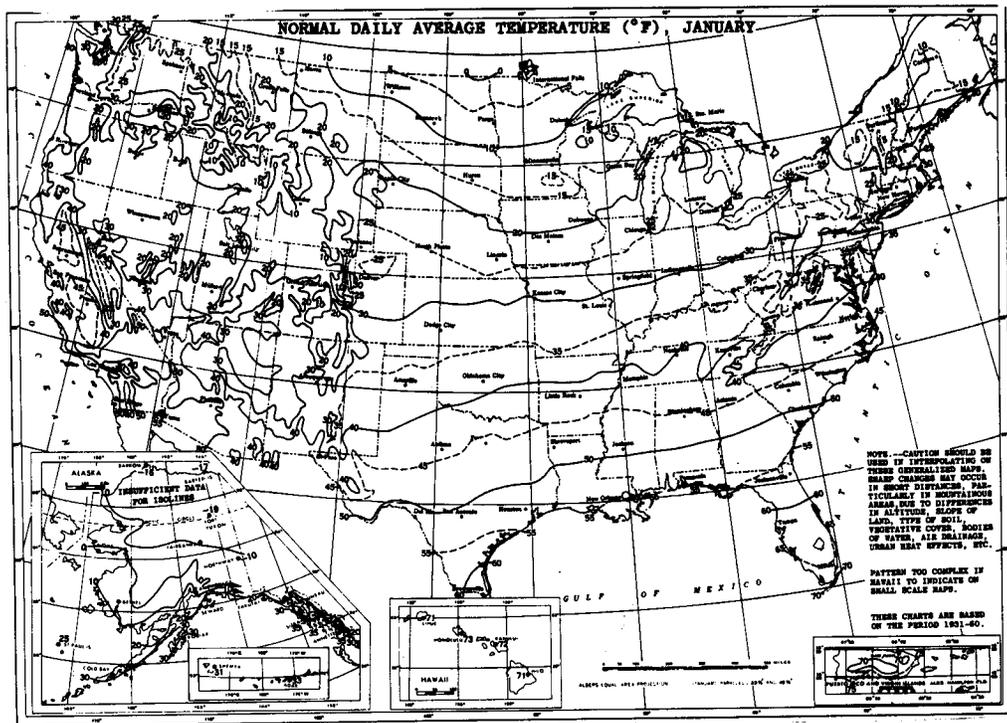
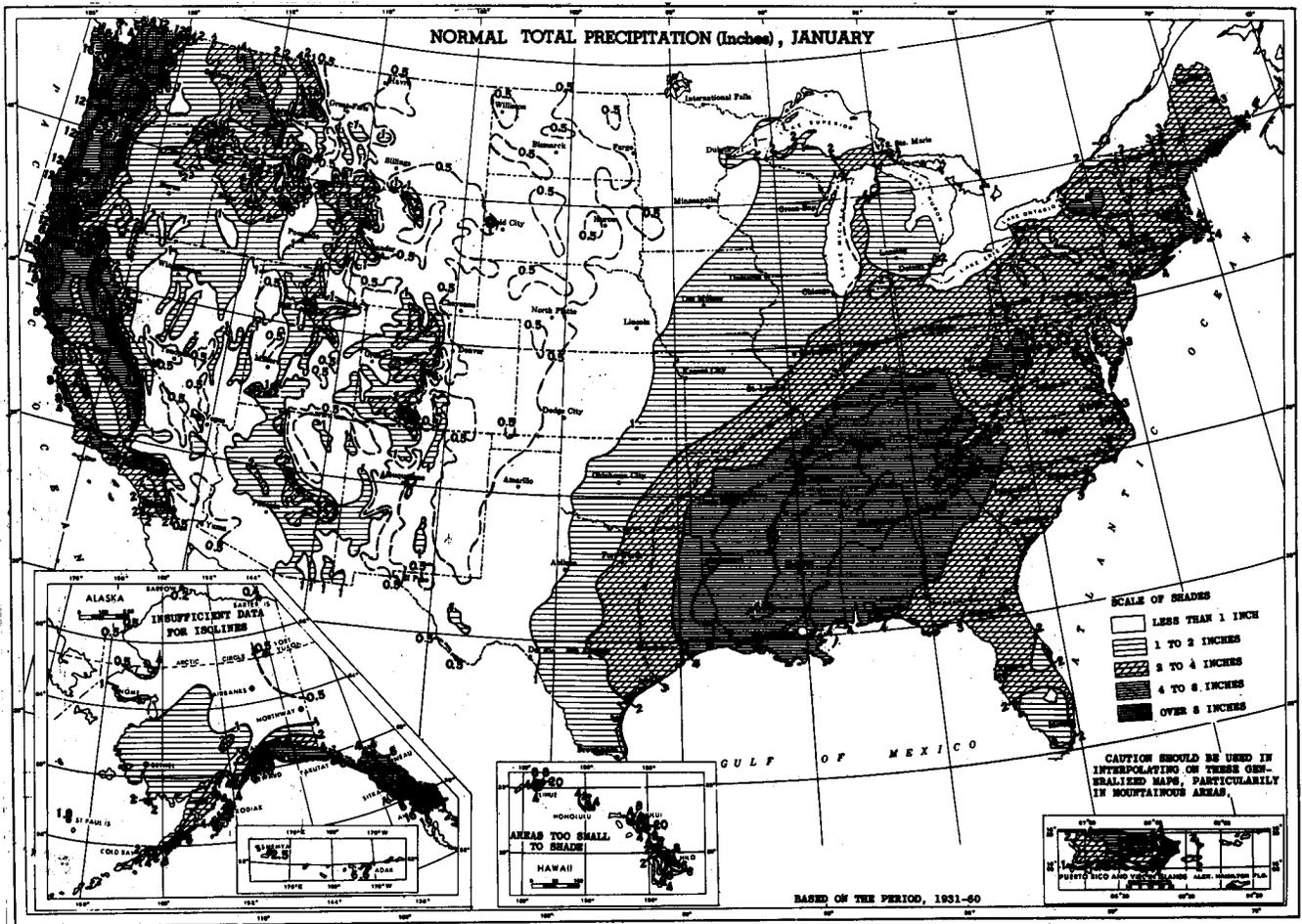
**WEST VIRGINIA:** Temperatures 7° below normal. Extremes: -13 and 43°. Precipitation normal and occurred as snow.

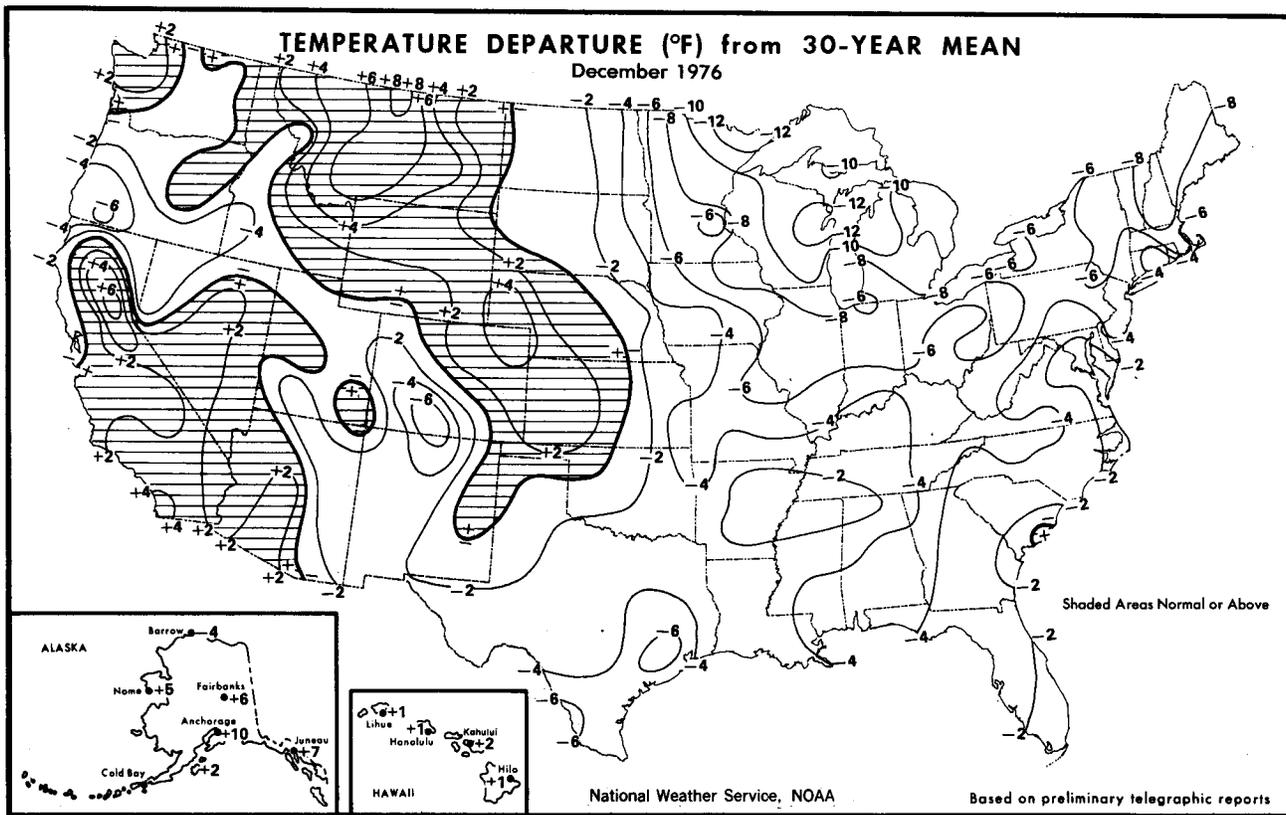
Fieldwork: 1.4 days suitable. Soil moisture adequate to surplus. Small grains covered with snow. Activities confined to feeding livestock and inside work. Hay supply diminishing fast, shortage expected. Most cattle good condition, early calves arriving.

**WISCONSIN:** Below normal temperatures with subzero readings. Coldest temperatures morning 9th at -20 to -40° except near Lake Michigan. Highs were teens and 20's south, 0 to 15 north. Snowfall 1 to 3 in. 3rd.; 2 to 5 in. south and central 7th with 1 to 2 in. north. Light snow again 9th.

**WYOMING:** Cold, arctic air produced subzero readings. Greatest departures in Big Horn and Lower Platte drainages 8 to 12° below normal. All locations reported at least some precipitation. Generally, 0.25 to 0.50 in. fell over western and northern sections, while southeast amounts mostly below 0.25 in.

Livestock mostly good condition. Supplemental feeding normal. Hay supplies still adequate. Early lambing beginning. Winter wheat short of moisture, some wind damage evident.





### December Weather Summary

**HIGHLIGHTS:** December was cold. This was the third month in a row in which the temperature averaged colder than normal. Many cities claimed the coldest December of record. The coldest areas were east of the Rocky Mountains. The first week in the month was the coldest with an almost continuous flow of Arctic air from central Canada. Some warming took place during midmonth but it was short-lived and the succession of Arctic outbreaks began anew. Significant precipitation was confined to the area east of a line from central Texas to Lake Erie, parts of the Lake shores and the West Coast. Most of the Nation recorded less than the normal amount of rainfall. Normal amounts of precipitation fell in the southern parts of the Gulf Coast States and in the Southeast. A small area in the northern Plains near the Canadian border recorded normal to slightly above in the form of snow.

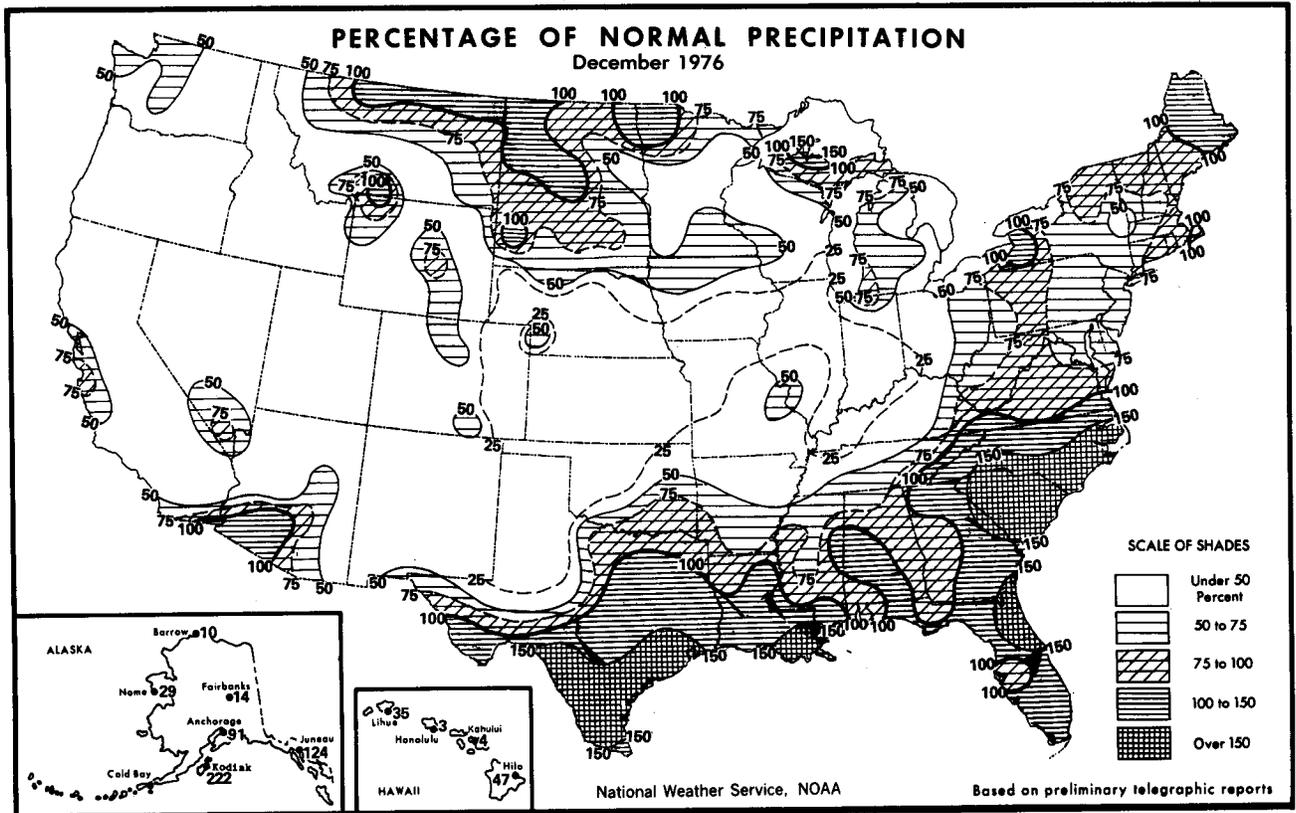
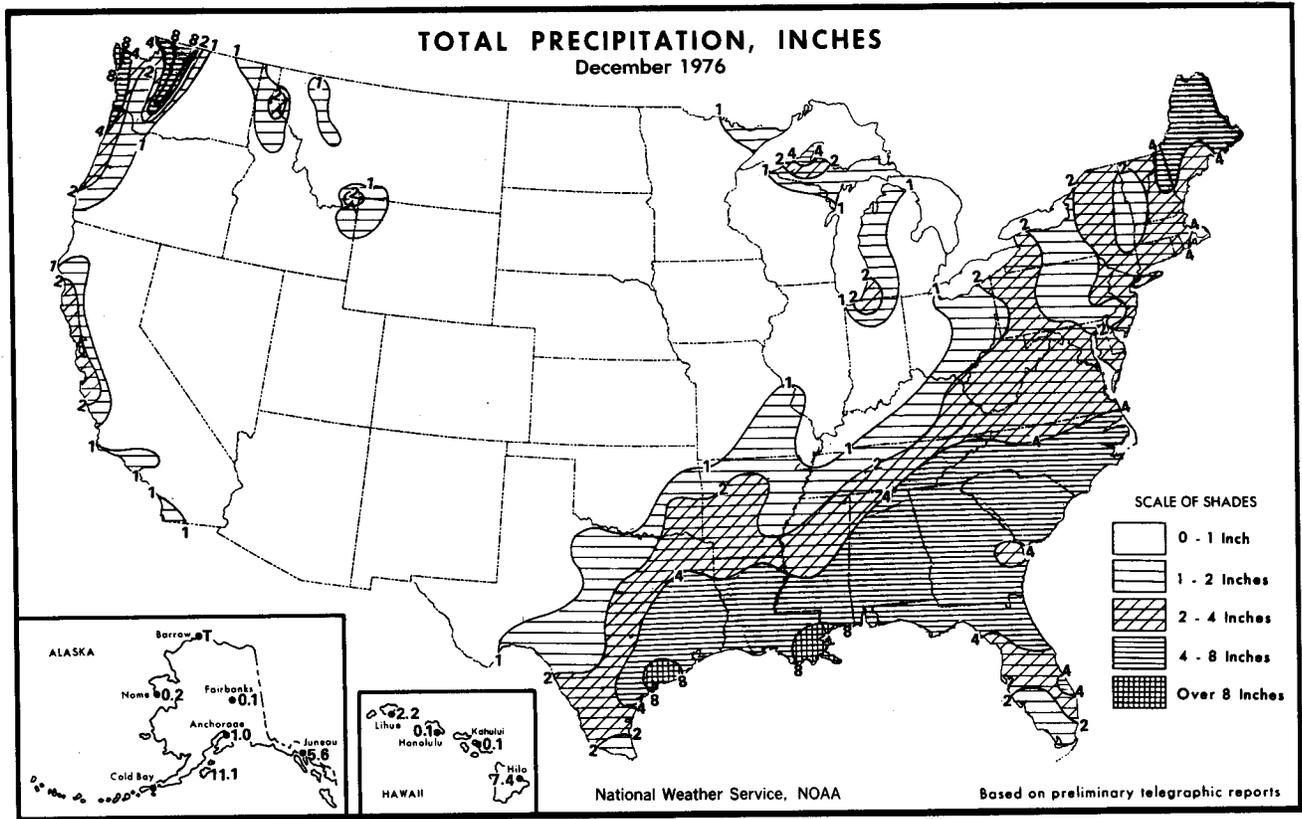
The first week in December was colder than normal in nearly all of the Nation. The only exception being some areas in the Far West. The coldest area was in the upper Great Lakes region.

A succession of cold outbreaks into the northern Plains moved cold air southward and eastward and even enveloped the Rocky Mountains and most of the Plateau in its icy fingers. Light showers of snow or rain occurred along the advancing edge of the cold air. Significant amounts of precipitation fell in east Texas in the form of rainshowers. Peninsula Florida recorded moderate showers. Elsewhere, the shores of the Great Lakes experienced almost daily light snow. Southwestern New York accumulated nearly 2 1/2 feet of new snow.

Cold air continued to push into the U.S. during the second week of December. However the flow of warm air from the Gulf of Mexico increased and moderate to heavy precipitation fell in the lower Mississippi Valley and the Gulf Coast area. Freezing rain was reported in northeast Texas and in Arkansas. Snow fell north of these areas and in the Ohio Valley. As the warmer air moved northward along the East Coast the precipitation moved with it. Rain fell east of the Appalachians and snow mixed with rain wet the southern mountains and the Ohio Valley.

A large high pressure system formed over the Plateau in the West at midmonth and the down slope air movement caused warming in the central and northern Plains while warm air from the Gulf flowed into the southern Plains. The Arctic air from Canada invaded only northeastern U.S. as a series of systems from the Pacific moved across the northern States. There was little or no precipitation over most of the U.S. The exceptions were: The Gulf States where some heavy rain fell along the Coast; the Southeast; northern New England and the coast of Pacific Northwest.

Early in the last ten days of the month the winter patterns were reestablished and a series of Arctic air masses again invaded the U.S. bringing cold weather to all areas east of the Rockies. There was still little or no precipitation over most of the Nation with some exceptions. Precipitation fell from east Texas through the southern States and the Southeast. Both sides of the Appalachians received rain or snow and snow covered the Northeast from western Maryland and Virginia northward. The rain-snow in the mountains in the Pacific Northwest spread inland to northern Idaho and western Montana.



Temperature and Precipitation Data for December 1976

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 . . .	41	-4	4.4	-.8	La.Baton Rouge . . .	50	-3	5.8	+.8	Youngstown . . .	22	-7	1.7	-.9
ALA.Mobile . . .	48	-5	4.2	-1.7	Lake Charles . . .	51	-3	6.7	+1.0	OKLA.Okla. City . . .	39	-1	.2	-1.1
ALA.Montgomery . . .	44	-5	4.9	0	New Orleans . . .	51	-4	8.8	+3.7	Tulsa . . .	37	-3	.6	-1.0
ALASKA.Anchorage . . .	23	+10	1.0	-.1	Shreveport . . .	46	-3	3.8	-.4	OREG.Astoria . . .	44	+1	4.2	-6.4
ALASKA.Barrow . . .	16	-4	T	-.2	MAINE.Caribou . . .	8	-8	4.6	+2.0	Burns . . .	30	+2	T	-1.7
ALASKA.Fairbanks . . .	4	+6	.1	-.6	Portland . . .	20	-6	3.2	-.9	Medford . . .	32	-6	.4	-3.3
ALASKA.Juneau . . .	34	+7	5.6	+1.1	MD.Baltimore . . .	33	-2	2.0	-1.3	Pendleton . . .	36	0	.4	-1.1
ALASKA.Kodiak . . .	32	+2	11.1	+6.1	MASS.Boston . . .	29	-4	3.4	-.8	Portland . . .	40	-1	1.4	-4.6
ALASKA.Nome . . .	9	+5	.2	-.5	Chatham . . .	31	---	4.5	---	Salem . . .	39	-2	1.3	-5.6
ARIZ.Flagstaff . . .	32	+2	.8	-1.4	MICH.Alpena . . .	15	-8	.6	-1.3	PA.Allentown . . .	27	-4	2.4	-1.2
ARIZ.Phoenix . . .	56	+3	.9	+.1	Detroit . . .	21	-8	.8	-1.5	Erie . . .	24	-5	2.2	-.6
ARIZ.Tucson . . .	52	0	.5	-.4	Flint . . .	18	-9	.9	-.8	Harrisburg . . .	30	-3	2.0	-1.1
ARIZ.Winslow . . .	31	-3	.4	-.2	Grand Rapids . . .	19	-8	1.1	-1.1	Philadelphia . . .	30	-5	1.6	-1.7
ARIZ.Yuma . . .	57	+1	.6	+.3	Houghton Lake . . .	14	-9	.7	-1.1	Pittsburgh . . .	24	-7	1.8	-.7
ARK.Fort Smith . . .	38	-4	1.8	-1.1	Lansing . . .	18	-9	1.0	-1.0	Scranton . . .	23	-7	1.5	-1.0
ARK.Little Rock . . .	41	-1	2.2	-1.9	Marquette . . .	15	-9	1.8	-.2	R.I.Providence . . .	25	-7	3.5	-.6
CALIF.Bakersfield . . .	51	+3	.1	-.6	Muskegon . . .	21	-8	1.8	-.6	S.C.Charleston . . .	49	0	5.1	+2.0
CALIF.Eureka . . .	47	-2	.5	-6.1	S. Ste. Marie . . .	10	-10	1.9	-.5	Columbia . . .	44	-2	7.5	+4.1
CALIF.Fresno . . .	47	+1	.7	-1.0	MINN.Duluth . . .	5	-9	.4	-1.0	Greenville . . .	40	-3	6.2	+2.1
CALIF.Los Angeles . . .	60	+2	.8	-1.4	Internat Falls . . .	3	-12	.6	-.4	S.D.Aberdeen . . .	15	-2	.3	-.2
CALIF.Red Bluff . . .	50	+4	.7	-3.2	Minneapolis . . .	14	-5	.5	-.4	Huron . . .	16	-3	.4	-.1
CALIF.San Diego . . .	61	+4	1.1	-.6	Rochester . . .	10	-9	.5	-.3	Rapid City . . .	27	0	.4	0
CALIF.San Francisco . . .	49	-1	2.7	-1.3	St. Cloud . . .	7	-9	.3	-.6	Sioux Falls . . .	17	-3	.4	-.3
CALIF.Stockton . . .	46	0	.6	-2.1	MISS.Jackson . . .	45	-4	3.4	-1.6	TENN.Chattanooga . . .	37	-4	5.5	+2
COLO.Denver . . .	36	+3	.2	-.2	Meridian . . .	44	-4	4.3	-1.3	Knoxville . . .	38	-4	4.4	-.1
COLO.Grand Junction . . .	28	-2	T	-.6	MO.Columbia . . .	27	-6	.6	-1.2	Memphis . . .	42	-1	1.8	-2.9
COLO.Pueblo . . .	33	0	.1	-.2	Kansas City . . .	29	-3	1.1	-1.4	Nashville . . .	37	-3	1.8	-2.7
CONN.Bridgeport . . .	30	-4	2.6	-.8	St. Louis . . .	29	-6	1.1	-.9	TEX.Abilene . . .	43	-3	.2	-.8
CONN.Hartford . . .	25	-3	3.0	-1.1	Springfield . . .	33	-3	1.0	-1.5	Amarillo . . .	38	-1	T	-.7
CONN.D.C.Washington . . .	36	-1	2.0	-1.0	MONT.Billings . . .	32	+5	.3	-.4	Austin . . .	49	-3	2.5	+.3
FLA.Apalachicola . . .	52	-3	5.0	+1.7	Glasgow . . .	19	+2	.3	0	Beaumont . . .	51	-3	6.1	+1.2
FLA.Daytona Beach . . .	59	-1	6.0	+4.0	Great Falls . . .	32	+5	.5	-.2	Brownsville . . .	57	-5	1.3	+.1
FLA.Ft. Myers . . .	63	-2	1.7	+.4	Havre . . .	27	+9	.4	0	Corpus Christi . . .	55	-4	2.3	+.8
FLA.Jacksonville . . .	53	-2	4.8	+2.2	Helena . . .	29	+6	T	-.6	Dallas . . .	---	---	---	---
FLA.Key West . . .	71	-1	1.9	+.4	KallsPELL . . .	27	+3	.7	-.8	Del Rio . . .	49	-3	1.5	+1.0
FLA.Lakeland . . .	60	-2	2.0	-.1	Miles City . . .	26	+4	.3	-.2	El Paso . . .	42	-2	.3	-.2
FLA.Miami . . .	68	0	1.6	0	Missoula . . .	24	-1	.3	-.8	Fort Worth . . .	45	-3	2.0	+.2
FLA.Orlando . . .	60	-2	2.8	+.9	NEBR.Grand Island . . .	28	+1	T	-.6	Galveston . . .	53	-4	7.7	+4.0
FLA.Tallahassee . . .	50	-3	4.1	-.1	Lincoln . . .	24	-3	T	-.7	Houston . . .	49	-6	6.2	+2.2
FLA.Tampa . . .	60	-2	2.1	-.1	Norfolk . . .	23	-1	.2	-.4	Lubbock . . .	40	-1	T	-.6
FLA.W.Palm Beach . . .	66	-1	3.1	+.9	N.Platte . . .	28	+1	T	-.4	Midland . . .	44	-2	.1	-.4
GA.Atlanta . . .	40	-4	4.0	-.2	Omaha . . .	24	-2	.2	-.6	San Angelo . . .	45	-3	.2	-.5
GA.Augusta . . .	44	-2	5.6	+2.2	Valentine . . .	24	0	.2	-.1	San Antonio . . .	50	-3	2.0	+.5
GA.Macon . . .	46	-2	4.2	-.1	NEV.Ely . . .	27	+1	T	-.7	Victoria . . .	52	-4	5.5	+3.5
GA.Savannah . . .	49	-1	3.9	+.6	Las Vegas . . .	46	+1	.3	-.1	Waco . . .	46	-4	2.5	+.5
HAWAII.Hilo . . .	73	+1	7.4	+8.4	Reno . . .	30	-3	T	-1.1	Wichita Falls . . .	41	-3	1.0	-.3
HAWAII.Honolulu . . .	75	+1	.1	-3.6	Winemucca . . .	29	-1	T	-.9	UTAH.Blanding . . .	31	+1	T	-1.3
HAWAII.Kahului . . .	75	+2	.1	-2.7	N.H.Concord . . .	16	-9	2.3	-1.0	Salt Lake City . . .	29	-1	.1	-1.3
HAWAII.Lihue . . .	74	+1	2.2	-4.1	N.J.Atlantic City . . .	30	-5	2.5	-1.5	VT.Burlington . . .	16	-7	2.0	-.2
IDAHO.Boise . . .	29	-3	.1	-1.3	Trenton . . .	30	-5	1.8	-1.5	VA.Lynchburg . . .	34	-4	2.8	-.4
IDAHO.Lewiston . . .	36	+1	.3	-1.0	N.MEX.Albuquerque . . .	33	-3	2	-.3	Norfolk . . .	41	-1	3.2	+.1
IDAHO.Pocatello . . .	28	+1	.2	-.8	Roswell . . .	39	0	0	-.5	Richmond . . .	37	-2	2.6	-.6
ILL.Cairo . . .	36	-3	.7	-3.2	N.Y.Albany . . .	21	-5	1.4	-1.5	Roanoke . . .	34	-3	2.6	-.5
ILL.Chicago . . .	20	-9	.9	-1.2	Binghamton . . .	20	-5	1.7	-1.1	WASH.Colville . . .	26	-1	.5	-1.7
ILL.Moline . . .	20	-7	.3	-1.5	Buffalo . . .	22	-6	3.8	+.8	Omak . . .	28	+1	.4	-1.2
ILL.Peoria . . .	21	-7	.4	-1.5	New York . . .	31	-5	2.2	-1.4	Quillayute . . .	44	+3	9.1	-6.5
ILL.Rockford . . .	15	-10	.4	-1.3	Rochester . . .	24	-4	1.5	-.9	Seattle-Tacoma . . .	45	+4	1.9	-4.0
ILL.Springfield . . .	24	-7	.7	-1.2	Syracuse . . .	23	-5	1.8	-1.3	Spokane . . .	30	+1	.6	-1.8
IND.Evansville . . .	32	-3	.6	-2.7	N.C.Asheville . . .	36	-3	4.1	+.5	Walla Walla . . .	36	-1	.8	-1.2
IND.Ft. Wayne . . .	22	-7	.6	-1.6	Charlotte . . .	39	-4	5.6	+2.2	Yakima . . .	30	-1	.1	-1.1
IND.Indianapolis . . .	25	-6	.5	-2.2	Greensboro . . .	37	-3	3.9	+.7	W.Va.Beckley . . .	30	-3	2.8	-.5
IND.South Bend . . .	23	-5	2.2	-.3	Hatteras . . .	47	-1	6.9	+2.4	Charleston . . .	31	-5	2.2	-1.0
IOWA.Burlington . . .	22	-6	.1	-1.5	Raleigh . . .	37	-4	4.0	+.9	Huntington . . .	32	-4	2.2	-.8
IOWA.Des Moines . . .	22	-3	.1	-1.0	Wilmingon . . .	46	-2	5.4	+2.0	Parkersburg . . .	29	-6	1.4	-1.4
IOWA.Dubuque . . .	15	-8	.5	-1.4	N.DAK.Bismarck . . .	15	-1	.6	+.1	WIS.Green Bay . . .	9	-12	.6	-.7
IOWA.Sioux City . . .	19	-5	.4	-.4	Fargo . . .	7	-6	.2	-.4	La Crosse . . .	13	-9	.7	-.3
KANS.Concordia . . .	31	+1	T	-.8	Williston . . .	15	0	.5	0	Madison . . .	13	-9	.4	-1.1
KANS.Dodge City . . .	36	+3	T	-.5	OHIO.Akron-Canton . . .	24	-5	1.4	-1.0	Milwaukee . . .	16	-8	.3	-1.5
KANS.Goodland . . .	33	+3	T	-.4	Cincinnati . . .	28	-6	.5	-2.4	WYO.Casper . . .	28	+2	.4	-.1
KANS.Topeka . . .	28	-4	.2	-1.3	Cleveland . . .	23	-7	1.6	-.8	Cheyenne . . .	31	+2	.1	-.3
KANS.Wichita . . .	34	-1	.1	-1.0	Columbus . . .	25	-6	.9	-1.5	Lander . . .	25	+2	.2	-.3
KY.Lexington . . .	31	-5	1.2	-2.4	Dayton . . .	26	-5	.7	-1.6	Sheridan . . .	28	+2	.3	-.4
KY.Louisville . . .	33	-3	.7	-2.6	Toledo . . .	20	-8	.9	-1.3	P.R.San Juan . . .	78	+1	2.1	-2.6

Based on 1941-70 normals

## World Weather and Crop Update

**HIGHLIGHTS:** The recent cold spell over European USSR has moderated, and temperatures have returned to normal or slightly above. Below normal temperatures, however, persist over much of China, especially south of the Yangtze River, and winter crops have probably been damaged from the low temperatures. Rainfall continues seasonally light over India. Below normal precipitation continues to dominate much of Australia, especially in the south and southeast. Heavy rains have broken a two-month drought in Peru. Under hot skies, Argentina has gotten a respite from the excessive rainfall that has plagued the wheat harvest in that country and Brazil. Spring crops should continue to improve in both countries. Widely scattered showers in Kenya have been insufficient to materially improve the overall drought situation there. In South Africa, precipitation has been about adequate for developing crops in the Transvaal but somewhat below normal in the Orange Free State. Heavy rains and snowfalls have greatly improved the drought situation in California. Light precipitation has not made any significant dent in the moisture deficit in the Great Plains and Canada's Prairie Provinces.

**NORTH AMERICA.** Heavy rains and snowfalls have greatly improved the moisture situation in California. Light precipitation has not made any significant dent in the moisture deficit in the Great Plains and Canada's Prairie Provinces.

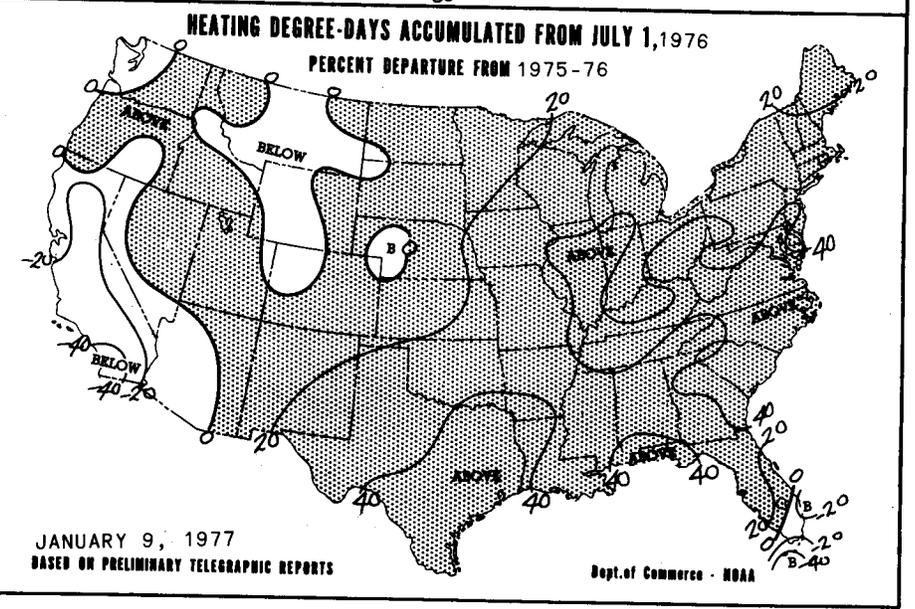
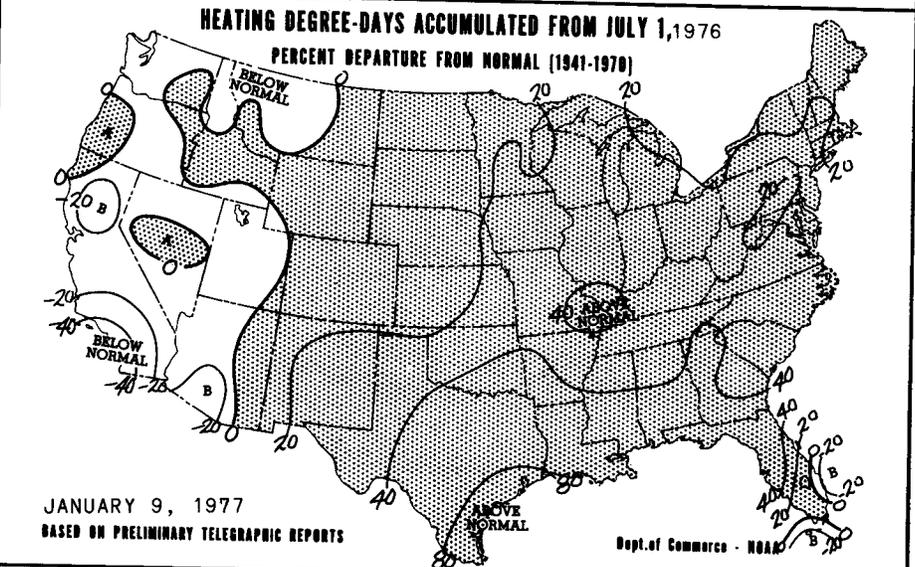
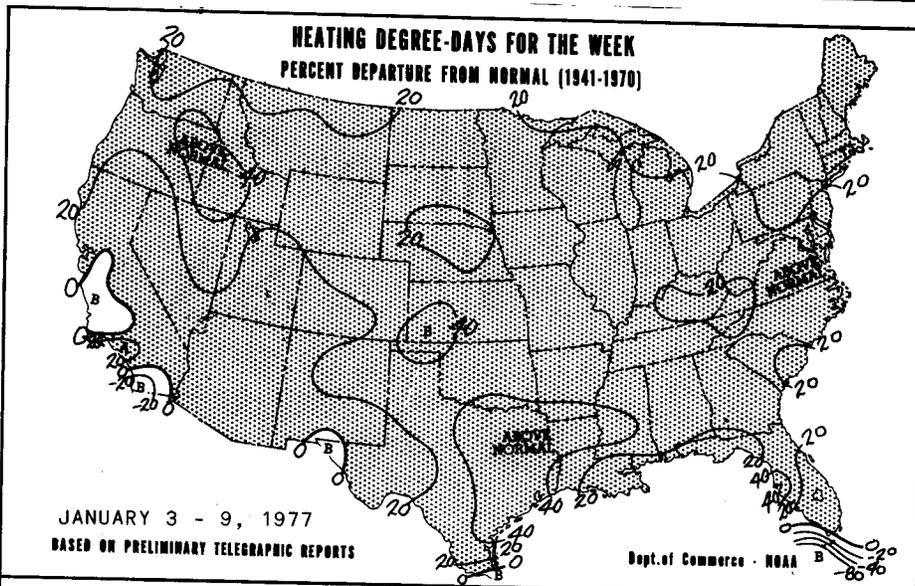
**EUROPE AND NORTH AFRICA.** Southern Spain and adjacent North Africa continue to receive additional precipitation. Good precipitation plus mild temperatures favor development of winter crops in these areas. Mild temperatures with good precipitation continue Western Europe's recovery from last summer's drought. In Eastern Europe dry cold weather is prevailing but winter crops are protected over much of the area with a good snow cover.

**USSR.** Temperatures have returned to normal or slightly above in European USSR as the recent cold spell moderated. Some damage to winter grains may have occurred in those areas with insufficient snow cover--extreme southern Ukraine, North Caucasus and Lower Volga--to insulate the plants. Good snow cover, however, blankets most of European USSR as well as the important crop areas in Asiatic USSR.

**ASIA.** The cold lingers on in the Peoples Republic of China with below normal temperatures over much of that country, especially south of the Yangtze River. Some damage to winter wheat and other crops has probably resulted from the cold spell that has dropped temperatures 5 to 10 degrees below normal. Seasonally dry weather continues in India with only scattered showers in the state of Kerala and into Sri Lanka. Below normal precipitation continues to affect crop production in important areas of Australia, especially in the south and southeast where water demands are increasing as spring crops are developing rapidly.

**SOUTH AMERICA.** Heavy rains have broken a 2-month drought in Peru where crop production has been significantly affected. In Argentina, high temperatures have brought a respite from the excessive rainfall that has plagued the wheat harvest in that country and Brazil. Spring crops should continue to improve in both countries.

**AFRICA.** Widely scattered showers have been insufficient to materially improve the overall drought situation in Kenya where more precipitation is badly needed to permit normal spring sowing. In South Africa, precipitation has been about adequate for developing crops in the Transvaal but somewhat below normal in the Orange Free State.



HEATING DEGREE DAYS (BASE 65°) FOR WEEK ENDING JAN. 9, 1977.

STATES AND STATIONS	WEEKLY			SEASONAL ACCUMULATION +			STATES AND STATIONS	WEEKLY			SEASONAL ACCUMULATION +		
	TOTAL	DEPARTURE*	DEPARTURE FROM 1975-76	TOTAL	DEPARTURE*	DEPARTURE FROM 1975-76		TOTAL	DEPARTURE*	DEPARTURE FROM 1975-76	TOTAL	DEPARTURE*	DEPARTURE FROM 1975-76
ALA. BIRMINGHAM...	1311	1311	1552	510	451	451	MAINE CARIBOU...	498	498	4794	596	522	522
MOBILE...	1311	1311	1552	510	451	451	PORTLAND...	498	498	4794	596	522	522
MONTGOMERY...	1311	1311	1552	510	451	451	OKLA. OKLAHOMA CITY...	353	80	3653	933	1027	1027
ARIZ. FLAGSTAFF...	14	14	3026	191	143	143	TULSA...	353	80	3653	933	1027	1027
PHOENIX...	14	14	3026	191	143	143	OREG. ASTORIA...	353	80	3653	933	1027	1027
TUCSON...	14	14	3026	191	143	143	BURNS...	353	80	3653	933	1027	1027
WINSLOW...	14	14	3026	191	143	143	HEDFORD...	353	80	3653	933	1027	1027
YUMA...	14	14	3026	191	143	143	PORTLAND...	353	80	3653	933	1027	1027
ARK. FORT SMITH...	14	14	3026	191	143	143	SALEN...	353	80	3653	933	1027	1027
LITTLE ROCK...	14	14	3026	191	143	143	PA. ALLENTOWN...	353	80	3653	933	1027	1027
CALIF. BAKERSFIELD...	14	14	3026	191	143	143	ERIE...	353	80	3653	933	1027	1027
EUREKA...	14	14	3026	191	143	143	HARRISBURG...	353	80	3653	933	1027	1027
FRESNO...	14	14	3026	191	143	143	PHILADELPHIA...	353	80	3653	933	1027	1027
LOS ANGELES...	14	14	3026	191	143	143	PITTSBURGH...	353	80	3653	933	1027	1027
LOS BLUFFS...	14	14	3026	191	143	143	SCRANTON...	353	80	3653	933	1027	1027
SAN DIEGO...	14	14	3026	191	143	143	R. I. PROVIDENCE...	353	80	3653	933	1027	1027
SAN FRANCISCO...	14	14	3026	191	143	143	S. C. CHARLESTON...	353	80	3653	933	1027	1027
STOCKTON...	14	14	3026	191	143	143	COLUMBIA...	353	80	3653	933	1027	1027
COLO. DENVER...	14	14	3026	191	143	143	GREENVILLE...	353	80	3653	933	1027	1027
GRAND JUNCTION...	14	14	3026	191	143	143	S. DAK. ABERDEEN...	353	80	3653	933	1027	1027
PUEBLO...	14	14	3026	191	143	143	HURON...	353	80	3653	933	1027	1027
CONN. BRIDGEPORT...	14	14	3026	191	143	143	RAPID CITY...	353	80	3653	933	1027	1027
HARTFORD...	14	14	3026	191	143	143	SIoux FALLS...	353	80	3653	933	1027	1027
DEL. WILMINGTON...	14	14	3026	191	143	143	TENN. CHATTANOOGA...	353	80	3653	933	1027	1027
D. C. WASHINGTON...	14	14	3026	191	143	143	KNOXVILLE...	353	80	3653	933	1027	1027
FLA. APALACHICOLA...	14	14	3026	191	143	143	MEMPHIS...	353	80	3653	933	1027	1027
DAYTONA BEACH...	14	14	3026	191	143	143	NASHVILLE...	353	80	3653	933	1027	1027
FORT MYERS...	14	14	3026	191	143	143	TEXAS ABILENE...	353	80	3653	933	1027	1027
JACKSONVILLE...	14	14	3026	191	143	143	AMARILLO...	353	80	3653	933	1027	1027
KEY WEST...	14	14	3026	191	143	143	AUSTIN...	353	80	3653	933	1027	1027
LAKELAND...	14	14	3026	191	143	143	BEAUMONT...	353	80	3653	933	1027	1027
MIAMI...	14	14	3026	191	143	143	BROWNSVILLE...	353	80	3653	933	1027	1027
ORLANDO...	14	14	3026	191	143	143	CORPUS CHRISTI...	353	80	3653	933	1027	1027
TALLAHASSEE...	14	14	3026	191	143	143	DEL. PASO...	353	80	3653	933	1027	1027
TAMPA...	14	14	3026	191	143	143	FORT WORTH...	353	80	3653	933	1027	1027
NORTH PALM BEACH...	14	14	3026	191	143	143	GALVESTON...	353	80	3653	933	1027	1027
GA. ATLANTA...	14	14	3026	191	143	143	HOUSTON...	353	80	3653	933	1027	1027
AUGUSTA...	14	14	3026	191	143	143	LUBBOCK...	353	80	3653	933	1027	1027
Macon...	14	14	3026	191	143	143	HIGHLAND...	353	80	3653	933	1027	1027
SAVANNAH...	14	14	3026	191	143	143	SAN ANGELO...	353	80	3653	933	1027	1027
IDAHO. BOISE...	14	14	3026	191	143	143	SAN ANTONIO...	353	80	3653	933	1027	1027
LEWISTON...	14	14	3026	191	143	143	VICTORIA...	353	80	3653	933	1027	1027
POCATELLO...	14	14	3026	191	143	143	MADRID...	353	80	3653	933	1027	1027
ILL. CAIRO...	14	14	3026	191	143	143	RICHITA FALLS...	353	80	3653	933	1027	1027
CHICAGO...	14	14	3026	191	143	143	UTAH SALT LAKE CITY...	353	80	3653	933	1027	1027
MOLINE...	14	14	3026	191	143	143	VT. BURLINGTON...	353	80	3653	933	1027	1027
PEORIA...	14	14	3026	191	143	143	VA. LYNCHBURG...	353	80	3653	933	1027	1027
ROCKFORD...	14	14	3026	191	143	143	NORFOLK...	353	80	3653	933	1027	1027
SPRINGFIELD...	14	14	3026	191	143	143	RICHMOND...	353	80	3653	933	1027	1027
IND. EVANSVILLE...	14	14	3026	191	143	143	ROANOKE...	353	80	3653	933	1027	1027
FORT WAYNE...	14	14	3026	191	143	143	WASH. BULLAYUTE...	353	80	3653	933	1027	1027
INDIANAPOLIS...	14	14	3026	191	143	143	SEATTLE-TACOMA...	353	80	3653	933	1027	1027
SOUTH BEND...	14	14	3026	191	143	143	SPOKANE...	353	80	3653	933	1027	1027
IOWA. BURLINGTON...	14	14	3026	191	143	143	HALLA HALLA...	353	80	3653	933	1027	1027
BES ROINES...	14	14	3026	191	143	143	YAKIMA...	353	80	3653	933	1027	1027
BUBUQUE...	14	14	3026	191	143	143	W. VA. BECKLEY...	353	80	3653	933	1027	1027
STOUX CITY...	14	14	3026	191	143	143	CHARLESTON...	353	80	3653	933	1027	1027
KANS. CONCORDIA...	14	14	3026	191	143	143	HUNTINGTON...	353	80	3653	933	1027	1027
DOGGE CITY...	14	14	3026	191	143	143	PARKERSBURG...	353	80	3653	933	1027	1027
GOODLAND...	14	14	3026	191	143	143	WIS. GREEN BAY...	353	80	3653	933	1027	1027
TOPEKA...	14	14	3026	191	143	143	LACROSSE...	353	80	3653	933	1027	1027
MICHITA...	14	14	3026	191	143	143	HADISON...	353	80	3653	933	1027	1027
WY. CASPER...	14	14	3026	191	143	143	HILLARQUEE...	353	80	3653	933	1027	1027
LA. BATON ROUGE...	14	14	3026	191	143	143	WYO. CASPER...	353	80	3653	933	1027	1027
LAKE CHARLES...	14	14	3026	191	143	143	CHEYENNE...	353	80	3653	933	1027	1027
NEW ORLEANS...	14	14	3026	191	143	143	LANDER...	353	80	3653	933	1027	1027
SHREVEPORT...	14	14	3026	191	143	143	SHERIDAN...	353	80	3653	933	1027	1027

\* BASED ON 1941-70 NORMALS.

+ ACCUMULATION FROM JULY 1, 1976.

**IMMEDIATE - U. S. Weather Report**

This Report Will be Treated in All Respects as Letter Mail

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

COM 210



**FIRST CLASS MAIL**

**WATER SUPPLY OUTLOOK FOR THE WESTERN UNITED STATES**  
Issued as of January 1, 1977

The table below shows the runoff forecast in percent of the 15-year (1958-72) average. The forecasts are for the remainder of the water year (October thru September), except for the full water year for the Sacramento and San Joaquin Basins; April 1 to September 30, 1977, for the Missouri, Yellowstone, and North Platte Basins; November 1, 1976 to June 30, 1977 for the Little Colorado Basin; and January 1 to June 30, 1977, for the Gila Basin. The publication "Water Supply Outlook for the Western United States," issued as of January 1, 1977, contains the complete water supply forecasts for about 375 stations in the Western United States.

River	Station	Forecast 1,000 Acre-feet	Percent 15-year average
Columbia	Grand Coulee, WA	50,800	74
Columbia	The Dalles, OR	71,500	68
Snake	Lower Granite, WA	14,100	63
Sacramento	Red Bluff, CA	4,600	51
San Joaquin	Big Creek, CA	900	69
Weber	Gateway, Ut	178	47
Jordan	Utah Lake, UT	325	75
Truckee	L. Tahoe-Farad	225	64
Colorado	L. Powell infl.	5,135	56
Green	Green River, UT	2,190	60
San Juan	Bluff, UT	698	57
Little Colo.	Woodruff, AZ	4.7	55
Gila	Solomon, AZ	84	49
Rio Grande	San Marcial, NM	266	54
Arkansas	Pueblo, CO	202	50
Missouri	Ft. Peck, MT	2,980	63
Yellowstone	Sidney, MT	5,420	78
North Platte	Glendo, WY	504	61

Office of Hydrology  
National Weather Service