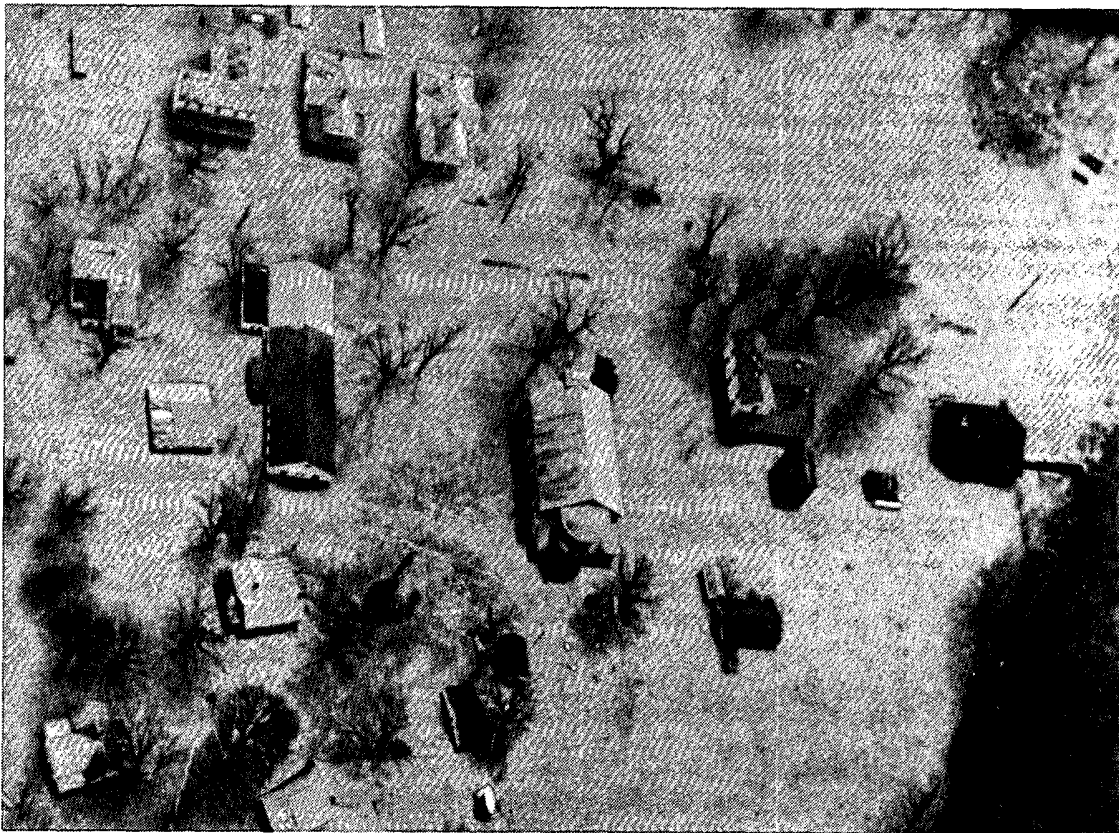


STORM DATA



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28801

Kenneth D. Hader

DIRECTOR
NATIONAL CLIMATIC DATA CENTER

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C O N T E N T S

Cover: Homes, businesses and a church at Lebanon Junction, Kentucky are beset by floodwaters of the Rolling Fork River about 25 miles south of Louisville. The flooding, widespread across western and central Kentucky, resulted from heavy rains that fell over the Ohio and Middle Mississippi valleys from February 12th to the 16th (see pages 8 through 13). ---Photo by Bobbi Woloch, The Pioneer News, Shepherdsville, Kentucky.

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STORM DATA (ISSN 0039-1972)

The section on Outstanding Storms of the Month is prepared by Professor T. Theodore Fujita, editor, and Duane J. Stiegler, associate editor, the University of Chicago, with funding by the U. S. Office of Naval Research. The Storm Data and Unusual Weather Phenomena narratives, and summaries of Hurricanes/Tropical Storms are prepared by the National Weather Service. The National Climatic Data Center compiles statistics on deaths, injuries, damage and prepares the annual summaries of tornadoes and Lightning. This publication contains our best information on storms, but due to the difficulties inherent in collection of this type of data it is not all-inclusive. Late reports and corrections will be carried quarterly. Maps of zones used in the Storm Data and Unusual Weather Phenomena will be published in all editions.

Storm Data is published monthly by the National Climatic Data Center.

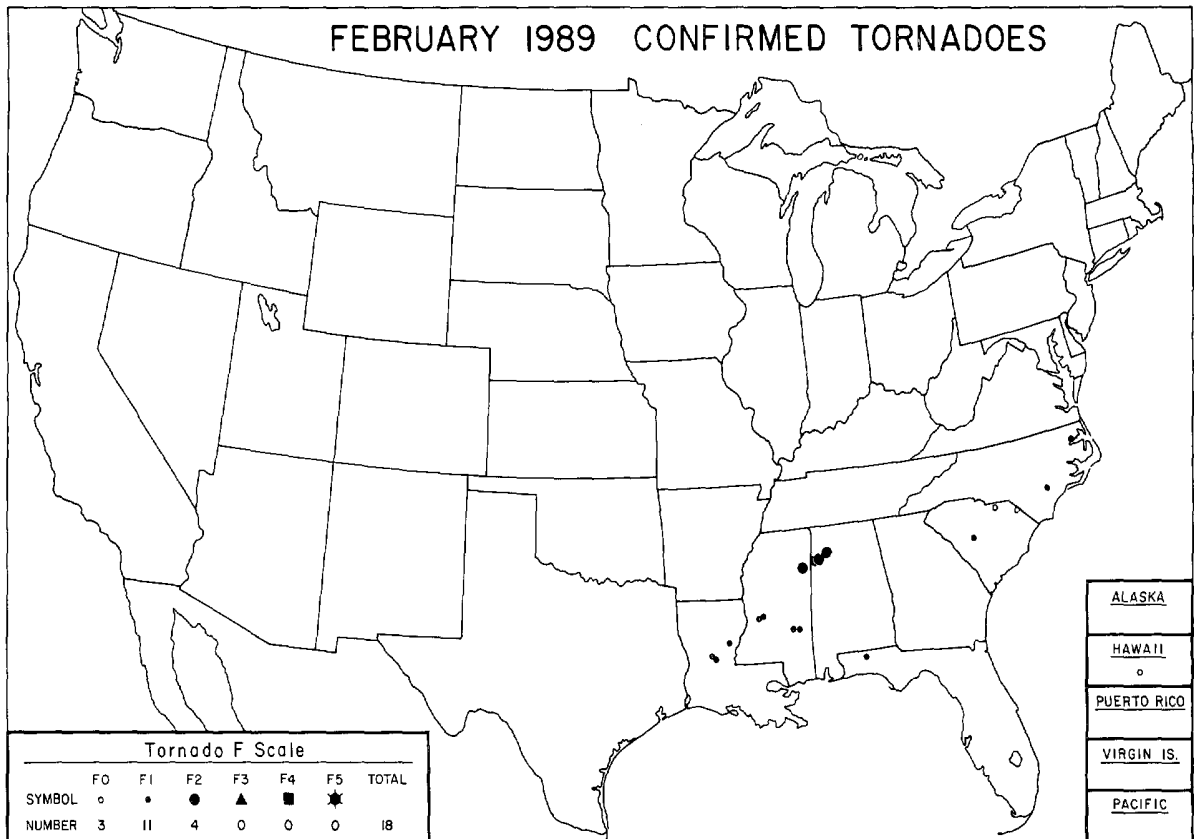
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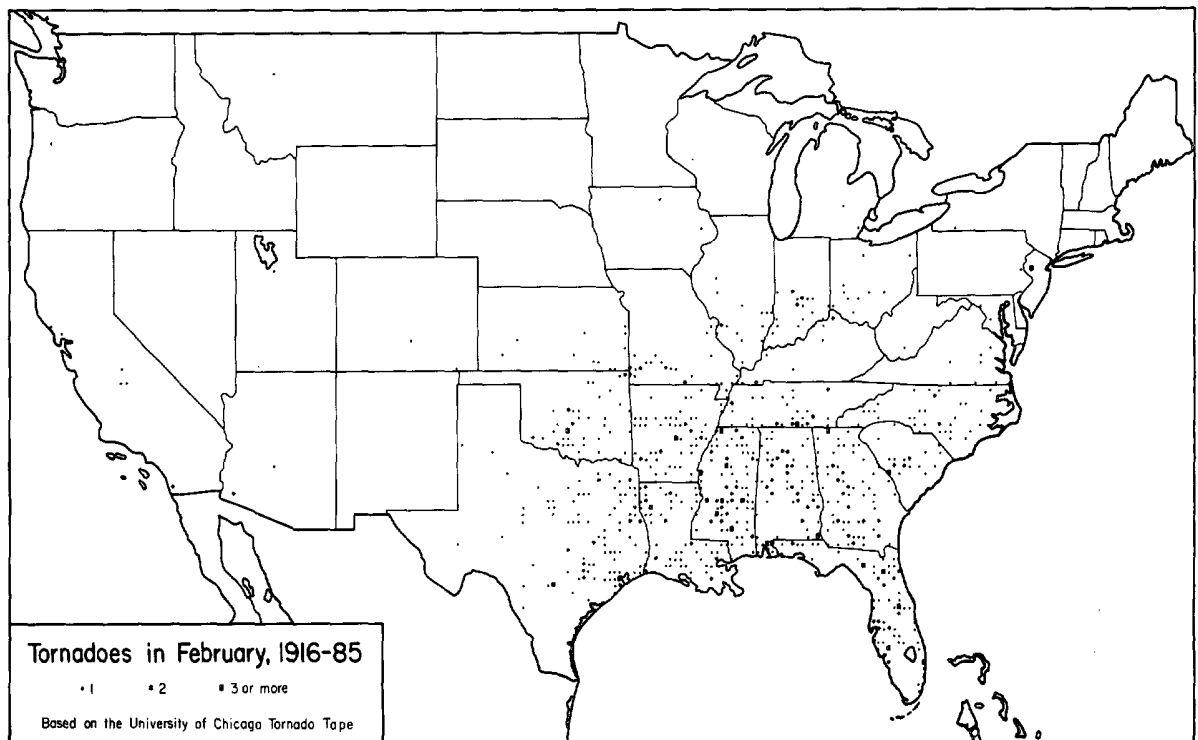
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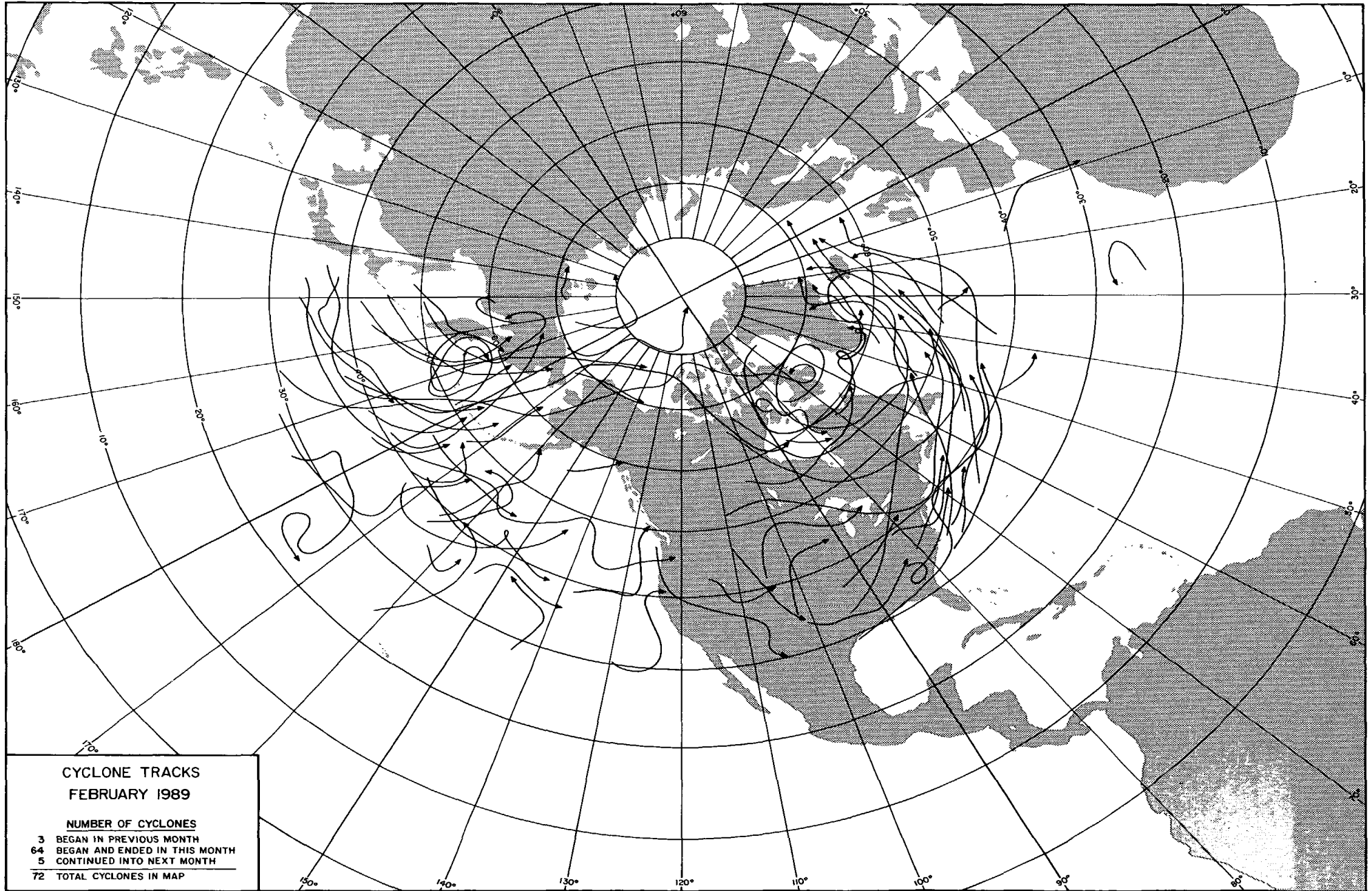
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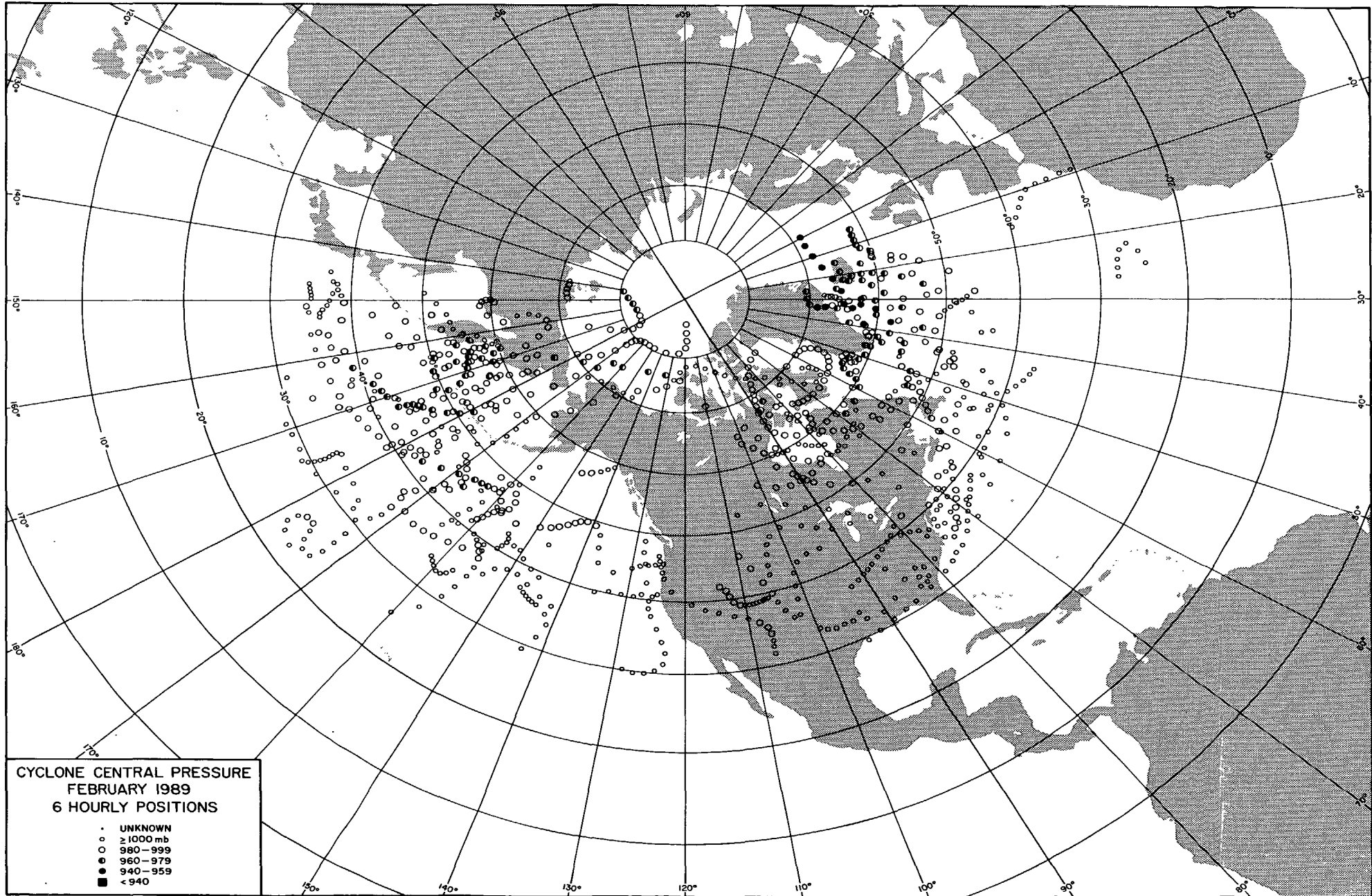
OUTSTANDING STORMS OF THE MONTH



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<p>(N) northern (W) western (S) southern (C) central (E) eastern (O) coastal (SE) southeastern</p>																																																																





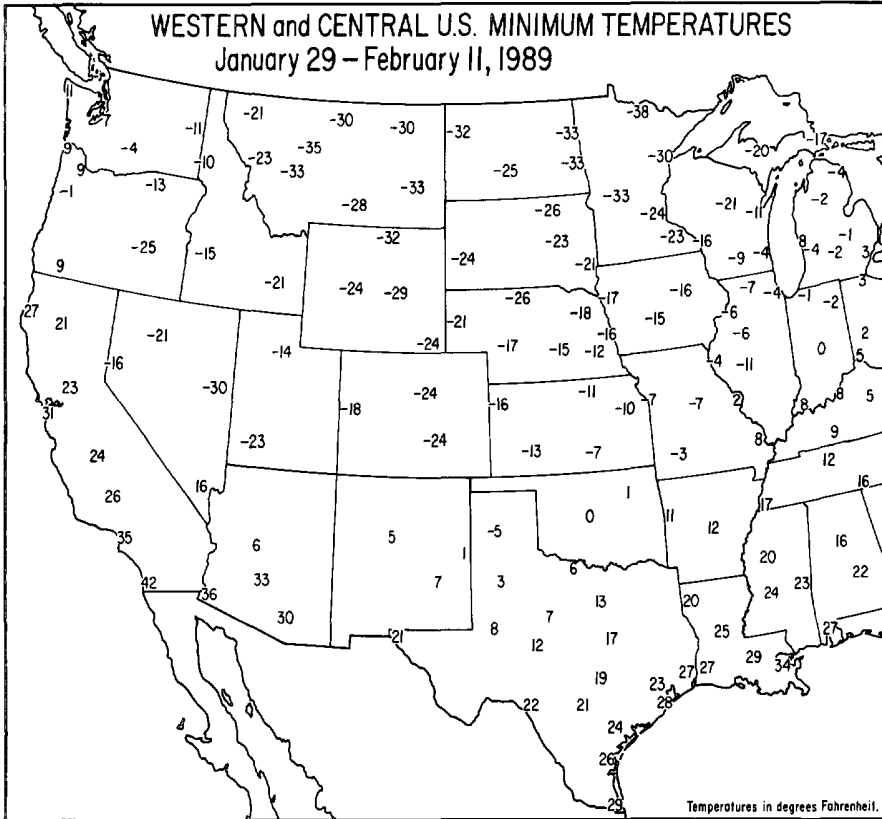


**CYCLONE CENTRAL PRESSURE
FEBRUARY 1989
6 HOURLY POSITIONS**

- UNKNOWN
- ≥ 1000 mb
- ◌ 980-999
- ◌ 960-979
- ◌ 940-959
- < 940

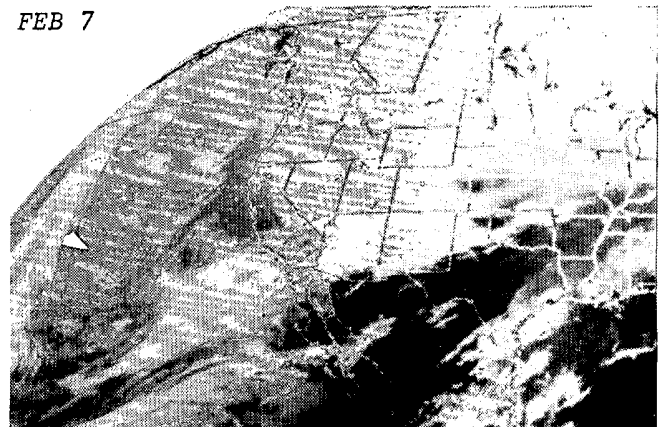
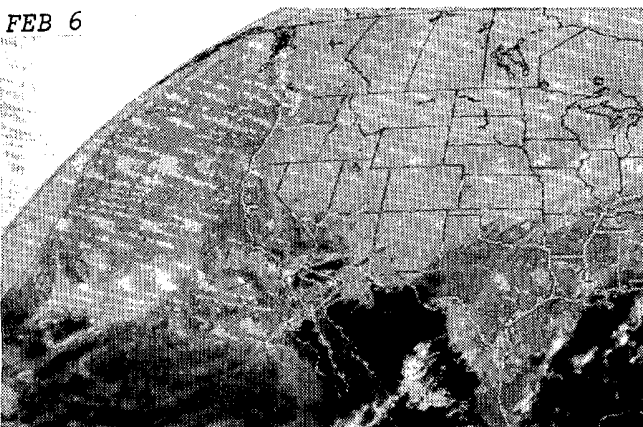
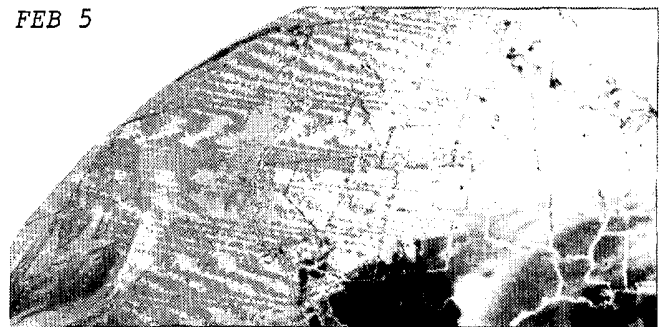
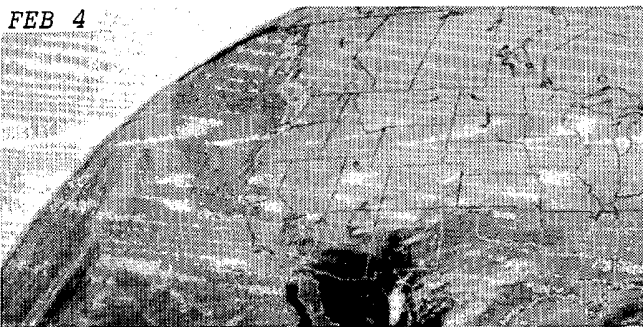
1. RECORD-SETTING COLD in the WESTERN U.S. on January 31 to February 8, 1989

The cold dome of Arctic air that formed over and plagued most of Alaska during the second half of January 1989, began spreading southeastward during the last few days of the month and settled in over the western two-thirds of the contiguous states during the first week of February. The frigid air initially pushed into the northern Rockies and all the way south through the Plains States, setting some new record lows in those regions. But over the course of a few days, the cold had also spread westward under the influence of an upper-level trough that regressed westward through the Western U.S., causing not only the central Rockies but also the intermountain region of the Great Basin and even much of the West Coast to experience unusually cold and record-setting temperatures. For some of the western states the coldest known temperatures, not necessarily official, included -52°F at Wisdom, Montana; -51 at Craig, Colorado; -47 at Weston, Wyoming; -43 at Boca, California; -42 at Carlin Gold Mine, Nevada; and -35 at Salmon, Idaho. West of the Cascades and Sierras, not as cold but none-the-less unusual were 7°F at Seattle-Tacoma, Washington; -1 at Salem, Oregon; and 31 at San Francisco, California.



Distribution of lowest minimum temperatures at official recording stations for selected cities in the western two-thirds of the United States for the two-week period of January 29th through February 11th, 1989. ---Data from the NOAA/USDA Joint Agricultural Weather Facility, Washington, DC.

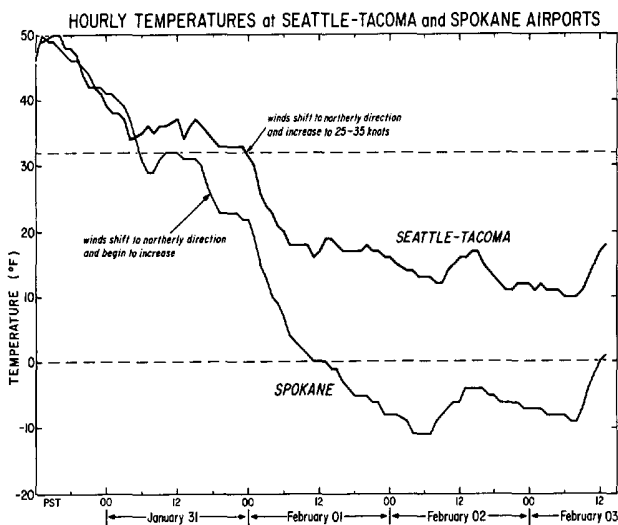
Below, the changing cloud pattern in a sequence of four GOES 7 satellite, infrared images taken daily at 1830 UTC from February 4th through 7th demonstrates how the cold air had spread westward through the Western U.S. and out over the Pacific Ocean from the West Coast as the combination of a regressing upper-level trough in the Southwest U.S. and a strong ridge anchored over the Gulf of Alaska caused the flow aloft over the Northwest U.S. to divert westward. ---Photos from NESDIS, Washington, DC.



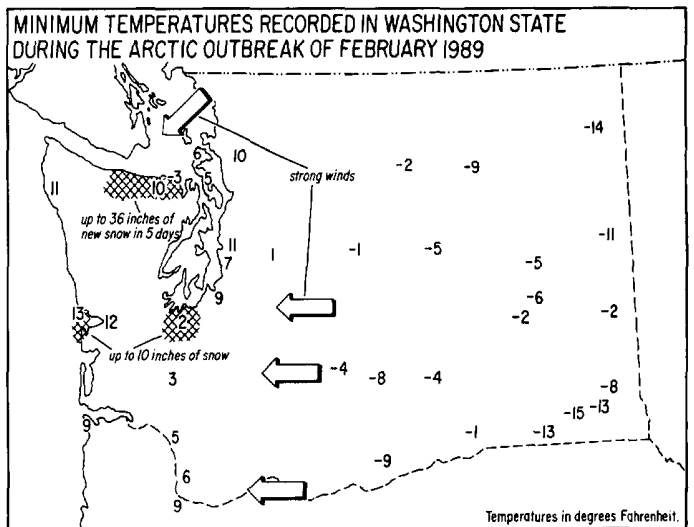
As if the record-setting temperatures, too numerous to list, were not enough, the prolonged stay of the cold only added to the impact of the outbreak. For several days it was too cold to operate machinery including cars and trucks in many areas. Many residents, especially in the coldest areas, remained indoors for an entire week until the temperatures began to significantly moderate. In all there were at least 22 deaths directly attributed to the cold, most resulting from hypothermia brought on by overexposure.



On February 5th, a woman has her hands full as she tries to excavate her car from snow that fell in amounts of up to three feet over eastern Clallam County on Washington's Olympic Peninsula between the 1st and the 5th. The snow resulted from cold northerly winds blowing across the much warmer waters of the Strait of Juan de Fuca during the cold air outbreak, an example of rare "strait-effect" snowfall. The photo was taken at an elevation of 500 feet near Lake Sutherland, 15 miles west of Port Angeles. ---Photo by Tom Thompson, The Peninsula Daily News, Port Angeles, Washington; and supplied by the NWSFO at Seattle, Washington.



Temperature versus time at the Seattle-Tacoma and Spokane airports in Washington State during the passage of the initial cold front and subsequent infiltration of cold air from the arctic outbreak at the start of February 1989.

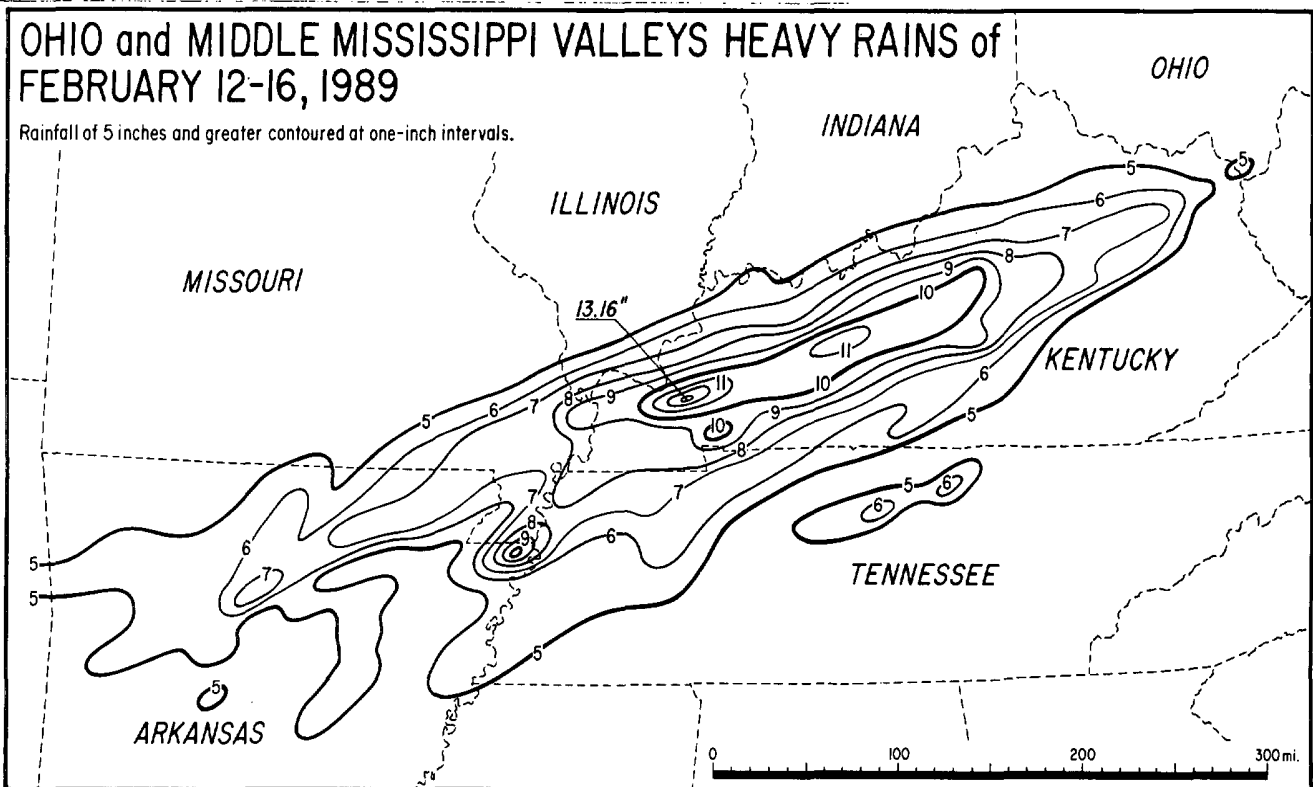


Distribution of lowest minimum temperatures in Washington State during the arctic outbreak of February 1989, including areas of strait-, sound- and bay-effect snowfall and strong winds that were induced by the event.

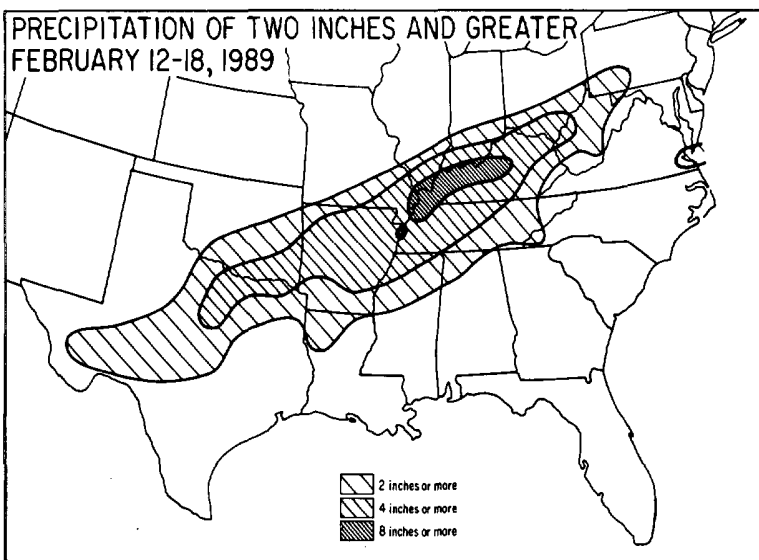
---Both above figures by Todd Dankers, NWSFO at Seattle, Washington.

2. HEAVY RAINS and FLOODING in the OHIO and MIDDLE MISSISSIPPI VALLEYS on February 12-16, 1989

Plentiful moisture overrunning a stationary front and aided by the passage of several small waves along the front made for heavy rains and widespread flooding in portions of the Ohio and Middle Mississippi valleys during a four to five day period in mid February. The heavy rains, beginning on February 12th and slowly spreading eastward across the area through the 13th, fell in a southwest-northeast band extending from central Texas to southwest Pennsylvania, but hardest hit was western and central Kentucky where 8 or more inches of rain had fallen. The highest recorded rainfall amount was 13.16 inches at Gilbertsville Dam, Kentucky. For the most part, the ground in the region was already saturated by previous rains, the consequence of which was only to quicken the onset of flooding and flash flooding. Most rivers in Kentucky that flow generally northwest into the Ohio River quickly reached flow capacity and began to spill over their banks, their waters inundating many buildings and in some cases entire towns in low-lying areas. Well over 1000 evacuations were necessitated as at least as many homes and businesses were infiltrated by the overspill. Only three deaths were attributed to the flooding, but damage estimates are expected to be at least in the area of several tens of millions of dollars. Although affected to a lesser degree than Kentucky, other areas also incurring flooding included northwest West Virginia, extreme southern portions of Illinois, Indiana and Ohio; extreme southeast Missouri, and much of northern Arkansas and the northwest half of Tennessee. Some additional rain fell during the 17th and 18th, but occurred mainly to the south of and contributed little in amount to the heavy rains that fell during the previous four days.



Analysis of total rainfall of 5 inches and greater in the Ohio and Middle Mississippi valleys for the period February 12-16, 1989. ---Mapped by the University of Chicago from Cooperative Observer data supplied by NCDC, Asheville, North Carolina.



Analysis of total rainfall of 2 inches and greater in the Central and Eastern U.S. for the period February 12-18, 1989. ---Analysis from the Weekly Weather and Crop Bulletin, NOAA/USDA Joint Agricultural Weather Facility, Washington, DC.



An aerial view of the flooding at Lebanon Junction, Kentucky. The town lies beside Interstate 65 (pictured) about 25 miles south of Louisville along the Rolling Fork River. The river crested at 10 feet above flood stage causing half of the town to become engulfed and forcing the evacuation of about 140 people from the southern Bullit County community. ---(BW)

Left, floodwaters from the Rolling Fork River at Lebanon Junction slowly seep through a wall of sandbags; below, the waters engulf two cars and a garage. ---Both (JR)





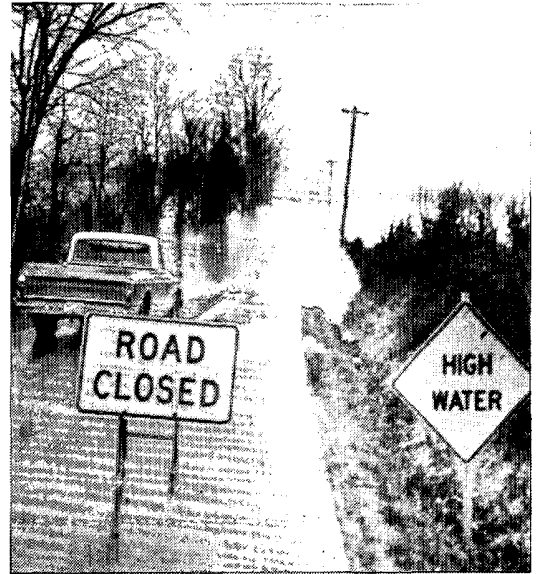
Residents keep vigil on the rising floodwater as it creeps up on their Lebanon Junction home. ---(BW)



A two-story dwelling in the community is surrounded. ---(JR)



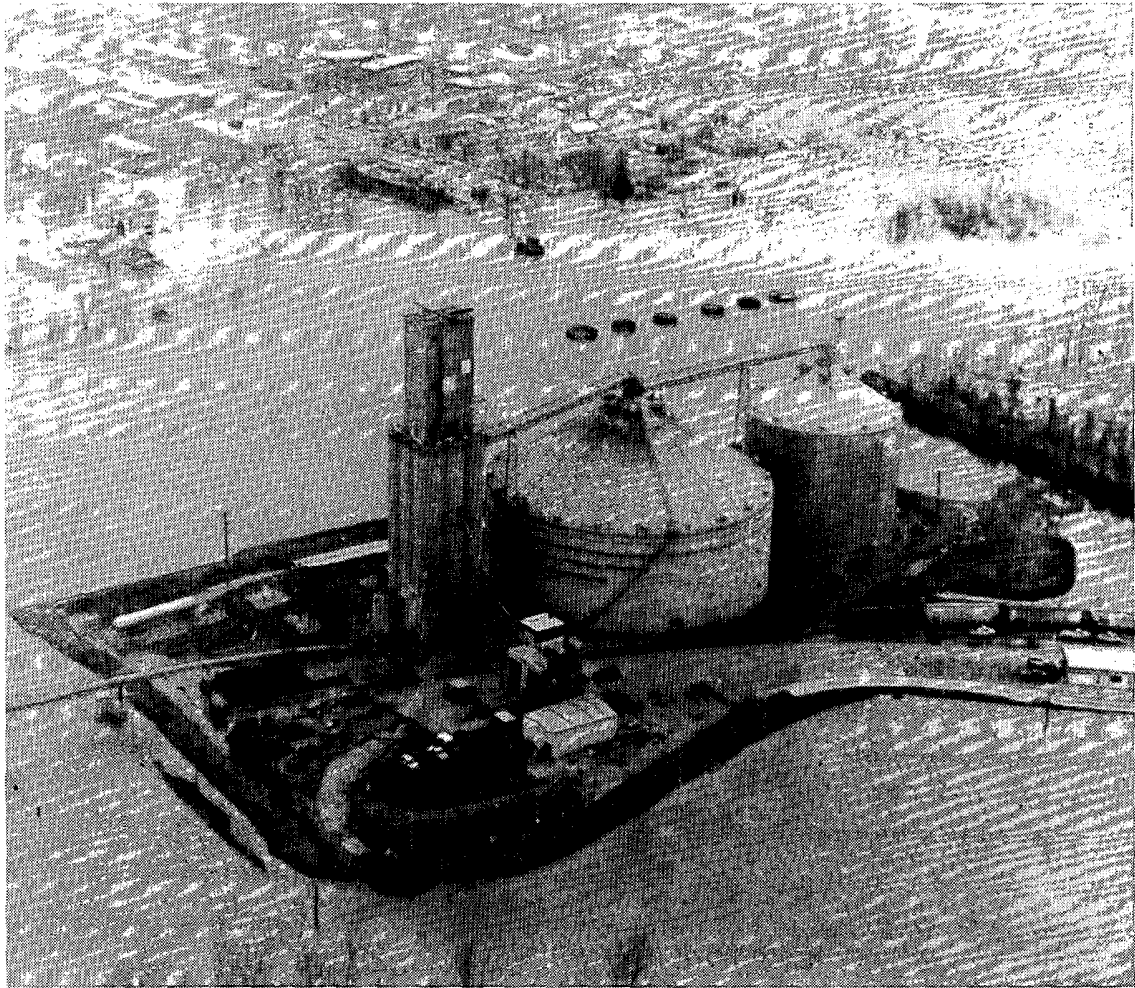
Also at Lebanon Junction, a pickup is used to tow another with a boat and trailer after it had stalled in the high water (left), and the road to Boston in Nelson County is closed after flooding made it impassable (right). ---Both (JR)



Above, water of the Salt River scales the piers of the L&N railroad bridge at Shepherdsville, Kentucky, the Bullit County seat about 15 miles south of Louisville. Right, onlookers view the high water from a highway bridge in Shepherdsville. ---Both (JR)



---Photos on pages 9 and 10 are by John Roberts (JR) and Bobbi Woloch (BW), both of The Pioneer News, Shepherdsville, Kentucky.



Seen in aerial and ground-level views above is flooding of the Green River at Livermore in eastern McLean County of western Kentucky. The large grain elevator and grain bins are part of the Bunge Corporation, located on the opposite side of the river from Livermore which is seen at the top of the upper photo.



Farther downstream along the Green River, this flooding took place at Highway 136 and Walnut Street in Calhoun, the McLean County seat. The river crested at 33.1 feet in Calhoun, 10 feet above flood stage. Countywide, over 200 homes and 75 mobile homes were damaged by the high water as nearly 10 inches of rain fell in less than 48 hours.



McLean County Road Department employees help evacuate a family and their belongings from a mobile home on east Second Street in Calhoun.

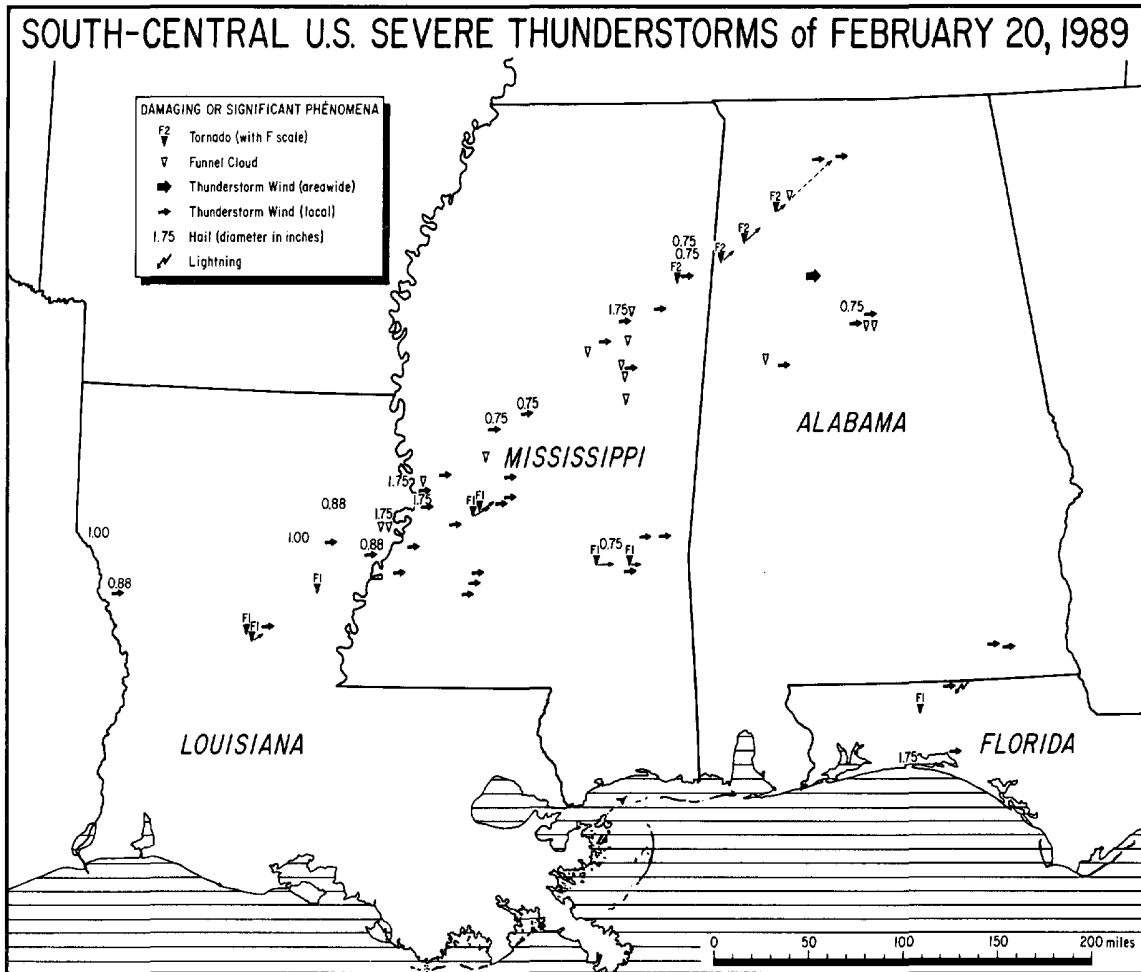


Above, the flooded town of Rumsey on the opposite side of the Green River from Calhoun is seen in an aerial view. The two towns are connected by the James Bethel Grisham Bridge which spans the river. At left, several rowboats, the only surefire mode of transportation at the time, are moored at a stop sign along Highway 81 at the foot of the bridge in Rumsey.

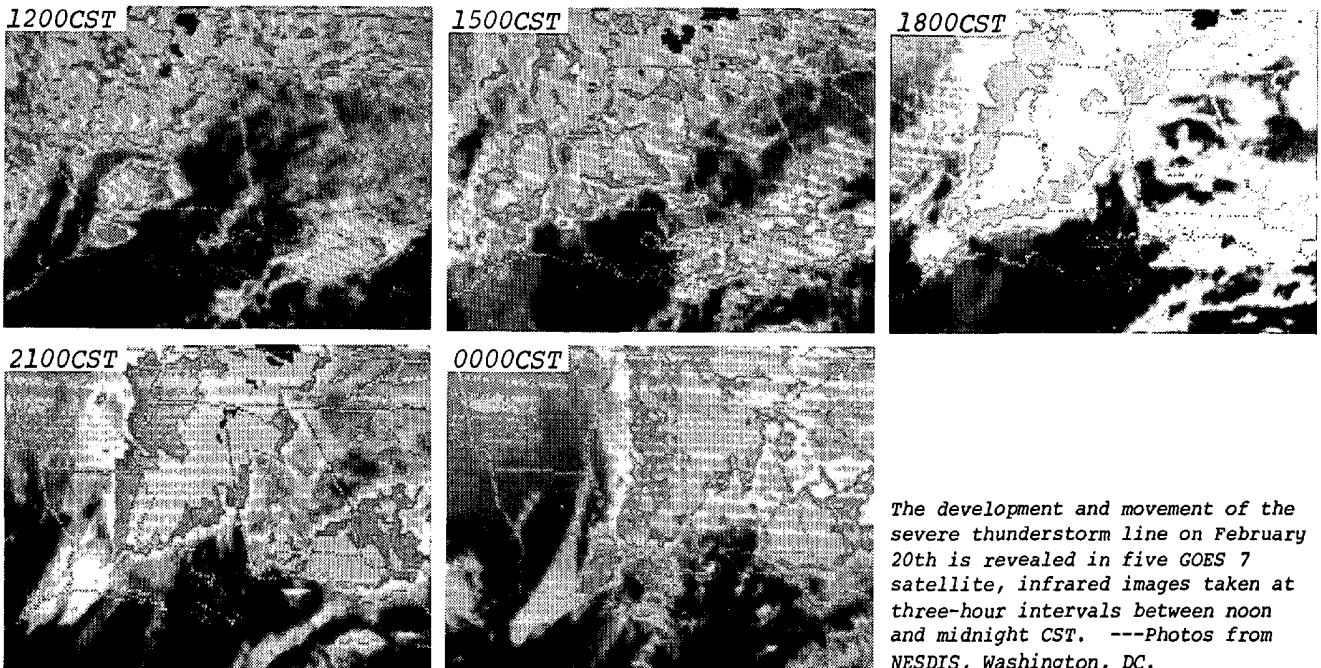
---All photos on pages 11 through 13 are from the McLean County News, Calhoun, Kentucky.

3. SEVERE THUNDERSTORMS in the SOUTH-CENTRAL and SOUTHEAST U.S. on February 20-21, 1989

The most prolific period of severe thunderstorm activity during February 1989 occurred over two consecutive days, the 20th and 21st in the South-Central U.S. and Southeast U.S., respectively. The severe phenomena began in central Louisiana at midday of the 20th as a low pressure system formed in northwest Louisiana. The storms had spread northeast through the afternoon and evening hours as the low raced northeast to the western front of the Appalachians, trailing its frontal system southwestward. The severe phenomena included four F2 tornadoes

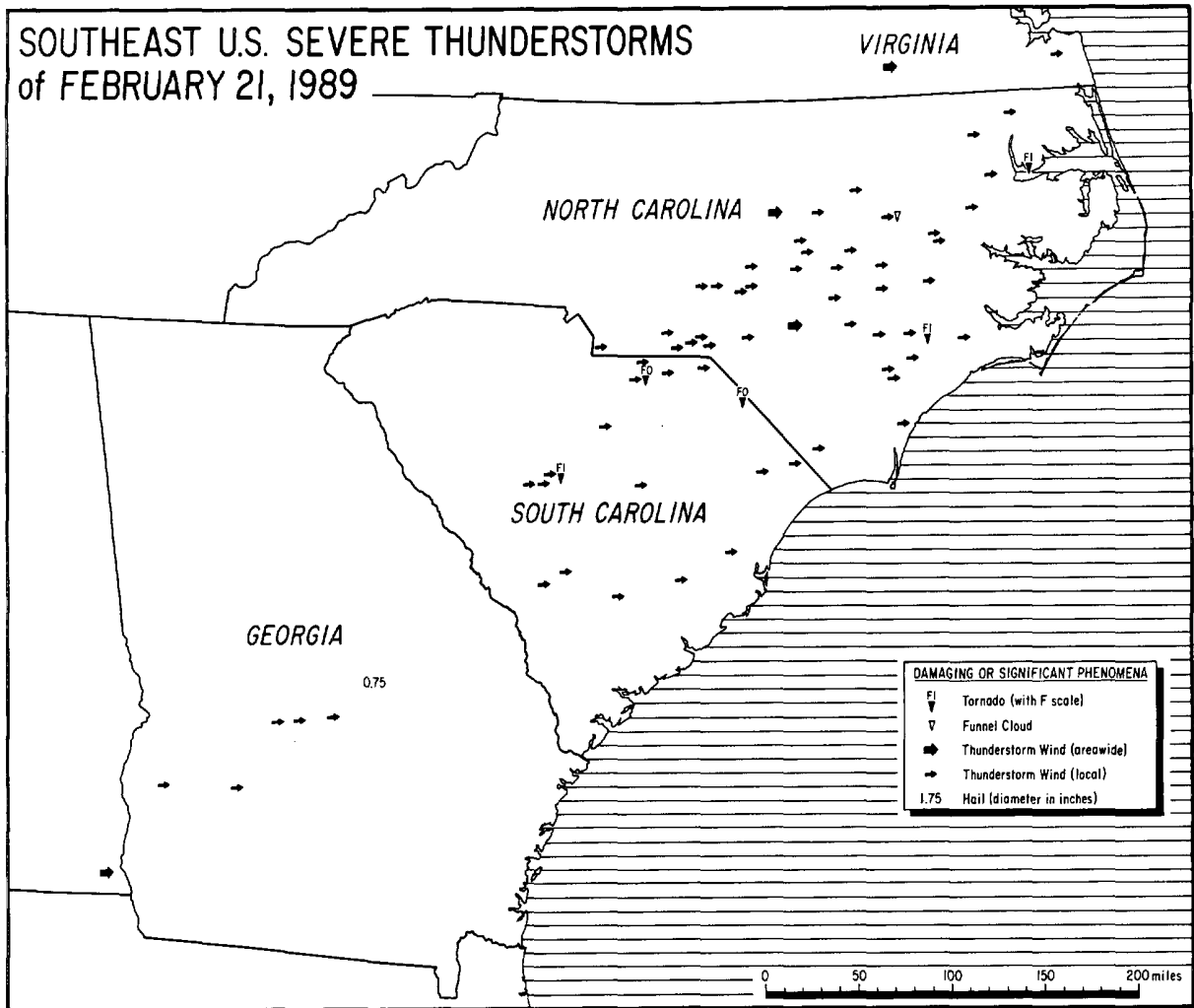


Distribution of severe thunderstorm phenomena reported in the South-Central U.S. between 1200CST of February 20th and 0300CST of the 21st. ---Graphic by the University of Chicago from data supplied by NWSFO's at Birmingham, Alabama; Miami, Florida; Slidell, Louisiana; and Jackson, Mississippi.



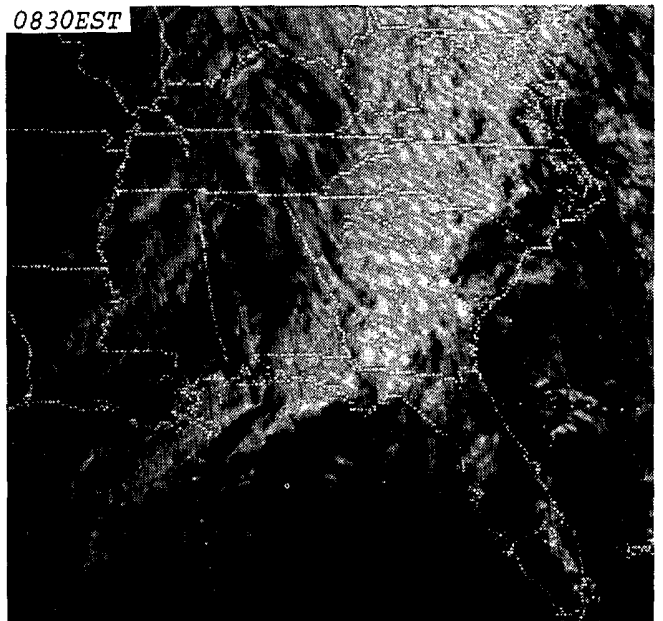
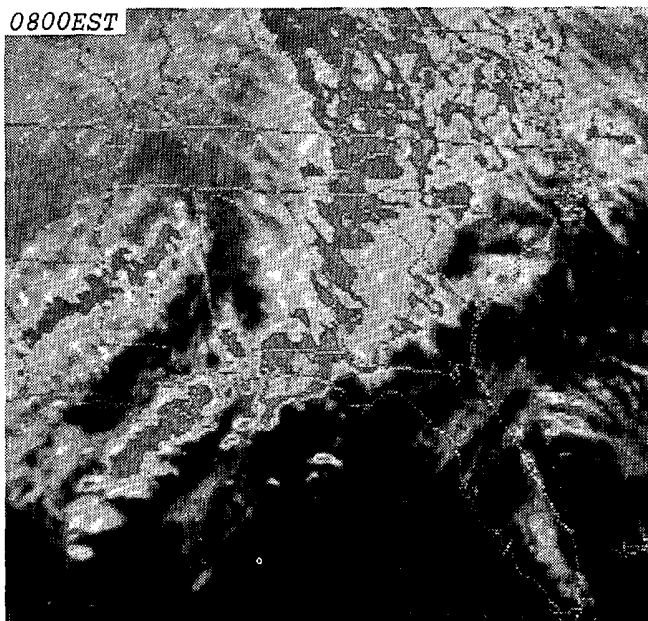
The development and movement of the severe thunderstorm line on February 20th is revealed in five GOES 7 satellite, infrared images taken at three-hour intervals between noon and midnight CST. ---Photos from NESDIS, Washington, DC.

that caused a considerable amount of damage in northeast Mississippi and northwest Alabama during the three hours prior to midnight CST. Overnight, the storms either dissipated or greatly weakened, then re-erupted in Georgia, the Carolinas and Virginia during the daylight hours of the following morning. These storms inflicted mainly wind damage and moved off the East Coast by mid afternoon. There was one death and 17 injuries caused by the storms, all of which occurred in the Carolinas on the 21st.

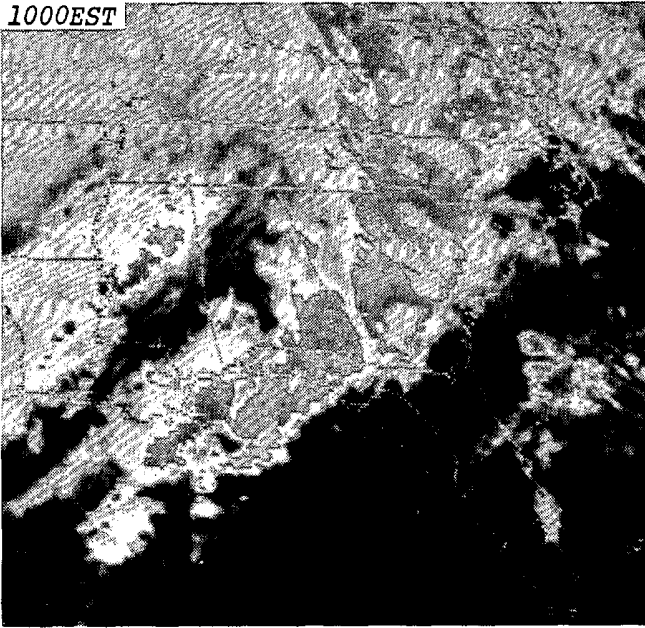


Distribution of severe thunderstorm phenomena reported in the Southeast U.S. between 0500EST and 1500EST of February 21st, 1989. ---Graphic by the University of Chicago from data supplied by NWSFO's at Birmingham, Alabama; Atlanta, Georgia; Raleigh, North Carolina; and Washington, DC; and the South Carolina State Climatology Office, Columbia.

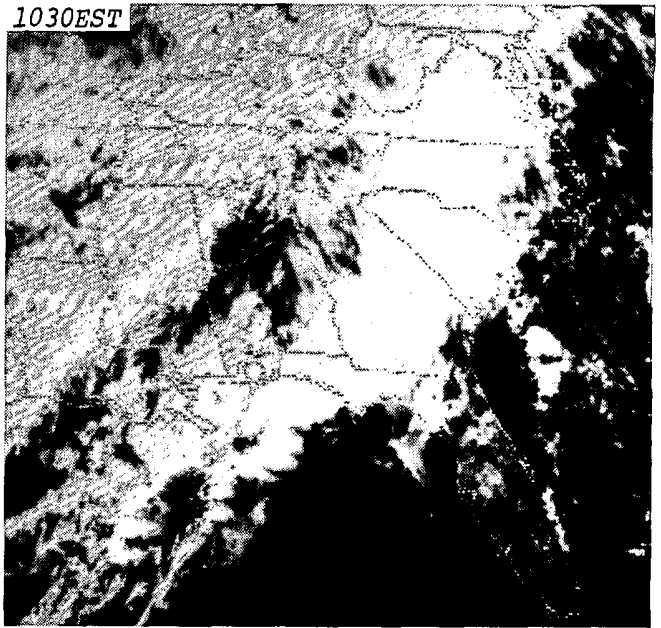
Below and on the following page, the February 21st storms are depicted in infrared (left) and visible (right) sequences of GOES 7 satellite images taken at two-hour intervals between 0800 and 1400EST and 0830 and 1430EST, respectively. ---Photos from NESDIS, Washington, DC.



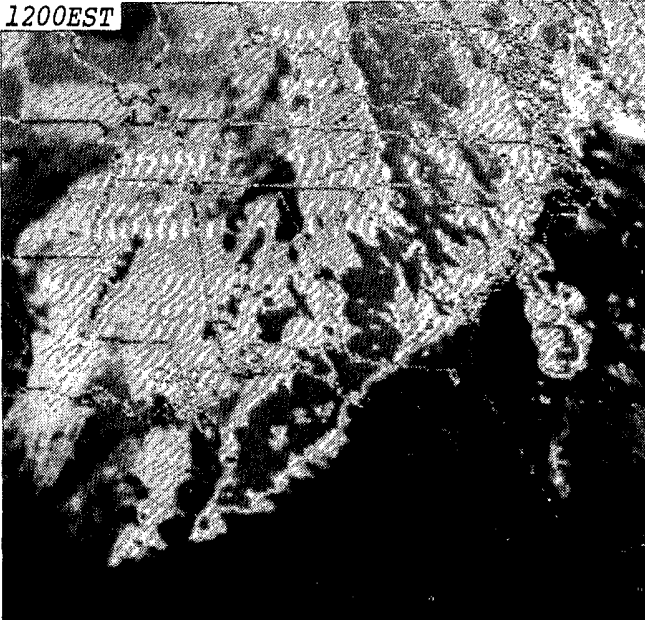
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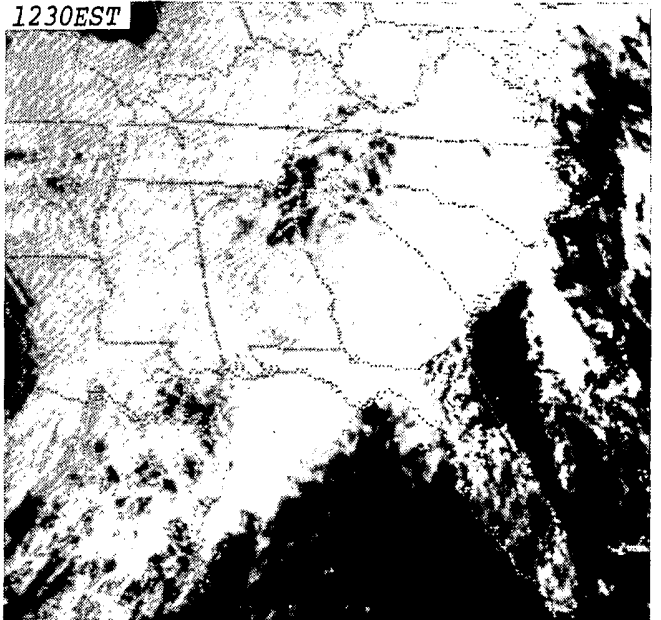
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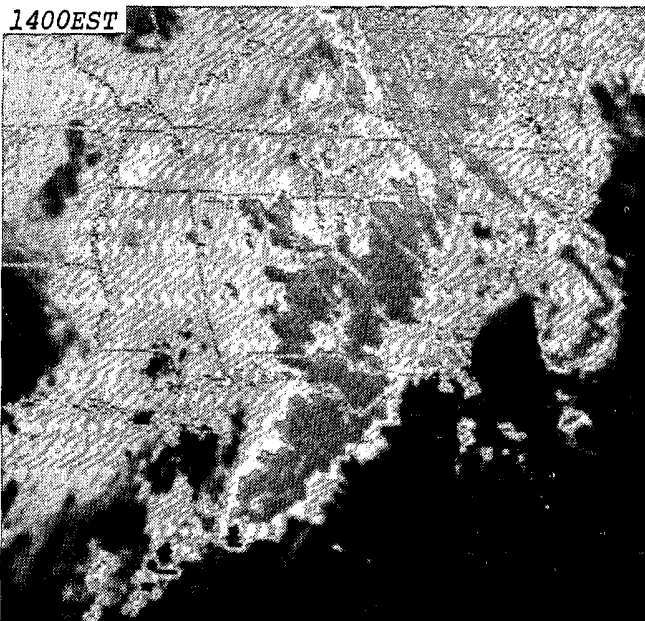
1200EST



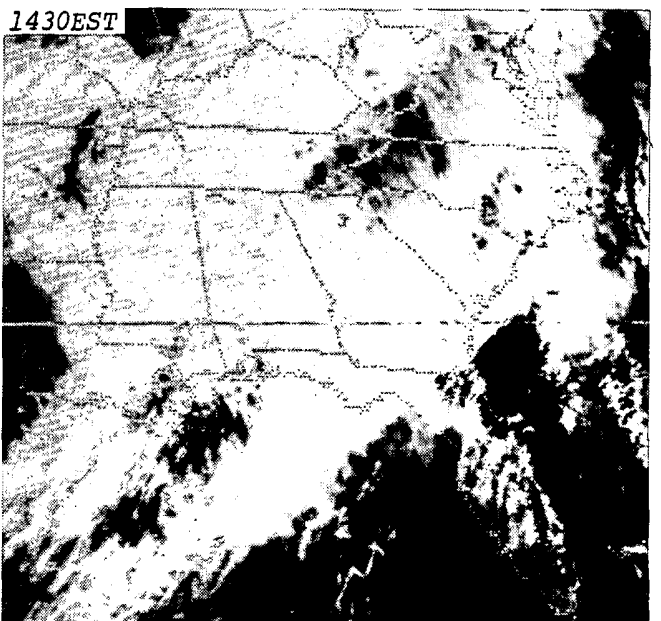
1230EST



1400EST



1430EST



STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
1 ALABAMA									
Lamar County	20	2130CST	9	440	0	0	6	5	Tornado (F2)
The tornado touched down about 3 miles north of Sulligent then hopped and skipped northeast over about a 9 mile long path averaging one-fourth mile in width. Surveys showed that 36 homes were partly damaged. Four homes were damaged more than 50 percent. Six mobile homes received extensive damage. Thirty-six outbuildings were either destroyed or damaged. Three churches received moderate to heavy damage. A grocery store was demolished. Six vehicles were damaged. A swath of timber about 5 miles long and around one-fourth mile wide was also destroyed. Structural damage estimates were placed at \$750,000 while timber damage estimates were \$150,000. There were no injuries or deaths.									
Marion County	20	2200CST	10	440	0	0	5	0	Tornado (F2)
A tornado touched down near Marion County Public Lake about 8 miles south of Hamilton then skipped over about a 10 mile path northeast across the county. The tornado crossed near the intersection of U.S. Hwy. 278 and State Road 253 before it lifted a short distance later. Several roofs were torn off, and several other buildings were destroyed near that intersection. Building damage was estimated at \$100,000. There were no injuries or deaths.									
Lauderdale County	20-21	2230-0500CST			0	0	?	0	Flash Flooding
Around 3 inches of rain fell over the Florence area causing water to rise into homes and over roads. Several motorists became stranded after attempting to drive through high water areas. There were no deaths or injuries.									
Lawrence County	20	2245CST			0	0	0	0	TSTM Wind
Trees were blown down at scattered locations in northeast Lawrence County. A mobile home was overturned in the same area. There was no one home and no injuries. Funnel clouds were sighted on a diagonal through Lawrence County from the southwest corner through Moulton to the northeast corner between 2215CST and 2245CST.									
Winston County	20	2300CST	5	200	0	0	6	0	Tornado (F2)
The tornado touched down about 1 mile north of Haleyville, then moved northeast about 5 miles to County Road 93 near Camp Maxwell before it lifted shortly before the Lawrence County line. One church was moderately damaged. One mobile home was flipped. Five residences received moderate damage. There was other damage to vehicles, equipment, and power lines. Damage estimates were placed at \$500,000. There were no deaths or injuries.									
Walker County	20	2300CST			0	0	0	0	TSTM Wind
Trees were blown down at scattered locations in Walker County, blocking a few roads.									
Morgan County	20	2315CST			0	0	0	0	ISTM Wind
Trees were blown down at Decatur.									
Tuscaloosa County	20	2330CST			0	0	?	0	TSTM Wind
The outside doors were damaged at a Tuscaloosa city hospital. Trees and power lines were blown down in the same area. A funnel cloud was seen near Buhl about 10 miles northwest of the City of Tuscaloosa.									
Jefferson County	21	0010CST			0	0	0	0	Hail (0.75)
At 0010CST dime size hail fell at Adamsville while trees and power lines were blown down in western Birmingham. At 0020CST funnel clouds were sighted at the University of Alabama in Birmingham and near the Highland Golf Course, both on Birmingham's south side. At 0045CST trees and power lines were blown down at scattered locations throughout the Birmingham area. Several trees were blown onto the tops of cars.									
Dale County	21	0155CST			0	0	?	0	ISTM Wind
Two mobile homes were damaged and power lines were blown down at Clayhatchee.									
Houston County	21	0200CST			0	0	?	0	ISTM Wind
Straight-line thunderstorm winds damaged a path approximately 1 mile long at Wicksburg. One mobile home was damaged. Two houses received roof damage and three houses had damage to porches. One storage building was destroyed. There were no injuries.									
Houston County	21	0520CST			0	0	?	0	TSTM Wind
One mobile home had its underskirting blown away. One mobile home was blown off its blocks. One greenhouse was destroyed and one barn was destroyed.									
2 ARIZONA									
AZZ-003	04	1510 MST			0	0	0	0	High Wind (58)
Sustained winds of 40-50 mph were reported in most of northern Arizona. One gust of 67 mph was observed at the St. Johns Airport.									
AZZ-006	04	2215 MST			0	0	5	0	High Wind (74)
Winds gusted to 85 mph at the Show Low Airport causing damage to three aircraft. Many trees were either uprooted or blown over at the Apache Sunrise Ski Resort. Some roof damage was reported in Show Low and total damages at the Stone Containers Paper Mill was \$60,000. Winds were clocked at 62 mph in Pinetop, nearly 60 mph in Page, and nearly 55 mph in Kingman.									
3 ARKANSAS									
Conway Co.	04	Early Morning			1	0	0	0	Extreme Cold
An elderly man died from exposure in his one-room home in Morrilton as the temperature dipped to 10 degrees. Apparently a wooden stove had failed to work. M77P									
Hot Spring Co.	09	Early Morning			2	0	0	0	Extreme Cold
An elderly couple died from exposure at their home in Malvern. The furnace had been turned down very low and only the living room was heated. Both victims were found in bedrooms. M79P P83P									
All of Arkansas	13th-22nd				0	0	5	?	Flooding
A series of wet weather systems passed over Arkansas during the mid part of February. Much of Arkansas received much above normal rainfall, with parts of the state measuring over seven inches of rain. The hardest hit areas were central and northeast Arkansas, where several counties reported over \$50,000 in damages. Numerous bridges were washed out, and other significant damage was also done to county roads. The flooding made it difficult for wildlife, which gathered on high ground. The flooding also delayed spring planting in some areas. No injuries were reported, but some families were evacuated or inconvenienced by high water. Overall, damage statewide was close to 1/2 million dollars.									
Carroll Co.	18	1030CST			1	0	0	0	Flash Flood
An elderly man was killed when flood waters from the Kings River swept his pickup truck into the river. The accident occurred on Highway 221, eight miles southwest of Berryville. State Police said water was running two to four feet over the bridge road surface. M77V									
Sharp Co.	21	Early Morning			0	0	?	?	Flash Flooding
Heavy rains washed out a 110 ft. wooden bridge over Martin's Creek ten miles northeast of Hardy. Four families were stranded in the North Hilltop Community for a short while afterwards. No estimates were available on the cost of replacement.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
4 CALIFORNIA, Northern									
CAZ009-010 Sierra Nevada	01	0600PST			0	0	0	0	High Winds
Strong southwest winds aloft along the southern edge of a cold Arctic 500mb low persisted over the Sierra Nevada. Ridgetop winds were sustained at 40 to 60 mph with gusts reported to 80 mph.									
CAZ001-007-008-009-010 Northern/Central California	02-04	1200PST-0800PST			0	0	4	?	Winter Storm
A series of strong Arctic fronts brought heavy snow to the mountains of Northern and Central California. At the higher elevations between one and two feet of snow fell (Soda Springs 22", Truckee 12"). Foothill areas had nearly a foot (Cedar 11", Grass Valley 9", Placerville 8"). Light snow fell to near sea-level with Redding picking up several inches and Eureka 1.5".									
CAZ002-003-004-005-006-009 Northern/Central California	05-07	1000PST-0900PST			0	0	0	7	Record Cold
Cold Arctic air enveloped California with record cold readings for three consecutive days. Minimum readings averaged 15 to 20 degrees below normal. Of particular note was a 31 at San Francisco on the 6th (the 8th coldest reading on record); and a -43 at Boca on the 7th (the coldest February reading ever recorded in California).									
CAZ005 Southern San Joaquin Valley	08	0830PST			0	0	4	?	High Wind
Strong gradient winds funneled into the southern San Joaquin Valley with sustained winds to 40 mph and gusts estimated to 80 mph in Arvin.									
4 CALIFORNIA, Southern									
Warm, sunny Southern California turned cold, windy, and wet this month as Arctic air was pushed into the region by zones of extremely high pressure over Alaska, Western Canada, and Northwestern U.S. A series of cold fronts passed through Southern California (SOCAL) between the 2nd and the 4th.									
CAZ014 Owens Valley	02	1800PST			0	0	4	0	High Winds
CAZ013-018-019	04	0653PST			0	0	4	0	High Winds
The series of cold fronts that moved through SOCAL the first three days of this month were very similar. Each tightened up the gradient as it approached. However, the surface low over Northern Nevada/Southern Idaho on the 1st dropped into Southeastern Nevada/Arizona by the 3rd and deepened somewhat. Thus, when the front came through on the morning of the 4th, the gradient was considerably steeper. This, along with the terrain effects, produced damaging winds from Antelope Valley through Victorville to Palm Springs and Twentynine Palms. Peak winds included: Victorville.....58 mph Daggett.....63 mph Crestline.....71 mph Lake Hughes.....72 mph									
Damage consisted mainly of overturned mobile homes, roof damage, and power outages due to downed power poles.									
CAZ013 San Bernardino Mtns.	04	1000PST			0	0	0	0	Blizzard
California Highway Patrol reported blizzard conditions at Big Bear Lake. 14 inches of snow fell at Snow Summit, 18 inches at Big Bear Lake, and heavy snow also hit other mountain resorts, forcing many to close their ski operations.									
CAZ011-012-013-016-017	04	All day			5	0	4	0	Rain, Fog, Ice, & Wind
A pilot walked away from the wreckage of his single-engine plane when it crashed in rain and fog on a ranch near Santa Ynez in Santa Barbara County. At least five weather related traffic fatalities were recorded in Los Angeles and Orange Counties. Ice and wind led to a twenty car pileup in the Tejon Pass and forced DHP to close 50 miles of Interstate 5 from Kern County to Lake Hughes Rd. In Los Angeles County a man was killed on the Santa Ana Freeway near La Cienega Boulevard. An unidentified man burned to death shortly after midnight in a car crash on the 210 Freeway near Tijunga. A woman passenger died in an explosion after a car crashed into a cement pylon on the Golden State Freeway north of Sylmar. In Orange County, a man was killed in a crash in Irvine and another in Laguna Niguel. M70V M77V F20V M46V M18V									
A cold front pushed through SOCAL late Saturday afternoon on the 4th. A low was located in Western New Mexico on Sunday the 5th as a high over Idaho pushed Arctic air southward. The upper low pressure center off the coast of Washington/Oregon Friday pushed southeast to near Southwest Idaho by Saturday afternoon and to Northern Utah by Sunday morning. The cold air from this system settled into SOCAL setting up the next in a sequence of rather significant weather events.									
— CALIFORNIA, Southern									
CAZ- ALL ZONES	06	All Day			0	1	3	?	Record Cold
In the Los Angeles area, a 42 year old man was injured when his car skidded on the icy surface road in Chatsworth and crashed. Monday's, the 8th, downtown Los Angeles high temperature of 52 equaled the record low maximum set for this date in 1887. Other temperatures included: UC Riverside.....46 (record low maximum) Redlands.....23 (record low minimum) Hemet.....24 " " " Ojai.....25 " " " Ontario.....27 " " " Escondido.....27 " " "									
The Los Angeles County Agricultural Commissioner reported no significant crop damage due to the cold temperatures...obviously there was some undetermined amount of minor damage.									
CAZ- ALL ZONES	07	2100PST			3	0	0	5	Snowstorm
Snow fell from the beaches of Malibu, to the desert canyons of Palm Springs, to the ski resorts of Big Bear beginning late Tuesday night in a frosty winter storm that closed schools and highways, threatened Southern California's fruit crops, and sent temperatures plummeting to new records. The snowfall created mammoth traffic jams throughout the Los Angeles Basin. The freak winter storm settled in over the Southland early Wednesday morning becoming only the fifth major snowstorm recorded in the Los Angeles area since 1932. Porter Ranch, Westlake, Calabasas, Granada Hills, Simi Valley, West Hills, Thousand Oaks, and Tarzana, areas that can go years without receiving snow, reported 1-2 inches. Valencia reported 2-3 inches. Snow fell throughout Palm Spring, Cathedral City, and Whitewater. The southern portions of Inyo County reported 8-10 inches of snow in Lone Pine and up to 18 inches in Glencha/Cartago. 4-15 inches of snow fell in parts of the Santa Clarita Valley, while up to 15 inches fell in the higher elevations near Acton. The principal highways into the Southland from the north and west -- Interstate 5 over the Tejon Pass, California 14 between Newhall and Palmdale, Interstate 15 over the Cajon Pass, and Interstate 10 through San Geronimo Pass -- were all closed by snow and ice by midnight Tuesday. A man apparently lost control of his automobile during a snowstorm and went over the edge of Soledad Canyon Road. He was found dead in his car at the bottom of a 60-foot ravine. M30V. A transient died in Fontana due to hypothermia brought on by exposure to the cold. M75D. A Riverside man was killed when his speeding car slammed into the back of a slow-moving truck during a downpour on Interstate 10 in the Redlands area. M35V. Los Angeles County strawberry farmers estimated a 25% loss of crop due to the freezing weather on the 6th and 7th. Damage estimates are near \$250,000. Also, area lemon groves are reporting a preliminary loss of 35% to the lemon crop. A man died Thursday afternoon on the 9th near Corona Del Mar in a head-on multicar accident during a rainstorm. M84V.									
CAZ-011-012-013-016-017	13	1200PST			0	0	3	0	Thunderstorm
An upper-level disturbance slid across Southern California bringing showers, thunder, and lightning. Hail fell in Santa Monica and Santa Ana. Lightning struck a Manhattan Beach home; the bolt apparently followed piping down through the walls, shattering a bathroom window and blowing holes in the stucco on both sides of the house. No one was hurt.									
CAZ013 W. Riverside County	19	1207PST			10	0	4	0	Drizzle and Fog
The shattered wreckage of a chartered twin-engine plane carrying five children, their parents, and two other relatives on an outing from Las Vegas to Disneyland was found Monday on a chaparral-covered peak in Riverside County. All 10 aboard, including the pilot, were dead. The Cessna 402, flying in overcast, drizzly weather at midday Sunday, failed to clear a 2,274 foot crest by about 100 feet and slammed into the peak overlooking Hagador Canyon in the Santa Ana Mountains, scattering twisted metal, bodies, and baggage over a 100 yard area. M36D F33D F15D F14D F12D M11C M7D M24D F23D M34D.									
5 COLORADO									
Montrose County CO2003	1	2230MST			0	0	4	0	High winds
Strong wind gusts damaged or destroyed several sheds in the Montrose area, and caused scattered power outages. The gusts toppled a brick chimney on one house, and also destroyed an awning and broke some storm windows. An empty metal fuel tank was thrown several hundred feet. The peak gust recorded at the Montrose airport was 50 mph at 2230 MST.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

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					KILLED	INJURED	PROPERTY	CROPS		

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE	CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS		

COLORADO

Statewide	1-6									Cold
COZALL										Snow
										High winds
<p>One of the century's worst doses of winter ravaged Colorado for the better part of a week. Bitterly frigid weather moved into northeastern Colorado on the 1st, and reached all areas of the state by the night of Feb. 4-5. Snow buried most areas. During the period Wolf Creek Pass, in southwestern Colorado's San Juan Mountains, had 5 1/2 feet of new snow, including 28 inches in 24 hours on Feb. 3-4. 2 to 4 feet fell throughout the Colorado Rockies, with most snowfall occurring from the 2nd through the 5th. A 6 year old boy was killed when he was buried by an avalanche in a parking lot at Crested Butte in Gunnison County on the 5th; the slide injured two other boys. Another snowslide injured a highway worker at Wolf Creek Pass. Heavy snow also fell at lower elevations. Craig, in Moffatt County, was buried by three feet in three days. Elsewhere in Western Colorado, about two feet fell in Garfield County at Glenwood Springs and Rifle; 9 inches immobilized Grand Junction on the 4th.</p> <p>The weather in western Colorado was particularly horrible on the night of February 4-5, when heavy snow and howling winds created widespread blizzard conditions. Many highways were closed, including Interstate 70 from Eagle to Grand Junction. Hundreds of travelers were stranded. High winds caused numerous power outages.</p> <p>Farther east, one to two feet of powder fell in the Colorado Springs area, most of it on February 3-4. Pueblo had a foot of snow. Accumulations were less in other areas, but still caused problems when combined with wind. In the Denver area, where 3 to 6 inches fell, blowing snow and resultant poor visibilities caused a 46 car pileup on Interstate 25 in the middle of the city on February 4. 2 to 3 hour delays were common at Stapleton airport.</p> <p>Though the snow and wind were bad enough, the main feature of this spell of rotten weather was the intense cold. This was arguably the worst February cold wave of the century in Colorado. Temperatures stayed below zero continuously for the best part of three days in Denver and Colorado Springs; wind chills reached 50 below zero in both cities. The mercury dropped to 24 below zero in Denver on the 5th, the city's coldest temperature in over 26 years. The cold air didn't reach western Colorado until the 4th, but then it came in with a vengeance. An 18 below reading at Grand Junction on the 6th was that city's coldest temperature in 26 years.</p> <p>But it was far, far colder elsewhere. After the heavy snow ended at Craig, the mercury there plunged to 51 below zero on the morning of the 6th. Many other spots were almost as cold. Throughout the state extensive damage occurred when pipes and water lines froze and broke. Thousands of cars failed to start; in Craig even heavy equipment was disabled by the Siberian-like temperatures. Schools were closed or operated at limited capacity in many places as the frigid weather strained heating and power facilities. On Feb. 3, a 57 year old woman died of hypothermia in a park in the Denver suburb of Arvada, in Jefferson County. 18 high school students were treated for hypothermia after a two hour ride through Jefferson County in an unheated bus. At least two cases of frostbite were reported; there were undoubtedly many more.</p> <p>In western Colorado, the deep freeze caused havoc to fruit crops in Mesa and Delta counties. Much of the peach crop near Grand Junction was destroyed when the temperature dropped under 15 below zero, freezing the buds on the trees. Apricots, plums, grapes, and cherries were also damaged.</p>										
Rio Blanco County	12	2330MST			0	0	4	0		Snow
COZ001										Snow accumulating through the winter caused the roof of a building in Meeker to collapse; damage was estimated at \$30,000.
Mountains, Southern	19-21				0	0	0	0		Heavy snow
Foothills										
COZ002-004-008-010-015										1 to 3 feet of snow fell on the Colorado Rockies during this period. The heaviest 24-hour snowfall was 20 inches at Irwin, in Gunnison County near Crested Butte. Heavy snow also fell at Rye, in the southern foothills in southwestern Pueblo County; 15 inches fell there in 24 hours, with 24 inches total during the storm.
Northern, Central	26-28				0	0	0	0		Heavy snow, wind
Mountains										
COZ002-004										1 to 2 feet of snow fell in the mountains from Aspen northward. The largest 24-hour total was 19 inches at Mary Jane ski area in Grand County. Wind gusts of 60 to 70 mph occurred around midnight on the 26th at Copper Mountain and Aspen Highlands ski areas.

6 CONNECTICUT ————— NONE REPORTED

7 DELAWARE

DEZ001	24	0000EST								Blizzard
DEZ002	24	0000EST								Winter Storm

Blizzard conditions prevailed over Sussex County, with snow and frequent winds to 35 knots. Accumulations throughout southern Delaware averaged 6 to 10 inches. The storm ended by mid afternoon, Friday the 24th.

8 FLORIDA

Okaloosa Co., Pt. Walton Beach	20	2109CST			0	0	1	0		Hail(1.75)
										Thunderstorms dumped golf ball size hail and 3-6 inches of rain in less than 3 hours on southern Okaloosa County. The storms contributed to the crash of an Air Force C141B jet at Eglin Air Force Base that killed all on board.
Walton Co., East Freeport	20	2230CST			0	0	3	0		TSTM wind
										High winds damaged an unoccupied mobile home.
Okaloosa Co., Dorcas	21	0000CST	0.5	50	0	0	4	0		Tornado(FL)
										A family of four narrowly escaped injury when a tornado completely destroyed their mobile home valued at \$7500. The tornado blew shingles from adjoining houses, uprooted several large pine trees and blew a small boat across Mirror Lake.
Walton Co., Gaskin	21	0230CST			0	0	3	0		TSTM wind
					0	0	4	0		Lightning
										Power lines and pine trees were blown down, three barns deroofed, and a lightning-started fire destroyed a shed and its contents worth \$7000.
Marion Co., Ocala	21	1335EST			0	0	4	0		Hail(1.75)
Volusia Co., Daytona Beach	21	1512EST			0	0	4	0		Hail(1.00)
										High winds and hail accompanied thunderstorms that moved east at 35 mph through portions of northeast Florida. Winds downed power lines, trees and signs and did minor damage to mobile homes, cars and residences.
FLZALL Peninsular Florida	23-	0800EST-			3	?	0	8		Cold Spell
	26	1000EST								
										A prolonged late-season Arctic outbreak broke numerous daily minimum temperature records throughout Florida. A hard freeze occurred in the north and central peninsula with a freeze and frost in interior south. Extensive damage, primarily to produce crops, caused an estimated 250-300 million dollars in losses. At least three people died of hypothermia and one person died in a fire possibly caused by a heating device. Near Tallahassee a woman was found frozen to death in her home. Two people died of exposure in Dade County. Cold F65P M650 M700
Broward Co., Ft. Lauderdale	28	1441EST			0	0	1	0		TSTM wind(50)
										Thunderstorms produced 1/2" hail at the north end of Ft. Lauderdale International Airport with pea size hail reported nearby. Rainfall amounts up to 7 inches caused a mud slide at a highway construction site in southeast Broward County that blocked traffic on Interstate 95 for several hours.

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					KILLED	INJURED	PROPERTY	CROPS	
9 GEORGIA									
GAZ002, Northeast Georgia	17-19	1900EST-0800EST			0	0	5	0	Ice Storm
			Freezing rain coated trees, bridges and overpasses at elevations above 2200 feet MSL in northeast Georgia. Hundreds of trees and power lines were downed by the weight of the ice during the nights of the 17th and 18th. The downed trees blocked roads and slowed the restoration of power and telephone service to 1800 homes.						
Randolph County, Cuthbert	21	0630EST			0	0	?	0	TSTM Wind
Lee County, 7 NE Leesburg	21	0700EST			0	0	2	0	TSTM Wind
			Falling trees damaged two mobile homes, several cars and a camper near Cuthbert. A dairy barn lost its roof and another was damaged by thunderstorm winds. Many trees were downed in the same area. Two trees were blown down and a storage shed rolled over by thunderstorm winds on U. S. Highway 19.						
Dooly County, Unadilla	21	0740EST			0	0	?	0	TSTM Winds
Pulaski County, 2 W Hawkinsville	21	0755EST			0	0	?	0	TSTM Winds
Dodge County, 11 NNW Eastman	21	0835EST			0	0	5	0	TSTM Winds
Laurens County, 2 E Dublin	21	0900EST			0	0	0	0	Hail (0.75)
			Thunderstorm winds damaged trees and downed power lines near Unadilla. A roof of an old building was blown off west of Hawkinsville. Two barns were destroyed and several large pine trees were snapped off by thunderstorm winds on a farm one mile north of the community of Roddy in northern Dodge County. The damage exceed \$150,000 to the barns and equipment stored in the barns.						
GAZ002-004-007, Northeast and East-Central Georgia	23-24	0200EST-0300EST			0	0	?	0	Heavy Snow
			Four to around seven inches of snow fell mainly during the morning and early afternoon hours on the 23rd. The heaviest snow fell near the South Carolina border from east of Athens to Augusta. Roads were very hazardous and weather conditions were blamed for numerous accidents which caused one fatality and several injuries. Warmer weather on the 24th quickly melted the snow.						
Muscogee County, 2 N Columbus	28	0600EST			0	0	?	0	TSTM Wind
Marion County, 7 N Buena Vista	28	0630EST			0	0	?	0	TSTM Wind
			Thunderstorm winds downed trees that damaged two homes in northern Columbus. Several trees were downed and roofs of chicken houses were damaged on Highway 41 north of Buena Vista.						
Houston County, Elberta	28	0620EST					4	0	TSTM Wind
			Many trees were uprooted or snapped off and several roofs were damaged by wind and falling trees in the Elberta area.						
Jefferson County, 6 S Louisville	28	0715EST			0	0	4	0	TSTM Wind
			Thunderstorm winds destroyed a dairy barn and a shed. Debris from the shed damaged a mobile home. Many oak and pine trees were snapped off and several homes had shingles torn off.						
Colquitt County, 12 ENE Moultrie	28	1330EST			0	0	?	0	TSTM Wind
			Thunderstorm winds damaged several farm sheds and the porch of a house as well as downing several small trees in the Needmore community in eastern Colquitt County.						
10 IDAHO									
IDZ003-004-010 Southeast Idaho	31 Jan.-05 Feb.	1600MST-0800MST			1	8	6	0	Blizzard (45)
			Over 1600 head of livestock perished from extreme windchills as mouths, nostrils and eyelids froze shut; some animals were frozen so solidly that their legs broke when rescuers tried to move them. A 17-vehicle pileup on Interstate 84 just south of the Interstate 86 junction in Cassia County, occurring at 1129MST on February 1st, involved 9 automobiles and 8 tractor-trailers and was blamed on a sudden drop of visibility to zero by wind-driven snow. The accident resulted in one death and three injuries. Interstate 15 was closed on the same day at 0500MST due to gale force winds and zero visibility with the windchill at -100°F; around 200 persons were stranded on Interstate 15 at Dubois for four days. Snow drifted to a height of 19 feet, closing roads and schools for four days. Diesel fuel froze to a gel. An ambulance sandwiched between two snow plows was used to transport a woman in labor to the hospital for a caesarean section. Oscillating power lines slapping together in 35 to 50 mph winds caused widespread power outages. Water pipes froze and burst. Hospitals reported several cases of frostbite. M60V						
IDZ008-009 Northern Idaho	31 Jan.-03 Feb.	2200PST-0200PST			0	2	6	5	Blizzard (45)
			An Arctic outbreak of cold air nicknamed "The Siberian Express" was apparently associated with the record highest sea-level pressure for North America observed in Alaska in the latter part of January. A January thaw had reduced insulating snow cover, allowing the ground to freeze to a depth of 4 to 5 feet. High winds from an unusual northeast direction snapped off hundreds of frozen trees, causing widespread power outages from broken lines. Many homes were damaged by falling trees. At least one house fire was started when the loss of power to the fan of an insert fireplace caused the insert to overheat. Drifting snow and low visibility forced the closure of Highways 1-90 and U.S. 95 after numerous slideoffs and accidents had occurred, Windchills of between -60°F and -80°F necessitated the closing of schools for three days. Numerous water pipes froze.						
Lemhi County, Salmon	03	0800MST							Extreme Windchill
			A windchill of -105°F was computed from the air temperature of -35°F and the wind speed of 35 mph at Salmon. Firemen fighting a fire in the bitter cold said they were insulated from the cold as water from their hoses froze onto their gear.						
IDZ001 Southwest Idaho	04-09				0	0	5	6	Unusual Cold Spell
			Daily minimum temperatures were below zero for six consecutive days. Boise established a new record low temperature for February with -15°F on the 5th; new record low temperatures for the date were established on the 4th, 5th, 6th, 7th and 8th. Water pipes and automobile radiators froze. Power failures occurred in Nampa and Caldwell. Several fires were blamed on overloaded wires and overturned space heaters. Berry vines and peach tree buds were reported as killed or severely damaged.						
IDZ003-004 Southeast Idaho	06	0600MST			0	0	4	0	Unusual Cold
			A minimum temperature of -21°F at Pocatello was 40 degrees colder than normal. Idaho Power reported an all-time peak load, with customers using 2,102 megawatts; the previous peak load was in July 1985 at 2,025 megawatts. Power blackouts lasted from minutes to hours. Schools closed. Six calves froze to death 25 miles south of Pocatello.						
Custer County	06-09				0	0	4	0	Flood
			Ice jams on the Salmon River caused minor flooding north of Stanley in the community of Lower Stanley.						
IDZ001-006-009 North and Southwest Idaho	16-17	2200MST-0600MST			0	2	4	0	Heavy Snow
			Four to seven inches of snow overnight was blamed for numerous automobile accidents which resulted in two injuries. Drifting snow closed Selle Road in northern Idaho. Blowing snow closed the Sand Point airport.						
Washington County	19	1300MST			0	0	0	0	Snowslide
			U.S. 95 near Cambridge was closed for three hours due to a snowslide.						
Power and Bannock Counties	24	0200-1100MST			0	1	4	0	Dense Fog
			Dense fog due to melting snow and warm temperatures was blamed for numerous automobile accidents which resulted in one injury. At least 5 flights were canceled at Pocatello Municipal Airport. The fog was mixed with sulfur from industrial emissions.						

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FEBRUARY 1989

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					KILLED	INJURED	PROPERTY	CROPS	
11 ILLINOIS									
Edwards, Hardin, Massac, Pope, Pulaski and Wabash Counties	13-16				0	0	?	0	Flooding
<p>Heavy rains fell across extreme southern Illinois along the Ohio River during the three day period from February 13th through the 16th. In Illinois the heaviest 24-hour calendar day rainfall total occurred at Brookport in Massac County where 5.32 inches fell on the 14th and 8.38 inches fell during the 3 days from the 13th through the 16th. The total February monthly precipitation at Brookport was 13.21 inches. Just across the Ohio River at Paducah, Kentucky rainfall was measured at 6.24 inches during the 24 hour period on the 13th and the monthly total was 13.32 inches which represented the fourth wettest for any month on record. Cairo, Illinois received 4.35 inches of rain on the 14th and 11.21 inches was recorded for the month. The heavy rain in the middle of the month caused flooding along many creeks and small streams that flowed out of their banks. Some roadways and highways were reported under water for a time but no major flooding damage was reported.</p>									
Cook Co, Chicago	16	0930CST			0	0	0	0	All-Time Record High Barometer
<p>At 930 am CST on the 16th the record for the highest sea-level pressure ever recorded in Chicago was broken. The barometer reading at O'Hare International Airport reached 30.98 inches of mercury, eclipsing the 62 year old record of 30.97 inches set on January 25th, 1927.</p>									
Extreme southeast Cook and extreme eastern Will Counties	23				0	0	0	0	Heavy Lake-Effect Snow
<p>Heavy snow off Lake Michigan fell from Chicago's downtown loop south all the way around the lake shore to east of Gary, Indiana. Snowfall totals in the southeast part of Cook County generally east of Torrence Avenue, in the far east portion of Will County east of State Street, and in Lake County, Indiana totaled from 12 to 16 inches. The south side of Calumet City received about 12 inches and about 4 inches of snow fell in downtown Chicago. Reports from Lake County, Indiana indicated snowfall totals from about 12 inches in the west part of the county up to 24 inches in east Lake County, Indiana near East Chicago and Gary.</p>									
12 INDIANA									
Vanderburgh Co.	13	2230EST			0	0	?	?	Flash Flood
	14	0230EST							
<p>Radar-estimated rainfall of 3.60 inches fell on already saturated ground and caused minor flash flooding. At 0015EST the state police reported water flowing over Highway 56. At 0030EST the sheriff reported Highway 56 continued closed due to water over the road.</p>									
Lake and Porter Counties	22	0800EST			0	0	?	0	Heavy Snow
	23	0300EST			0	0	?	0	Heavy Snow
<p>Heavy lake-effect snow accumulated to a depth of 12 to 20 inches in northern portions of Lake and Porter counties. Twenty inches of snow was reported in Gary and 12 inches was reported at Burns Harbor. There was some blowing and drifting of the snow on the 22nd.</p>									
13 IOWA									
Pottawattomie County, Council Bluffs	06	Early Morning			1	0	0	0	Cold
<p>A Council Bluffs man died of exposure to the cold during the early morning hours of the 6th. He was unable to unlock the door to his apartment, and froze to death on the front steps. M360</p>									
IAZ008-009-010-011-012-013-014-015, ILZ004, NEZ010 Southern Iowa	12-13	1700 CST-0600 CST			0	0	3	0	Snow and Heavy Snow
<p>Snow broke out over Southwest Iowa during the late afternoon of the 12th and quickly spread north and east. The snow ended by sunrise on the 13th. Anywhere from 3 to 8 inches of snow fell over much of the south half of Iowa. For a while, snow was falling at the rate of 2 inches per hour. Over extreme southeast Iowa, some freezing rain was mixed with the snow during the early morning hours. Snow fell over Northern Iowa, but accumulation was generally an inch or less.</p>									
14 KANSAS									
KSZALL	02	0600 to 2400CST			0	0	0	5	Severe Cold
<p>All of Kansas</p> <p>An extremely strong surge of arctic air from Alaska and western Canada plunged southward into Kansas. The Arctic airmass moved into the state during the early morning hours on the 2nd and persisted through the 5th. Many record cold temperatures were set on the 3rd across the state and included: 16 degrees below zero at both Goodland and Russell, 13 below at Dodge City, 8 degrees below zero at Topeka and 7 below zero at Wichita. Some other low temperatures on the morning of the 3rd included 13 degrees below zero at Hill City, 11 below at Concordia and 4 degrees below zero at Chanute. Most of the record cold temperatures were recorded without any snow cover on the ground. Daytime high temperatures through this period were generally in the 5 degrees below zero to 10 above zero range. The bitter cold on the 2nd and 3rd was accompanied by strong northerly winds of 15 to 35MPH which produced wind chill readings of 40 to 80 degrees below zero across the state. The Arctic air outbreak was preceded by unusually warm weather the last 3 days of January when high temperatures were in the 60S and 70S across the state. The severe cold and lack of snow cover did considerable damage to the winter wheat crop, especially in northern and western portions of the state. Light snow fell across the northern two-thirds of the state from the morning hours of the 4th into the afternoon hours on the 5th. Between 1 to 3 inches of snow was common in the region. Some snowfall amounts included 3 inches at Topeka and Garden City, 2 inches at Salina and Concordia, and 1 inch at Dodge City, Russell and Wichita. Three deaths resulted from hypothermia due to the extreme cold. One older woman died in Lawrence on the 3rd while another woman was found dead in her unheated apartment in Kansas City on the 3rd. A man died in Louisburg on the 4th from a heart attack. Cold F82P. Cold F34P. Cold M67P.</p>									
KSZ010-011-013-014-015	12	1200 to 2100CST			0	0	0	0	Snow
<p>North-Central and Northeast Kansas</p> <p>A storm system moved across Kansas during the afternoon and evening hours and produced a band of snow through north-central and northeast sections of the state. Snowfall amounts were in the 1 to 3 inch range with 3 inches in Mankato, Marysville and Frankfort; 2 inches in Blue Rapids, Ellsworth and Concordia to 1 inch in Topeka and Hiawatha. Many traffic accidents were reported with the snow. Two persons were killed in weather-related accidents in northeast Kansas. A young girl was killed on K-99 north of Blaine in Pottawattomie County at 1740CST. A second person was killed at 1850CST on K-4 between Rock Creek and Valley Falls in Jefferson County. F6V. M65V.</p>									
KSZ010-013-015	26	0800 to 1800CST			0	0	0	0	Snow
<p>North-Central and Northeast Kansas</p> <p>A narrow band of snow, heavy at times, fell across north-central and northeast Kansas during the morning and afternoon hours. Snowfall amounts from the storm ranged from 4 inches at Topeka to 2 inches in Manhattan and Concordia. Several traffic accidents resulted from snow-packed and icy roads in the area.</p>									
15 KENTUCKY									
Morgan Co.	03	1015EST			0	0	2	0	Flash Flood
<p>Caney Creek rose out of its banks as more than three inches of rain fell in a short period of time. Several roads between West Liberty and Salyersville were closed because of high water.</p>									
Magoffin Co.	03	1030EST			0	0	2	0	Flash Flood
<p>Over three inches of rain in twelve hours forced many creeks and streams to rise out of their banks. Several roads were reported covered with water.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

KENTUCKY

Trigg Co.	13	0315CST	0	0	5	1	Flash Flood	<p>Torrential rain that sent Little River gushing from its banks, damaged roads, flooded houses and closed county schools. Ten to 15 houses were affected by high water. In addition the heavy flow of water resulted in a broken water main that supplies the Rockcastle community.</p>
Caldwell Co.	13	1120CST	0	0	5	1	Flash Flood	<p>Nearly eight inches of rain in a 24 hour period produced flash flooding throughout the county. Many roads were closed by high water. Several businesses were also flooded, including the Princeton Plaza. A few houses in Homestead Heights were evacuated as well.</p>
Ballard Co.	13	2000CST	2	0	5	2	Flash Flood	<p>Five inches of rain produced flash flooding over many areas of the county. City streets in LaCenter were flooded and flooding was reported in Lovelsceville. Estimated damage to county roads alone was above \$50,000. In addition two people drowned. Marjorie Teeters 33, of Wickliffe and Brad Casey 28 drowned near Barlow, while trying to wade from a stranded four-wheel drive vehicle to a nearby cabin.</p>
McCracken Co.	13	2000CST	0	0	4	1	Flash Flood	<p>High water from over five inches of rain in a 24 hour period closed roads and forced the evacuation of several homes.</p>
Graves Co.	13	2000CST	0	0	4	1	Flash Flood	<p>Approximately six inches of rain in 24 hours caused widespread damage in low-lying areas across the county and temporarily closed numerous highways and secondary roads.</p>
Livingston Co.	13	2000CST	0	0	4	2	Flash Flood	
Lyon Co.	13	2020CST	0	0	4	2	Flash Flood	
Carlisle Co.	13	2020CST	0	0	4	2	Flash Flood	
Crittenden Co.	13	2020CST	0	0	4	1	Flash Flood	
Marshall Co.	13	2020CST	0	0	4	2	Flash Flood	<p>Many roads in the county were closed and several businesses in north Benton were evacuated as nearly six inches of rain in less than 24 hours forced the Clarks River out of its banks.</p>
Christian Co.	13	2130CST	0	0	5	2	Flash Flood	<p>Nearly five inches of rain in 24 hours brought streams and the Little River out of their banks. High water threatened homes and mobile homes in numerous low-lying areas. Schools were also closed for several days as rising water blocked many roads and streets.</p>
Hancock Co.	13	2130CST	0	0	4	1	Flash Flood	<p>Heavy rain which fell in amounts of up to 10 inches over the area forced the evacuation of several homes in low-lying areas throughout the county. In addition many roads and streets were closed.</p>
Henderson Co.	13	2130CST	0	0	4	2	Flash Flood	<p>High water from heavy rain forced the evacuation of several houses in the area and closed many roads.</p>
McLean Co.	13	2130CST	0	0	6	3	Flash Flood and River Flood	<p>Countywide, over 200 homes and 75 mobile homes were damaged by high water as nearly 10 inches of rain fell in less than 48 hours. In addition many roads in the county were closed and some winter wheat crops were lost. The Green River at Calhoun crested at 33.1 feet which is 10 feet above flood stage.</p>
Ohio Co.	13	2130CST	0	0	5	3	Flash Flood and River Flood	<p>Over 10 inches of rain forced the evacuation of over 30 people from their homes. In addition county schools were closed for four days as water rose over many roads in the county and destroyed three bridges. Winter wheat crops were also affected. The Rough River at Dundee crested at 29.6 feet and the flood stage is 25 feet.</p>

KENTUCKY

Davies Co.	13	2130CST	0	0	4	0	Flash Flood	<p>High water from heavy rain forced the evacuation of several homes in Owensboro and other low-lying areas around the county. Also many roads in the county were covered with water as streams and creeks rose out of their banks.</p>
Union Co.	13	2130CST	0	0	4	0	Flash Flood and River Flood	<p>High water forced the evacuation of a few homes and several roads were closed as creeks overflowed their banks. The Ohio River at Uniontown crested 8 feet above flood stage.</p>
Hopkins Co.	13	2130CST	0	0	4	3	Flash Flood	<p>Over 5 and 1/2 inches of rain in 24 hours caused havoc throughout the county. Many people were forced to evacuate homes in low-lying areas as streams and creeks quickly rose out of their banks. In addition school officials were forced to cancel classes for several days as high water forced the closing of many county roads.</p>
Bullitt Co.	13	2300EST	0	0	5	3	Flash Flood and River Flood	<p>Rainfall which amounted to nearly 10 inches in 48 hours caused flash flooding and flooding on the Rolling Fork River at Lebanon Junction in southern Bullitt County. About 140 people in this small community were evacuated, with 5 families being evacuated by helicopter. Over half the town was under water as the Rolling Fork River crested at 10 feet above flood stage. In addition many roads in the county were covered with water and some winter wheat crops were destroyed.</p>
Nelson Co.	13	2300EST	0	0	6	3	Flash Flood and River Flood	<p>Two of the hardest hit communities in the state were Boston and New Haven along the Rolling Fork River in Nelson County. Flash flooding and flooding produced by nearly 10 inches of rain in two days forced many evacuations. At one point Boston was an island with all roads and railroads leading to the town under water. The Rolling Fork River at Boston crested at 52.6 feet which is a new record crest. Flood stage at Boston is 35 feet.</p>
Hardin Co.	13	2300EST	1	0	5	2	Flash Flood	<p>Nearly 10 inches of rain produced flooding and flash flooding in the communities of Radcliff, Colsbury and West Point. About 200 people were evacuated and over 60 homes heavily damaged. An eighty one year old lady was killed when she fell down her basement steps which had been weakened by deep water in the basement.</p>
Jefferson Co.	13	2300EST	0	0	4	0	Flash Flood and River Flood	<p>Heavy rain caused some sewers in low-lying areas to back up, flooding some homes and basements. In addition about 10,000 people were without phone service as water got into phone cables. The Ohio River at Louisville crested at 58.4 feet which was 3 and 1/2 feet above flood stage.</p>
Shelby Co.	13	2300EST	0	0	3	0	Flash Flood	<p>Heavy rain produced small stream flooding of low-lying areas. Several streets and a few buildings were reported flooded.</p>
Larue Co.	13	2300EST	0	0	4	0	Flash Flood	<p>Over 6 inches of rain in two days forced streams and creeks out of their banks. Several stores and homes were evacuated and a few roads were covered with water.</p>
Trigg Co.	14	0200CST	0	0	4	0	Flash Flood	<p>More than 5 inches of rain in 24 hours led to the closing of several county roads and the evacuation of a few homes.</p>
Meade Co.	14	0700EST	0	0	4	0	Flood	<p>High water from over three inches of rain marooned the town of Big Spring east of Brandenburg. In addition high water from the flooding Ohio River forced several downtown businesses in Brandenburg to close.</p>

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

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					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
— KENTUCKY											
Washington Co.	14	0700EST			0	0	5	1			Flooding
											Flood water from the rain swollen Beach Fork River forced the evacuation of 30 homes in Fredericktown. Tens of thousands of dollars of damage was done in this small town where about 60 percent of the houses were affected. Over 11 inches of rain fell in the area prior to the flood.
Edmonson Co.	14	0700CST			0	0	4	0			Flash Flood and River Flood
											Nearly six inches of rain caused streams and rivers in the county to rise out of their banks. Many roads were covered with water and a few homes were evacuated. The Green River at Brownsville rose to 34 feet which was 16 feet above flood stage.
Henry Co.	14	1000EST			0	0	5	1			Flooding
											High water from the Kentucky River forced many residents of Lockport to evacuate their homes. Many businesses were covered with water as well. In addition four state highways and 10 county roads were closed by high water.
Christian Co.	15	0120CST			0	0	5	0			Flash Flood
											Additional rainfall and high water forced the evacuation of residences in the Cherokee Park and Givens areas of Hopkinsville. In addition many roads in the county were covered with water again.
Allen Co.	15	0120CST			0	0	4	0			Flash Flood
											Heavy rain again produced flash flooding across the county with many creeks and streams rising rapidly and overflowing their banks. Many highways were closed and a few houses evacuated.
Butler Co.	15	0120CST			0	0	6	5			Flash Flood and River Flood
											Butler County was one of the hardest hit areas across the state. Flash flooding of streams and rivers and flooding along the Green River produced major damage across the county. Over 36 homes were either completely destroyed or heavily damaged. In addition substantial agricultural damage to fences, barns and equipment exceeded \$75,000. \$50,000 in damages to businesses was reported as well as \$20,000 to roads and bridges. \$7,000 in damages was done to recreational facilities as well as \$4,000 to public utilities. The Green River at Woodbury crested at 48 feet and flood stage is 33 feet. The Green River at Rochester crested at 29.2 feet which is 12 feet above flood stage.
Crayson Co. Logan Co. Muhlenburg Co. Simpson Co. Todd Co.	15	0120CST			0	0	5	3			Flash Flood and River Flood
											An additional 2 to 3 inches of rain falling on already saturated ground again produced flash flooding and river flooding over the area. Many major highways were covered with water and several homes were evacuated. Winter wheat crops were also lost.
Hart Co.	15	0120CST			0	0	5	2			Flash Flood and River Flood
											High water forced the evacuation of 13 families. Also many roads were closed due to high water. The Green River at Munfordsville crested at 43 feet, 15 feet above flood stage.
Warren Co.	15	0120CST			0	0	5	1			Flash Flood
											High water from additional rain forced the evacuation of three homes, closed dozens of roads and shut down five school systems.
McCracken Co.	15	0200CST			0	0	5	0			Flash Flood and River Flood
											Additional rain brought streams and the Clark's River back out of their banks. The high water damaged roads and several buildings.
Ballard Co.	15	0200CST			0	0	4	0			Flash Flood
											An additional two to three inches of rain brought streams and creeks back out of their banks, producing more flooding over the county. In addition high water washed out a railroad bridge.
— KENTUCKY											
Owen Co.	15	0200CST			0	0	5	1			Flood
											High water from the flooding Kentucky River forced the evacuation of eight families in Gratz and 35 families and three businesses in Monterey. Winter wheat crops were also lost.
Carlisle Co.	15	0215CST			0	0	4	0			Flash Flood
Marshall Co.	15	0220CST			0	0	4	0			Flash Flood
Graves Co.	15	0225CST			0	0	4	0			Flash Flood
Livingston Co.	15	0230CST			0	0	4	1			Flash Flood and River Flood
											Additional rain produced flash flooding and river flooding, closing several roads in the county. The Ohio River at Smithland crested at 46.2 feet and flood stage is 40 feet.
Crittenden Co.	15	0300CST			0	0	4	0			Flash Flood
Lyon Co.	15	0300CST			0	0	4	0			Flash Flood
Caldwell Co.	15	0300CST			0	0	5	1			Flash Flood
											Additional rain brought water back into the Princeton Plaza. Water remained there for nearly a week. Damage estimates were close to \$200,000.
Harrison Co.	15	0400EST			0	0	6	2			Flood
											Close to 10 inches of rain over three days brought the South Fork of the Licking River at Cynthiana out of its banks. The south and west portions of the town were completely covered with water. In all nearly 390 homes and apartments and 31 businesses were affected by the high water. The river at Cynthiana crested at 23.4 feet which was a new record crest and 3 feet above the flood stage of 20 feet.
Franklin Co.	15	0400EST			0	0	7	3			Flood
											From 8 to 11 inches of rain fell over the Kentucky River basin in less than 72 hours. Major flooding occurred on the Kentucky River and one of the hardest hit cities was Frankfort. Nearly 18 million dollars in damages was reported throughout the city. Over 200 homes were evacuated as the entire south portion of the city was under water. Twenty-two city streets were blocked by high water as well. The Kentucky River at Frankfort crested at 44.2 feet which was 13 feet above flood stage.
Bourbon Co.	15	0400EST			0	0	5	2			Flood
											Around 30 houses were evacuated in Millersburg as the Hinkston Creek overflowed its banks. In addition 15 to 20 houses in Paris were evacuated as Stoner Creek rose out of its banks. Many streets and roads throughout the county were also covered with water.
Rowan Co.	15	0400EST			0	0	5	1			Flood
											High water from the flooding Licking River forced many evacuations from the city of Farmers. The river crested at 23 feet which was 7 feet above flood stage.
Montgomery Co.	15	0600EST			0	0	4	0			Flood
											Heavy rain brought the Hinkston Creek out of its banks. Several homes and businesses were evacuated in downtown Mt. Sterling. In addition 20 roads throughout the county were covered with water.
Pendleton Co.	15	0600EST			0	0	5	2			Flood
											The flooding Licking River forced the evacuation of 65 people from their homes in Falmouth and Shoemakerstown. In addition a trailer was washed away and many roads throughout the county were covered with water. The Licking River at Falmouth crested at 39 feet, 11 feet above flood stage.
Fleming Co.	15	0600EST			0	0	4	0			Flood
											Several families from Sherburne were evacuated as the Licking River rose out of its banks.
Bath Co.	15	0600EST			0	0	5	1			Flood
											At least 60 people were evacuated from the Salt Lick area because of flooding along Salt Lick.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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					KILLED	INJURED	PROPERTY	CROPS	
KENTUCKY									
Woodford Co.	15	0800EST			0	0	6	2	Flood
<p>Flooding on the Kentucky River forced the evacuation of residents from Shoreacres and Clifton. The river at Clifton rose 15 feet above flood stage. 125 homes were evacuated, 30 roads blocked and 5 to 10 roads damaged. Estimates of damage were in the area of \$3 million.</p>									
Anderson Co.	15	0800EST			0	0	6	2	Flood
<p>Thirty people had to be evacuated and several homes were destroyed as the Kentucky River rose above flood stage. The hardest hit areas were Tyrone, Gilberts Creek, and Glensboro. Eighty homes were heavily damaged, with water reaching as high as ten feet in several houses.</p>									
Jessamine Co.	15	0800EST			0	0	6	1	Flood
<p>An emergency team used boats to rescue four people from a house that was quickly overtaken by high water from the rising Kentucky River. In all over 50 homes were evacuated and many county roads were covered with water.</p>									
Mercer Co.	15	0800EST			0	0	4	0	Flood
<p>Over six inches of rain forced the Chaplin River out of its banks. The high water destroyed the mill and dam at Cornishville. It also caused some flooding in Burgin.</p>									
Boyd Co.	15	0800EST			0	0	5	2	Flash Flood
<p>High water from nearly six inches of rain in 48 hours closed many roads throughout the county and forced the evacuation of 30 families.</p>									
Carter Co.	15	0800EST			0	0	5	0	Flash Flood
<p>Nearly six inches of rain forced the evacuation of about 85 people in Olive Hill as creeks and streams in the area overflowed their banks.</p>									
Powell Co.	15	0800EST			0	0	5	1	Flood
<p>High water from the flooding Red River forced the evacuation of several houses in Clay City and closed many area roads. The Red River crested at 22 feet at Clay City, 4 feet above flood stage.</p>									
Wolfe Co.	21	0430EST			0	0	2	0	Flash Flood
<p>Nearly two inches of rain in less than six hours forced several streams and creeks out of their banks. Roads near Hazel Green and Natural Bridge were closed.</p>									
16 LOUISIANA									
LAZ002-003-004-005-006 All but northwest and south Louisiana	05-07	0400CST-0300CST			0	0	?	?	Ice Storm
<p>An Arctic air mass spread across all but extreme southeast Louisiana on February 2nd and 3rd. Light freezing drizzle began on the morning of the 4th across the northwest sections and spread across the north and west portions during the day. Areas of significant freezing rain and sleet moved from the west-central sections into the north-central and northeast sections on the 5th and 6th. The light freezing drizzle spread as far southeast as the Baton Rouge area on the evening of the 6th before ending across the state later that night.</p> <p>Icing on bridges and overpasses caused transportation problems over all but southeast sections. Interstate Highway 20 was virtually impassable between Minden and the Mississippi border due to ice accumulations and numerous traffic accidents. Interstate Highway 10 between Baton Rouge and Lafayette was closed on the evening of the 6th due to icy bridges and accidents.</p> <p>The hardest hit areas were the north-central, northeast, and east-central sections where 1 to 2 inches of ice accumulation on the 5th and 6th resulted in powerline breaks and damage to trees. Some rural communities were without power for 24 to 36 hours. Many schools and business were closed over this area on the 5th and 6th. Numerous traffic accidents were reported with at least six traffic fatalities resulting from icy road conditions.</p>									
LOUISIANA (Continued)									
Rapides Parish, 2.7 SE AEX 5.2 SE AEX Estler Field (ESF)	20	1233CST	1.5	35	0	0	5	?	Tornado (F1)
<p>Severe thunderstorms raked the Alexandria area, spawning two tornadoes. The first tornado touched down in the vicinity of the Louisiana Coliseum in the northwest portion of Alexandria, damaging several house roofs, a trailer, and the roof of an abandoned warehouse. The second tornado, more damaging than the first, touched down a few minutes later in the south portion of Alexandria and moved rapidly northeast across the Red River into Pineville and Wardville. This tornado touched down intermittently, damaging trailers, houses, and trees. The greatest damage occurred when the tornado struck the Pineville Recreation Center, ripping away half of the second floor. The two tornadoes caused major damage to 21 single family homes and minor damage to 75 other houses, destroyed five mobile homes, and heavily damaged three mobile homes.</p>									
Catahoula Parish, 3 NNW Joneville	20	1410CST	3.0	40	0	0	4	?	Tornado (F1)
<p>A tornado touched down along an intermittent path, damaging a house and downing numerous trees.</p>									
Caldwell Parish, Holun	20	1432CST			0	0	?	?	Hail (1.00)
Tensas Parish, 12N Waterproof	20	1448CST			0	0	?	?	Hail (0.88)
Tensas Parish, 12N Waterproof	20	1448CST			0	0	?	?	TSTM Wind
Tensas Parish, 2 NE Newelton	20	1448CST			0	0	0	0	Funnel Cloud
DeSoto Parish, 7 E Logansport	20	1500CST			0	0	?	?	Hail (1.00)
Tensas Parish, 8 N Newelton	20	1520CST			0	0	?	?	Hail (1.75)
Tensas Parish, 8 N Newelton	20	1556CST			0	0	0	0	Funnel Cloud
Sabine Parish, 1 SW Zwolle	20	1540CST			0	0	0	0	Hail (0.88)
Sabine Parish, 1 SW Zwolle	20	1540CST			0	0	?	?	TSTM Wind
Franklin Parish, Baskin	20	1540CST			0	0	0	0	Hail (0.88)
Franklin Parish, 10 SW Gilbert	20	1545CST			0	0	?	?	TSTM Wind
Madison Parish, 5 SE Tallulah	20	1650CST			0	0	?	?	Hail (1.75)
<p>Strong thunderstorms moved across north Louisiana and brought scattered reports of hail. Thunderstorm wind gusts downed trees near Waterproof, Zwolle, and along the south shore of Turkey Creek Reservoir southwest of Gilbert.</p>									
17 MAINE ————— NONE REPORTED									
18 MARYLAND and D.C.									
MDZ001-002-004 Eastern and Southern Maryland	23	2300EST			0	0	4	0	Blizzard
<p>Blizzard conditions prevailed over the area, with frequent wind gusts to 40 knots. Visibilities were near zero at times in blowing and drifting snow. Accumulations averaged 6 to 11 inches. The storm ended Friday, the 24th.</p>									
MDZ001 Coastal Maryland	24	All day			0	0	?	0	Beach Erosion
<p>Strong onshore winds and a storm surge tore away 50 to 70 feet of beach sand in Ocean City.</p>									
19 MASSACHUSETTS									
MAZ002-003-009 Southeast Massachusetts	24-25	1800EST-1200EST			0	0	0	0	Heavy Snow
<p>An ocean storm moving northeastward well off the coast brought a moderate to heavy snowfall to southeastern Massachusetts. Amounts of 6 to 8 inches fell over the southern portions of Plymouth and Bristol counties. Over Cape Cod and the Islands, depths reached 6 to 12 inches; with about one foot having been measured at Chatham. Highway travel was most affected by the storm as snow-plowing crews struggled to keep ahead of the accumulating snow and the drifting snow caused by winds which gusted up to 40 to 60 mph. Near-blizzard conditions were reported at the height of the storm.</p>									

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FEBRUARY 1989

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					KILLED	INJURED	PROPERTY	CROPS	
20 MICHIGAN									
MIZ001-002-013-015-022 Extreme Southern Lower Peninsula	02	0200EST			0	0	0		Freezing Drizzle One person was killed and 25 injured in 345 auto accidents. A plane skidded off the runway at Detroit. Six persons were injured in falls. Schools were closed in many areas.
MIZ001-004-011-015-022 Southern Lower Peninsula	05	1800EST			0	0	0		Snow Snowfall averaged about 2 inches across the area; a maximum of 7 inches fell at Paw Paw. Freezing rain fell in southern Monroe. Many schools were closed. Three people were killed and 9 injured in 96 auto accidents.
MIZ006-007 Northwest Lower Peninsula	07	1500EST							Snow A narrow band of 6 to 10 inches of snow fell along the Lake Michigan shore from Frankfort to Mackinaw City, and up to 6 inches fell near the highlands around Cadillac.
MIZ005-006-007-008-016 Northwest Lower Peninsula	08	0000EST							Snow Six to 9 inches of snow fell throughout the area, and 14 inches fell locally at Wolverine.
MIZ020 Keveeenaw Area	08	0130EST							Snow An estimated 8 inches of snow fell, and there was considerable blowing and drifting of the snow.
MIZ021 Northern Chippewa County	08	0900EST			1	0	0		Blizzard Visibility was near zero in snow and blowing snow as winds gusted to 56 mph at Sault Ste. Marie and to 68 mph at Whitefish Point. Three to 5 inches of new snow accumulated. There were 15 auto accidents, which resulted in injury to four people. An ice fisherman became disoriented and died of exposure. There were 22 accidents. M320
MIZ016-021 Straits of Mackinac Area	08	0900EST			0	0	0		Snow and Wind Snow and wind caused local highway closures. Winds were up to 49 mph on the Mackinac Bridge and up to 53 mph at Pellston. Two auto accidents resulted in injury to two people.
MIZ020 near Ironwood	26				0	0	0		Snow More than a foot of new snow was reported along the Lake Superior shore.
21 MINNESOTA									
MNZ001-002-006-007-010 Northwest and West-Central Minnesota	31 Jan. 1200CST-01 Feb. 0800CST				0	0	0	0	Wind, Blizzard, (26-43) Arctic high pressure pushed into northwestern Minnesota bringing sustained winds in excess of 30 mph with gusts in excess of 50 mph. This closed many east-to-west roadways due to wind-blown snow. Visibilities were generally one-quarter mile or less, causing near-blizzard conditions. More than a hundred motorists were stranded. There were no deaths or injuries. Wind chill index temperatures were driven into the -70° range.
22 MISSISSIPPI									
MSZ001-002-003-006	05	0400CST			0	0	6	0	Winter Storm
MSZ004-005-007	05	0700CST			0	0	5	0	Winter Storm
MSZ008-010-011	06	0300CST			0	0	5	0	Winter Storm
MSZ009-012-014 All but Coastal Mississippi	06	1800CST			0	0	5	0	Winter Storm A cold airmass was located across Mississippi as a series of weak upper-level low pressure areas moved northeast across the state causing widespread winter precipitation. The degree of severity varied across the state because of a difference in temperatures, both at the surface and aloft. Roads were ice covered and very hazardous north of a Greenville-Greenwood-Aberdeen line. Much of the precipitation fell as sleet with some freezing rain. Power was not affected, but travel was nearly impossible for 2 days. Freezing rain and some sleet fell south of this line to a Woodville-McComb-Hattiesburg line. Icing occurred on bridges, power lines, trees and other exposed objects. Some roads iced up in Central Mississippi on the morning of the 6th.
MISSISSIPPI									
									The most severe icing was in a 50 mile wide band from Vicksburg to Yazoo City to Kosciusko. Trees were heavily damaged and it took one week to get all power line damage repaired. In some instances, ice had accumulated to more than an inch thick. Freezing rain on both the 5th and 6th caused this heavy icing. Counties just outside this area received moderate damage. In the Jackson area alone, nearly 60,000 people were without electricity. An estimated 150,000 people were without electricity in the state, and most of them were in Central Mississippi.
Warren County, 5N Vicksburg	20	1640CST			0	0	0	0	Funnel Cloud
Warren County, 2S Vicksburg	20	1658CST			0	0	?	0	Hail (.175) Thunderstorm Winds (652)
Warren County, Vicksburg	20	1700CST			0	0	5	0	Thunderstorm Winds (680) Winds were estimated at over 90 mph in an area one-quarter mile wide by one-quarter mile long in Vicksburg. Two motels suffered roof damage and one mobile home was destroyed. Twelve cars had windshields blown out and numerous signs in the area were blown down.
Warren County, Oak Ridge	20	1725CST			0	0	?	0	Thunderstorm Winds Numerous trees and power lines were blown down.
Madison County, 4NW Flora	20	1748CST			0	0	0	0	Funnel Cloud
Yazoo County, Benton	20	1815CST			0	0	0	0	Hail (.175) Thunderstorm Winds (655)
Holmes County, 3N Pickens	20	1840CST			0	0	?	0	Hail (.175) Thunderstorm Winds Several trees were blown down.
Bolivar County, Cleveland	20	1855CST			0	0	3	0	Flash Flood Heavy rains caused water to rise high enough to surround 8 homes. Water actually rose into one home.
Claiborne County, Port Gibson	20	1925CST			0	0	?	0	Thunderstorm Winds Trees and power lines were blown down.
Choctaw County, 7NW Ackerman	20	1940CST			0	0	3	0	Thunderstorm Winds Several antennas and a few trees were blown down.
Choctaw County, French Camp	20	1945CST			0	0	0	0	Funnel Cloud
Jefferson County, 4SW Lorman	20	1950CST			0	0	?	0	Thunderstorm Winds Several trees were blown down.
Hinds County, 2N Utica	20	2003CST			0	0	4	0	Thunderstorm Winds Several trees and power lines were blown down. One home and a car were damaged when trees fell on them.
Oktibbeha County, Maben	20	2010CST			0	0	?	0	Hail (.175) Thunderstorm Winds Trees and power lines were blown down.
Hinds County, 4SE Raymond to 7SW Jackson	20	2015-2025CST	7.0	100	0	0	5	0	Tornado (F1) A tornado developed southeast of Raymond, moved northeast and dissipated near the city limits of southwest Jackson. The tornado's path was marked by downed trees, though several roofs and carports were damaged and several outbuildings were destroyed.
Oktibbeha County, Maben	20	2016CST			0	0	0	0	Funnel Cloud
Hinds County, 3SE Raymond to 4SW Jackson	20	2018-2035CST	9.5	120	0	0	5	0	Tornado (F1) A second tornado developed parallel to the first one in Hinds County. The tornado was about 800 yards apart from the first one when it first touched down, but was as close as 100 yards when the first one dissipated. This tornado moved into southwest Jackson but was weakening. A majority of the damage was confined to trees and power lines falling on homes and cars. Several homes and mobile homes were damaged southwest of Jackson.
Oktibbeha County, Sturgis	20	2020CST			0	0	0	0	Funnel Cloud
Winston County, Louisville	20	2030CST			0	0	0	0	Funnel Cloud
Clay County, 5W West Point	20	2030CST			0	0	?	0	Thunderstorm Winds Numerous trees and power lines were blown down.

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PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
MISSISSIPPI											
Hinds County, 25W Jackson	20	2035CST			0	0	5	0			Thunderstorm Winds (G90) Strong downburst winds, most likely from the back portion of the storm which produced the tornadoes, moved into central Jackson. Winds estimated at over 100 mph unroofed 12 roofs at one hotel. The hotel next door had numerous windows blown in and some roof damage. Power lines in the area were also blown down.
Rankin County, Flowood	20	2035CST			0	0	?	0			Thunderstorm Winds Trees and signs were blown down in northwest Rankin County.
Madison County, Madison	20	2035CST			0	0	?	0			Thunderstorm Winds (655) Strong winds blew down several trees in Madison.
Winston County, 5N Louisville	20	2050CST			0	0	?	0			Thunderstorm Winds Several trees were blown down.
Winston County, 5N Louisville	20	2055CST			0	0	0	0			Funnel Cloud
Winston County, 15S Louisville	20	2100CST			0	0	0	0			Funnel Cloud
Copiah County, 5S Hazlehurst	20	2100CST			0	0	?	0			Thunderstorm Winds Several trees were blown down.
Monroe County, Amory	20	2103CST			0	0	?	0			Hail (.75)
Monroe County, Bigbee	20	2104CST			0	0	?	0			Hail (.75)
Monroe County, Aberdeen	20	2105CST			0	0	?	0			Thunderstorm Winds Power lines were blown down.
Copiah County, 2N Nesson	20	2115CST			0	0	?	0			Thunderstorm Winds Several trees were blown down on Interstate 55.
Lincoln County, 6NW Brookhaven	20	2115CST			0	0	?	0			Thunderstorm Winds Trees were blown down northwest of Brookhaven.
Lee County, Tupelo	20	2130CST			0	0	?	0			Flash Flood Over 3 inches of rain caused numerous creeks in southwest Tupelo to overflow. Several homes in one subdivision were flooded.
Monroe County, 2S Aberdeen	20	2200CST	2.5	100	0	0	0	5	0		Tornado (F2) A tornado moved through south Aberdeen and caused heavy damage. At a ballpark, 2 sets of concrete block bleachers were completely destroyed. A nearby church was heavily damaged. An unoccupied mobile home was destroyed. Several other homes in the area were damaged. In a cemetery, 12 huge cedar trees were blown down and broke several tombstones. One monument was blown over by the force of the winds.
Jones County, 2NE Sandersville	20	2300CST			0	0	?	0			Thunderstorm Winds Trees were blown down on U.S. Highway 11 in northeast Jones County.
Jasper County, 3W Stringer to 5E Stringer	20	2302-2315CST	8.0	80	0	0	0	5	0		Tornado (F1) A tornado moved west to east across southern Jasper County. An estimated 60,000 dollars in property damage occurred including 7 homes with roof damage. Two mobile homes were also damaged and 2 barns were destroyed. One car was totaled and a shed and work shop were damaged.
Jasper County, 5E Bay Springs	20	2325CST			0	0	?	0			Hail (.75)
Jasper County, 25W to 35E Heidelberg	20	2325-2335CST	5.0	60	0	0	4	0			Tornado (F1) This was a second tornado to develop out of this eastward-moving storm. Damage was confined to trees and powerlines in this sparsely populated area of the county.
Clarke County, Pachtua	20	2330CST			0	0	?	0			Thunderstorm Winds
Clarke County, Quitman	20	2340CST			0	0	?	0			Thunderstorm Winds Trees and power lines were blown down in Pachtua and Quitman by this eastward-moving storm.
23 MISSOURI											
MO2003-006-007-010-011 Central through Northeast Missouri	20	1000-2330CST			0	0	0	0			Heavy Snow Snow had spread from Central to Northeast Missouri by mid morning and became heavy heavy over both Central and Northeast portions. Most of the snow fell along a narrow band from just east of Columbia to the Quincy, Illinois area. The snow totals in this band were in the 4 to 8 inch range, except in Hannibal where 9 inches was reported. The snow extended as far south as the north portion of Missouri Zone 11, in Lincoln County. The snow was generally south of Kirksville, where 1 to 2 inches fell.
24 MONTANA											
Statewide	1-5				3	?	7	4			Severe Cold The coldest Arctic airmass in five years covered the state during the first 5 days of the month. Widespread property and crop damage occurred. The coldest temperature recorded was 52 degrees below zero at Wisdom on the morning of the 3rd. Power outages caused by the cold produced the most damage as waterlines froze due to the loss of heating systems. Early morning of the 2nd, a freight train broke loose west of Helena and rolled down into town and exploded. The severe cold caused the brakes to fail. Severe damage was done to Carroll College in Helena which was near the blast. Electric power failed, roses in a greenhouse froze, and water pipes froze all over town. The Governor, on Wednesday the 1st, declared a state of emergency and schools were closed on the 2nd and 3rd statewide. Crop damage resulted to exposed winter wheat, cherry trees in the Flathead Valley, and pine trees statewide. At least three deaths were attributed to the cold. A Great Falls man died of hypothermia, M780. A Lame Deer man froze to death, M477; and a billion man died in his home after the fire went out, M897. I-15 was closed at Monida Pass on the 1st and 2nd and I-90 was closed between Deer Lodge and Missoula on the 1st. The extreme cold also caused spotty calf and lamb losses in the state.
Madison County	3	early morning			0	0	4	0			Ice Jam Flooding Near Cameron, ice jammed on the Madison River causing high water which trapped 100 head of cows, 15 of which died.
Missoula County, Missoula	11	207 MST			1	0	0	0			Cold A Missoula man died of hypothermia. M670
MT2001 Northwest Montana	28	morning			0	0	0	0			Heavy Snow 8-10 inches of snow fell west of Kalispell when an Arctic front moved through.
25 NEBRASKA											
NE2012 Southwest Nebraska	03	0500CST			1	0	0	0			Cold A man was found dead in Brady in the back of a pickup truck, with the cause of death ruled a combination of alcohol and hypothermia from cold. The minimum temperature in the area was around 18 below with wind chill factors 60 to 70 below. M290.
NE2010-015-019-020 Southeast Nebraska	12-13	1500CST-0200CST			0	0	2	1			Heavy Snow Snow of 6 inches or more fell south of a line from Plattsmouth to Valparaiso to Fairbury and north of a line from Auburn to Barneston. Heaviest snowfall of 7 inches was reported at Roca and Syracuse.
NE2014-015 Central and East-Central Nebraska	19-20	1500CST-0500CST			0	0	1	1			Heavy Snow Six inches of snow fell around Loup City and also in a band from Osceola through Surprise to Utica.
NE2005-011-012 Panhandle and Southwest Nebraska	26-27	0800CST-0200CST			0	0	1	1			Heavy Snow Six inches or more of snow fell in the Panhandle west of a line from Lyman to Lisco to Potter. Heaviest snowfall of 8 inches was reported at Bridgeport. Six inches of snow also fell around Ogallala and Paxton in the southwest part of the state.

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					KILLED	INJURED	PROPERTY	CROPS	
26 NEVADA									
NVZ003 Extreme Western Nevada	01-02	0200PST 0330PST			0	0	4	0	High Winds
NVZ004 West-Central Nevada	01	0930PST 1700PST			0	0	5	0	High Winds
NVZ001-002 Northwest and Northeast Nevada	01-02	1900PST 0200PST			0	0	0	0	Heavy Snow
NVZ003 Extreme Western Nevada	02	0800PST 1600PST			0	0	3	0	High Winds
NVZ007 Extreme Southern Nevada	02	1430PST 1600PST			0	0	3	0	High Winds
NVZ003 Extreme Western Nevada	02-03	2300PST 1600PST			0	0	5	0	Heavy Snow
NVZ004 West-Central Nevada	03	0600PST 1600PST			0	0	5	0	Heavy Snow
NVZ005 East-Central Nevada	03-04	1400PST 1200PST			0	0	4	0	Heavy Snow
NVZ001-002-003-004 005-006 Northern, Central and South-Central Nevada	05-08	0030PST 1600PST			0	0	7	0	Extreme Cold
NVZ007 Extreme Southern Nevada	06-08	0030PST 1600PST			0	0	4	0	Extreme Cold
<p>As very cold Arctic air poured into the Pacific Northwest a very strong pressure gradient developed over Western Nevada. The result was very high winds over the Sierra Nevada and throughout Western Nevada. High winds began over the mountains of Extreme Western Nevada around midnight, February 1st. Winds gusting between 80 and 90 MPH over the ridgetops continued throughout the day. Around 200 AM high winds began in the Reno-Sparks-Carson City area. Sixty to 80 MPH gusts continued until the early morning hours of the 2nd. The highest measured gust was 85 MPH at around 230 AM the morning of the 2nd in the Callahan Ranch area south of Reno. A gust to 83 MPH occurred during the afternoon of the 1st in the Virginia Foothills south of Reno and 81 MPH was measured about the same time in Stead, north of Reno.</p> <p>Around 930 AM on the 1st high winds developed in West-Central Nevada. In the Yerington area winds gusted to 68 MPH. In the Walker Lake and Hawthorne areas 77 MPH gusts were measured between Noon and 100 PM and even stronger gusts were estimated later that afternoon.</p> <p>Despite the strength and duration of the winds, damage was light in Extreme Western Nevada. Most damage consisted of power outages and minor roof and tree damage. Several mountain roads had to be closed for a time due to blowing snow.</p> <p>In the Walker Lake and Hawthorne areas of West-Central Nevada it was a different story. The high winds produced blowing dust that resulted in the closure of U. S. Highway 95 from the Fallon area to south of Hawthorne and U. S. 95A from Yerington to Shurz. This main north-south highway was closed for several hours. Several accidents were reported before the highways were closed. There were two accidents involving semis and smaller vehicles. On U. S. 95 near Hawthorne a semi and an automobile hit head-on in near zero visibility due to blowing dust. Thirteen miles south of Fallon a pickup truck and a semi collided in blowing dust. In both accidents there were no injuries because the vehicles were only doing about five MPH.</p> <p>Two semi tractor-trailers were blown over in the Hawthorne area. One was empty and the other was loaded with furniture. Several automobiles, including three Highway Patrol cars, had windows blown out in the Hawthorne area. A manufactured home in Hawthorne lost its roof.</p> <p>It was also windy in Southern Nevada. However, high winds were only reported for a short time during the afternoon of the 2nd. Sixty MPH gusts caused local sandstorms, making driving hazardous.</p> <p>Heavy snow fell on a small area of Southern Humboldt and Central Elko counties during the evening of the 1st. By 2 AM on the 2nd six inches of snow was measured at Winnemucca and Mill City. The ranger station at Wildhorse measured 9 inches and 18 inches fell on Wells.</p> <p>Heavy snow began in the Sierra Nevada shortly before midnight on the 2nd and spread across Extreme Western and West-Central Nevada on Friday the 3rd. The storm continued to move east spreading snow across East-Central Nevada the evening of the 3rd and the morning of the 4th.</p>									
NEVADA									
<p>More than three feet of new snow was measured in the Sierra Nevada of Extreme Western Nevada. In the valleys of Western Nevada snow depths ranged from five inches to more than a foot. As much as 11 inches fell in the valleys north of Reno, Verdi reported 9 inches, the Truckee Meadows (Reno and Sparks) received 6 to 8 inches. Carson City measured a foot, Dayton received 14 inches and the Carson Valley had around 9 inches. Further east, Smith Valley and Yerington measured 7 inches, Fallon received 9 inches and Fernly reported 8 to 10 inches. Five inches was measured in Lovelock and 18 inches of new snow fell in the Silver Springs area.</p> <p>As the storm continued east, 6 inches of new snow fell on Austin, 7 inches in Ely and 16 inches in Baker. At least 8 inches of snow fell on the passes around Ely.</p> <p>The heavy snow caused traffic accidents all across the state. State, county and local police reported hundreds of fender-benders and vehicles in ditches.</p> <p>Very cold Arctic air continued to pour into Nevada and by the morning of the 5th the combination of clear skies, snow-covered ground and an arctic airmass produced extremely cold low temperatures. The Northeast was the coldest part of the state. Mountain City recorded a morning low of -35. Minus 27 was recorded at both Elko and Ely, and Jackpot had -26. Wildhorse Reservoir and Fallon both recorded minus 23 degrees. The rest of Northern and Central Nevada ranged from near zero to -18. That afternoon, high temperatures only managed the single digits and teens and the following morning was even colder. By the morning of the 6th the Arctic air had reached Extreme Southern Nevada.</p> <p>However, the coldest temperatures were once again in the northeast: Carlin Gold Mine recorded -42, Spring Creek -38, Wildhorse Reservoir -38, Carlin -33, Mountain City -31, Ely -30 and Elko -29. Smith Valley High School had -31, Lemmon Valley -30, Fallon -27, Yerington -25, and Battle Mountain, Tuscarora and Ruby Lake Refuge -23. The rest of Northern and Central Nevada recorded minimum temperatures ranging from -1 at Tonopah to -20 at Carson City. In the southern part of the state morning temperatures dropped into the teens and single digits. Normally warm Laughlin got down to 27 degrees. The afternoon of the 6th was again quite cold with highs barely reaching the teens in most areas. The morning of the 7th was again quite frigid: Wildhorse Reservoir -36, Mountain City and Deeth -30, Ely and Spanish Springs -29, Elko and Smith Valley -27, Verdi -25, the Minden-Douglas County Airport -24, Yerington -23, Fallon Naval Air Station -22 and Winnemucca and Lovelock -21. The rest of Northern and Central Nevada ranged from -8 at Tonopah to -20 at Stead, and in the south, Pahrump had a cold 6 degrees and Laughlin 24. The afternoon of the 7th was again cold and so was the morning of the 8th. The morning of the 8th was the last extremely cold morning. Wildhorse Reservoir recorded -31, Elko -26, Mountain City -25, Ely -22, and the Fallon Naval Air Station and Winnemucca -21.</p> <p>Damage from the cold was extensive. There were hundreds of dead car batteries and frozen water pipes all around the state. Broken water pipes caused flooding in many commercial buildings and private homes. Both the Washoe County and White Pine County Libraries had to close their doors because of broken pipes. Broken pipes caused major damage to several buildings and equipment on Fallon Naval Air Station. On Tuesday the 7th Fallon NAS lost power. Because the extreme cold congealed lubricating oil, backup generators failed. Broken pipes caused minor flooding in the Naval Strike Warfare Building but significant damage was done to electrical equipment inside the building. Broken pipes also caused the ceiling to collapse on the Weapons Department Assembly Building.</p> <p>Elsewhere across the state houses and apartment accidentally caught fire when homeowners attempted to thaw frozen pipes with torches. During this cold spell local power companies all across the state reported record consumption of electricity and natural gas. The heavy snow and extreme cold took its toll on newborn calves. Several died of "instant pneumonia" at a ranch in Spanish Springs. Wild water fowl also suffered. With wetlands frozen and covered with snow, migrating birds were having a hard time finding food. Many died. An effort was made to get grain to some of these birds.</p>									
27 NEW HAMPSHIRE — NONE REPORTED									
28 NEW JERSEY, Northern — NONE REPORTED									

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					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
28 NEW JERSEY, Southern											
Cumberland County, Cedarville	21	1415EST		0	0	2	0				TSTM Wind
Thunderstorm wind gusts brought down large tree limbs in Cedarville, Lawrence Township. The winds were estimated at over 60 mph.											
Atlantic County, Pomona, Elwood, and 3N Egg Harbor City	21	1435EST		0	0	3	0				TSTM Wind
Thunderstorm wind gusts brought down trees at Pomona in Galloway Township, at Elwood in Mullica Township, and a few miles north of Egg Harbor City on Moss Hill Road.											
NJ2003	24	0700EST		0	0	3	0				Heavy Snow
NJ2004	24	0900EST		0	0	3	0				Heavy Snow
NJ2006	24	0900EST		0	0	3	0				Heavy Snow
Southern Coastal, Coastal Delaware Bay and Southern Interior Zones	Snow began between 11 PM on the 23rd and 3 AM on the 24th and continued until 4 to 6 PM on the 24th. The snow came down very heavy at times, and along the immediate Atlantic Coast was accompanied by strong winds causing near-blizzard conditions. The highest accumulations of snow were in the Southern Coastal Zone where 10 to 19 inches of snow resulted. Accumulations over the Coastal Delaware Bay Zone ranged from around one inch in the extreme west portion to around 4 inches in the central portion, to as much as 18 inches in the east portion. In the Southern Interior Zone accumulations were 1 to 2 inches on the western edge and ranged up to 8 to 16 inches over the eastern half of the zone.										
29 NEW MEXICO											
Statewide	3-6			0	0	?	?				Heavy Snow
An upper-level disturbance over the Great Basin helped to produce heavy snows over a three day period. Amounts at northern ski areas ranged from one to seven feet of new snow. Amounts averaged from 6 to 12 inches at lower elevations of the north. The storm spread more to the south by the 6th, dumping a few inches of snow in the lower elevations and up to a foot in the mountains. The storm was accompanied by the frigid Arctic air which spilled into the eastern plains on the 3rd and 4th. The very cold air moved into the northwest portion of the state on the 5th and the southwest portion on the 6th.											
30 NEW YORK, Coastal											
NY2016-017 Suffolk County	25	0200EST		0	0	0	0				Heavy Snow
A strong low pressure center moving northeastward over the Atlantic coastal waters dumped 6 inches of snow across sections of extreme eastern Long Island. Patchogue and East Hampton received 6 inches of snow before this strong but rather compact storm headed out to sea.											
30 NEW YORK, Central											
Areawide	01-26	0001EST-2359EST		0	0	?	?				Drought
Eastern New York continued to experience a lack of snow during the month. This coupled with a precipitation deficit carry over from 1988, has resulted in public water supplies to fall to critical and near-critical levels. Hardest hit areas include the Delaware River basin in New York and the New York City Water supply area of the Catskills. The lack of snow has also produced an economic impact for many winter sports and tourist centers. Local farmers are also bracing for potential crop damage later this spring because of the lack of snow cover.											
NEW YORK, Central											
Areawide	01	Afternoon-Evening		0	0	0	0				Record High Temperatures
Unseasonably mild air moved into Eastern New York producing record high temperatures at many stations. With such warm temperatures, ice cover on many lakes and streams began to soften. One male fell into Schuyler Lake in Otsego County due to weakened ice cover.											
Areawide	02	0445EST-Evening		1	2	5	?				Winter Storm
A combination of snow, sleet and freezing rain fell over all of Eastern New York. Many local roads became slippery, with hundreds of minor car accidents occurring throughout the area. In Tioga County roads west of Binghamton had to be closed between 4 and 6 am due to the accumulation of ice. F-73-V (City of Amsterdam)											
Oneida, Herkimer and St Lawrence Counties	09	0400-2300EST		0	5	4	0				Snow Squall
Lake-effect snows accumulated to 14 inches in the Village of Boonville. Winds whipped up to 35-40 mph. Gusting winds and blowing snow produced whiteout conditions in several areas of the county.											
Orange County, Warwick	09	unknown		0	0	0	?				Dust Storm
A lack of moisture and high winds gusting to 45 mph turned skies dark with dust in the town of Warwick.											
Areawide	22-23	AM-PM		0	0	4	0				Floods
A combination of rainfall, above freezing temperatures, and melting snow cover produced minor flooding and ice jams on small streams and brooks. Streams affected included: the Callicoon Creek, West Canada Creek, Otsego Creek and the Casoga Creek. Many cities also experienced local storm sewer flood problems.											
Orange County, Cornwall on the Hudson	23	AM		0	0	4	0				Landslide
Two inches of rain saturated Storm King Mountain, resulting in a landslide which closed Rt. 218 between West Point and Cornwall on the Hudson.											
Areawide	26	Early Afternoon		6	23	3	0				Snow
Light snow (1-4 inches) fell over all of Eastern New York. This snow produced hundreds of automobile accidents. F-50-V (T. of W. Winfield) F-57-V (T. of Pittstown) F-31-V (T. of Bethlehem) M-61-V (T. of Bethlehem) F-38-V (T. of E. Glenville) F-18-V (T. of E. Glenville)											
30 NEW YORK, Western											
Erie County, Buffalo, Hamburg, E. Aurora	02	0700 EST		0	0	5	0				Freezing Rain
Monroe County, Rochester	02	0700 EST		0	0	5	0				Freezing Rain
Chautauqua County, Sherman, South Ripley, Clymer, Hanover, French Creek	02	0700 EST		0	0	5	0				Freezing Rain
Onondaga County, Skaneateles	02	Evening		0	0	3	0				Freezing Rain
Cayuga County, Union Springs, Southern Cayuga	02	Evening		0	0	4	0				Freezing Rain
Seneca County, Seneca Falls	02	Evening		0	0	3	0				Freezing Rain

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					KILLED	INJURED	PROPERTY	CROPS	
NEW YORK, Western									
Erie County									
Buffalo Area		07 0700 EST			0	0	5	0	Snow
					Lake-effect snow accumulated to more than a foot by mid-morning. It caused many traffic delays, vehicular accidents, and cancellation of meetings. The highest snowfall amount was 15 inches.				
Chautauque County									
Jamestown		08 Noon			0	0	4	0	High Winds
Erie County									
Buffalo Area		08 Afternoon			0	0	4	0	High Winds(54)
Portions of Genesee and Wyoming Counties		08 Afternoon			0	0	4	0	High Winds
					Strong winds whipped up the snow on the ground, created zero visibilities and rendered driving very dangerous. There were many accidents, one of which resulted in the death of a motorist.				
Genesee County									
Batavia		09 Morning			0	0	4	0	High Winds
Portions of Wyoming County									
		09 Morning			0	0	4	0	High Winds
					High winds and snow caused zero visibilities. Schools and businesses had to close.				
31 NORTH CAROLINA									
NC2002-003-005-006-007-009-010 Northern North Carolina		17 1700EST			0	0	0	0	Heavy Snow
					During afternoon of February 17, snow fell in the Northern Mountains of the state, and slowly spread across the northern half of North Carolina to the Northern Coastal Area by late that evening. Snow and some freezing rain continued on the 18th and ended on the 19th. Total accumulations averaged 10 to 15 inches of snow along all of the North Carolina Virginia border with two to three inches from Charlotte to Sanford to Wilson to Washington. The area to the south of the snow experienced damaging freezing rain from Monroe to Lillington to north of Goldsboro.				
Anson Co.		21 0900EST			0	2	6	0	TSTM Winds
Wadesboro									
Richmond Co.		21 0912EST			0	0	6	0	TSTM Winds
Rockingham									
Montgomery Co.		21 0915EST			0	0	4	0	TSTM Winds
Candor									
Union Co.		21 0915EST			0	0	5	0	TSTM Winds
					Violent thunderstorm downburst produced extensive damage across the Southern Piedmont. In Anson County near Wadesboro a store roof was damaged, walls were blown down at a hospital construction sight and a cable television antenna was blown down. Two people were injured by flying debris. Two Cessna airplanes were blown over at the county airport. In Morven several windows were blown out and a rooftop was damaged and an overhead walkway damaged at an elementary school. In a rural section of southwest Union County several farms were damaged, and barns and trees blown down. In Richmond County near Rockingham a motel roof was destroyed, two homes damaged and a wall at a construction sight was blown down. Near Hamlet two storage buildings were damaged. Near Cordova numerous trees were blown down. A mobile home was damaged and trees blown down in Candor of Montgomery County.				
NORTH CAROLINA									
Chatham Co.		21 1020EST			0	0	0	0	TSTM Winds
Moore Co.		21 1027EST			0	2	5	0	TSTM Winds
Eagle Springs									
Moore Co.		21 1040EST			0	0	5	0	TSTM Winds
Vass and Lakeview									
Harnett Co.		21 1045EST			1	5	5	0	TSTM Winds
Lillington									
Lee Co.		21 1055EST			0	0	5	0	TSTM Winds
Hoke Co.		21 1100EST			0	0	4	0	TSTM Winds
Bowmore									
Cumberland Co.		21 1110EST			0	0	4	0	TSTM Winds
Wake Co.		21 1130EST			0	0	0	0	TSTM Winds
Raleigh									
Fuquay Varina									
Franklin Co.		21 1155EST			0	0	3	0	TSTM Winds
3 S Bunn									
Johnston Co.		21 1210EST			0	0	5	0	TSTM Winds
3 E Benson and Smithfield									
					A solid line of rapidly moving thunderstorms continued to sweep across central North Carolina. Trees were blown down in northeast Chatham County. In Moore County at Eagle Springs two people were injured as trees were downed and two mobile homes were destroyed. Two mobile homes were destroyed in West End. Trees were blown down near Vass and Lakeview. In Harnett County a man was killed and three others were injured when thunderstorm winds blew down a home under construction in Lillington. Three mobile homes were damaged in Angier, two injuries were reported. In southwest Lee County two mobile homes were destroyed and numerous trees blown down. Near Bowmore in Hoke County two mobile homes were destroyed. In Cumberland County there were widespread reports of trees down and minor damage to barns and buildings. In Johnston County a roof was blown off a house 4 miles east of Benson. Trees were blown down and roofs damaged near Smithfield. Just south of Bunn in Franklin County the roof was blown off a garage. Trees were blown down over much of Wake County. (M30P)				
Pitt Co.		21 1215EST			0	2	4	0	TSTM Winds
3 E Farnville									
Wayne Co.		21 1215EST			0	0	3	0	TSTM Winds
Goldsboro									
Lenoir Co.		21 1215EST			0	0	0	0	TSTM Winds
Kinston									
Wilson Co.		21 1217EST			0	0	4	0	TSTM Winds
Wilson									
Wayne Co.		21 1245EST			0	0	5	0	TSTM Winds
4 N Mt. Olive									
Pitt Co.		21 1300EST			0	2	5	0	TSTM Winds
6 SW Greenville									
					In Pitt County trees and power lines were blown down and a mobile home was damaged near Farnville. Two people were injured. South of Greenville powerful downburst destroyed two mobile homes and damaged two houses and a business. In Wayne County trees were blown down and a barn was destroyed near Goldsboro. A large metal factory building was severely damaged near Mount Olive. In Lenoir County, Kinston reported trees down. A funnel cloud was sighted by amateur radio spotters in the Wilson area. Trees were blown down and minor roof damage was also reported.				
Duplin Co.		21 1220EST			0	0	4	0	TSTM Winds
Magnolia									
Sampson Co.		21 1245EST			0	0	4	0	TSTM Winds
near Clinton									
Sampson Co.		21 1245EST			0	0	4	0	TSTM Winds
Spivey's Corner									
Pender Co.		21 1248EST			0	0	3	0	TSTM Winds
Willard and 5 N Burgaw									
Duplin Co.		21 1250EST			0	0	4	0	TSTM Winds
Beaulville									
Onslow Co.		21 1305EST			0	0	4	0	TSTM Winds
Belgrade									
Duplin Co.		21 1310EST			0	0	4	0	TSTM Winds
Pin Hook									
Columbus Co.		21 1330EST			0	0	0	0	TSTM Winds
Nakina									
New Hanover Co.		21 1345EST			0	0	3	0	TSTM Winds
8 NE Wilmington									
					In Duplin County downburst winds damaged trees, barns and some residences as the a thunderstorm swept from Magnolia to Beaulville to Pin Hook. In Sampson County trees and tobacco barns were destroyed near Clinton and Spivey's Corner. In Pender County trees were blown down and small barns were damaged or destroyed near Willard and 5 miles north of Burgaw. In Belgrade in Onslow County two mobile homes were destroyed and numerous trees blown down. A mobile home was turned over and barns damaged and trees blown down in Nakina of Columbus County. New Hanover County reported two mobile homes turned over, boats turned over and trees and power lines blown down about eight miles northeast of Wilmington.				

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
— NORTH CAROLINA									
Onslow Co. 4 SW Richlands	21	1300EST	2	100	0	0	5	0	Tornado (F1)
		A small tornado touched down about four miles southwest of Richlands and moved through a rural area for about two miles to the northeast. The tornado blew down many trees but only struck one home, damaging the roof. The tornado lifted about two miles southwest of Richlands.							
Martin Co. Beargrass	21	1328EST			0	0	5	0	TSTM Winds
Bertie Co. Windsor	21	1330EST			0	0	4	0	TSTM Winds
Hertford Co. Gates Co. near Gatesville	21	1330EST			0	0	0	0	TSTM Winds
	21	1400EST			0	0	0	0	TSTM Winds
		Thunderstorm winds destroyed a mobile home and two small storage buildings and blew down trees near Beargrass. In Bertie County a camper unit was blown off a pickup truck, a cinder block wall was blown over and large tree limbs were blown down. The roof was blown off a barn and trees were blown down in southwest Hertford County. A farm building was destroyed and trees were down near Gatesville.							
Chowan Co. 4 SE Edenton	21	1410EST	.5	20	0	0	0	0	Waterspout-Tornado (F1)
		A waterspout sighted over the Albemarle Sound moved over land about four miles southeast of Edenton. The tornado moved northeast for about a half a mile before lifting near Edenton Municipal Airport.							
NCZ 002-003-004-005-006-007-008-009-010-011-012-013-014-015-016-017 All of North Carolina	23	0900EST			0	0	0	0	Heavy Snow
		During the early morning of February 23, heavy snow fell in the Northern Mountains of North Carolina. In the next 24 hours heavy snow spread over almost the entire state. Most southern areas of the state received from 2 to 6 inches of snow with 6 to 10 inches of snow in the northern half of North Carolina. The greatest snowfall amounts were 12 to 18 inches in Northern Coastal Plain.							
NCZ006 007 009 Northwest North Carolina	27	0800EST			0	0	0	0	Heavy Snow
		During the day of February 27, eight to ten inches of snow fell in the Northern Mountain with four to six inches in the northern counties of the Northwest Piedmont.							
32 NORTH DAKOTA									
North Dakota NDZALL	01-04				0	6	?	0	Extreme Cold
		Northwest winds of 20 to 35 mph combined with temperatures of 20 to 35 below to cause wind chill temperatures of 60 to 90 below. A wind chill temperature of 97 below was observed at Rolla, in north-central North Dakota near the Canadian border, on the morning of February 1 (0900CST).							
		On February 2, the actual temperatures across most of North Dakota never got above 20 below.							
		A seventeen year old male was stranded in his vehicle for over 60 hours in northeast North Dakota, in a remote area along the Towner-Cavalier county line. He suffered severe frostbite and hypothermia. Five passengers, traveling in an unheated bus along Interstate 94, were also treated for frostbite and hypothermia.							
		The Governor ordered schools closed on February 2 and 3, due to the extreme cold temperatures. The cold caused isolated power outages and breakage of frozen water pipes.							
33 OHIO									
OHZ002-003 Central Lakeshore and East Lakeshore	05	0030 EST			0	0	?	0	Heavy Snow
		Four to six inches of snow fell within 5 miles of Lake Erie from Lakewood through Cleveland to Mentor. The snow began at 1700 EST on the 4th and ended at 1200 EST on the 5th.							
OHZ003 East Lakeshore	06	2347 EST			0	0	?	0	Heavy Snow
		Four to six inches of snow fell along the Lake Erie shore in central Lake County. The heaviest snow of 6 inches fell at Fairport Harbor. The snow began at 0700 EST on the 6th and ended at 0100 EST on the 7th.							
OHZ003 East Lakeshore	09	0700 EST			0	0	?	0	Heavy Snow
		Four to six inches of snow fell on Lake Geauga and Ashtabula counties. The heaviest snow was over southern Ashtabula County. The snow began at 1600 EST on the 8th and ended at 0800 EST on the 9th.							
OHZ008 Adams County	14	0900 EST-1400 EST			0	0	?	0	Flood
	15	1000 EST-2400 EST			0	0	?	0	Flood
		The Ohio Brush Creek flooded at West Union. The crest equaled 15.9 feet on the 14th at 1130 EST. Ohio Brush Creek went into flood again on the 15th and crested at 16.9 feet at 1700 EST. Minor lowland flooding occurred with both floods. Flood stage is 15.0 feet.							
Washington County	15	1400 EST			0	0	?	0	Flash Flood
		Over 3 inches of rain fell on Washington County causing many flooded roads and highways. The following roads were under water: State Route 555, SR 26 near Bloomfield, SR 676 near Dail and SR 821 at Elba; County Road 111 near Belpre, CR 33 in Grand Township, CR 206 at Dail and the intersection of CR 9 and CR 3. CR 12 was closed due to a rock slide.							
OHZ009 Pike County	16	0030 EST-17 1300 EST			0	0	?	0	Flood
		The Scioto River flooded at Piketon. It crested at 19.0 feet on the 16th at 1800 EST. Only lowland flooding occurred. Flood stage is 16.0 feet.							
OHZ008 Adams County	21	1100 EST-1330 EST			0	0	?	0	Flood
		The Ohio Brush Creek at West Union flooded. It crested at 15.5 feet at 1200 EST. Only minor lowland flooding occurred. Flood stage is 15.0 feet.							
OHZ009 Pike County	21	1630 EST-22 2200 EST			0	0	?	0	Flood
		The Scioto River at Piketon flooded. It crested at 18.4 feet on the 21st at 1900 EST. Only lowland flooding occurred. Flood stage is 16.0 feet.							
OHZ006 Hocking County	21	2100 EST-22 0230 EST			0	0	?	0	Flood
		The Hocking River at Enterprise flooded. It crested at the flood stage of 12.0 feet on the 21st at 2100 EST. Minor lowland flooding immediately along the river occurred.							
OHZ001 Northwest		Entire Month			0	0	0	C	Drought
		Precipitation for February averaged eighty-seven hundredths inches (0.87") over Northwest Ohio. This was only 47 percent of normal. South-Central Ohio had over 200 percent of normal precipitation that totaled six and eighty-five hundredths inches (6.85"). This was 246 percent of normal.							
		The excessive precipitation over South-Central Ohio dropped that area out of the long-term drought index. Northwest Ohio was still in the Moderate category of the Palmer Drought Severity Index. Almost 4 inches of precipitation is needed to end the long-term drought in Northwest Ohio.							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
34 OKLAHOMA									
OKZALL STATEWIDE	02-05	0000CST 1800CST			3	0	?	?	Record Cold
<p>An Arctic outbreak overspread the state on the 1st and resulted in record and near-record temperatures on the morning of the 2nd through 5th. Overnight low temperatures reached -6°F in Guymon. Strong north winds gusting to 40 MPH produced wind chills of -30°F to -50°F. Three fatalities were attributed to hypothermia on the 4th. An 81-year-old Oklahoma City man died in his home; an 82-year-old Durant woman also died in her home, and a middle-aged man was found frozen at the bottom of a drainage ditch in Oklahoma City. M81P F82P</p>									
35 OREGON									
ORZALL All of Oregon	01-08	1400PST			5	?	6	?	Winter Storm followed by Prolonged Cold
<p>Arctic air pushed southward across Oregon between the 1st and the 3rd of the month. Heavy snow fell over all of Oregon. Some coastal areas had 6 to 12 inches of snow, an event of which is almost unheard. Salem reported 9 inches of snow, and over a foot fell in the Cascades and northeast mountains. As the Arctic air settled over the state, numerous record temperatures were set. Strong winds produced wind chill temperatures of between 30 and 60°F below zero. There was extensive power failures as well as considerable home and business damage resulting from frozen plumbing throughout the state. Damage estimates exceeded well over a million dollars. Several moored boats sank on the Columbia River because of ice accumulation. There were five weather-related deaths, three in auto accidents caused by ice and snow, and two in which women had frozen to death. M23V, F05V, F39V, F720, F400</p>									
ORZ006-010-011-013 Cascades, Northeast Mountains and Columbia Basin	16-18	1400PST- 1430PST			0	?	?	0	Winter Storm (Snow and Freezing Rain)
<p>A low pressure system deepened off the northern Oregon coast on the 16th and remained stationary until it weakened on the 18th. The warm moist overrunning produced heavy snow in the Cascades with at least a foot of new snowfall. On the 17th and 18th, freezing rain fell in the Columbia Basin and in the valleys of the northeastern mountains.</p>									
36 PENNSYLVANIA, Eastern - NONE REPORTED									
36 PENNSYLVANIA, Western									
Washington County, 15 E Washington	16	1500 EST			0	0	0	0	Flood
<p>Minor flooding occurred at Charleroi on the Monongahela River. The river height rose to one foot above flood stage.</p>									
Allegheny County, 17 SE Pittsburgh	16	2000 EST			0	0	0	0	Flood
<p>Minor flooding occurred at Braddock on the Monongahela River. The river height rose to one and a half feet above flood stage.</p>									
FAZ005 Laurel Mountains	26	2230 EST			0	0	0	0	Heavy Snow
<p>Six to ten inches of snow fell in Somerset and Cambria counties.</p>									
37 RHODE ISLAND									
RIZ002 South-Central Rhode Island	24-25	1800EST- 1200EST			0	0	0	0	Heavy Snow
<p>An ocean storm moving northeastward well off Cape Cod brought a period of heavy snow to the south-central portion of the state. Up to 8 inches of snow fell at Point Judith and at Charlestown. Highway travel was most affected by the storm. Gusty winds caused blowing and drifting of the snow.</p>									
38 SOUTH CAROLINA									
SCZ001-002 Northwest South Carolina	17-19				0	0	6	0	Ice Storm
<p>An overrunning precipitation pattern led to freezing precipitation over much of the Upstate area of South Carolina.</p> <p>During the late morning Cherokee, Oconee, Spartanburg, and Pickens counties reported light mixed precipitation. The only accumulation of note was at Smeltzer Mountain Fire Tower in Oconee County where the tower was "iced-up".</p> <p>The freezing rain caused slick roads and accidents (especially on bridges and overpasses) as early as 800 PM February 17. However, accumulations did not reach Ice Storm criteria until about 0000EST February 18. At that time, the first reports of damage were received from Spartanburg County.</p> <p>In many places the accumulation of ice was very light, but northeast of Greer about 1 inch of glaze and sleet accrued on trees and power lines. On Saturday evening, the mountains had 1 to 3 inches of snow. There were reports of a minor glaze accumulations as far south as Newberry and as far east of Fort Mill.</p> <p>There were numerous trees across roads in the northwestern portion of South Carolina, and many cars suffered damage from falling trees, limbs, and ice. Power outages varied across the area. Some communities were without power well into Sunday evening.</p> <p>There were no known direct weather-caused casualties. There were numerous auto accidents with usual injuries on both nights; and a house in Spartanburg County caught fire, killing three people. Apparently, ice-laden power lines fell against the house and set it on fire. More roads were involved Saturday night, but there was less traffic.</p>									
SCZ 003-004-005-006-007-008 Central & Eastern South Carolina	21	0900EST			0	0	4	0	TSIM
<p>An area of thunderstorm moved across the state during the late morning and early afternoon causing wind damage at a number of locations. Total damage of thunderstorm winds and three small tornadoes included 5 mobile homes destroyed, 19 suffering at least minor damage, 4 businesses were destroyed and 3 damaged. Total damage of entire storm event was \$400,000.</p>									
Lexington County, Gilbert and Redbank	21	0900EST			0	0	5	0	TSIM Winds
<p>Thunderstorm winds felled trees and damaged several mobile homes.</p>									
Lexington County, 6 E Lexington	21	0900EST	1.0	100	0	0	5	0	Tornado (F1)
<p>A tornado ripped the roof of a home and business, destroyed a mobile home and damaged another mobile home. A wind speed of 60 knots was recorded at Columbia Airport at 0855EST.</p>									
Lexington County, 4 W West Columbia	21	1910EST			0	1	4	0	TSIM Winds
<p>Thunderstorm winds injured one person at Lexington Wire and Cable Company along SC Rte. 378, four miles west of West Columbia.</p>									
Richland County, Shandon area	21	0920EST			0	0	3	0	TSIM Winds
<p>Thunderstorm winds broke several trees, causing minor damage to fences and roofs.</p>									
Barnwell County, 6 E Barnwell	21	0930EST			0	0	4	0	TSIM Winds
<p>A roof was blown off of a building, a mobile home was damaged, and a dog was killed.</p>									
Chesterfield County, Jefferson	21	0934EST			0	0	3	0	TSIM Winds
<p>Winds damaged the roof of a factory.</p>									
Kershaw County, 7 NW Camden	21	0940EST			0	0	3	0	TSIM Winds
<p>Winds destroyed a barn and mobile home, and damaged an equipment shed.</p>									
Chesterfield County, 3 E Pageland	21	0950EST			0	1	5	0	TSIM Winds
<p>Winds destroyed a mobile home, damaged a mobile home and two turkey houses, and disrupted power. A number of turkeys in the turkey houses were killed.</p>									
Chesterfield County, 3 E Jefferson	21	0950EST	0.2	20	0	0	5	0	Tornado (F0)
<p>A small tornado destroyed a mobile home and damaged other buildings nearby. The tornado occurred 3 miles east of Jefferson and moved to the northeast.</p>									
Sumter County, Sumter	21	0953EST			0	0	4	0	TSIM Winds
<p>Trees were blown down and a roof was blown off of a warehouse.</p>									
Chesterfield County, 3 S Chesterfield	21	1000EST			0	1	2	0	TSIM Winds
<p>A few trees were downed.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
— SOUTH CAROLINA									
Bamberg County, 2 NW Bamberg	21	1002EST			0	0	5	0	TSTM Winds
					Three mobile homes were damaged two miles northwest of Bamberg. Trees were blown down between Bamberg and Denmark.				
Marlboro County, Northern Marlboro County	21	1045EST			0	0	4	0	TSTM Winds
					Transmission lines designed to withstand 90 mph winds were blown down.				
Dillon County, 5.5 N Dillon (Oakland Community)	21	1048EST	1.0	133	0	1	5	0	Tornado (F0)
					A small tornado moving northeast over a one mile long path damaged or destroyed several mobile homes, destroyed one small business, and damaged roofs of several homes. One person in a mobile home was injured.				
Dorchester County, 2 S St. George	21	1110EST			0	0	2	0	TSTM Wind
					A few trees were blown down.				
Berkeley County, 5 N Monks Corner	21	1140EST			0	0	2	0	TSTM Wind
					A few trees were blown down.				
Georgetown County, 3 E Andrew	21	1220EST			0	0	2	0	TSTM Winds
					Minor wind damage was done to a home.				
Horry County: Aynor Loris	21	1225EST			0	0	2	0	TSTM Winds
	21	1230EST			0	0	3	0	TSTM Winds
					A few trees and power lines were downed.				
SC2001-002-003-004- 005-006-007-008 Statewide	23	0800EST			0	0	5	0	Heavy Snow
					On February 22nd, a cold front passed through the upstate, bringing cold and windy conditions to the entire state. Cyclogenesis occurred along the frontal zone, bringing snow to the upstate early on the 23rd which spread across the remainder of the state during the day. Although much of the snow melted as it fell, depths varied from nine inches in West-Central South Carolina to 6 inches in the North-Central, 4 to 5 inches over most of the Coastal Plains, and to one inch or less along the South Coast. The snowfall disrupted traffic and caused schools and some businesses to close. The snow cover was short lived due to warm soil temperatures.				
39 SOUTH DAKOTA									
SDZ 001-002-003-004- 005-006-007-008- 009-010-011-012- 013-015-016-017- 018-019-020	01- 02	1800 to 1400 CST			0	0	0	0	Winter Storm
Most of South Dakota					Four to eight inches of snow fell across western and northern South Dakota. Winds of 25 mph and subzero temperatures produced wind chill temperatures in the 50-80 below zero range. Several schools were closed across the state because of the dangerous wind chill temperatures.				
SDZ014 South-Central South Dakota	02	0230 MST			1	0	0	0	Winter Storm
					A man in Martin died of exposure during a winter storm. M520.				
40 TENNESSEE									
Obion County	14	0400CST			0	0	4	0	Flash Flood
Dyer County	14	0400CST			0	0	4	0	Flash Flood
Weakley County	14	0400CST			0	0	4	0	Flash Flood
Henry County	14	0430CST			0	0	4	0	Flash Flood
Montgomery County	14	0500CST			0	0	4	0	Flash Flood
Robertson County	14	0530CST			0	0	4	0	Flash Flood
Sumner County	14	0530CST			0	0	4	0	Flash Flood
Wilson County	14	0530CST			1	0	6	0	Flash Flood
Smith County	14	0540CST			0	0	4	0	Flash Flood
Davidson County	14	0540CST			0	0	4	0	Flash Flood
Cheatham County	14	0540CST			0	0	4	0	Flash Flood
Williamson County	14	0540CST			0	0	4	0	Flash Flood
Rutherford County	14	0540CST			0	0	4	0	Flash Flood
Hickman County	14	0540CST			0	0	4	0	Flash Flood
					Flash flooding was widespread over this 14 county area of West and Middle Tennessee. Four to six inches of rain fell over the area in less than 24 hours, most of it between midnight and 6AM. Numerous people were evacuated from their homes. Roads and streets were damaged by the flowing water and some bridges were knocked out. The hardest hit area was Wilson County. In Lebanon, Sinking Creek, also referred to as Town Creek, which runs through the middle of town, overflowed its banks and was 4 feet deep in the public square. It trapped families in their homes, flooded homes and businesses and forced the evacuation of a hospital. One woman drowned after ignoring the warnings of a police officer, having driven her car into a flooded street at around 7 AM. F62V				
Obion County	15	2100CST			0	0	5	0	Flash Flood
					An earthen dam on the rain-swollen Obion River broke and sent 4 feet of water into the town of Rives. 25 homes were flooded. The flooding caused another levee south of the town to give way and sent flood waters further downstream into the town of Obion. In all there were about 400 people in the county evacuated due to the flood waters.				
Fayette County	20	1730CST			0	0	3	0	Flash Flood
Chester County	20	1830CST			0	0	3	0	Flash Flood
Hardeman County	20	1830CST			0	0	3	0	Flash Flood
Cheatham County	20	2200CST			0	0	4	0	Flash Flood
Sumner County	20	2200CST			0	0	3	0	Flash Flood
Williamson County	20	2200CST			0	0	3	0	Flash Flood
					With the soil saturated and all streams at or above bankful in West and Middle Tennessee from the heavy rains less than a week before, an additional 2 to 3 inches of rain caused flash flooding in these counties. Numerous roads were flooded and some bridges were washed out. In Portland, Sumner County, 25 people had to be evacuated from their homes. Homes were also flooded in Ashland City, Cheatham County.				
TN2001-003-016	23	0100CST			0	0	0	0	Heavy Snow
					From six inches of spotty snow in the lower elevations up to twenty-two inches of snow in the higher elevations were recorded in East Tennessee. Mt. LeConte had the 22 inches. Roads were closed halting travel in this area.				
TN2008-009-010-011	27	0100CST			0	0	0	0	Heavy Snow
					Four to eight inches of snow fell overnight in this part of Middle Tennessee. This stopped travel and caused the closing of schools and businesses.				
41 TEXAS, Northern									
TN2021-022-023- 025-026-027-028- 031-032-033	2- 7	2000CST- 1200CST			6	0	?	?	Ice and Cold
North-Central and Northeast Texas					A bitter cold air mass settled over North Texas. Temperatures dropped below freezing over much of North Texas on the evening of the 2nd and did not climb above freezing until the afternoon of the 7th. Approximately one inch of sleet fell across the eastern two-thirds of North Texas during the evening of the 2nd and early morning of the 3rd, coating roadways with ice. One to two inches of snow fell across North-Central Texas during the evening of the 4th and morning of the 5th. Freezing drizzle and freezing rain coated exposed surfaces with ice in Northeast Texas during the evening of the 4th and morning of the 5th.				
					Many schools were closed on the 3rd due to hazardous driving conditions and on the 6th and 7th due to natural gas curtailments. Numerous accidents occurred on icy roads, resulting in five fatalities. Six other people also died from the cold and ice. A 67 year old man died on the 3rd from injuries in Dallas after he slipped on ice and hit his head. An 84 year old woman died from exposure in Fort Worth on the 3rd after apparently accidentally locking herself out of her house. A 65 year old man died of exposure on the 4th in an abandoned house in Dallas. Two men died of hypothermia in Gatesville on the 6th in their home when a bottled gas supply for their space heater ran out. A 57 year old man died in Waco of hypothermia on the 7th. Heat was available to the house he was in, but the heat was not in use. M670, F840, M650, M63P, M63P, M57P				

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

— TEXAS, Northern

Cass County	3	0100CST-0300CST			0	0	?	?	Flash Flooding
Gregg County	3	0130CST-0300CST			0	0	?	?	Flash Flooding
Marion County	3	0230CST			0	0	?	?	Flash Flooding

Two to four inches of rain fell across Northeast Texas the evening of the 2nd and the early morning of the 3rd, before changing to sleet. Farm-to-Market Road 125 was flooded and closed in two places in southeast Cass County. Streets and underpasses were flooded in Longview in Gregg County, with some of them closed for a period of time. Roads were flooded in north-central Marion County north of Jefferson.

Hopkins County	17	1345CST-1545CST			0	0	?	?	Flash Flooding
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Heavy rains flooded several Farm-to-Market roads in Hopkins County northeast of Sulphur Springs and Farm-to-Market Road 69 near Como.

41 TEXAS, Southern

TXZ034-035-036-037-038-039-040-041-042-043-044-045-046-047-048-054 Southern Texas	04-06				5	?	6	6	Winter Storm
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A massive outbreak of very cold Arctic air moved into South Texas and held a firm grip over all of the area from the 4th until the 7th. There was widespread freezing rain and drizzle that coated all of South Texas with a layer of ice. The ice immobilized everyone as driving was hazardous and many roads were closed including major thoroughfares and interstates. Icy roads were even reported in the lower Rio Grande Valley. In general, the icy blast of Arctic air was not as severe as the cold outbreak of December of 1983. There was damage to vegetation from freezing temperatures in the lower Rio Grande Valley. However, it was restricted to tender vegetation and to blooms on trees. Citrus trees were not damaged. The melon crop suffered major damage. While the ice storm covered all of South Texas from Del Rio eastward to Beaumont and south to Brownsville the accumulation of ice was most serious along the mid coastal plains northeast into southeastern Texas. The weight of the ice on power lines in southeastern Harris County around Clear Lake toppled several supporting steel towers. There were hundreds of automobile accidents from the icy roads. Most schools were closed on the morning of the 6th and some on the morning of the 7th. Many businesses were closed. Airlines canceled many flights and there were many delays because of the ice. 5 deaths could be attributed directly to the cold. On the morning of the 5th, in Llano County a man died from the cold after spending the night in an unheated building. In Austin, a 36 year old paraplegic died of exposure when he had an accident on his wheelchair outside of his home and had to spend the night outside in the cold. On the 6th, in Liberty County, a 2 year old baby girl wandered outside from her mobile home and died from exposure in the early morning hours. In Jim Wells County, a 41 year old man died from exposure after losing his way in the brush country. He had apparently fallen into a creek and gotten wet. In Bastrop County, a 68 year old man died from hypothermia after spending the night in his car.
M70 M360 F20 M410 M680

Hardin County	20	1700CST			0	0	0	?	Tsm Wind (53)
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Near Silbee, large oak trees were damaged from thunderstorm winds.

41 TEXAS, Western

Culberson County	01	1340 MST			0	0	0	0	High Wind (53)
									Gradient westerly winds gusted to 53 knots at Guadalupe Pass, in the northwest corner of the county. No damage was noted.
Culberson County	02	0955 MST			0	0	0	0	High Wind (53)
									A westerly gradient wind gusted to 53 knots at Guadalupe Pass. No damage was noted.

42 UTAH

UTZ003	01	1135MST			0	0	1	0	High Wind (G52)
UTZ001	01	1455MST			0	0	1	0	Heavy Snow
UTZ002	01	1505MST			0	0	1	0	High Wind (G52)
UTZ010	01	1830MST			0	0	1	0	Heavy Snow
UTZ003	01	1900MST			0	0	1	0	Heavy Snow

Wasatch Front, Cache Valley, Great Salt Lake Desert, Northern Mountains

A spotter in Salt Lake City reported wind gusts in excess of 60 mph in advance of a cold front moving into northwest Utah. Later in the afternoon, a gust to 60 mph was also recorded at the Morton Thiokol plant in Brigham City. The front also spread heavy snow across the northwest part of the state. A spotter in Smithfield received 8 inches of snow during the morning and early afternoon hours. By early evening several northern mountain locations had received 8 or more inches of new snow. The heavy snow spread southward leaving between 6 and 14 inches in many spots along the Wasatch Front from Weber to Utah counties by midnight.

UTZ003	02	1540MST			0	0	1	0	Heavy Snow
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Wasatch Front

The cold front that produced heavy snow in northern sections of the Wasatch Front on the previous day, continued southward into Utah County on this date. Heavy snow began by midday and by early afternoon some locations had received 4 inches of new snow. By 10:00 p.m. several locations had received 8 inches of new snow.

UTZ003	03	0555MST			0	0	1	0	Heavy Snow
UTZ010	03	0600MST			0	0	1	0	Heavy Snow
UTZ002	03	1125MST			0	0	1	0	Heavy Snow
UTZ004	03	1450MST			0	0	1	0	Heavy Snow
UTZ003	03	2000MST			0	0	1	0	Heavy Snow
UTZ010	03	2130MST			0	0	1	0	Heavy Snow
UTZ002	03	2135MST			0	0	1	0	Heavy Snow
UTZ004	03	2145MST			0	0	1	0	Heavy Snow
UTZ010	03	2300MST			0	0	1	0	Heavy Snow

Wasatch Front, Northern Mountains, Great Salt Lake Desert, Uinta Basin

The very slow moving cold front continued to produce heavy snow in southern Salt Lake County and northern Utah County. Six inches of new snow fell overnight in parts of Sandy and Draper. In Utah County an additional 6 to 13 inches of new snow was reported. By midday 15 inches of snow had fallen at Dugway and by early afternoon, the observer in Vernal had 8 inches of new snow. Snow continued to fall in many areas through the evening hours. An additional 8 inches fell across much of the north by 9 p.m., including the Wasatch Front and the Uinta Basin. Blowing and drifting snow was a problem in the Uinta Basin. Shortly before midnight, a spotter at Flaming Gorge reported two feet of new snow for the day.

UTZ003	04	0508MST			0	0	1	0	Heavy Snow
UTZ006	04	0600MST			0	0	1	0	Heavy Snow
UTZ007	04	0920MST			0	0	1	0	Heavy Snow
UTZ004	04	1001MST			0	0	1	0	Heavy Snow
UTZ011	04	1318MST			0	0	1	0	Heavy Snow
UTZ003	04	1325MST			0	0	1	0	Heavy Snow
UTZ006	04	1414MST			0	0	1	0	High Wind (G57)
UTZ003	04	1800MST			0	0	1	0	High Wind (G52)
UTZ008	04	2000MST			0	0	1	0	Heavy Snow
UTZ003	04	2150MST			0	0	1	0	High Wind (G57)

Wasatch Front, Southwest Valleys, Sevier Valley, Uinta Basin, Southern Mountains, Southeast Valleys

Heavy snowfall continued for the fourth day in a row. Six to nine inches of new snow fell in Provo overnight and 4 inches was reported at Delta. 4 to 6 inches fell in Sandy during the 12 hours preceding 6 a.m. The front moved southward and began to produce heavy snow in the Sevier Valley by mid morning. A spotter in Monroe reported 9 inches of new snow from 4 a.m. to 9 a.m. The Richfield UHP office reported 8 inches of new snow during the same time. The Vernal UHP reported 8 to 10 inches of snow overnight in the Uinta Basin. By early afternoon, the Cedar City area had an additional 6 to 8 inches of snow and the Elk Meadows ski resort had received 12 inches of snow during the preceding 24 hours. Nine inches of snow in 24 hours was reported in Sandy at 1:35 p.m. As the storm moved into the southern part of the state, strong winds combined with the snow to produce near-zero visibilities in some places. A wind gust to 65 mph was reported in St. George at 2:15 p.m. Easterly canyon winds began to reach high wind criteria by about 6 p.m. along the Wasatch Front. A gust to 60 mph was reported by the Weber UHP at that time. However, the front was not finished producing heavy snow in the south, spotters in Big Water and Hurricane reported 7 and 6 inches of new snow as of about 8 p.m. An estimated wind gust of 65 mph was reported by a spotter in Farmington shortly before 10 p.m.

UTZALL	06	0000MST-2300MST			0	0	4	0	Record Cold
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Entire State

An Arctic airmass followed the cold front and record cold temperatures were felt over the entire state of Utah. Twenty-five known record minimum temperatures were broken or tied on the morning of the sixth. Frozen pipes were common throughout the state.

UTZ009	09	0850MST			0	0	1	0	Heavy Snow
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Utahs Dixie

Four inches of new snow fell overnight in Santa Clara in the southwest corner of the state.

UTZ006	12	0623MST			0	0	1	0	Heavy Snow
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Southwest Valleys

Four to five inches of new snow fell overnight just west of Cedar City.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

UTAH

UTZ010 Northern Mountains	13	1600MST			0	0	1	0	Heavy Snow
<p>Nordic Valleys received 14 inches of new snow and Powder Mountain and Snow Basin each got 10 inches during the day.</p>									
UTZ010	19	1600MST			0	0	1	0	Heavy Snow
UTZ002	19	1600MST			0	0	1	0	Heavy Snow
UTZ003	19	1630MST			0	0	1	0	Heavy Snow
<p>Great Salt Lake Desert, Wasatch Front, Northern Mountains</p> <p>Wet snow fell over much of the northwest part of the state on this date. Johnson's Pass received 5 inches and Salt Lake City had 4 1/2 inches. The northern Wasatch ski resorts received from 1 to 2 feet of new snow.</p>									
UTZ010	20	0415MST			0	0	1	0	Heavy Snow
UTZ002	20	0815MST			0	0	1	0	Heavy Snow
UTZ005	20	1300MST			0	0	1	0	High Wind (056)
<p>Great Salt Lake Desert, Northern Mountains</p> <p>Four to 5 inches of new snow fell overnight in the Brigham City area. Northern Wasatch ski resorts received up to 8 inches of snow overnight. During the early afternoon hours the Price RAMOS recorded a gust to 64 mph.</p>									

43 VERMONT

Statewide	15	1100EST			0	0	4	0	Snow
<p>Wet slushy snow fell across all of Vermont. Several car accidents were reported.</p>									

44 VIRGINIA

VAZ008-009-010 -011-012-013 -014 Western Virginia	13	0630EST			0	0	?	0	Snow
<p>Snow fell throughout the area during the morning rush hour, causing numerous auto accidents. Amounts averaged 1 to 3 inches with Rockbridge County reporting 4 to 5 inches. The snow ended around noon.</p>									
VAZ001-002-003 -004-006-007 -008-009-014 -015-017-018 Southern 2/3 of Virginia	17	1330-1800			0	0	?	?	Winter Storm
<p>Snowfall accumulations averaged 10 to 18 inches along the North Carolina border, affecting zones 1, 2, 3, 4, 6, 7, 8, and 15. Further north, amounts ranged from 3 to 8 inches. The storm ended from west to east late on the 18th. In extreme southeast Virginia, the heavy wet snow produced significant vegetation damage with many power outages from tree limbs falling on power lines.</p>									
Chesapeake and Brunswick County	21	1425EST			0	0	?	0	Thunderstorm Winds
<p>Several telephone poles and a tree were blown down in Chesapeake City. Several trees were blown down in Brunswick County, where winds were estimated at 52 knots.</p>									
VAZ001-002-003 -004 VAZ006-007-017 VAZ002 Southeastern Virginia	23	2200EST			0	0	?	0	Blizzard
23	2200EST				0	0	?	0	Winter Storm
24	All day				0	0	?	0	Tidal Flood
<p>Blizzard conditions knocked down power lines and dropped visibility to near zero as winds gusted to 35 to 45 knots. Cape Henry reported 52 knots which later diminished to 20 to 30 knots Friday afternoon. Snowfall amounts in coastal areas were 8 to 11 inches with much higher drifts. In zones 6, 7 and 17, snowfall averaged 3 to 6 inches. The high winds and high tides combined to cause flooding along the south shore of the Chesapeake Bay and the Elizabeth and Lynnhaven rivers. A 2 story building was knocked down by a storm surge in Virginia Beach.</p>									

45 WASHINGTON

Entire State	01	All Day			5	?	7	?	Snowstorm
Whatcom County	01	through 04							High Wind
Island County									
Southeast King County									
Entire State	02	through 05							Hard Freeze
Spokane County	03	afternoon			1	0	0	0	Cold
<p>Record-breaking cold air from Alaska began moving over the rest of North America on the last day of January, sweeping over Washington State on February 1st. The initial Arctic front brought widespread snow over the state, with amounts ranging from an inch on the north coast to 10 inches in the south Puget Sound area. Eastern Washington received 3 to 8 inches of new snow. Outflow winds through the Fraser River Valley, Enclave Plateau and the Columbia River Gorge lasted up to three days with speeds to 75 mph and gusts to 105 mph. Strong winds damaged marinas from Neah Bay to the San Juan Islands. Freezing spray and cold temperatures with the strong north winds caused cancellation of ferry service in Puget Sound from Edmonds northward. Uprooted trees across the state caused scattered power outages in all portions of the state. Schools across the state were closed for up to three days. Schools in Spokane were closed due to weather for the first time in 20 years because of daytime temperatures below zero and strong northerly winds. Five deaths were weather related. A lineman working to restore power died when he fell from a power pole. Four people in the Seattle area died in four separate sledding/inner tubing accidents. Countless other injuries were caused in sledding accidents. Western Washington temperatures in single digits and Eastern Washington temperatures as low as -15°F led to broken water pipes which added to the damage when temperatures moderated after the 4th. M350, P120, F210, M60, M180. One additional fatality occurred on the 3rd when an elderly Spokane resident died from exposure to cold winds while on an afternoon walk in the bitter cold of the Arctic outbreak. M790.</p>									

46 WEST VIRGINIA

Preston County	16	0300EST			?	?	?	?	Heavy Rains and Minor Flooding
<p>The Cheat River at Rowlesburg crested at 13.75 feet, 2 feet above flood stage.</p>									
Wirt County	16	0700EST			?	?	?	?	Heavy Rain
<p>The Little Kanawha at Crest crested at 22.2 feet, 2.2 feet above flood stage.</p>									
Cabell and Lincoln Counties	16	?			?	?	?	?	Flooding
<p>Farm fields in flood plains were inundated and flood waters cut off many homes and small roads, forcing city officials to close roadways. Water rose above the banks.</p>									

47 WISCONSIN

WIZ020 Racine and Kenosha Counties	05	Early Afternoon into Late Evening			0	0	0	0	Heavy Snow
<p>Heavy snow amounts from 6 to 8.5 inches fell along the lake shore areas of Racine and Kenosha counties causing at least 45 traffic accidents.</p>									
WIZ002 Ashland and Iron Counties	26	Early Morning into Early Morning			0	0	0	0	Heavy Snow
<p>Lake Superior snow squalls dumped localized heavy snow over Ashland and Iron counties. Hurley (Iron County) reported 9 inches of snow while 8 inches was deposited at Mellen and 6 inches at Butternut, both in Ashland County.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
48 WYOMING									
WYZDNW-004-010-012-017 NORTHWEST WY., BIG HORN MOUNTAINS, WIND RIVER BASIN, EASTERN PLAINS, SOUTHEAST PLAINS	01	0001 TO 2359MST			0	0	0	0	EXTREME COLD
	<p>AREAS, RESULTING IN A FEW ROAD CLOSURES. SNOW AMOUNTS INCLUDED 18 INCHES AT JELM, 16 INCHES IN SARATOGA, 14 INCHES AT LARAMIE, 9 INCHES AT RAWLINS AND ROCK SPRINGS, AND CASPER ACCUMULATED 8 INCHES. CHEYENNE LOGGED 9 INCHES OF FRESH SNOW DURING THE 2ND.</p>								
	<p>WYZ001-002-007-008-009-010-013 NORTHWEST MOUNTAINS, NORTHWEST CHINOOK, WESTERN MOUNTAINS, GREEN RIVER BASIN, WIND RIVER MOUNTAINS, WIND RIVER BASIN, SOUTHWEST</p>								
WYZ014-016 RED DESERT, LARAMIE VALLEY	01	0900 TO 1700MST			0	0	?	0	HIGH WIND
<p>IN THE WAKE OF THE PASSAGE OF A SEVERE ARCTIC COLD FRONT, TEMPERATURES PLUMMETED OVER ALL OF WYOMING EXCEPT FOR THE SOUTHWEST THIRD. SINCE THE FRIGID AIRMASS HAD REMAINED STATIONARY FOR AN EXTENDED PERIOD OF TIME OVER ALASKA AND THE CANADIAN NORTHWEST TERRITORIES, THAT ALLOWED THE SIBERIAN AIRMASS TO COOL TO EPISODIC PROPORTIONS.</p> <p>ON THE 1ST, THE ARCTIC FRONT TEMPORARILY BECAME STATIONARY ACROSS SOUTHWEST WYOMING. THAT ALLOWED RELATIVELY WARM MOIST PACIFIC AIR, IN COMBINATION WITH SEVERAL UPPER-LEVEL DISTURBANCES, TO OVERRIDE THE ARCTIC DOME FROM THE SOUTHWEST. THE RESULT WAS SNOWFALL, HEAVY OVER NORTHWEST WYOMING, IN THE COLD AIR. THERE WAS ALSO HEAVY SNOW WEST OF THE CONTINENTAL DIVIDE. FINALLY, HIGH WINDS DEVELOPED OVER SOUTHWESTERN WYOMING ON THE 1ST, IN THE WARM AIR.</p> <p>DURING THE 1ST, TEMPERATURES ACROSS THE NORTH AND EAST PART OF THE COWBOY STATE DROPPED TO AT LEAST 15 TO 30 DEGREES BELOW ZERO, WITH WIND CHILLS BETWEEN MINUS 50 AND MINUS 90. THESE AIR TEMPERATURES WERE 50 TO 80 DEGREES LOWER THAN THE PREVIOUS DAY. LOCATIONS AFFECTED BY THE ICY GRIP WERE SHERIDAN, LANDER, CODY, CASPER AND GILLETTE.</p> <p>SOME SNOWFALL REPORTS WERE 14 INCHES AT AFTON, UP TO 13 INCHES IN EVANSTON, 11 INCHES AT DUBOIS AND JEFFREY CITY, AND 7 INCHES IN LANDER. REPORTS OF AS MUCH AS 20 INCHES OF SNOWFALL WERE RECEIVED FROM LOCATIONS ALONG THE EAST SLOPES OF THE ABSAROKA MOUNTAINS. JACKSON HOLE AND YELLOWSTONE PARK LOGGED FROM 6 TO 12 INCHES OF NEW SNOW.</p> <p>FROM THE MORNING THROUGH THE AFTERNOON OF THE 1ST, RAWLINS HAD SUSTAINED WINDS AROUND 40 MPH WITH MANY GUSTS OVER 60 MPH, INCLUDING A PEAK WIND OF 67 MPH. MINOR DAMAGE OCCURRED THERE. VEDAWOOD, ABOUT 30 MILES WEST OF CHEYENNE, RECORDED SUSTAINED WINDS OF 40 TO 50 MPH ON THE AFTERNOON OF THE 1ST. ROCK SPRINGS ALSO HAD HIGH WINDS DURING THIS AFTERNOON.</p>									
WYZ011-012-014-015-016-017 CENTRAL PLAINS, EASTERN PLAINS, RED DESERT, SOUTHERN MOUNTAINS, LARAMIE VALLEY, SOUTHEAST PLAINS	02	0001 TO 2359MST			0	0	0	0	HEAVY SNOW
<p>AS THE ARCTIC FRONT RESUMED IT'S SOUTHWESTWARD INVASION OF THE ROCKIES, THE SNOW THAT HAD OCCURRED OVER NORTHERN WYOMING THE PREVIOUS DAY, SHIFTED SOUTHWARD, AND INTENSIFIED. NORTH TO EASTERLY WINDS WITH SPEEDS FROM 20 TO 35 MPH CAUSED SOME BLOWING AND DRIFTING SNOW IN OPEN</p>									
WYOMING									
WYZALL ENTIRE STATE	02 06	0001 TO 1200MST			0	0	0	0	EXTREME COLD
<p>RECORD COLD TEMPERATURES GRIPPED THE COWBOY STATE FROM THE 2ND THROUGH THE MORNING OF THE 6TH, THE COLDEST IN AT LEAST 5 YEARS. MANY LOCATIONS HAD AT LEAST 80 TO 100 CONSECUTIVE HOURS OF SUBZERO READINGS. WIND CHILLS FROM 50 TO 90 DEGREES BELOW ZERO ACCOMPANIED THE COLD. MOST OVERNIGHT LOWS WERE BETWEEN MINUS 20 AND MINUS 40 DEGREES WITH MAXIMUM TEMPERATURES STRUGGLING ABOVE 15 OR 20 DEGREES BELOW ZERO.</p> <p>ON THE MORNING OF THE 3RD, SHERIDAN SET A RECORD LOW OF MINUS 32, ECLIPSING THE OLD RECORD OF 24 DEGREES BELOW ZERO, SET IN 1985. CASPER HAD A RECORD LOW 27 DEGREES BELOW ZERO. THE MINIMUM AT CHEYENNE WAS MINUS 24, ONE DEGREE SHY OF THE RECORD LOW FOR THE 3RD, DATING BACK TO 1883. ADDITIONALLY, WESTON, LOCATED OVER FAR NORTHERN WYOMING, DROPPED TO 47 DEGREES BELOW ZERO WHILE LOCATIONS IN YELLOWSTONE PARK DIPPED LOWER THAN MINUS 40 DEGREES. THESE LOW TEMPERATURES, INCLUDING SEVERAL RECORDS, WERE TYPICAL THROUGH THE 6TH.</p> <p>THE MAXIMUM TEMPERATURE FOR CHEYENNE ON THE 3RD WAS 18 DEGREES BELOW ZERO. NOT ONLY WAS THAT A RECORD LOW MAXIMUM, BUT THE SECOND COLDEST SUCH READING SINCE WEATHER RECORDS HAVE BEEN KEPT AT CHEYENNE, BACK MORE THAN 100 YEARS. DURING THE MORNING OF THE 6TH, THE TEMPERATURE AT THE CAPITOL CITY FINALLY ROSE ABOVE ZERO. THAT MARKED THE END OF 106 CONSECUTIVE HOURS BELOW ZERO. THE RECORD IS 120 HOURS, SET IN DECEMBER 1983.</p> <p>DUE TO THIS ARCTIC EPISODE, FEBRUARY WAS THE COLDEST FEBRUARY EVER FOR CASPER. IT WAS ALSO THE WORST COLD SPELL FOR GILLETTE IN A DECADE.</p>									
WYZ016 LARAMIE VALLEY	23	0500 TO 1200MST			0	0	?	0	HIGH WIND
<p>DURING THE MORNING OF THE 23RD, STRONG WINDS DEVELOPED ABOUT 30 MILES WEST OF CHEYENNE, ON INTERSTATE 80. VEDAWOOD HAD SUSTAINED WINDS FROM 50 TO 60 MPH WITH GUSTS NEAR 70 MPH. THE RESULT WAS LIMITED VISIBILITIES DUE TO BLOWING SNOW, CAUSING NUMEROUS AUTOMOBILE ACCIDENTS AND A TEMPORARY CLOSURE OF THE INTERSTATE BETWEEN LARAMIE AND CHEYENNE.</p>									
WYZ002 NORTHWEST CHINOOK	26 27	2100 TO 0600MST			0	0	0	0	HIGH WIND
<p>FROM THE LATE EVENING OF THE 26TH THROUGH THE EARLY MORNING OF THE 27TH, HIGH WINDS DEVELOPED ALONG THE EAST SLOPES OF THE ABSAROKA MOUNTAINS IN NORTHWEST WYOMING. CODY HAD SUSTAINED WINDS OF 25 TO 40 MPH WITH GUSTS TO 62 MPH DURING THE NIGHT.</p>									
WYZ016 LARAMIE VALLEY	27	0400 TO 1200MST			0	0	0	0	HIGH WIND
<p>ON THE MORNING OF THE 27TH, SUSTAINED WINDS OF 30 TO 40 MPH WITH GUSTS GREATER THAN 60 MPH OCCURRED ALONG THE INTERSTATE 80 SUMMIT, LOCATED ABOUT 30 MILES WEST OF CHEYENNE.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
49 ALASKA, Northern ————— NO REPORT RECEIVED									
49 ALASKA, Southern									
ALEUTIANS, ALASKA PENINSULA	2-5	N/A			0	0	?	0	High Winds
A strong high pressure over mainland Alaska coupled with a moderate low over the eastern Aleutians produced strong winds over the eastern Aleutians and Alaska Peninsula with gusts to over 60 mph. Both systems remained nearly stationary during the four-day period.									
ALEUTIANS	21	1600AST			0	0	?	0	High winds
A moderate 975 MB low southwest of Shemya Island moved northeast into the Bering Sea. It brought winds gusting to nearly 60 mph over the western Aleutians									
49 ALASKA, Southeastern									
All of Southeast Alaska	Jan. 30 - Feb. 03				1	0	5	0	Anticyclone (Winds and Cold)
A condition of strong winds and low temperatures caused by a record high pressure center which developed over interior Alaska during the end of January and early February caused several thousand dollars damage and resulted in at least one death in Southeast Alaska. Frozen pipes were the biggest cause of property damage as several water lines burst. 2 small boats were swamped by 6 foot seas and winds gusting to 60 mph in Behm Canal north of Ketchikan. The driver of one of the boats died. At about 2 AM on the 3rd the mercury climbed to 31.24 inches at Juneau's airport. This was the highest pressure reading ever recorded in Alaska's capital city. This pressure caused the FAA to restrict air traffic as aircraft altimeters can only be adjusted to 31 inches.									
Extreme wind ghill readings were felt throughout the region with a reported 85° below north of Haines being the coldest in Southeast Alaska.									
To cap off a miserable few days, a landslide in Sitka knocked out power and caused sporadic brownouts for 2 days throughout that city on the 30th and 31st of January.									
50 HAWAII									
All Islands	3-5				0	0	5	0	Flash Flooding
A nearly stationary front over the Islands caused localized heavy showers and thunderstorms. Flash flooding was reported in the Kohala district on Hawaii at around 0800HST on the 3rd, near Haiku on Maui at 1400HST on the 4th, near Pahala on Hawaii during the night of the 4th-5th, and over the South Kona slopes at about 1600HST of the 5th.									
Kauai	10	1309HST			0	0	0	0	Waterspout
A waterspout was observed briefly offshore near Barking Sands.									
Oahu	10	2215HST	?	?	0	0	3	0	Waterspout-Tornado (FO)
A waterspout moved on shore from the southwest and caused minor wind damage on Papipi Drive in Ewa Beach.									
All Islands	10-11				0	0	5	0	Flash Flooding
Frequent heavy showers affected all of the Islands. One line of heavy showers moved across Oahu during the morning hours of the 11th and stalled over Molokai at around noon. Localized flash flooding closed roads on Molokai. Also, some minor flooding occurred on Maui and near Kona on Hawaii. Rainfall in central Oahu was near 6 inches.									
Kauai	21-23				0	0	5	0	Flash Flooding
A shear line became stationary over Kauai for about 48 hours and rainfall amounts in the 5 to 15 inch range were common over much of the island. Some road closures and flooding of dwellings in low-lying areas occurred.									
51 PUERTO RICO ————— NONE REPORTED									
52 VIRGIN ISLANDS ————— NONE REPORTED									
53 PACIFIC ————— NONE REPORTED									

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STORM SUMMARY

FEBRUARY 1989

TYPE	ALABAMA	ARIZONA	ARKANSAS	CALIFORNIA	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA	IDAHO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND & DC	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI	MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE
TORNADOES						0											0		0		0						0
Number	3							1								3						5					
Days	1							1								1						1					
Deaths	0							0								0						0					
Injuries	0							0								0						0					
Property Damage	6							4								0						0					
Crop Damage	5							0								?						0					
HAIL																											
Deaths								0								0							0				
Injuries								0								0							0				
Property Damage								4								?							?				
Crop Damage								0								?							0				
THUNDERSTORM WINDS																											
Deaths	0							0	0							0							0				
Injuries	0							0	0							0							0				
Property Damage	?							4	5							?						5					
Crop Damage	0							0	0							?						0					
HIGH WINDS																											
Deaths		0		0	0																						0
Injuries		0		0	0																						0
Property Damage		5		4	5																						5
Crop Damage		0		?	0																						0
LIGHTNING																											
Deaths				0				0																			
Injuries				0				0																			
Property Damage				3				4																			
Crop Damage				0				0																			
FLASH FLOODS																											
Deaths	0		1									0			2								0				
Injuries	0		?									?			7								?				
Property Damage	?		?									?			7								?				
Crop Damage	0		?									?			5								0				
FLOODS																											
Deaths			0							0	0					0											
Injuries			0							0	0					0											
Property Damage			5							4	?					7											
Crop Damage			?							0	0					5											
HEAVY SNOWSTORMS AND BLIZZARDS @																											
Deaths				0	0		0	0	0	0	0	0	0	0				0		1					0	0	0
Injuries				0	0		0	0	3	3	?	?	?	?	?	?		0		0					0	0	0
Property Damage				4	5		?	4	6	6	?	?	?	3				4		0					2	5	5
Crop Damage				5	0		0	0	5	5	0	0	0					0		0					1	0	0
ICE STORMS #																											
Deaths				0					0							0							0				
Injuries				0					0							0							0				
Property Damage				4					0							?							6				
Crop Damage				0					5							?							0				
HURRICANES AND TROPICAL STORMS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ALL OTHERS																											
Deaths			3	1	2			3		0			1	3					0								0
Injuries			0	0	23			?		0			0	0													0
Property Damage			0	4	7			?		5			0	0													0
Crop Damage			0	7	7			0		6			0	5													7

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM SUMMARY

FEBRUARY 1989

TYPE	NEW JERSEY	NEW MEXICO	NEW YORK	NORTH CAROLINA	NORTH DAKOTA	OHIO	OKLAHOMA	OREGON	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA	SOUTH DAKOTA	TENNESSEE	TEXAS	UTAH	VERMONT	VIRGINIA	WASHINGTON	WEST VIRGINIA	WISCONSIN	WYOMING	ALASKA	HAWAII	PACIFIC	PUERTO RICO	VIRGIN ISLANDS	NATIONAL DEATH & INJURY TOTALS	
TORNADOES																												
Number				2					0	0	3									0		#			0	0	0	
Days				1							1																	
Deaths				0							0																	0
Injuries				0							1																	1
Property Damage				5							5																	
Crop Damage				0							0																	
HAIL																												
Deaths																												
Injuries																												
Property Damage																												
Crop Damage																												
THUNDERSTORM WINDS																												
Deaths	0			1							0			0			0			0								1
Injuries	0			13							3			0			0			0								16
Property Damage	3			6							6			?			?			?								
Crop Damage	0			0							0			0			0			0								
HIGH WINDS																												
Deaths			0					0							0			0			0							
Injuries			0					0							0			0			0							
Property Damage			5					?							1			7			?							
Crop Damage			0					0							0			0			0							
LIGHTNING																												
Deaths																												
Injuries																												
Property Damage																												
Crop Damage																												
FLASH FLOODS																												
Deaths						0							1	0														4
Injuries						0							0	0														0
Property Damage						?							6	?														
Crop Damage						0							0	?														
FLOODS																												
Deaths			0			0													0									
Injuries			0			?													?									
Property Damage			4			?													?									
Crop Damage			0			0													?									
HEAVY SNOWSTORMS AND BLIZZARDS @																												
Deaths	0	0	0			0		2			0			0	0	0	0	0	0	0								3
Injuries	0	0	0			0		?			0			0	0	0	0	0	0	0								3?
Property Damage	3	?	6			?		6			5			1	4	?	?	?	?	?								
Crop Damage	0	?	2			0		?			0			0	0	?	?	?	?	?								
ICE STORMS #																												
Deaths			0					0			0			0														0
Injuries			0					?			0			0														?
Property Damage			5					?			6			6														
Crop Damage			0					0			0			6														
HURRICANES AND TROPICAL STORMS																												
Deaths																												
Injuries																												
Property Damage																												
Crop Damage																												
ALL OTHERS																												
Deaths			0		0	0	3				1			10	0		0	1										33
Injuries			0		6	0	0				0			?	0		0	0										29?
Property Damage			4		?	0	?				0			0	4		?	5										
Crop Damage			?		0	?	?				0			0	0		0	?										

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM DAMAGE CATAGORIES

REFERENCE NOTES

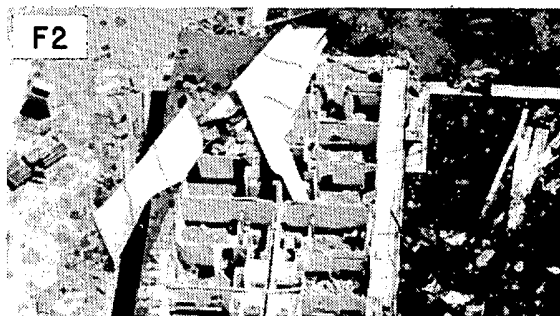
- 1 Less than \$50
- 2 \$50 to \$500
- 3 \$500 to \$5,000
- 4 \$5,000 to \$50,000
- 5 \$50,000 to \$500,000
- 6 \$500,000 to \$5 Million
- 7 \$5 Million to \$50 Million
- 8 \$50 Million to \$500 Million
- 9 \$500 Million to \$5 Billion

- 0/Blank None reported.
- * Miles instead of yards.
- ** Yards instead of miles.
- @ Includes heavy sleet storm.
- # Freezing drizzle and freezing rain, commonly known as glaze.
- ≠ Report incomplete.
- ≠≠ Report not received.
- o/c Indicates Crop Damage amount is included in the value given for property damage.

When reports are not received or are incomplete, the Storm Summary National Death and Injury totals may also be incomplete.

Definition of Fujita Tornado Scale (F scale)

(F0) Gale tornado (40-72 mph): Light damage
Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage sign boards.



(F1) Moderate tornado (73-112 mph): Moderate damage
The lower limit (73 mph) is the beginning of hurricane wind speed; peel surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads.



(F2) Significant tornado (113-157 mph): Considerable damage
Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.

(F3) Severe tornado (158-206 mph): Severe damage
Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.



(F4) Devastating tornado (207-260 mph): Devastating damage
Well-constructed houses leveled; structure with weak foundation blown off some distance; cars thrown and large missiles generated.

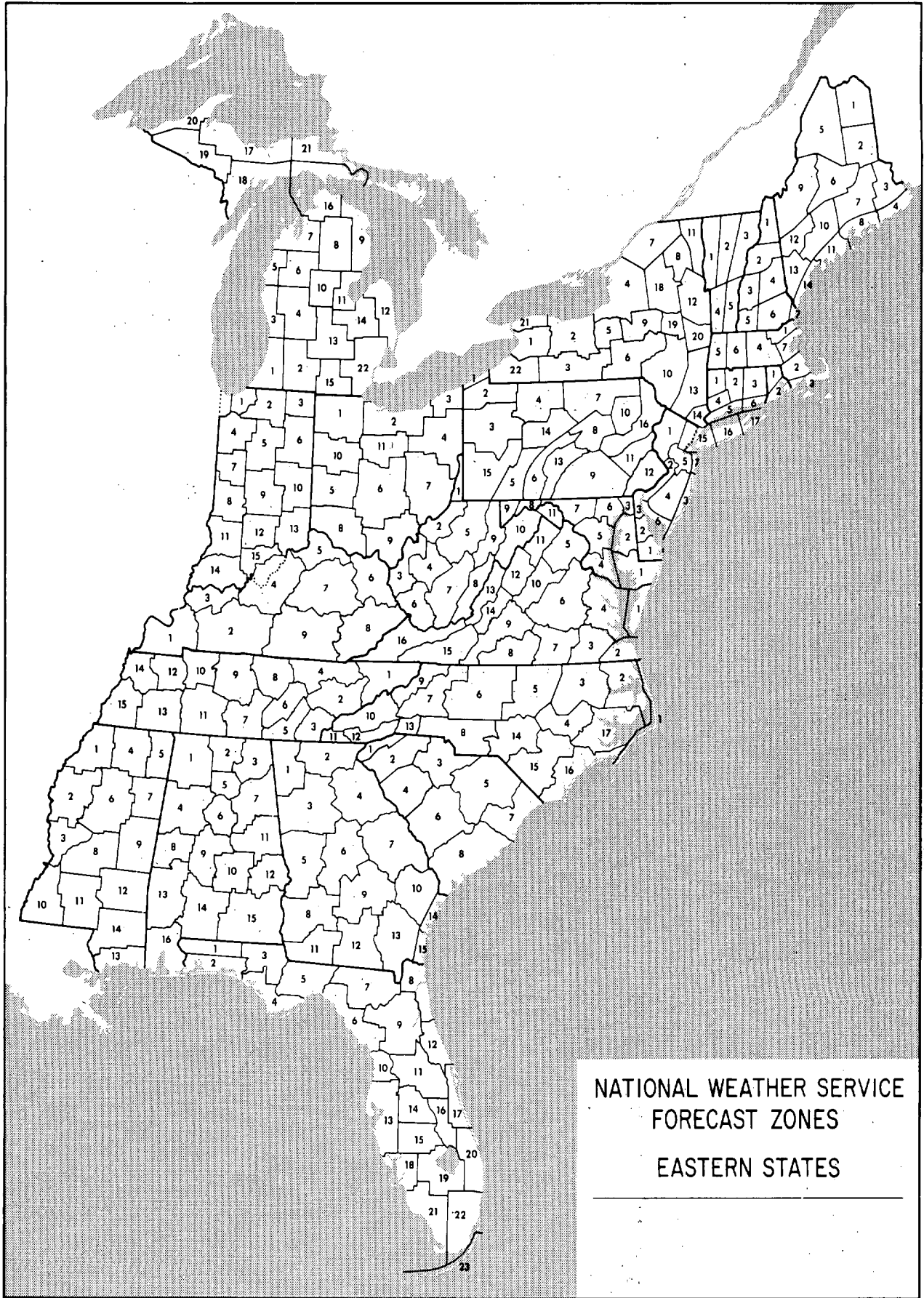
(F5) Incredible tornado (261-318 mph): Incredible damage
Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 m; trees debarked; incredible phenomena will occur.



(F6-F12) (319 mph to Mach 1, the speed of sound):
The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

- (F0+F1) Weak Tornado
- (F2+F3) Strong Tornado
- (F4+F5) Violent Tornado

From J. Atmos. Sci., August 1981, p. 1517-1519



NATIONAL WEATHER SERVICE
FORECAST ZONES
EASTERN STATES

Summaries of Temperature and Precipitation Extremes were compiled by Vincent Miller of THE WEATHER CHANNEL, Atlanta, Georgia.

TEMPERATURE EXTREMES

FEBRUARY 1989

STATE	HIGHEST	DATE	STATION	LOWEST	DATE	STATION
Alabama	85	15	Beatrice	10	10	Saint Bernard
					10	Valley Head
					25+	Hamilton 3 S
Alaska	52	24	Dutch Harbor	-63	1	Circle City
Arizona	95	26	Yuma Valley	-23	7	Sunset Crater Natl Mon.
Arkansas	83	1	Texarkana FAA Airport			
		15	Crossett 2 SSE	- 4	4	Huntsville 1 SSW
California	96	26	Palm Springs	-43r	7	Boca
Colorado	83	25	Las Animas	-51	8	Antero Reservoir
Connecticut	67	1	Hartford WSO Airport	- 1	18	Wigwam Reservoir
Delaware	75	15	Lewes		10	Newark University Farm
Florida	91	21	Devils Garden	15	25	Fountain 3 SSE
		21	Mountain Lake			
Georgia	88	15	Valdosta 3 E	8	10	Blairsville Exp Station
Hawaii	88	24	Waikiki 717.2	25	27	Mauna Loa Slope Obs
Idaho	62	24	Riggins	-42	5	Stanley
Illinois	66	1	Mount Carmel	-19	6	Mount Carroll
Indiana	67	1	Brookville	-11	24	Lowell
		1	Charlestown Ord Plant			
		1	Columbus			
		1	Madison Sewage Plant			
		1	North Vernon 2 SW			
		1	Scottsburg			
		1	Seymour 2 N			
		1	Shoals Hwy 50 Bridge			
		1	Vevay			
Iowa	53	1	Burlington Airport	-24	3	Forrest City 2 NNE
					4+	Sibley 5 NNE
Kansas	84	25	Cedar Bluff Dam	-18	3	Kinsley
		25	Ulysses 1 SE			
Kentucky	76	15	Williamsburg	1	9	Waynesburg 7 NE
Louisiana	86	15	Brusly 2 W	17	7	Plain Dealing
					8+	Ruston - LA Tech Univ
Maine	63	1	Portland WSMO Arpt.	-34	5	Van Buren 2
					18	Allagash
					18	Squa Pan Dam
Maryland	79	15	Patuxent River	- 1	9	Mc Henry 2 NW
Massachusetts	67	1	Walpole 2	- 5	26	Dunstable
		1	West Medway			
Michigan	53	1	Coldwater State Sch.	-34	21d	Kenton.
		1	Detroit City Arpt.			
Minnesota	48	24	St James Waste Water	-45	3	Baudette
Mississippi	88	5	Waveland	11	10	Pontotoc Exp Station
	87	15	Meadville		24	Crystal Springs Exp Stn.
					24	Newton Experimental Stn.
Missouri	72	1	Kennett Radio KBOA	-20	9	Clinton
		1	West Plains			
Montana	59	24	Birney	-52	3	Wisdom
		24	Nye 2			
Nebraska	76	25	Beaver City	-30	3	Sidney 6 NNW
Nevada	90	25+	Laughlin	-38!	6	Wildhorse Reservoir
				-42r	6	Carlin Gold Mine
New Hampshire	65	1	Massabesic Lake	-36	19+	First Conn Lake
New Jersey	70	1	Tuckerton		26+	High Point Park
New Mexico	87	26	Carlsbad	-35	7	Eagle Nest
		26	Carlsbad FAA Arpt.			
New York	69	1	Garnerville	-28	17	Gouverneur 3 NW
		1	NY Westerleigh Stat.		17	Old Forge
					17	Wanakena Ranger School
					18+	Newcomb 3 E
North Carolina	85	3	Hofmann Forest	- 8	9	Mount Mitchell
		4e	Elizabethtown Lock 2			
North Dakota	49	23	Mott	-42	4+	Belcourt KEYA Radio
		24	Fort Yates			
Ohio	72	1	Cincinnati-Fernbank	- 7	25	Chardon
Oklahoma	82	25	Hollis	-13	7	Kenton
Oregon	66	21	Powers	-48	6	Seneca
Pennsylvania	73	1	Mercersburg 1 E	- 4	10+	Tionesta 2 SE Lake
Rhode Island	64	1	North Foster 1 E		0	Kingston
		1	Providence WSO AP		26	
South Carolina	88	16	Aiken 4 NE	8	24	Caesars Head
South Dakota	60	24	Ardmore	-38	4+	Camp Creek
		24	Fort Meade			
		24	Martin 5 NNE			
Tennessee	79	15	Chattanooga WSO Arpt.	-10	23D	Mt LeConte
Texas	98	27	Laredo 2	-10	5	Stratford
Utah	81	25	Lytile Ranch	-48	5	Electric Lake UP&L
Vermont	65	1	Vernon	-29	18	West Burke
Virginia	84	15+	Stony Creek 3 ESE	- 9	9	Mt Lake Biological Stn.
Washington	59	22	Bellingham 3 SSW	-20	2	Wellpinit
West Virginia	76	1	Williamson	-13!	8	Parkersburg FAA Airport
				-11	10	Snowshoe
Wisconsin	48	25	Port Washington	-38	4	Foxboro
					6+	Solon Springs
Wyoming	66	24	Yoder 4 SW	-47	3	Cody 21 SW

NOTE: Due to differences in observing times and methods, and quality control problems, dates in the temperature table may differ from dates (primarily of high temperatures) published in the individual state Climatological Data. The differences, if any, are of one calendar day. Temperatures are in degrees Fahrenheit.

- ^ High given for month differs from published extremes in Climatological Data - which actually occurred on January 31st.
- + And on previous date or dates.
- ! Published as monthly extreme in Climatological Data, but verified by National Climatic Data Center to be incorrect.
- D Date may be one day too early.
- d Probably happened on 18th.
- e Temperature estimated by National Climatic Data Center.
- r New state monthly record.

PRECIPITATION EXTREMES

FEBRUARY 1989

STATE	G R E A T E S T	M O N T H L Y	STATION	M O N E T H L Y	STATION	G R E A T E S T	D A T E	STATION	G R E A T E S T	M O N T H L Y	STATION	G R E A T E S T	D E P T H	STATION
Alabama	11.28		Russellville 2	1.33	Jackson	3.71	21	Geneva No 2	2.7		Valley Head	2	23	Valley Head
Alaska	13.57		Dutch Harbor	.00 T	Gakona 1 N; Haines Circle City; Nabesna; Northway FAA Airport; Wrangell Airport 49 stations	1.50	4	Emmonak	41.8		Ambler West	102	1	Main Bay
Arizona	2.65		Tonto Creek Fish Hatchery	T/7.00	Eudora	1.72	5	Crown King	17.3		Sunset Crater National Mon.	44	5	Bright Angel Ranger Station
Arkansas	14.44		Blytheville	4.90	18 Stations	4.10	15	Blytheville	8.0		Green Forest	5	6	Odell 2 N
California	8.55		Mt Wilson No 2	T/7.00	Idalia 5 NNE Shaw 2 E West Hartford	5.59	4	Mt Wilson No 2	65.0		Lodgepole	76	4	Echo Summit Sierra Ski Res. Bonham Reservoir
Colorado	5.20		Bonham Reservoir	T	Milford 4 SE Devils Garden Fort Green 12 WSW Atkinson 2 W	2.45	5	Redstone 4 W	60.3		Silverton	72	6	Bonham Reservoir
Connecticut	5.26		Silverton Norwich Public Util Plant	1.76		1.75	21	Groton	8.5		Norfolk 2 SW	3	27+	Norfolk 2 SW
Delaware	4.18		Dover	2.62		1.45	21	Dover	11.7		Georgetown 5 SW	8	24	West Thompson Lake Lewes
Florida	5.41		Niceville	T		2.70	22	Wawahitchka						
Georgia	8.10		Ringgold 2 SW	.56		3.76	21	Macon WSO Airport	4.6? 7 M		Athens WSO Airport Hartwell	7	23	Hartwell
Hawaii	34.28		Ph Wainiha 1115	1.94	Kaunakakai 536	10.12	24	Ph Wainiha 1115				64	19	Island Park
Idaho	2.90		Palisades	.04	Malta Aviation	.97	21	Silver City 5 W	29.7		Mullan	13	22	Canton 1 ESE
Illinois	13.21		Brookport Dam 52	.45	Avon 5 NE	5.32	14	Brookport Dam 52	19.9		Chicago Midway AP 3 SW	14	23	Hobart
Indiana	8.87		Tell City	.35	Prairie Heights	3.09	13	Tell City	29.8M		Lowell	11	13	Red Oak
Iowa	1.33		Red Oak	.08	Swea City	.53	13	Red Oak	19.3		Red Oak			
Kansas	2.00		Walnut 3 S	.03	Mc Pherson	.65	13	Creston 2 SW	15.5		Centralia	6	27	Hillsdale Lake
Kentucky	17.25M		Gilbertsville Kentucky Dam	3.40	Fishtrap Lake	6.52	14	Leavenworth 5 NNW Dawson Springs	16.5		Closplint 4 ESE	8	27	Columbus
Louisiana	7.62		Tallulah	.00	New Orleans Algiers New Orleans D P S 14 New Orleans Water Plant	3.97	21	Alexandria	1.0		Calhoun Research Stat. Marion 7 SE	1	6	Calhoun Research Station Marion 7 SE
Maine	3.84		Acadia National Park	.53	Clayton Lake	1.01	21	Lewiston	25.6		Dover-Foxcroft	37	28+	Sterlington Van Buren 2
Maryland	6.06?		National Arboretum D C	1.92	Emmitsburg 2 SE	1.69	21	Millington 1 SE	21.7		Snow Hill 4 N	12	24	Snow Hill 4 N
Massachusetts	5.15		Mc Henry 2 NW		Lanesboro	1.52	22	Southbridge 3 SW	14.0		Beechwood	11	26	Oakland 1 SE Chatham WSO
Michigan	4.57		New Salem	1.57	Stephenson 8 WNW	1.79	8	Houghton FAA Airport	89.8		Houghton FAA Airport	56?	23	Houghton FAA Airport
Minnesota	5.11		Houghton FAA Airport	.12s								45	11	Houghton FAA Airport
Mississippi	1.35		Milan 1 NW	T	Fosston	.75h	24	Hallock	17.3		Minneapolis- St Paul WSO AP	65	28	Tower 3 S
Missouri	11.04		University	T s	Red Lake Indian Agency	.56	2	Milan 1 NW	2.5		Swan Lake	2	6+	Cleveland
Missouri	14.20M		Charleston	.50	Bay St. Louis NASA Hamilton 2 W St Joseph 4 NNW	3.98	28	Tibbee	15.2		La Belle	9	7	Columbia WSO Airport Hannibal Water Works Rolla Univ of Missouri
Montana	2.21		Lindbergh Lake	T	Mildred 5 N Raymond Border Station	1.00	1	Mystic Lake	41.8		Lindbergh Lake	45	4	West Yellowstone Olney
Nebraska	2.04?		Sterling	.10s	Gothenburg	.80h	4	Sterling	18.5		Kingsley Dam	8	6+	Hay Springs 12 S
Nebraska	1.41		Kingsley Dam	.10s	Mullen	.80	11d	Western						
Nevada	2.10		Clover Valley	T	Laughlin	.60	20	Arcadia	24.3		Smoke Creek - Espil	48	8	Dagget Pass
Nevada						1.13	22	Austin						

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PRECIPITATION EXTREMES

FEBRUARY 1989

STATE	GRE A T E S T	MON T H L Y	STATION	MON T H L Y	STATION	GRE A T E S T	DA T E	STATION	GRE A T E S T	MON T H L Y	STATION	GRE A T E S T	DA T E	STATION
New Hampshire	4.20		Mount Washington	.63	Berlin	1.61	21	Mount Washington	28.6		Mount Washington	30	18+	First Conn Lake
New Jersey	5.41?		Jersey City	1.50	Midland Park	1.90	21	Audubon	15.5		Cape May 2 NW	14	24	Cape May 2 NW
New Mexico	4.30		Millville FAA Airport	.00	Glenwood; Kelly Ranch;	1.60	17	Ochoa	56.0		Red River	64	8+	Red River
	3.24		Eagle Nest		Magdalena; Mimbres Ranger Station; Quemado Ranger Station; Rienhardt Ranch; Socorro; Winston									
New York	5.26		Boonville 2 SSW	.49	Peru 2 WSW	2.32	21	Islip	77.6M		Barnes Corners	47	12	Boonville 2 SSW
North Carolina	9.67		Andrews	2.09	Wilmington 7 N	3.35	28	Coweeta Exp. Sta.	38.0		Mount Mitchell	24	28	Mount Mitchell
North Dakota	.84h		Hankinson	T	Courtenay 1 NW; Hansboro 4 NNE; Harvey; Petersburg 2 N; Watauga S Dakota 8 N	.46h	19	Towner 2 NE	11.0		Bowman Courthouse	37	10+	Pembina X
					Bowling Green WWTP	.46h	28	Zap						
Ohio	7.24		Portsmouth-Sciotoville	.57	Regnier	2.00	14	Chilo Meldahl Lock & Dam	21.0		Andover 2 NE	11	10	Chardon
Oklahoma	8.72		Sallisaw 2 NE	.16	Mitchell 2 NW	4.00	14	Smithville	6.6		Gage FAA Airport	7	28	Gage FAA Airport
Oregon	10.84		Nehalem 9 NE	.13	Paupack 2 WNW	3.18	16	Nehalem 9 NE	49.0		Crater Lake	123	16	Crater Lake
Pennsylvania	6.81		Chalk Hill 2 ENE	.71	Woonsocket	1.61	16	Chalk Hill 2 ENE	23.0		Laurel Mountain Ski Lodge	14	27	Laurel Mountain Ski Lodge
Rhode Island	3.26		Kingston	2.42	Hilton Head	1.63	21	North Foster 1 E	8.6		Kingston	5	27	Providence WSO Airport
South Carolina	6.80		Hogback Mountain	.66	Usta 8 WNW	3.00	28	Longcreek	9.0		Johnston 4 SW	8	24	Clark Hill 1 W
South Dakota	1.45h		Highmore 23 NNW	T	Erwin 2 SW	.48h	2	Highmore 23 NNW	31.8		Lead	18	28	Winthrop College
	1.25		Deadwood		Benavides 2; Encinal Eads Ranch; Fowlerton 2 NW; Goliad 1 SE									Buskala Ranch
Tennessee	12.82		Martin Univ of Tenn Branch	3.82	Chapman Ranch; Sarita 7 E	5.22	14	Lebanon 3 SW	47.6		Mt LeConte	34	23	Mt LeConte
Texas	9.65		Linden	.00	Price Warehouses	4.00	3	Jefferson 4 NE	3.0		Higgins	2	6+	Bonham; Greenville 7 N
					South Hero									Wills Point
Utah	4.36		Silver Lake Brighton	T	Covington	1.75	4	Alton	82.5		Alta	89	20	Alta
Vermont	2.85M		Peru	.09	Pulaski	1.48	22	Rochester	23.6		Canaan	71	16	Mount Mansfield
Virginia	6.35		Wallaceton Lake Drummo	.92?	Mc Nary Dam	1.78	18	Williamsburg 2 N	39.5		Independence 2	19	19	Stony Creek 3 SE
				1.26s	Upper Tract									
Washington	9.73		Aberdeen 20 NNE	.44	Ripon 5 NE	3.20	16	Grays River Hatchery	75.0M		Rainier Paradise R S	168	20	Rainier Paradise R S
West Virginia	8.67		Huntington WSO Airport	1.09	Diversion Dam	2.67	15	Huntington WSO Airport	24.2		Snowshoe	16	28+	Snowshoe
Wisconsin	2.04h		Racine	.08s		.77h	13	Racine	30.4		Hurley	28	10	Hurley
	1.49		Hurley											Brule Ranger Station
Wyoming	2.95h		Bitter Creek 4 NE	.02		1.20h	3	Bitter Creek 4 NE	46.4		Centennial 1 N	57	23	Snake River

A-4

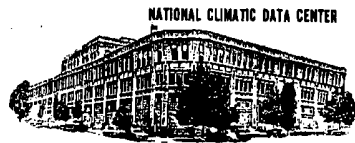
NOTE: Due to differences in observing times and methods, and quality control problems, the precipitation event listed for a particular date may have actually occurred wholly or partially on the previous day. Dates listed are as published in Climatological Data. Precipitation amounts are measured in inches.

- + And on previous date or dates.
- ? Published as monthly extreme in Climatological Data, but appears to be in error. When possible, the probable correct total and station is listed.
 - h Total is probably too high due to likely error in measuring the water equivalent of some/all snowfall.
 - s Total is probably too small due to likely error in measuring the water equivalent of some/all snowfall.
- M Missing (1 to 9 daily values).
- T Trace (an amount too small to measure).
- X Climatological Data lists "2 stations" as sharing extreme, but only 1 station name was published in Climatological Data.
- d Probably happened on 13th.

MONTHLY PRECIPITATION TOTALS

ANNUAL 1987
NORTH CAROLINA

STATION	ANNUAL	MONTH											
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
NORTH CAROLINA													
ASHEVILLE WSO AP	34.57	1.11	1.85	2.75	0.57	3.55				4.19	5.28	4.28	
ASHEVILLE	25.67	0.71	1.57	1.81	0.53	2.25			2.77	4.15	2.94		
ASHFORD	36.74E	1.20	2.70	2.90	0.54E	2.25			3.80	4.90	4.80		
BADIN		1.70	1.50	3.60	1.30E				2.40	4.10	2.90		
B C KERRETT JORDAN DAM										1.70			
BOOMER 5 WSO		1.00	2.10										
BURLINGTON 3 WNE		0.80	1.32E										
CAPE HATTERAS WSO	48.86	5.75											
CAROLINA 8 SE		1.70											
CATALDOCHEE		0.55											
CHARLOTTE WSO AP													
CLINTON 2 NE	28.91												
DARTON	35.00												
DOBSON													
ECON													
ELIZABETH													
ELIZABETH													
FAYE													
FRANK													
GREENS													
GREENSBORO													
HELIX													
HOBOKEN													
LAKE LURE													
LAURINBURG													
LEXINGTON													
MOOREVILLE 2													
MOREHEAD CITY													
MOUNT PLEASANT													
WILKESBORO 12													
POLKTON 2 NE													
QUEBEC													
RALEIGH-DURHAM WSO													
ROANKE RAPIDS													
ROARING GAP 1 NW													
SHELBY 2													
SWEADS FERRY 2 ENE													
SAPANCA 2 SSE													
WILKINSON WSO AP													
WILSON 3 SW													
YADKINVILLE 6 E	28.00												



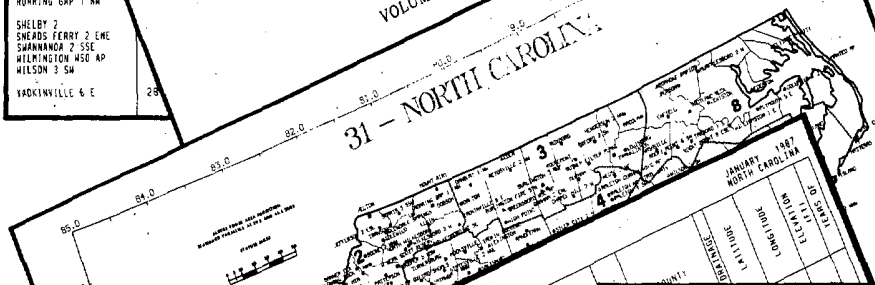
HOURLY PRECIPITATION DATA

NORTH CAROLINA

DECEMBER 1987
WITH ANNUAL SUPPLEMENT
VOLUME 37 NUMBER 12

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- * Public Utilities
- * Research & Development
- * Energy



STATION INDEX

STATION	TOWNSHIP	COUNTY	PRECIPITATION PERIODS OF MEASUREMENT
NORTH CAROLINA			30 MINUTES, 1 HOUR, 2 HOURS, 3 HOURS, 6 HOURS, 12 HOURS, 24 HOURS, 48 HOURS, 72 HOURS, 96 HOURS, 120 HOURS, 144 HOURS, 168 HOURS, 192 HOURS, 216 HOURS, 240 HOURS, 264 HOURS, 288 HOURS, 312 HOURS, 336 HOURS, 360 HOURS, 384 HOURS, 408 HOURS, 432 HOURS, 456 HOURS, 480 HOURS, 504 HOURS, 528 HOURS, 552 HOURS, 576 HOURS, 600 HOURS, 624 HOURS, 648 HOURS, 672 HOURS, 696 HOURS, 720 HOURS, 744 HOURS, 768 HOURS, 792 HOURS, 816 HOURS, 840 HOURS, 864 HOURS, 888 HOURS, 912 HOURS, 936 HOURS, 960 HOURS, 984 HOURS, 1008 HOURS, 1032 HOURS, 1056 HOURS, 1080 HOURS, 1104 HOURS, 1128 HOURS, 1152 HOURS, 1176 HOURS, 1200 HOURS, 1224 HOURS, 1248 HOURS, 1272 HOURS, 1296 HOURS, 1320 HOURS, 1344 HOURS, 1368 HOURS, 1392 HOURS, 1416 HOURS, 1440 HOURS, 1464 HOURS, 1488 HOURS, 1512 HOURS, 1536 HOURS, 1560 HOURS, 1584 HOURS, 1608 HOURS, 1632 HOURS, 1656 HOURS, 1680 HOURS, 1704 HOURS, 1728 HOURS, 1752 HOURS, 1776 HOURS, 1800 HOURS, 1824 HOURS, 1848 HOURS, 1872 HOURS, 1896 HOURS, 1920 HOURS, 1944 HOURS, 1968 HOURS, 1992 HOURS, 2016 HOURS, 2040 HOURS, 2064 HOURS, 2088 HOURS, 2112 HOURS, 2136 HOURS, 2160 HOURS, 2184 HOURS, 2208 HOURS, 2232 HOURS, 2256 HOURS, 2280 HOURS, 2304 HOURS, 2328 HOURS, 2352 HOURS, 2376 HOURS, 2400 HOURS, 2424 HOURS, 2448 HOURS, 2472 HOURS, 2496 HOURS, 2520 HOURS, 2544 HOURS, 2568 HOURS, 2592 HOURS, 2616 HOURS, 2640 HOURS, 2664 HOURS, 2688 HOURS, 2712 HOURS, 2736 HOURS, 2760 HOURS, 2784 HOURS, 2808 HOURS, 2832 HOURS, 2856 HOURS, 2880 HOURS, 2904 HOURS, 2928 HOURS, 2952 HOURS, 2976 HOURS, 3000 HOURS, 3024 HOURS, 3048 HOURS, 3072 HOURS, 3096 HOURS, 3120 HOURS, 3144 HOURS, 3168 HOURS, 3192 HOURS, 3216 HOURS, 3240 HOURS, 3264 HOURS, 3288 HOURS, 3312 HOURS, 3336 HOURS, 3360 HOURS, 3384 HOURS, 3408 HOURS, 3432 HOURS, 3456 HOURS, 3480 HOURS, 3504 HOURS, 3528 HOURS, 3552 HOURS, 3576 HOURS, 3600 HOURS, 3624 HOURS, 3648 HOURS, 3672 HOURS, 3696 HOURS, 3720 HOURS, 3744 HOURS, 3768 HOURS, 3792 HOURS, 3816 HOURS, 3840 HOURS, 3864 HOURS, 3888 HOURS, 3912 HOURS, 3936 HOURS, 3960 HOURS, 3984 HOURS, 4008 HOURS, 4032 HOURS, 4056 HOURS, 4080 HOURS, 4104 HOURS, 4128 HOURS, 4152 HOURS, 4176 HOURS, 4200 HOURS, 4224 HOURS, 4248 HOURS, 4272 HOURS, 4296 HOURS, 4320 HOURS, 4344 HOURS, 4368 HOURS, 4392 HOURS, 4416 HOURS, 4440 HOURS, 4464 HOURS, 4488 HOURS, 4512 HOURS, 4536 HOURS, 4560 HOURS, 4584 HOURS, 4608 HOURS, 4632 HOURS, 4656 HOURS, 4680 HOURS, 4704 HOURS, 4728 HOURS, 4752 HOURS, 4776 HOURS, 4800 HOURS, 4824 HOURS, 4848 HOURS, 4872 HOURS, 4896 HOURS, 4920 HOURS, 4944 HOURS, 4968 HOURS, 4992 HOURS, 5016 HOURS, 5040 HOURS, 5064 HOURS, 5088 HOURS, 5112 HOURS, 5136 HOURS, 5160 HOURS, 5184 HOURS, 5208 HOURS, 5232 HOURS, 5256 HOURS, 5280 HOURS, 5304 HOURS, 5328 HOURS, 5352 HOURS, 5376 HOURS, 5400 HOURS, 5424 HOURS, 5448 HOURS, 5472 HOURS, 5496 HOURS, 5520 HOURS, 5544 HOURS, 5568 HOURS, 5592 HOURS, 5616 HOURS, 5640 HOURS, 5664 HOURS, 5688 HOURS, 5712 HOURS, 5736 HOURS, 5760 HOURS, 5784 HOURS, 5808 HOURS, 5832 HOURS, 5856 HOURS, 5880 HOURS, 5904 HOURS, 5928 HOURS, 5952 HOURS, 5976 HOURS, 6000 HOURS, 6024 HOURS, 6048 HOURS, 6072 HOURS, 6096 HOURS, 6120 HOURS, 6144 HOURS, 6168 HOURS, 6192 HOURS, 6216 HOURS, 6240 HOURS, 6264 HOURS, 6288 HOURS, 6312 HOURS, 6336 HOURS, 6360 HOURS, 6384 HOURS, 6408 HOURS, 6432 HOURS, 6456 HOURS, 6480 HOURS, 6504 HOURS, 6528 HOURS, 6552 HOURS, 6576 HOURS, 6600 HOURS, 6624 HOURS, 6648 HOURS, 6672 HOURS, 6696 HOURS, 6720 HOURS, 6744 HOURS, 6768 HOURS, 6792 HOURS, 6816 HOURS, 6840 HOURS, 6864 HOURS, 6888 HOURS, 6912 HOURS, 6936 HOURS, 6960 HOURS, 6984 HOURS, 7008 HOURS, 7032 HOURS, 7056 HOURS, 7080 HOURS, 7104 HOURS, 7128 HOURS, 7152 HOURS, 7176 HOURS, 7200 HOURS, 7224 HOURS, 7248 HOURS, 7272 HOURS, 7296 HOURS, 7320 HOURS, 7344 HOURS, 7368 HOURS, 7392 HOURS, 7416 HOURS, 7440 HOURS, 7464 HOURS, 7488 HOURS, 7512 HOURS, 7536 HOURS, 7560 HOURS, 7584 HOURS, 7608 HOURS, 7632 HOURS, 7656 HOURS, 7680 HOURS, 7704 HOURS, 7728 HOURS, 7752 HOURS, 7776 HOURS, 7800 HOURS, 7824 HOURS, 7848 HOURS, 7872 HOURS, 7896 HOURS, 7920 HOURS, 7944 HOURS, 7968 HOURS, 7992 HOURS, 8016 HOURS, 8040 HOURS, 8064 HOURS, 8088 HOURS, 8112 HOURS, 8136 HOURS, 8160 HOURS, 8184 HOURS, 8208 HOURS, 8232 HOURS, 8256 HOURS, 8280 HOURS, 8304 HOURS, 8328 HOURS, 8352 HOURS, 8376 HOURS, 8400 HOURS, 8424 HOURS, 8448 HOURS, 8472 HOURS, 8496 HOURS, 8520 HOURS, 8544 HOURS, 8568 HOURS, 8592 HOURS, 8616 HOURS, 8640 HOURS, 8664 HOURS, 8688 HOURS, 8712 HOURS, 8736 HOURS, 8760 HOURS, 8784 HOURS, 8808 HOURS, 8832 HOURS, 8856 HOURS, 8880 HOURS, 8904 HOURS, 8928 HOURS, 8952 HOURS, 8976 HOURS, 9000 HOURS, 9024 HOURS, 9048 HOURS, 9072 HOURS, 9096 HOURS, 9120 HOURS, 9144 HOURS, 9168 HOURS, 9192 HOURS, 9216 HOURS, 9240 HOURS, 9264 HOURS, 9288 HOURS, 9312 HOURS, 9336 HOURS, 9360 HOURS, 9384 HOURS, 9408 HOURS, 9432 HOURS, 9456 HOURS, 9480 HOURS, 9504 HOURS, 9528 HOURS, 9552 HOURS, 9576 HOURS, 9600 HOURS, 9624 HOURS, 9648 HOURS, 9672 HOURS, 9696 HOURS, 9720 HOURS, 9744 HOURS, 9768 HOURS, 9792 HOURS, 9816 HOURS, 9840 HOURS, 9864 HOURS, 9888 HOURS, 9912 HOURS, 9936 HOURS, 9960 HOURS, 9984 HOURS, 10000 HOURS

MONTHLY PRECIPITATION MAXIMA

MAXIMA FOR MEASUREMENT PERIODS OF

STATION	HOURS					
	15	30	45	1	2	3
NORTH CAROLINA						
ASHEVILLE WSO AP	10 20/1400	10 20/1400	10 20/1400	18 19/1000	18 18/700	42 18/1000
ASHEVILLE	20 01/1425	20 01/1425	20 01/1425	18 19/1000	18 18/700	42 18/1000
ASHFORD	10 20/1400	10 20/1400	10 20/1400	18 19/1000	18 18/700	42 18/1000
BADIN	10 20/1400	10 20/1400	10 20/1400	18 19/1000	18 18/700	42 18/1000
B C KERRETT JORDAN DAM	10 20/1400	10 20/1400	10 20/1400	18 19/1000	18 18/700	42 18/1000

HOURLY PRECIPITATION

STATION	A.M. HOUR ENDING											
	1	2	3	4	5	6	7	8	9	10	11	12
NORTH CAROLINA												
ASHEVILLE WSO AP	01	01	01	01	01	01	01	01	01	01	01	01
ASHEVILLE	01	01	01	01	01	01	01	01	01	01	01	01

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ISSN 0364-6319

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NORTH CAROLINA

JANUARY 1987

VOLUME 37 NUMBER 1

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CLIMATOLOGICAL DATA ANNUAL SUMMARY PENNSYLVANIA 1987

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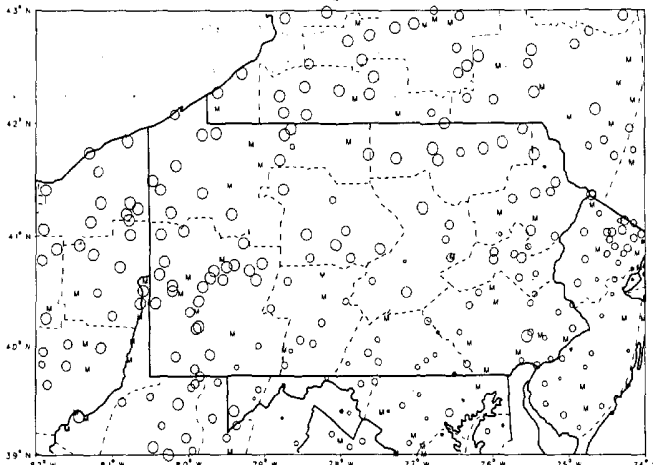


ISSN 0364-5843

CLIMATOLOGICAL DATA PENNSYLVANIA JANUARY 1988 VOLUME 93 NUMBER 1

MONTHLY PRECIPITATION DEPARTURE FROM
INDIVIDUAL STATION NORMALS (1951-1980)

- M INCOMPLETE DATA FOR THE MONTH
- EXACTLY NORMAL
- 5, 10, 20, ... 50% OR MORE BELOW NORMAL
- 10, 20, 40, ... 100% OR MORE ABOVE NORMAL



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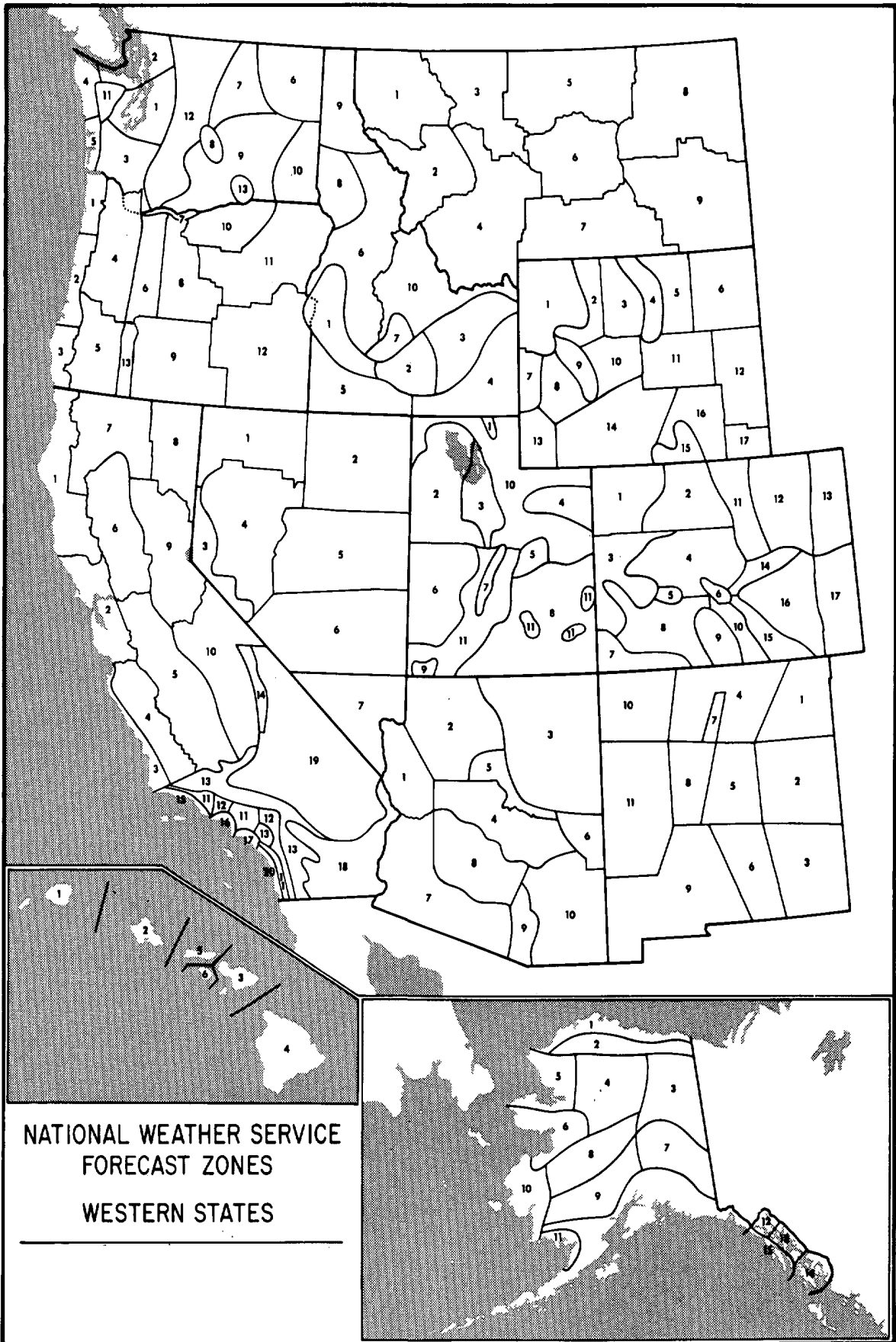
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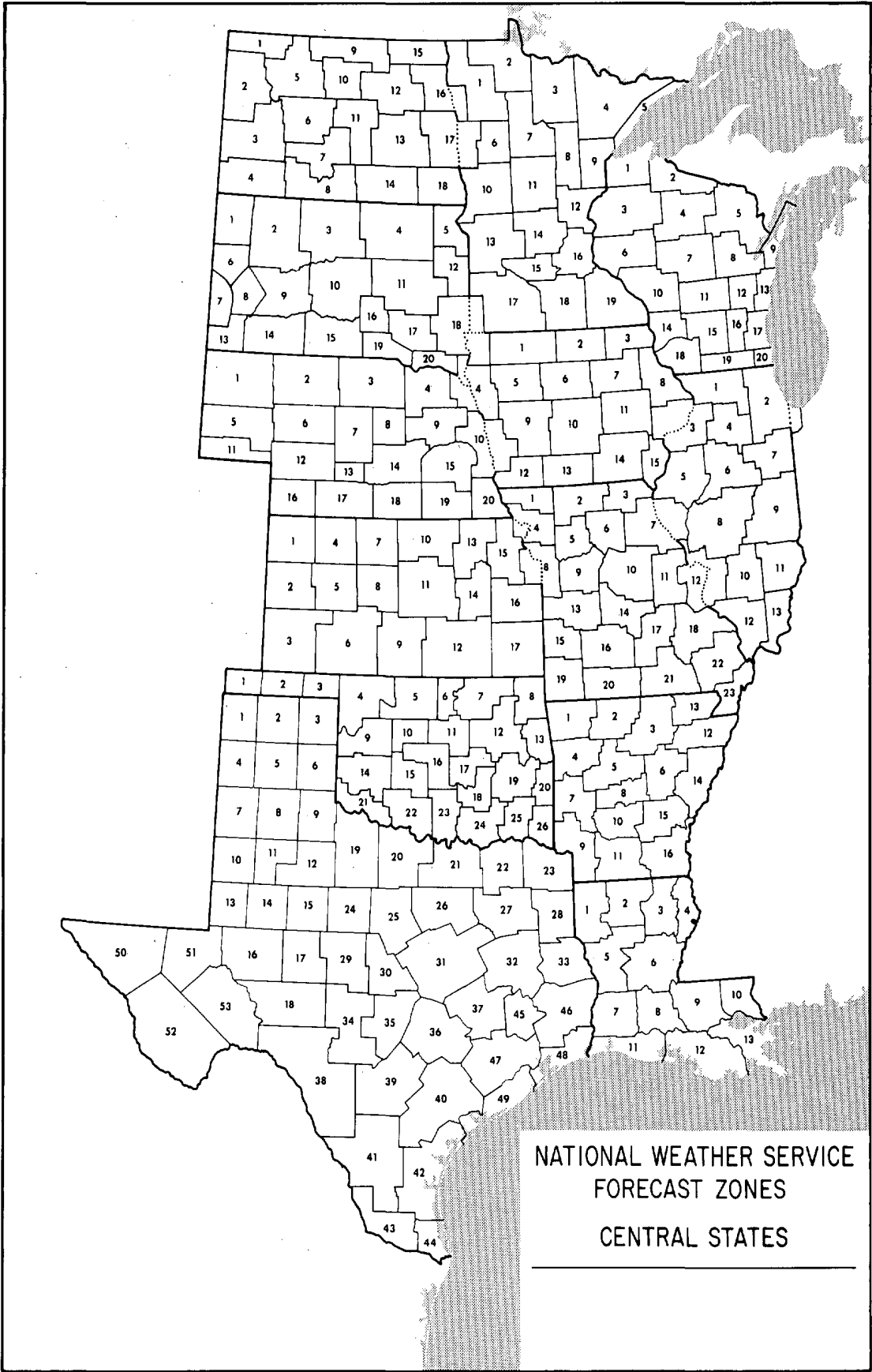
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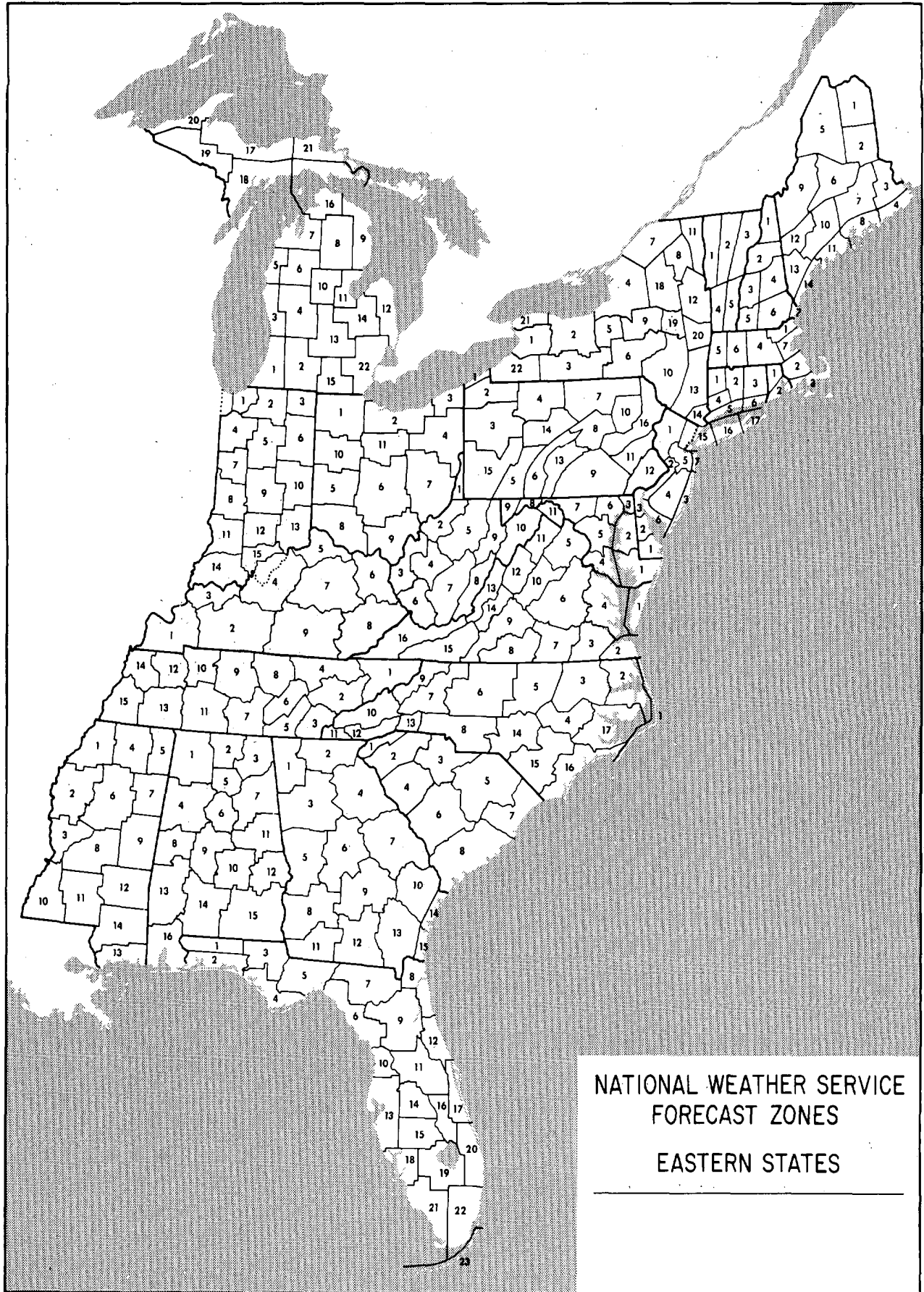


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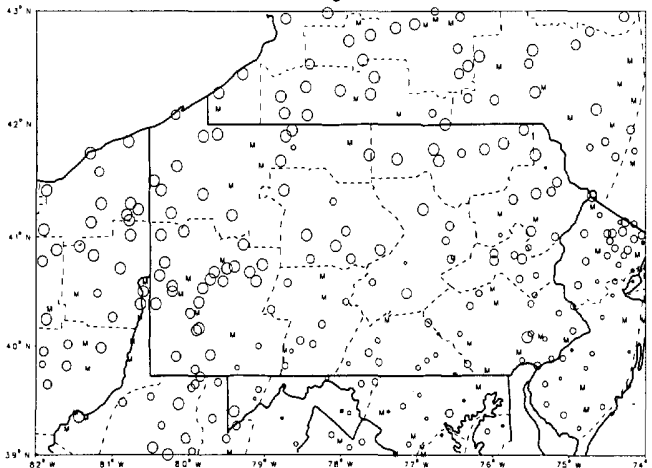


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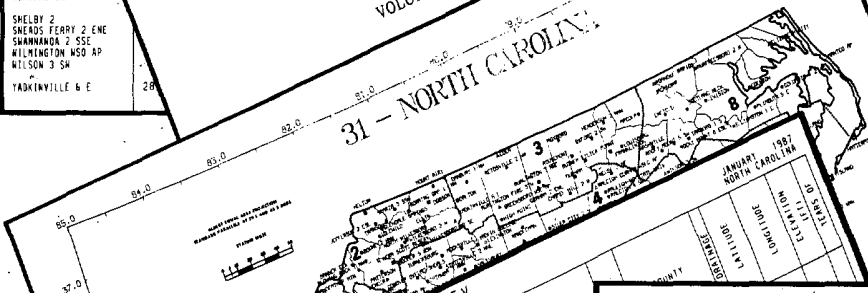


STATION	ANNUAL	MONTHLY PRECIPITATION TOTALS													
		MONTH													
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
NORTH CAROLINA															
ASHEVILLE WSO AP	34.57	1.11	1.85	2.75	0.57	3.55							4.19	5.28	4.28
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RAIDIN		1.70	1.30	2.60	1.20								2.40	4.10	2.90
W EVERETT JORDAN DAM		1.70	1.50	3.50									2.40	1.70	
BOOMER 5 WSW															
BURLINGTON 3 WNE		1.00	2.10												
CAMP HATTERAS WSO	48.86	0.80	1.90E												
CARTHAGE 8 SE		5.75													
CATALDOCHEE		1.70													
CHARLOTTE WSO AP															
CLINTON 2 NE	26.91														
CALTON	36.00														
EDEN															
ELIZABETH															
ELI															
FRANK															
GREENSBORO															
GREENVILLE															
HELTON															
HOBUCKEN															
LAKE LURE															
LARNSBURG															
LEXINGTON															
MORRISVILLE 3 WNE															
MOREHEAD CITY															
MOUNT PLEASANT															
N WILKESBORO 12															
POLKTON 2 NE															
QUEBEC															
RALEIGH-DURHAM WSO															
ROANKE RAPIDS															
ROARING GAP 1 NW															
SHELBY 2															
SNEADS FERRY 2 ENE															
SWANNANOA 2 SSE															
WILKINGTON WSO AP															
WILSON 3 SW															
YADKINVILLE 6 E	28.00														



HOURLY PRECIPITATION DATA NORTH CAROLINA

DECEMBER 1987
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STATION	COUNTY	STATE	STATION
ASHEVILLE WSO AP	ASHE	NC	357100
ASHEVILLE	ASHE	NC	357100
ASHFORD	ASHF	NC	357100
RAIDIN	RAID	NC	357100
W EVERETT JORDAN DAM	RAID	NC	357100
BOOMER 5 WSW	BOOM	NC	357100
BURLINGTON 3 WNE	BURL	NC	357100
CAMP HATTERAS WSO	CAMP	NC	357100
CARTHAGE 8 SE	CARTH	NC	357100
CATALDOCHEE	CATAL	NC	357100
CHARLOTTE WSO AP	CHAR	NC	357100
CLINTON 2 NE	CLINT	NC	357100
CALTON	CALTON	NC	357100
EDEN	EDEN	NC	357100
ELIZABETH	ELIZAB	NC	357100
ELI	ELI	NC	357100
FRANK	FRANK	NC	357100
GREENSBORO	GREEN	NC	357100
GREENVILLE	GREEN	NC	357100
HELTON	HELTON	NC	357100
HOBUCKEN	HOBUCK	NC	357100
LAKE LURE	LAKE	NC	357100
LARNSBURG	LARNS	NC	357100
LEXINGTON	LEXING	NC	357100
MORRISVILLE 3 WNE	MORRIS	NC	357100
MOREHEAD CITY	MORE	NC	357100
MOUNT PLEASANT	MOUNT	NC	357100
N WILKESBORO 12	WILKES	NC	357100
POLKTON 2 NE	POLKTON	NC	357100
QUEBEC	QUEBEC	NC	357100
RALEIGH-DURHAM WSO	RALEIGH	NC	357100
ROANKE RAPIDS	ROANKE	NC	357100
ROARING GAP 1 NW	ROARING	NC	357100
SHELBY 2	SHELBY	NC	357100
SNEADS FERRY 2 ENE	SNEADS	NC	357100
SWANNANOA 2 SSE	SWANNANOA	NC	357100
WILKINGTON WSO AP	WILKING	NC	357100
WILSON 3 SW	WILSON	NC	357100
YADKINVILLE 6 E	YADKIN	NC	357100

STATION	MONTHLY PRECIPITATION MAXIMA												
	MAXIMA FOR MEASUREMENT PERIODS OF												
	MINUTES	45	2	3	6	15	30	15	30	45	15	30	
NORTH CAROLINA													
ASHEVILLE WSO AP	10 29 1400	10 29 1400	20 27 0745	40 07 1945	18 18 0600	15 18 2400	20 18 2000	25 18 2400	30 18 2400	47 18 0700	20 18 2000	25 18 2400	30 18 2400
ASHEVILLE	10 29 1400	10 29 1400	20 27 0745	40 07 1945	18 18 0600	15 18 2400	20 18 2000	25 18 2400	30 18 2400	47 18 0700	20 18 2000	25 18 2400	30 18 2400
ASHFORD	10 29 1400	10 29 1400	20 27 0745	40 07 1945	18 18 0600	15 18 2400	20 18 2000	25 18 2400	30 18 2400	47 18 0700	20 18 2000	25 18 2400	30 18 2400
RAIDIN	10 29 1400	10 29 1400	20 27 0745	40 07 1945	18 18 0600	15 18 2400	20 18 2000	25 18 2400	30 18 2400	47 18 0700	20 18 2000	25 18 2400	30 18 2400
W EVERETT JORDAN DAM	10 29 1400	10 29 1400	20 27 0745	40 07 1945	18 18 0600	15 18 2400	20 18 2000	25 18 2400	30 18 2400	47 18 0700	20 18 2000	25 18 2400	30 18 2400

STATION	HOURLY PRECIPITATION												
	A.M. HOUR ENDING												
	1	2	3	4	5	6	7	8	9	10	11	12	
NORTH CAROLINA													
ASHEVILLE WSO AP	01	01	01	01	01	01	01	01	01	01	01	01	
ASHEVILLE	01	01	01	01	01	01	01	01	01	01	01	01	
ASHFORD	01	01	01	01	01	01	01	01	01	01	01	01	
RAIDIN	01	01	01	01	01	01	01	01	01	01	01	01	
W EVERETT JORDAN DAM	01	01	01	01	01	01	01	01	01	01	01	01	

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE, NORTH CAROLINA

CHALLENGES AHEAD: FLOOD LOSS REDUCTION STRATEGIES FOR THE '90s



This year's conference theme focuses on the challenges we face in the advent of the 21st century, and the strategies needed to further reduce flood hazards over the next decade. Papers are invited for, but not limited to, the following issues and subjects:

Mapping Issues: Delineation of floodplains in rapidly growing areas to account for the effects of future watershed development; new methods and techniques for assessing and evaluating flooding risks; dealing with floodplains not identified through the National Flood Insurance Program or where flood data does not exist.

Managing Stormwater: Linking floodplain and stormwater management programs; designing stormwater management facilities to reduce future flood losses while providing other environmental and community benefits; effective funding and maintenance arrangements.

The Floodplain and Beyond: Approaches for balancing the need to protect wetlands while allowing for appropriate development of floodplains; special partnerships which further multi-objective management; innovative land use strategies for river corridor management; basinwide approaches to stormwater management.

Floodplain Management for Tomorrow: Successful ways to encourage and promote flood preparedness and response; innovative floodplain management programs; effectiveness of Executive Order 11988 in the '90s.; new tools for floodplain managers; noteworthy local regulatory programs; key flood loss reduction issues for the decade ahead and alternatives for resolving them.

Flood Control: Designing flood control projects for multi-objective benefits; responding to the growing transfer of flood control project costs from federal to state and local governments.

Mitigation: Gaining greater support for state and local flood hazard mitigation activities; practical alternatives for mitigating flood losses to existing structures; exemplary mitigation projects.

Unique Flood Hazards: Defining the hazards; new mapping methodologies; effective management standards.

In addition to specific papers, the ASFPM also welcomes proposals for short course presentations at the conference and any special exhibits or demonstrations that may be of particular interest to conference attendees.

Submission of Abstracts

Prospective authors must submit three copies of the following items to Tim Keptner, Program Chair, by October 31, 1989:

- A one page abstract including the paper's title, all authors' names and their affiliations and the kinds of visual aids which will be used in the presentation.
- Concise biographies of all authors not to exceed 100 words per individual including current titles and positions, other background information directly relevant to the paper and complete mailing addresses and telephone numbers.

Authors will receive timely notification of the status of their papers. All papers selected must be submitted by May 15, 1990 for inclusion in the conference proceedings. All attendees, including authors, are expected to pay the conference registration fee.

About the Conference

The conference program will run Tuesday, June 12 through Thursday, June 14, including technical field trips in the Asheville area. The ASFPM will conduct its committee and general membership meetings on Monday, June 11. All members and conference participants are encouraged to attend.

The conference will be held at the Inn on the Plaza, in the heart of Asheville. Conference room rates are \$62 for a single and \$68 for a double. Hemispheric Travel, Inc. of Madison, Wisconsin will serve as the official conference travel agency.

Registration rates prior to May 1, 1990 will be \$180 for members, \$195 for non-members, and \$95 for students.

Exhibit Space

Exhibit space will be made available for a fee to individuals or organizations who wish to display a product or service to attendees. Further information can be obtained from Dan Accurti, Exhibits Chair.

Deadlines

OCTOBER 31, 1989 - final day for the receipt of abstracts and biographies.

MAY 15, 1990 - final day for the receipt of completed papers for inclusion in conference proceedings.

ASSOCIATION OF STATE
FLOODPLAIN MANAGERS
14TH ANNUAL CONFERENCE
ASHEVILLE, NORTH CAROLINA
JUNE 11-14, 1990

About Asheville

Located at the junction of the French Broad and Swannanoa Rivers, Asheville is the gateway to the Blue Ridge Parkway, Great Smoky Mountains National Park and Mt. Mitchell, the highest peak in the Eastern United States. This mountain region offers a unique blend of cultural and recreational opportunities from white water rafting to Appalachian arts and crafts; from raw natural beauty and scenic attractions to premier mountain resorts and from the simplicity of the Thomas Wolfe Memorial to the grandeur of 7,500 acre Biltmore Estate. Come join us for a breath of fresh air in the North Carolina mountains!

Conference Host:

NORTH CAROLINA DIVISION
OF EMERGENCY MANAGEMENT

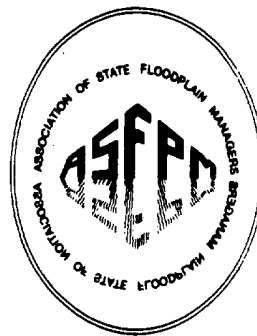
Conference Director - Berry Williams
NC Div. of Emergency Management
116 West Jones Street
Raleigh, NC 27603-1335
Tele. (919) 733-3867

Program Chair - Tim Keptner
PA Dept. of Community Affairs
551 Forum Building
Harrisburg, PA 17120
Tele. (717) 787-7403

Exhibits Chair - Dan Accurti
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551 Forum Building
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CALL FOR PAPERS

ASSOCIATION OF STATE
FLOODPLAIN MANAGERS
14TH ANNUAL CONFERENCE
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CHALLENGES AHEAD:

FLOOD LOSS REDUCTION STRATEGIES FOR THE '90s

*T*he Association of State Floodplain Managers (ASFPM) invites all persons interested in presenting papers at the 14th annual conference in Asheville, North Carolina to submit abstracts for consideration by the program review committee. As the major floodplain management conference in the country, this yearly event attracts a broad audience including local, state, and federal officials, consultants, engineers, planners, representatives from non-profit organizations, researchers, educators, and involved citizens--all of whom have an interest or role in flood hazard reduction activities.

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