

FEBRUARY 1991

VOLUME 33

NUMBER 2

STORM DATA

AND UNUSUAL WEATHER PHENOMENA
WITH LATE REPORTS AND CORRECTIONS



noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL CLIMATIC DATA CENTER ASHEVILLE, N.C.

COVER: Tom Miller wades through the floodwaters of Lake Aliceville as he moves debris from around his flooded home in the Rivermont Subdivision near Pickensville in Pickens County, Alabama. (Photo courtesy: Tuscaloosa (AL) News; photo by Neil Brake.)

CONTENTS

	<u>Page</u>
Outstanding Storms of the Month	3
Storm Data and Unusual Weather Phenomena	11
Late Reports and/or Corrections	49
Storm Summaries	50
Reference Notes and "F" Scale Definitions	52

STORM DATA

(ISSN 0039-1972)

National Climatic Data Center

Editor: Roger W. Tanner

Publication Staff: Lanny Dimmick, Jay Hollifield, William Angel, Mary Ann Byrd, and Sara Lackey

STORM DATA is prepared, funded, and distributed by the National Oceanic and Atmospheric Administration (NOAA). The Outstanding Storms of the Month section is prepared by the Data Operations Branch of the National Climatic Data Center.

The Storm Data and Unusual Weather Phenomena narratives and Hurricane/Tropical Storm summaries are prepared by the National Weather Service. Monthly and annual statistics and summaries of tornado and lightning events resulting in deaths, injuries, and damage are compiled by cooperative efforts between the National Climatic Data Center and the National Severe Storms Forecast Center.

STORM DATA contains all confirmed information on storms available to our staff at the time of publication. However, due to difficulties inherent in the collection of this type of data, it is not all-inclusive. Late reports and corrections are printed in each edition.

Maps of the National Weather Service Forecast Zones which are used in the Storm Data and Unusual Weather Phenomena section will be printed in all editions.

Except for limited editing to correct grammatical errors, materials submitted are generally published as received.

Subscription, pricing, and ordering information is available from:

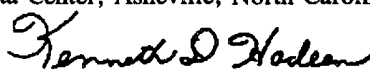
National Climatic Data Center
Federal Building
37 Battery Park Avenue
Asheville, NC 28801-2733
(704) 259-0682 or (704) CLIMATE

The editors of **STORM DATA** solicit your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or unusual weather events (past or present). These could be for use in the "Outstanding Storms of the Month" or "Et Cetera" sections of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

Grant W. Godge
National Climatic Data Center
Federal Building
37 Battery Park Avenue
Asheville, NC 28801-2733

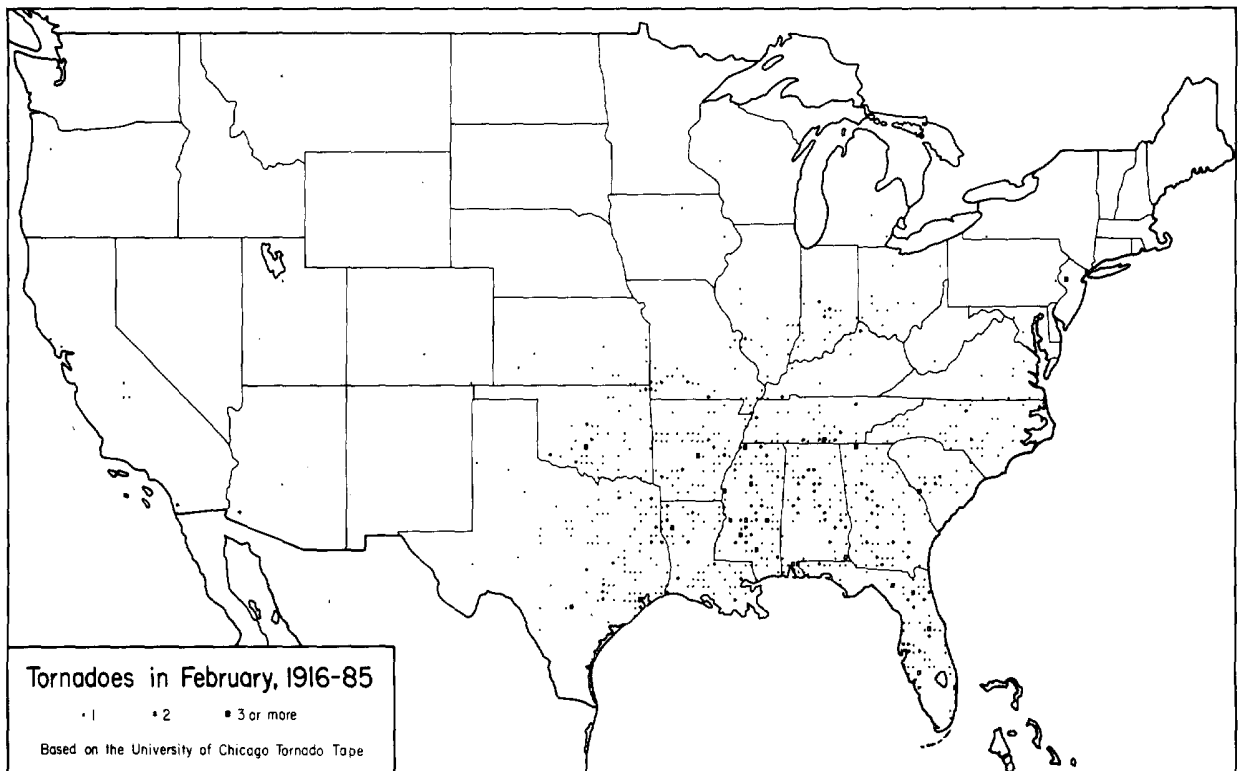
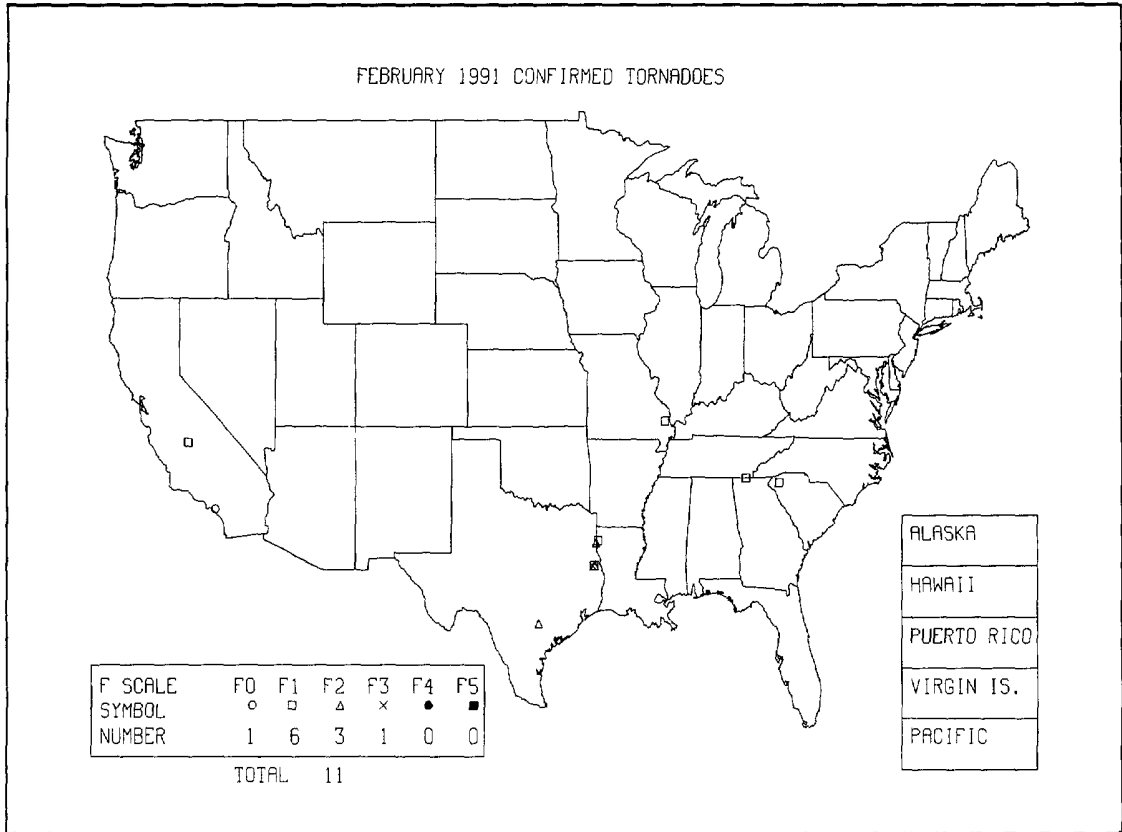
Any such items received by the editors will be for use in **STORM DATA** only. Any other use will be with the permission of the owner of said items. Materials submitted will be returned if requested in the original submission.

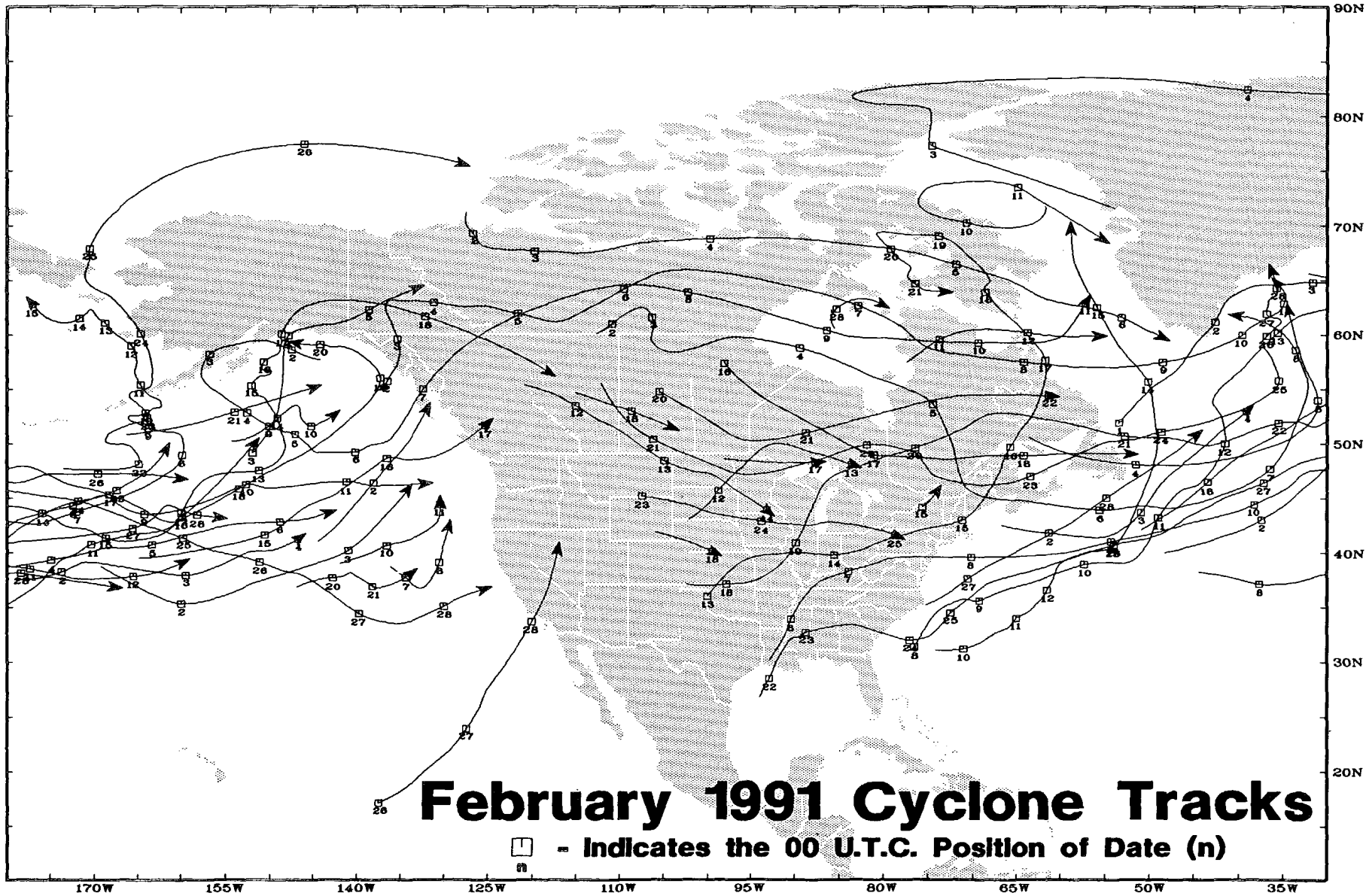
"I certify that this is an official publication of the National Oceanic and Atmospheric Administration and is compiled from information received at the National Climatic Data Center, Asheville, North Carolina 28801-2733."



Director
National Climatic Data Center

OUTSTANDING STORMS OF THE MONTH





1. PRECIPITATION AND TEMPERATURE ANOMALIES - FEBRUARY 1991

Table 1 lists the 97-year temperature and precipitation rankings for the nine climatically homogeneous regions outlined in Fig. 1. February 1991 finished as the third warmest February since 1895. The Northwest region had the warmest February on record where temperatures averaged between 10°F and 16°F above normal, while the West North Central and West regions ranked second and third warmest, respectively. Alaska and Hawaii also observed slightly warmer temperatures than normal. The only subnormal temperatures occurred in the Aleutian Islands and extreme western Alaska. (See Figs. 2 and 3 on page 6.) Over 270 daily record high temperatures were reported during the month, according to the National Weather Service. Precipitation for the month of February was well below the long-term mean, with February 1991 being the eighth driest February on record. Driest regions were across the northern and eastern fringes of the country. The Northeast region had the sixth driest and the North Central also had the tenth driest February. The only wet regions existed from eastern Texas northeastward into the Ohio Valley. Above normal precipitation occurred in portions of California, the Southeast, western Washington, northern Great Plains, and the upper Midwest. (See Figs. 4 and 5 on page 7.)

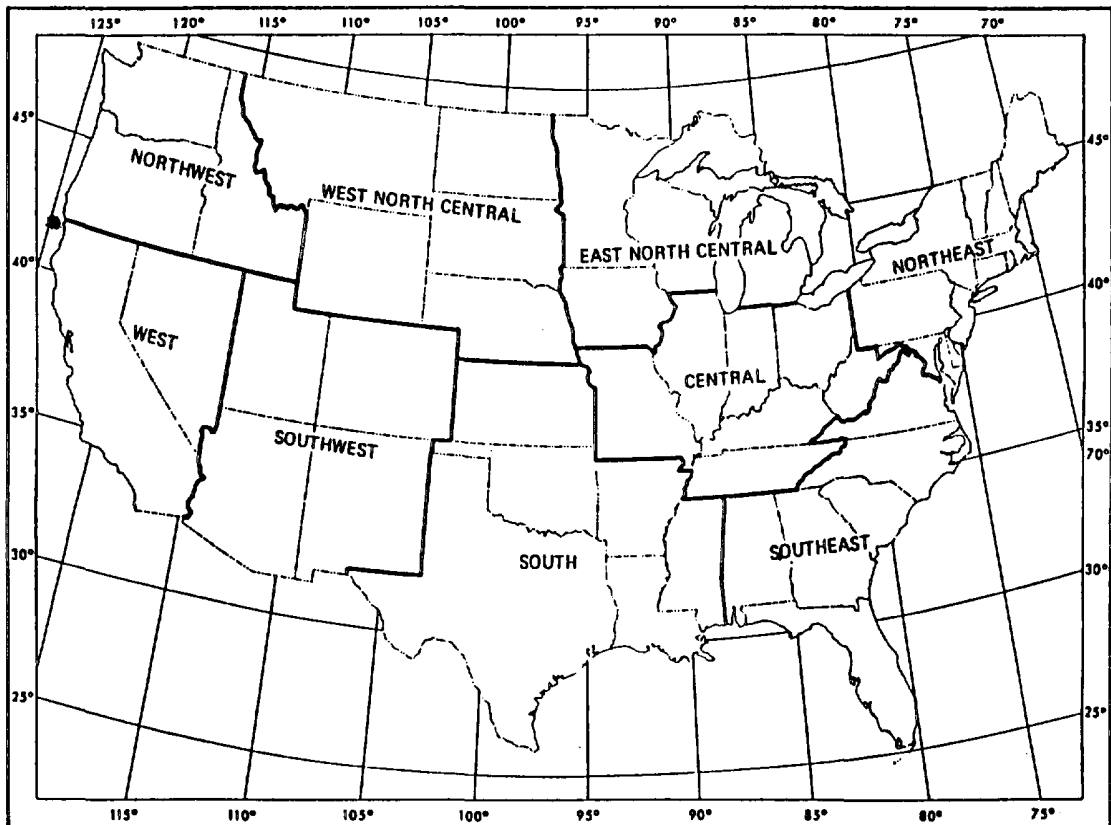
TABLE 1. TEMPERATURE AND PRECIPITATION RANKINGS FOR FEBRUARY 1991, BASED ON THE PERIOD 1895-1991.

1 = DRIEST/COLDEST, 97 = WETTEST/HOTTEST.

<u>REGION</u>	<u>PRECIPITATION</u>	<u>TEMPERATURE</u>
Northeast	6	90
East North Central	20	90
Central	48	80
Southeast	14	76
West North Central	10	96
South	35	86
Southwest	22	88
Northwest	19	97
West	48	95
National	8	95

From National Climatic Data Center

Fig. 1



From National Climatic Data Center

Fig. 2

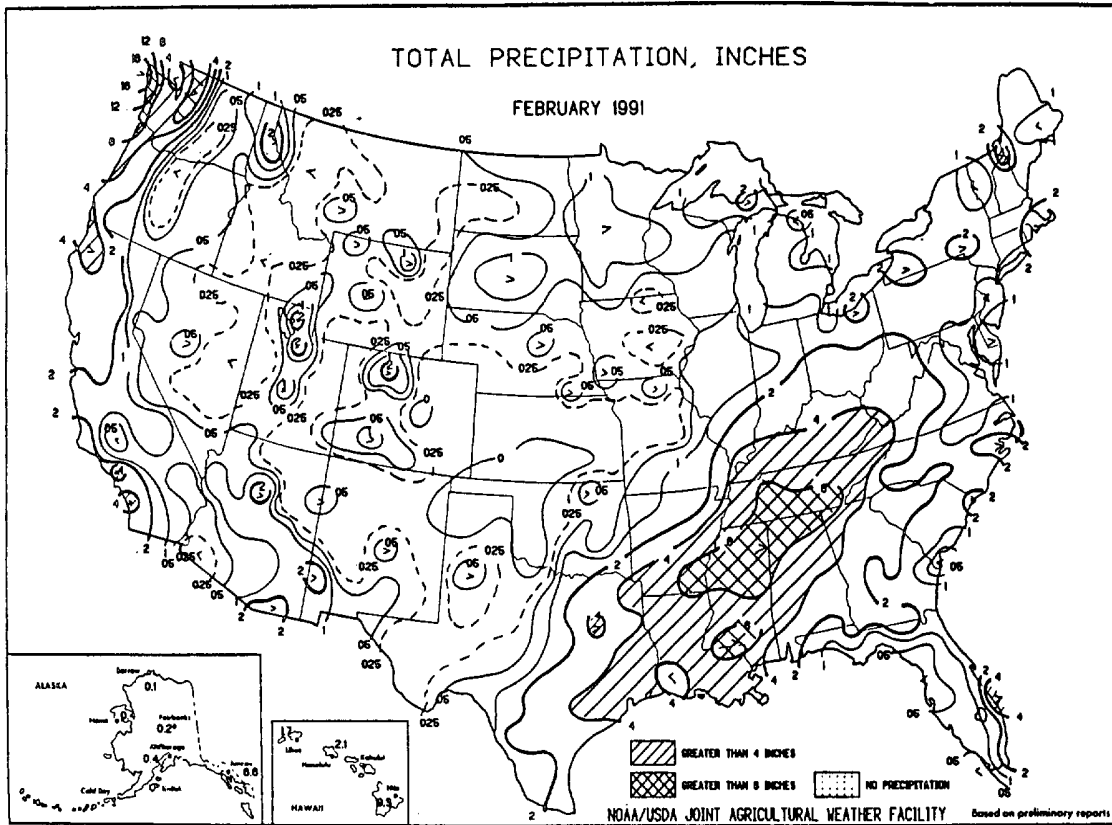
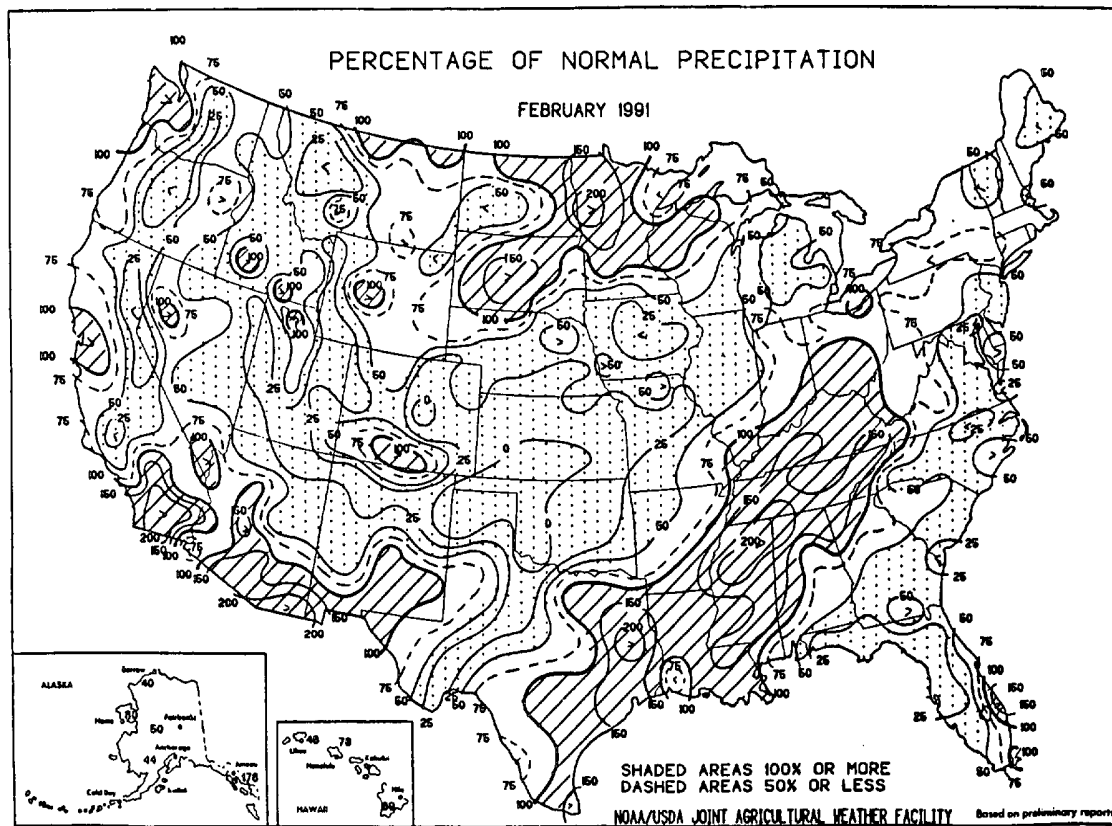


Fig. 3



Reprinted from *Weekly Weather and Crop Bulletin* - March 5, 1991

Fig. 4

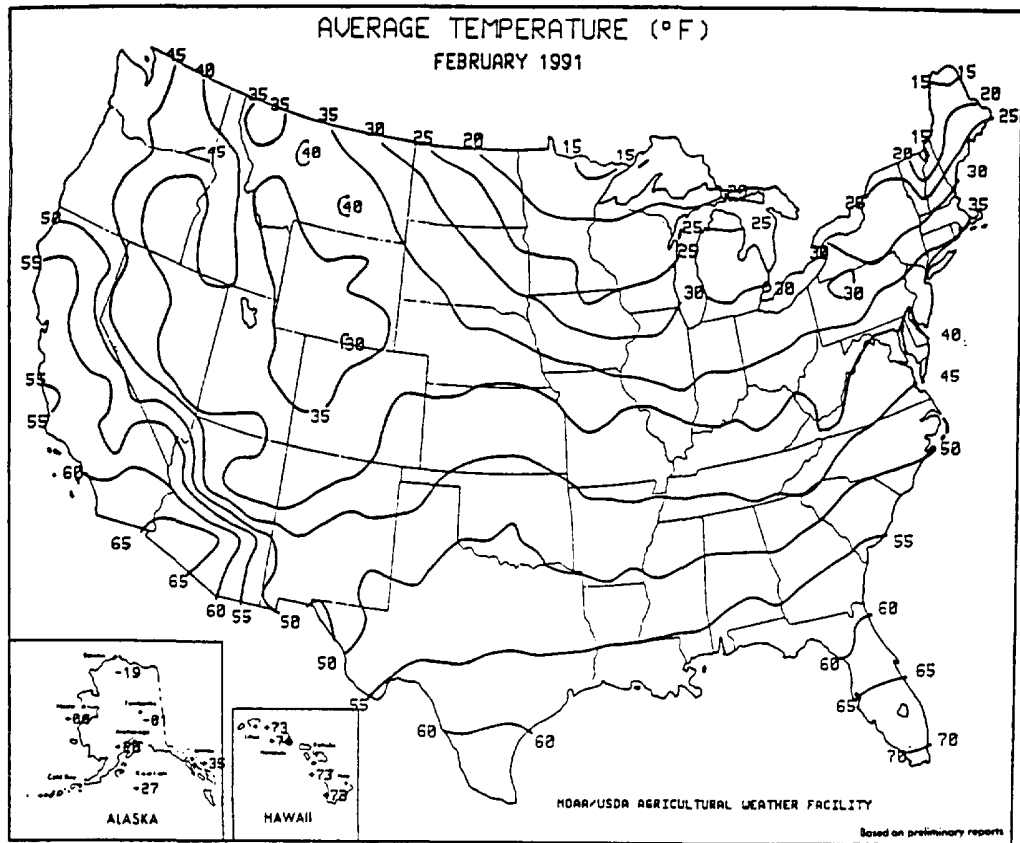
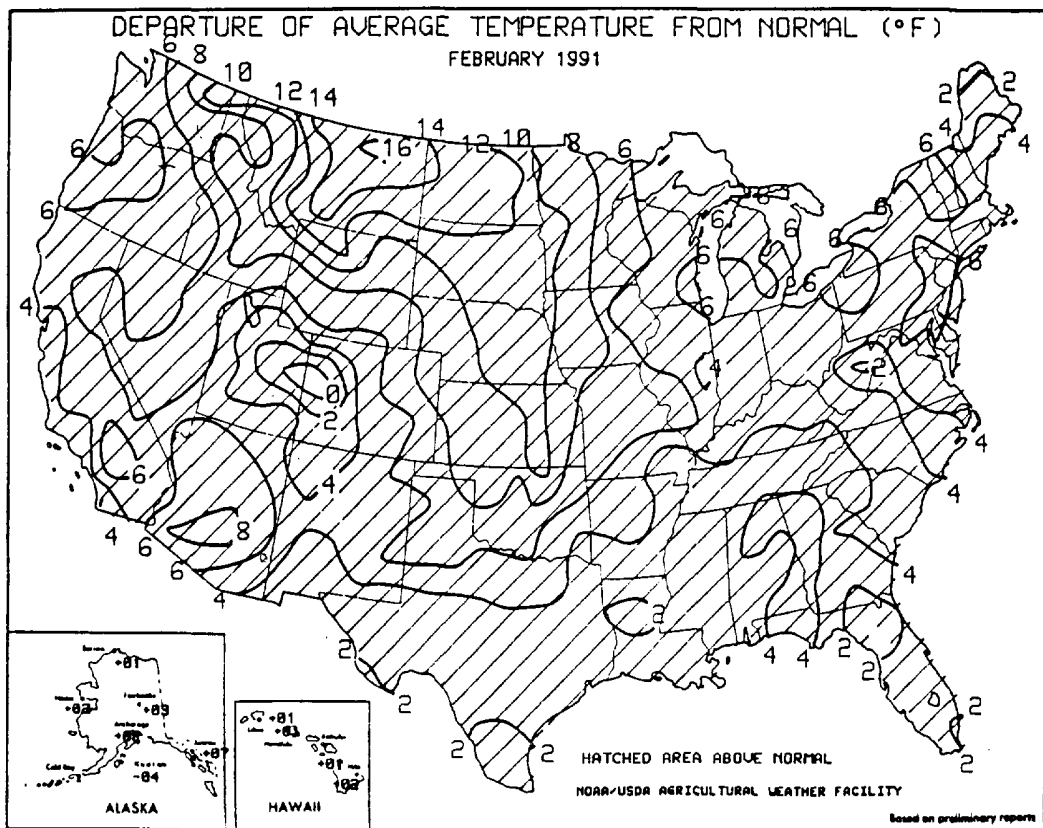


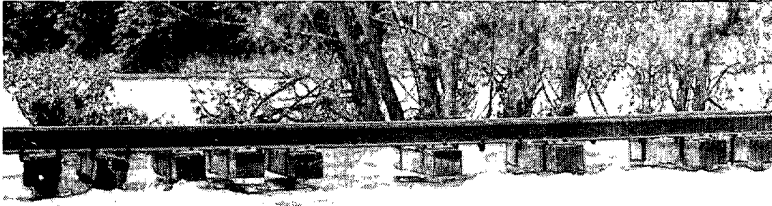
Fig. 5



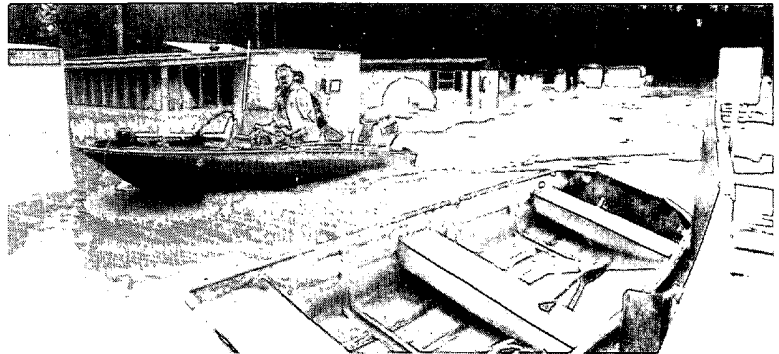
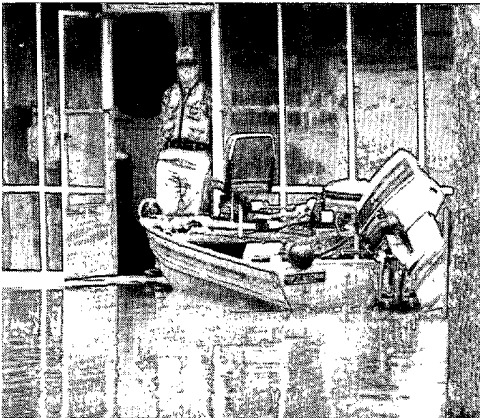
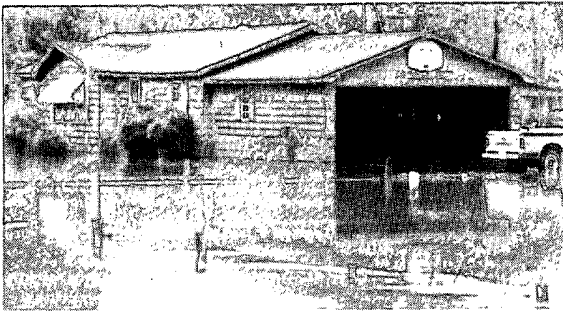
Reprinted from *Weekly Weather and Crop Bulletin* - March 5, 1991

2. FLOODING IN ARKANSAS AND ALABAMA

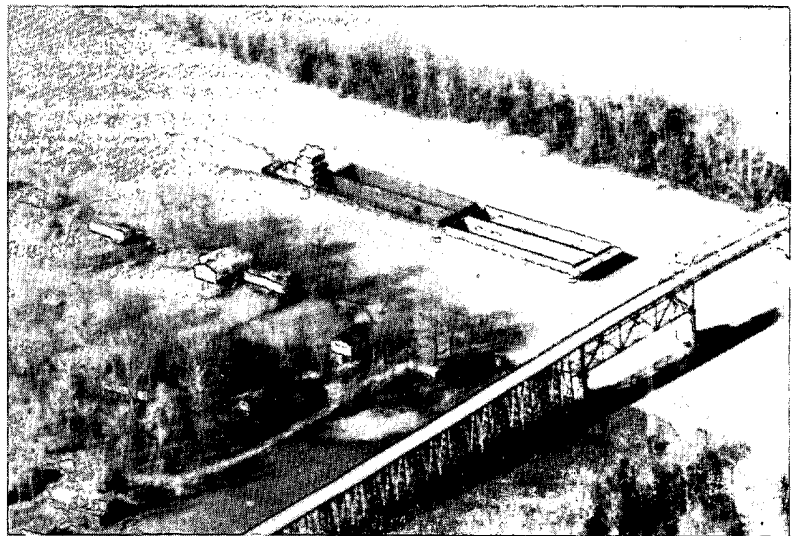
From February 18th through February 22nd, 5 to 8 inches of rain fell over parts of Arkansas and Alabama. Reports of flash flooding and flooding occurred over a wide area. Many roads were closed, bridges washed out, and homes were flooded.



Left (top and bottom): Flooded areas around Hamburg, Arkansas. Seventy-two-hour official rainfall total for Hamburg was 11.99 inches. *Below:* The flood waters left this group of cattle standing in water as they ate their hay. (Photo courtesy: Ashley County (AR) Ledger.)



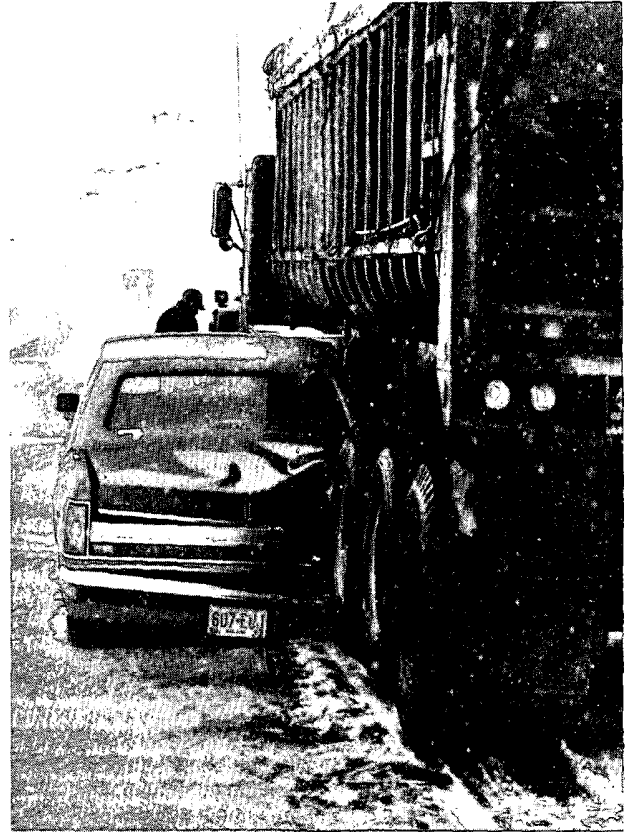
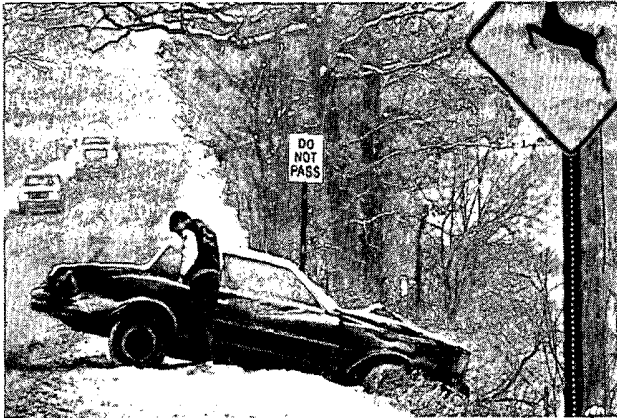
Above: Artie Davis and David Hampton motor through David Landing in Pickensville in Pickens County, Alabama. *Above (left):* William L. James stands in his mobile home along Run-A-Way Park 2 in Demopolis, Alabama. *Right:* A Parker Towing tow boat pushes against a strong current past flooded camp houses on Warrior River near Alabama Highway 14, bridge east of Eutaw, Alabama. (Photo courtesy: Tuscaloosa (AL) News; photo by Neil Brake.)



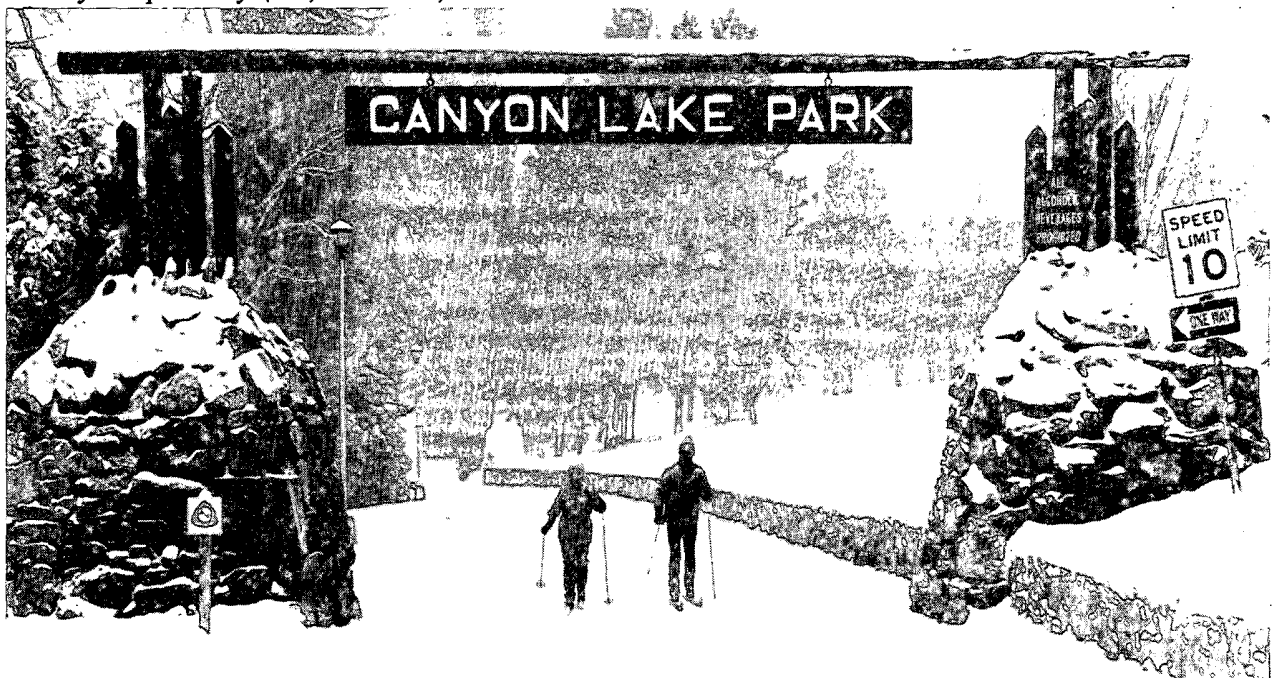
3. SNOW - MICHIGAN AND SOUTH DAKOTA - FEBRUARY 14TH, 18TH

The heaviest snowstorm since February 1988 struck Lower Michigan February 13th to 15th. The heaviest snowfall was in a band that extended from Allen Park in Wayne County to Ann Arbor in Washtenaw County. In this area, 10 to 11 inches of snow was common. The combination of snow and blowing snow caused hundreds of motor vehicle accidents, with multi-vehicle collisions involving as many as 14 cars. About a dozen serious injuries and one death occurred.

South Dakota experienced a major snowstorm on February 14th that dumped huge amounts of snow. The Black Hills had to dig out of 2 feet of snow and most highways were closed. One serious injury occurred.



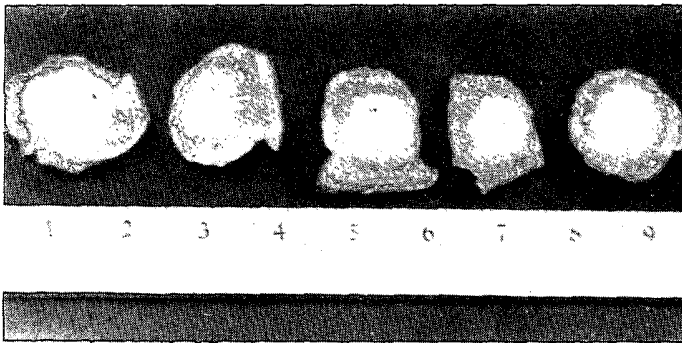
Above: Snow-covered roads brought Adam Sivulka's drive to Pioneer High School (Michigan) to an abrupt halt on Miller Road. The car spun near the Wagner Road intersection and was hit by a van. **Right:** Tow truck operators hook chains to car belonging to an Ohio couple that slid under a truck on U.S. Highway 23 near Milan, Michigan. (Photo courtesy: Ann Arbor (MI) News.) **Below:** Seven to more than twelve inches of snow fell on the Black Hills area. Pictured below is Jackie Stucky (left) and friend, Dave Strom (right), at Canyon Lake Park. (Photo courtesy: Rapid City (SD) Journal.)



4. OTHER EVENTS OF FEBRUARY 1991



A small (F1) tornado formed near Cisco, Georgia, on U.S. Highway 411 and moved over farm lands. Some scattered damage occurred to these farmlands along with damage to trees, power lines and poles, and to several cows which were killed or injured. (Photo courtesy: Chatsworth (GA) Times; Photographer: Jock Ellis.)



Left: Two-inch chunks of hail fell around Pleasanton, Poteet, and Jourdanton, Texas, on February 18th. Damage was mainly to roofs, automobiles, and tree limbs. (Photo courtesy: The Pleasanton (TX) Express.)
Bottom (both): A severe thunderstorm tracked across the Shreveport/Bossier City area producing large hail, damaging wind gusts, and a tornado. Hail size was up to 2 inches and accumulated 2 to 4 inches deep in many locations. Hail damage to automobiles and roofs was estimated at approximately \$9 million. (Photo courtesy: Mike Pass, KSLA-TV; Shreveport, Louisiana.)



STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

ALABAMA

Limestone County	13	2135CST			0	0	0	0	Hail (0.75)
									Dime-size hail fell in Ardmore at 2135 CST.
Madison County	13	2140CST 2148CST			0 0	0 0	0 0	0 0	Hail (0.75) Hail (1.75)
									Dime-size hail fell in the Fisk vicinity at 2140 CST. At 2148 CST, golf ball-size hail fell in the vicinity of New Market.
Lauderdale County	13	2146CST			0	0	?	?	Thunderstorm Winds
									Power lines were blown down at Waterloo.
Lauderdale and Limestone Counties	18	1440CST- 1730CST			0	0	?	?	Flash Flooding
									Heavy rain covered numerous roadways and washed out several bridges.
Colbert, Cullman, Franklin, Greene, Lauderdale, Lamar, Lawrence, Madison, Marengo, Marion, Marshall, Morgan, Pickens, Sumter, and Tuscaloosa Counties	18 22	1800CST- 1000CST			0	0	0	0	Flooding Flash Flooding
									From February 18th through February 22nd 5 to 8 inches of rain fell over northern, western, and north-central Alabama, producing numerous episodes of flash floods and flooding over a wide area. Many roads were closed due to high water and some bridges were washed out. In the Florence/Sheffield area, 22 residences received heavy water damage, and in many cases homes were destroyed. Homes were flooded in many other communities, particularly in the Tennessee Valley area of northern Alabama. Major flooding occurred along the Tombigbee River where residential flooding became a problem in the Pickensville and Aliceville areas; major damage occurred to homes along the river. Widespread flooding caused damage to cabins, trailers, and recreational areas in Sumter, Marengo, and Greene counties. Complete damage estimates were not available.
Jefferson County	19	1210CST			0	0	?	?	Thunderstorm Winds
									Strong thunderstorm winds downed trees at Graysville.
Cullman County	19	1240CST			0	0	?	?	Thunderstorm Winds
									Trees and power lines were blown down in the Vinemont vicinity.

ARIZONA

None reported.

ARKANSAS

Mississippi County Victoria	13	1730CST			0	0	0	0	Hail (0.75)
Pulaski County Little Rock	14	1200CST- 1700CST			0	0	4	0	High Winds (G33)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

ARKANSAS Cont'd

A strong low-pressure system caused wind gusts to near 40 mph. About 3,500 customers lost electrical power: mainly due to tree limbs falling on power lines. A window on the 14th floor of a building was also blown out.

Ashley County
Crossett 18 0115CST 0 0 0 0 **Hail (0.75)**

Emergency management personnel reported dime-size hail.

Lafayette County
Lewisville 19 0110CST 0 0 0 0 **Hail (1.00)**
2 W Crest City 19 0115CST 0 0 0 0 **Hail (1.75)**
Miller County
Fouke 19 0120CST 0 0 0 0 **Hail (1.00)**

Drew County 19 0130CST-0400CST 0 0 2 0 **Flash Flood**

High water from flash flooding closed Highways 35 and 172.

Ashley County
Hamburg
Crossett 19 0230CST-0700CST 0 0 4 0 **Flash Flood**

Flash flooding caused evacuations in Hamburg and Crossett; thirty-two homes were evacuated around Crossett and eight in Hamburg. Highway 133 had to be closed due to high water.

Chicot County
Lake Village 19 0415CST 0 0 2 0 **Thunderstorm Winds**

Several docks along Lake Chicot were damaged by high winds.

Chicot County 19 0630CST-0900CST 0 0 4 0 **Flash Flood**

Virtually all roads across Chicot County were flooded by heavy rains. The water in Lake Chicot rose several feet, damaging about 50 docks along the lake. Approximately 50 families had to be evacuated around Dermott due to high water.

Desha County
McGehee 22 0630CST-0900CST 0 0 3 0 **Flash Flood**

Nearly 8 inches of rain in a 24-hour period caused flooding in McGehee and much of southern Desha County. Numerous roads and homes were flooded.

Garland County 22 1015CST-1200CST 0 0 3 0 **Flash Flood**
Montgomery County 22 1015CST-1200CST 0 0 2 0 **Flash Flood**
Yell County 22 1015CST-1200CST 0 0 2 0 **Flash Flood**

Heavy rains flooded roads across western and central Arkansas. Several county roads flooded across eastern Montgomery County. Streets flooded in Hot Springs and Buckville (in Garland County), with water often as high as car bumpers.

Hot Spring County 22 1030CST-1200CST 0 0 3 0 **Flash Flood**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

ARKANSAS Cont'd

Three to 4 inches of rain caused flooding across Hot Spring County. The communities of Donaldson, Witherspoon, and Friendship reported roads were impassable due to flooding.

Saline County
Shannon Hills

22 1100CST-1230CST 0 0 2 0 Flash Flood

Heavy rains flooded roads in the Shannon Hills area.

CALIFORNIA, Northern

Fresno County

07 0200PST-1000PST 4 31 5 0 Dense Fog

Two separate accidents in the Fresno area occurred on fog-shrouded highways. The most serious accident on Highway 99 involved at least 74 vehicles, and resulted in 3 deaths and 31 injuries. In another accident, a truck drove onto railroad tracks in the fog and was struck by a train.

Southern Sierra, Nevada, and Tehachapi Mountains

16 0010PST-1200PST 0 0 0 0 High Winds

Strong winds were induced by a pressure gradient between a high in the Great Basin and a low in Arizona. Wind gusts to 60 mph were reported in Yosemite Valley with numerous downed trees and blocked roads.

Kern County

27 0830PST-1300PST 0 36 5 0 Blowing Dust

Winds gusting to around 35 mph kicked up dust and reduced visibility to near zero. Multiple vehicle accidents occurred in several locations, with the largest involving about 70 cars and the bulk of the injuries.

Kern County

27 2145PST-28 0200PST 0 0 0 0 Flash Flood

Highways were closed near Inyokern as heavy rain caused water and gravel to flow over the roads.

Tulare County

28 1615PST 0 0 0 1 5 0 Tornado (F1)

A tornado briefly touched down near the town of Goshen.

CALIFORNIA, Southern

CAZALL

17 0600PST 3 17 ? 0 High Winds

Strong gusty Santa Ana winds, caused by a high-pressure system over Nevada and Utah, hit all of southern California. Winds to 55 mph blew over parts of the Antelope Valley, reducing visibility with blowing sand and dust along State Highways 14 and 138. Wind gusts to 45 mph were reported at Sandberg in the Tehachapi Mountains. Three fishermen died after their boat broke apart in rough seas off Anacapa Island in the Santa Barbara Channel; the three survivors said the boat was hit by a large wave. In the Antelope Valley, near-zero visibility led to a chain-reaction traffic accident involving more than 40 vehicles. At least 14 people were injured. (M330, M510, M620)

CAZALL

27-28 1 0 ? 0 Heavy Rains

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

CALIFORNIA, Southern Cont'd

From February 27th to March 1st, a series of winter storms moved through southern California, producing heavy rain and local urban flooding in the lowlands, and heavy snow in the mountains. Some heavier rainfall amounts were: Cuyamaca 13.50 inches; Mt. Wilson 13.39 inches; Oldman Mt. 11.30 inches; Big Tujunga Dam 8.75 inches; Long Beach 5.48 inches; Hemet 4.76 inches; Santa Ana 4.02 inches; Palm Springs 3.91 inches; Los Angeles Civic Center 3.79 inches; Santa Barbara 3.71 inches; and San Diego 3.32 inches. Because of heavy rainfall, some mudslides and road washouts occurred. One death occurred during the storms in late February, when three people were rafting down the Santa Ana River and a young lady fell off the raft.

Orange County
5 NW El Toro
Marine Air
Station

28 1245PST 0.5 50 0 0 ? 0 Tornado (F0)

A weather observer at El Toro Marine Air Station reported a tornado 5 miles northwest of the base, moving northward. At least 40 homes were damaged; however, the damage was classified as light. The types of damage reported included: shingles blown off, windows shattered, fences broken, and trees and power lines blown down. The size and strength of the torando was estimated.

COLORADO

COZ002-004-007
Northern, Central
and Southwestern
Mountains

13 0000MST-
15 1800MST 0 0 0 0 Heavy Snow

A strong winter storm struck the state early on the 13th, as northwesterly flow aloft brought heavy snows to the Colorado Rockies during the 3-day period. Strong winds of 40 to 60 mph accompanied the heavy snows, often creating near-whiteout conditions on the 13th and 14th. Many roads throughout the mountains were closed due to blowing and drifting snow, including U.S. 40 over Rabbit Ears Pass in the northern mountains. Snowfall amounts for the 3 days ranged from 9 to 26 inches, including: 26 inches at Berthoud Pass; 25 inches at both Loveland and Irwin Ski Areas; 24 inches at Copper Mountain; 20 inches at Mary Jane Ski Area; 19 inches at both Vail and Steamboat Springs; and 9 inches at 7 Utes.

COZ002-004-008-
010
Northern, Central,
and Southern
Mountains

17 0000MST-
20 1200MST 0 0 0 0 Heavy Snow

The second winter storm within a week pounded the Colorado Rockies. The slow-moving storm produced heavy snows in the mountains during the three and one-half-day period. As with the previous storm, many mountain passes were closed due to blowing and drifting snow. Snowfall totals for the storm ranged from 4 to 38 inches. Steamboat Springs reported the largest amount with 38 inches. Other storm totals included 35 inches at Gothic; 30 inches at Irwin Ski Area; 25 inches at Wolf Creek Ski Area and at Vail; 20 inches at Telluride; 15 inches at Red Mountain Pass; 14 inches at 7 Utes; 11 inches at both Aspen Mountain and southwestern Huerfano County in the Walsenburg area; and 4 inches at Floyd Hill, on Interstate 70 just east of Idaho Springs.

COZ002-004-008
Northern, Central
and Southwestern
Mountains, and
Four Corners Area

28 0000MST-
01 0000MST 0 0 0 0 Heavy Snow

February closed with the beginning of another winter storm which continued into March. Snow began falling early on the 28th, and by the end of the day snowfall reports indicated 2 to 13 inches had fallen across the mountains and southwestern Colorado. Snow totals for the 28th included 13 inches at Wolf Creek and at Snowmass; 10 inches at Monarch and Durango; 9 inches at Platoro; 8 inches at Summitville; 7 inches at Irwin, Telluride, Purgatory, and Aspen Highlands; 5 inches at Vail, Steamboat Springs, and Crested Butte; and 2 inches at Cortez near the Four-Corners.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

CONNECTICUT

CTZ001-004-005 26 All Day-
27 Early Morning 0 0 0 0 Heavy Snow

Heavy snow accumulated across the southwestern portion of the state with amounts of 8 to 10 inches reported from Fairfield County. Ridgefield received 20 inches; New Fairfield 8.5 inches; and both New Canaan and Redding 8 inches. The immediate coastal section of southwestern Connecticut had 4 to 5 inches.

DELAWARE

None reported.

FLORIDA

Monroe County
1 SW Key West 02 1515EST 0 0 0 0 Waterspout

A pilot reported a waterspout 1 mile southwest of Key West.

Monroe County
5 SE Key West 03 1253EST 0 0 0 0 Waterspout

United States Weather Service employees observed a waterspout 5 miles southeast of Key West.

FLZALL
Northern, Central,
and Southern
Florida 15 0800EST-
2200EST 0 0 4 1 Winds

Winds around a strong low-pressure system, and in advance of a slow-moving cold front, gusted up to about 60 mph in some locations. Trees and power lines were downed, light metal sheds and roofs were destroyed, and signs were blown over. The winds whipped up at least 150 brush fires in various sections of the state.

St. Johns County
St. Augustine 15 1100EST 1 0 0 0 Winds

Strong winds (up to 60 mph) and rough waters along the St. Johns River swamped an 18-foot boat; one man drowned and one was declared missing as their boat capsized. (M690)

Martin County
4 SW Stuart 22 1737EST 0 0 0 0 Funnel Cloud

A funnel cloud was reported by a pilot 4 miles southwest of Stuart.

GEORGIA

Lowndes County
Valdosta 01 0000EST-
08 0700EST 0 0 4 4 Flood

After heavy rainfall on January 29th, the Withalacoochee River remained above flood stage at Valdosta. Floods during early January damaged numerous roads and streets over Valdosta and the surrounding area. During the flooding which started on January 29th, additional roads and streets were damaged and water entered a few homes. Low-lying agricultural and timber lands were flooded. By February 1st the river was at 19.1 feet, after cresting at 19.5 feet on January 31st; the flood stage at Valdosta is 13 feet.

Thomas County
Thomasville 01 0000EST-
08 0700EST 0 0 4 4 Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

GEORGIA Cont'd

Although the Ochlockonee River crested at Thomasville on January 25th at 17.9 feet, existing problems at Thomasville were further aggravated by the flooding which began on January 29th; February 1st, the river was at 17.4 feet. Roads and residential streets around the river were impassable, and mobile and permanent homes were flooded. Farming and logging operations were hampered around Thomasville, with the flood stage on the river there at 15 feet.

Ware County Waycross

01 0000EST-
08 0700EST 0 0 4 3 Flood

After heavy rainfall on January 29th, the Satilla River remained above flood stage at Waycross. Agricultural and timber lands along the river were flooded. During early February, additional damage occurred to county roads and a few schools remained closed as flooding persisted. Fishing camps on the river were flooded. The Satilla River crested at 19.7 feet on February 2nd; flood stage is 16 feet.

Brantley County Atkinson

01 0000EST-
20 0700EST 0 0 4 4 Flood

After heavy rainfall on January 29th, the Satilla River remained above flood stage at Atkinson. The flash flooding which developed on January 29th marooned several residences, and eventually pushed the river over the surrounding area. The river was at 19.9 feet by February 1st with agricultural and timber lands flooded. The Satilla River crested at 20.6 feet on the 3rd; flood stage is 13 feet.

Echols County Statenville

01 0000EST-
16 0700EST 0 0 4 4 Flood

The Alapaha River remained above flood stage throughout January. Heavy rainfall over Echols County produced flash floods on January 29th and pushed the river higher. By January 31st, about eight residences along the river were evacuated. The Alapaha River crested at 28.9 feet on February 1st at Statenville. Timberlands, farms, and pastures along the river were flooded; flood stage is 24 feet.

Webster County Preston

01 0000EST-
02 0700EST 0 0 3 0 Flood

Widespread flooding developed on the Kinchafoonee Creek at Preston. Roads and surrounding property were flooded after the creek crested at 8.8 feet on January 31st; flood stage is 7 feet.

Jenkins County Scarboro

01 0000EST-
14 0700EST 0 0 0 3 Flood

The Ogeechee River flooded agricultural and timber lands around Scarboro. The river crested at 10.8 feet on February 2nd; flood stage is 8 feet.

Screven County Dover

01 0000EST-
14 0700EST 0 0 0 3 Flood

The Ogeechee River flooded low-lying agricultural property around Dover; flood stage is 7 feet.

Tattall County Reidsville

01 0000EST-
16 0700EST 0 0 0 4 Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

GEORGIA Cont'd

The Ohoopce River remained above flood stage at Reidsville and caused extensive flooding. Agricultural and timber activities were hampered, along with travel near the river. The river crested at 20.6 feet by February 4th; flood stage is 11 feet.

Appling County Northern Appling County	01 17	0000EST- 0700EST			0	0	0	4	Flood
Toombs County Southern Toombs County	01 17	0000EST- 0700EST			0	0	0	4	Flood

The Altamaha River remained above flood stage at Plant Hatch north of Baxley. The river crested at 79.2 feet by February 8th. Extensive flooding of agricultural and timber lands developed over Appling and Toombs counties; flood stage is 74.5 feet.

Effingham County Eden	01 20	0000EST- 0700EST			0	0	0	3	Flood
---------------------------------	----------	---------------------	--	--	---	---	---	---	--------------

The Ogeechee River flooded access roads, timber, and farmlands around Eden as it rose to 13.1 feet on February 6th. The flood stage there is 9 feet.

Montgomery County 5 S Uvalda	02 17	0100EST- 0100EST			0	0	3	3	Flood
Jeff Davis County Extreme Northeastern Jeff Davis County	02 17	0100EST- 0100EST			0	0	3	3	Flood

The Altamaha River flooded around Charlotte Bridge and reached into nearby vacation homes and other buildings. Agricultural lands were also flooded. The river crested at 18.7 feet on February 7th; flood stage is 15 feet.

Murray County 1.5 N Cisco	14	0000EST	1.5	150	0	0	5	0	Tornado (F1)
-------------------------------------	----	---------	-----	-----	---	---	---	---	---------------------

A small tornado developed just north of Cisco, on U.S. Highway 411, and moved over farm lands. Along its path, the tornado tore the roof from an automotive garage and demolished a barn. Many trees were twisted off, scattered utility lines were downed and eight power poles were broken. About 350 residents of Cisco and Eton had power outages. Along Highway 411, pasture fences were damaged and several cows were killed or injured.

Fannin County McCaysville	14	0010EST			0	0	0	0	Thunderstorm Winds Hail (0.50)
-------------------------------------	----	---------	--	--	---	---	---	---	---

Thunderstorm winds downed tree limbs, while 2 to 3 inches of hail covered the ground in parts of McCaysville.

Lumpkin County Dahlonega	14	0030EST			0	0	2	0	Thunderstorm Winds
------------------------------------	----	---------	--	--	---	---	---	---	---------------------------

Scattered trees were downed by thunderstorm winds.

Union County Blairsville	14	0030EST			0	0	3	0	Thunderstorm Winds (G52) Hail (0.50)
------------------------------------	----	---------	--	--	---	---	---	---	---

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

GEORGIA Cont'd

High winds toppled trees, downed power lines, and caused scattered damages around the city. Around 0800 EST several sections of a concrete-deck roof were torn from a business and another lost its awnings. A large tree downed by high winds, crushed a pickup truck. A few street lights were also damaged.

Dougherty County Albany

15 0842EST										High Winds
15 0900EST										High Winds

High winds knocked down several trees and many power lines around Albany. An uprooted tree pulled down an electrical line at a residence, tore down the weatherboard, and caused an arc which ignited a fire in the attic and over the carport. Around 0900 EST, another fire was ignited in the attic of a home when a small tree fell onto power lines. The winds also caused arcing along power lines at several other places.

Bryan County 7 SSW Richmond Hill

15 1000EST										High Winds
------------	--	--	--	--	--	--	--	--	--	------------

Gusty winds toppled a truck which was transporting half a mobile home down Interstate 95. The winds overturned both the cab and trailer, causing minor injuries to the driver.

Troup County Hogansville

15 Morning										High Winds
------------	--	--	--	--	--	--	--	--	--	------------

Several homes in Hogansville were without power after high winds downed tree limbs and electrical lines.

Chatham County Savannah Dutch Island Isle of Hope Thunderbolt

15 Morning										High Winds
15 Morning										High Winds
15 Morning										High Winds

Strong winds tore down power lines, and also damaged broadcasting equipment and a radio tower at Savannah. At the National Weather Service at Savannah, winds gusted to 49 mph. Approximately 1,200 residents of Thunderbolt, along with many residents on Dutch Island and Isle of Hope, were without electricity during the morning after tree limbs downed feeder lines.

Effingham County Southern Portion

15 Morning										High Winds
------------	--	--	--	--	--	--	--	--	--	------------

Several hundred customers lost electrical power after strong winds tore down tree limbs and feeder lines.

Bibb County Macon Macon

15 Morning										High Winds
15 1200EST										High Winds

Strong winds blew down large trees and crossed electrical lines over several sections of Macon. The high winds also blew out a large window at a downtown office building about noon.

Dougherty County Eastern Portion

15 1200EST										High Winds
------------	--	--	--	--	--	--	--	--	--	------------

Strong winds blew down tree limbs and electrical lines. A falling power line started a brush fire in eastern Dougherty County.

Ware County Waycross

15 1200EST										High Winds
------------	--	--	--	--	--	--	--	--	--	------------

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

GEORGIA Cont'd

15	1211EST				0	0	0	0	High Winds
15	1300EST				0	0	0	0	High Winds

High winds tore down power lines, branches, and a few trees around Waycross. Several fires were ignited when electrical lines came in contact with trees or grassy areas.

Columbia County Appling

15	1215EST				0	0	4	0	High Winds
----	---------	--	--	--	---	---	---	---	------------

High winds, gusting to 65 mph, caused damage to a marina on Lake Thurmond when boats were tossed onto the docks. Many boats were damaged and several tin roofs at the marina were loosened.

Tift County

Countywide	15	1215EST			0	0	0	0	High Winds
Tifton	15	1215EST			0	0	4	0	High Winds

Cook County

8 W Adel	15	1256EST			0	0	4	0	High Winds
----------	----	---------	--	--	---	---	---	---	------------

Colquitt County

Moultrie	15	1300EST			0	0	0	0	High Winds
----------	----	---------	--	--	---	---	---	---	------------

Doerun

Ellenton	15	1330EST			0	0	0	0	High Winds
----------	----	---------	--	--	---	---	---	---	------------

Worth County

3 NNW Doerun	15	Afternoon			0	0	4	0	High Winds
--------------	----	-----------	--	--	---	---	---	---	------------

Atkinson County

Pearson	15	Afternoon			0	0	0	0	High Winds
---------	----	-----------	--	--	---	---	---	---	------------

Turner County

Rebecca	15	Afternoon			0	0	0	0	High Winds
---------	----	-----------	--	--	---	---	---	---	------------

Ben Hill County

Fitzgerald	15	Afternoon			0	0	0	0	High Winds
------------	----	-----------	--	--	---	---	---	---	------------

Coffee County

Ambrose	15	Afternoon			0	0	0	0	High Winds
---------	----	-----------	--	--	---	---	---	---	------------

High wind gusts, estimated at near 55 mph, pushed down numerous trees and many utility poles over southern Georgia. Scattered power outages developed over the entire area when utility lines were torn down by falling trees or winds. Outages were reported in the towns of Rebecca, Pearson, Tifton, Ambrose, Moultrie, Doerun, and over rural areas.

The winds blew half of a mobile home off a transport rig just outside of Doerun and blocked Georgia Highway 133 in Worth County.

At the Fitzgerald Airport, a wind gust was measured at 41 mph during the afternoon. Near Rebecca, U.S. Highway 41 was blocked by falling trees. At Ellenton, high winds knocked power out at about 1330 EST.

At the Coastal Plains Experiment Station in Tifton, a falling tree caused minor damage to a building. Numerous trees were downed at Abraham Baldwin College.

The roof of a home in the Chaserville community (west of Adel) was damaged by a large tree uprooted by high winds.

Dougherty County

Albany	15	1430EST			0	0	4	0	High Winds
--------	----	---------	--	--	---	---	---	---	------------

Worth County

Warwick	15	1430EST			0	0	0	0	High Winds
---------	----	---------	--	--	---	---	---	---	------------

Thomas County

Pavo	15	1430EST			0	0	0	0	High Winds
------	----	---------	--	--	---	---	---	---	------------

Terrell County

Dawson	15	1430EST			0	0	0	0	High Winds
--------	----	---------	--	--	---	---	---	---	------------

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

GEORGIA Cont'd

Waycross	16	0359EST			0	0	0	0	High Winds
<p>As high winds continued over the Waycross area, power lines were torn down. Several fires were ignited when the power lines came into contact with trees on the lines, or grassy areas. A fire started about 1721 EST on U.S. Highway 1; around 0359 EST, a trash-pile fire and a woods fire along the highway were ignited by falling power lines.</p>									
Chatham County Savannah	16	Morning			0	0	4	0	Cold Spell
<p>Extremely cold temperatures froze a water line on a storage tank and caused a rupture. The rupture eventually led to a large chemical spill of over 1,000 gallons of a caustic substance. The spill developed at about 1330 EST.</p>									
GAZ001-GAZ003 Northern and Northwestern Georgia	17	0430EST-1145EST			0	0	0	0	Snow and Sleet
<p>Intermittent snow and sleet developed across northwestern Georgia. Travel was disrupted and several school systems were closed.</p>									
GAZ001 & GAZ002 Northern Georgia Walker County Lookout Mountain	17	1145EST-1900EST			0	0	0	0	Snow and Sleet
	17	1145EST-1730EST			0	0	0	0	Ice Storm
<p>Intermittent snow and sleet continued over northern Georgia through the afternoon. Road conditions significantly worsened with scattered accumulations of more than an inch. Freezing rain and sleet caused isolated power outages in Walker County as ice-laden trees fell onto power lines around Lookout Mountain.</p>									
Gordon County Calhoun	19	1940EST-200200EST			0	0	0	0	Flash Flood
Chattooga County Summerville	19	2000EST-200200EST			0	0	3	0	Flash Flood
Trion	19	2000EST-200200EST			0	0	3	0	Flash Flood
Countywide	19	2000EST-200200EST			0	0	4	0	Flash Flood
Floyd County Rome	19	2100EST			0	0	0	0	Flash Flood
Bartow County Northern Bartow County	19	2100EST			0	0	0	0	Flash Flood
<p>Heavy rain produced amounts over 2.50 inches across much of northwestern Georgia, resulting in brief flash flooding over several counties. By 2035 EST Chickamauga State Park in Catoosa County had received 3.40 inches of rainfall; no flooding was reported. Around Calhoun in Gordon County, several ponds overflowed during the heavy rainfall. By 2000 EST 1.40 inches of rain had fallen at Rome in Floyd County, causing ditches and small creeks to overflow. Minor flooding developed at Calhoun and Rome and over northern Bartow County. At Summerville, flooded streets hampered traffic after nearly 2.50 inches of rain. At Trion, many roads and low-lying areas quickly flooded. Hazardous road conditions forced county schools and several businesses to close on the 20th. The heavy rainfall caused significant damage to many dirt or chert roads across Chattooga County.</p>									
Cobb County Marietta	19	2100EST			0	0	3	0	Flash Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

ILLINOIS

ILZ006-010
Central Illinois

13	2100CST-				0	0	6	5	Winter Storm
14	2100CST								

Snow began falling the evening of the 13th and continued much of the next day. Northwestern winds of 40 mph compounded problems the afternoon of the 14th, by blowing and drifting the snow, so many roads were closed. Across central Illinois, reported snowfalls were only 2 to 3 inches, but strong winds caused widespread "white-out." Air temperatures were near zero degrees F with wind chills to -40° and -50° F, so conditions were dangerous. A 60-mile stretch of Interstate 57, from Kankakee to near Paxton, was closed until 1800 CST because of numerous accidents in low visibilities. Both Interstate 55 near Bloomington and Interstate 74 near Champaign were closed in the afternoon and evening, because of dangerous travel conditions.

INDIANA

INZ001-002-
Northwestern to
Northern-Central
Indiana

14	0210EST-				0	?	?	?	Heavy Snow
16	0707EST								

Strong northwestern winds, in the wake of a deep low-pressure system that moved through the lower Great Lakes, combined with Arctic temperatures to produce heavy lake-effect snow over north-central and northwestern Indiana. Some storm total snow depths were 19.8 inches at South Bend, and 17 inches at LaPorte. Four to 6 inches was common throughout the remainder of St. Joseph, Elkhart, Marshall, and LaPorte counties in Indiana. Snow emergencies were declared in LaPorte, St. Joseph, Marshall, and Elkhart counties, with only emergency vehicles permitted on roadways. Many automobile accidents and minor injuries were reported.

Sustained winds of 20 to 30 mph and higher gusts caused whiteouts and drifts of 4- to 5-feet deep. Thirteen and one-tenths inches of snow fell during the 24-hour period (from 0700 EST the 14th to 0700 EST the 15th) at South Bend, establishing a new 24-hour record snowfall for February.

IOWA

IAZ012
Southwestern
Iowa

11	0600CST-				0	0	2	0	Flooding
12	1200CST								

Minor snowmelt and ice-jam flooding occurred along the lower portions of the Nishnabotna River of southwestern Iowa. Flooding was very minor; however, the river did crest about a foot over flood stage.

IAZ001-SDZ018
Extreme
Northwestern
Iowa

18	0500CST-				0	0	3	0	Snow and Heavy Snow
	1400CST								

A low-pressure system moved across Kansas, through northern Missouri, and into Illinois. Heavy snow fell over extreme northwestern Iowa. Amounts were generally in the 3- to 6-inch range, with spotty amounts to around 9 inches. Estherville, for example, had 9 inches of new snow while Spencer received about 6 inches. Most of the snow fell during a 3- to 4-hour period. Lighter snows and some freezing rain fell to the southeast of the heavy snow area, though amounts were quite light.

IAZ007-010
Central into
Northeastern Iowa

21	0600CST-				0	0	3	0	Flooding
24	1200CST								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

IOWA Cont'd

Minor snowmelt and ice-jam flooding occurred over parts of central into northeastern Iowa. This occurred along portions of the Iowa River, and on some of the tributaries of the Cedar River Basin.

KANSAS

KSZ001-0066
Far Western
Kansas

14 0800CST 0 0 5 0 High Winds (G50)

Strong winds caused a blackout from blowing dust over much of western Kansas between 0800 and 1600 CST. The visibility decreased to zero for several hours, forcing the closing of Interstate 70 west of Russell, Kansas. A 33-car pile-up occurred about 7 miles east of Goodland, Kansas, resulting in several injuries but no fatalities.

KENTUCKY

Butler County
Monroe County

07 0700CST 0 0 3 3 Flood

Rain falling on already-saturated ground forced the Green River out of its banks. At Brownsville and Rochester, the river crested 1.5 feet above flood stage. At Paradise, the river crested 10 feet above the flood stage.

Ohio County

07 0700CST 0 0 3 3 Flood

The Rough River at Dundee rose to 26.1 feet; 1 foot above the flood stage.

Nelson County

07 0700EST 0 0 3 2 Flood

The Rolling Fork River at Boston rose to 37.5 feet; 2 feet above flood stage.

Bell County

14 0600EST 0 0 4 3 Flood

Heavy rain forced the Yellow Creek in Middlesboro out of its banks. Several streets were flooded and a few homes were evacuated.

Butler County

16 0700CST 0 0 2 2 Flood

Additional rain again forced the Green River into flood at Rochester. The river rose to 21.6 feet; 4.5 feet above the flood stage.

Bell, Knox, and
Whitley Counties

18 1400EST 0 0 5 4 Flood

Heavy rain fell over most of central and eastern Kentucky, beginning on the 18th and continuing into the 19th. The heaviest rain fell over southeastern Kentucky where nearly 5 inches was reported in 24 hours. The rain forced most creeks and streams out of their banks. Many roads were covered with water, forcing the cancellation of school in all four counties for 3 days. The hardest-hit areas were Middlesboro on the Yellow Creek and Williamsburg on the Cumberland River. In both communities, many streets were covered with water and several homes and businesses had to be evacuated.

Hart, Fulton,
and McLean Counties

19 0700CST 0 0 2 2 Flood

Additional heavy rain forced the Green River into flood for the second time in less than 1 month.

Owsley and
Lee Counties

20 0700EST 0 0 3 3 Flood

Heavy rain over the region forced the South Fork of the Kentucky River at Boonesville and Heidelberg to flood.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

KENTUCKY Cont'd

Livingston and McCracken Counties	21	0700CST			0	0	3	3	Flood
--	----	---------	--	--	---	---	---	---	-------

The lower Ohio River rose into flood from heavy rains which fell over the Ohio River Basin several days earlier.

LOUISIANA

Claiborne Parish 4 ESE Homer	17	2300CST			0	0	3	0	Thunderstorm Winds
---	----	---------	--	--	---	---	---	---	--------------------

Several outbuildings and boathouses along the shore of Lake Claiborne were heavily damaged by thunderstorm wind gusts, and a number of trees were toppled.

Caddo Parish 6 W Shreveport Bethany to Northwestern Shreveport	18	1341CST	1.0	200	0	0	2	0	Tornado (F1)
	18	1335CST- 1355CST			0	0	7	0	Hail (2.00) Thunderstorm Winds

Bossier Parish Bossier City to Haughton	18	1355CST- 1415CST			0	0	7	0	Hail (2.50) Thunderstorm Winds
--	----	---------------------	--	--	---	---	---	---	-----------------------------------

Webster Parish 3 N Dixie Inn	18	1420CST			0	0	5	0	Hail (1.00) Thunderstorm Winds (G52)
---	----	---------	--	--	---	---	---	---	---

Claiborne Parish 5 SW Homer	18	1430CST			0	0	2	0	Hail (1.00)
--	----	---------	--	--	---	---	---	---	-------------

A severe thunderstorm tracked across extreme northwestern Louisiana, including the Shreveport/Bossier City metropolitan area, producing large hail, damaging wind gusts, and a tornado. The tornado touched down in a heavily-forested area about 6 miles west of the Shreveport Regional Airport (SHV), with damage confined to downed timber. The severe thunderstorm produced hail up to the size of golf balls as it moved across the northern portion of the Shreveport/Bossier City area. The hail was piled 2- to 4-inches deep in many locations. Wind gusts of 50 to 60 mph accompanied the passage of the thunderstorm, and a mobile home was damaged by wind gusts in Bossier Parish. A peak wind of 65 mph was measured at the downtown Shreveport Airport. The severe thunderstorm continued to move northeast, across Webster and Claiborne Parishes, producing damaging wind gusts and large hail. Hail damage to automobiles and roofs in the Shreveport/Bossier City area was estimated around \$9 million.

Bienville Parish Liberty Hill Claiborne Parish 5 S Homer to 5 E Homer	18	2120CST			0	0	2	0	Hail (1.75)
	18	2150CST- 2155CST			0	0	1	0	Hail (0.88) Thunderstorm Winds

Thunderstorm wind gusts downed a few trees near Homer, and hail was reported near Liberty Hill and Homer.

Caddo Parish 2 SE Blanchard	19	0145CST			0	0	1	0	Hail (1.00)
Bossier Parish 2 N Benton	19	0157CST			0	0	1	0	Hail (1.00)
DeSoto Parish Grand Cane	19	0320CST			0	0	2	0	Thunderstorm Winds
Sabine Parish Noble	19	0340CST			0	0	2	0	Hail (0.88) Thunderstorm Winds

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

LOUISIANA Cont'd

Jackson Parish 2 S Jonesboro	19	0400CST			0	0	3	0	Thunderstorm Winds
Natchitoches Parish Northern Portion	19	0415CST			0	0	0	0	Hail (1.00)
Winn Parish Calvin	19	0500CST			0	0	2	0	Thunderstorm Winds Hail (1.00)
Richland Parish Rayville	19	0545CST			0	0	3	0	Thunderstorm Winds
Delhi	19	0600CST			0	0	3	0	Thunderstorm Winds
Caldwell Parish 5 WNW Columbia	19	0600CST			0	0	2	0	Thunderstorm Winds
Madison Parish Waverly	19	0605CST			0	0	4	0	Thunderstorm Winds
East Carroll Parish Transylvania	19	0615CST			0	0	2	0	Thunderstorm Winds
Claiborne Parish Entire Parish	19	0100CST- 0900CST			0	0	3	0	Flash Flood
Union Parish Entire Parish	19	0300CST- 0830CST			0	0	3	0	Flash Flood
Lincoln Parish Entire Parish	19	0300CST- 0830CST			0	0	3	0	Flash Flood
Morehouse Parish Entire Parish	19	0300CST- 0900CST			0	0	3	0	Flash Flood

Severe thunderstorms moved across the northern portion of the state during the night, producing wind damage and 1-inch-size hail in scattered locations. Most of the wind damage was confined to trees, power lines, and outbuildings in rural areas; however, wind gusts blew the windows out of a restaurant in Rayville, and roofs were blown off two houses in Waverly. Roof damage was also reported in Delhi. Four to 5 inches of rain was reported in many areas of northern-central Louisiana during the night of the 18th and early morning of the 19th. Saturated soil conditions contributed to excessive runoff of the rainfall, and many roads in Claiborne, Union, Lincoln, and Morehouse Parishes were closed due to flash flooding. Near Simmsboro, one person had to be rescued after the automobile being driven was swept off the highway by floodwaters.

MAINE

MEZ001-002-005

006-009-012-013

Northeastern,
Northern Interior,
Northwestern,
Central Highlands,
Western Mountains,
Western Foothills,
and Interior Maine

14 Morning-Night	0	0	?	0	Heavy Snow
------------------	---	---	---	---	------------

On the morning of February 14th, a complex low-pressure pattern with two centers had formed over the northeastern United States. One center was in northeastern Pennsylvania and another was situated over eastern West Virginia. The two low-pressure centers moved northeast in tandem during the day of the 14th. This scenario spread heavy snow across Maine. By that evening, one center had moved to upstate New York and the other center had moved to central Massachusetts. There were numerous automobile accidents (some fatalities), many school closures, and many business and social cancellations as a result of this weather.

MEZ005-009

Northwestern,

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

MAINE Cont'd

Western Mountains 19 Morning-Night 0 0 ? 0 Heavy Snow

A large ocean high-pressure system over the north Atlantic circulated warm and very moist air over New England. This humid ocean air was gently lifted over a warm frontal surface as it moved into New England. The surface position of the warm front extended from South Carolina to just south of Cape Cod, and then east out over the ocean. As a result of this pattern, precipitation fell across the entire state with the heavy snow being restricted to the northwestern and the western mountains. There were many minor traffic accidents and some closures, but for the most part, no major problems occurred as a result of this weather event.

MEZ008-012
Penobscot Bay/Mt
Desert, Western
Foothills

22 Afternoon-Evening 0 0 ? 0 High Winds

Franklin County
Sugarloaf USA

22 1345EST 0 0 ? 0 Lightning

A cold front extended from the St. Lawrence River Valley, across the eastern Great Lakes to Oklahoma, on the morning of February 22nd. High winds and thunderstorms occurred in New England as this frontal system rapidly moved east. By the morning of February 23rd, it was well out over the ocean. A large spruce tree was blown over on the Knowltons Corner Road, Farmington. This downed tree, along with many downed limbs, resulted in more than 200 Central Maine Power Company customers without power, in and around the Farmington area. A downed tree came to rest on a power line on Route 166, near the British Canal in Castine, knocking the power out for more than 2 hours in the Castine area. Lightning struck the gondola line and the Bucksaw lift line at Sugarloaf USA, shutting down the gondola and knocking out telephone service for a period of time.

MARYLAND and D.C.

Garrett County 14 1200EST-
15 1200EST 0 0 0 0 Heavy Snow

Strong northwestern winds transporting moisture from the Great Lakes caused about a foot of snow. The strong winds and single-digit temperatures resulted in near-blizzard conditions for about 24 hours. Although there were numerous minor traffic accidents, no serious problems were reported.

MASSACHUSETTS

None reported.

MICHIGAN

MZ018-021-023-025 13 1400EST-
027-031-034-035-
037 15 1000EST 0 0 0 0 Heavy Snow
Southeastern-Lower Wind (G45)
Peninsula

The heaviest snowstorm since February 1988 for southeastern-lower Michigan began as freezing rain during Wednesday afternoon. The freezing rain changed to snow Wednesday evening. Snow continued with strong gusty, northerly winds through the day on Thursday, finally ending late Friday morning. Snowfalls were mostly from 6 to 8 inches over southeastern-lower Michigan. The heavy snow area extended north to the Thumb area, near Saginaw, and westward to near Lansing. The remainder of the state had some light snow Thursday morning as the storm

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

MICHIGAN Cont'd

center deepened to the south and east of Michigan. Snowfalls of 1 to 2 inches were common, outside the heavy snow area across Michigan, Thursday morning. The heaviest snowfalls were in a narrow band that extended from Allen Park, in eastern-central Wayne County, west to Ann Arbor in central Washtenaw County. In this area 10 to 11 inches of snow were common. Besides heavy snow, very cold air began blowing across most of Michigan during the afternoon hours on Thursday. Northerly winds blew at 15 to 30 mph in most areas; the University of Michigan at Ann Arbor reported a wind gust to 52 mph. Temperatures fell from the 20s early Thursday to the teens by late Thursday, and remained in the teens on Friday. This caused the wind-chill to fall to -25° to -35° F. The strong winds blew the snow into 3-foot drifts. The combination of snow and blowing snow caused hundreds of motor vehicle accidents. Many multi-vehicle collisions, involving as many as 14 cars were reported. About a dozen serious injuries and one death occurred as a result of these accidents. Most schools were closed Thursday and Friday across southeastern-lower Michigan.

MZ001-002-005-007
 014-050-051-056-058
 059-060-065-066-069
 070-078-081-082
 Western Lower and
 Northern Lower
 Peninsula

14	1200EST-								
16	0800EST	0	0	0	0				Heavy Snow Wind (G55)

Early Thursday afternoon, heavy lake effect-snow developed across most of western lower Michigan (within 50 miles of Lake Michigan), and most of the Upper Peninsula. Over the Upper Peninsula, the heaviest snow fell in a 20-mile-wide area that extended from western-central Luce County on the eastern side, westward across the Upper Peninsula, to Ontonagon County. From there the heaviest snow area turned southwest across western Gogebic County, within 10 miles of Lake Superior. Due to the strong winds, heavy snow fell across most of the Upper Peninsula. Only Iron and Dickinson counties escaped most of the snow. There, the primary effects of this storm were very low wind-chills and some blowing and drifting snow. This event resulted from Arctic air moving southward across Lake Superior and Lake Michigan, behind the same storm that caused the heavy snow over southeastern-lower Michigan. The lake-effect heavy snow ended over the Upper Peninsula Friday evening, but did not end over southwestern-lower Michigan until 0800 EST Saturday morning. Snowfall in most of these areas ranged from 8 to 12 inches; however, Ironwood in western Gogebic County reported 15.7 inches. K. I. Sawyer Air Force Base in Marquette County reported 23 inches; this was the maximum snowfall for the state during this storm. The maximum snowfall for the Lower Peninsula was 20 inches in northern Muskegon County. Besides the heavy snow, temperatures fell to near-zero on northerly winds of 20 to 35 mph, with gusts near 50 mph. This caused wind-chills of -30° to -40° F over lower Michigan, and -35° to -55° over the Upper Peninsula. Presque Isle Lighthouse reported winds of 47 mph, with gusts to 63 mph around 2045 EST on Friday. The strong winds caused considerable drifting with many areas reporting drifts of 3 to 5 feet. Schools were closed on Friday across these areas due to the frequently near-zero visibility, very low wind-chills, heavy snow, and deep drifts. Many accidents were reported, with most of them minor. In spite of the intense cold, snow, and strong winds there were no reports of personal injury due only to the storm.

MZ006-034-036-037
 044-048-050-064-067
 068-070-083
 Thumb and Northern
 Lower Peninsula
 Upper Peninsula

23	1500EST-								
24	2400EST	0	0	0	0				Heavy Snow

Snow began falling over the western Upper Peninsula during Saturday afternoon (23rd), then spread to northern-lower Michigan by 2100 EST Saturday evening. The heaviest snow fell over the Upper Peninsula until early Sunday morning (February 24th, 0100 EST). Light snow ended over most of the Upper Peninsula by 1000 EST Sunday morning. Over the Keweenaw Peninsula, the snow continued until 1500 EST Sunday. Over northern lower Michigan, the heaviest snows fell during the daylight hours of Sunday (February 25th), then tapered to light snow during Sunday evening. The snow ended over the Lower Peninsula by midnight Sunday. Snowfalls ranged from 4 to 7 inches in most areas; however, Cass City, in northern Tuscola

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

MICHIGAN Cont'd

County (Thumb area), reported 8 inches. Kalkaska, in northwestern-lower Michigan, also reported 8 inches of snow from this storm. This storm did not have strong winds; as a result, no reports of motor vehicle accidents were attributed to this storm.

MZ002-007-052-054
060-061
 Northwestern Lower
 Southwestern Lower
 Peninsula

26	1400EST-								
27	2000EST			0	0	0	0		Heavy Snow

Lake-effect heavy snow caused areas of heavy snow across parts of western-lower Michigan. Over Charlevoix and southern Emmet counties, 6 to 11 inches were reported; Petoskey reported the 11-inch snowfall. Over western Manistee and most of Wexford County, 8 to 12 inches fell. Snowfalls of 4 to 6 inches were reported in western Van Buren and most of Cass County. Over the rest of western-lower Michigan and southern lower, outside of the heavy snow areas, 1 to 2 inches of snow was common. The wind during this event was generally under 10 mph. As a result, only a few minor traffic accidents were reported due to the snow. Those were over southern-lower Michigan; not in the heavy snow areas of northwestern lower Michigan.

MINNESOTA

MNZ004-011-014-
017-019 Extreme
 Northeastern
 Central-Southern
 Minnesota

18	0200CST-								
19	1400CST			0	0	0	0		Heavy Snow

An area of low pressure moved from northern Missouri on the morning of the 18th to northern Illinois by evening. Snow began to fall during the early morning of the 18th over southwestern Minnesota, and gradually enveloped most of the state by late evening. Most of the state had accumulations of at least 4 inches. Travel became treacherous, with at least 250 spinouts or accidents, across the Twin Cities metropolitan area. A 6-mile stretch of Interstate 90, from Fairmont to Welcome, was closed for a time because of heavy snow and near-zero visibilities. One to 3 inches of snow fell over southeastern sections, along with a mixture of sleet and freezing rain, glazing roadways and causing hazardous driving conditions. At last five fatalities were attributed to icy roadways.

Heavy snow fell over roughly three areas. One band about 30-miles wide fell in southern-central, from the Minnesota/Iowa border near Fairmont, to near New Ulm. Fairmont reported 8 inches.

A 70-mile-wide band of 6 inches or more was deposited from southwestern into central Minnesota. The northern extent was located from Ortonville to Mora, with the southern boundary from Tyler to near Zimmerman.

A 20-mile-wide band of 8 inches or more was located from near Marshall to Montivideo and Mora, with Montivideo reporting 9 inches.

Finally, as the storm lifted into the Great Lakes on the 19th, the heavy snow moved across the northeast. A 50-mile-wide band of snow 6 inches or more, was deposited from Chisholm into the Boundary Waters Canoe Area. Eight inches fell at Tower.

MNZ002-005
 Extreme Northern
 Minnesota

21	0400CST-								
	1700CST			0	0	0	0		Heavy Snow

A fast-moving storm system tracked along the Canadian border dropping a narrow band of heavy snow. Six inches or more fell north of a line from Roseau to Tofte. Eight inches or more fell from Warroad to Baudette to west of International Falls. Warroad reported the heaviest amount with an even 12 inches.

MNZ001-006-012-
014-016
 Northwestern-

22	2300CST-								
23	2200CST			0	0	0	0		Heavy Snow

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

MINNESOTA Cont'd

Central-East-Central Minnesota

A storm system tracked across northern Iowa and into the Great Lakes during the period. Travel along a small stretch of Interstate 94 near Fergus Falls was halted, as a result of numerous accidents during the morning of the 22nd.

The axis of 6-inch-plus snow totals had a southern boundary from near Moorhead, to just north of Fergus Falls southeast across St. Cloud, to the northern suburbs of the Twin Cities, from south of Anoka to near Stillwater. The northern end of this area was located from south of Grand Forks, North Dakota to Walker, and south of Aitkin.

A 50-mile swath of maximum totals of 8 to 10 inches covered the communities of Wadena, Brainerd, Long Prairie, Milaca, Hinkley, and Pine City.

A 20-mile-wide core of 10-inches plus occurred from Motley, Pierz, Mora, and to west of Pine City. Little Falls reported the largest snowfall total with an even 12 inches.

MISSISSIPPI

Marshall County Louisburg

13	2000CST	0	0	3	0	High Winds
----	---------	---	---	---	---	------------

High winds blew the porch off of a store.

Lowndes County Columbus Air Force Base (CBM)

13	2135CST	0	0	0	0	Hail (0.75)
----	---------	---	---	---	---	-------------

Winston County Louisville

14	1255CST	0	0	3	0	High Winds
----	---------	---	---	---	---	------------

High winds blew down a large tree which smashed a parked van; some power lines were also downed by the same tree.

Tippah County Blue Mountain Chickasaw, Itawamba Lafayette, Lee, Monroe, Pontotoc, Tippah, Tishomingo, and Union Counties

17	1745CST	0	0	0	0	Hail (1.25)
18	1930CST- 2300CST	0	0	5	0	Flash Flooding

Heavy excessive rainfall produced flash flooding across much of northeastern Mississippi. Numerous roads and streets were flooded and closed. Many small creeks and streams overflowed their banks. High water washed out a bridge in Pontotoc County and another in Lafayette County.

Bolivar, Carroll, Grenada, LeFlore, Quitman, Sunflower, Tallahatchie, Washington and Yalobusha Counties

19	0500CST- 0830CST	0	0	5	0	Flash Flooding
----	---------------------	---	---	---	---	----------------

Heavy rain on February 18th and early on February 19th, caused flash flooding in these Mississippi Delta counties. In excess of 8 inches of rain fell across the area. Due to the flat terrain in this portion of Mississippi, water accumulates and creates a ponding-effect with nowhere to drain. Throughout these counties there was widespread flooding of streets and roads. Numerous cars were left stranded along many roadways. A bridge was washed out in Sunflower County, and 90 percent of the streets and roads were flooded. High waters affected some homes in several towns throughout these counties. In Bolivar County, up to 100 people were evacuated from their homes.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

MISSISSIPPI Cont'd

Adams County Cranfield	19 0530CST	0	0	4	0	High Winds
<p>The combination of high winds and saturated ground allowed a tree to fall on a mobile home and two power lines.</p>						
Calhoun County	19 0700CST-1000CST	0	0	4	0	Flash Flooding
<p>A few roads were made impassable because of widespread lowland flooding throughout the county.</p>						
Yazoo County Myrlesville	19 0735CST	0	0	4	0	Thunderstorm Winds
<p>A mobile home was damaged; a skylight was blown off a house; and an outbuilding was damaged.</p>						
Winston County 2 W Louisville	19 0945CST	0	0	4	0	Thunderstorm Winds
<p>Several trees were blown down; one of them falling on a house.</p>						
Neshoba County Philadelphia	19 0945CST	0	0	4	0	Thunderstorm Winds
<p>Thirty feet of a metal awning (over a covered walkway at an elementary school) was blown away.</p>						
Alcorn, Bolivar, Calhoun, Chickasaw, Clay, Coahoma, Itawamba, Kemper, Lauderdale, Lee, Lowndes, Monroe, Neshoba, Newton, Noxubee, Panola, Pontotoc, Prentiss, Quitman, Sunflower, Tallahatchie, Tishomingo, Union, Washington, Winston, and Yalobusha Counties	19 23	0	0	7	0	Flooding
<p>Heavy rainfall of 6 to 12 inches fell over portions of northern and east-central Mississippi from the 17th through the 22nd. Nearly every creek, stream, and river in that portion of the state reached bankfull and flooded. Due to the flat land and poor drainage in the Delta region of northwestern Mississippi, the water created a ponding effect. Over 1.2 million acres of land were estimated to be under water. Numerous roads and bridges were damaged by the floodwaters; over 300 homes were affected. Damage estimates on the homes were difficult to assess because some had just minor damage and some major. In all, government agencies estimated a total of over \$5.2 million in damage. A listing of homes with flood damage in each county follows:</p>						

Boliver	26	Grenada	14	Tallahatchie	28
Calhoun	25	Lowndes	100	Washington	49
Clay	30	Quitman	30		
Coahoma	20	Sunflower	45		

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

MISSISSIPPI Cont'd

Tishomingo County
Burnsville

20 1530CST 2 0 0 0 Flooding

Three teenage boys launched their boat in the floodwaters along Little Yellow Creek; the boat was caught in the swift water and capsized. One of the boys was rescued, the other two drowned. (M160, M170)

Attala County
Ethel

22 1120CST 0 0 0 0 Hail (0.88)

MISSOURI

Cape Girardeau County
Delta
Scott County
Chaffee

13 1644CST-1652CST 5 30 0 0 5 0 Tornado (F1)

A tornado touched down in Delta and crossed into Scott County. The tornado was on the ground from Delta to Chaffee, downing trees, fences, and telephone poles. It also tore off several roofs. This tornado was observed by police and by FAA Air Traffic Control personnel.

Scott County
Kelso

13 1706CST 0 0 0 0 Hail (1.75)

Golf ball-size hail accumulated to 8 inches deep in some locations.

McDonald County
Goodman

18 0055CST 0 0 0 0 Hail (1.50)

Hail to 1.50-inch diameter was reported near Goodman.

Newton County

18 0115CST 0 0 0 0 Hail (1.00)

One-inch diameter hail was reported in eastern Newton County.

Barry County
Pioneer

18 0120CST 0 0 0 0 Hail (1.00)

Hail to 1-inch diameter was reported in Pioneer.

MONTANA

MTZ007

19 2040MST 0 0 0 0 High Winds (G61)

MTZ007

20 0721CST 0 0 0 0 High Winds (G58)

MTZ003-005-006

28 0700MST-1100MST 1 0 5 0 Blizzard

A strong Arctic front moved southward across central Montana, causing very low visibilities in blowing and falling snow. A 20-vehicle pileup on Interstate 15, south of Cascade near the Hardy exit, resulted in one death. Visibility was reduced to near zero around 0900 MST; a tractor-semitrailer, unable to see or stop, plowed into the back of a motorhome resulting in the death of one person. (M690)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

NEBRASKA

Panhandle-North-Central-Nebraska NEZ001-003-007-008	17	1900CST-			0	0	?	?	Heavy Snow
	18	1200CST							

Six to 8 inches of snow fell in northwestern and central Nebraska.

NEVADA

NVZ002 Central Sierra Eastern Slopes	27	2005PST			0	0	0	0	Blizzard
--	----	---------	--	--	---	---	---	---	----------

The California Department of Transportation (CALTRANS) in Bishop, CA reported blizzard conditions on U.S. Highway 395 through much of southern Mono County. Snowplow operators reported being unable to see roadside plow markers due to very low visibilities.

NEW HAMPSHIRE

NHZ001-002-003-004-005-006 Northern Portion, White Mountains, Western and East-Central Monadnock, and Southern Interior	14	Morning-Night			0	0	?	0	Heavy Snow
---	----	---------------	--	--	---	---	---	---	------------

On the morning of February 14th, a complex low-pressure pattern with two centers had formed over the northeastern United States. One center was in northeastern Pennsylvania, and another was situated over eastern West Virginia. The two low-pressure centers moved northeast in tandem during the day of the 14th. This scenario spread heavy snow across New Hampshire. By that evening one center had moved to upstate New York and the other center had moved to central Massachusetts. There were numerous automobile accidents (some fatalities), many school closures, and many businesses and social cancellations as a result of this weather.

NHZ002-006 White Mountains, Southern Interior	22	Afternoon-Evening			0	0	?	0	High Winds
---	----	-------------------	--	--	---	---	---	---	------------

A cold front extended from the St. Lawrence River Valley, across the eastern Great Lakes to Oklahoma, on the morning of February 22nd. High winds and thunderstorms occurred in New England as this frontal system rapidly moved east. By the morning of February 23rd, it was well over the ocean. A large tree was blown down on Hayward Street in Manchester. This downed tree, along with downed limbs, caused many power outages, with 1,000 Manchester-area residents being without power. High winds toppled trees onto power lines, which resulted in power outages for 275 residences in the Forest Lake area of Whitefield from 0830 to 1030 EST. Several small scattered outages also occurred in the North Country area.

NEW JERSEY, Northern

None reported.

NEW JERSEY, Southern

None reported.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

NEW MEXICO

NMZ002 Taos County 13 1600MST-2030MST 0 0 0 0 **Heavy Snow**

A southeastward-moving upper-trough brushed the northeastern part of the state, producing up to 6 inches of snow in a 4- to 5-hour period.

NMZ002-008-012 Bernalillo, Otero, and Lincoln Counties 17 0100MST-19 0500MST 0 0 0 0 **Heavy Snow**

The main snow period for February occurred in the middle of the month, from late on the 16th into the 19th. During this time, a series of upper-level weather systems moved across the state, as a strong upper-ridge built into the Gulf of Alaska which resulted in a deep upper-trough over the southern Rockies and Four Corners states.

The main snows occurred over the Sandia/Manzano and the south-central mountains where 16 to 26 inches of snow fell from the 16th into the 19th. Sandia Peak Ski Area (Bernalillo County) received a total of 16 inches of snow; the town of Cloudcroft (Otero County) 17 inches; and Ski Apache (Lincoln County) 26 inches. Other ski areas in the north received totals of 2 to 7 inches.

The last system to affect the state occurred very late on the last day of the month, continued into the next month, and will be covered in the March Storm Data.

NEW YORK, Central

Area-Wide 02 PM-05 PM 0 0 0 ? **Record Heat**

Many stations across eastern New York set date-record high temperatures during the period. Farmers are unsure of the effect this unusual heat wave will have on the agricultural community.

Area-Wide 13 2300EST-14 PM 3 27 5 0 **Snow**

Snow fell over all of eastern New York with amounts ranging from about 3 inches in extreme-southern portions, to nearly 2 feet in the Adirondacks. Toward the end of the storm, some mixed rain and snow fell south of the Mohawk River. Three persons died in automobile accidents during the storm. (F44V, F50V, M36V)

NYZ006-009-019 Susquehanna Region Western and Eastern Mohawk Valley 18 1800EST-2100EST 0 19 5 0 **Freezing Rain**

Freezing rain was reported to be the cause of several motor-vehicle accidents in central New York. A section of Interstate 81 between Marathon and Polkville, in Cortland County, was closed due to traffic accidents. Upon reopening, the interstate was closed again just 7 minutes later, due to additional traffic mishaps.

NEW YORK, Coastal

None reported.

NEW YORK, Western

NYZ021-004 Orleans and Oswego Counties 11 1000EST 0 0 4 0 **Heavy Snow**

NYZ002 Wayne County 11 1100EST 0 0 4 0 **Heavy Snow**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

NEW YORK, Western Cont'd

NYZ005 Onondaga County	11	1200EST			0	0	4	0	Heavy Snow
A northwesterly flow of very cold air produced lake-effect snow squalls to the lee of Lake Ontario. A nearly-stationary squall set up along the southern shore of the lake. Specific reports were as follows: Lyndonville-Orleans County, 3 to 5 inches; Fulton-Oswego County, 7 to 9 inches; Wolcott-Wayne County, 16 inches; and Syracuse-Onondaga County, 12 inches.									
NYZ021 Niagara County	15	1020EST			0	0	4	0	Heavy Snow
NYZ001-002-004-005-022 Erie, Monroe, Oswego, Onondaga, and Chautauqua Counties	15	1300EST			0	0	4	0	Heavy Snow
A deep, low-pressure system north of New York State brought a northwesterly flow of Arctic air to the area, producing lake-effect snow squalls southeast of Lakes Erie and Ontario. The heavy snow reduced visibilities and was blamed for many automobile accidents. Reports included: Niagara County-Lockport, 6 to 8 inches, Olcott, 9 inches; Erie County-Orchard Park, 3 to 6 inches; Monroe County-Brockport, 9 inches; Oswego County-Pulaski, 4 to 6 inches; Onondaga County-Baldwinsville, 4 to 6 inches; Chautauqua County-Mayville, 13 inches.									
NYZ004 Oswego County	27	0900EST			0	0	4	0	Heavy Snow
A brisk westerly flow of Arctic air produced a band of lake-effect snow off Lake Ontario. A report of 8 inches of snow was received from Oswego before the band shifted across northern Oswego County.									

NORTH CAROLINA

Rowan County Landis	12	0330EST			0	0	5	0	Thunderstorm Winds
A severe thunderstorm uprooted trees, damaged carports, and blew over a chimney and numerous small farm buildings in the Landis area.									
NCZ009 Northern North Carolina	17	2000EST			0	0	0	0	Heavy Snow
A winter storm produced heavy snow across the northern mountains. Four to 6 inches of snow was reported at Burnsville, Boone, and Blowing Rock.									

NORTH DAKOTA

NDZ016-017 Extreme Eastern North Dakota	23	0200CST-1300CST			0	0	0	0	Heavy Snow
Six to 8 inches of snow fell in a narrow section along the North Dakota and Minnesota border. This heavy snow area extended from Fargo, northward to Grand Forks.									

OHIO

Erie County Milan	05	0330EST-0430EST			0	0	0	0	Flood
Localized heavy rain pushed the Huron River to 14.2 feet at 0400 EST. This was only two-tenths of a foot above flood stage.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

OHIO Cont'd

Pike County
Piketon 07 1100EST-
 09 2100EST 0 0 4 0 **Flood**

Localized heavy rain pushed the Scioto River above flood stage, causing some minor damage to farmland near the river. The river crested at 19.1 feet at 0200 EST on the 8th. This was 3.1 feet above flood stage.

OHZ002-004
Central Lakeshore 14 1200EST-
Northeastern 15 2130EST 0 0 5 0 **Heavy Snow**
Lakeshore
Northeastern
Inland

Heavy snow moved into northeastern Ohio during the morning of the 14th, with accumulations reaching 6 inches over northeastern Ohio at 0200 EST on the 15th. The heavy snow ended during the evening of the 15th, with total accumulations ranging from 6 inches to nearly 2 feet. The largest amounts were in the higher elevations of southeastern Cuyahoga and southwestern Geauga counties.

Erie County
Milan 19 1300EST-
 20 1400EST 0 0 3 0 **Flood**

The Huron River went into flood for the second time during February. It crested at 15.9 feet at 2000 EST on the 19th. This was nearly 2 feet above the 14-foot flood stage. Minor damage occurred.

Williams County
Stryker 21 1900EST-
 22 2400EST 0 0 0 0 **Flood**

The Tiffin River went into flood and crested at 11.2 feet at 0400 EST on the 22nd. This was just above the 11-foot flood stage.

OHZ003
Northeastern 26 1200EST-
Lakeshore 27 0600EST 0 0 4 0 **Lake-Effect Snow**

Lake-effect snow developed over northeastern Ohio during the morning of the 26th. Heavy snow developed during the afternoon, and depths reached 6 inches over parts of Geauga County by 0300 EST on the 27th. Final snow depths were from 6 to 8 inches in Geauga County.

OKLAHOMA

Tulsa, Rogers,
Mayes, and Ottawa
Counties 24 1900CST-
From Tulsa to 2400CST 0 0 0 0 **Heavy Snow**
Kansas Line Near
Baxter Springs

A snow storm dumped an accumulation ranging from 1.50 inches of snow in Tulsa, to 6 inches in Miami in Ottawa County. Several automobile accidents occurred when motorists slid off snow-packed roads into ditches. No injuries were reported in these accidents.

Sequoyah County
2 N Sallisaw 15 0200CST 0 0 3 0 **High Winds**

Strong winds tore off part of the roof of a storage building.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

OREGON

ORZ001 **03 1800PST-**
Northwestern **04 1200PST-** **0 0 ? 0 High Winds**
Oregon
Southwestern
Washington

A strong winter-storm center passed very close to the northern coastal region and produced strong wind speeds between the 2nd and the 4th. The strongest winds occurred toward the end of the stormy period. After 1400 PST on the 3rd, weather spotters reported the following peak gusts: Pacific City (Tillamook County) 55 mph; Netarts (Tillamook County) 55 mph; Tillamook (Tillamook County) 60 mph; and Seaside (Clatsop County) 64 mph. The gusty weather continued into the morning of the 4th and included: Arch Cape (Clatsop County) 55 mph; Cape Disappointment (Pacific County, Washington) 60 mph; and just before speeds decreased, Ocean Park (Pacific County, Washington) had a gust to 80 mph.

ORZ004-005 **24-**
Western Oregon **28** **0 0 0 0 Extreme Warmth**

A strong and slow-moving high-pressure area over Oregon the last week of the month, created record-warm sunshine for several days. The maximum temperature at Grants Pass (Josephine County) on the 24th was 72°F, which broke by 1° the record that stood since 1920. On the 25th, Salem (Marion County) reached 71°F (old record 65°F in 1968). The warmest reading was on the 26th at Hazel Dell (Clark County, Washington), when the mercury hit 73°F. Portland re-established the record for monthly-average temperature (48.8°F), 5.6°F above normal.

PENNSYLVANIA, Eastern

None reported.

PENNSYLVANIA, Western

Erie County
4 E Erie **11 1520EST** **4 7 5 0 Winter Weather**

There was a pile-up of 7 trucks and 15 cars on Interstate 90 as "whiteout," and blowing snow reduced visibilities. Slippery road conditions also contributed directly to the accident. (M60V, M68V, F60V, F90V)

PAZ002 **15 0730EST** **0 0 0 0 Heavy Snow**
Northwestern
Portion

Six to 7 inches of snow fell at Corry, Lowville, Edinboro, and Wattsburg in Erie County. Conneautville and Meadville in Crawford County also reported the same amounts.

PAZ003 **15 0730EST** **0 0 0 0 Heavy Snow**
Western

Eight to 10 inches of snow fell in northern Butler County.

PAZ005 **15 0730EST** **0 0 0 0 Heavy Snow**
Laurel Mountains

Edensburg in Cambria County received 6 inches of snow. Somerset and Ursina received 6 and 7 inches, respectively.

PAZ003 **15 1130EST** **0 0 0 0 Heavy Snow**
Western
Portion

The northern half of Armstrong County received 7 to 8 inches of snow.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

RHODE ISLAND

RIZ002
Block Island
Off Southern
Rhode Island

15 2114EST-2140EST
0 0 0 0 **High Winds**

Gusty west to northwest winds reached 63 knots (72 mph) at Block Island during a snow squall between 2114 and 2140 EST.

SOUTH CAROLINA

Sumter County
Shaw Air
Force Base

07 1900EST
0 0 ? 0 **Hail (unknown)**

Small hail was reported.

Oconee County
8 N Seneca

14 0130EST
0 0 2 0 **Thunderstorm Winds (G52)**

Pickens County
2 E Liberty to
3 NE Liberty
2 E Liberty to
3 NE Liberty

14 0200EST 2 150 0 0 4 0 **Tornado (F1)**

14 0200EST
0 0 ? ? **Hail (1.00)**

A tornado, moving from southwest to northeast, developed from the steady-state severe thunderstorm described below. At the point of touchdown the tornado was 200-yards wide. The character of the damage path suggests that the tornado never developed to the ground. Numerous trees were uprooted or snapped off, and some trees and limbs fell on homes and mobile homes. Many small utility buildings were damaged or destroyed. The tornado was briefly accompanied by hail.

Spartanburg County
Spartanburg

14 0230EST
0 0 2 0 **Thunderstorm Winds**

A steady-state severe thunderstorm moving from west-northwest to east-southeast moved from eastern Tennessee and the mountains of northern Georgia into northwestern South Carolina during the early-morning hours. Although the storm lost some of its punch because of its encounter with the mountains, it regained much of its strength for a period as it crossed northwestern South Carolina. Despite marginal surface temperatures for severe weather (low-to mid-50s), low-level shear was enormous. Power outages were reported across the western portions of Greenville County, as gusts to near 50 mph occurred. There was no significant damage, as the outages happened when power lines were blown together. A couple of plate glass windows were blown out in the Hillcrest Shopping Center in Spartanburg.

SCZ002
Foothills

16 Unknown
1 0 0 0 **Cold**

A 41-year-old man died of cold exposure in Union County. (M41?)

SCZ003
Eastern Piedmont

25 Unknown
1 0 0 0 **Cold**

A 77-year-old woman died of hypothermia in Fairfield County. (F77?)

SOUTH DAKOTA

Entire State of
South Dakota

17 0200CST-
18 1600CST
0 ? ? 0 **Heavy Snow Storm**

On February 17th, a major snow storm dumped huge amounts of snow on most of the following parts of the state: the Black Hills, southwest, central, east-central, and northeast. At the end

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

SOUTH DAKOTA Cont'd

of the storm, parts of the Black Hills were digging out of up to 2 feet of snow while the rest of the affected area had between 8 and 15 inches of snow. The heavy snow caused most of Interstate 90 west of the Missouri River to close, as well as many other highways in the central part of the state. Many cars and trucks skidded off the highways, causing many minor injuries. The only serious injury was a man who rolled his car over after losing control. He was traveling on Interstate 90, 5 miles east of Belvidere in Jackson County, when the mishap occurred.

TENNESSEE

Area-Wide A warm front followed by a swiftly-moving cold front passed through Tennessee on the 13th, and produced quite a bit of hail and damaging thunderstorm winds.

Lauderdale County
Ripley and Other Locations 13 1815CST 0 0 2 0 Hail (1.00)

Tipton County
Covington Brighton 13 1820CST 0 0 2 0 Hail (0.75)

Haywood County
3 S Brownsville 13 1850CST 0 0 1 0 Hail (0.75)

Madison County
Jackson 13 1925CST 0 0 2 0 Hail (1.25)

Carroll County 13 1935CST 0 0 2 0 Hail (1.75)

Benton County
Camden 13 1940CST 0 0 2 0 Hail (1.00)

Coffee County
Manchester 13 2100CST 0 0 4 0 Thunderstorm Winds

Thunderstorm winds blew part of a roof off a motel and the debris damaged some cars; trees and power lines were blown down as well. A mobile home was destroyed near Manchester.

Franklin County
Winchester 13 2105CST 0 0 4 0 Thunderstorm Winds

Part of a roof was blown from a tire company store, several homes were damaged, and trees were downed by thunderstorm winds.

Grundy County
Pelham 13 2135CST 0 0 5 0 Thunderstorm Winds

Thunderstorm winds ripped off part of the roof, caved in a corner wall, and broke the windows of a convenience store.

Lincoln County
4 S Fayetteville 13 2150CST 0 0 1 0 Hail (1.75)

Marion County 13 2159CST 0 0 2 0 Thunderstorm Winds

Trees and power lines were downed by thunderstorm winds in Witwell.

Sequatchie County 13 2222CST 0 0 1 0 Hail (0.75)

Hamilton County 13 2225CST 0 0 1 0 Hail (0.88)

Blount County 13 2230CST 0 0 4 0 Thunderstorm Winds

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

TENNESSEE Cont'd

Trees and power lines were downed by thunderstorm winds in several parts of Blount County. Near Greenback the roof of a large storage building was ripped off, posts were twisted and broken, and debris was blown 400 feet away.

Polk County	13	2258CST			0	0	1	0	Hail (0.75)
Bradley County	13	2310CST			0	0	4	0	Thunderstorm Winds

Trees and power lines were downed by thunderstorm winds in several locations around Bradley County. In Cleveland, the roof of a manufacturing building was ripped off by thunderstorm winds.

Warren County	13	2345CST			0	0	4	0	Thunderstorm Winds
---------------	----	---------	--	--	---	---	---	---	--------------------

Thunderstorm winds ripped a mobile home from its foundation in the Pleasant Road Community.

16-20

Heavy rain fell on and off from the 16th through the 20th and led to widespread flooding, especially in middle and southeastern Tennessee. A warm front on the 18th, followed by a slow-moving cold front on the 19th and 20th, brought most of the heavy rain. Rainfall totals were 6 to 9 inches in many locations.

Rhea County	18	0430CST			0	0	2	0	Flash Floods
Bledsoe County	18	0430CST			0	0	2	0	Flash Floods
Lawrence County	18	0700CST			0	0	0	0	Minor Flooding
Coffee County	18	0700CST			0	0	0	0	Minor Flooding
Rutherford County	18	0730CST			0	0	0	0	Minor Flooding
Anderson County	18	0800CST			0	0	0	0	Minor Flooding

From 1.50 to 4 inches of rain fell over much of Tennessee from Saturday night to Monday morning, causing many flooded roadways and covering some bridges. In Spring City of Rhea County, some homes and businesses had to be evacuated as the Piney Creek overflowed its banks for the second time in less than 2 months.

Marshall County	19	0705CST			0	0	3	0	Flash Flood
Bedford County	19	0730CST			0	0	3	0	Flash Flood
Maury County	19	0730CST			0	0	3	0	Flash Flood
Giles County	19	0730CST			0	0	3	0	Flash Flood
Madison County	19	0800CST			0	0	0	0	Minor Flooding
Rutherford County	19	0830CST			0	0	3	0	Flash Flood
Hamilton County	19	0830CST			0	0	2	0	Flooding
McMinn County	19	0900CST			0	0	0	0	Minor Flooding
Meigs County	19	0900CST			0	0	0	0	Minor Flooding
Wayne County	19	0945CST			0	0	3	0	Flash Flood
Lawrence County	19	0945CST			0	0	2	0	Flash Flood
Lewis County	19	0945CST			0	0	2	0	Flash Flood
Lincoln County	19	1100CST			0	0	2	0	Flash Flood
Moore County	19	1100CST			0	0	2	0	Flash Flood
Marshall County	19	1400CST			0	0	2	0	Flash Flood
Franklin County	19	1430CST			0	0	0	0	Minor Flooding
Benton County	19	1500CST			0	0	4	0	Flood
Hardin County	19	1500CST			0	0	3	0	Flood

Heavy rain continued Monday and Tuesday over middle and eastern Tennessee, and continued to cause flash flooding and flooding. All streams and creeks in the area were over bankfull and led to river flooding as well. In middle and eastern sections of the state numerous roads were flooded and closed, with schools also closed in many counties. The South Chickamauga Creek was 3 feet above bankfull in Chattanooga. Roaring Creek near Graysville and Piney Creek in Spring City flooded houses and mobile homes. The Duck River overflowed its banks and more

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

TENNESSEE Cont'd

than 120 people were evacuated from their homes in Maury and Marshall counties. The Tennessee River flooded and among the most affected areas were Benton and Hardin counties of western Tennessee. In Hardin County, approximately 20 families were forced from their homes by floodwaters.

TEXAS, Northern

Harrison County										
2 N Marshall	17	2352CST								Hail (1.00)
9 N Waskom	18	0018CST								Thunderstorm Winds

A downburst destroyed a mobile home and damaged the roof of two homes. Two persons were critically injured as the mobile home lifted and rolled approximately 100 yards.

Marion County										
Smithland	18	0010CST								Hail (1.00)
Shelby County										
Stockman	18	0420CST								Hail (1.00)
Smith County										
Bullard	18	1148CST								Hail (0.75)
Cherokee County										
Jacksonville	18	1230CST								Hail (0.75)
Anderson County										
Montalba	18	1245CST								Hail (1.25)
Gregg County										
Longview	18	1245CST								Hail (0.88)
Easton	18	1245CST								Hail (1.00)
Rusk County										
Tatum	18	1250CST								Hail (1.75)
Harrison County										
2 S Hallsville	18	1253CST								Hail (1.75)
Marshall	18	1315CST								Hail (1.75)
Elysian Fields	18	1323CST				4				Thunderstorm Winds

Strong winds destroyed several windows and blew an air conditioning unit off the roof of a school.

Panola County										
1 NW Grand Bluff	18	1300CST								Hail (1.75)
8 NW Beckville	18	1310CST								Hail (1.75)
						3				Thunderstorm Winds
Karnack	18	1325CST				2				Thunderstorm Winds
Latex	18	1335CST				0				Hail (1.75)
										Funnel Cloud

A downburst downed several trees 8 miles northwest of Beckville. Strong winds destroyed two mobile homes and a vehicle at Karnack; two persons inside the mobile home were injured.

Panola County										
Harrison County										
5 E Elysian Fields	18	1330CST-1335CST	4	300	0	0	5	0		Tornado (F2)
5 S Waskom										

A tornado touched down 5 miles east of Elysian Field in Panola County at 1330 CST and moved northeast. It entered Harrison County about 2 miles north of Panola. The last evidence of damage was 5 miles south of Waskom. Several hundred trees were uprooted or snapped in the forested area along the tornado track.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

TEXAS, Northern Cont'd

Hopkins County								
Shirley	18	1925CST			0	0	0	Hail (0.75)
Saltillo	18	2015CST			0	0	0	Hail (1.75)
Franklin County								
3 W Mount Vernon	18	2015CST			0	0	0	Hail (1.00)
Morris County								
Omaha								
Cass County								
10 NW Hughes Springs	18	2055CST			0	0	0	Hail (1.75)
Bowie County								
5 W Maud	18	2115CST			0	0	0	Hail (1.00)
Bell County								
4 N Belton	18	2125CST			0	0	0	Hail (0.75)
Henderson County								
Malakoff	18	2230CST			0	0	0	Hail (1.75)
5 WSW Athens	18	2245CST			0	0	0	Hail (1.75)
Navarro County								
Winkler	18	2245CST			0	0	0	Thunderstorm Winds (G52)
Smith County								
2 NW Tyler	19	0007CST			0	0	3	Thunderstorm Winds

Strong winds blew several large tree branches down over power lines.

Gregg County								
8 N Longview	19	0015CST			0	0	0	Hail (1.75)
Upshur County								
10 NE Gilmer	19	0024CST			0	0	0	Hail (1.75)
Morris County								
Lone Star	19	0030CST			0	0	0	Hail (0.75)
Anderson County								
Elkhart	19	0030CST			0	0	0	Hail (0.75) Thunderstorm Winds (G52)
Cass County								
5 NW Avinger	19	0040CST			0	0	0	Hail (1.75)
Linden	19	0052CST			0	0	0	Hail (1.00)
Harrison County								
Harleton	19	0115CST			0	0	0	Hail (1.75)
1 E Harleton	19	0115CST			0	0	4	Thunderstorm Winds
2 SW Waskom	19	0140CST			0	0	0	Hail (0.75)

A downburst downed numerous trees 1 mile east of Harleton.

Marion County								
2 S Smithland	19	0125CST			0	0	0	Hail (0.88)
					0	0	3	Thunderstorm Winds

A downburst downed several trees.

Angelina County								
3 NW Pollok	19	0130CST			0	0	3	Thunderstorm Winds
Lufkin	19	0201CST			0	0	3	Thunderstorm Winds (G52)

A downburst downed several trees 3 miles northwest of Pollok. Strong winds estimated at 60 mph uprooted several trees and blew down utility poles in Lufkin.

Nacogdoches County								
1 S Etoile	19	0230CST			0	0	3	Thunderstorm Winds (G75)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

TEXAS, Northern Cont'd

Nacogdoches 19 0240CST 0 0 3 0 **Thunderstorm Winds**

Strong winds measured at 87 mph uprooted several trees 1 mile south of Etoile, and blew a tree over a power line in Nacogdoches.

San Augustine County

Denning to 19 0245CST-
3 NW San 0250CST 5 300 0 0 6 0 **Tornado (F3)**

Augustine 2 NW San
Augustine to 19 0255CST-
3 E Bland Lake 0300CST 5 200 0 0 5 0 **Tornado (F2)**

A tornado touched down near Denning, destroying two chicken houses valued at \$180,000. The tornado moved northeastward, damaged one airplane hangar and destroyed four airplanes at the San Augustine Airport (3 miles northwest of San Augustine); where damage was estimated at \$400,000. A second tornado touched down 2 miles northwest of San Augustine and damaged several homes, two barns, and numerous outbuildings before lifting 3 miles east of Bland Lake. Several hundred trees were either uprooted or snapped, along each individual tornado track.

Shelby County

Patroon 19 0255CST 0 0 5 0 **Thunderstorm Winds**

Goober Hill 19 0300CST 0 1 5 0 **Thunderstorm Winds**

Strong winds destroyed several chicken houses, outbuildings, and numerous mobile homes at Patroon. A mobile home and four chicken houses were also destroyed at Goober Hill.

TEXAS, Southern

Galveston County 05 1000CST-
1900CST 0 0 0 0 **Flooding**

Rainfall in Galveston was 4.50 inches, with the Mayor reporting about 70 percent of the city's streets were flooded. Three and one-half inches of rain fell between 0800 and 1130 CST.

Frio County

Frio Town 18 2300CST 0 0 0 0 **Hail (1.75)**

Golf ball-size hail was reported at Frio Town by a cooperative observer. Some damage was reported in Pearsall.

Atascosa County

Pleasanton 18 2330CST 0 0 0 0 **Hail (2.00)**

Poteet 18 2332CST 0 0 0 0 **Hail (2.00)**

Jourdanton 18 2335CST 0 0 0 0 **Hail (1.75)**

Hail up to 2 inches in diameter fell at Poteet at 2332 CST. Hail was flat and irregularly shaped; the event lasted for about 5 minutes with the hail covering the ground. Heavy rain followed the hail and damage was confined to a few glass panes. Two-inch diameter hail was also reported in Pleasanton, accompanied by gusty winds and heavy rain, which lasted for about 5 minutes. Damage was mainly limited to roofs, automobiles, and tree limbs. The greatest damage appeared to be between Pleasanton and Jourdanton. Department of Public Safety officers reported golf ball-size hail in Jourdanton at 2335 CST. The hail continued for 10 to 15 minutes. Damage was reported to roofs with some hail dents in automobiles. Approximately 0.50 inch of rain accompanied the storm.

Wilson County

Floresville 19 0005CST 0 0 0 0 **Hail (1.50)**

Much of County 19 0015CST 0 8 0 0 **Thunderstorm Winds (G?)**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

TEXAS, Southern Cont'd

Hail up to 1.50 inches in diameter broke hundreds of windows in Floresville, and was reported to be as much as a foot deep on the ground. The public reported power and telephone lines had been blown over near Floresville, and winds were estimated to be near 100 mph. There was a report of a 2.5-ton truck having been pushed nearly 0.25 mile into a freshly-plowed field. At the height of the storm, almost 1,700 homes were without power. Trees had been snapped off and a large 3-foot diameter oak tree had been pulled out of the ground between Poth and Floresville. The storm ripped apart three mobile homes. One man was seriously injured when his mobile home was demolished; two others received minor cuts and bruises. Some parents also reported their children suffered minor cuts from glass shards when the hail broke through bedroom windows. There was some damage to hundreds of homes, hay barns, chicken coops, and hundred of outbuildings. Damage was estimated at \$100,000 at the primary school and \$100,000 at the county courthouse. The storm moved across the county from northwest to southeast with the worst damage in an area 8-miles wide between Floresville and Poth.

Karnes County Northern Portion

19	0025CST			0	0	0	0	Thunderstorm Winds (G?)
----	---------	--	--	---	---	---	---	-------------------------

The Karnes County Sheriff's Department reported damage to trees and utility poles in the northern part of the county.

DeWitt County Hochheim Hochheim 5 S Hochheim Petersville Yoakum

19	0030CST			0	0	0	0	Thunderstorm Winds (G?)
19	0030CST			0	0	0	0	Hail
19	0030CST			0	0	0	0	Hail (4.50)
19	0032CST			0	0	0	0	Hail (2.75)
19	0035CST			0	0	0	0	Hail (1.75)

Roofs were blown off by winds estimated at 70 mph; large hail was also reported. Trees were knocked over, limbs broken off, and television antennae were blown down. The hail was as large as baseballs in Petersville, and as large as softballs at Concrete, just 5 miles south of Hochheim. Extensive damage was reported to windows of buildings and cars in the area. Golf ball-size hail was reported in Yoakum, just east-southeast of Petersville.

Gonzales County Smiley

19	0040CST	?	?	0	0	0	0	Tornado (F?)
19	0040CST			0	0	0	0	Hail (1.75)

A possible tornado was reported at Smiley by the Gonzales County Sheriff's Department. Trees were blown over with high winds, large hail, and heavy rain accompanying the storm. The greatest damage was to the middle school campus, where a huge section of the two-story school auditorium roof was ripped off. Additional damage occurred to the auditorium due to the rainfall. Several classroom windows were broken, and large chunks of rock were torn from concrete-masonry work along the top of the main building. Hail up to the size of a golf ball fell for nearly 10 minutes; it covered the ground and made pock marks in many automobiles. Rainfall totaled 1.19 inches in just 20 minutes. Damage apart from the school was estimated at \$100,000.

Wilson County Kosciusko

19	0130CST			0	0	0	0	Hail (1.50)
----	---------	--	--	---	---	---	---	-------------

A house was possibly damaged by a tornado.

Angelina County LFK Airport San Augustine County 3 W San Augustine

19	0201CST			0	0	0	0	Thunderstorm Winds (G60)
19	0300CST	?	?	0	0	0	0	Tornado (F?)

A tornado was reported 3 miles west of San Augustine City with one metal-framed airport hangar and three aircraft destroyed. One home was destroyed with considerable damage to several others. Seven miles west of the San Augustine Airport, an airport barn was destroyed.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

TEXAS, Western

Reeves County
Pecos 17 1640CST 0 0 4 0 **High Winds**

High winds damaged the roof of a home and downed power lines in Pecos.

UTAH

UTZ001-003 07 0700MST-
Northwestern 1300MST 0 0 0 0 **Dense Fog**
Valleys

A high-pressure system over the area put a cap on the air mass. Because of the persistent high pressure, low-level moisture increased which led to widespread dense fog. No injuries or accidents were reported.

UTZ001-002-003- 08 0300MST-
010 1200MST 0 0 3 0 **Dense Fog**
Northwestern
Valleys
and Northwest-
Mountain Valleys

A persistent high-pressure system again led to widespread-dense fog. Although the fog dissipated in most areas by noon, locally-dense fog remained in the Cache Valley until midafternoon. One accident occurred on Interstate 80 near the Great Salt Lake, involving one tractor-semitrailer and one tanker truck. No injuries were reported.

UTZ010- 16 1700MST-
Northern Mountains 17 1800MST 0 0 0 0 **Heavy Snow**

A strong, moist Pacific-storm system brought precipitation to most of the state, and significant amounts of snow to the mountains of northern Utah. Most amounts reported were in the 1- to 2-foot range with the Wasatch Mountains receiving locally-higher amounts. Most areas of the state received rain, but the northwestern valleys reported snowfall amounts of less than 5 inches.

VERMONT

Statewide 13 Late PM-
 14 Late PM 0 4 5 0 **Snow**

Snow accumulated up to a foot in parts of Vermont, with the heavier amounts reported in the northern and eastern areas.

VIRGINIA

Fairfax County
Chantilly 14 1218EST 1 9 4 0 **High Winds**

Gusty winds accompanying a cold frontal passage led to the collapse of a 20-foot-high and 150-foot-long wall under construction. Ten workers were on scaffolding when the wall started to collapse; they were taken to hospitals where one of them died of his injuries. Inspection revealed the wall had not been properly braced. Winds were reported at about 40 knots in brief gusts at Dulles International Airport (IAD) around the time of the accident. (M340)

Buchanan County 14 2200EST-
Dickenson County 15 2200EST 0 0 0 0 **Heavy Snow**
Wise County

A brief invasion of cold air triggered heavy snow-showers over portions of Buchanan, Wise, and Dickenson counties. Four to 6 inches of snow fell in valley locations, with 8 to 11 inches reported at elevations over 3,000 feet.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

PLACE	DATE	TIME	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	
WEST VIRGINIA									
WV009-012 Northern and Central Mountains	14	1900EST-							Heavy Snow
	16	0700EST			0	0	0	0	
<p>Arctic air brought an onslaught of snow showers to the mountainous counties, along with the coldest temperatures of the winter. Snowstorm totals were 6 to 14 inches across the northern and central mountains. Considerable blowing and drifting of snow occurred there. Snow amounts were in the 2- to 5-inch range across the southern mountains, and mostly 1 to 3 inches in the western lowlands. Specific snowstorm totals included 14 inches at Pickens; 12 inches at Snowshoe; 11 inches at Cheat Bridge; 9 inches at Thomas and Webster Springs; and 7 inches at Elkins. Most of the snow fell in the 24 hours ending at 1900 EST on February 15th. The coldest temperature was -12°F at Snowshoe, on the morning of February 16th. Single digits were felt in the western lowlands; a few homes reported frozen water pipes.</p>									
WISCONSIN									
WIZ002 Lake Superior Snowbelt	14	Early Morning-							Heavy Snow
	14	Late Evening			0	0	?	0	
<p>Heavy snow squalls in the Lake Superior snowbelt area of Wisconsin occurred mainly in Ashland and Iron Counties. Between 8 and 17 inches of snow fell with Hurley (Iron County) measuring 17 inches.</p>									
WIZ001-003-004- 005-006-007- 008-009-013 Northern Wisconsin	23	Morning-							Heavy Snow
		Late Evening			0	0	?	0	
<p>A band of snow with widespread accumulations of 6 to 10 inches fell across the northern portions of Wisconsin. Wausau (Marathon County) reported 10 inches. Some 8-inch amounts included Park Falls (Price County), Antigo (Langlade County), and Siren (Burnett County).</p>									
WYOMING									
WYZ004-006 Big Horn Mountains Northeastern Plains	16	2200MST-							Heavy Snow
	18	0600MST			0	0	0	0	
<p>Twelve to 18 inches of snow fell in the Big Horn Mountains, with 8 to 12 inches in the Wyoming Black Hills.</p>									
WYZ012-015-016-017 Eastern Plains Southern Mountains Laramie Valley Southeastern Plains	20	0700MST-							High Winds
		2000MST			0	0	0	0	
<p>Strong winds occurred in the higher elevations and foothills of southeastern Wyoming. Gusts up to 80 mph were recorded near Wheatland around 0900 MST.</p>									
ALASKA, Southeastern									
AKZ014 Southern Southeastern Alaska	01	Early Morning			0	?	?	0	High Winds
	<p>As a small intense low-pressure system moved northeast to the southern coast of the Panhandle, tight pressure gradients over southern-southeast Alaska resulted in very strong gusty winds. Ketchikan reported sustained winds of 46 mph with gusts up to 75 mph.</p>								
AKZ014 Southern Southeastern Alaska	05	Evening-							High Winds
	06	Early Morning			0	?	?	0	

STORM DATA AND UNUSUAL WEATHER PHENOMENA

FEBRUARY 1991

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

ALASKA, Southeastern Cont'd

Another strong low-pressure system moved to the southern Panhandle and produced high winds. Winds at Ketchikan were recorded at 41 mph and gusted as high as 62 mph. One gust at 83 mph was measured on the roof of the Ketchikan Airport Terminal. The gusty winds resulted in downed trees, including one which damaged a picnic shelter.

HAWAII

Kauai and Oahu 18 1200LST 0 0 5 0 Wind, Rain

A strong cold front reached Kauai about noon, and western Oahu about 1400 LST. Winds gusted from 60 to 70 mph at some locations in heavy squalls off the Waianae coast and near the Oahu northern shore. Several roofs were damaged or blown away. A lightning strike damaged the United States Weather Service anemometer at Honolulu International Airport. Brief heavy downpours caused localized flooding.

PACIFIC

American Samoa 16-22 0 0 4 0 Flooding

An active monsoonal trough remained in the area near Samoa for about a week, with strong and gusty northwesterly winds and frequent heavy showers. Some minor flooding occurred throughout the island group.

PUERTO RICO

Eastern Section 05 Afternoon 0 0 0 0 Urban Flooding

A mid-level low-pressure system and associated trough over eastern Hispaniola were influenced by an upper low-pressure system near Bermuda, causing 24-hour precipitation totals between 4 and 5 inches. Only minor flooding was reported in eastern Puerto Rico.

17 Afternoon 1 0 0 0 Sea Wave

A 30-year-old Rio Piedras man drowned in the choppy seas of the Condado area. He was strolling with his girl friend and her mother when he decided to go in for a swim. He was unable to swim back to shore because of the strong waves. (M300)

VIRGIN ISLANDS

None reported.

CORRECTIONS

DECEMBER 1990

MINNESOTA - Page I-12

Greatest should read 41

Year should read 1981

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.

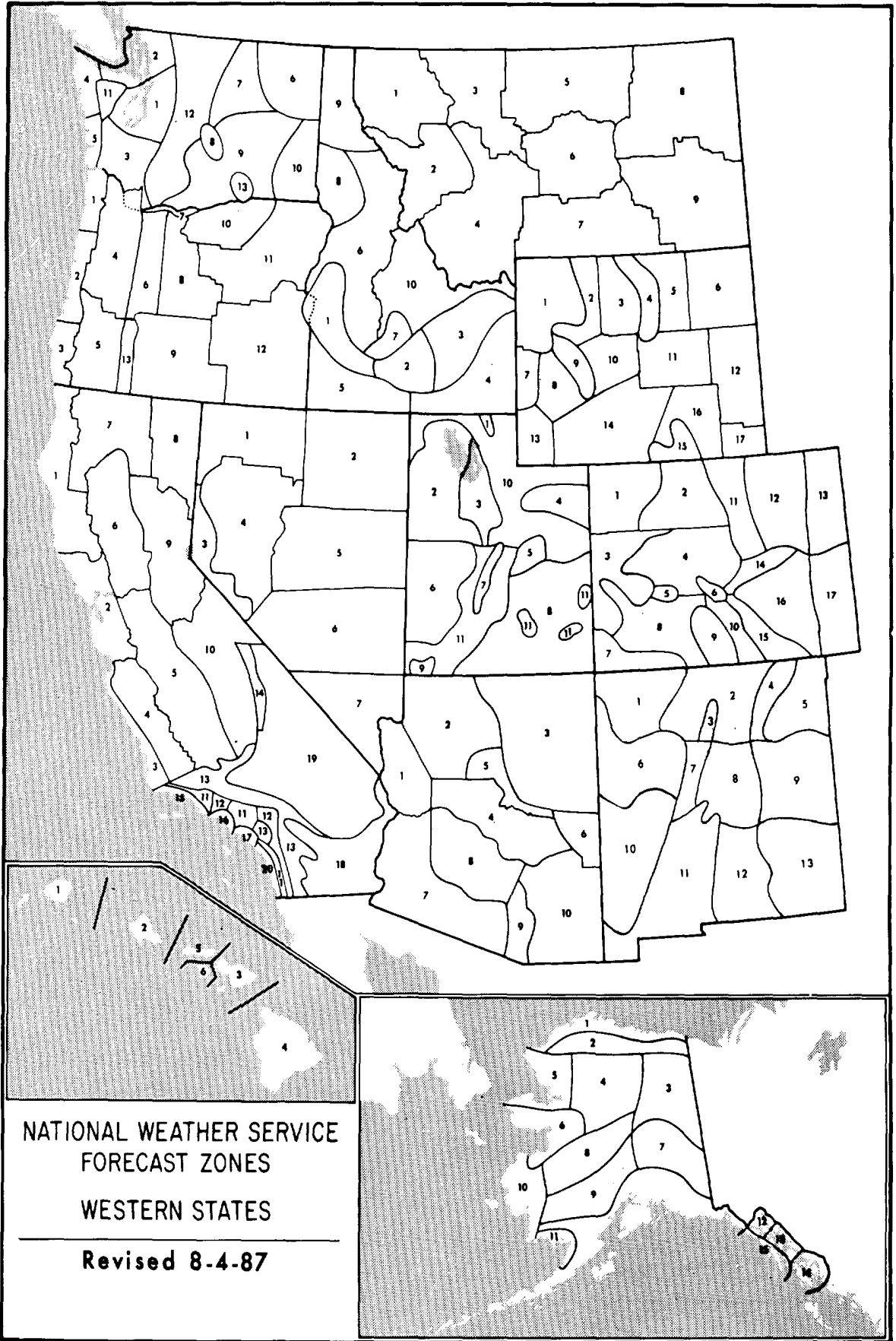
(F5) Incredible tornado (261-318 mph): Incredible damage
Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 m; trees debarked; incredible phenomena will occur.

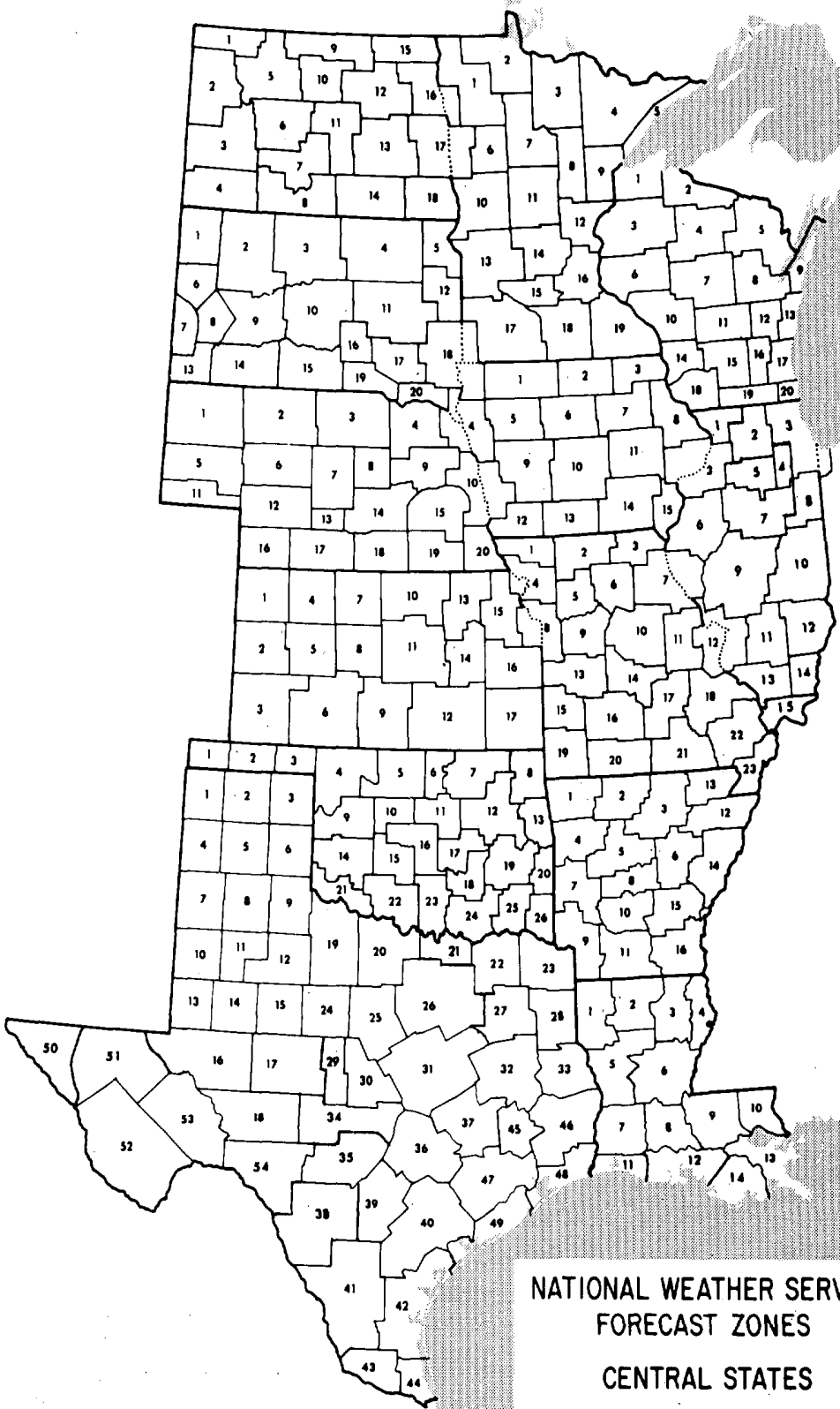
(F6-F12) (319 mph to Mach 1, the speed of sound):
The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

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



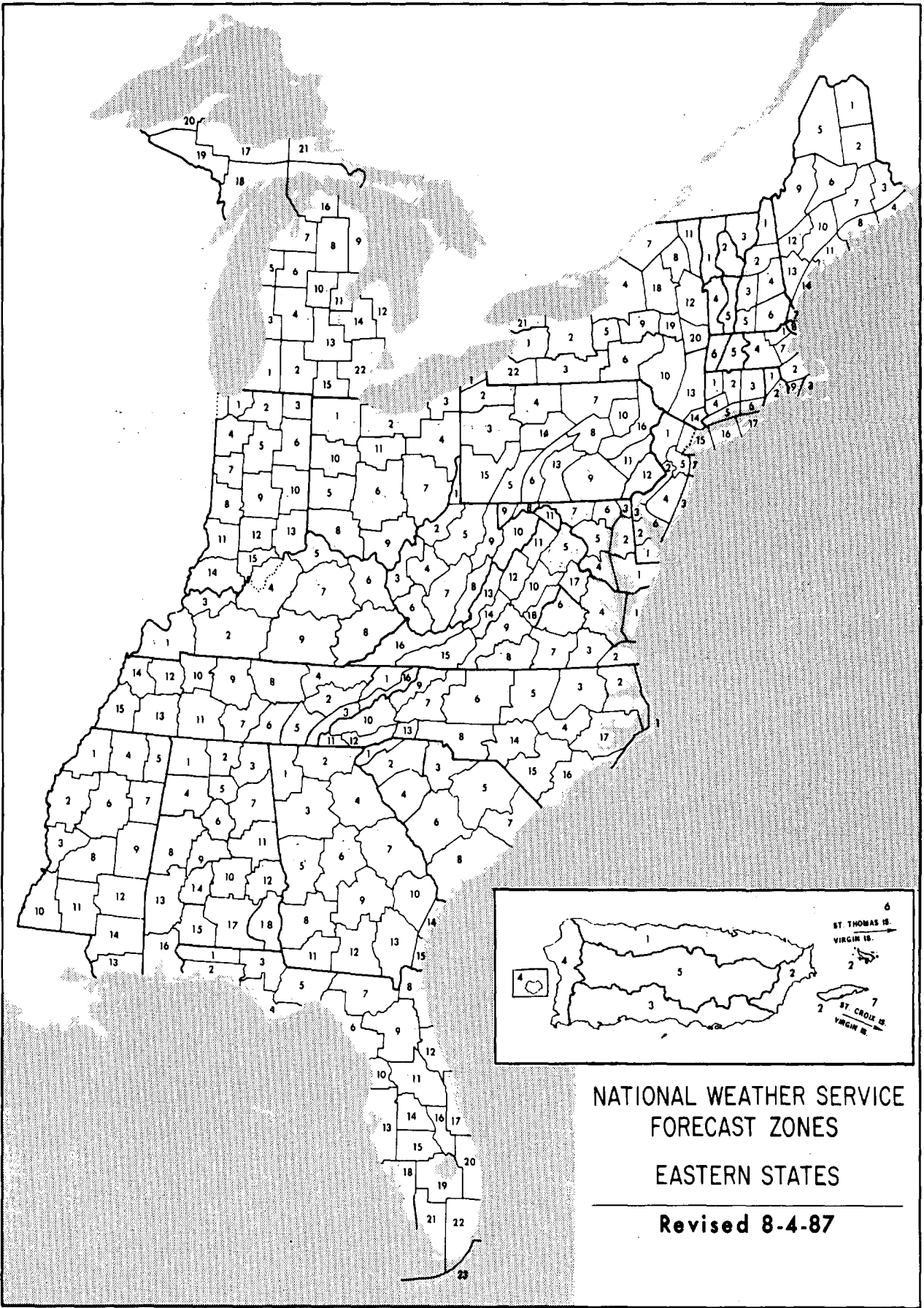
From J. Atmos. Sci., August 1981, p. 1517-1519





NATIONAL WEATHER SERVICE
FORECAST ZONES
CENTRAL STATES

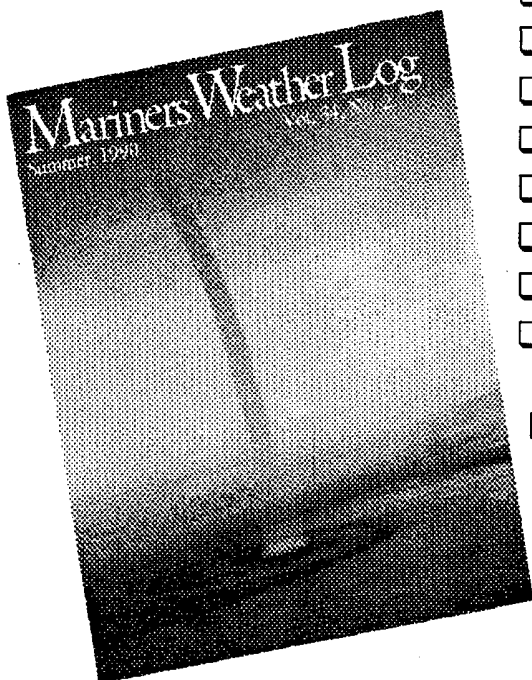
Revised 8-4-87



To change your address, please return a copy of the mailing label along with your new address.

Mariners Weather Log

Serving the maritime community



- Comprehensive coverage of storms.
- Typhoon and Hurricane information.
- Unusual weather phenomena at sea.
- Selected gale and wave observations.
- Storm tracks and weather-related casualties.
- History of marine weather and marine lore.
- Lighthouse features by Elinor DeWire
- Sea photography and radio tips.

For sample copy and subscription form write:

**User Services Branch
National Oceanographic Data Center
NOAA
Washington, DC 20235**

National Climatic Data Center
Federal Building
37 Battery Park Avenue
Asheville NC 28801-2733

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300
FORWARD AND ADDRESS CORRECTION

<p>BULK RATE POSTAGE & FEES PAID United States Department of Commerce NOAA Permit No. G - 19</p>
--