

MARCH 1990
VOLUME 32
NUMBER 3

STORM DATA



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

COVER: One of two violent tornadoes which raked parts of central Kansas on March 13th. The photo site is 4 miles west of Halstead, looking north; the tornado is just north of U.S.-50. This tornado caused 1 fatality several minutes before crossing U.S.-50; it later made a direct hit on Hesston, Kansas. *Video transfer by Robert Prentice of the National Severe Storms Laboratory from video taken by Officer Chris Arnett of the Halstead Police Department.*

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STORM DATA

(ISSN 0039-1972)

National Climatic Data Center

Editor: Roger W. Tanner

Associate Editor: Vince Miller

Publication Staff: Lanny Dimmick, Jay Hollifield, 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 in cooperation with Mr. Vince Miller, Associate Editor. He is a broadcast meteorologist for THE WEATHER CHANNEL in Atlanta, GA.

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 the January, April, July, and October editions.

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 the limited editing for grammatical errors, material submitted are generally published as received.

Subscription, pricing, and ordering information is available from:

National Climatic Data Center
Federal Building
Asheville, NC 28801-2696
(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 Storm of the Month" or "Et Cetera" sections of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

Mr. Vince Miller
1464 Wood Thrush Way
Marietta, GA 30062

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."

Kenneth D. Haden
Director
National Climatic Data Center

STORM FOLKS . . .

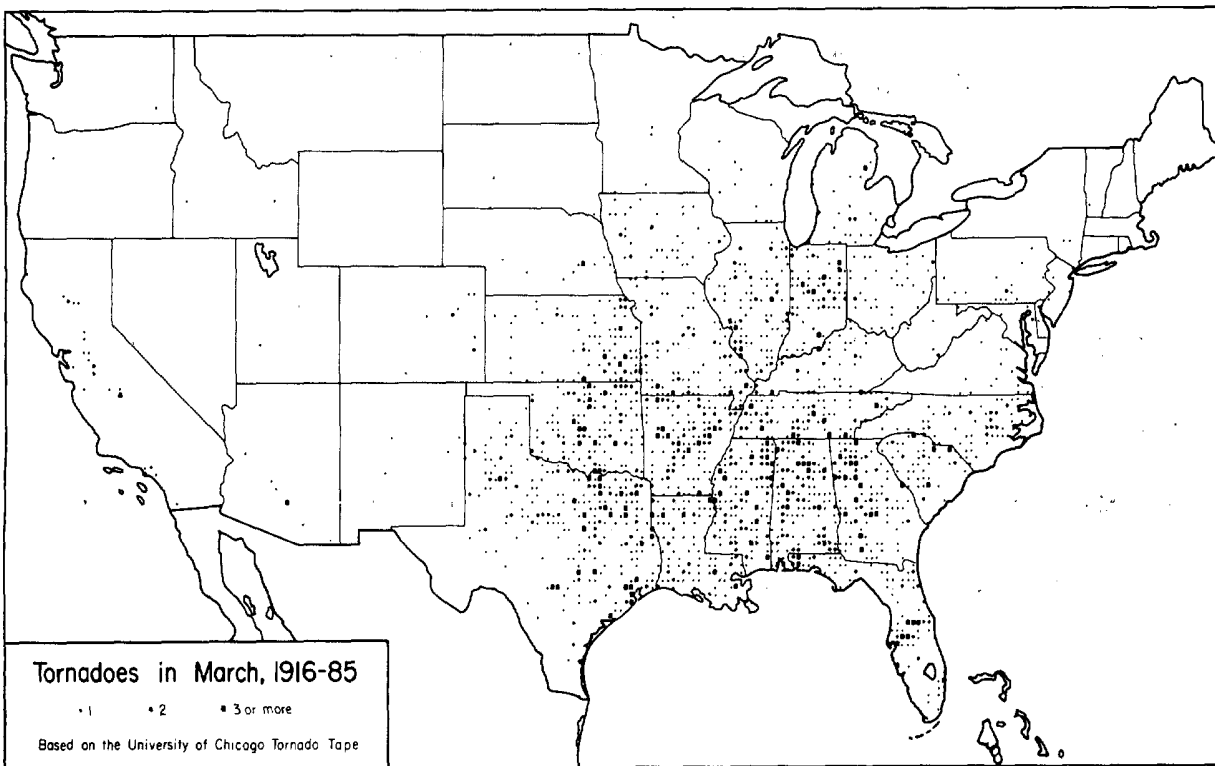
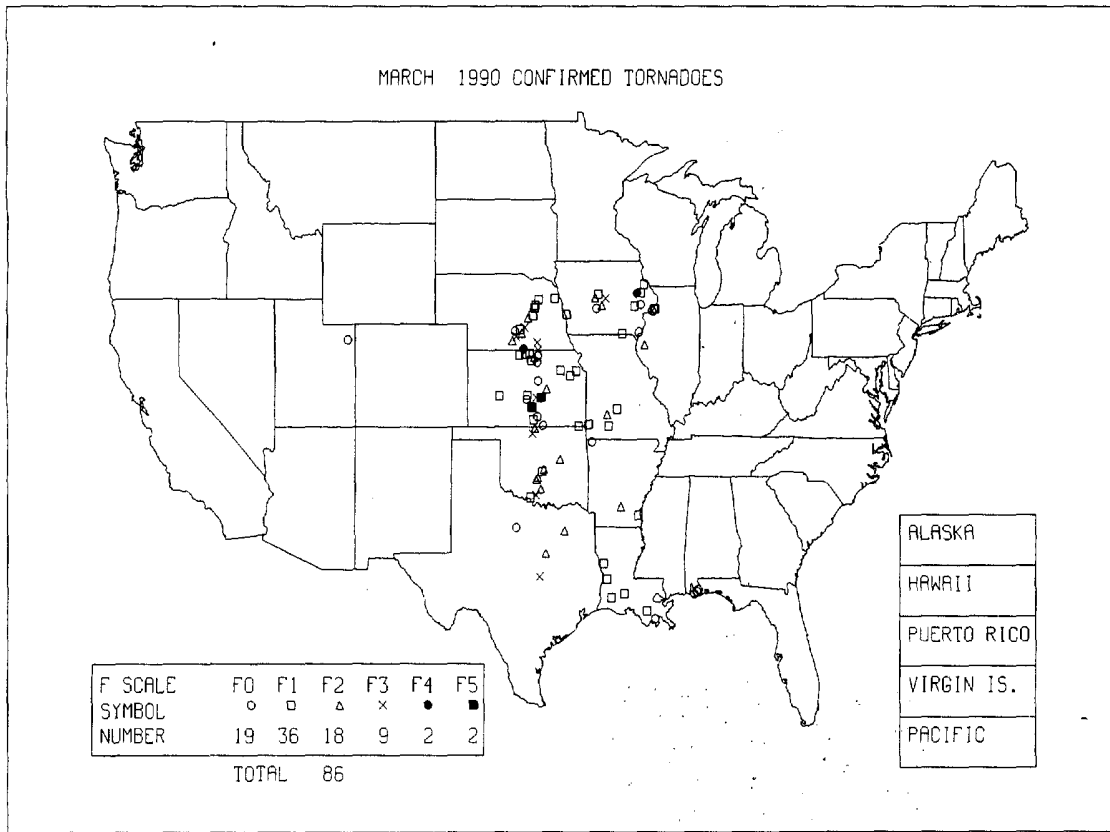


*Meteorological technicians of the Verification Unit,
National Severe Storms Forecast Center (NSSFC), Kansas
City, MO.*

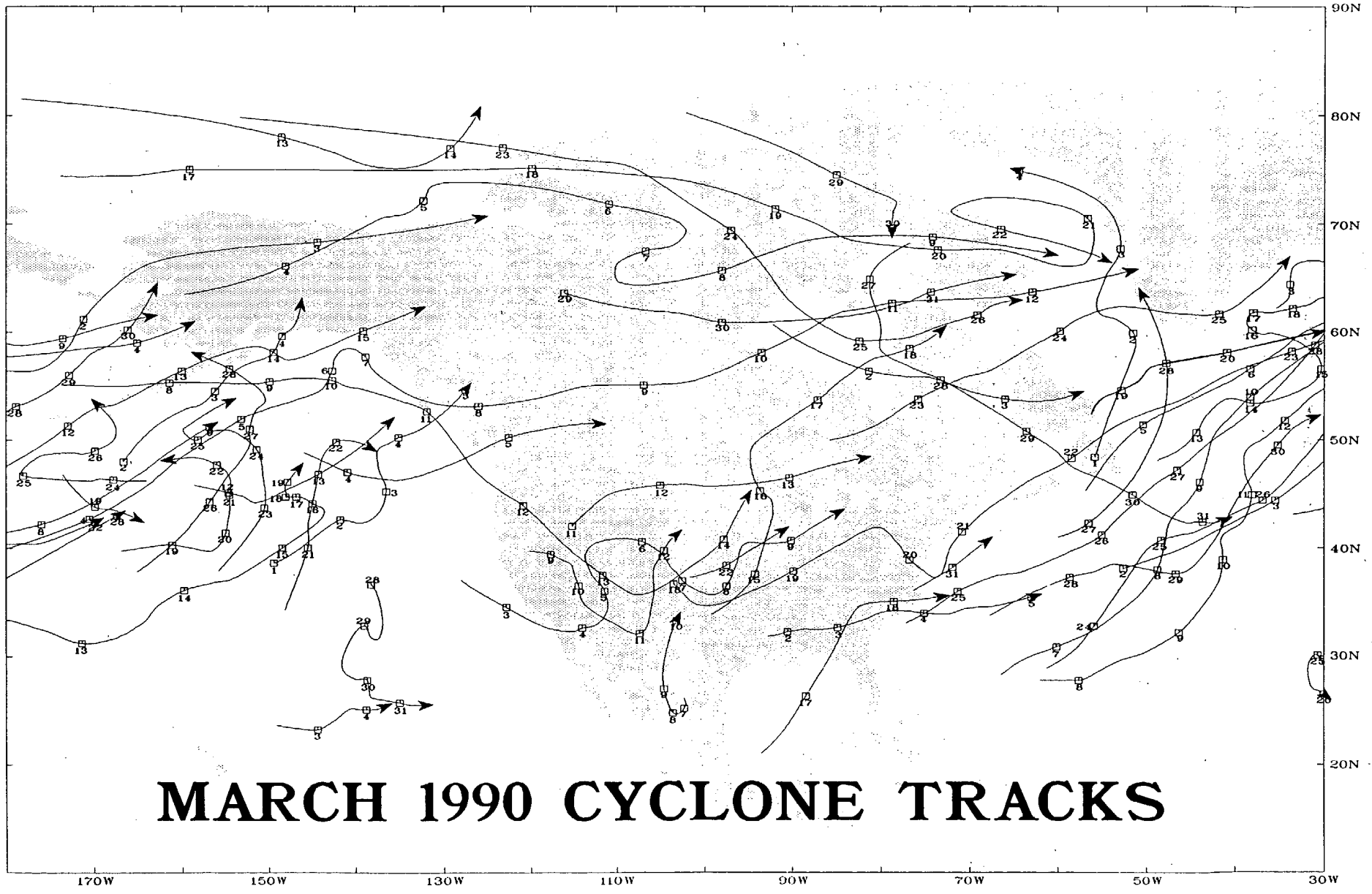
Leo Grenier (left) served in the U.S. Navy from 1956 to 1976. He then worked for more than seven years at WSO Grand Rapids, MI as a meteorological technician. In November 1984 he transferred to NSSFC as a storm verification technician.

John Halmstad (right) served in the U.S. Navy from 1964 to 1968 as a meteorological technician. John has worked at the National Severe Storms Forecast Center since 1969 as a meteorological technician/computer operator and now a verification technician.

OUTSTANDING STORMS OF THE MONTH



5



MARCH 1990 CYCLONE TRACKS

1. PRECIPITATION AND TEMPERATURE ANOMALIES - MARCH 1990

Almost all of the United States reported above normal March temperatures (Fig. 2), while most of the Plains were wetter than normal (Fig. 3).

Table 1 shows the temperature and precipitation rankings for March 1990 for the nine climatically homogenous regions shown in Fig. 1.

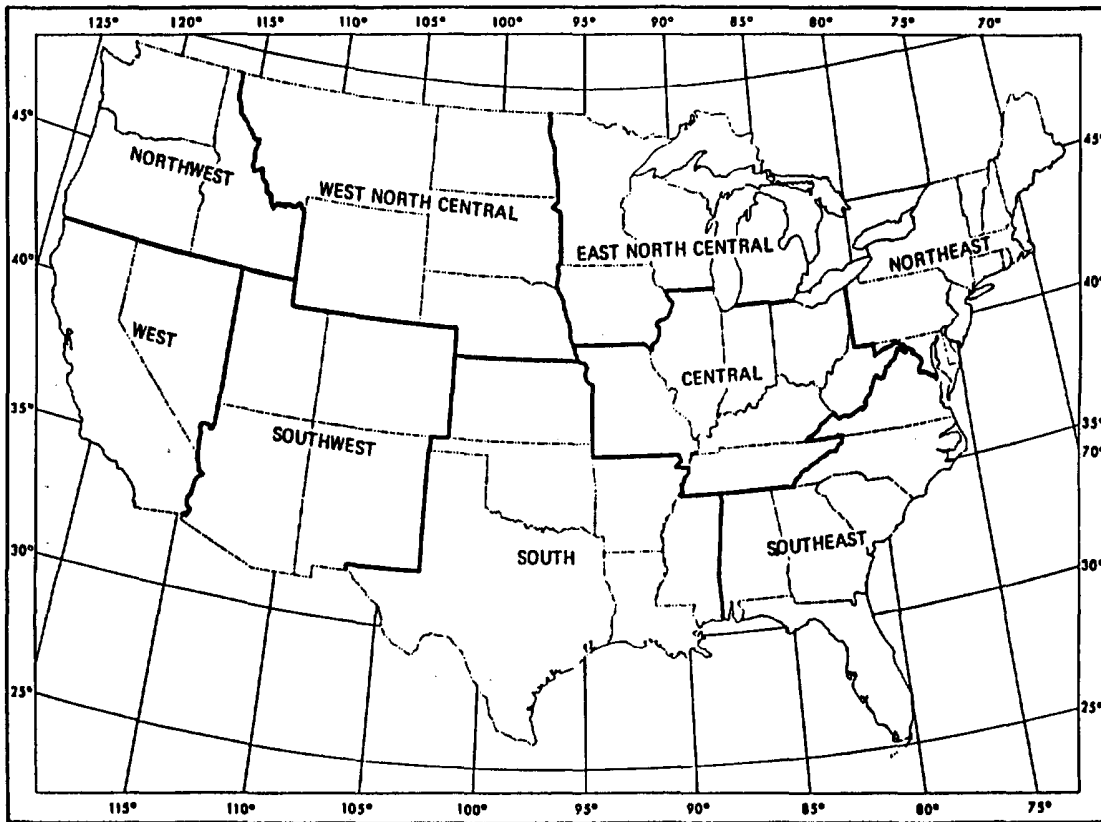
TABLE 1. TEMPERATURE AND PRECIPITATION RANKINGS FOR MARCH 1990, BASED ON THE PERIOD 1895-1990.

1 = DRIEST/COLDEST, 96 = WETTEST/HOTTEST.

<u>REGION</u>	<u>PRECIPITATION</u>	<u>TEMPERATURE</u>
Northeast	7	80
East North Central	90	79
Central	39	81
Southeast	66	79
West North Central	80	85
South	91	64
Southwest	42	83
Northwest	28	78
West	14	79

From National Climatic Data Center

Fig. 1



National Climatic Data Center

Fig. 2

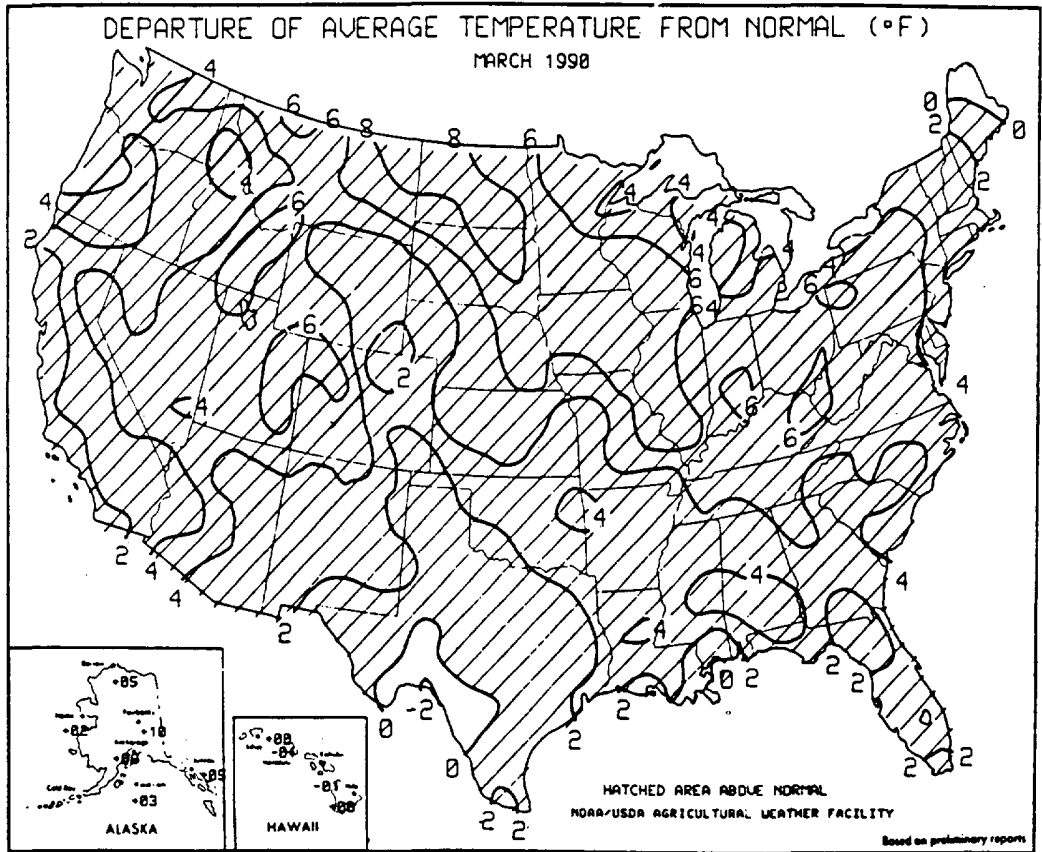
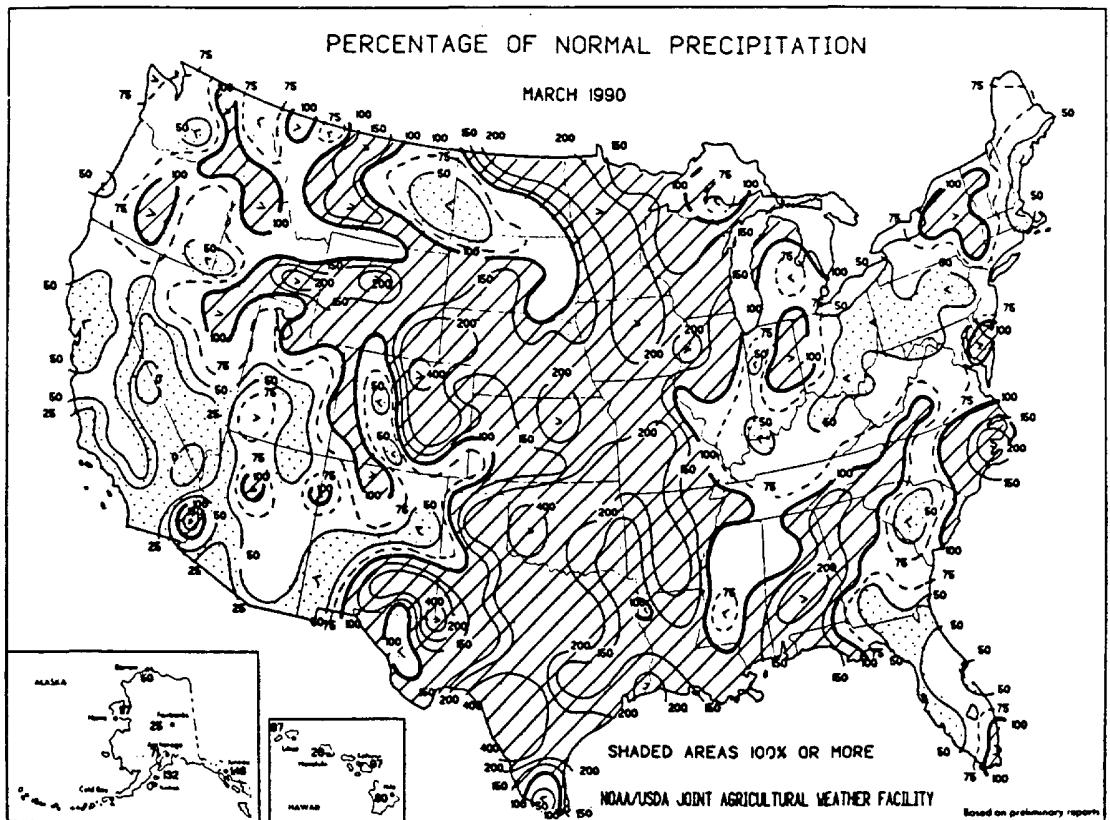


Fig. 3



Above figures reprinted from *Weekly Weather and Crop Bulletin* - April 10, 1990.

2. MID-MARCH (1990) TORNADOES

Of the 86 individual tornadoes that occurred in the United States in March 1990, 78 touched down in the period of March 11th through March 15th; 59 touchdowns occurred on March 13th alone. Although 26 of the individual tornadoes of March 13th were classified as either strong (F2 or F3) or violent (F4 or F5), only 2 people were killed by them. Fortunately, many of these tornadoes were not masked by heavy precipitation. Also, many occurred during daylight hours and could be seen for miles. Warnings were generally ample; in some cases, e.g., Hesston, Kansas, up to 40-minutes warning was given.

Some unusual aspects of this mid-March tornado activity:

MARCH TORNADOES

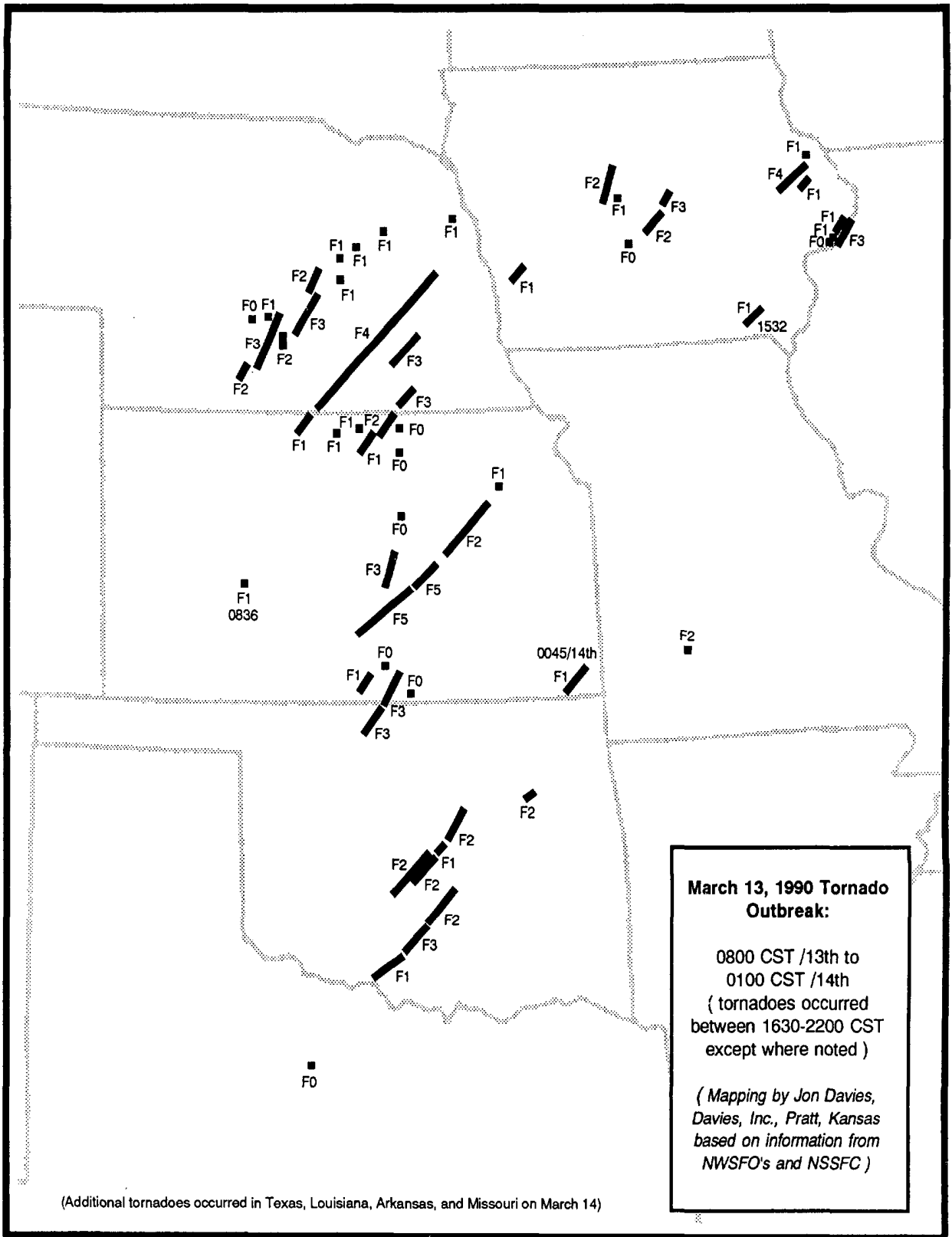
State	Date	F Scale	Tornadoes
Alabama	15th	F0	3
Arkansas	14th	F0	1
		F1	1
Illinois	8th	F2	1
	13th	F3	1
	13th	F3	1
Iowa	8th	F0	1
		F1	1
	12th	F0	1
	13th	F0	3
		F1	7
		F2	2
		F3	1
Kansas	11th	F4	1
		F0	1
	12th	F1	1
		F1	1
	13th	F0	5
		F1	8
		F2	2
Louisiana	14th	F3	2
		F5	2
	14th	F1	1
	15th	F1	1
Missouri	29th	F0	1
	13th	F1	4
Nebraska	13th	F2	1
		F1	3
Oklahoma	13th	F0	1
		F1	6
		F2	3
		F3	4
		F4	1
Texas	13th	F1	2
		F2	6
		F3	2
Utah	14th	F0	1
		F2	2
TOTAL	23rd	F3	1
		F0	1
			86*

*Corrected for tornadoes which crossed state line. One tornado crossed from Iowa into Illinois; another tornado crossed from Oklahoma into Kansas.

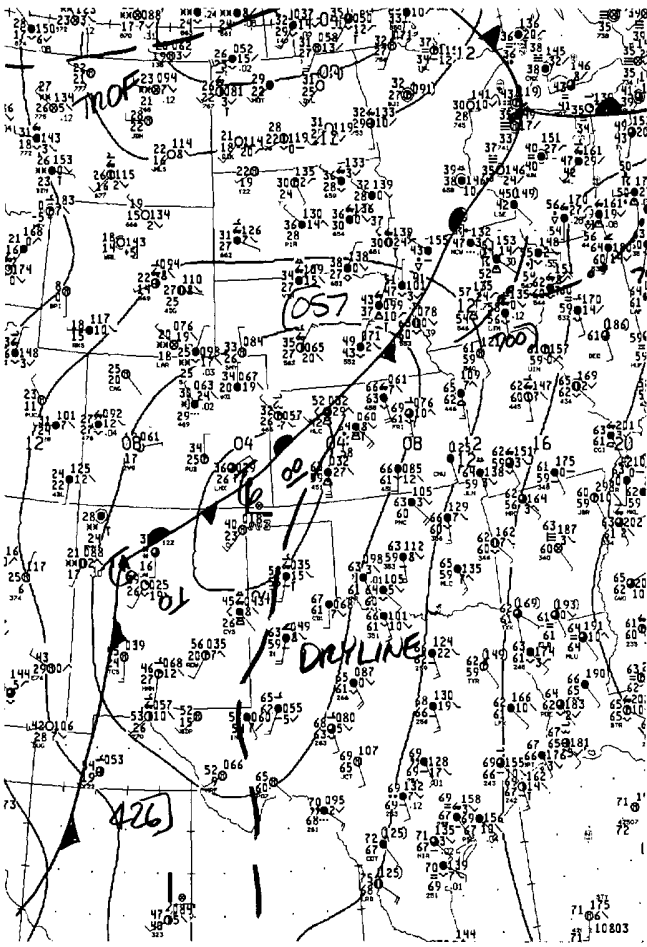
1. The outbreak of the 13th produced the strongest tornadoes of record for so early in the season for so far northwest in the United States.
2. Kansas reported tornadoes on four consecutive days (11th, 12th, 13th and 14th) - unusual for so early in the season.
3. Kansas reported initial touchdowns at 11:49 p.m. on the 12th; 12:10 a.m. and 8:36 a.m. on the 13th; and 12:45 a.m. on the 14th. Iowa reported a touchdown at 10:40 p.m. on the 12th. These times would be unusual even in the heart of the normal tornado season.
4. The violent tornadic thunderstorm in Nebraska's York County killed 10,000 geese.
5. A storm with cloud tops generally less than 25,000 feet produced a tornado with a 14-mile long track in Kansas on the 11th. One bolt of lightning was noted by lightning detection equipment.
6. About 8 miles southwest of Hesston, Kansas, a 1/4-mile section of fence was rolled up into a big ball in a tree row.
7. It was reported that a pickup truck on the same property as in #6 above was never found, except for pieces. Only the steering column, wheels, and parts of the frame were located.
8. In Hesston, posts of a chain-link fence anchored in concrete were dragged through the ground for nearly 20 feet, leaving a narrow trench.
9. Several tons of powdered cement were sucked out of a bin in Hesston.

3. TORNADOES OF MARCH 13, 1990

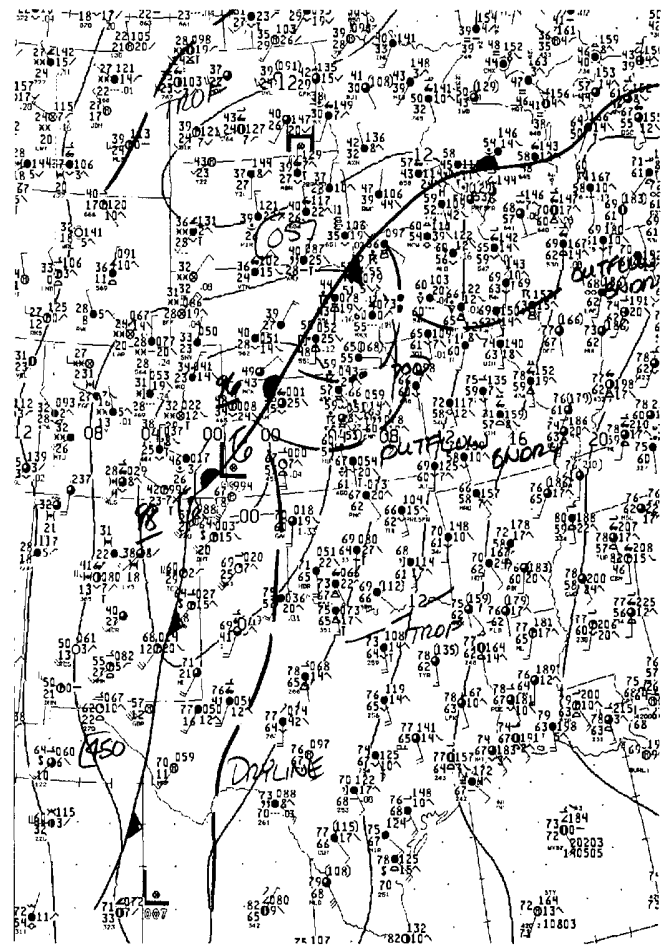
The approximate locations and tracks of the tornadoes of March 13th are shown below (with the exception of the 12:10 a.m. tornado in Jefferson County, Kansas).



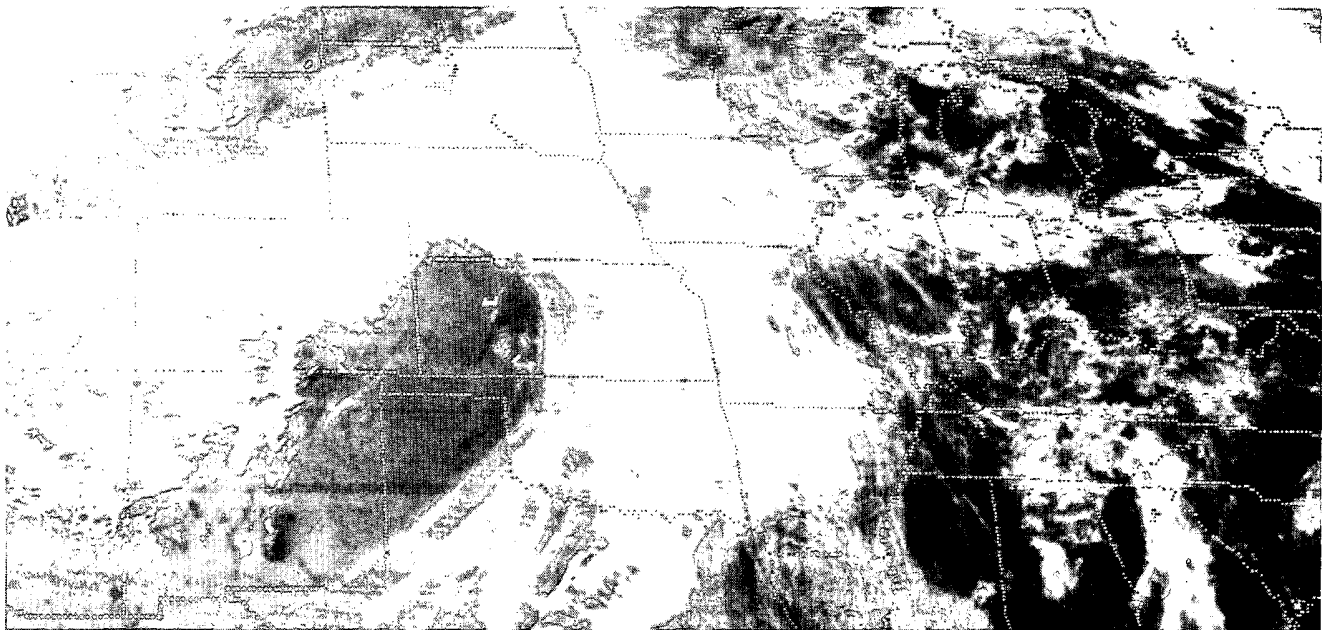
The surface weather maps at 1200 UTC (6:00 a.m. CST) and 1800 UTC (12 p.m. CST) show quite warm and moist air east of the dry line and south of the stationary front. Add ingredients from the upper atmosphere, and the stage is set for an afternoon and evening of severe weather.



1200 UTC



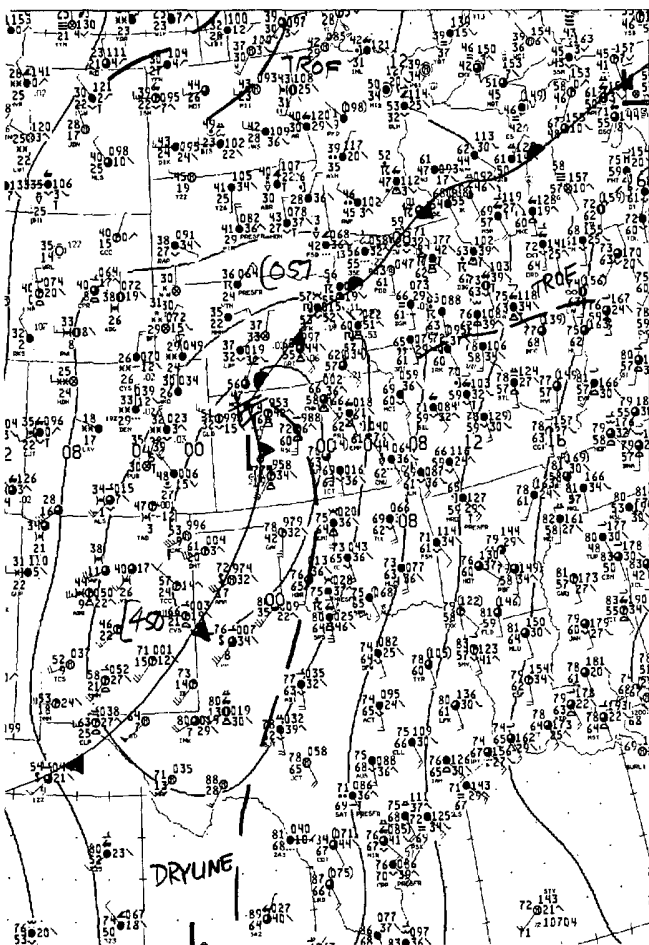
1800 UTC



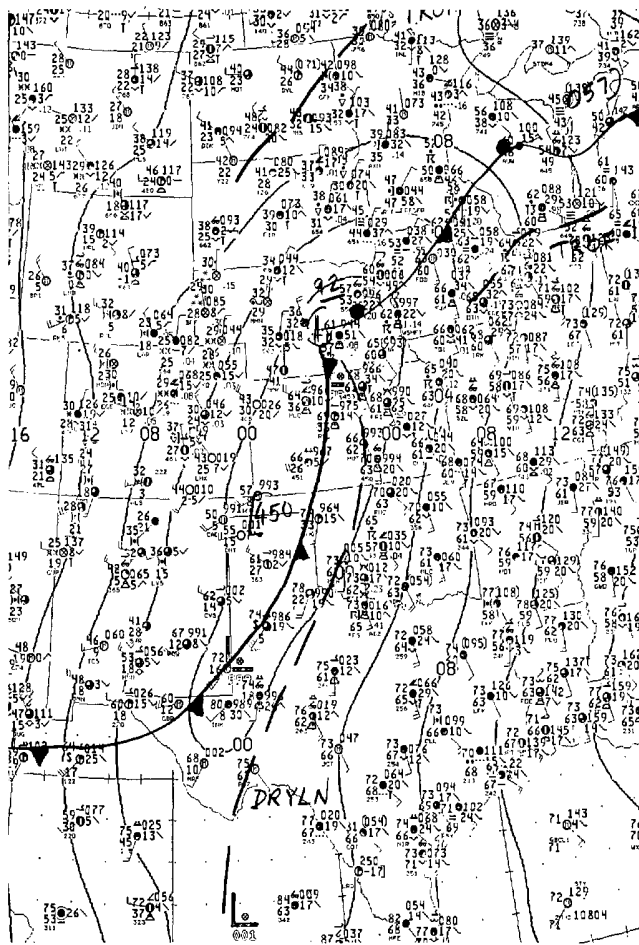
1831 UTC

Above maps and satellite courtesy National Climatic Data Center.

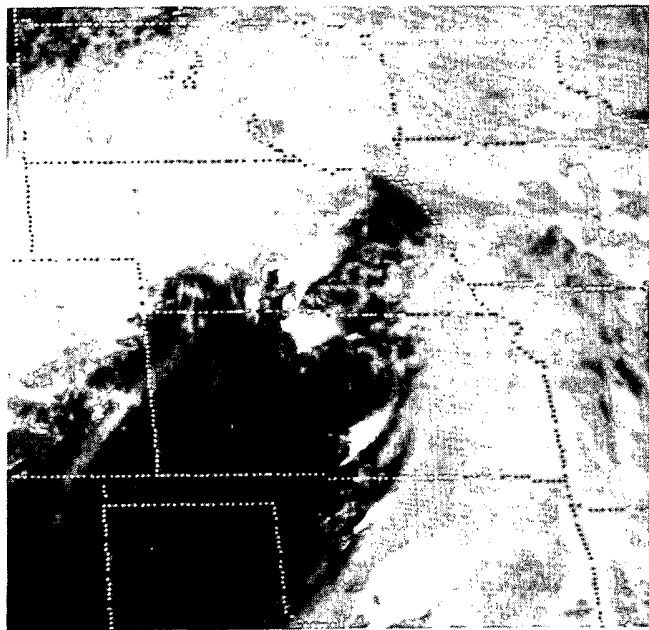
By 2100 UTC (3:00 p.m. CST), strong thunderstorms had developed along the dry line from near Wichita Falls, Texas, and northward, and in eastern Iowa. By 2131 UTC (3:31 p.m. CST) some had become severe. At 0000 UTC (6:00 p.m. CST), violent tornadoes had just struck Hesston, Kansas and Lawrence, Nebraska. Tornadoes were on the ground in central and northern Oklahoma and just ending in eastern Iowa.



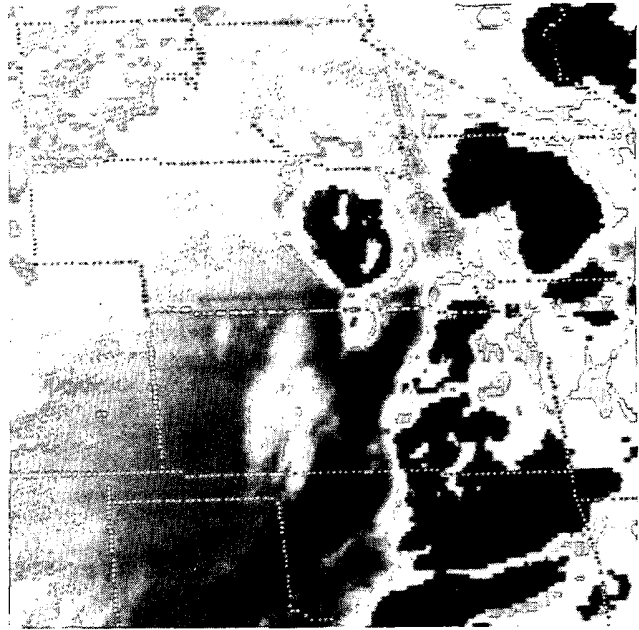
2100 UTC



0000 UTC



2131 UTC



0001 UTC

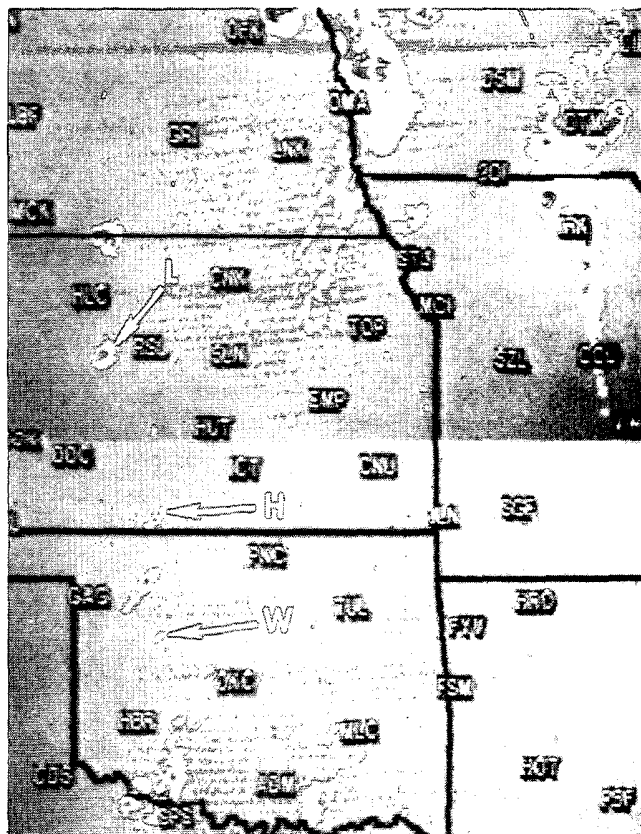
Above maps and satellites courtesy National Climatic Data Center.

The composite radar frames (with approximate times) on this and the following page show the evolution of much of the severe weather of March 13, 1990. The following letters are used to identify three of the more significant tornado-producing thunderstorm complexes.

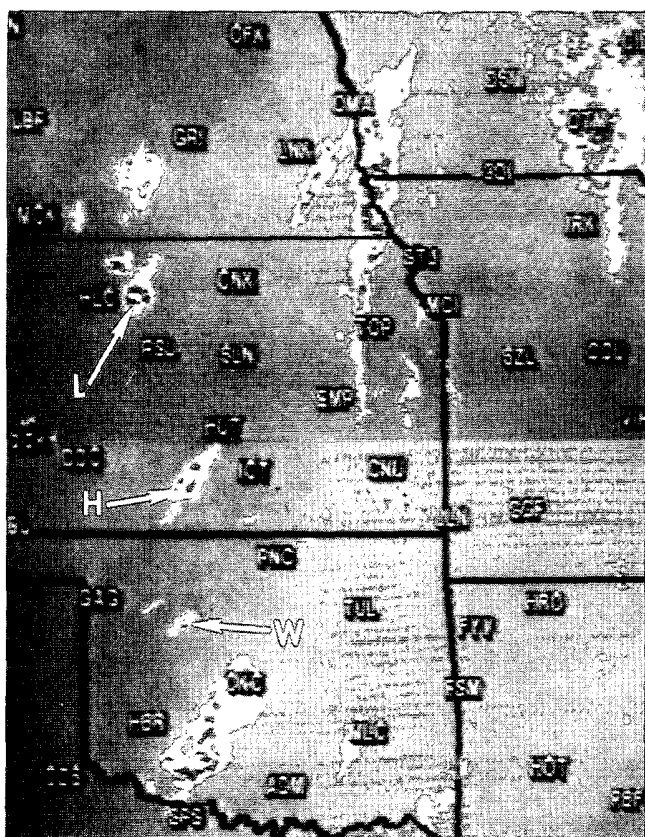
H Hesston, Kansas (4 tornadoes)

L Lawrence, Nebraska

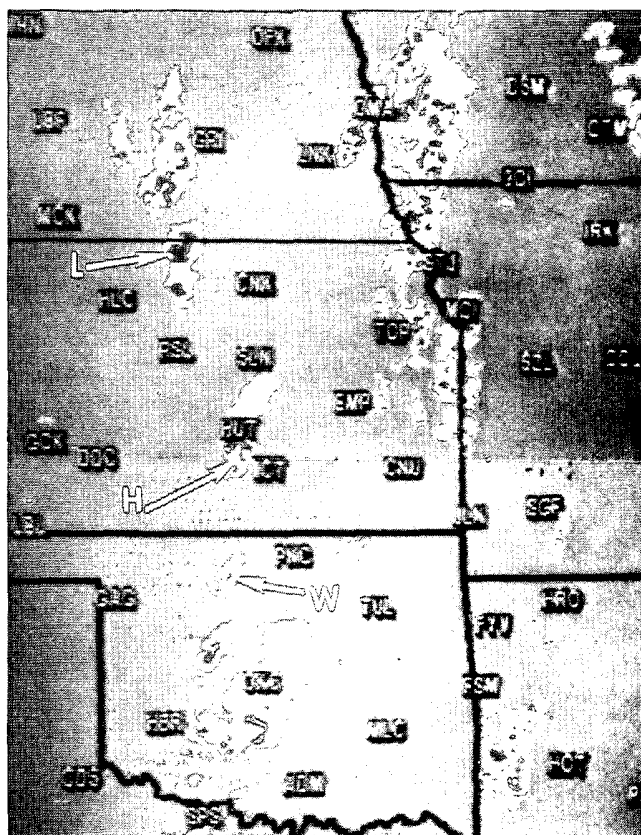
W near Wakita, Oklahoma (2 tornadoes)



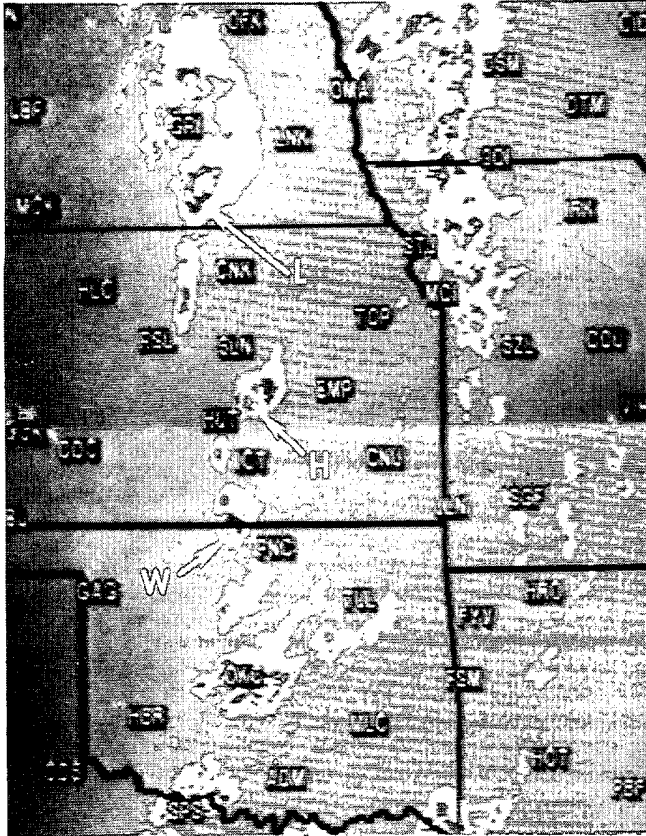
2:30 p.m. CST



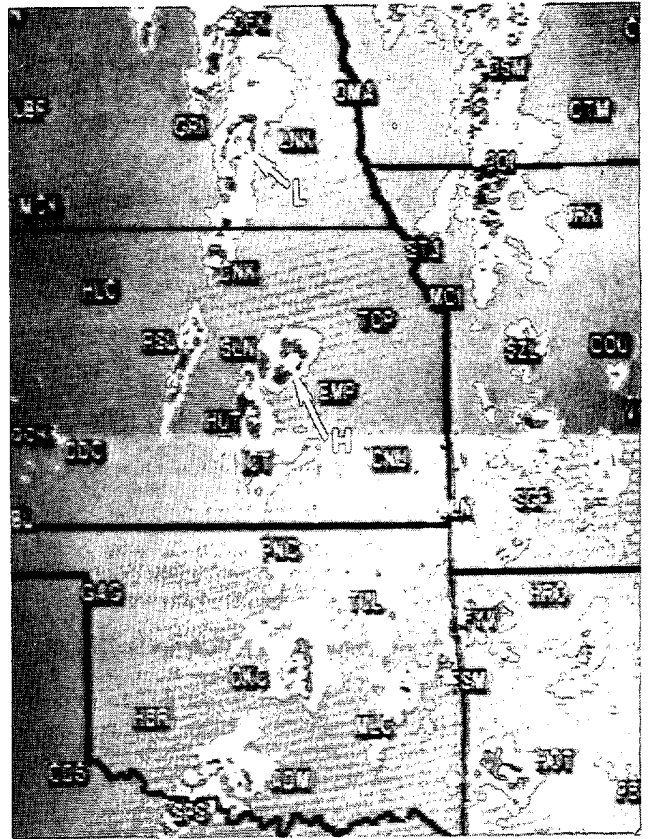
3:45 p.m. CST



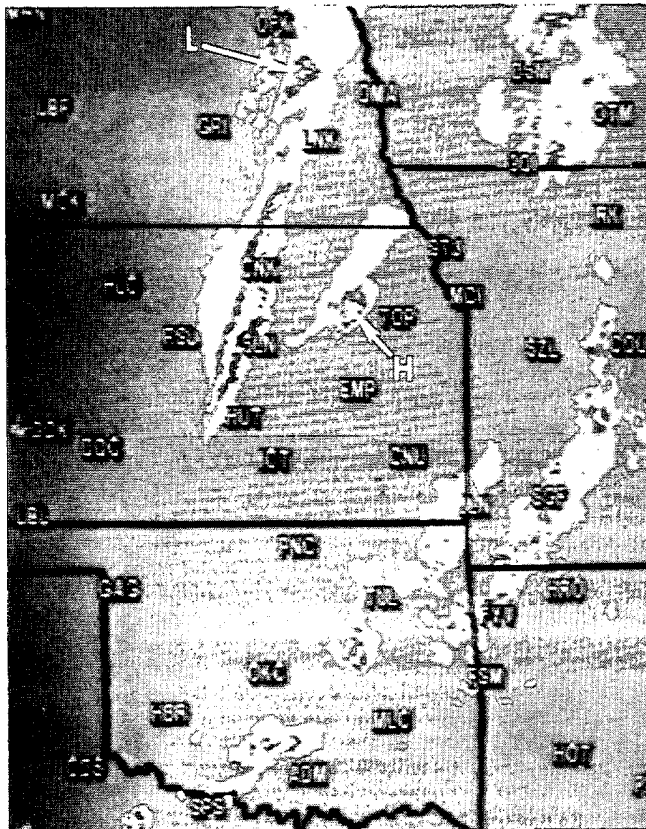
4:45 p.m. CST



5:45 p.m. CST



6:45 p.m. CST

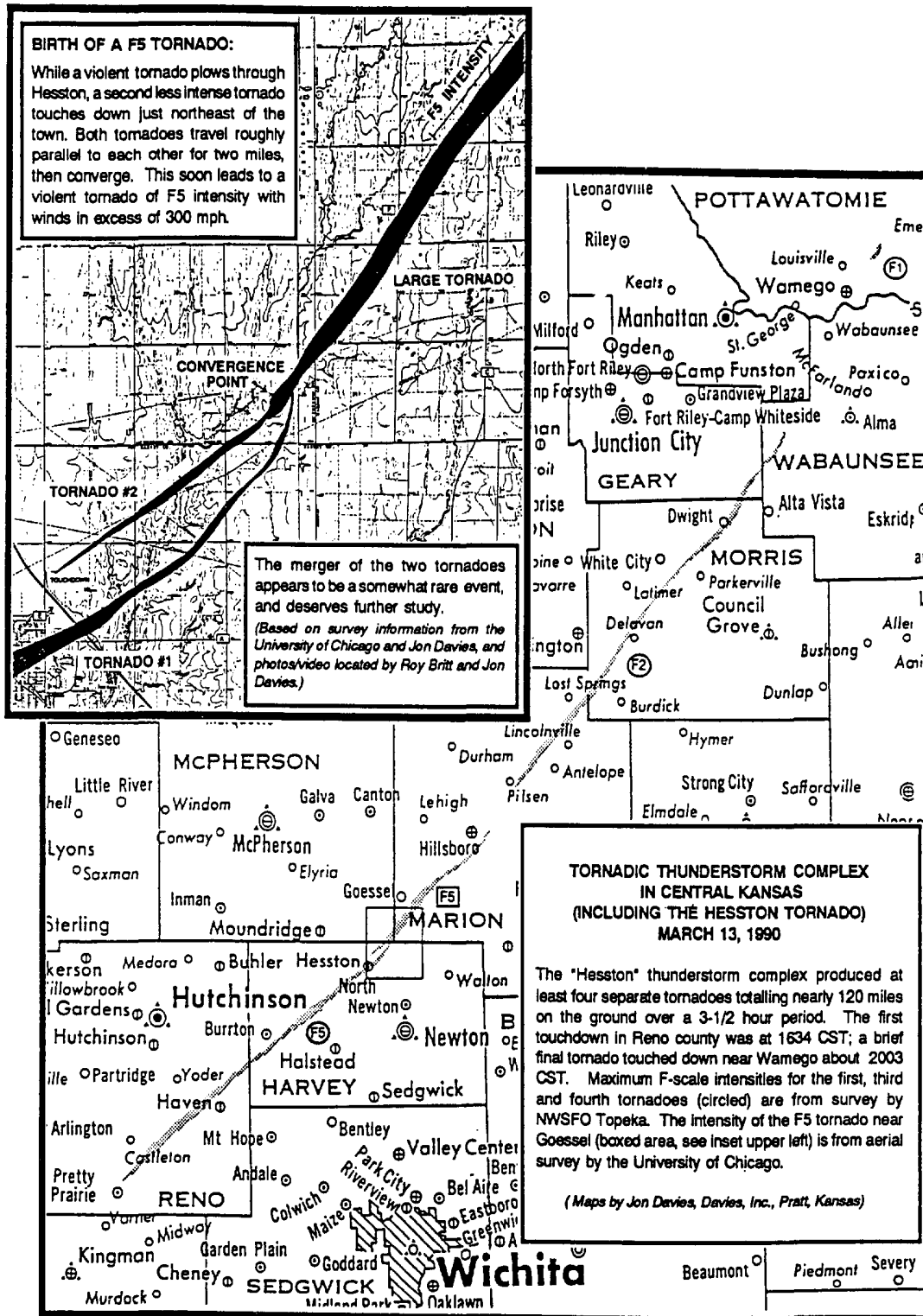


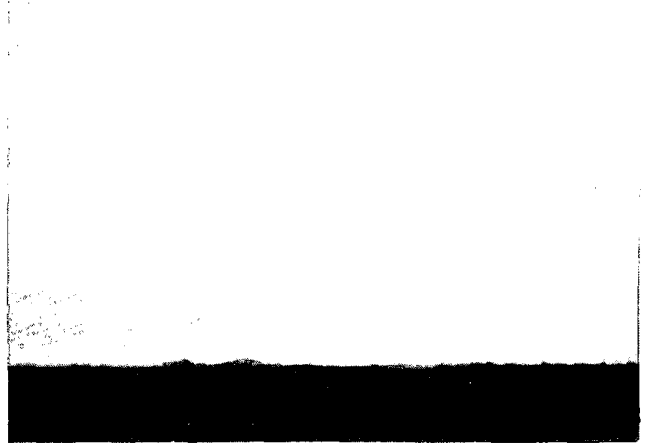
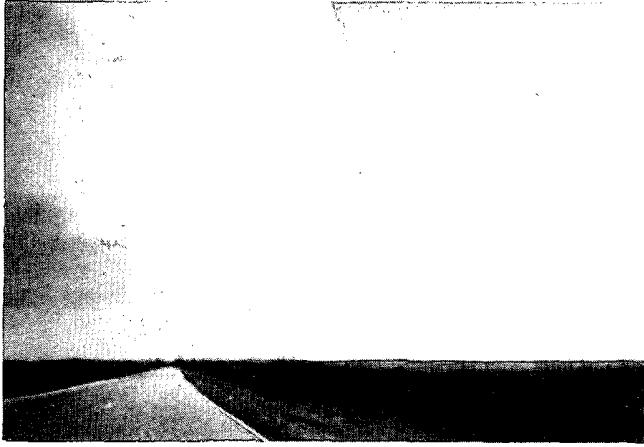
7:45 p.m. CST

The composite NOWrad® images on this and the preceding page courtesy WSI Corporation (Billerica, MA). Video transfer by Robert Prentice of the National Severe Storms Laboratory from video provided by THE WEATHER CHANNEL®.

3(a). HESSTON (KANSAS) TORNADO COMPLEX

The Hesston Complex (so named because one of its tornadoes scored a direct hit on Hesston, Kansas) produced four tornadoes, two of which were rated as F5 (violent) storms. It was remarkable that, although the total path length of the two tornadoes was 70 miles, each caused only one death (these were the only deaths caused by the day's 59 tornadoes). The warning system worked well, but a little good luck did not hurt either.



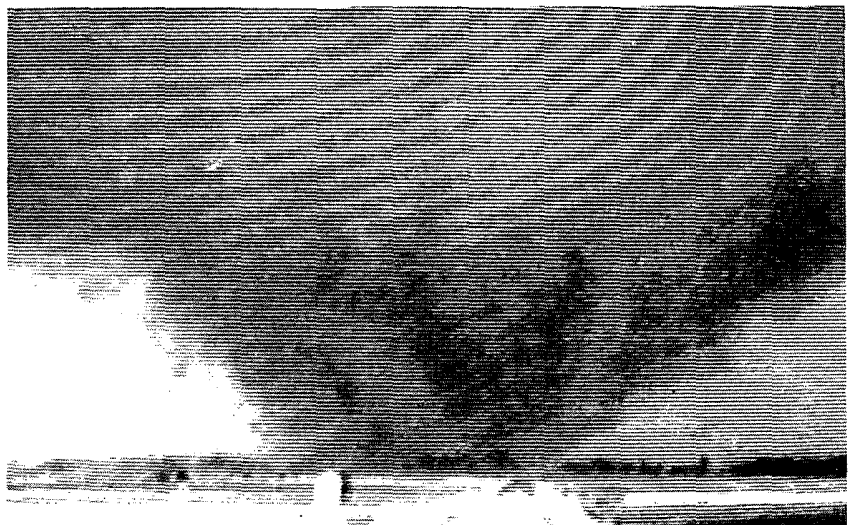


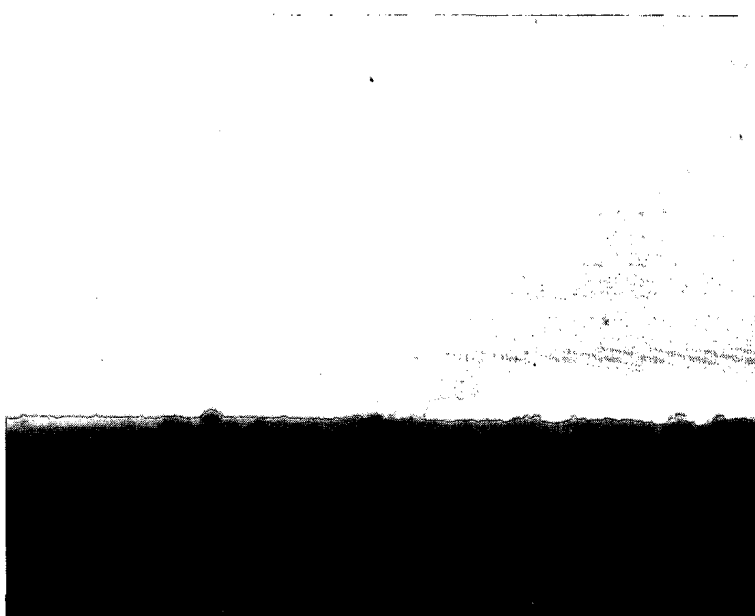
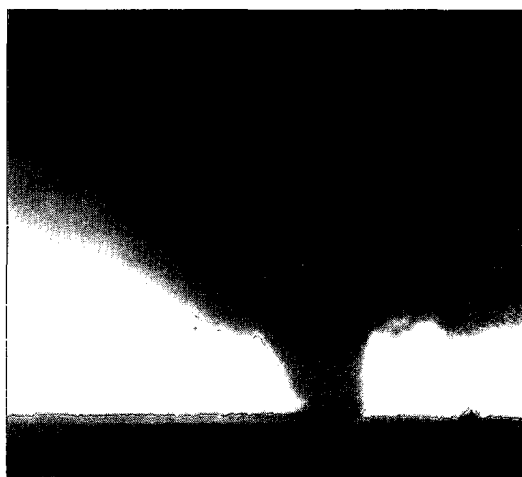
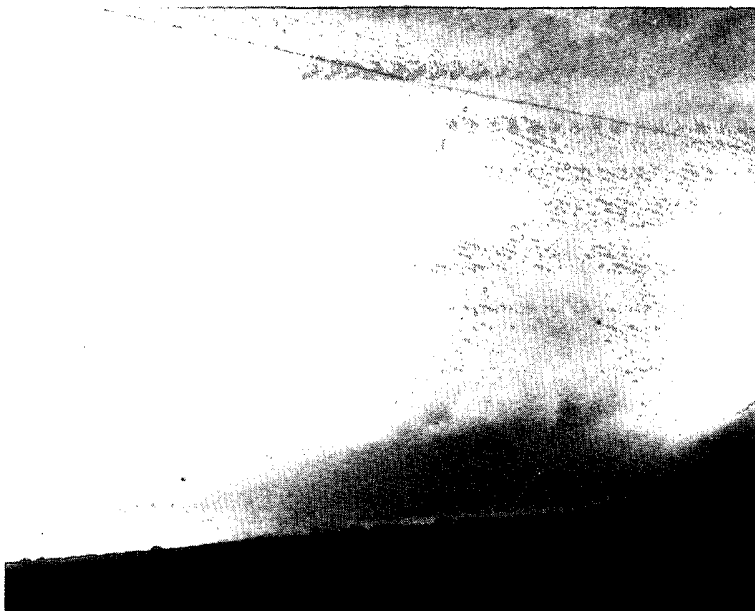
The first radar returns of the Hesston thunderstorm complex appeared a little before 2:30 p.m. CST, southwest of Medicine Lodge, Kansas. *Above (left): the developing storm near Medicine Lodge at 3:10 p.m. CST. Above (right): looking northeast at hail shaft out of west side of the storm near Penalosa at 4:10 p.m. CST. Left: Wide-angle view at 4:45 p.m. CST looking northeast of Pretty Prairie at a one-half-mile wide tornado soon after touchdown. Courtesy Jon Davies of Pratt, Kansas.*



Left: Looking northwest at a tornado near Burrton. The fatality produced by this tornado occurred near Burrton when a falling chimney killed a young boy huddled with his family in the basement of their farm home.

Right: Close-up of a one-half-mile-wide tornado several minutes after the above photo was taken and immediately after the cover photo was taken. The two photos on the lower half of this page are video transfers produced by Robert Prentice of the National Severe Storms Laboratory from video taken by Officer Chris Arnett of the Halstead (Kansas) Police Department.



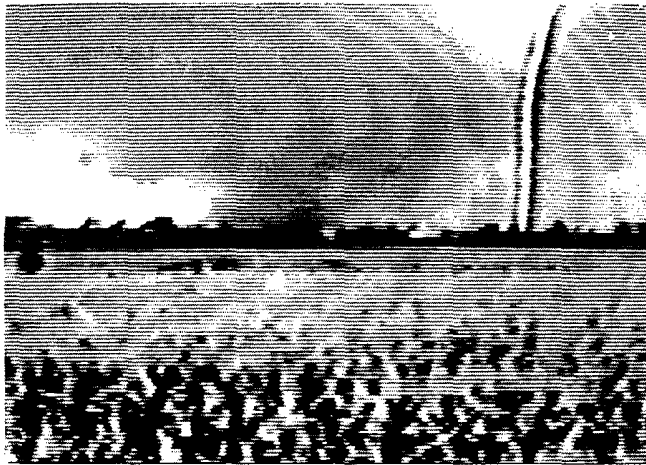


Top (left): Wide-angle (28mm) view of tornadic storm structure which was probably southwest of Burrton, Kansas.

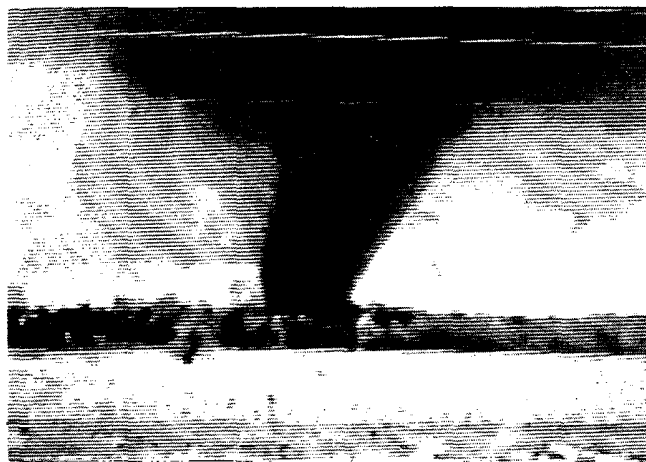
Left (center and bottom): Tornado was probably northeast of Burrton. Center photo is a 28mm view; bottom photo is zoomed.

Above (2 photos): Multi-vortex tornado passes south of photographer who has moved 1-1/3 miles south; 1.5" hail on ground. Courtesy: Doug Nelson of Alma, Kansas.

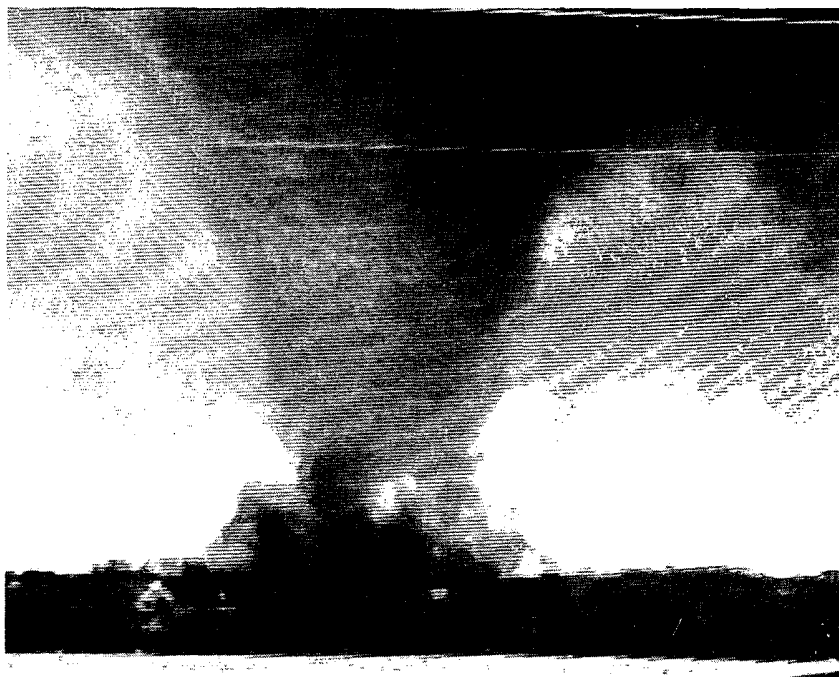
The three photos at left were taken 5 miles west of Hesston, looking southwest.

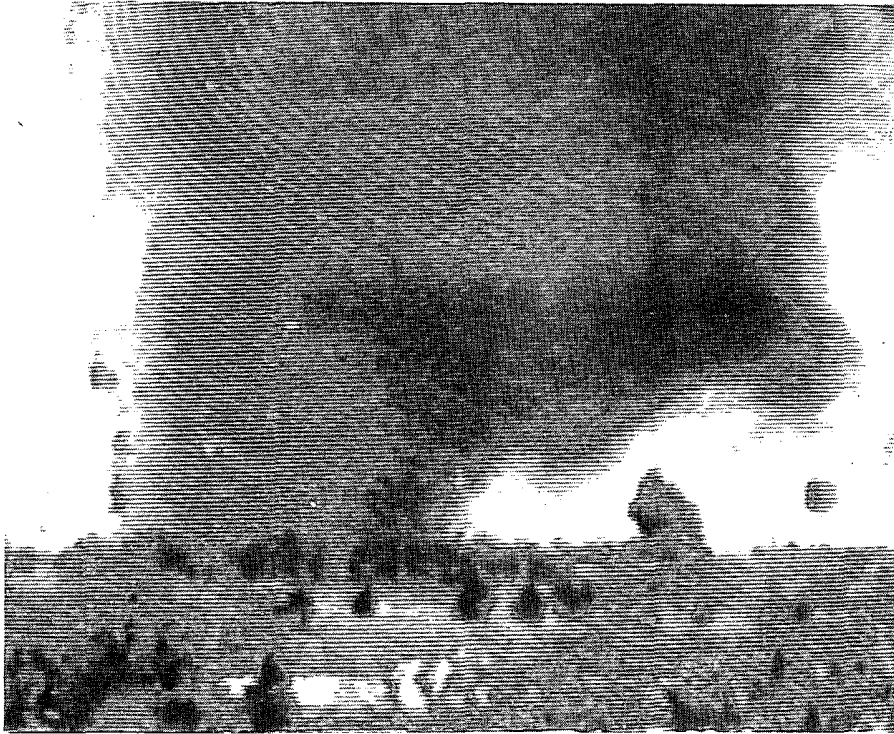


Positive cloud-to-ground lightning bolt as tornado approaches Hesston, Kansas.
Courtesy: Bill Hugie of Hesston, Kansas.

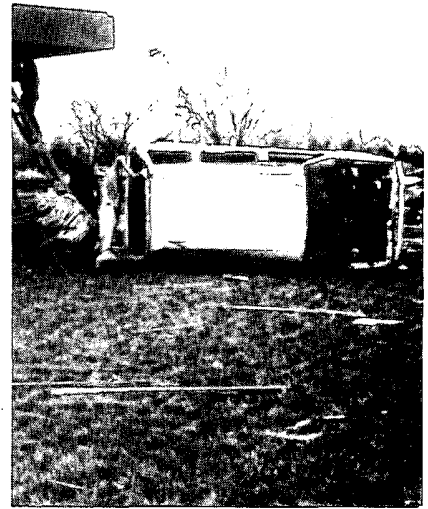


Top (right): Tornado about five minutes before hitting Hesston, Kansas. Courtesy: Jeff Schultz of Hesston. The remaining photos show the tornado moving through Hesston (1-1/2 to 2 miles west of photographer); multiple-vortex structure evident in bottom right photo. Courtesy: Dean Alison of Hesston. Video transfer by Robert Prentice of the National Severe Storms Laboratory; except bottom, right by Jon Davies of Pratt, Kansas.

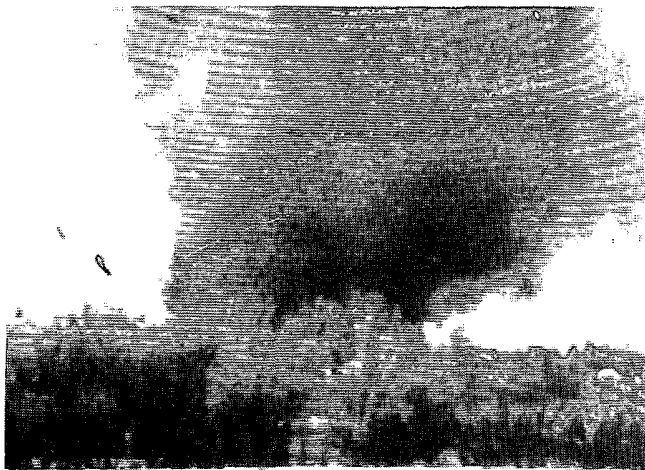




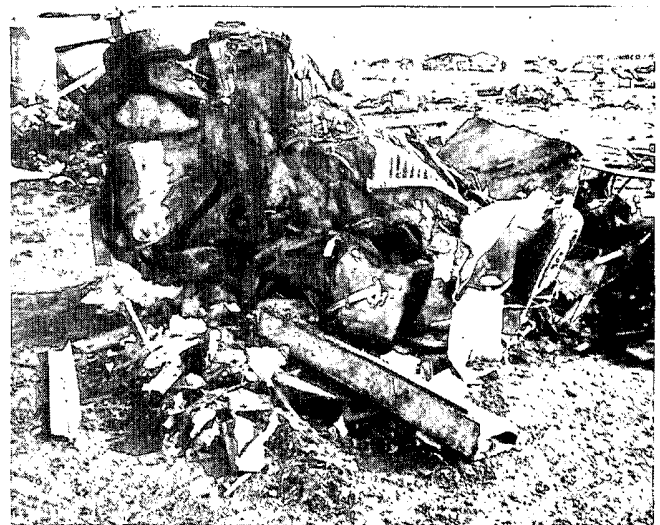
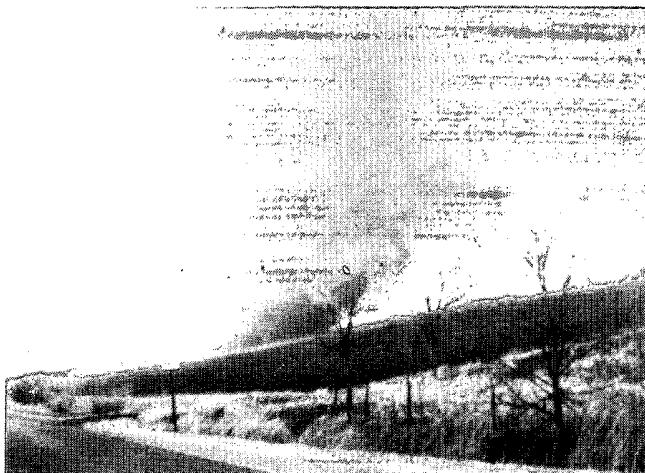
The dark "spot" at right-center horizon is several tons of powdered cement becoming airborne. Courtesy: Dean Alison of Hesston, Kansas.



This mini-van in Hesston was airborne until it hit the overhang at the top-left of photo. Courtesy: Jack May of Topeka, KS (WSFO).



Left (center): The tornado is exiting Hesston. Courtesy: Dean Alison of Hesston via Robert Prentice video transfer. *Bottom (left):* The tornado has just exited Hesston. Courtesy: Doug Nelson of Alma, Kansas. *Below:* Bill Hugie's Toyota after the tornado destroyed it along with his house on Hesston's far west side. Courtesy: Bill Hugie.





Left: The destruction of Bill Hugie's house by a tornado in Hesston, Kansas. Courtesy: Bill Hugie.

The remaining four photos on this page were taken in Hesston, Kansas the morning after the tornado by Jack May, MIC, WSFO at Topeka.



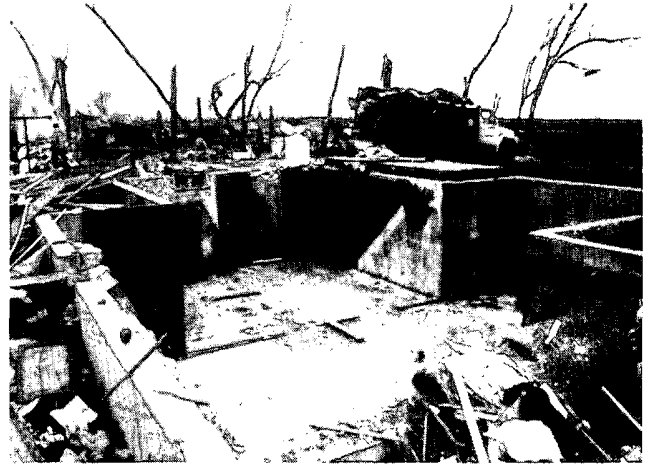
As was typical of the many homes destroyed by the Hesston tornado, not much was left except debris and memories.



Many trees showed the "sandblasted" (debarked) results of flying debris.

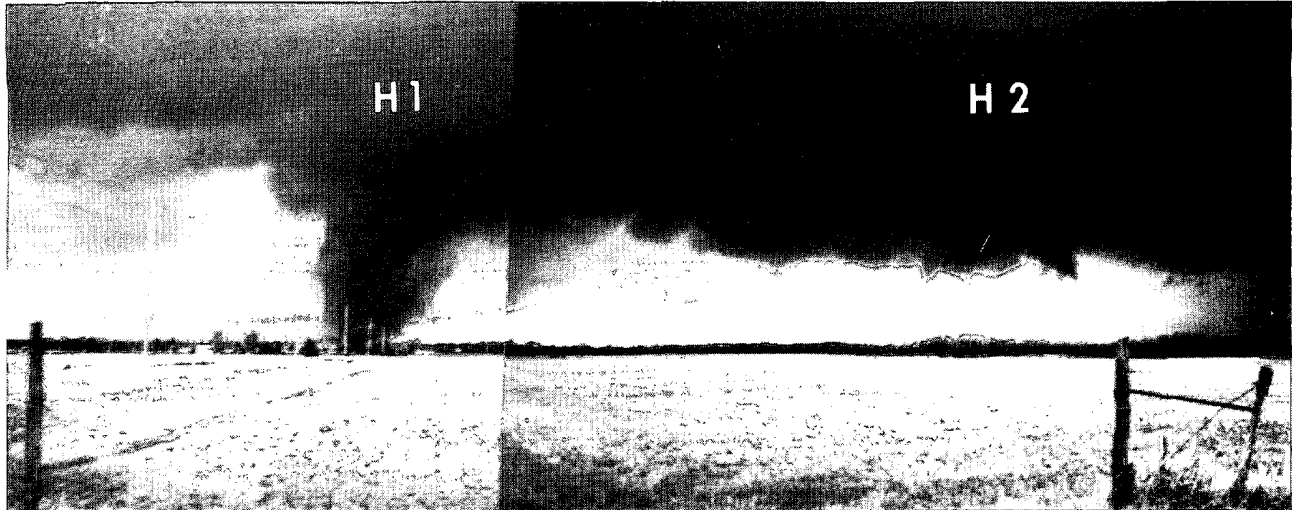


This truck's paint was "sandblasted" by flying debris.

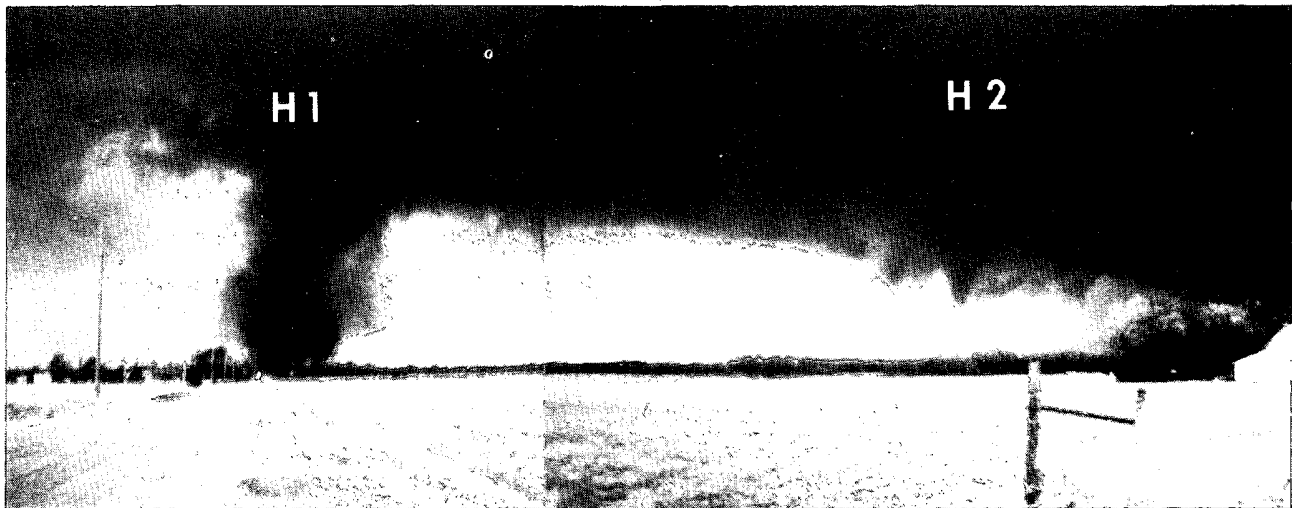


Only the basement was left of this house (debris had already been removed).

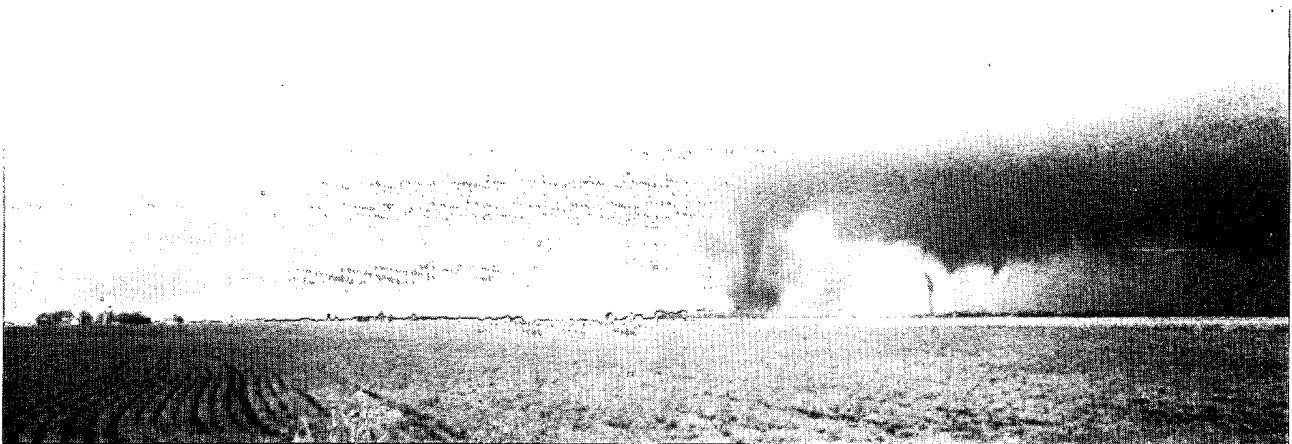
As Hesston was being hit by the tornado previously shown (H1), a second tornado (H2) touched down about 1 mile to the north-northeast. H1, moving faster than H2, passed to the east of H2. Then, apparently enmeshed in the circulation of H2, went to the north of H2 and eventually converged with H2 from the west. Another large F5 tornado soon resulted.



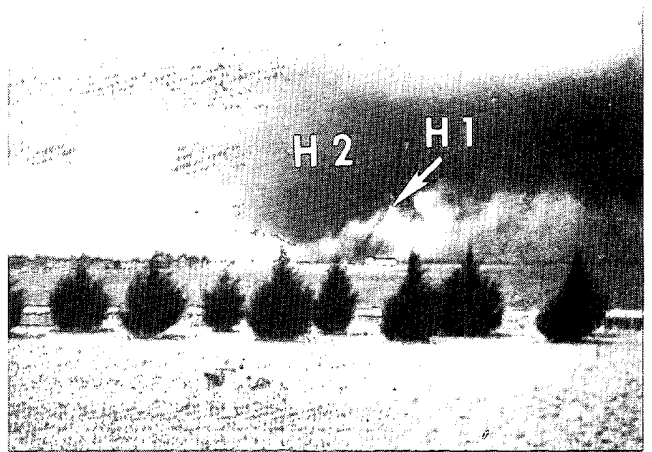
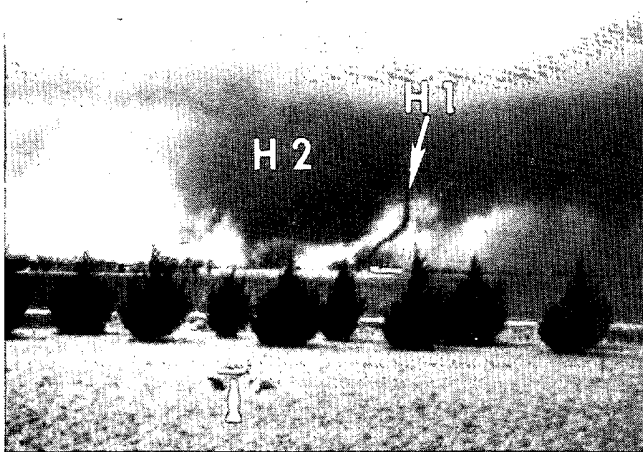
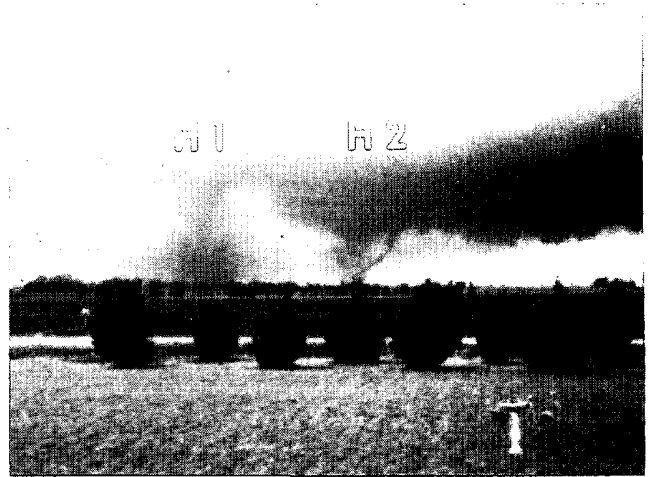
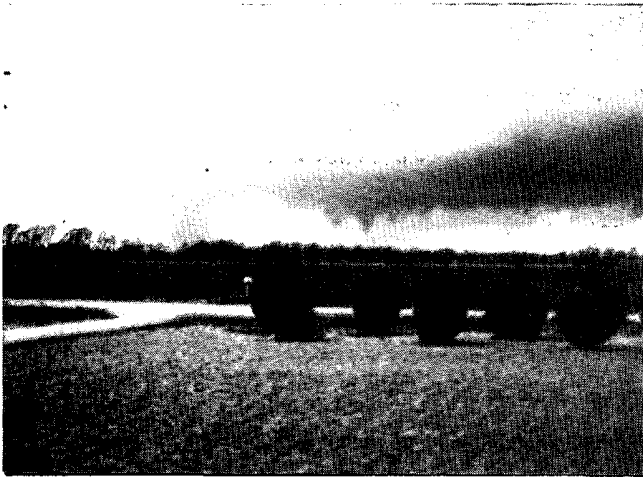
Looking west at the original Hesston tornado (H1) passing through Hesston (about 2-1/3 miles from photographer), while the wall cloud of the soon-to-be new tornado (H2) is already producing a funnel(s).



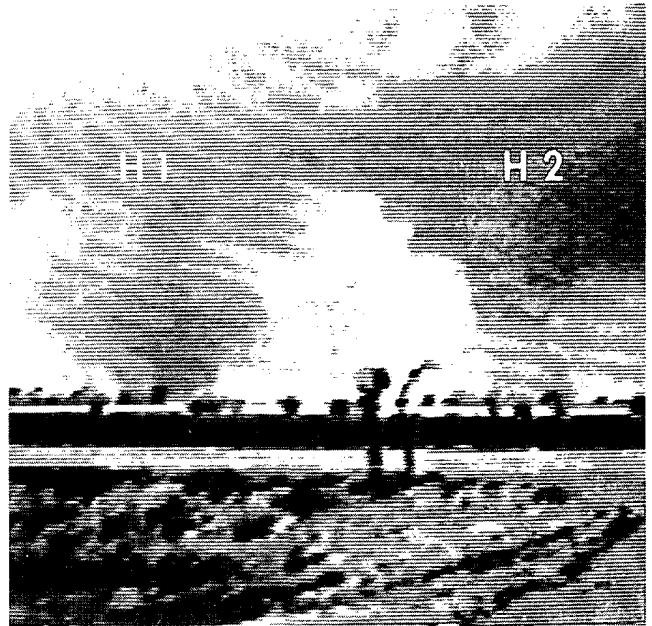
Moments later the debris cloud of H2 becomes visible. Above photos courtesy of Ms. Beth Eason of Peabody, KS; and Ms. Bobbie Harris of Peabody.



H1 northeast of Hesston as H2 exhibits multiple-vortex characteristics. The photo site is 5 miles east and 1/2 mile south of Hesston. Courtesy: Al Molzen of Newton, KS.

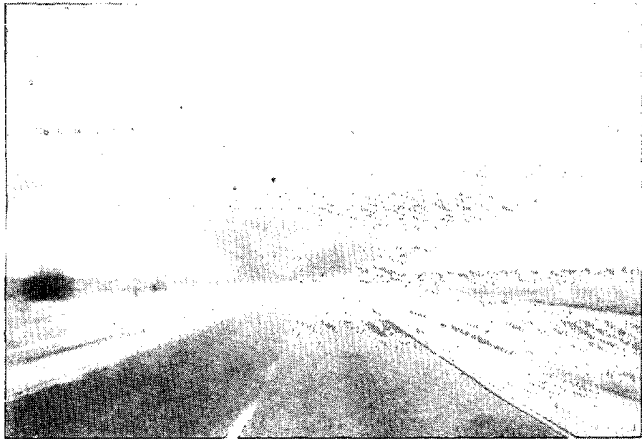
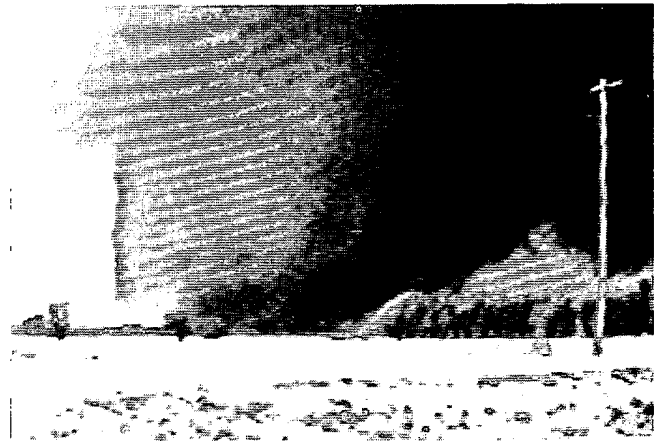
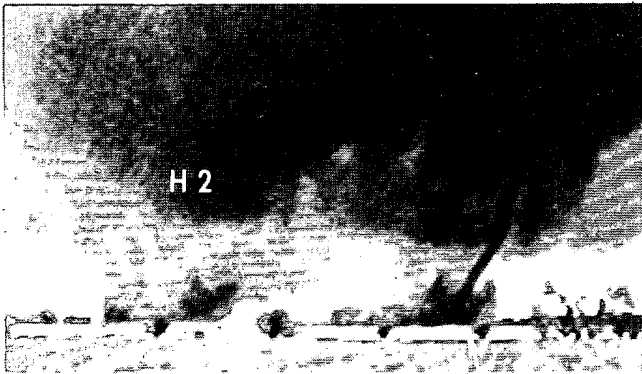


The above photos were taken several miles northeast of the Harris/Eason photos on the previous page. **Top (left):** H1 passing through Hesston while H2 has just touched down. **Top (right):** H2 already showing multiple vortex characteristics. **Above (left):** H1 has passed H2. **Above (right):** H1 is merging with H2. *Courtesy: Mrs. Nancy Franzen of Newton, KS.*

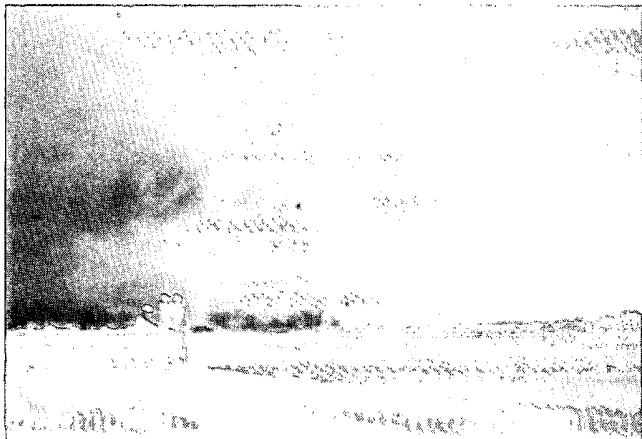


Looking southwest at H1 and H2 (about 1 mile from photographer). The photographer's farm suffered major damage from H2 shortly after its merger with H1. *Courtesy: Diana Schmidt of Goessel, KS.*

H1 and H2 (its debris cloud is barely visible) are about 3 miles southwest of the video site.



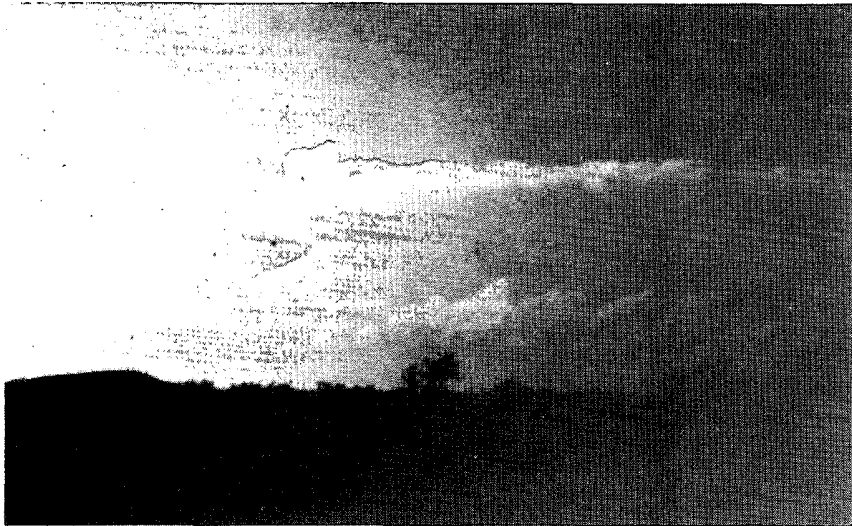
Top (left): About 2 miles WSW of video site, H1 has passed H2. Top (right): H1, evidently enmeshed in the circulation of H2, is northwest of H2. Above (left): The merger of H1 and H2 is almost complete about 2 miles west of the video site. Above right: H2 has widened considerably in a short time. These photos (and last photo on previous page) courtesy of Olin Harris of Walton, KS. Video transfer by Robert Prentice of NSSL.



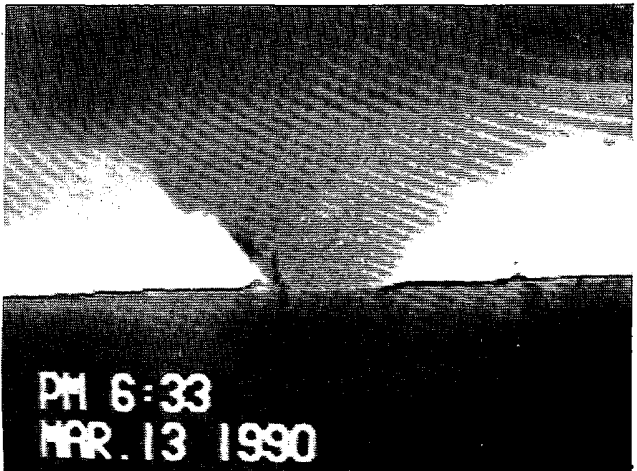
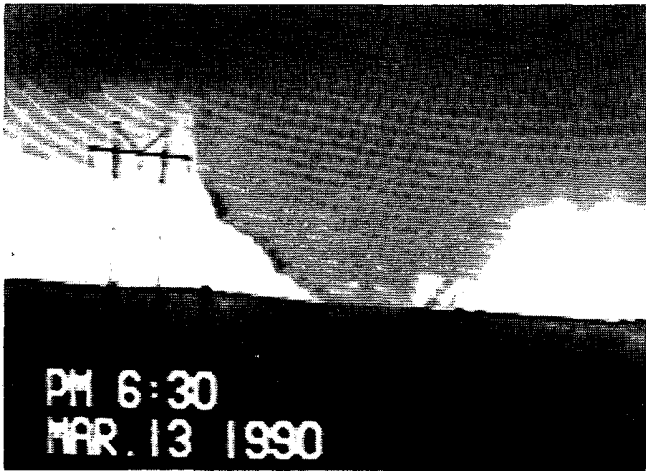
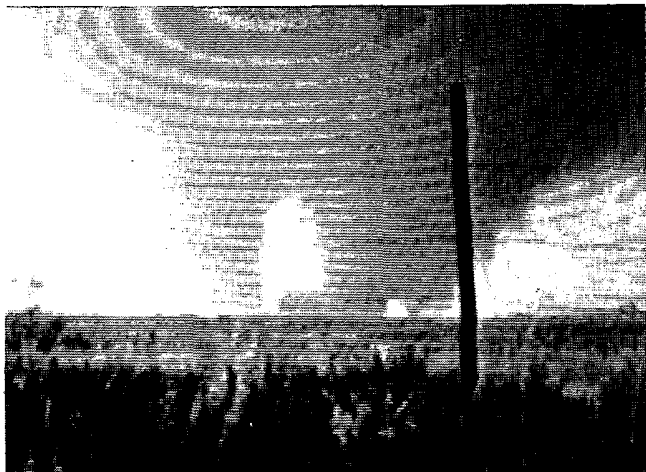
Above (left): Large F5 tornado (H2) crossing Highway K-15 about 1-1/2 miles southeast of Goessel. Left: H2 near Hillsboro. Courtesy: Larry Nelson of Alma, KS.

3(b). LAWRENCE (NEBRASKA) TORNADO COMPLEX

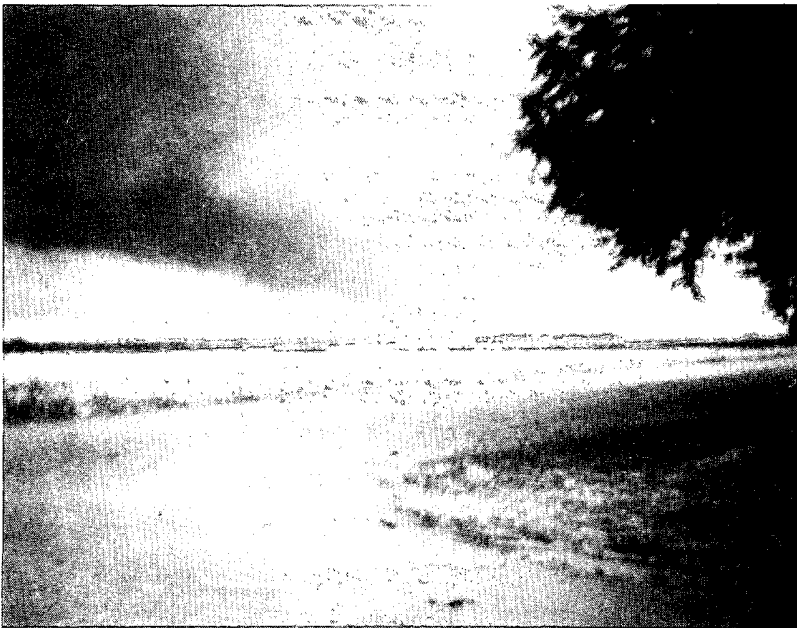
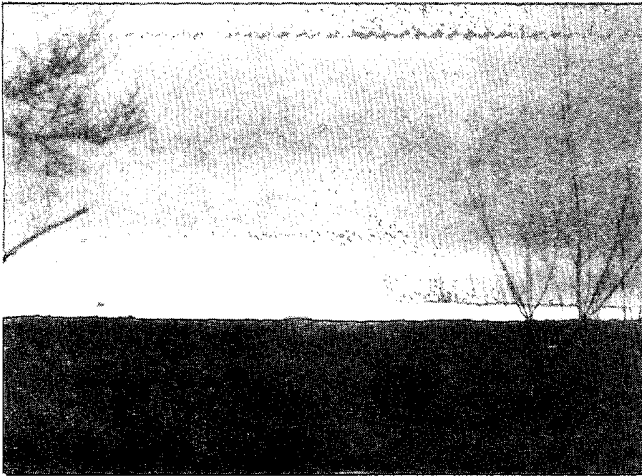
The Lawrence Complex officially produced two tornadoes: an F1 tornado in Smith County in Kansas (13-mile track), and an F4 tornado in Nebraska with a 124-mile track. It is quite likely, however, that the latter tornado event actually consisted of at least two separate tornadoes.



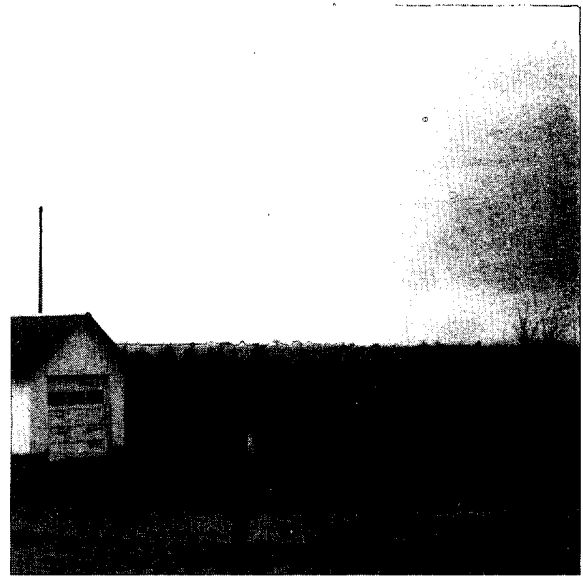
Left: The photo of the thunderstorm with an overshooting top (often indicative of a severe or potentially severe storm) was taken about 4:00 p.m. near Salina, Kansas - looking northwest. At 4:17 p.m., 1.75-inch hail fell at Cedar; and at 4:48 p.m., an F1 tornado touched down just north of Smith Center, KS. Courtesy: Doug Nelson of Alma, KS.



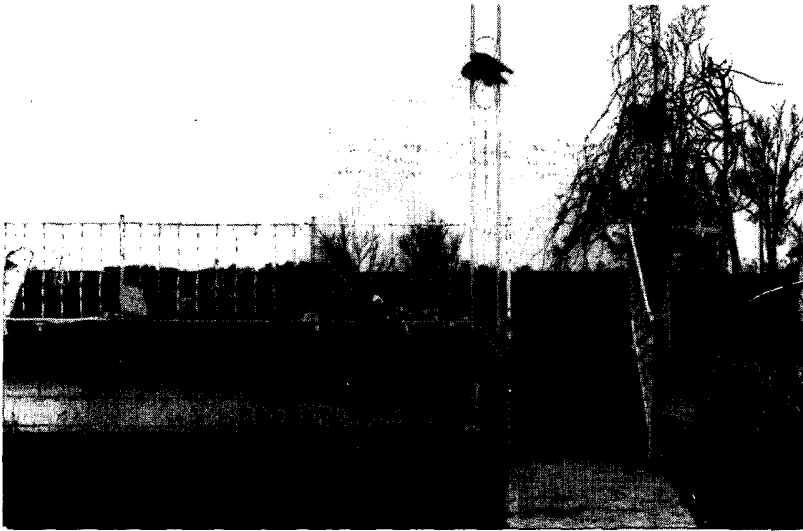
Middle (left): The multi-vortex Lawrence tornado northwest of Guide Rock, Nebraska. Middle (right): A little later, looking NNW. Courtesy: Evelyn Rehtus of Guide Rock. Above (left and right): The same tornado southwest of Lawrence. The correct time was 5:30 p.m. and 5:33 p.m. CST. Courtesy: Bob Schroeder of Blue Hill. Above 4 video transfers by Robert Prentice of NSSL.



Above (left): Looking southwest at a tornado which was estimated to be 15 miles southwest of Lawrence. Photo site is 3 miles east and 3/4 of a mile south of Lawrence. Above (right): Some time later, the tornado was just northeast of Lawrence. Courtesy: Robert Janda of Lawrence. Left: Photo looking south-southeast from site 2-3/4 miles north of Lawrence; taken about the same time as the second Janda photo above. Courtesy: Alois Hubl of Lawrence.



Above (left): Looking west from site 4 miles east and 1 mile north of Lawrence; tornado was about 3 miles distant. Above (right): A little later, looking NNW. Courtesy: Carolyn Janda of Lawrence.



Above (left): As a result of the tornado, all that was left of this home in southeast Lawrence was the front porch railing—still with its butterfly decorations. Above (right): This farmstead windbreak about 4 miles northeast of Lawrence caught a lot of tornadic debris. It was reported that part of the Lawrence athletic field scoreboard was found on the same farmstead. Center (left): Every building

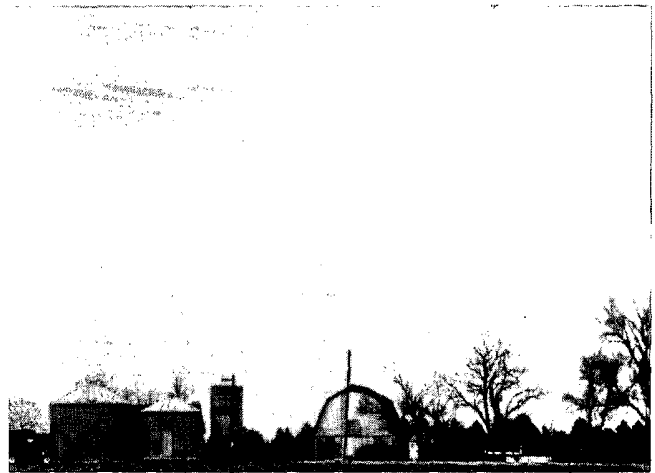
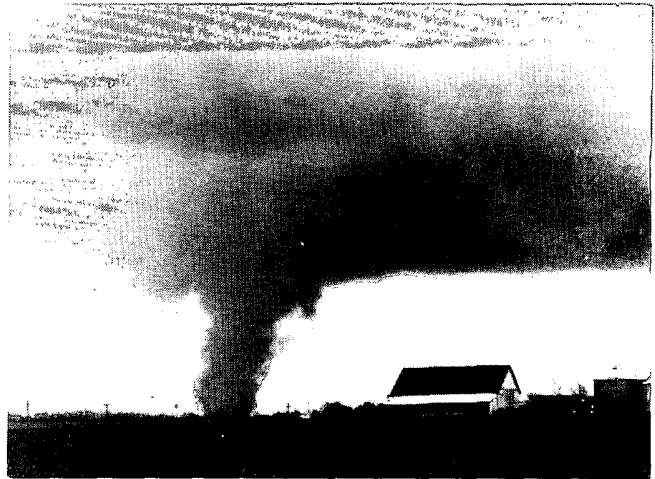
on this farmstead in the southeast corner of Lawrence was destroyed. Items from the home were found 100 miles away in Columbus, Nebraska. Photos courtesy: The Lawrence Locomotive; Lawrence, Nebraska.

3(c). WAKITA (OKLAHOMA) TORNADOES



An F3 tornado passed quite close to Wakita; a second tornado developed between Wakita and Caldwell (Kansas). The second tornado was classified F2 in Oklahoma, but strengthened to F3 in Kansas.

Left: The dying stage of the first Wakita tornado, looking southwest from Caldwell, KS. This and the four top photos on the next page were taken from the northwest edge of Caldwell. These five photos courtesy of and copyrighted 1990 by Larry Miller/Caldwell, Kansas. NOTE: On the next page a small twin engine airplane is between the two poles right of the tornado (with the black cloud mass in its background) in the TOP (left) photo. The plane is in the far left-center (just below cloud base) of the TOP (right) photo.



Top (left): Looking southwest from Caldwell at the second tornado. The tornado was about 5 miles distant (200mm lens used). Top (right): Taken about 5 minutes later, looking northwest (90mm lens). Above (left): A few minutes later, looking north-northwest (90mm lens). Above (right): Zoomed (200mm lens) view of tornado, taken after the sun had completely set.

3(d). LOVEWELL RESERVOIR (KANSAS) TORNADO

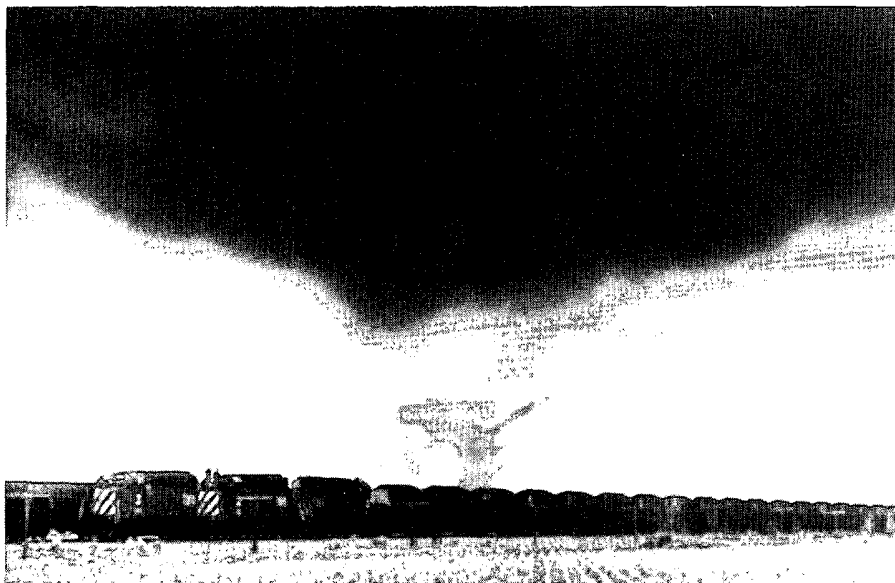
An F1 tornado touched down south of Lovewell Reservoir and moved north-northeast across the lake. *Bottom (left and right): Looking east as the tornado (a little more than 3/4 mile from the photographer) churns the lake surface and sends spray flying high.*





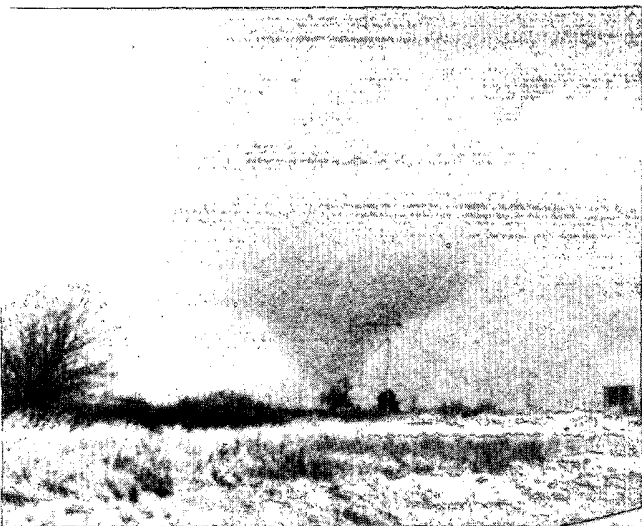
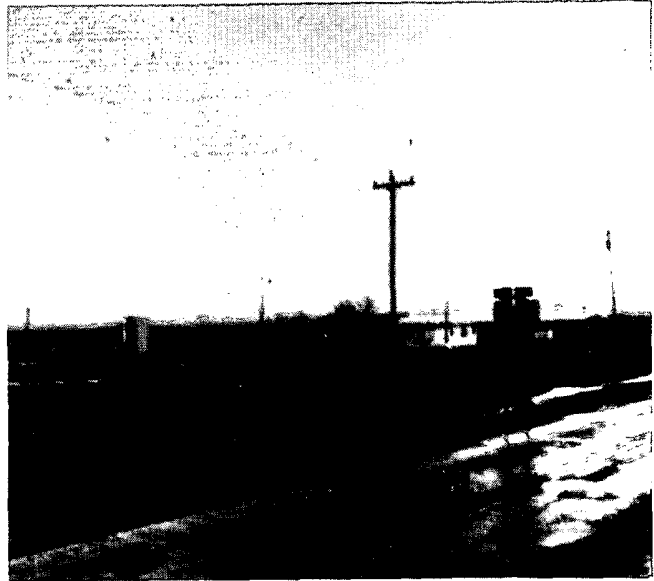
Above (left): The tornado continues churning across the lake. Right (top and center): The tornado weakens and begins to dissipate. These photos and two bottom photos previous page provided by Bill Fortune of WSFO Topeka from Lee Schnider of WSO Concordia; courtesy: Robert Richardson of Belleville, Kansas.

3(e). ANOTHER NEBRASKA TORNADO



Two Burlington Northern employees standing atop a loaded coal train watching as an approaching tornado nears railroad tracks along Highway 2 northwest of Grand Island. Courtesy: Rich Fox of the Grand Island (Nebraska) Independent.

3(f). CENTRAL OKLAHOMA TORNADOES



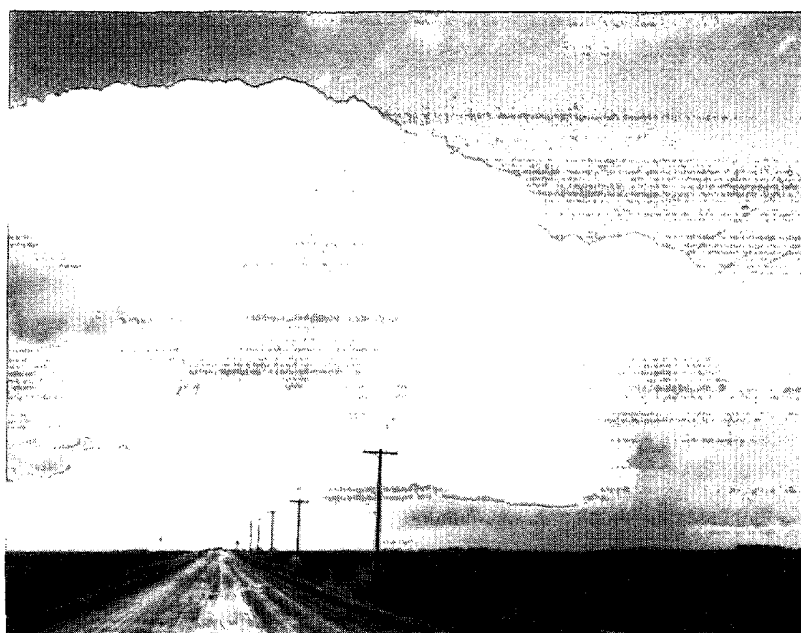
The first two of the four tornadoes which touched down in central Oklahoma between 4:44 p.m. and 5:59 p.m. are shown. *Above (left and right): Looking south-southeast, then southeast at an F2 tornado near Washington (about 5:15 p.m.). Courtesy: Mike Rehbein, University of Oklahoma. LEFT: Looking NNW at second F2 tornado northeast of Washington at 5:53 p.m. Courtesy: Steve Vasiloff, NSSL/NOAA. Photos provided by Don Burgess, NSSL.*

3(g). REPUBLIC COUNTY (KANSAS) TORNADO DAMAGE



The above four photos show tornado damage which occurred in western Republic County. Courtesy: Telescope, Inc./Belleville, KS.

KANSAS "MINI" SUPERCCELL OF MARCH 11, 1990



A storm (hard to call it a thunderstorm since lightning detection equipment noted only one strike in about two hours time) produced two tornadoes and numerous funnels from near Zenith to near Minneapolis, Kansas. The first tornado touchdown occurred near Zenith while cloud tops were measured at only 23,000 feet. *Above: A rare view of a tornadic supercell showing not only a tornado, but also the storm's tops (cloud tops about 23,000 feet), flanking line, and evidence of a rear flank downdraft. Photo site looking northeast from south of Stafford. Bottom: Looking NNE at storm before it became tornadic, from site west of Preston.* Courtesy: Jon Davies of Pratt, KS. These photos appear in color on pages 260-261 of the October 1990 issue of Weatherwise.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

ALZ-001-018
All Alabama Counties

	15	0600CST-							
	17	0800CST			13	0	8	?	Flash Flooding, Flooding

Heavy rainfall amounts of 8 to 16 inches fell over southern Alabama and lesser amounts of 3 to 8 inches fell over northern Alabama from the morning of Thursday, March 15, through the morning of Saturday, March 17. The heavy rains caused severe flash flooding along small streams and record or near-record flooding along main streams over the southern two-thirds of Alabama. Twenty-four-hour rainfall amounts ending at 0700 CST on the 17th, exceeded amounts with a 100-year return period over the Pea River Basin, and the upper portion of the Choctawhatchee River in southeast Alabama. Extensive damage occurred to streets, roads, and bridges in south Alabama, where several major highways were closed. Over 6,000 people were forced out of their homes. Twenty-six counties in Alabama were declared disaster areas.

At about 0630 CST, Saturday, March 17, at Elba in Coffee County, a swollen stream broke a levee and flooded the city of Elba to a depth of 6 to 12 feet. Most of the town was evacuated with no loss of life or injuries. Of the city's 140 businesses, 130 were either destroyed or severely damaged. Nearly 1,000 homes were either destroyed or damaged. Three hundred to 400 homes outside the levee area were also flooded. Complete and accurate damage estimates were not available, but some think damage at Elba could easily exceed \$25 million. Damage estimates in Alabama by the Alabama Emergency Management Agency (excluding Elba) were \$38 million to roads, streets, and bridges, and approximately \$10 million to homes and commercial buildings. Other estimates placed the total flood damage in Alabama over \$100 million. Agricultural damage estimates were not available, but it too will be very high. It was too early in the season for widespread crop damage, but considerable damage occurred through soil erosion from rapid runoff.

There were 13 deaths attributed to the flood events in Alabama. In Covington County, six people drowned in a one-car accident Friday evening, March 16. The car went off a county back road and plunged into a flooded creek where a bridge had washed out. Four males and two females lost their lives in the accident.

In Escambia County, two men were killed Saturday, March 17, at about 2215 CST when they ignored a road barricade, then drove through a flooded washed-out bridge and hit the base of the concrete bridge. The two men died from injuries sustained from the accident. Also in Escambia County, an East Brewton man drowned Saturday night, March 17, when he waded onto a flooded roadway.

In Dale County, the bodies of two men were found in a car Saturday, March 17, just hours after it ran off a washed-out road and slipped into the Choctawhatchee River. Also in Dale County, rescue workers found the body of a woman in the Choctawhatchee River Sunday morning, March 18.

In Mobile County, a Prichard man died in his car on a road that had been barricaded due to 7 feet of water.

National Weather Service products were considered very good and kept the public well informed of these severe flood and flash flood events. M43V, F44V, M14V, M20V, M29V, F29V, M40V, M28V, M30O, M50V, M28V, F21O, M38V.

Mobile and Baldwin Counties	15	1100CST- 1400CST			0	0	?	?	Flash Flooding
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Torrential rains caused extensive flooding throughout the city of Mobile and Mobile County. In Baldwin County many roads and streets became impassable.

Baldwin County	15	1545CST	0.3	10	0	0	?	?	Waterspout- Tornado (F0)
	15	1612CST	0.3	10	0	0	?	?	Tornado (F0)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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 Cont'd

15 1628CST 0.3 10 0 0 ? ? Tornado (F0)

At 1545 CST a small waterspout moved inland as a tornado and damaged the roof of a house near Weeks Bay. Also a pump house was damaged and two trees were blown down in the same vicinity. At 1612 CST a small tornado touched down at Summerdale then moved northeast a short distance. Several mobile homes were damaged or knocked off their foundations. At 1628 CST a small tornado uprooted trees along Highway 90 at Elsanor.

Pike County	16	1500CST			0	0	?	?	Thunderstorm Wind
	16	1503CST			0	0	?	?	Thunderstorm Wind
	16	1505CST			0	0	?	?	Thunderstorm Wind
	16	1507CST			0	0	?	?	Thunderstorm Wind
	16	1534CST			0	0	?	?	Thunderstorm Wind
	16	1610CST			0	0	?	?	Thunderstorm Wind

At 0300 CST two chicken houses were heavily damaged by strong thunderstorm winds at Troy. At 1503 CST trees were blown onto a highway near Troy. At 1505 CST a country club was damaged at Brundidge. At 1507 CST trees were blown down at Troy. At 1534 CST a mobile home was blown over near Troy. At 1610 CST several mobile homes and houses were damaged 5 miles east-southeast of Troy.

Bullock County	16	1550CST			0	0	?	?	Thunderstorm Wind
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Trees were blown onto power lines 23 miles northeast of Troy.

Coffee County	16	1635CST			0	0	?	?	Thunderstorm Wind
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Trees were blown down at Victoria.

Barbour County	16	1820CST- 1930CST			0	0	?	?	Thunderstorm Wind
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At 1820 CST trees were blown onto a house and power lines were blown down at Eufaula. At 1930 CST trees were blown down, one onto a mobile home at Eufaula.

Dale County	16	1930CST			0	0	?	?	Thunderstorm Wind
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Trees were blown down at Ozark.

Henry County	16	1940CST			0	0	?	?	Thunderstorm Wind
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Trees were blown down at Abbeville.

ARKANSAS

Carroll County	05 06	1800CST- 0400CST			0	0	4	?	Flash Flood
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Heavy rain sent numerous small streams out of their banks, flooding and washing out county roads, and damaging several bridges. Damage was around \$40,000.

Madison County	05 06	1800CST- 0400CST			0	0	5	?	Flash Flood
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Heavy rain fell across Madison County the night of the 5th and during the day of the 6th, resulting in flash flooding. War Eagle Creek overflowed its banks at several locations, washing out sections of county roads. Total damage was estimated at \$81,000.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Little River County 07 2000CST-
08 0600CST 0 0 4 ? Flash Flood

From 5 to 6 inches of rain fell during the night of March 7th and early morning March 8th, causing widespread flash flooding. Several roads and bridges were washed out or damaged, with damages estimated around \$5,000.

Miller County 07 2000CST-
08 0600CST 0 0 4 ? Flash Flood

Five to 7 inches of rain fell the night of March 7th and early March 8th, causing flash flooding across Miller County. Texarkana had several streets flooded and other minor problems. Elsewhere across the county, several roads were washed out along with bridges damaged. Damage to roads and bridges was estimated to be around \$36,000.

Sevier County 07 2000CST-
08 0600CST 0 0 4 ? Flash Flood

Rainfall around 6 inches fell from the night of March 7th through the early morning hours of March 8th, causing widespread flash flooding across Sevier County. Many county roads were washed out and several bridges were under water. A woman and two children were swept into Sand Creek near Lockesburg on Arkansas 317. They managed to get onto the hood of the vehicle and were later rescued unharmed. Damage to roads and bridges was estimated to be around \$10,000.

Clark County 07 2100CST-
08 0600CST 0 0 4 ? Flash Flood

Around 7 inches of rain fell across Clark County the night of March 7th and early March 8th, resulting in flash flooding. Numerous creeks overflowed their banks causing an estimated \$40,000 damage to roads and bridges. The Ouachita River also flooded parts of Arkadelphia.

Hot Spring County 08 0000CST-
0400CST 0 0 5 ? Flash Flood

Hot Spring County suffered an estimated \$118,000 in damage as a result of flash flooding from heavy rains March 7th and 8th. A dam on the Ouachita River at Lake Catherine had to be completely opened to release the sudden onslaught of water. The resulting sudden rise of the river flooded numerous roads and fields near Malvern, trapping some people and putting farm equipment and livestock under water.

Columbia County 08 0000CST-
0600CST 0 0 5 ? Flash Flood

Heavy rains ranging from 5 to 7 inches caused widespread flash flooding across Columbia County. Damage to washed-out roads and bridges was estimated to be around \$60,000.

Howard County 08 0000CST-
0600CST 0 0 4 ? Flash Flood

About 7 inches of rain fell across Howard County the night of March 7th and early March 8th, causing widespread flash flooding. Damage estimates from washed-out roads and bridges were around \$32,000. About a dozen families near Nashville had to be evacuated when Mine Creek overflowed its banks.

Lafayette County 08 0000CST-
0600CST 0 0 4 ? Flash Flood

About 7 inches of rain fell across Lafayette County the night of March 7th and early March 8th. Nearly \$20,000 damage was done to county roads and bridges. Schools had to be closed in some areas because buses could not travel their normal routes.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Nevada County	08	0000CST-0600CST			0	0	4	?	Flash Flood
Heavy rains of 5 to 7 inches caused flash flooding across Nevada County resulting in about \$30,000 in damage to roads and bridges.									
Ouachita County	08	0000CST-0600CST			0	0	4	?	Flash Flood
Five to 7 inches of rainfall resulted in nearly \$10,000 in damage to roads and bridges across Ouachita County.									
Pike County	08	0000CST-0600CST			0	0	4	?	Flash Flood
Heavy rains washed out roads and bridges across Pike County resulting in about \$20,000 in damage.									
Dallas County	08	0100CST-0600CST			0	0	4	?	Flash Flood
Five to 7 inches of rain caused flash flooding and washed out roads and bridges across Dallas County. Damage was estimated at \$6,000.									
Saline County	08	0100CST-0600CST			0	0	5	?	Flash Flood
An estimated \$120,000 damage to roads and bridges alone, was caused by flash floods across Saline County early March 8th. Thirty-one families had to be evacuated during the early morning hours due to rising water. Several emergency rescues were done to save people from automobiles that were washed off roads.									
Faulkner County	08	0200CST-0700CST			0	0	4	?	Flash Flood
Two to 4 inches of rainfall flooded several roads across Faulkner County. More than 50 families were isolated when the only access road into their neighborhood, just east of Lake Conway, was washed out by a flooding Palarm Creek. Damage was near \$10,000.									
Lonoke County Ward	08	0200CST-0800CST			0	0	?	?	Flash Flood
A school bus was stranded in about 4 feet of water for 2-1/2 hours as the result of washed-out bridges on Cocklebur Road. Mill Creek flooded the road due to 4 to 6 inches of rain that fell the night of March 7th and early March 8th. Forty-one students and their driver were trapped, but all were rescued unharmed.									
Van Buren County	08	0200CST-0800CST			0	0	4	?	Flash Flood
Heavy rains caused flash flooding that washed out several roads across Van Buren County. Damage was estimated around \$7,000.									
Pulaski County	08	0200CST-0800CST			0	0	?	?	Flash Flood
Five to 6 inches of rainfall caused flash flooding across parts of Pulaski County. The AA Motel, along Interstate 30 near the Saline County line, had to be evacuated due to about 4 feet of flood water. Numerous cars had to be abandoned along flooded roads in the south Little Rock area. A convenience store was closed and 15 people were evacuated from homes along Baseline Road. In Sherwood, a section of Brockington Road was washed out from flood waters.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

White County	08	0200CST- 0800CST				0	0	4	?	Flash Flood
Numerous county roads were flooded and washed out by flood waters from heavy rains that fell March 7th and 8th. Damage was near \$20,000.										
ARZ010-011 Ouachita River	09- 23					0	0	?	?	River Flood
Heavy rains during the first two weeks of March sent the Ouachita River over its banks from Arkadelphia south to Camden. The most significant flooding was in the Camden area, where the river rose to 39.4 feet, 13.4 feet above flood stage. Numerous roads were flooded and homes isolated due to the flood water.										
Benton County NW Bentonville	14	0800CST	.25	50	0	0	?	?		Tornado (F0)
A small tornado touched down briefly in the Punkin Holler area, uprooting and breaking trees. A chicken house also lost its roof.										
Arkansas County 5 E DeWitt	14	2120CST			0	0	?	?		Thunderstorm Winds (G56)
Power poles were downed by thunderstorm winds along Highway 165 between Lodge Corner and DeWitt.										
Union County Norphlet	14	1920CST			0	0	?	?		Thunderstorm Winds
Thunderstorm winds peeled back part of the roof of Norphlet Elementary School. Heavy rain that followed flooded several classrooms, destroying books and equipment.										
Dallas County Fordyce	14	1940CST	2	200	1	6	5	0		Tornado (F2)
A tornado ripped through the southeast and east sections of Fordyce, damaging at least 50 homes, two businesses, and one school. The Greenville neighborhood in the southeast part of town suffered the worst damage. At least eight homes were damaged to the point they were uninhabitable. One mobile home was carried a block through the air before it came crashing to the ground. Two men in the mobile home were injured; one died two days later. A third occupant was a six-week-old baby girl. Miraculously, the baby was found amidst the debris, lying face down in the mud, with only minor injuries. Damage across town was estimated at \$250,000. M57M										
Arkansas County 5 E Gillett	14	2142CST			0	0	?	?		Thunderstorm Winds
Gillett	14	2145CST			0	0	?	?		Thunderstorm Winds
A mobile home was damaged just east of Gillett. Trees and power lines were downed, along with window and roof damage a few minutes later.										
Jefferson County Pine Bluff	14	1947CST			0	0	?	?		Lightning
A lightning strike started a fire in a home just southwest of Pine Bluff.										

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Cleveland County
Rison 14 2000CST 0 0 ? ? **Thunderstorm Winds (G56)**
Trees and power lines were downed by thunderstorm winds in an area 2 miles southeast of Rison along Highway 35, to 8 miles east of Rison near Highway 15.

Lincoln County
5 N Gould 14 2100CST 0 0 ? ? **Thunderstorm Winds**
Thunderstorm winds downed power lines just north of Gould. Power was knocked out to Cummins Prison, causing the facility to go to a backup generator.

Chicot County
3 S. Halley 14 2200CST 0.25 30 0 0 5 0 **Tornado (F1)**
A small tornado destroyed one home and caused minor damage to a few others. A couple inside the home heard a loud "pop" so they quickly took shelter in a nearby closet, where they escaped injury. About three-fourths of the home was completely destroyed. Damage was estimated at \$90,000.

Arkansas County
Stuttgart 14 2210CST 0 0 ? ? **Thunderstorm Winds**
Thunderstorm winds downed power lines just south of Stuttgart.

Cleburne County
Heber Springs 14 2237CST 0 0 ? ? **Thunderstorm Winds**
Thunderstorm winds downed power lines near Heber Springs.

St. Francis County
Hughes 14 2320CST 0 0 ? ? **Thunderstorm Winds**
Thunderstorm winds downed trees and power lines.

Lee County
Brickeys 14 2325CST 0 0 ? ? **Thunderstorm Winds**
Thunderstorm winds downed trees and power lines.

Crittenden County
West Memphis 14 2330CST 0 0 ? ? **Thunderstorm Winds (G51)**
Thunderstorm winds downed trees and power lines.

ARIZONA

AZZ008
South Central
Deserts 05 1320MST 0 0 4 0 **High Wind**
Police in Youngtown reported a large dust cloud and strong winds near 113th and Grand Avenues. The winds blew out the side and rear windows of three vehicles on Grand Avenue and caused another to swerve off the road. Power outages were also reported throughout the town. Luke AFB reported a gust to 39 mph, while a station near Interstate 17 and Dunlap recorded a gust of 58 mph.

AZZ010
Southeast Arizona 05 1500MST 0 0 0 0 **High Wind**
Wind gusts to about 60 mph moved through Cochise County during the afternoon and caused a severe dust storm. Department of Public Safety closed Interstate 10 between Willcox and the New Mexico border for more than 3 hours. Six vehicles were involved in accidents related to the dust storm.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

CALIFORNIA, Northern

Kern County
52 WNW
Bakersfield

13 1400PST-1530PST 0 0 0 6 Hail (0.375)

An intense convective shower produced hail over a small area to the west of Bakersfield. Almond orchards were the hardest hit by the hail which covered the ground. The hail knocked blossoms off the trees at a critical point in development causing an estimated \$1 million in damages.

CALIFORNIA, Southern

None reported.

COLORADO

El Paso, Douglas,
Arapahoe Counties

05 1200MST-2100MST 0 0 6 0 Lightning
Thunderstorm Winds

A band of strong showers and thunderstorms ahead of an approaching Pacific winter storm swept across Colorado's eastern plains. Thunderstorms pounded sections of Colorado Springs (El Paso County) during the late morning and afternoon hours. The storms dropped pea- to marble-size hail (.50) across northern and western sections of the city around the Garden of the Gods and the Air Force Academy. In a few locations, hail piled to a depth of 2 to 3 inches. The hail and heavy rainfall (on the order of 1.00 to 2.50 inches) was blamed for damage to a 160,000 square-foot roof on a north-side high school, along with flooded basements in several neighboring homes. Lightning caused a house fire in Colorado Springs, with no injuries reported. Frequent lightning also was blamed for numerous electrical power outages across northern El Paso County, during much of the afternoon.

Later that evening (1900 MST to 2100 MST) a line of strong thunderstorms traversed the southeastern corner of the Denver metropolitan area. Heavy rain (0.90- to 2.40-inch amounts) and pea- to marble-size hail (.50) piled to a depth of 2 to 3 inches, fell on portions of northern and eastern Douglas and western Arapahoe counties. Thunderstorm winds were clocked to 43 knots (50 mph) at Centennial Airport (10 miles south of Denver). Strong thunderstorm winds were also blamed for toppling several acres of evergreen trees in east-central Douglas County near the community of Larkspur. No other damage reported in the vicinity of the fallen trees.

Southwest and
Sangre De Cristo
Mountains, Pikes
Peak/Palmer Divide
COZ002-004-006
007-008-010

05-07 0 0 4 0 Winter Storm
Blizzard

The season's strongest winter storm swept from southwest to northeast across the state, bringing with it moderate to heavy snowfall, blizzard conditions, and thunderstorms. Snow began on the 5th in Colorado's Four Corners and southwest mountains by Monday afternoon (5th). Snow totals ranged from 5 to 10 inches in the lower elevations of the southwest, with 1-1/2 to 3 feet of wet heavy snow burying the higher terrain. Overnight the storm continued to track very slowly to the east across the southern mountains and San Luis Valley, then northeast across Colorado's northeastern plains. In advance of the storm, numerous showers and thunderstorms developed on the eastern plains with the heaviest activity near Colorado Springs and in portions of the Denver metropolitan area. The rain observed east of the Continental Divide quickly changed to snow during the pre-dawn hours of the 6th, then spread east onto the high plains soon after sunrise. Snow, heavy at times and coupled with gusty northerly winds, whipped into 2- to 3-foot drifts by noon (MST)...as snow fell at a rate of 2 to 3 inches per hour in and along the northeastern foothills in areas above 6,000 feet. Schools and businesses closed soon after mid-day as weather conditions deteriorated quickly throughout the afternoon. By rush hour (around 1700MST) sustained winds of 30 to 40 knots (35 to 46 mph) with gusts exceeding 50 knots (58 mph) reduced visibilities to near zero and whipped the newly fallen snow into 3- to 4-foot drifts. Many residential as well as secondary and primary roads became impassable.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

COLORADO Cont'd

Interstates 25 and 70 in and out of Denver closed soon after the evening rush hour. Snowfall was heaviest over northern and western portions of the Denver metropolitan area during the evening hours. Road crews cleared drifts as high as 12 feet across a number of east-west roads in southeastern Boulder and northwestern Adams Counties. Several hundred rush hour commuters, including the state's governor, were caught in the blizzard conditions and became stranded along a 15-mile stretch of U.S. Highway 36 between Denver and Boulder. Many remained snow bound in their vehicles up to 8 hours until rescued by police and National Guard units. The highway remained closed until around 1900 MST the next day.

By early evening heavy snow and blizzard conditions forced Denver's Stapleton International Airport to shut down operations...just after a passenger airliner with 82 passengers aboard skidded off a runway at about 1915 MST.

Wind speeds and snowfall tapered off soon after midnight MST (on the 7th) in many areas along the Front Range. Light snow and wind gusts to 35 knots (40 mph) continued to hamper travel across Colorado's northeastern plains. Snowfall totals varied from 1 to 3 feet in the northern and central mountains, 18 to 50 inches over the Front Range and along the northeast foothills above 6,000 feet, 9 to 24 inches at elevations between 5,000 and 6,000 feet (mainly west of Interstate 25), and 1 to 5 inches across the northeast plains. Significant totals include a 50-inch reading near Echo Lake at the foot of Mount Evans (Clear Creek County), 46.5 inches on Buckhorn Mountain, 15 inches northwest of Fort Collins (Larimer County), and 46 inches near the top of Coal Creek Canyon (20 miles northwest of Denver in Boulder County). The roof of a Denver home collapsed under the weight of the heavy snow just after midnight (around 0100MST) on the 7th. An attached fiberglass patio awning was also severely damaged. Although the family was home asleep at the time of the incident, no one was reported injured. Total water equivalents ranged from about 2 inches in the lower elevations to as much as 5.4 inches measured at many higher northeastern foothill locations.

Mountains, Front Range, Pikes Peak/Palmer Divide
COZ002-004-008
011-014

13 All Day 0 0 4 0 Snow

Five to 10 inches of snow fell in the Colorado mountains. At lower elevations, 4- to 9-inch readings were observed around Fort Collins (Larimer County) south to just north of Colorado Springs. In foothill areas above 6,000 feet, 8 to 16 inches fell with 9 inches in Morrison and 11 inches in Evergreen (both in Jefferson County), and 14 inches of new powder in Aspen Springs (Gilpin County), 25 miles northwest of Denver. One- to 4-inch amounts fell elsewhere in northeastern Colorado. Numerous accidents were reported, a few serious. Delays of up to 2 hours because of blowing snow and reduced visibilities hampered operations at Denver's Stapleton International Airport throughout the day.

Front Range, Northeast Plains
COZ011-012

15 0700MST-1730MST 0 0 4 0 High Winds

Wind gusts exceeded 50 knots (58 mph) at several locations across Colorado's northeastern plains. Peak gusts include 44 knots (51 mph) in Briggsdale (Weld County) at 1030MST, 47 knots (54 mph) in Nunn (Weld County) at 1315MST, 53 knots (61 mph) in Fort Collins (Larimer County) at 1635MST, and 59 knots (68 mph) clocked in Fort Morgan (Morgan County) at 1440MST. Gusts to 52 knots (60 mph) were recorded near the town of Wellington (Larimer County) around 1700MST. Gusty northwest winds created severe drifting and reduced visibilities at times to near zero, prompting officials to curtail travel on Interstate 25 and U.S. Highway 287 from near Fort Collins north to the Wyoming line during much of the afternoon and early evening hours.

Front Range, Pikes Peak/Palmer Divide
COZ011-014

23-24 0 0 5 0 Freezing Rain and Glaze

Several hours of freezing drizzle covered roadways along the eastern slopes of the Front Range and portions of the Palmer Divide between Denver and Colorado Springs. A thin layer of "black ice" was blamed for nearly a hundred vehicle accidents in the Denver area alone. A single-engine plane sustained minor damage on the 24th after icing on the craft caused a rough landing at the Colorado Springs Municipal Airport. Fortunately, the pilot of the craft was uninjured.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

COLORADO Cont'd

In the Boulder area, snow showers and periods of freezing rain caused numerous accidents and brief power outages. Snow began late on the 22nd, and continued through much of the daylight hours...heavy at times...on the 23rd. Snow totals across Boulder County ranged from an inch or so on the plains east of Boulder to 4 to 5 inches near Table Mesa on the southwest side of town. Several Front Range communities reported thunder embedded within the snow shower activity.

Southwest Mountains
COZ008

29-31	0	0	0	0	0	0	0	Snow
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Moist southwesterly flow on the leading edge of a very slow moving Pacific storm system kept most of southwestern Colorado under clouds and snowfall for nearly 72 hours. Although snowfall intensities remained on the light to moderate side, snowfall totals ranged from 18 to as much as 36 inches over a few of the higher mountain passes. A few totals included 27 inches at the Monarch Ski Area (Chaffee County) and 31 inches on Wolf Creek Pass (Mineral County) along U.S. Highway 160.

CONNECTICUT

None reported.

DELAWARE

No reports received.

FLORIDA

Escambia County
Atmore

15	1735EST	0	0	0	0	0	0	Thunderstorm Wind (G50)
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Tree blown down.

Escambia County
Pensacola

16	0930EST	0	0	0	0	0	0	Thunderstorm Wind (G55)
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Trees and fence blown down.

Santa Rosa County
2 SE Floridatown

16	0930EST	0	0	0	0	0	0	Thunderstorm Wind (G65)
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Ten to 15 trees blown down.

Santa Rosa County
Milton

16	0930EST	0	0	3	0	0	0	Thunderstorm Wind (G60)
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Windows blown in and roof damage at a shopping center.

Pasco County
San Antonio
Dade City

17	1500EST	0	0	0	0	0	0	Thunderstorm Wind (G55)
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Trees and power lines blown down.

Lee County
Cape Coral

17	1800EST	0	0	3	0	0	0	Thunderstorm Wind (G50)
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A light pole was blown onto a parked car.

Lake County
Northern

29	1545EST	1	0	0	0	0	0	Thunderstorm Wind (G55)
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A thunderstorm moved across Lake County, downing trees and power lines. Numerous auto accidents occurred around Leesburg during the storm. A 72-year-old man drowned while trying to dock his boat. M720.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

FLORIDA Cont'd

St. Johns County Mollasses Junction	29	1900EST			0	0	?	?	Hail (1.0) Thunderstorm Wind (G60)
A 30-minute hail storm with quarter-size hail damaged about 1,000 acres of potatoes. Outbuildings were destroyed, power poles snapped, and trees downed by thunderstorm winds.									
Duval County Jacksonville	30	1400EST			1	0	0	0	Lightning
A construction worker on the roof of a loading dock was killed by lightning. M320									
Leon County Tallahassee	30	1400EST			0	0	3	0	Thunderstorm Wind (G55)
A large oak tree was blown onto a mobile home. Power lines and other trees blown down.									
Holmes County Bonifay	30	1500EST			0	0	4	0	Lightning
Seven cows were killed by a single lightning strike.									
Highlands County Lorida	30	1700EST			0	0	0	0	Thunderstorm Wind (G50)
Tree and power lines blown down.									
Orange County 5 NW Orlando	30	1845EST			0	0	0	0	Hail (0.75)
Pilot reported 3/4-inch hail.									

GEORGIA

Burke County Burton's Ferry	01 31	0000EST- 2400EST			0	0	?	?	Flood
Effingham County Clyo	01 31	0000EST- 2400EST			0	0	?	?	Flood
The Savannah River remained above its flood stage the entire month at Burton's Ferry and Clyo. The river crested 5.7 feet above the 11 feet flood stage at Clyo on the 6th. With the flood stage at 15 feet, the river crested 3.1 feet above flood stage at Burton's Ferry on March 3rd. Considerable flooding of farms, roads, and lowlands occurred. Flooding at Clyo started February 12th.									
Wilcox County Abbeville	01 02	0000EST- 0700EST			0	0	?	?	Flood
The Ocmulgee River flooded from February 23rd through March 2nd. Farms, access roads, and pastures were flooded.									
Toombs County Southern Toombs County	01 09	0000EST- 0700EST			0	0	?	?	Flood
Appling County Northern Appling County	01 09	0000EST- 0700EST			0	0	?	?	Flood
The Altamaha River flooded at Plant Hatch north of Baxley from February 20th until March 9th. The river crested 4.4 feet above the flood stage of 74.5 feet. Farms and pastures were flooded, along with rural roads in Toombs and Appling Counties.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Brantley County
Atkinson

01	0000EST-								
08	1000EST				0	0	?	?	Flood

The Satilla River flooded at Atkinson from February 21st until March 8th. Recreational areas were flooded. The river crested at 14.6 feet, 1.6 feet above its flood stage.

Montgomery County
5 S Uvalda

01	0000EST-								
06	1900EST				0	0	?	?	Flood

Jeff Davis County
Extreme Northeast
Jeff Davis County

01	0000EST-								
06	1900EST				0	0	?	?	Flood

The Altamaha River flooded vacation homes and cabins along the river in Montgomery and Jeff Davis counties near the Charlotte Bridge gage. Riverside trailers were flooded and roads were impassable. Flooding began on February 26th. The river crested at 17.4 feet on March 2nd.

GAZ001-003
North and West
Georgia

16	0600EST-								
	1600EST				0	0	?	?	Flash Floods

Floyd County
Rome

16	1000EST-								
24	0700EST				0	0	?	0	Flood

Polk County
Cedartown

16	1000EST-								
17	2200EST				0	0	?	0	Flood

Cherokee County
Canton

16	1100EST-								
19	1300EST				0	0	?	0	Flood

Gordon County
Resaca

16	1600EST-								
23	1300EST				0	0	?	0	Flood

Redbud

16	1600EST-								
19	1000EST				0	0	?	?	Flood

Calhoun

16	1600EST-								
19	1000EST				0	0	?	?	Flood

After moderate to heavy rainfall over north and west Georgia that started in the evening on the 15th, flash flooding developed. Every county had many incidents of flooding. Fourteen roads were closed in Floyd County by 0800EST, with considerable flooding at Rome and Cave Springs. In Chattooga County several roads were closed also. In Fannin County a couple of mobile homes were evacuated. In Union County by 0800EST, heavy rainfall had caused flash floods that washed out several county roads and culverts. A few buildings had water standing in them.

As heavy rainfall continued to develop during the day and creeks and streams collected the run-off waters, mainstream floods developed over the Coosa and Tennessee River Basins. By 1050EST, flooding had occurred and evacuations had begun at Cedartown in Polk County. The ground was totally saturated. Rainfall amounts were generally over 1.5 inches, although over 4 inches fell in several locations.

At Cedartown, about a hundred persons were evacuated from homes near the Big Cedar Creek. The Big Cedar Creek crested at 18.4 feet; the flood stage is 15 feet. The Little Cedar Creek flooded Cave Springs, although damage was generally minor. The Etowah River overflowed at Canton and flooded a motel and a new mall. The Etowah crested around 25.3 feet; the flood stage is 17 feet. At Rome, the flooding was more severe than the February 1990 flood. The Oostanaula River flooded the stores of a mall, buildings, and homes. Fifty-five families were evacuated. The Oostanaula crested at 34.26 feet; the flood stage is 25 feet. At Resaca, the Oostanaula flooded over agricultural lands. The Oostanaula River at Resaca crested at 27.3 feet; the flood stage is 22 feet. In Calhoun, a few homes were flooded. Along the Coosawattee River near Redbud, there was extensive flooding to agricultural lands.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Catoosa County Countywide	16	1650EST- 1915EST			0	0	?	?	Flash Flood
Walker County Countywide	16	1650EST- 1950EST			0	0	?	?	Flash Flood
Dade County Countywide	16	1650EST			0	0	?	?	Flash Flood
Whitfield County Countywide	16	1650EST- 1948EST			0	0	?	?	Flash Flood
Tilton	16 19	1650EST- 1900EST			0	0	?	?	Flood

After consistent moderate to heavy rainfall over extreme northwest Georgia, streams and rivers in the area were at or above the banks. Several roads were flooded. As the rainfall continued, extensive flooding developed after 1900 EST, closing more roads over Catoosa, Whitfield, and Walker counties. In Whitfield County, roads were damaged by the floods. Along the Conasauga River at Tilton, extensive flooding occurred over the surrounding agricultural lands.

GAZ001-GAZ006 North and Central Georgia

16	1700EST- 2300EST			0	0	?	?	Flash Floods
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Many incidents of flash flooding developed as moderate to heavy rainfall persisted mainly over north and west Georgia. Roads were closed in many areas.

Muscogee County Columbus

16	1725EST			0	0	?	0	Thunderstorm Wind
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Thunderstorm winds blew trees down onto power lines. Several outages resulted.

Columbus Chattahoochee County Fort Benning Military Reservation

16	1750EST- 0300EST			0	0	6	0	Flash Floods
16	1750EST- 0300EST			0	0	5	0	Flash Floods

After over 4.25 inches of rainfall was measured at the Weather Office at Columbus, low-lying areas started flooding in the Columbus area. By 0245 EST, nearly 7 inches of moderate to heavy rainfall caused extensive flooding over the city. With the St. Mary's Creek and Bull Creek flowing through the center of the city, downtown Columbus was inundated. The South Columbus Pollution Control Plant was flooded, causing raw sewage to pour directly into the Chattahoochee. Extensive flooding developed in the Germantown area north of Fort Benning. Many homes were evacuated over metropolitan Columbus. Damage totaled an estimated \$1.4 million to 41 homes, backed-up sewer lines, and caved-in roads.

By 0700 EST, most floodwaters had subsided. Telephone service to hundreds of customers in the greater Columbus area was interrupted by the flash flooding. At Fort Benning, emergency phone repairs cost over \$62,000.

Meriwether County Countywide

16	1750EST- 0300EST			0	0	4	?	Flash Flood
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Thirteen culverts and two bridges were damaged by flash floods. The estimated cost of repairing one bridge was \$18,029. Total costs were over \$25,000.

Harris County Countywide

16	1730EST			0	0	?	?	Thunderstorm Wind
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Winds uprooted trees at several locations over the county. Power outages occurred when utility lines were torn down by falling trees.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Cobb County Vinings	16 1800EST- 18 0700EST				0	0	?	0	Flood
Austell	16 1800EST- 21 0700EST				0	0	?	0	Flood
Fulton County Southwest Fulton County Atlanta	16 1800EST- 19 0700EST 16 1800EST- 18 0700EST				0	0	?	0	Flood
Coweta County Northeast Coweta County	16 1800EST- 19 0700EST				0	0	?	?	Flood
Carroll County Whitesburg	16 1800EST- 20 1900EST				0	0	?	?	Flood
Carrollton	16 1800EST- 19 0700EST				0	0	?	?	Flood

After moderate to heavy rainfall over northwest Georgia, floods developed along the Chattahoochee River Basin. At Vinings and Austell, the river flooded a school's athletic field, numerous streets, many homes, and a portion of the Six Flags theme park. At Austell, an entire mobile home park was flooded. Many families were evacuated in Cobb and Fulton Counties as flooding accelerated. In Vinings alone, over forty families were forced from their homes. The Chattahoochee River ran so high that Atlanta's major sewage treatment plant was forced to stop operations. A hospital in west Atlanta (Bolton) near the Chattahoochee River was evacuated. Nancy Creek, Sope Creek, Proctor Creek, and Sweetwater Creek also overflowed.

Along the river over south Fulton, northwest Coweta, and Carroll counties, considerable flooding occurred over rural farms and pastures. Several recreational areas were flooded. McIntosh Reserve Park, on the Chattahoochee River near Whitesburg, was flooded by about 15 feet of water.

In Carrollton, the Little Tallapoosa River flooded nearby residential areas. Several roads were washed out by flash floods; twenty-five county roads were closed. Peachtree Creek in Atlanta flooded many homes in the Buckhead community. About a hundred residents were forced out of an apartment building and homes were evacuated. The creek crested at 20.9, three feet above its flood stage, on Saturday.

Fulton County Atlanta	16 1800EST				0	0	?	0	Thunderstorm Wind
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Scattered limbs were blown down by the winds.

Talbot County Talbotton Pleasant Hill	16 1800EST				0	0	?	?	Thunderstorm Wind
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Several trees were uprooted or broken by thunderstorm winds. Falling limbs and trees pulled down power lines.

Gwinnett County Lilburn	16 1800EST				0	0	?	0	Flash Flood
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Flash floods pushed the Yellow River out of its banks but only minor damage resulted. A few homes had water in the basements.

Rockdale County 4 SE Conyers Conyers	16 1800EST				0	0	?	0	Flash Floods
4 S Conyers 4 S Conyers	16 1825EST				0	0	0	0	Funnel Cloud

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Rockdale County
Countywide
4 ESE Conyers

16 1830EST 0 0 ? 0 Thunderstorm Wind

A downburst wind event developed east-southeast of Conyers and downed numerous trees in one subdivision toward the east-northeast. Several homes lost roof shingles in the winds. A few residences suffered damage when trees fell upon them. In other sections of the county, scattered trees were uprooted and isolated damage occurred as a result. Power outages developed as trees tore down power lines. Flash floods occurred in the storm, mainly over southeast Rockdale County. In the flooding, several vehicles were lost, two mobile home parks were damaged, and over thirty roads were inundated, along with other damage.

Coweta County
Newnan

16 1830EST 0 0 4 ? Flash Flood

Flash flood damaged a bridge along the Caney Creek.

Henry County
McDonough

16 1830EST 0 0 ? ? Thunderstorm Wind

Numerous trees were downed around McDonough.

Newton County
Countywide

16 1900EST 0 0 ? ? Thunderstorm Wind

Walton County
Countywide
31 SW Athens

16 1900EST-
1905EST 0 0 ? ? Thunderstorm Wind

Scattered trees were uprooted or broken over Newton and Walton Counties by thunderstorm winds. Power outages resulted as lines were torn down by winds and falling trees. In Newton County, at least half of the county was without power around 1900 EST. Most of the damages in Walton County were over the western sections.

Catoosa County
Countywide

16 1915EST 0 0 ? ? Flash Flood

Numerous roads were closed by 1915 EST after extensive flooding developed over the county.

Jackson County
2 SW Arcade

16 1925EST 0 0 ? ? Thunderstorm Wind

Scattered trees were uprooted by thunderstorm winds over the southwestern portion of the county along Georgia Highway 319. Power outages resulted.

Clarke County
5 W Athens

16 1935EST 0 0 ? 0 Thunderstorm Wind

Athens

16 1945EST- 0 0 0 0 Funnel Cloud

Athens

16 2005EST 0 0 ? 0 Thunderstorm Wind

Thunderstorm winds uprooted trees and damaged at least one utility pole in Athens, resulting in power outages. Scattered damage also occurred to a few homes and buildings from fallen trees.

Banks County
29 NW Athens

16 1935EST 0 0 ? ? Thunderstorm Wind

Scattered trees were blown down over the western portion of Banks County along Georgia Highway 51. Power outages resulted.

Newton County
32 SW Athens

16 1950EST 1.0 0 0 ? ? Thunderstorm Wind

A downburst wind event uprooted numerous trees in a rural area.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Madison County										
Carlton	16	2015EST-				0	0	?	?	Thunderstorm Wind
Northwest Madison County	16	2030EST				0	0	?	?	Thunderstorm Wind

Scattered trees were blown down over the county.

Franklin County										
2 SE Sandy Cross	16	2030EST				0	0	?	?	Thunderstorm Wind

Scattered trees were downed along Highway 174 near Sandy Cross.

Elbert County										
Countywide	16	2030EST				0	0	?	?	Thunderstorm Wind
7 WSW Elberton	16	2030EST				0	0	?	?	Thunderstorm Wind

Along the eastern side of the Broad River near Georgia Highway 72, scattered trees were uprooted. A few trees were downed over Elbert County.

Hart County										
Vanna	16	2045EST				0	0	?	?	Thunderstorm Wind

Near Vanna at Highway 17, scattered trees were downed.

Taylor County										
Butler	16	2150EST				0	0	?	?	Thunderstorm Wind
10 N Butler										

Thunderstorm winds uprooted several trees, resulting in power lines being torn down. Scattered power outages resulted. Damage also occurred along Georgia Highway 19, north of Butler.

Macon County										
2 E Oglethorpe	16	2200EST				0	0	?	?	Thunderstorm Wind

Between Montezuma and Oglethorpe, numerous trees were uprooted by winds. Scattered power outages developed in the area.

Jasper County										
Northeast Jasper County	16	2219EST				0	0	?	?	Thunderstorm Wind

Thunderstorm winds uprooted trees and caused scattered power outages and traffic disruptions.

Crawford County										
Countywide	16	2220EST				0	0	?	?	Thunderstorm Wind
Peach County	16	2220EST				0	0	?	?	Thunderstorm Wind
Countywide										

Scattered trees were uprooted over Crawford and Peach counties. Falling trees tore down power lines and outages resulted.

Bibb County										
Macon	16	2250EST				0	0	?	?	Thunderstorm Wind

Scattered power lines were blown down by thunderstorm winds.

GAZ001-006										
North and Central Georgia	16	2300EST-				0	0	?	?	Flash Floods
	17	0600EST								

Incidents of flash flooding were increasing by midnight.

Talbot County										
5 N Talbotton	17	0030EST				2	0	0	0	Flash Flood
Countywide	17	0130EST				0	0	6	?	Flash Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

GEORGIA Cont'd

Talbot County
 Lake Juniper
 4 SSW Roland
 Junction City

17	0200EST				0	0	5	?	Flash Flood
17	0230EST				0	0	?	?	Flash Flood

Two men drowned while trying to swim ashore from a flooded car. The car swept about 200 feet off the road into a flooded field near the Big Lazer Creek. The creek rose about 12 feet out of its banks. M20D M31O

Flash floods damaged fifty-eight bridges, culverts, and about 45 miles of roads. A home on the Flint River near Georgia Highway 36 was destroyed. Two other homes and a trailer on Lake Juniper were flooded. Five dams on private lakes in the county were destroyed. At Junction City, an earthen dam gave way and washed out about 300 trees and pavement from roads.

Stewart County
 Countywide
 Countywide
 4 SW Lumpkin

17	0130EST				0	0	?	?	Thunderstorm Wind
17	0130EST				0	0	?	?	Flash Floods
17	0230EST				3	0	0	0	Flash Flood

With soils already totally saturated, thunderstorm winds uprooted many trees. Power lines were torn down by the winds and falling trees, resulting in scattered outages. Roads were inundated by heavy rainfall. Several roads were damaged; a few were washed out. Earthen dams on small ponds also gave way and contributed to the flooding in a few areas.

Three men died near Lumpkin after their car swerved off a section of Georgia Highway 27. The road had been washed out by heavy rainfall. M42V M34V M17V

Calhoun County
 3 E Edison

17	0230EST				0	0	?	?	Thunderstorm Wind
17	0230EST				0	0	?	0	Lightning

Thunderstorm winds uprooted trees. Scattered power outages resulted from lightning damage, in addition to the power lines torn down by winds and falling trees.

Marion County
 Tazewell

17	Morning				0	0	?	?	Flash Flood
----	---------	--	--	--	---	---	---	---	-------------

After heavy rainfall throughout the night, a dam burst on one of the largest ponds in the county near Buck Creek.

Terrell County
 Bronwood

17	0300EST				0	0	?	?	Thunderstorm Wind
----	---------	--	--	--	---	---	---	---	-------------------

A trailer was damaged by thunderstorm winds and a few smaller utility buildings were destroyed. Several trees were uprooted.

Crawford County
 Northern Crawford
 County

17	0300EST				0	0	?	?	Thunderstorm Wind
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Scattered trees were blown down and onto power lines, resulting in a few power outages.

Towns County
 Countywide

17	0300EST				0	0	?	?	Flash Flood
----	---------	--	--	--	---	---	---	---	-------------

Several county roads were damaged by flash floods.

Henry County
 Countywide
 McDonough

17	0300EST				0	0	6	?	Flash Floods
17	0345EST				1	0	0	0	Flash Flood

Torrential rainfall caused flash floods that caused over \$2.5 million worth of damage to Henry damage. Most of the damage occurred in southern and eastern sections of the county. Walnut

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Creek Reservoir overflowed at McDonough and flooded the yards of nearby properties. Several businesses in McDonough were flooded. A woman drowned when her car swept off a washed-out section of road over a culvert. F39V

Spalding County
Countywide
Griffin

17	0400EST				0	0	?	?	Flash Flood
17	0400EST				0	0	4	0	Flash Flood

After heavy rainfall throughout the evening of the 16th and in the early hours of the 17th, flooding developed over Spalding County. Along Troublesome Creek, several properties were flooded. Water damaged a retail area due to poor drainage. Damage in the store cost about \$10,000. About twelve bridges were flooded and many roads.

Habersham County
Countywide

17	0400EST				0	0	5	?	Flash Flood
----	---------	--	--	--	---	---	---	---	-------------

Flash floods over the county caused damages estimated near \$75,000. Torrential rainfall that started March 16th and continued through Saturday morning washed out many roads.

Morgan County
Countywide
Madison

17	0400EST				0	0	5	?	Flash Flood
17	0400EST				0	0	3	?	Flash Flood

Several county roads and bridges were damaged by heavy rainfall that started late March 16th. By early morning, many areas were inundated, although few homes were threatened. Most of the damage at Madison was minor and cost about \$3,000 for repairs. Damage in the county cost approximately \$200,000.

Clark County
Athens

17	0400EST				0	0	?	0	Flash Flood
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Widespread heavy rainfall and scattered thunderstorms produced flash floods and pushed many area creeks to full.

Green County
Penfield

17	0400EST-				0	0	?	?	Flood
22	1300EST								

The Oconee River flooded after moderate to heavy rainfall developed over north Georgia. Considerable flooding occurred in the bottomlands, over many farms and pastures, and in a few residential areas. Most of the damage was along the north side of Wallace Lake. The Oconee River crested 12.1 feet above its flood stage, 11 feet.

Muscogee County
Columbus

17	0400EST-				0	0	6	0	Flood
19	1000EST								

After heavy to moderate rainfall at Columbus and over the northern counties of Georgia, the Chattahoochee River flooded Columbus and surrounding areas. A trailer park was damaged and a golf course was flooded. The river crested 7.1 feet over the flood stage, 34 feet. Damage costs from flooding were estimated to be over \$2.6 million. Approximately 100 homes were damaged.

Clay County
Walter George
Lock and Dam

17	0400EST-				0	0	?	?	Flood
21	1000EST								

A major flood developed on the Chattahoochee River at Georgia Dam. With the entire area inundated, recreational, residential, and agricultural lands were damaged. The tailwaters crested at 153.25 feet; the flood stage is 134 feet.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Butts County Jackson Lake	17	0400EST-							
	22	1300EST			0	0	?	?	Flood
Jones County East Juliette	17	0400EST-			0	0	?	?	Flood
	22	1300EST			0	0	?	?	Flood
Monroe County Culloden	17	0400EST-			0	0	?	?	Flood
	22	1300EST			0	0	?	?	Flood
2 NE High Falls	17	0700EST			0	0	?	?	Flash Flood
Forsyth	17	0700EST			0	0	?	?	Flash Flood
5 S Blount Countywide	17	0700EST-			0	0	?	?	Flash Flood
		1200EST			0	0	?	?	Flash Flood
Butts County High Falls State Park	17	0700EST			0	0	?	?	Flash Flood

Jackson Lake on the Ocmulgee River flooded in Butts County. Nearby vacation properties and residences were flooded, while several docks were destroyed. Over Butts County, flash floods damaged many homes and other properties. In Butts and Monroe counties, High Falls State Park was inundated. A vehicle was swept away in the park as water pushed over the dam.

In Jones and Monroe counties, along the Ocmulgee River, widespread flooding developed over rural lands. The river rose over 12 feet above its flood stage of 18 feet. Town Creek in Jones County was at bankfull; many riverside roads and developments were flooded. Along the Towaliga River and High Falls Lake in northern Monroe County, widespread flooding occurred. Along Highway 42 south of Blount, flood damage occurred; a bridge was washed out on Highway 42. At Culloden, a tributary of the Flint River flooded after rain continued through the early morning. Many families were evacuated. The rains pushed the Tobesofkee Creek over its banks. Over all three counties, numerous roads were flooded or damaged.

Upson County 14 SE Thomaston	17	0700EST-							
	22	1300EST			0	0	?	?	Flood

Persistent moderate to heavy rainfall pushed the Flint River over its banks between Thomaston and Butler. Extensive flooding of roads, lowlands, and farms occurred.

Jones County Countywide	17	0700EST-							
		1200EST			0	0	?	?	Flash Flood

As heavy rainfall continued over central Georgia, flash floods developed over Jones County. Considerable flooding occurred along the Ocmulgee River and along Georgia Highways 129 and 18.

Bibb County Macon	17	0700EST-							
	22	1300EST			0	0	?	0	Flood

The Ocmulgee River flooded Macon and surrounding areas. In the downtown area considerable damage occurred. Water entered buildings and flooded a city park. One apartment complex had 15 feet of water in some units; many city residents were evacuated. Brick companies located on the river at Macon were under water. Outside of Macon, low-lying areas flooded. The river crested at 29.83 feet; the flood stage is 18 feet.

Jasper County Shady Dale	17	0700EST							
	17	0840EST			0	0	?	?	Flash Flood
3 N Monticello					0	0	?		Flash Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Jasper County
Countywide

17	0840EST- 1055EST					0	0	?	?	Flash Flood
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The Murder Creek, north of Monticello, flooded at the bridge on Highway 229. Over the southern portion of the county, numerous roads were flooded; a few were damaged.

White County
Helen

17	0710EST- 1000EST					0	0	?	?	Flash Flood
----	---------------------	--	--	--	--	---	---	---	---	-------------

The Chattahoochee River overflowed its banks and flooded Helen and areas near the river. Evacuations occurred as buildings near the river and numerous roads became inundated.

Early County
George Andrews
Dam
Saffold
Hilton

17	1000EST-									
21	1900EST					0	0	?	?	Flood
17	1000EST-									
21	1900EST					0	0	5	?	Flood

Extensive flooding developed on the Chattahoochee River at Andrews Dam. The area was completely inundated as the river crested at 122.1 feet; the flood stage is 113 feet. Riverside development, homes, recreational areas, and other properties sustained damage. Evacuations, including a Corp of Engineers facility, were completed by 1900 EST on March 17th.

Outside Hilton, several rural homes and other properties near the Chattahoochee River were inundated. About eighteen families at Saffold were evacuated from their homes Saturday as the river rose. The homes were either demolished by the flooding or extensively damaged. Estimated damage costs were over \$400,000.

Webster County
Kinchafoonee
Creek
Preston

17	1045EST					0	0	?	?	Flash Flood
17	1100EST-									
19	1000EST					0	0	5	?	Flood

Almost 9 inches of rain fell over the northern portion of the Kinchafoonee Basin, with about 2 inches of rain elsewhere. With the consistent rainfall, levees around two ponds near the Kinchafoonee Creek in northern Webster County gave way around 1045 EST. The runoff went into the Kinchafoonee Creek and caused flash flooding along the creek and at Preston. Although the flooding persisted until the 19th, it generally remained over farms and pastures. Three mobile homes were damaged as the flood waters rose to 12.2 feet, a record height. Costs for damages to the trailers were estimated at more than \$50,000.

Madison County
Carlton

17	1300EST-									
19	1000EST					0	0	?	?	Flood

Extensive flooding occurred along the Broad River. Lowlands were inundated, and riverside sand companies were badly flooded. The river crested at 26.0 feet, 11 feet above flood stage.

Baldwin County
Milledgeville

17	1900EST-									
19	0700EST					0	0	?	?	Flood

Considerable flooding occurred along the Oconee River. Farms, pastures, and roads were flooded near Fishing Creek.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Clark County
Athens

18	0000EST-								
19	0700EST				0	0	?	0	Flood

The northern and middle sections of the Oconee River flooded at Athens. Riverfront homes had water in the basements as several residential areas were flooded. At Athens, the Oconee River crested 2.5 feet above its flood stage of 18 feet.

Putnam County
Eatonton

18	0700EST-								
19	1300EST				0	0	?	?	Flood

4 WSW Eatonton

18	0700EST-								
19	1300EST				0	0	?	?	Flood

The Murder Creek swelled out of its banks between Eatonton and Monticello after consistent rainfall occurred. The Murder Creek crested at 12.9 feet. At Eatonton, the Little River flooded. The river crested at 28.72 feet. A few families were evacuated.

Macon County
Montezuma

19	0700EST-								
22	1900EST				0	0	5	?	Flood

Oglethorpe

19	0700EST-								
22	1900EST				0	0	4	?	Flood

Extensive damage occurred along the Flint River, as agricultural land flooded, along with the towns of Montezuma and Oglethorpe. At the river gate at Montezuma, the river crested near 26.1 feet; the flood stage is 20 feet. At Montezuma, a trailer park was flooded. Water also backed up a sewage treatment plant. Damages to businesses, homes and public property in Oglethorpe were estimated to cost more than \$75,000. Damages in Montezuma cost over \$30,000.

Dooly County
Drayton

19	0700EST-								
22	1300EST				0	0	?	?	Flood

The Flint River near Drayton flooded about 3 miles of riverside property. Although twenty families were evacuated from their homes, only four houses had major damage. Two roads were damaged by the floodwaters.

Lee County
Leesburg
6 NW Leesburg
5 S Leesburg

19	1100EST-								
22	1300EST				0	0	?	?	Flood

At Leesburg on the Kinchafoonee Creek, a trailer home park was flooded, along with several residential areas and roads. A few evacuations occurred. The river crested at 20.45 feet near Leesburg. Mostly rural lands flooded along the Kinchafoonee.

Laurens County
Dublin

20	1100EST-								
24	1900EST				0	0	?	?	Flood

Farms and pastures were flooded by the Oconee River. The river crested at 27.2 feet; the flood stage is 21 feet.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Dougherty County

Albany	20	1200EST-							
Radium Springs	26	1300EST			0	0	?	?	Flood

Considerable flooding developed along the Flint River at Albany and Radium Springs. Flooding was accelerated as water flowed along the Kinchafoonee Creek into the area. Several public buildings, many streets, homes, and recreational areas were flooded in Albany and Radium Springs. The river crested at 30.93 feet; the flood stage is 20 feet.

Pulaski County Hawkinsville

Hawkinsville	20	1900EST-							
	24	1900EST			0	0	?	?	Flood

Several families were evacuated as the Ocmulgee River flooded at Hawkinsville. The river crested 5.5 feet above flood stage.

Wilcox County Abbeville

Abbeville	21	1900EST-							
	29	1000EST			0	0	?	?	Flood

Extensive flooding developed on the Ocmulgee River at Abbeville. A few residential areas and streets were flooded. Boat landings on the river were inundated. The river crested at 17.5 feet; the flood stage is 12 feet.

Baker County Newton

Newton	22	2100EST-							
	27	1000EST			0	0	?	?	Flood

Mitchell County 2 E Newton

2 E Newton	22	2100EST-							
	27	1000EST			0	0	?	?	Flood

The Flint River near Newton flooded and damaged riverside homes. Georgia Highways 37, 91, and 200 in Baker County were flooded in several areas. Georgia 37 was flooded in western Mitchell County. The river crested at 28.8 feet; the flood stage is 24 feet.

Montgomery County Mount Vernon

Mount Vernon	23	0700EST-							
	28	1600EST			0	0	?	?	Flood

Farms and pastures were flooded by the Oconee River. The river crested 3.7 feet above its flood stage of 16 feet.

Decatur County Bainbridge

Bainbridge	24	1000EST-							
	28	0700EST			0	0	?	?	Flood

A subdivision and several streets along the Flint River flooded.

Toombs County Southern Toombs County

Southern Toombs County	24	0700EST-							
	31	2400EST			0	0	?	?	Flood

Appling County Northern Appling County

Northern Appling County	24	0700EST-							
	31	2400EST			0	0	?	?	Flood

The Altamaha River rose above its 74.5-foot flood stage and caused considerable flooding around Plant Hatch north of Baxley. Widespread flooding occurred over agricultural lands adjacent to the river in both Appling and Toombs counties. The river crested at 81.0 feet.

Montgomery County 5 S Uvalda

5 S Uvalda	25	0700EST-							
	31	2400EST			0	0	?	?	Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Jeff Davis County	25	0700EST-							
Extreme Northeast									
Jeff Davis County	31	2400EST			0	0	?	?	Flood

Vacation homes and cabins were flooded along the Altamaha River in Montgomery and Jeff Davis counties. Some riverside trailers were evacuated and roads were impassable. The river crested at 20.5 feet; the flood stage is 15 feet.

Grady County	30	1400EST							
Whigham					0	0	?	?	Thunderstorm Wind

Scattered trees were blown down. The roofs of a few homes around Whigham were damaged.

IDAHO

IDZ003	04-05	1800MST-1200MST							
					0	0	0	0	Heavy Snow

An overnight snow storm dumped 3 to 4 inches in the Pocatello area and 6 to 8 inches in the American Falls and Aberdeen areas causing slushy roads and impeding traffic.

ILLINOIS

Hancock-Adams County	08	1515CST-1700CST	42	50			5	0	
Border, Schuyler, Fulton Counties					0	0	5	0	Tornado (F2)
2 S Augusta to Marbleton									

A long track intermittent tornado first touched down on the Hancock-Adams County border 2 miles south of Augusta and then skipped eastward across northern rural Schuyler County with little reported damage. The tornado then moved into Fulton County, at Astoria, where some building damage occurred. The tornado continued to move to the southeast of Sumnum damaging a farm home and outbuildings. The tornado was last reported near Marbleton.

ILZ007-008-010	11						5	0	
Central Illinois					0	0	5	0	Flooding

Thunderstorms produced heavy rainfall runoff and caused flooding damage on the 11th to some bridges and a few homes in the flood plain of the Vermillion River.

Adams County	11	2200CST					5	0	
Quincy					0	0	5	0	Thunderstorm Downburst

Downtown buildings were damaged by thunderstorm downburst winds that were estimated up to around 70 mph.

DeKalb County	13	1500CST					4	0	
5 W DeKalb					0	0	4	0	Thunderstorm Wind

Thunderstorm winds destroyed a barn.

Rock Island County	13	1605CST					?	0	
Quad City AP, Moline					0	0	?	0	Hail (1.0)

Rock Island County	13	1605CST					?	0	
Milan					0	0	?	0	Hail (1.75)

Rock Island County	13	1605CST					?	0	
2 N-3 NE Moline					0	0	?	0	Hail (2.75)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

ILLINOIS Cont'd

Rock Island County

Port Byron, Cordova, Rock Island, 13 1635CST 0 0 ? 0 Hail (1.5)

Whiteside County

Mississippi River-Port Byron, Cordova, 1 SE Albany 13 1646CST-1715CST 15 250 0 1 6 0 Tornado (F3)

Several tornados were spawned from a supercell thunderstorm that developed over Mercer County, Illinois. The thunderstorm moved northeast and a wall cloud developed over southern Rock Island County, from which a tornado formed. A tornado touched down on the Iowa side of the Mississippi River, 1 mile southeast of Riverdale at 1631 CST. A series of short tornados were reported from Riverdale to LeClaire, Iowa. A tornado crossed the Mississippi River into Illinois at 1646 CST and shortly thereafter moved into Port Byron, Illinois causing \$175,000 damage. The tornado skipped northward to 2 miles southeast of Cordova. It stayed on the ground for 4 miles through the sparsely populated east and north parts of Cordova at around 1700 CST. The tornado moved back out over the Mississippi River near the north border of Cordova and held over the river for about 1 mile. The only injury from the tornado occurred at the Cordova Nuclear Plant where a worker was blown off a scaffold and broke his leg. This tornado had multiple vortex characteristics and reached maximum F3 intensity over Cordova, where it destroyed or severely damaged 12 homes, damaged another 26 homes, and caused an estimated \$2.5 million damage. The tornado then moved over the Mississippi River again and then probably looped, skipping back to the east, and briefly touching down 1 mile southeast of Albany at 1715 CST.

Will, Cook Counties Chicago

15 0900CST 1 0 3 0 High Wind

One man was killed, when struck on the head by flying debris, at a construction site in downtown Chicago. Frequent wind gusts to over 50 mph were reported across northeast Illinois. Wind gusts of 55 mph were recorded at O'Hare International Airport, Chicago's official reporting station. Wind damage occurred to some structures and trees across northeast Illinois. M300

ILZ009 > 012 Southern Illinois

24 Early 0 0 0 0 Snowstorm

An early spring storm caused snowfall of 6 to 10 inches from Quincy to Lawrenceville, in about a 100-mile-wide band from south Springfield to Centralia, with lesser depths in far southern sections of Illinois.

INDIANA

LaGrange County Shipshewana

10 0625EST 0 0 ? ? Hail (1.75)

Golf ball-size hail reported by the Indiana State Police.

Warren County 1 W West Lebanon Independence

10 1610EST 0 0 ? ? Hail (2.00)
10 1615EST 0 0 3 ? Thunderstorm Wind

Fountain County Attica

10 1612EST 0 0 ? ? Hail (1.75)

Thunderstorms produced large hail and damaging winds over Warren and northern Fountain counties. A shed and numerous trees were damaged by wind near Independence.

Vermillion County Dana

10 1707EST 0 0 ? ? Hail (1.75)

Montgomery County Crawfordsville Linden

10 1726EST 0 0 ? ? Hail (0.75)
10 1730EST 0 0 ? ? Thunderstorm Wind

Thunderstorms produced penny-size hail at Crawfordsville and wind downed a utility pole at Linden.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

PLACE	DATE	TIME	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
		LOCAL STANDARD			K I L L E D	I N J U R E D	P R O P E R T Y	C R O P S	

INDIANA Cont'd

Parke County									
Marshall									
6 N Rockville	10	1745EST			0	0	?	?	Hail (0.88)
Putnam County	10	1753EST			0	0	?	?	Hail (1.00)
E Side Greencastle	10	1859EST			0	0	?	?	Hail (1.00)
Morgan County									
Moorseville	10	1935EST			0	0	?	?	Hail (0.88)
Hendricks County									
3 SW Plainfield	10	1942EST			0	0	?	?	Thunderstorm Winds

Thunderstorm winds snapped several large (6 to 8 inch) tree limbs.

Johnson County									
1 E Franklin	10	2005EST			0	0	?	?	Hail (1.00)
Jay County									
	10	1900EST- 2100EST			0	0	?	?	Flash Flooding

Heavy rain caused flash flooding of county roads and small streams in western Jay County. An amateur radio operator reported 1.5 inches of rain in half an hour at Pennville.

INZ005-007-008>010

Tippecanoe, Warren, Clinton, Vermillion, Parke, Putnam, Hendricks, Boone, Marion, Hamilton, Hancock, Madison, Johnson Counties									
	10	1800EST-			0	0	?	?	Flash Flooding
	11	1300EST							

Thunderstorms produced torrential rain which caused widespread flash flooding over parts of west-central and central Indiana on the evening of the 10th. More heavy rain early in the morning of the 11th caused flooding in northwest and central Indiana. Between 1800 and 2400, flash flooding caused water to cover many county and state roads in Johnson, Hendricks, Vermillion, Parke, Putnam, Madison, Marion, and Hamilton counties. U.S. Highway 40 in Plainfield, was under a foot of water at 1930 EST. A county road was washed out near Newport, Vermillion County at 1800 and west of Franklin, Johnson County at 2055. After midnight, storms caused flash flooding in Clinton, Warren, Tippecanoe, Boone, Hamilton, Madison and Hancock counties. There was high water on State Road 26 in several locations in Warren, Tippecanoe, and Clinton counties. State Road 55 near Pine Village, Warren County was washed out and was closed for over a month for repairs. In Boone County, State Road 32 east of Lebanon and at the intersection of U.S. 421 was closed. U.S. 52 was closed north of

I-65. Water was 2 to 4 feet deep in Lebanon by 0400 EST. Several cars were stranded in Boone and Hamilton counties between 0200 and 0600 EST. Many basements and some businesses were also flooded. Streets flooded in Hancock County around 0700 EST. Many creeks and small streams flooded in northwest and central Indiana.

INZ008-012>015									
Southern Indiana									
	23	1800EST-			0	0	?	?	Heavy Snow
	24	1000EST							

Six to 8 inches of snow fell over part of southern Indiana from Sullivan, Vincennes, and Linton east to Bedford, Seymour and North Vernon. Three to 4 inches fell in the far south, from Evansville to near Louisville KY.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

IAZ001-002-003-004-
 005-006-007-009-010-
 011-012-013-014-
 SDZ018-NEZ010
 Much of Iowa

07 0100CST-
 08 0400CST 0 1 8 0 Major Ice Storm

A major ice storm left much of Iowa under a thick coating of ice. The storm began in southwest Iowa during the early morning hours of the 7th, and continued for more than 24 hours. Temperatures rose slowly during the early morning hours of the 8th, changing most of the precipitation to rain. Western, central, and north-central Iowa were hardest hit. Many locations in these areas received an ice coating from 1/2 to 2 inches thick on exposed surfaces. The hardest hit area seemed to be in Crawford and Carroll counties. Ice accumulated up to 3 inches thick over parts of these counties. Tree and power line damage was incredible. Thousands of utility power poles were broken across the state. Some reports indicated that the ice accumulated from 3 to 5 inches thick on some of the electrical lines. Many houses received structural damage as trees fell on them. The ice downed 78 towers in a 17-mile stretch of a high voltage feeder line near Boone. A total of 1200 miles of cable were downed. This damage alone cost the utility about \$5,000,000. Since the transmission line is shared by three utilities, the total cost of repair was estimated at nearly \$15,000,000, or about \$5,000,000 for each of the three utility companies. During the height of the storm, 98,000 customers were without electricity in Des Moines alone, about 65% of the city. Put another way, in the metropolitan Des Moines area alone, 270,000 people were without power. Iowa Power placed initial damage estimates to their system at \$10,000,000. Similar damage was reported by other electric utilities in western and northern Iowa. Many of the smaller communities and rural areas around the state reported 75 to near 100 percent of their customers without power. Some areas did not regain power for a week or more. Similar breaks in service were reported for both cable TV and telephone service. The local cable company in Des Moines reported over \$1,000,000 in damage to their system. Thirty to 40 percent of their customers were without service. That meant that 76,000 customers were knocked out in the central Iowa area. Over one million feet of cable had to be replaced. Telephone service was knocked out for about 25 percent of the people in the area. There was one injury reported in Des Moines, as a tree limb fell on a woman. The ice caused numerous traffic problems. Many roads were blocked by downed trees. Interstate 35 was closed for a period of time due to numerous accidents. Overall, tree damage was incredible. The worst hit areas were in central Iowa from near the Des Moines area, on to the north and west. Parts of north-central Iowa were also very hard hit. Actual damage estimates are hard to come up with. Costs ran into the millions to clean up the debris from the storm. The city of Des Moines would be a good example. Clean-up began there on the 19th of March, and is not expected to be completed before the first week in June. It is estimated that about 15,600 truckloads of debris will be hauled away at a cost of \$2,100,000. In addition, there were several million dollars in damages to buildings and vehicles by falling tree limbs. The damage to the trees is priceless. A look at records indicated that this was the worst ice storm to hit Iowa in at least 25 years. Considering the areal extent of the ice, it would be the worst storm in a century. Many parts of the state received a significant amount of precipitation from this ice storm. One to 2 inches was quite common, with a few areas receiving nearly 3 inches of precipitation. This set the stage for flooding later in the month. That issue will be addressed later in this report.

Johnson County
 3 SE North Liberty
 to
 3 E North Liberty
 Near Solon

08 1635CST
 08 1640CST 2.5 30 0 0 5 0 Tornado (F1)
 08 1702CST 0 0 0 0 Funnel Cloud

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Cedar County
2 W Tipton

08 1740CST .1 25 0 0 3 0 Tornado (F0)

A small line of thunderstorms developed in eastern Iowa during the late afternoon hours. There were two tornadoes reported. The first was in Johnson County, and caused damage to two apartment complexes as well as damage to three cars. This storm weakened rapidly, but still produced a funnel cloud as it passed near Solon. Another storm spawned a tornado west of Tipton. This tornado touched down briefly in a rural area causing minimal damage.

Muscatine County
Fruitland
Muscatine

10 0012CST 0 0 3 0 Hail (1.50)
10 0035CST 0 0 4 0 Hail (1.75)

Marion County
Pella

10 0715CST 0 0 3 0 Hail (1.00)

Lee County
Donnellson
Fort Madison

10 0720CST 0 0 4 0 Thunderstorm Winds (G50+)
10 0808CST 0 0 4 0 Thunderstorm Winds (G57)

Mahaska County
1 N New Sharon
New Sharon

10 0800CST 0 0 2 0 Hail (0.88)
10 0803CST 0 0 2 0 Hail (0.50)

Muscatine County
Muscatin Arpt
Muscatine

10 0814CST 0 0 4 0 Hail (1.50)
10 0825CST 0 0 3 0 Hail (1.50)

Two areas of thunderstorms formed during the night of the 9th and morning of the 10th. The first was over southeast into east-central Iowa. Numerous reports of 30 to 40 mph winds and pea- to marble-size hail were received. Winds of up to 64 mph were reported over the far southeast corner of the state, in the Donnellson and Fort Madison areas. Some damage was reported, but it was not extensive. Hail from around 1 inch up to golf ball-size occurred in the southern part of Muscatine County with this area. The second area moved into southwest Iowa, then developed into a line extending from near Omaha, through Des Moines, to near the Quad Cities. Pea- to marble-size hail was common. A few of the storms became severe. One storm produced 1 inch-diameter hail at Pella. It then moved east and produced quarter-size hail north of New Sharon, and marble-size hail in New Sharon. Another storm produced one and one-half inch-diameter hail at the Muscatine airport, with hail about an inch in diameter reported a short time later in the southern part of the city of Muscatine.

Des Moines County
Burlington
Burlington

10 1645CST 0 0 3 0 Lightning
10 1645CST-1800CST 0 0 4 0 Urban Flooding

Thunderstorms moved through the Burlington area during the late afternoon hours. Lightning struck the sheriff's communication tower, knocking out the radio. Very heavy rain, along with marble-size hail, caused some urban flooding and some basement flooding in the city of Burlington.

Polk County
West Des Moines
West Des Moines
Nwrn Des Moines
Highland Park
Berwick

12 2121CST 0 0 2 0 Hail (0.50)
12 2124CST 0 0 3 0 Hail (0.75)
12 2126CST 0 0 3 0 Hail (0.80)
12 2144CST 0 0 4 0 Hail (0.875)
12 2148CST 0 0 3 0 Hail (1.75)

Lee County
4 N Fort Madison
Appanoose County
Rathbun Lake

12 2240CST .2 20 0 0 4 0 Tornado (F0)
12 2323CST 0 0 4 0 Hail (1.75)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

IOWA Cont'd

Decatur County 12 2340CST 0 0 3 0 Hail (0.50)

Thunderstorms erupted rapidly during the evening hours along a moisture boundary in central Iowa. Reports of pea- to marble-size hail were numerous. One cluster dropped dime to quarter-size hail over the northern sections of Des Moines. Later on, thunderstorms moved into southern Iowa from Missouri. Severe weather was reported at Rathbun Lake with golf ball-size hail. Thunderstorms moved across the far southeast corner of the state during the late evening of the 12th and morning of the 13th. A small tornado touched down briefly north of Fort Madison. Damage was done to several outbuildings. A large tree was uprooted and a carport was ripped off a mobile home there. The carport was slammed back into the trailer.

Cedar County 13 0050CST 0 0 4 0 Hail (1.25)

5 E Cedar Valley
Clinton County
5 NE Calamus

13 0110CST 0 0 4 0 Thunderstorm Winds (G50+)

As the line of thunderstorms that caused hail over southern Iowa moved north and northeast, wind damage was reported in Clinton County. Northeast of Calamus, winds from one of these storms ripped off 76 feet of a barn roof on one farm. In Cedar County, hail over an inch in diameter fell east of Cedar Valley.

Carroll County 13 0515CST 0 0 3 0 Lightning
Carroll

Lightning struck a tree outside of a house in Carroll. The lightning traveled through the house wiring, causing a minor fire and damaging several appliances.

Scott County 13 1325CST 0 0 3 0 Hail (1.00)
Eldridge 13 1330CST 0 0 4 0 Hail (1.00)
Park View 13 1330CST 0 0 3 0 Hail (1.75)
Long Grove

Jones County 13 1346CST 0 0 3 0 Lightning
Oxford

Clinton County 13 1350CST 0 0 4 0 Hail (1.75)
Elvira

Clinton County 13 1415CST 0 0 3 0 Hail (0.875)
Six Mile

Davis County 6 SSE Bloomfield 13 1532CST-
to 9 NE Bloomfield 1550CST 14.0 25 0 0 5 0 Tornado (F1)
Bremer County

1 E Frederika 13 1630CST 0 0 3 0 Hail (0.75)

Scott County 13 1630CST 0 0 4 0 Hail (1.75)
East Bettendorf

1 SE Riverdale 13 1631CST .3 50 0 0 3 0 Tornado (F0)

Chickasaw County 13 1640CST 0 0 3 0 Hail (0.75)
Fredricksburg

Scott County 13 1642CST .2 75 0 0 3 0 Tornado (F0)
Near Lock and Dam 14
2 W Le Claire 13 1643CST-
1647CST 0 0 0 0 Funnel Cloud

2 W Le Claire 13 1647CST 0 0 4 0 Hail (1.75)
Princeton 13 1650CST 0 0 3 0 Hail (1.00)

Linn, Jones, Dubuque and Delaware Counties 13 1653CST-
Prairieburg to Worthington 1725CST 19.0 200 0 0 7 0 Tornado (F4)

F3 strength in Jones and Delaware Counties, F4 in Dubuque County.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

IOWA Cont'd

Scott County Le Claire	13	1645CST	.5	75	0	0	5	0	Tornado (F1)
Scott and Clinton Counties									
1 W Le Claire to 1 SW Camanche	13	1655CST- 1715CST	13.0	45	0	0	5	0	Tornado (F1)
Pottawattamie County 6 NE Council Bluffs	13	1700CST			0	0	4	0	Thunderstorm Winds (G50+)
Jones County Monticello to 6 NE Monticello	13	1708CST- 1717CST	6.0	30	0	0	6	0	Tornado (F1)
Clinton County Camanche	13	1712CST			0	0	3	0	Hail (.75)
Washington County 3 S Riverside	13	1715CST			0	0	4	0	Thunderstorm Winds (G50+)
Pottawattamie County 7 W Underwood to 5 N Underwood	13	1710CST- 1727CST	8.0	40	0	0	5	0	Tornado (F1)
7 W Underwood	13	1715CST			0	0	5	0	Thunderstorm Winds (G50+)
Clinton County	13	1720CST			0	0	3	0	Hail (0.75)
Camanche	13	1722CST			0	0	5	0	Thunderstorm Winds (G50+)
Dubuque County Dyersville	13	1730CST			0	0	0	0	Funnel Cloud
7 NE Dyersville to Holy Cross	13	1755CST- 1800CST	3.0	25	0	0	4	0	Tornado (F1)
Clinton County 5 N Clinton	13	1735CST			0	0	0	0	Funnel Cloud
Cedar County 2 S Centerdale	13	1755CST			0	0	0	0	Funnel Cloud
Jackson County Bellevue	13	1813CST			0	0	0	0	Funnel Cloud

Thunderstorms developed over eastern Iowa during the early afternoon hours. Initially, the storms only produced golf ball-size hail. Lightning struck a building in Oxford, causing some roof damage. Thunderstorm winds damaged two machine sheds and caused some damage to barns south of Riverside. There were some spotty hail reports over northeast Iowa. The largest was three-fourths inch in diameter over parts of Bremer and Chickasaw counties. The storms became tornadic by the middle of the afternoon. The first tornado touched down in Davis County, crossing mainly rural areas. Two barns were downed east of Bloomfield. Several small tornadoes touched down in the Quad Cities area. The strongest moved along the eastern edge of Scott and Clinton Counties. Around \$200,000 damage was caused by one tornado, as it moved through the Le Claire area. The storm that produced the tornadoes actually produced several separate tornadoes. The main tornado moved along the river, but was in Illinois most of the time. High winds in Camanche ripped off a 200-foot roof section of a downtown business. The supercell that produced the tornadoes around the Quad Cities area developed just to the south of Moline, in Rock Island County, Illinois. Large hail began to fall in southern Rock Island County at 1605 CST. Severe size hail continued to fall north and west of the wall cloud until 1720 CST, when the last report of dime-size hail was received from Clinton. The wall cloud also produced several tornadoes. Besides the tornadoes that developed from the wall cloud, the flanking line produced several funnels. At least two of these funnels touched down. There were several other reported tornadoes with this supercell that are not included in this report. The storm moved along the Mississippi River. As a result, the rest of the tornadoes reported with this storm were in Illinois. The most violent tornadoes struck over east-central Iowa in Jones, Delaware, and Dubuque counties. The strongest tornado was on the ground for over 30 minutes, causing millions of dollars in damage. The hardest hit area was in western Dubuque County in the city of Worthington. Twenty-six homes and businesses were damaged and 13 were destroyed. Early damage estimates were near \$1,600,000. The break-down for the Worthington area alone went as follows: Damage to homes \$713,000, damage to commercial buildings \$157,000, damage to vehicles \$150,000, damage to farm machinery \$20,000, damage to farm property \$255,000, miscellaneous damage \$50,000, damage to city property \$90,000, damage to the Iowa Electric Light and Power Company \$150,000. The

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

IOWA Cont'd

tornado was 1/2 mile wide as it approached Worthington. As it moved into the city, its width was down to about 2 blocks. In Delaware County, south of Hopkinton, 2 farm houses were destroyed, along with several vehicles. In northwestern Jones County, over \$1 million damage was reported on one farm in Castle Grove Township. Four other rural homes were destroyed and several others were damaged. Damage in the county was over \$2,500,000. The tornado that moved from the Prairieburg area to the Worthington area struck 13 farms, in addition to the damage reported above. Another tornado touched down southwest of Holy Cross in Dubuque County. This tornado damaged several homes. Some minor structural damage occurred, including the siding being ripped off a few homes. This area of severe weather was part of a large area of thunderstorms extending across the state. Many of the storms produced pea- to marble-size hail and gusty winds. One became severe northeast of the Council Bluffs area. A barn was damaged by high winds northeast of Council Bluffs. A tornado touched down west of Underwood. A total of four farmsteads were damaged by the tornado. Several sheds and barns were destroyed along its 8-mile-long path. One family reported that the tornado picked up their dog and they saw the dog fly past the bathroom window. There was no report on the fate of the dog. Another family reported that the tornado threw a brick through the foundation of their house and scattered debris up to a mile away from their house. High winds took the roofs off several barns, damaged trees, and knocked out power.

Webster County
Webster City
Dallas County
Near Wauke
Boone and Hamilton
Counties
Ogden to
2 NE Stanhope
Boone County
8 N Boone

13	1830CST				0	0	4	0	Lightning
13	1920CST	.1	15		0	0	3	0	Tornado (F0)
13	1925CST- 2002CST	22.0	50		0	0	6	0	Tornado (F2)
13	1935CST	1.0	30		0	0	5	0	Tornado (F1)

Polk and Story
Counties
Sern Ankeny to
Maxwell

13	1955CST- 2018CST	15.0	60		0	15	6	0	Tornado (F2)
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Intermittent path from 4 NE Ankeny to Maxwell. F2 in Ankeny.

Hamilton County
3 1/2 S Kamrar
Webster City
Story County
3 W Colo
Nevada
3 W Colo to
2 S Zearing
Zearing

13	2010CST				0	0	4	0	Thunderstorm Winds (G61)
13	2015CST				0	0	3	0	Lightning
13	2033CST				0	0	5	0	Thunderstorm Winds (G50+)
13	2033CST				0	0	5	0	Thunderstorm Winds (G50+)
13	2036CST- 2052CST	9.0	100		0	1	5	0	Tornado (F3)
13	2048CST				0	0	5	0	Thunderstorm Winds (G50+)

A second round of severe weather developed over central Iowa during the evening hours. Isolated thunderstorms developed and quickly became tornadic, but they only maintained themselves for an hour or so. The first tornado report came from a rural area near Wauke. A short time later, another storm dropped a tornado in the southeast part of Ankeny. The tornado caused major damage to 20 houses, and significant damage to 16 others. None of the houses were completely destroyed. Two by fours and 2 X 6's were shoved through the walls of several houses. Rotation was obvious, as some of the boards were shoved in from a northeast direction, while others were shoved in from the southwest direction. Part of the roof of a condominium complex was blown onto Interstate 35, causing a multi-car accident. Seven people were injured by this accident. At least a dozen cars were blown off Interstate 35 by the tornado. A total of 15 injuries were reported. It was very fortunate that there were no deaths. The tornado touched down only 100 yards from a large mobile home park. In addition to that, about 1 of every 8 people in the town was attending a school function 2 miles away. As a result, many of the homes that were struck by the tornado were vacant at the time. The tornado itself was nearly obscured by heavy rain, which is somewhat unusual for tornadoes in the plains

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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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

states. Damage was placed at around \$2,000,000 in Ankeny alone. After the Ankeny storm weakened, it moved across eastern Story County. Wind damage was reported at several locations. Buildings were damaged at Zearing. A tornado formed west of Colo. This tornado lifted a tractor-semitrailer truck off the ground and threw it into a ditch. The driver sustained minor injuries. About \$60,000 damage occurred on one farm between Colo and Nevada. Four buildings were destroyed and 6 others were damaged. Fortunately, this tornado traveled through largely rural areas. Two other tornadoes touched down in Boone County. The strongest was near Ogden. Several farm buildings were damaged or destroyed, and some livestock killed along its 22-mile-long path. Damage from this tornado in Boone County was estimated at \$616,000, most of it in the city of Ogden. Although this tornado was on the ground for a longer period of time than the Ankeny tornado, damage was not as severe due to the rural nature of the areas it went through. The second tornado in Boone County struck north of the city of Boone, causing about \$119,000 in damage. It struck 3 homes and damaged a hog confinement building. After the tornadic storm that moved through the Ogden area weakened, wind damage was reported in the Kamrar area. Several farms sustained damage. The debris from one building was carried one-fourth mile across a field. Lightning struck a house in Webster City, damaging appliances and blew a hole in the wall of the living room. Two other nearby houses were damaged. Later on, lightning struck a power transformer in Webster City. Power was disrupted and some appliance damage was reported in several homes.

Des Moines County	13	2000CST-							
Mediapolis	14	0400CST	0	0	5	0			Urban Flooding

Heavy rains of around 4 inches caused considerable urban flooding in the Mediapolis area. Numerous streets and basements were flooded with up to 2 feet of water.

Cerro Gordo County	13	2107CST	0	0	4	0			Thunderstorm Winds (G50+)
1 1/2 N Dougherty									

A line of thunderstorms moved into north-central Iowa. Damage was done on a farm north of Dougherty by what appears to be a microburst. A shed and a garage were both destroyed. The winds blew a hog house through the bedroom wall of the farmhouse. Fifteen trees were also downed on the farm. There was no damage reported by any of the nearby neighbors.

Harrison County	13	2230CST	0	0	4	0			Thunderstorm Winds (G67)
Little Sioux	13	2230CST	0	0	4	0			Thunderstorm Winds (G67)
Logan	13	2300CST	0	0	3	0			Hail (1.75)
Monona County	13	2300CST	0	0	4	0			Thunderstorm Winds(G50+)
3 S Ute									
Crawford County	13	2310CST	0	0	4	0			Thunderstorm Winds (G50+)
Dow City	13	2315CST	0	0	4	0			Thunderstorm Winds (G50+)
Charter Oaks	13	2320CST	0	0	4	0			Thunderstorm Winds (G50+)
Kiron									

A third round of severe weather moved into west-central Iowa shortly before midnight. These storms produced high winds and some hail. Buildings were damaged in Little Sioux, as 75 to 80 mph winds accompanied the storms. Winds of 75 to 80 mph were also reported at Logan. A roof was also blown off a mobile home at Logan. Tree limbs were broken throughout Harrison County. Wind damage was also reported in several parts of Crawford County and eastern Monona County. Golf ball-size hail, and wind damage to a barn and several sheds were reported south of Ute, in Monona County.

Lee County	13	2300CST-							
Fort Madison	14	0800CST	0	0	4	0			Urban Flooding

Heavy rainfall over Lee County caused urban flooding in Fort Madison. Rainfall was generally in the 2- to 4-inch range. It fell on top of already saturated ground, causing the flooding and property damage.

IAZ010	13	0115CST-							
Central Iowa	14	1400CST	0	0	3	0			Local Flooding

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

IOWA Cont'd

IAZ014-015 Southeast Iowa	14	0000CST-			0	0	4	0	Flooding
	16	0100CST							
ILZ004 East central Iowa	14	1600CST-			0	0	3	0	Flooding
	16	0100CST							
IAZ013 South central Iowa	15	0300CST-			0	0	2	0	Flooding
	15	1300CST							
IAZ010 Central Iowa	15	1800CST-			0	0	3	0	Flooding
	17	0100CST							

Rainfall during the month of March was well above normal. Quite a bit of minor flooding was reported over about the southeast half of Iowa. Actually, for the state, precipitation received during the month of March was the greatest in the 118 years of weather records for the state. This is nearly twice the normal amount of rainfall for the month. The state average for the month was 4.3 inches. The previous record was 4.2 inches. Officially, the highest total was 7.87 inches in Ankeny, with Marshalltown second with 7.15 inches. Unofficially, over 9 inches was recorded near Ankeny, 7.69 at Rhodes, 7.5 inches at Maxwell, and 7.3 inches at Adair. Overall, precipitation totals from 5 to nearly 8 inches were common over central, east-central, and southeast Iowa. The most significant precipitation occurred during a one week period from the 7th to the 15th, when the state was struck by a combination of ice, heavy rain, and heavy snow. By the 14th, the continued heavy precipitation over the state had finally caused streams and rivers to rise to near or above bankfull over southeast Iowa. Flooding that did occur was quite minor and was restricted to agricultural lowlands. There was some local flooding in the city of Des Moines as both Walnut Creek and Four Mile Creek rose to near bankfull. Neither Walnut Creek or Four Mile Creek actually flooded, but there was some lowland flooding around them. The greatest flooding occurred on the Skunk River, in southeast Iowa. The river crested anywhere from 1 to 3 feet above flood stage on the 15th. Once again, this only caused minor flooding, and was generally restricted to agricultural lands. The Wapsipinicon River at De Witt crested about a foot over flood stage on the 16th. The flooding on the North River and the Chariton River was minor, with crests less than a foot over flood stage. The reason the flooding was all relatively minor is two-fold: first, conditions were very dry across the state due to the ongoing drought; secondly, a significant amount of the precipitation that was recorded in the headwaters of these rivers fell in the form of ice during the aforementioned ice storm. That moisture took 1 to 2 days to reach the rivers, thus keeping stream rises lower than would otherwise be expected.

IAZ001-004-005-009-012-NEZ010 Western Iowa	15	0400CST-			0	0	4	0	Heavy Snow
		1000CST							

An intense low pressure system moved through central Iowa during the morning of the 15th. This low moved rapidly through Iowa, and had moved north into Minnesota by the early afternoon hours. To the west of the track, heavy snow fell. Anywhere from 4 to 10 inches of wet snow were common. Eight to 12 inches of snow fell in the Storm Lake area. The highest official snowfall total was 12 inches at Galva. Other areas with 10 inches or greater include 11 inches at Ida Grove and Harlan, and 10 inches at Holstein, Cherokee, and Sanborn. Eight to 9 inches fell in the Atlantic and Avoca areas. The heavy snow caused traffic problems and numerous school closings. Many roads became nearly impassable.

IAZ003-007-008-011-014-015-ILZ004 Eastern Iowa	15	0600CST-			0	0	6	0	High Winds
		1200CST							

The same storm that brought the heavy snow to western Iowa, produced high winds in eastern Iowa. Winds gusted to 73 mph in Iowa City, 65 mph in Tipton and Lansing, 62 mph at Dubuque, 60 mph at Ottumwa, 59 mph at Cedar Rapids, and 58 mph in the Quad Cities. Sustained winds were in the 30 to 50 mph range. There were numerous reports of trees and power lines being blown down. Winds blew out windows in the Cedar Rapids and Dubuque areas. The roof was blown off an aircraft hangar that was under construction at the Cedar Rapids Airport. There were several other reports of damage across eastern Iowa. In Iowa City, a large section of roofing was peeled off a downtown business around 0900 CST. Several buildings were damaged in Arlington, which is in northeast Iowa. A stoplight was blown down

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

IOWA Cont'd

in Clinton by high winds. The strong gust of wind at the Quad Cities Airport blew down a light pole there. The high winds caused traffic problems for high profile vehicles. At least two tractor-semitrailer were blown off the road: one in the Cedar Rapids area, the other north of Guttenberg. Some wind damage was also reported in central Iowa, along the western edge of the windstorm. Building damage was reported as far west as Traer, which is in north-central Tama County. These damage reports are only some of the more significant reports received. There were numerous reports of minor damage over eastern Iowa, many more than could be placed in this report.

KANSAS

Osborne County Alton	07 1630CST				0 0 4 3	Thunderstorm Wind (G70)
Downburst wind from an intense thunderstorm caused damage to 3 residences, some outbuildings and a camper. Several large trees were uprooted.						
Reno County 20 W Hutchinson	11 1700CST	.1	50	0 0 0 0	Tornado (F0)	
A small tornado formed in western Reno County from a small thunderstorm with a top of only 23,000 feet.						
10 W Hutchinson	11 1710CST			0 0 0 0	Thunderstorm Wind (G60)	
10 W Hutchinson	11 1715CST			0 0 3 0	Thunderstorm Wind Damage	
Wind damage at a residence in western Reno County consisted of siding torn off the house and the top line snapped off a power line.						
Rice County Alden to 3 S Geneseo	11 1715CST	14	440	0 0 5 3	Tornado (F1)	
A tornado touched down 1 mile southeast of Alden and moved north-northeast to just west of Lyons where it lifted and then touched down north of Lyons. It lifted again just south of Geneseo. Some light damage was reported near Alden with several farms between Alden and Geneseo receiving extensive damage. Power poles were down north of Lyons. A 5-ton farm machine was rolled 100 yards.						
Chase	11 1742CST			0 0 3 2	Hail (0.75)	
Ellsworth County Kanopolis Lake	11 1805CST			0 0 0 0	Funnel Clouds	
Saline County Brookville	11 1828CST			0 0 3 0	Hail (0.75)	
Brookville	11 1828CST			0 0 0 0	Funnel Clouds	
Ottawa County Culver	11 1845CST			0 0 0 0	Funnel Cloud	
Minneapolis	11 1900CST			0 0 0 0	Funnel Cloud	
The same thunderstorms traveled across Ellsworth, Saline, and Ottawa Counties. Several funnel cloud sightings were reported, but there were no reports of damage.						
Greenwood County 10 W Madison	12 2026CST			0 0 3 3	Hail (1.75)	
Coffey County Lebo	12 2054CST			0 0 0 0	Hail (0.75)	
Lebo	12 2102CST			0 0 0 0	Hail (1.00)	
Lyon County Neosho Rapids	12 2104CST			0 0 0 0	Hail (1.00)	
Lincoln County 5N Denmark	12 2105CST			0 0 2 0	Hail (0.75)	

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

KANSAS Cont'd

Osage County Burlingame	12	2121CST			0	0	0	0	Hail (1.00)
Coffey County Burlington	12	2126CST			0	0	0	0	Hail (0.75)
Shawnee County Topeka	12	2139CST			0	0	0	0	Hail (0.75)
Topeka	12	2140CST			0	0	0	0	Hail (1.50)
Topeka (Forbes)	12	2147CST			0	0	0	0	Hail (1.75)
Jefferson County Grantville 6NE TOP	12	2152CST			0	0	0	0	Hail (1.00)
Shawnee County Auburn 1 W	12	2205CST			0	0	0	0	Hail (0.75)
Osage County Overbrook	12	2205CST			0	0	0	0	Hail (1.00)
Jackson County Denison	12	2217CST			0	0	0	0	Hail (1.00)
Shawnee County Topeka	12	2233CST			0	0	0	0	Hail (1.00)
Jackson County 3.5 E Mayetta	12	2237CST			0	0	0	0	Hail (1.00)
Shawnee County Topeka 2 E	12	2238CST			0	0	0	0	Hail (0.75)
Topeka	12	2248CST			0	0	0	0	Funnel Cloud
Osage County Burlingame	12	2304CST			0	0	0	0	Hail (0.75)
Shawnee County Auburn 3.5 SW	12	2305CST			0	0	0	0	Hail (0.75)
Topeka	12	2328CST			0	0	0	0	Hail (1.00)
Topeka 4 SE	12	2349CST	5	100	0	1	5	0	Tornado (F1)
Jefferson County 1 SW to 2 NE McClouth	13	0010CST	3	100	0	0	5	0	Tornado (F1)

A tornado touched down at 53rd and Ratner Road in southeast Shawnee County, then traveled northeast into extreme western Douglas County (1 W Big Springs). The tornado dissipated just northeast of Big Springs. A second tornado touched down on the southwest edge of McClouth and produced a damage path about 50 yards wide across the town to 2 miles northeast of McClouth. Damage was extensive in Shawnee County. Twenty-five homes received damage, as did one church and the Shawnee Heights (School District) Administration Building. Continuous damage was about 50 yards wide. One home was totally destroyed; two others were beyond repair and one was moved from its foundation. Several homes lost all their windows, as did the church. The preacher for the damaged church was injured when the storm blew out the windows of his home. Injuries were minor. The rest of the damage was minor roof damage (shingles) and broken windows.

Gray County Cimarron 8 S	13	0520CST			0	0	0	0	Hail (1.0)
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Jewell County Burr Oak	13	0710CST			0	0	3	0	Lightning
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Lightning struck a tree in Burr Oak. Pieces from the tree blew into a house, causing extensive damage to windows and siding.

Hodgeman County Jetmore 10 NW	13	0836CST	1	25	0	0	0	0	Tornado (F1)
Ford County 4 S Ford (city)	13	0847CST			0	0	3	0	Thunderstorm Wind (G62)
Comanche County Protection	13	0925CST			0	0	3	0	Thunderstorm Wind (G58)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

KANSAS Cont'd

Rice County Chase 1 East	13	1045CST			0	0	3	0	Thunderstorm Wind (G65)
Frederick	13	1045CST			0	0	2	0	Hail (0.75)
Frederick	13	1045CST			0	0	0	0	Funnel Cloud
Ellsworth County Ellsworth 12 South	13	1045CST			0	0	3	0	Thunderstorm Wind (G70)
Rice County Lyons	13	1100CST			0	0	2	0	Thunderstorm Wind (G52)
Reno County Hutchinson	13	1110CST			0	0	2	0	Thunderstorm Wind Damage
Ottawa County Bennington 1S to 1.25 NE	13	1130CST			0	0	4	0	Thunderstorm Wind (G70)
Saline County Salina 5 North	13	1145CST			0	0	3	0	Thunderstorm Wind (G60)
Smith County Cedar	13	1617CST			0	0	3	2	Hail (1.75)
Reno County 2 NW Pretty Prairie	13	1618CST			0	0	2	0	Hail (1.75)
Kingman County Extreme North	13	1620CST			0	0	0	0	Hail (0.75)

Reno County Harvey County McPherson County 1 S Pretty Prairie to 3 NE Hesston	13	1634CST	48	1320	1	60	7	5	Tornado (F5)
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Tornado developed just south of Pretty Prairie and quickly intensified to F5 strength. The tornado entered Harvey County 8 miles southwest of Burrton. One fatality occurred in Burrton when the tornado struck a farm home. The family was in the basement when the chimney toppled onto the 6 year old boy. The tornado continued northeast through the western sections of Hesston where it leveled homes and businesses. The tornado entered McPherson County, 3 miles northeast of Hesston. It began to weaken while in extreme southeast McPherson County and merged with a second tornado into a tremendous F5 tornado. Over \$20 million in damage in Harvey County alone. M6P.

Harvey County McPherson County Marion County 1 N Hesston to Marion Reservoir	13	1634CST-							
	13	1730CST	22	1320	1	0	7	5	Tornado (F5)

The strongest of the tornadoes during the "Hesston Outbreak of March 13, 1990" was actually the merger of 2 tornadoes. As the first tornado (no. 1) moved through Hesston a second tornado (no. 2) developed 1 mile North of Hesston. The two tornadoes traveled parallel into southeast McPherson County. In southeast McPherson County the two tornadoes merged into one huge F5 storm and traveled northeast. An elderly woman was killed near Goessel in southwest Marion County. The huge tornado dissipated near Marion Reservoir after passing south and east of Hillsboro, KS. F65P.

Smith County Smith Center 3 SE	13	1635CST			0	0	3	2	Thunderstorm Wind (G60)
Smith Center 2 N	13	1648CST	13	220	0	0	4	3	Tornado (F1)

A tornado touched down 2 miles north of Smith Center and lifted just 2 miles south of the Nebraska border, 6 miles east of Thornburg, KS.

Jewell County 1.5 NE Esborn	13	1700CST	1.5	100	0	0	4	0	Tornado (F1)
Smith County Bellaire 12 N	13	1710CST			0	0	3	2	Hail (1.00)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

PLACE	DATE	TIME	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
		LOCAL STANDARD			KILLS	INJURIES	PROPERTY	CRODGS	

KANSAS Cont'd

Jewell County Burr Oak 8.5 N	13	1730CST			0	0	3	2	Hail (1.00)
Marion County Goessel	13	1745CST			0	0	3	2	Hail (4.00)
McPherson County Extreme SE Corner	13	1755CST			0	0	0	0	Hail (2.50)
Sumner County 3 E South Haven	13	1804CST	.1	50	0	0	0	0	Tornado (F0)
7 WSW Caldwell	13	1805CST	18	200	0	0	6	4	Tornado (F3)

A tornado crossed over from Oklahoma, 6.5 miles southwest of Caldwell, KS and continued for 18 miles to 3 miles southwest of Mayfield.

Conway Springs	13	1812CST	.1	50	0	0	0	0	Tornado (F0)
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Tornadoes touched down briefly producing mostly minor damage except for some extensive damage to a farm 4 N of Danville. Law enforcement reported sighting as many as 7 funnels at one time.

Marion County
Morris County
Geary County
Waubaussee County
2 W Pilsen to
8 W Alma

	13	1815CST	56	220	0	0	6	0	Tornado (F2)
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The same parent thunderstorms that produced the Hesston tornado produced another tornado that traversed four counties. Eyewitness accounts and video tape were used to locate the touchdown point in northeast Marion County. Damage was primarily to farm complexes as the storm crossed grassland and farmland. Four homes were destroyed on the southeast side of Dwight, KS. A tornado entered Morris County 1 mile east of Lost Springs, Geary County 4 miles northeast of Dwight, and Waubaussee County 3 miles north of Alta Vista and lifted 8 miles west of Alma.

Jewell County Lovewell Lake 2 S	13	1820CST	5	440	0	0	5	0	Tornado (F1)
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A tornado touched down 2 miles south of Lovewell Lake, moved north-northeast across the lake, lifting near Webber. Several large trees (3 feet in diameter) were ripped from the ground. Several boats and small buildings were destroyed.

Harper County Bluff City	13	1830CST			0	0	0	0	Funnel Cloud
1 W Danville	13	1835CST	12	50	0	0	5	0	Tornado (F1)

A tornado touched down near Danville, KS producing damage to a farm complex, a small truck, and a trailer. The tornado was sighted by Danville Police Department who witnessed several other funnel clouds in the area at the same time.

Sedgewick County Viola	13	1840CST			0	0	0	0	Funnel Cloud
Haysville	13	1845CST			0	0	0	0	Funnel Cloud
Jewell County Cloud County Republic County 1.5 SE Randall	13	1845CST	13	550	0	0	5	3	Tornado (F1)

A tornado touched down 1.5 miles southeast of Randall, moved northeast and east across northwest Cloud County, lifting 2 miles south of Courtland in Republic County. Power lines were down east of Randall and there was extensive damage to three farms in southwest Republic County.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

KANSAS Cont'd

Reno County
Harvey County
McPherson County
10 NW Burrton-
13 S McPherson

13 1855CST 23 200 0 0 5 2 Tornado (F3)

A small but destructive tornado began in Reno County, 10 miles northwest of Burrton; traveled into Harvey County for 18 miles; then, crossed into southeast McPherson County for approximately 8 miles. A farm and 3 homes were destroyed along the path with total damage at \$275,000.

Republic County
1 NE Kackley to
8 E Republic

13 1900CST 15 440 0 0 6 3 Tornado (F2)

Extensive damage to several farm homes along the path from northeast of Kackley, to just west of Scandia, to 8 miles east of Republic.

Ottawa County
5 NW ADA
Dickinson County
Herington

13 1900CST 0 0 0 0 Funnel Cloud

13 1915CST 0 0 0 0 Funnel Cloud

Republic County
Belleville 2.5 S
Munden

13 1916CST .5 10 0 0 0 0 Tornado (F0)

13 1940CST 0 0 0 0 Funnel Cloud

Saline County
Salina Airport .5E13

1950CST .25 10 0 0 0 0 Tornado (F0)

Pottawatomie County
4 E Wamego

13 2003CST 2 50 0 0 5 0 Tornado (F1)

The last tornado of the Hesston thunderstorm caused extensive damage to a farm complex near Wamego, KS. Power lines, a telephone relay tower, and other outbuildings were destroyed. The path narrowed to just a few feet, but still made a path mark on the ground. The tornado lifted 6 miles northeast of Wamego, after causing \$250,000 in damage.

Cloud County
2.5 S Concordia
Aurora

13 2040CST .25 10 0 0 0 0 Tornado (F0)

13 2040CST 0 0 3 0 Hail (1.75)

Harper County
Anthony

13 2143CST 0 0 0 0 Thunderstorm Wind (G75)

Sedgwick County
Goddard
Wichita

13 2209CST 0 0 3 0 Hail (1.00)

13 2228CST 0 0 0 0 Hail (0.75)

Butler County
4 S Augusta

13 2303CST 0 0 0 0 Funnel Cloud

Sedgwick County
Haysville
Bel Aire

13 2250CST 0 0 0 0 Hail (0.75)

13 2250CST 0 0 0 0 Hail (0.75)

Whitewater
1 W Mulvane

13 2259CST 0 0 0 0 Hail (0.75)

13 2310CST 0 0 0 0 Hail (0.75)

Labette County
Chetopa

14 0045CST 20 50 0 0 5 2 Tornado (F1)

A small tornado skipped from 5 miles southwest of Chetopa, in extreme southeast Kansas, to 10 miles northeast of Chetopa. The high school and a manufacturing building sustained mostly roof damage. Several large trees (over 2 feet in diameter) were uprooted and landed on residences. There were no injuries, but property damage was assessed at just over \$100,000.

Cherokee County
Columbus

14 0110CST 0 0 3 0 Thunderstorm Wind Damage

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

KANSAS Cont'd

Labette County
K101 N of Edna

14 0755 0 0 0 0 Flooding

Heavy rain from thunderstorms closed parts of K101, with over a foot of water on the road surface. Other secondary roads were also washed out.

March 13, 1990 will be remembered for years to come as the day of the "Hesston Outbreak". Seventeen tornadoes touched down in Kansas during the outbreak which began with the Hesston tornado touchdown at 1634 CST and continued until 2100 CST. Two deaths and sixty injuries occurred on that day, along with damage in excess of \$25 million. The deaths were the first tornado-related deaths since 1984. Twenty-three tornadoes touched down in Kansas during the month of March, making it the busiest severe weather month since April 1984.

KENTUCKY

None reported.

LOUISIANA

St. James Parish
Entire Parish

09 1830CST-
09 2215CST 0 0 4 ? Flash Flood

Torrential rain fell over a small area in southeast Louisiana, centered on St. James Parish. Storm-total rainfall during the late afternoon and evening hours approached 10 inches in many areas of the parish. The most intense rainfall occurred between 1800CST and 2130 CST with 6.25 inches of rain recorded in Grammercy and 5.00 inches in Convent. This brief, yet intense, rainfall overwhelmed drainage in the area. Approximately 20 homes and businesses were flooded in Grammercy, and a dozen homes flooded in Paulina and Grand Point communities.

Sabine Parish
1 W Many

14 1830CST 0.8 30 0 0 4 ? Tornado (F1)

A tornado touched down just west of Many, toppling numerous trees and utility poles. Several mobile homes and a house were damaged by the fallen trees.

Morehouse Parish
South Portion

14 2100CST-
2120CST 0 4 4 ? Thunderstorm Wind

A severe thunderstorm produced widespread wind damage to trees and utility systems in Morehouse Parish. The fallen trees blocked a number of roads in the parish. In the community of Bastrop, four persons suffered minor injuries when a large tree was blown down onto their house, subsequently caving in a portion of the roof.

Lafourche Parish
Golden Meadow

15 0425CST 0.5 25 0 0 4 0 Tornado (F0)

A tornado touched down just north of Golden Meadow, removing the roof of a mobile home. The three occupants of the trailer were uninjured. Two automobiles were damaged by flying debris.

Beauregard Parish
5 W Longville

29 0410CST 0 0 2 0 Thunderstorm Wind

Several trees along Louisiana Highway 110 were blown down by thunderstorm wind gusts.

Vernon Parish
12 S Leesville

29 1340CST 0.5 30 0 0 4 0 Tornado (F1)

A tornado touched down in the community of Sandy Hill causing minor damage to house roofs, storefront windows, and several automobiles.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Calcasieu Parish									
Lake Charles	29	1855CST			0	1	5	0	Thunderstorm Wind
Sulphur	29	1910CST			0	0	3	0	Thunderstorm Wind
Moss Bluff	29	1910CST			0	0	3	0	Thunderstorm Wind
Hayes	29	1920CST			0	0	3	0	Thunderstorm Wind
Jefferson Davis Parish									
Iowa	29	1927CST	0.3	25	0	0	4	0	Tornado (F1)
Acadia Parish									
Church Point	29	2030CST	0.3	25	0	0	4	0	Tornado (F1)

A squall line moved eastward across southwest Louisiana, producing damaging winds and a few short-lived tornadoes. The most extensive damage occurred on the south side of Lake Charles where 15 units of an apartment complex were damaged by wind gusts. A small child suffered minor injuries from flying debris. A hangar at Chenault Airfield was heavily damaged by thunderstorm wind gusts. At Church Point and Hayes, houses were unroofed; and a barn was heavily damaged near Iowa.

St. Mary Parish									
Franklin	29	2100CST			0	0	3	0	Thunderstorm Wind
Morgan City	29	2110CST			0	0	3	0	Thunderstorm Wind
Assumption Parish									
10 SSW Labadieville	29	2140CST			0	0	3	0	Thunderstorm Wind
Terrebonne Parish									
Gray	29	2200CST	2.0	50	0	7	5	0	Tornado (F1)
Lafourche Parish									
North Portion	29	2205CST			0	0	?	0	Thunderstorm Wind
St. Charles Parish									
West Portion	29	2255CST			0	0	?	0	Thunderstorm Wind
St. Tammany Parish									
15 S Mandeville	29	2350CST			0	0	0	0	Thunderstorm Wind (G55)
Slidell	30	0010CST			0	0	?	?	Thunderstorm Wind

A "bow echo" type thunderstorm complex moved out of the Gulf of Mexico coastal waters into southeast Louisiana during the evening hours producing wind damage to trees in St. Mary Parish and damaging the roof of a business in southern Assumption Parish. A meso-cyclone thunderstorm developed over Terrebonne Parish spawning a tornado which struck a mobile home park near Gray. Fifteen mobile homes were destroyed and 15 others suffered heavy damage. Seven persons in the mobile home park were injured, one seriously. The thunderstorm continued to move northeast downing trees in Lafourche and St. Charles Parishes. Wind gusts to 63 mph were recorded on the Lake Pontchartrain Causeway south of Mandeville. Minor wind damage was later reported in the south portion of Slidell.

MAINE

None reported.

MARYLAND and D.C.

MDZ005

DCZ001

Harwood

(23 E DCA)

Bristol Landing

(22 ESE DCA)

Annapolis

(15 SE BWT)

17	1100EST-								
17	1300EST			2	1	5	0		Thunderstorm Winds

Thunderstorms produced numerous reports of downburst-type winds with areas of damage. In Montgomery County and the southeast part of the District of Columbia, thunderstorm winds brought power outages to 3,000 at about 11:00 a.m. In Harwood a mobile home was picked up, flipped several times, and destroyed. A house and several barns were also damaged. One man was killed and another injured when thunderstorm winds blew a tree onto a van in northern Anne Arundel County, near Annapolis. A man drowned at Bristol Landing on the Patuxent River when his boat was swamped by rough water during the thunderstorms. M35V, M340.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

MASSACHUSETTS

None reported.

MICHIGAN

MIZ001-002-003-004-012-013-014-015-022
South Half Lower Michigan

04 0800EST 0 0 0 0 Heavy Snow

Light snow began falling over west-central lower Michigan during the midmorning hours of Sunday, March 4th, then spread eastward and south across the remainder of the area by midevening Sunday. The heaviest period of snow was from midevening Sunday until about midmorning, Monday, March 5th. The snow then slowly ended north to south across the area during Monday. The snow ended over the southern border area by late evening on the 5th. This snow caused few problems, only several minor accidents were reported during the Monday morning drive to work time.

Heavy Snowfalls February 1st
Monroe 6.5 inches
Ann Arbor 6.0 inches
Brooklyn 6.0 inches
Detroit 5.9 inches
West Bloomfield 5.0 inches
Nottawa 5.0 inches

Allegan County
Allegan

13 0700EST 0 0 7 0 Hail (2)

Golf ball-size hail caused extensive damage to florists, car dealers, and most of the vehicles on the street during this brief severe thunderstorm. One local repair shop reported over 200 cars with damage ranging from broken glass to dented metal. Over 300 cars and trucks in dealer display lots were totally destroyed by the large hail. Insurance claims exceeded \$8,000,000.

Grand Traverse County
Benzonia

13 2330EST 0 0 4 0 Lightning

Lightning struck a television antenna. This caused a fire that gutted the second floor of a wooden home before the fire department could get the fire under control.

Grand Traverse County

13 2345EST 0 0 4 0 Thunderstorm Wind

A series of thunderstorms, which moved across northwest lower Michigan during the late night hours of the 13th and early morning hours of the 14th, caused considerable damage in Grand Traverse County. The strong thunderstorm winds blew apart a barn. A camper top was blown off a pickup truck and destroyed. Many houses reported damage ranging from blown-off shingles to major roof damage, as several large trees were blown down. There were many power lines also blown down from the strong winds and falling tree limbs. A total of 1,770 households and businesses experienced power outages. Lightning hitting transformers helped add to the power outages.

Grand Traverse County
Acme

14 0500EST 0 0 2 0 Lightning

A home in the Springbrook subdivision was struck by lightning. There was minor damage to the insulation in the attic before fire-fighters could get the fire under control.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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									
Central and South MNZ007-008-009-010-011-012-013-014-015-016-017-018-019	7-8				0	0	0	0	Ice Storm
A prolonged period of freezing rain spread into southern Minnesota during the early morning hours of March 7th. The freezing rain spread into central Minnesota during the afternoon of March 7th and north into the Bemidji, Grand Rapids, and Duluth areas by the morning of March 8th. A quarter-inch of glaze accumulated on exposed surfaces throughout central and southern Minnesota. Travel conditions became dangerous resulting in a number of accidents involving both vehicles and pedestrians. Power outages resulted from ice buildups and electrical arcing across the ice buildups, causing pole fires. Ice accumulation forced the closing of schools and caused numerous postponements and cancellations of scheduled events. The freezing rain ended across southern Minnesota around noon on March 8th. During the same afternoon, the freezing rain over central Minnesota changed to snow. Precipitation diminished to patchy freezing drizzle by the evening of March 8th.									
Central and East Central MNZ011-012-014-016	11	0300CST			0	0	4	0	Flooding
Rain with embedded thunderstorms spread north into central and east-central Minnesota during the early morning. Heavy rain fell over frozen ground causing ponding of water and flood damage. A maximum of 2.50 inches of rain fell in downtown Minneapolis. Basements were flooded in many communities around the Twin Cities metropolitan area and some residential foundations collapsed. Some cars were flooded due to high water levels in highway underpasses and parking areas. Homes and roads were inundated with water around Brainerd and Little Falls. Storm sewers were also flooded in St Cloud.									
Olmsted County Chatfield	13	1630CST			0	0	0	0	Hail (1.75)
Marble to golf ball-size hail fell near Chatfield.									
Houston County Spring Grove	14	1400CST			0	0	4	0	Lightning
A lightning strike caused a fire that destroyed two businesses.									
Southeast MNZ019	15	0800CST			0	1	4	0	High Winds
High winds associated with a deep low pressure area in Iowa blew over two tractor-semitrailers. The first truck was overturned just west of Kasson at 1000 CST and the second near the intersection of Interstate 90 and Highway 74 at 1100 CST. A man was severely injured in Houston County when strong winds blew him from a truck while he was adjusting a tarpaulin. The man sailed 25 feet into the air and landed 45 feet from the truck with a broken back, jaw, and teeth. The roof from a business was blown onto an adjacent residence in Spring Grove at 0815 CST. The brick front of a building in Houston was blown down at 1045 CST. Many trees were downed resulting in scattered power outages.									
West MNZ001-006-010-013-015-017	15	1100CST			0	0	0	0	Heavy Snow
Snow preceded by light rain and a mixture of sleet and freezing rain increased in intensity across southwest Minnesota during the morning of March 15th. By 1135 CST, 6 inches of snow had fallen at Marshall. Heavy snow spread into west-central Minnesota by early afternoon and winds increased causing blowing and drifting snow. By early evening snow accumulations of 6 inches or more spread north through Thief River Falls. Total accumulations of 12 inches were reported at Detroit Lakes, Fertile, and Fosston. Other snowfall accumulations included 11 inches at Pelican Rapids, 10 inches at Worthington, and 8 to 10 inches in the Slayton area. Winds in excess of 30 mph created drifts from 4 to 6 feet high in Polk County. Travel became impossible as many roads became blocked with drifts of wet and heavy snow. Numerous school closings and postponements and cancellations of scheduled events resulted from the storm.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Rock County
1 N Hills 22 0300CST 0 0 4 0 **Thunderstorm Wind**
Thunderstorm winds toppled a crane at a construction site.

MISSISSIPPI

Washington County
Greenville 14 2230CST 0 0 ? 0 **Thunderstorm Wind**
Several trees and power lines were blown down.

Bolivar County
Cleveland 14 2240CST 0 0 ? 0 **Thunderstorm Wind**
Numerous trees and power lines were blown down.

Issaquena County
2 S Grace 14 2300CST 0 0 4 0 **Thunderstorm Wind**
A few trees were blown down. One tree fell on a house.

Bolivar County
Boyle 14 2315CST 0 0 ? 0 **Thunderstorm Wind**
Several trees and power lines were blown down. At least one power pole was blown down.

Sunflower County
Ruleville 14 2315CST 0 0 ? 0 **Thunderstorm Wind**
Several trees and power lines were blown down.

Washington County
2 S Leland 14 2320CST 0 0 ? 0 **Thunderstorm Wind**
Three power poles and several trees were blown down.

Tunica County
1 W Banks 14 2325CST 0 0 ? ? **Hail (0.75)**

Washington County
2 N Tribbett 14 2335CST 0 0 ? 0 **Thunderstorm Wind**
Several power poles and power lines were blown down.

Desoto County
8 W Hernando 14 2350CST 0 0 ? 0 **Thunderstorm Wind**
Several large limbs and trees were blown down.

Harrison County
Gulfport 15 0716CST 0 0 ? ? **Hail (0.75)**

Jackson County
Hurley 15 0830CST 0 0 ? 0 **Thunderstorm Wind**
Large tree limbs, 3 to 4 inches in diameter, were blown from trees.

George County
Benndale 15 0830CST 0 5 5 0 **Thunderstorm Wind**

Two mobile homes were destroyed. All five injuries occurred in the mobile homes. Numerous trees and power lines were blown down.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

MISSISSIPPI Cont'd

Jackson County	15	1100CST-1300CST			0	0	?	?	Flash Flooding
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Many roads and streets were flooded throughout the county.

George County	16	0300CST-0600CST			0	0	5	?	Flash Flooding
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Extensive flooding caused damage to many roads and streets throughout the county. A few people had to be evacuated from their homes, but the water did not get high enough to get into their houses.

Jackson County	16	0300CST-1200CST			0	0	5	?	Flash Flooding
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Up to 14 inches of rain fell over Jackson County in two days. Thirty-five homes were flooded. Numerous streets and roads were washed out. At least 30 roads were cut off or impassable.

Washington County Hollandale	29	1600CST			0	2	0	0	Lightning
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One man was injured when lightning came through a telephone line. Another man was on a metal stepladder outside the building and was knocked off when lightning struck.

MISSOURI

Camden County Camdenton	11	1930CST			0	0	3	0	Thunderstorm Wind
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Winds to 60 mph or greater, produced damage to trees and roofs.

Franklin County Sullivan	11	2145CST			0	0	0	0	Thunderstorm Wind
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Sheriff reported winds 50 to 70 mph.

St. Charles County Wentzville St. Peters	11	2205CST			0	0	5	0	Thunderstorm Wind
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Winds produced damage in St. Charles County. Most of the damage was near the intersection of Highways 40 and 61. A garage was nearly destroyed and a number of power lines were downed due to falling tree limbs. The winds were measured at 52 mph at the National Weather Service Forecast office in St. Peters. No damage was reported there.

Jefferson County De Soto	11	2230CST			0	0	3	0	Thunderstorm Wind
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Winds 60 to 70 mph reported by a spotter. Trees and power lines downed.

St. Louis City & St. Louis County	11	2235CST			0	0	4	0	Thunderstorm Wind
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Scattered tree damage and power outages.

Platte County Riverside	13	2328CST			0	0	0	0	Hail (1.75)
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Hail the size of golf balls reported by the Riverside Police Department.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

MISSOURI Cont'd

Polk County
Pleasant Hope

13 2130CST 2 600 0 0 6 0 Tornado (F2)

A tornado touched down near Pleasant Hope and stayed on the ground for about 2 miles. It damaged 5 houses and 16 barns. It also downed trees and power lines. Several sheds were damaged. Final damage was about 2 miles northeast of Pleasant Hope.

Newton County
Neosho

14 0745CST 0 0 4 0 Thunderstorm Wind

Airport and Crowder College. Two hangars damaged. Power lines downed.

Jasper County
Duquense

14 0749CST 0.5 50 0 0 4 0 Tornado (F1)

A tornado touched down briefly and produced damage to trees.

Greene County
Dade County
Lawrence County
Barry County
Cedar County
Polk County

14 0000CST-0600CST 0 0 6 0 Flash Flooding

Roads under water in low spots. Small creeks out of their banks and urban flooding in Springfield.

Laclede County
Lebanon

14 1825CST 0.5 50 0 0 3 0 Tornado (F1)

A tornado touched down briefly just north of Lebanon. A barn was destroyed. Widespread flooding was also reported.

Dade County

14 1938CST 0 0 3 0 Flash Flooding

Widespread flooding reported by a precipitation observer.

Greene County
Springfield

14 1930CST 0 0 4 0 Flash Flooding

Low water bridges and several streets under water.

Lawrence County
Monett

14 1930CS 0 0 ? 0 Flash Flooding

Roads were under water.

Christian County
Ozark

14 2000CST 0.5 50 0 0 4 0 Tornado (F1)

A tornado touched down briefly and produced tree and property damage. Finley River was out of its banks due to heavy rain.

Boone County
Columbia

14 1805CST 0 0 7 0 Thunderstorm Wind

A severe thunderstorm with very high (probably downburst) winds started producing damage at Rangeland and Interstate 70 and produced a 1-mile path of damage about 100 yards wide. The most impressive damage was when two tractor-semitrailer rigs were blown over and then the two of them blown through the side of the A.N.R. building. A factory received extensive damage. A two-ton Ryder truck was blown over. Numerous trees and wires were down. A chain link fence was blown over.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

MISSOURI Cont'd

Boone County Columbia	14	1952CST			0	0	5	0	Thunderstorm Wind
Several mobile homes were damaged at The Pine Cove Trailer Court. Shingles were blown off two houses in El Chapparel Subdivision.									
Boone County Columbia	14	2100CST			0	0	0	0	Flash Flooding
Bear Creek out of its banks.									
Boone County Columbia	14	2102CST			0	0	0	0	Flash Flooding
Hinkson Creek out of its banks.									
Boone County Columbia	14	2105CST			0	0	05	0	Flash Flooding
Boone County Moniteau County	14	1600CST- 2300CST			0	0	5	0	Flash Flooding
Numerous roads closed and streams out of their banks. A vehicle was washed away near California but the man swam to safety.									

MONTANA

MTZ003	11	0100MST- 0700MST			0	0	2	0	Heavy Snow
Six to 10 inches fell along the Rocky Mountain front from the Canadian Border to Augusta. Cut Bank reported 8 to 10 inches of snow.									
MTZ001-003-004- 005-006-007-008	12 13	0100MST- 1700MST			0	0	4	0	Winter Storm
Six to 12 inches of snow fell, along and just south of the Canadian Border, during the day on the 12th. The heavy snow continued southward late on the 12th and finally ended during the day on the 13th. Malta received 6 to 12 inches of snow on the 12th with drifts 3 to 5 feet. Echo Lake near Kalispell had 16 inches. Additional heavy snow amounts were: Bozeman 6 inches; Great Falls 10 inches; Kings Hill 20 inches; Havre 6 inches; Dutton 10 inches; 6 inches near Livingston, and 12 inches at Shelby. Strong winds caused extensive drifting, with several roads being closed across central Montana.									
MTZ003	21 22	0100MST- 0400MST			0	0	0	0	Heavy Snow
Four inches fell at Cut Bank with 3 inches at Great Falls.									
MTZ007	23	0200MST- 1700MST			0	0	2	0	Heavy Snow
Six inches fell at Red Lodge and Billings.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

NEBRASKA

NEZ0001-002-005-006-011-012
Panhandle and North Central Nebraska

06	0500CST-1200CST	0	0	6	1	Ice Storm
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Freezing rain caused a heavy glaze breaking tree limbs, power lines, and power poles. One of the hardest-hit areas was around Hemingford, where two-thirds of the town was left without power and broken limbs fell on buildings and vehicles. Other areas of more significant problems were reported around Hyannis, Hay Springs, Kimball, and Ogallala.

NEZ001-002-003-005-006-007-012
Panhandle and North Central Nebraska

06	0900CST	0	0	3	2	Heavy Snow
07	0700CST	0	0	3	2	Heavy Snow

Snow of 6 inches or more fell north and west of a line from Harrisburg to Big Springs to Anselmo to Butte. Heaviest snow fell in the northern panhandle with 17 inches at Crawford, 12 inches at Harrison, 11 inches at Hemmingford. Nine-inch amounts were measured at Lyman, Alliance, Agate, and Chadron in the panhandle, and Mullen and Arthur in the north-central area. Gusty north to northeast winds reduced visibility at times in blowing and drifting snow.

NEZ0003-004-007-008-009-014
Northeast and Central Nebraska

06	0200CST-0800CST	0	0	6	1	Ice Storm
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Freezing rain caused heavy glazing which broke numerous power poles, power lines, and tree limbs. Broken limbs fell on vehicles and buildings causing damage. Thousands were left without power. The NWS Weather Radio station transmitter at Carroll was knocked out of service. Eight miles west of Platte Center, ice falling from a television transmission tower caused considerable damage to a studio and transmitter building. The area around Albion suffered considerable damage with an estimated 200 power poles broken.

Dawson County
Lexington
1 S Overton

11	1830CST	0	0	5	1	Thunderstorm Wind
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Thunderstorm gusts tore portions of a roof off a lumber-yard building in Lexington. One mile south of Overton, three calving sheds were destroyed and two homes damaged.

Otoe County
Nebraska
Cass County
7 S Louisville
Sarpy County
3W Offutt AFB

13	0045CST	0	0	4	1	Hail (1.75)
13	0120CST	0	0	3	1	Hail (1.75)
13	0205CST	0	0	2	1	Hail (0.75)

Douglas County
Omaha

13	0230CST	0	0	5	0	Lightning
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Lightning set fire to an apartment building.

NEZ001-005
North Panhandle
Nebraska

13	1400CST	0	0	2	1	Heavy Snow
14	0200CST	0	0	2	1	Heavy Snow

Heavy snow fell in the north panhandle with 9 inches at Crawford, 7 inches at Chadron and Agate, and 6 inches at Hemingford.

Harlan County
2 E Alma
1 SW Wilcox

13	1500CST	0	0	3	2	Hail (1.00)
13	1500CST	0	0	3	2	Thunderstorm Wind

Thunderstorm gusts destroyed irrigation pivots and broke off trees.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

NEBRASKA Cont'd

Buffalo County 1 SW Gibbon	13	1627CST				0	0	1	1	Hail (0.75)
Buffalo County 2 NW Shelton	13	1645CST	1	80		0	0	2	1	Tornado (F1)

A tornado touched down 2 miles northwest of Shelton and moved northeast 1 mile, causing minor damage.

Buffalo County Kearney County Hall County	13	1700CST-				0	0	6	1	Tornado (F3)
Buffalo County 3 NW Minden to 2 S Cairo	13	1730CST	36	200		0	0	6	1	Tornado (F3)

A tornado touched down 3 miles northwest of Minden in Kearney County and moved northeast to 1 mile east of Lowell. The storm then crossed into Buffalo County 7 miles southwest of Shelton and continued northeast, lifting at intervals. The tornado crossed into Hall County, 6 miles west-southwest of Wood River, and lifted 2 miles south of Cairo. Along the path numerous outbuildings were destroyed, trees uprooted, power lines downed, and a county bridge destroyed. Four farmsteads were heavily damaged southeast of Lowell, and a farm southwest of Shelton also had extensive damage.

Webster County Nuckolls County Clay County Fillmore County York County Seward County Butler County Colfax County	13	1705CST 2010CST	124	440		0	8	7	3	Tornado (F4)
3 S Red Cloud to 3 E Schulyer										

A tornado touched down 3 miles south of Red Cloud in Webster County and moved northeast. The tornado entered Nuckolls County 1 mile southwest of Lawrence, entered Clay County 2 miles west-southwest of Deweese, entered Fillmore County 6 miles west of Grafton, entered York County 2 miles south-southwest of Lushton, entered Seward County 11 miles west-northwest of Staplehurst, entered Butler County 6 miles west-southwest of Ulysses and entered Colfax County 2.5 miles southwest of Schuyler, and lifted 3 miles east of Schuyler. One farm was completely wiped out northeast of Red Cloud in Webster County. Seven farm houses were damaged and many outbuildings and power lines destroyed. Many livestock were killed. At Lawrence, 68 buildings were damaged including 53 residences in Nuckolls County. Eight homes and a lumber yard were destroyed. Many vehicles were damaged as well as outbuildings, power lines, and a grain elevator. Three people were injured. Eight farms were damaged and many livestock killed in the rural area around Lawrence. The storm hit around 1810 CST in Clay County. Forty-nine homes were damaged, and one business destroyed, 11 with severe damage in Sutton. Many outbuildings, trees, power lines, and autos were damaged. A small airplane was demolished. A pickup truck was flipped injuring 3 occupants. A police car was also overturned, injuring the officer. One hundred-ten cars were damaged at a car dealership. Many trees and power lines were downed and 20 farms were damaged in the rural area around Sutton. The tornado damaged outbuildings, trees, and power lines as it moved through the extreme northwest corner of Fillmore County. The storm hit around 1835 CST in York County and most damage occurred in rural areas and in and around the Interstate 80 interchange. A farm house and buildings were heavily destroyed 4 miles west of McCool Junction. At the Interstate 80 interchange, a roof was torn off a motel and 2 people sustained injuries from flying glass. Two tractor-semitrailers were destroyed, and a gas station and convenience store heavily damaged. A farm house 3 miles southwest of York was destroyed. All told, 11 farms were damaged and 3 destroyed. Near Waco, 57 railroad cars were knocked off the track. Many power lines and trees were downed and 10,000 geese killed in the County. In Seward County, mainly trees and power lines were damaged. The storm hit around 1900 CST in Butler County and numerous farmsteads were damaged from Surprise through the David City area into the northeast portion of the County. Thirty-five homes were damaged or destroyed, 155 structures damaged, and 1,200 livestock killed or injured. The storm veered at David City sparing the most developed areas major damage; however, a police car was overturned. Numerous trees were uprooted and power lines damaged along the tornado track. The storm hit about 2005 CST in Colfax County. Four farms were damaged southeast of Schuyler. Several buildings and grain bins were destroyed, as well as several center pivot irrigation systems. Trees were uprooted, power lines downed, and fences damaged.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

NEBRASKA Cont'd

Kearney County
1 S Wilcox to
7 N Wilcox

13	1720CST	8	100	0	0	5	0	Tornado (F2)
13	1720CST	100	0	0	0	5	0	Tornado (F2)

A tornado touched down 1 mile south of Wilcox, skipped over town and moved north about 7 miles before lifting. Extensive damage occurred to farms south and north of Wilcox, where livestock were killed, outbuildings and center pivots destroyed, and trees were downed.

Adams County
Hall County
4 W Prosser to
Wood River

13	1725CST	9	80	0	0	5	2	Tornado (F2)
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A tornado touched down 4 miles west of Prosser in Adams County and moved northeast, entering Hall County 8 miles south-southwest of Wood River, lifting near Wood River. Two farms were hit causing extensive damage to a farmhouse, destroying outbuildings, grain bins, two barns, and many trees.

Buffalo County
2 N Kearney

13	1735CST	0.1	40	0	0	1	1	Tornado (F0)
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A tornado touched down briefly in an open field 2 miles north of Kearney.

Hall County
Howard County
Merrick County
1 N Alda to 3 SE
Palmer

13	1744CST							
	1825CST	25	200	0	0	6	2	Tornado (F3)

A tornado developed 1 mile north of Alda and moved northeast, entering Howard County 2.5 miles south-southeast of St. Libory, entering Merrick County 1 mile west-northwest of Worms, and lifting 3 miles southeast of Palmer. The tornado moved through the Army Ordnance Plant, destroying a building, 3 mobile homes, and overturning 15 railroad cars. The tornado overturned 47 railroad cars northwest of Grand Island and damaged several farms. Power lines were downed, trees blown down and livestock killed in the same area. A mobile home was demolished 5 miles northwest of Grand Island and another demolished southeast of St. Libory. Twelve dwellings sustained minor damage and 2 farms had extensive damage in Hall County. Extensive damage was done to 4 farms south and southeast of Palmer in Merrick, County including loss of cattle. Power lines were downed, trees uprooted, and outbuildings damaged along the path.

Merrick County
Nance County
2 NW Palmer to
5 SW Belgrade

13	1823CST	13	100	0	0	6	2	Tornado (F2)
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A tornado touched down 2 miles northwest of Palmer and moved northeast, entering Nance County 17 miles southwest of Belgrade, lifting 5 miles southwest of Belgrade. The tornado damaged 10 farms in Nance County, including 4 farmhomes. Trees were uprooted, power lines downed, and outbuildings damaged along the path.

Boone County
8 ESE Albion to
7 E Albion

13	1825CST-							
	1835CST	1.5	200	0	0	5	2	Tornado (F1)
13	1830CST			0	0	4	1	Hail (2.00)

A tornado touched down from 8 miles east-southeast of Albion to 8 miles east of Albion, damaging irrigation pipes and 11 center pivot irrigation systems. Trees were uprooted and fences damaged.

Nance County
2 SE to 3E
Fullerton

13	1830CST	2	50	0	0	4	2	Tornado (F1)
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A tornado touched down 2 miles southeast of Fullerton, and moved northeast, to 3 miles east of town before lifting. Trees were uprooted and power lines destroyed.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

NEBRASKA Cont'd

York County
York 13 1845CST 0 0 5 2 **Hail (2.00)**

Hail damaged vehicles and roofs.

Madison County
1 E Newman Grove 13 1845CST 0.2 50 0 0 4 1 **Tornado (F1)**

A tornado touched down 1 mile east of Newman Grove, destroying a farm building.

Polk County
2 N Shelby 13 1920CST 0 0 4 0 **Wind**

Strong gusts damaged power lines.

Madison County
2 SE Battle Creek 13 1930CST 0.6 75 0 0 6 1 **Tornado (F1)**
Norfolk 13 1940CST 0 0 2 1 **Hail (0.75)**

A tornado touched down 2 miles southeast of Battle Creek destroying several farm buildings, damaging a center pivot system, and completely blowing away fifteen 1,200-pound hay bales and hog shed.

Thayer County
Fillmore County
1 N Carleton to
3 SE Exeter 13 1945CST-
 2010CST 0.6 75 0 0 6 1 **Tornado (F3)**

A tornado touched down 1 mile north of Carleton; moved northeast entering Fillmore County 6 miles southeast of Shickley; then lifting 3 miles southeast of Exeter. Windows were broken and trees uprooted, on a farm north of Carleton. On the northeast edge of Strang, a mobile home was destroyed and a metal roof pulled off a building. On another farm just northeast of Strang, a large hog facility and outbuildings were destroyed and downed trees blocked a highway. Numerous trees were uprooted and power lines damaged along the track.

Thayer County
Chester to 5 E
Hebron 13 1945CST 13 150 0 0 5 2 **Tornado (F3)**

A tornado touched down near Chester and moved northeast, lifting 5 miles east of Hebron. Trees, outbuildings, and propane tanks were damaged on the outskirts of Chester. Two miles northeast of Chester a farm home was damaged, and a machine shed destroyed, with extensive damage to a combine, tractor, and truck. A number of farmsteads were also damaged southeast of Hebron. Trees were uprooted, power lines downed, and fences damaged along the path.

Dodge County
North Bend 13 2015CST 0 0 4 1 **Thunderstorm Wind**

Strong gusts blew the roof of a building. Tree limbs were broken.

Cedar County
Laurel 13 2030CST 0 0 3 1 **Hail (2.00)**
Seward County
Cordova 13 2035CST 0 0 3 2 **Thunderstorm Wind**

Strong gusts downed trees and power lines.

Seward County
Pleasant Dale 13 2100CST 0 0 4 2 **Hail (1.75)**
Gage County
Adams 13 2100CST 0 0 4 1 **Thunderstorm Wind**

Strong wind gusts damaged a hog house and feed bins.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

NEBRASKA Cont'd

<p>Jefferson County Fairbury</p>	<p>13 2115CST</p>	<p>0 0 4 1</p>	<p>Thunderstorm Wind</p>	<p>Strong wind gusts started 15 empty railroad cars moving, resulting in a derailment. Tree limbs were broken and power lines downed.</p>
<p>Lancaster County Lincoln Waverly</p>	<p>13 2137CST 13 2145CST</p>	<p>0 0 2 1 0 0 4 1</p>	<p>Hail (0.75) Thunderstorm Wind</p>	<p>Strong wind gusts blew the roof off a school storage building at Waverly.</p>
<p>Saunders County Ashland</p>	<p>13 2155CST</p>	<p>0 0 3 1</p>	<p>Thunderstorm Wind (G52)</p>	<p>Thunderstorm gusts to 60 mph downed trees and power lines. A roof was blown off a garage.</p>
<p>Douglas County Omaha King Lake</p>	<p>13 2200CST</p>	<p>0 0 3 0</p>	<p>Thunderstorm Wind</p>	<p>Thunderstorm winds broke limbs and blew down a few trees.</p>
<p>Thurston County 3 SW Rosalie to 1.5 SW Rosalie</p>	<p>13 2201CST</p>	<p>1.5 50 0 0 5 2</p>	<p>Tornado (F1)</p>	<p>A tornado touched down 3 miles southwest of Rosalie and moved northeast 1.5 miles. A home, several barns, vehicles, machinery sheds, and trees were damaged or destroyed.</p>
<p>Pawnee County Pawnee Cit Table Rock</p>	<p>13 2205CST</p>	<p>0 0 4 1</p>	<p>Thunderstorm Wind</p>	<p>Strong thunderstorm wind gusts blew portions of roofs off buildings in Pawnee City, and just east of town. Siding was torn off a building at Table Rock. Trees limbs were broken.</p>
<p>Washington County Herman</p>	<p>13 2210CST 13 2210CST</p>	<p>0 0 3 1</p>	<p>Thunderstorm Wind (G65)</p>	<p>Thunderstorm wind gusts, estimated to 75 mph, damaged trees.</p>
<p>Otoe County Nebraska City</p>	<p>13 2215CST</p>	<p>0 0 3 1</p>	<p>Thunderstorm Wind (G52)</p>	<p>Thunderstorm winds, estimated to 60 mph, broke tree limbs.</p>
<p>Richardson County Humboldt</p>	<p>13 2215CST</p>	<p>0 0 5 1</p>	<p>Thunderstorm Wind</p>	<p>Strong thunderstorm gusts blew down trees and wires and damaged a number of buildings. Wind tore the roofs off grain bins and a hog shed at a farmstead south of town.</p>
<p>Nemaha County Auburn</p>	<p>13 2220CST</p>	<p>0 0 4 1</p>	<p>Thunderstorm Wind</p>	<p>Strong thunderstorm gusts damaged outbuildings and broke tree limbs in Auburn and surrounding countryside.</p>
<p>NEZ005 Panhandle Nebraska</p>	<p>15 1446CST</p>	<p>0 0 3 2</p>	<p>High Wind (G51)</p>	<p>Winds gusted upwards to 59 mph. A peak gust of 59 mph was measured at Scottsbluff at 1446 CST.</p>

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

NEBRASKA Cont'd

NEZ001
Panhandle
Nebraska

16 0840CST-1200CST 0 0 3 2 High Wind (G56)

Northwest winds gusted upwards to 64 mph. A peak gust to 65 mph was recorded at Chadron at 1014 CST.

NEZ001-005-006
Panhandle and
North Central
Nebraska

23 0300CST
24 1300CST 0 0 3 1 Heavy Snow

Six inches or more of snow fell in portions of the panhandle and north-central Nebraska, bounded by a line from Lyman to Oskosh to Arthur to Crawford, to just south of Agate. Heavier snow amounts included 9 inches at Crescent Lake Wildlife Refuge and 8 inches at Bridgeport and Arthur. Gusty winds caused some blowing and drifting snow.

NEZ015-019-020
Southeast
Nebraska

23 0400CST
24 1100CST 0 0 2 1 Heavy Snow

Six inches of snow fell in an area bounded by Polk to Hickman to Western to York, back to Polk. Heavy snow also fell over extreme southeast Nebraska with 8 inches reported at Falls City and 6 inches at Pawnee City.

Cheyenne County
4 E Sidney

23 1800CST 0 0 4 1 Thunderstorm Wind

Strong wind gusts damaged a rodeo grandstand and trees near Colton.

NEVADA

NVZ007
East Central-
Nevada

04 1930PST
05 0700PST 0 0 0 0 Heavy Snow

A cold front, moving through eastern Nevada, produced heavy snow in parts of Eureka and White Pine counties. Up to 6 inches of new snow fell in valley locations and over a foot fell in mountains above 8,000 feet.

NVZ003
Extreme Western
Nevada

10 0730PST-1300PST 0 0 0 0 High Winds

High winds developed ahead of a very strong Pacific cold front as it approached extreme western Nevada. Winds gusting to 62 mph were reported in the Virginia Foothills, south of Reno.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

NEVADA Cont'd

NVZ007 East Central Nevada	12	0030PST 0930PST			0	0	0	0	Heavy Snow
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A Pacific storm increased in intensity as it moved into the mountains of east-central Nevada. Over a foot of new snow was measured at Great Basin National Park.

NVZ006 Northeast Nevada	17	1300PST			0	0	0	0	Funnel Cloud
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A storm spotter observed a small funnel cloud 10 miles north of Wells, Nevada.

NEW HAMPSHIRE

NHZ001-002	30 31	1700EST- 0500EST			0	0	2	0	Heavy Snow
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A weak area of low pressure moved across northern New Hampshire on the latter part of the 30th. This low moved across to eastern Maine on the 31st. The moisture with this low, in combination with high pressure off the mid-Atlantic coast, produced light to moderate snowfall across northern New Hampshire.

NEW JERSEY, Northern

None reported.

NEW JERSEY, Southern

None reported.

NEW MEXICO

Cibola County Grants	05	1500CST			0	0	0	0	High Wind (G55)
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Strong gusting winds over western New Mexico preceded an upper level storm system. Wind gusts averaged near 40 knots. (See storm details below.)

NMZ002 North-central Mountains	02	0200MST- 2300MST			0	0	?	0	Heavy Snow
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An upper-level storm system moved south into Nevada and California, then east across southern Colorado. An associated strong cold front accompanied the upper low. This storm system brought significant snows to the north-central mountains, ranging from 6 inches at Taos, to 16 inches at Angel Fire and Red River. Taos Ski Valley received 30 inches. Strong afternoon winds, averaging 38 knots, preceded and accompanied the storm across the state.

Eddy County Brantley Lake	11	0130MST			1	2	0	0	Thunderstorm Wind (G70)
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A 43-year-old male died of hypothermia when a boat overturned because of thunderstorm wind. Three people were in the boat, with one fatality (no life jacket), two others had minor injuries (life jackets). M430.

Lea County Hobbs	11	0217MST			0	0	0	0	Hail (0.75)
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Dime-size hail reported in the city of Hobbs.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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 YORK, Coastal

NYZ017
Twin Forks of Long Island

06	1500EST	0	0	0	0	Heavy Snow
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A strong upper-level disturbance, moving just south of Long Island, dumped 6 to 8 inches of snow over sections of the Twin Forks. Plum Island reported the highest amount with 8 inches.

NEW YORK, Central

Area Wide

	12 PM					
	17 PM	0	0	0	?	Record Heat

Record high temperatures were recorded across all of eastern New York. This heat wave lasted for five days. Farmers were concerned that crops may be damaged. Especially vulnerable, are some early vine plants, fruit trees, and flowers. Maple syrup producers are fearful that such high temperatures might result in a very short maple flow. The early warm weather has triggered the migration of Great Horned Owls and Red Winged Blackbirds. Ornithologists state that these species are among the last to migrate northward.

Essex County
Whallonsburg

15	1145EST	0	0	4	0	Flash Flood (Ice Jam)
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An ice jam formed along the Bouquet River, at Whallonsburg. Ice from the jam pushed up against bridges on County Rt. 55 and State Rt. 22. During the flood event water and ice backed up into some homes. At one residence ice sheared off the valve of a large propane tank, creating a hazardous condition. The ice jam broke later that afternoon, but forced the closure of the bridge on County Rt. 55 until Monday (3/19/90).

Saratoga County

16	1225EST-			2	0	
	1430EST	0	0	2	0	Flash Flood (Ice Jam)

Warren County

16	1225EST-			4	0	
	1430EST	0	0	4	0	Flash Flood (Ice Jam)

Ice piled up near the Hadley Gorge, which created a short lived flash flood. Damage was mainly confined to the Warren County side of the Hudson River. Flood waters affected mainly roads and summer cottages.

Franklin County

16	1620EST-			5	0	
	2100EST	0	0	5	0	Flash Flood (Ice Jam)

St. Lawrence County

16	2233EST-			5	0	
	17 0737EST	0	0	5	0	Flash Flood (Ice Jam)

Ice jam flooding occurred along the St. Regis in both Franklin and St. Lawrence Counties. Damage was confined to river edge structures and power poles and power lines.

Area Wide

20	AM-PM	1	38	6	0	Snow
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A late-winter storm blanketed eastern New York with snow. Amounts ranged from 4 to 15 inches, with the heaviest snow being reported in the Adirondack foothills and the mountain towns of the Catskills. Several accidents were reported during the storm. In Niverville, Columbia County, a school bus rolled over on snow-covered roads. Twenty-nine students were injured. Snow and blustery winds hampered searchers in Marlboro, Ulster County. They were continuing a search for a missing 12-year-old girl, in a heavily wooded section of the county. Heavy snow also brought down scattered power lines and large tree limbs. In Washington County a 20-year-old male died in a weather related automobile accident. According to state police, the fatal crash occurred when the victim lost control of his car on snow and ice covered roads. M-20-V

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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, Central Cont'd

NYZ011
Shores
Lake Champlain 23 AM-PM 0 0 4 0 Ice Breakup

Strong winds and high lake levels resulted in an ice breakup on Lake Champlain. Wind driven blocks of ice crashed on to the shore, damaging a large number of facilities including docks, lake front cottages, boathouses, and stored marine vehicles. Local residents also noted the ice this year was exceptionally clear and therefore very strong.

NEW YORK, Western

NYZ004
Lewis County 16 0600EST-
Lowville 20 0800EST 0 0 3 0 Flood
Jefferson County
Watertown

Heavy rains in combination with a melting snowpack caused the Black River in Lewis and Jefferson Counties to rise. The water content of the snowpack had been measured at over 6 inches just prior to the floods. At Watertown, the Black River crested at 11.58 feet. Several roads in Lewis and Jefferson counties were flooded and closed for several days. Large areas of agricultural flatlands were inundated.

NORTH CAROLINA

Catawba County
Newton 17 1020EST 0 0 4 0 Flash Flood

A large section of Highway 321 near Newton was flooded, and then severely eroded, as heavy rains fell over the area.

Western North
Carolina 17 0930EST 0 0 0 0 Flood
NCZ010 012

Heavy rainfall ranging from 4 to 6 inches fell over the central and southern mountains of North Carolina producing widespread minor flooding on and near the French Broad River from Rosman to Marshall. Damage was limited to flooded agricultural areas near the river. Some minor flooding was reported in the city of Marshall.

NORTH DAKOTA

NDZ005-010-011-012 14 0700CST 0 0 0 4 Heavy Snow
013

Parts of North
Central and East
Central North Dakota 15 40300CST

Snowfall amounts ranged from 6 to 12 inches in a band of heavy snow that extended from Minot eastward to Devils Lake, then southward to New Rockford. Isolated heavy snow also occurred in surrounding areas. Many schools and businesses closed. The weather contributed to a traffic-pedestrian accident in Minot.

NDZ015-016-017-018 15 1100CST 0 0 4 0 Heavy Snow

Extreme Eastern
North Dakota 16 1200CST 0 0 4 0 Heavy Snow

Snow began late the morning of the 15th. The snowfall was heavy at times during the afternoon and night of the 15th, reducing visibilities to near zero. Little or no blowing snow occurred with the snowfall. The snow gradually tapered off to flurries the morning of the 16th.

The Weather Service Office at Fargo reported 11.5 inches of snow, while 6 inches of snow was reported at Grand Forks.

The storm closed schools and businesses, caused traffic accidents, and canceled airline flights. The heavy snow was also beneficial; alleviating drought conditions.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

NORTH DAKOTA Cont'd

NDZ003

Southwestern
North Dakota

16 1400CST-1800CST 0 0 0 0 High Winds

Strong northwest winds of 40 to 60 mph developed over parts of southwest North Dakota early the afternoon of the 16th, and continued until sunset. Gusts to 59 mph were recorded at the Dickinson Airport.

OHIO

Williams County
Tiffin River

01 0000EST-02 2300EST 0 0 3 0 Flood

The Tiffin River at Stryker continued above flood from February. The crest was 15.8 feet, which occurred at 0900 EST on February 24th. This was 4.8 feet above flood stage. In March, the river's highest level was 12.4 at 0000 EST on the 1st. Minor lowland flooding occurred in March.

Williams County
St. Joseph River

01 0000EST-0100EST 0 0 3 0 Flood

The St. Joseph River at Montpelier continued above flood from February. The crest was 15.9 feet at 1000 EST on the 24th of February. The highest level in March was 12.1 feet at 0000 EST. Minor lowland flooding occurred in March.

Williams County
Stryker

10 2300EST-17 1500EST 0 0 3 0 Flood

The Tiffin River at Stryker went into flood for the second time in March. It crested at 12.9 feet at 0600 EST on the 13th. This was 1.9 feet above flood stage. Minor lowland flooding occurred.

Williams County
St. Joseph River

11 0300EST-15 1300EST 0 0 3 0 Flood

The St. Joseph River at Montpelier went into flood for the second time in March. It crested at 13.6 feet at 1000 EST on the 12th. This was 1.6 feet above flood stage. Minor lowland flooding occurred.

OHZ008-009
Southwest &
South Central

24 Morning 0 0 4 0 Heavy Snow

Heavy snow moved into southern Ohio during the early morning hours and accumulated to between 3 and 6 inches over much of southern Ohio.

OKLAHOMA

Roger Mills County
Near Herring Station
Dewey County
Leedey
Grady County
2 SW Cox City
Garvin County
Lindsay
Ellis County
Arnett
Cleveland County
SW Norman
McClain County
Near Goldsby

06 1745CST 0 0 ? ? Hail (0.75)
06 1826CST 0 0 ? ? Hail (0.88)
06 2020CST 0 0 ? ? Hail (0.75)
06 2023CST 0 0 ? ? Hail (0.75)
06 2040CST 0 0 ? ? Hail (0.75)
06 2042CST 0 0 ? ? Hail (1.00)
06 2045CST 0 0 ? ? Hail (1.75)

Thunderstorms produced golf ball-size hail.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

OKLAHOMA Cont'd

Canadian County El Reno	10	2330CST- 0100CST			0	0	?	?	Flash Flood
Oklahoma County NW Portions	10	2345CST			0	?	?	?	Flash Flood

Slow-moving thunderstorms resulted in heavy rains that closed roads in El Reno, and swept at least one pickup truck off the road. Interstate 40 was closed near El Reno due to water flowing over the road. In northwest Oklahoma County, the heavy rains closed roads in Deer Creek and Edmond. Two people were swept into the floodwaters when the vehicle they were in attempted to cross Highway 74. They were rescued by a lake patrol-boat after spending the night in a tree.

Bryan County Durant	11	0850CST			0	0	5	?	Lightning
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Lightning struck an apartment complex. The resulting fire caused \$250,000 in damage.

Okmulgee County N Portion	11	2000CST			0	0	?	?	Flash Flood
Tulsa County S Portion	11	2000CST			0	0	?	?	Flash Flood

Heavy rains on already saturated grounds caused several small creeks to overflow and resulted in the closure of several county roads for up to 2 hours.

OKZ00E- Eastern Oklahoma	11- 13	Unknown			0	?	?	?	River Flooding
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Heavy rains resulted in flooding along many rivers and creeks in eastern Oklahoma. Cottonwood Creek flooded on the 11th and 12th and the floodwaters blocked Highway 33 and other major streets in Guthrie. Fifteen businesses were closed and approximately a dozen people left their homes. Schools were closed due to flooded bus routes. In Skiatook, Bird Creek flooded on the 11th through 13th, forcing evacuation of 62 homes and 9 businesses. Highways 11 and 20 were closed due to water up to 4 feet deep. In Bartlesville, flooding along the Caney River and Sand Creek forced evacuation of 2 dozen homes. Approximately a dozen homes and businesses were flooded. Several highways and streets were closed by floodwaters.

Payne County 2 N Perkins	12	1748CST			0	0	?	?	Hail (1.75)
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An isolated severe thunderstorm produced golf ball-size hail in central Oklahoma.

Ellis County 11 N Shaftuck	13	0825CST			0	0	?	?	Thunderstorm Wind (G56)
Harper County May	13	0830CST			0	0	?	?	Thunderstorm Wind
Ellis County Gage Airport	13	0831CST			0	0	?	?	Hail (0.75)
Harper County Buffalo	13	0844CST			0	0	?	?	Hail (0.75)
Woods County 11 NNW Freedom	13	0850CST			0	0	?	?	Thunderstorm Wind (G52)
Woodward County, Near Ft Supply Lake	13	0855CST			0	0	?	?	Thunderstorm Wind (G52)
Harper County, 12 NNW Woodward	13	0900CST			0	0	?	?	Hail (0.75)
Harper County, 12 NNW Woodward	13	0900CST			0	0	?	?	Thunderstorm Wind (G52)

Thunderstorms in northwest Oklahoma produced large hail and damaging winds. A mobile home was destroyed and a livestock shed sustained damage in the town of May.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

OKLAHOMA Cont'd

Tillman County Grandfield	13	1438CST			0	0	?	?	Hail (0.88)
Tillman County 5 W Frederick	13	1444CST			0	0	?	?	Hail (0.75)
Comanche County 6 S Lawton	13	1515CST			0	0	?	?	Hail (1.75)
Comanche County 4 S Pumpkin Center	13	1520CST			0	0	?	?	Hail (1.50)
Comanche County 2 N Lawton	13	1522CST			0	0	?	?	Hail (0.88)
Comanche County Fletcher	13	1551CST			0	0	?	?	Hail (1.00)
Canadian County 3 S Yukon	13	1547CST			0	0	?	?	Hail (1.00)
Grady County, 5 W Rush Springs	13	1558CST			0	0	?	?	Hail (1.00)
Grady County, 2 S Rush Springs	13	1610CST			0	0	?	?	Thunderstorm Wind (G52)
Grady County, 4 N Rush Springs	13	1616CST			0	0	?	?	Hail (1.75)
McClain County, Criner	13	1636CST			0	0	?	?	Hail (0.75)
Grady County, 1 W Bradley	13	1644CST	28	200	0	0	?	?	Tornado (F2)
Garvin County Near Lindsay	13	1647CST-			0	0	?	?	Thunderstorm Wind
Grady County Chickasha	13	1707			0	0	?	?	Hail (1.00)
Grady County 2 SW Blanchard	13	1710CST			0	0	?	?	Hail (1.75)
Grady County 2 SW Alex	13	1713CST			0	0	?	?	Hail (0.75)
Grant County 5 NE Nash	13	1715CST	19	200	0	0	5	?	Tornado (F3)
Cleveland County Norman	13	1716CST			0	0	?	?	Hail (0.88)
Grady County 8 N Alex	13	1718CST			0	0	?	?	Hail (1.00)
McClain County 3 S Goldsby	13	1720CST			0	0	?	?	Hail (1.00)
Grady County 4 SW Alex	13	1720CST			0	0	?	?	Hail (3.50)
McClain County 2 W Criner	13	1731CST	18	150	0	?	5	?	Tornado (F2)
McClain County Blanchard	13	1732CST			0	0	?	?	Hail (0.75)
Cleveland County Norman	13	1735CST			0	0	?	?	Hail (0.88)
Grant County 5 S Wakita	13	1740CST			0	0	?	0	Hail (3.50)
Cleveland County Norman	13	1749CST			0	0	?	0	Hail (1.00)
Cleveland County 4 SW Stella	13	1753CST	5	50	0	0	?	?	Tornado (F1)
Grant County 6 NE Wakita	13	1754CST	4	150	0	0	?	?	Tornado (F2)
Oklahoma County Newalla	13	1756CST			0	0	?	?	Hail (1.00)
Oklahoma County Newalla	13	1756CST			0	?	4	?	Thunderstorm Wind
Cleveland County 1 SW Stella	13	1759CST	18	200	0	1	5	?	Tornado (F2)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

OKLAHOMA Cont'd

Jefferson County 5 W Waurika	13	1801CST	21	75	0	0	?	?	Tornado (F1)
Jefferson County Waurika	13	1803CST			0	0	?	?	Hail (1.75)
Lincoln County 3 S Meeker	13	1847CST			0	0	?	?	Hail (1.00)
Oklahoma County 2 S Tinker AFB	13	1849CST			0	0	?	?	Hail (0.75)
Craig County Whiteoak	13	1855CST			0	0	5	?	Lightning
Jefferson County 5 SSW Loco	13	1858CST	20	200	0	1	6	?	Tornado (F3)
Lincoln County Prague	13	1913CST			0	0	?	?	Hail (1.75)
Oklahoma County Harrah	13	1921CST			0	0	?	?	Hail (1.00)
Okfuskee County 6 W Paden	13	1930CST			0	0	?	?	Hail (1.75)
Okfuskee County Paden	13	1949CST			0	0	?	?	Hail (0.75)
Garvin County 8 SSW Elmore City	13	1950CST	28	150	0	0	6	?	Tornado (F2)
Garvin County Elmore City	13	1959CST			0	0	?	?	Hail (0.75)
Creek County Slick	13	2010CST			0	0	?	?	Hail (1.75)
Creek County 6 SE Slick	13	2010CST	9	340	0	0	5	?	Tornado (F2)
Okmulgee County 1 NW Beggs	13	2015CST			0	0	?	?	Hail (3.00)
Okfuskee County 5 SE Slick	13	2020CST			0	0	?	?	Hail (0.75)
Okmulgee County NW Okmulgee Co	13	2020CST			0	0	?	?	Thunderstorm Wind (G61)
McClain County Washington	13	2046CST			0	0	?	?	Hail (1.75)
Tulsa County S Tulsa	13	2050CST			0	0	?	?	Hail (1.75)
Tulsa County S Tulsa	13	2050CST			0	0	?	?	Thunderstorm Wind (G52)
Tulsa County Glenpool	13	2050CST			0	0	?	?	Hail (1.75) (G52)
Cleveland County SE Norman	13	2050CST			0	0	?	?	Hail (0.75)
Wagoner County 3 NE Broken Arrow	13	2107CST			0	0	?	?	Hail (0.75)
Okmulgee County 10 N Okmulgee	13	2115CST			0	0	?	?	Hail (0.75)
Rogers County 5 SE Tiawah	13	2155CST			0	0	?	?	Hail (1.00)
Tulsa County South Tulsa	13	2135CST			0	0	?	?	Hail (0.75)
Hughes County Holdenville	13	2215CST			0	0	?	?	Hail (1.00)
Seminole County Wewoka	13	2218CST			0	0	?	?	Hail (1.00)
Tulsa County Tulsa airport	13	2305CST			0	0	?	?	Thunderstorm Wind (G56)
Mayes County 5 S Pryor	13	2330CST			0	0	?	?	Hail (0.75)
Delaware County 2 N Grove	14	0030CST			0	0	?	?	Thunderstorm Wind

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

OKLAHOMA Cont'd

Ottawa County 5 SE Fairland	14	0030CST			0	0	?	?	Thunderstorm Wind
Grady County Tuttle	14	0240CST			0	0	?	?	Thunderstorm Wind (G52)
Carter County Wilson	14	0345CST			0	0	?	?	Thunderstorm Wind
Lincoln County Prague	14	0400CST			0	0	?	?	Thunderstorm Wind
Carter County Ardmore	14	0405CST			0	0	?	?	Hail (0.75)
Carter County Ardmore	14	0405CST			0	0	?	?	Thunderstorm Wind (G52)
Pontotoc County 3 W Latta	14	0425CST			0	0	?	?	Thunderstorm Wind
Hughes County Nr Spaulding	14	0430CST			0	0	?	?	Thunderstorm Wind
Seminole County Wewoka	14	0442CST			0	0	?	?	Hail (0.75)
Hughes County 4 SE Holdenville	14	0445CST			0	0	?	?	Thunderstorm Wind
Muskogee County Muskogee	14	0545CST			0	0	?	?	Thunderstorm Wind (G74)
Delaware County 2 E Cleora	14	0655CST			0	0	?	?	Thunderstorm Wind (G52)

An outbreak of severe thunderstorms and tornadoes occurred during the afternoon and evening of the 13th and into the early morning hours of the 14th. Many reports of large hail were received, some as large as softballs. Ten tornadoes were reported. An F2 tornado touched down 1 mile west of Bradley and moved northeast, dissipating 5 miles northeast of Noble at 1737 CST. Near Bradley, 2 mobile homes were destroyed, several homes were damaged, and 3 barns were damaged. In McClain County damage was intermittent from 5 miles west of Criner to Interstate 35 southeast of Goldsby. At least 8 mobile homes were destroyed and several outbuildings destroyed. In Washington, the second story of a home was destroyed. There was one injury to a woman in a mobile home. In Noble, Cleveland County, damage was extensive. An apartment building lost part of its roof, and a mobile home was overturned. Several tractor-semitrailers were overturned at a warehouse. Numerous houses sustained roof and other structural damage in the Sky Ridge and Forest Hills subdivisions. The Noble High School stadium press box was destroyed, several light poles were snapped, and the scoreboard destroyed. Total damage is estimated between \$750,000 and \$1 million.

The second tornado (F2) touched down 2 miles west of Criner and followed a path very close to the first tornado, dissipating 5 miles southeast of Noble around 1805 CST. Damage was intermittent and included mobile homes damaged just west of Criner, damage to outbuildings 3.5 miles south of Washington, and many uprooted trees.

The third tornado (F1) traveled a 5-mile path across Little River State Park in east Norman, lifting 4 miles southwest of Stella. Damage was confined to downed trees and power lines.

The fourth tornado touched down 1 mile southwest of Stella and moved northeast, lifting 4 miles west of Meeker at 1845 CST. A mobile home was destroyed in Stella, resulting in one serious injury. In Pottawatomie County, damage to the Shawnee Lakes area included the roof ripped off a home, several homes with minor structural damage, three mobile homes damaged, and a barn destroyed. In Lincoln County, a camper was rolled over onto a shed west of Meeker, and a mobile home 4.25 miles west of Meeker was destroyed. This tornado was classified as separate from tornado number three, after close examination of Doppler Radar radial velocity data.

Tornado number five (F3) touched down 5 miles northeast of Nash and dissipated 7 miles northeast of Wakita at 1755 CST. A home was severely damaged 4 miles east of Wakita, as was a nearby garage and several outbuildings. Tornado number six touched down 8 miles northeast of Wakita and moved across the Kansas state line southwest of Caldwell at approximately 1805 CST. Damage in Oklahoma consisted of snapped trees.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

OKLAHOMA Cont'd

Tornado number seven touched down 5 miles west of Waurika and moved northeast, dissipating 3 miles southwest of Loco at 1900 CST. Damage was confined to uprooted trees and the intensity was rated F1.

Tornadoes numbers eight and nine, produced considerable damage in south-central Oklahoma counties. Tornado number eight (F3) touched down 5 miles south-southwest of Loco and moved northeast, dissipating 3 miles northeast of Ratliff City at 1937 CST. Damage from just west of Ratliff City into town, included 5 destroyed mobile homes, a motor home rolled 100 feet and destroyed, and severe damage to a gas compressor station. At the station, a large metal building and a mobile home were destroyed. A 5-ton crane was overturned, several vehicles were damaged, and debris was found over a mile northeast. There was one minor injury to a worker at the station. Total damage in the Ratliff City area is estimated at \$500,000 to \$750,000. Tornado number nine touched down 8 miles south-southwest of Elmore City and dissipated 4 miles southwest of Byers at 2045 CST. Damage in Pauls Valley included the roof ripped off a farm implement company, damage to stock and other equipment inside the building, and the roof partially ripped off a nearby civic club building. Northeast of Pauls Valley, several barns were destroyed. Elsewhere along the path trees and power lines were downed. Damage is rated at F2.

Tornado number ten (F2) touched down 6 miles southeast of Slick and moved east, intermittently touching down for nine miles, and lifting 3 miles northwest of Beggs. Several barns were destroyed and 14 power poles were snapped. Total damage is estimated at \$75,000.

In addition to tornadoes, damaging straight-line winds were also reported. A mobile home was destroyed in Newalla (Oklahoma County) during the evening of the 13th. During the early morning of the 14th, there were many reports of wind damage: a mobile home was destroyed and a home unroofed 1 mile north of Wilson; a barn was destroyed 3 miles west of Latta, several buildings suffered roof damage in Prague; a barn and carport were destroyed near Spaulding; five buildings suffered roof or other structural damage in Wewoka; a roof was damaged and a porch destroyed 4 miles southeast of Holdenville; a mobile home and storage shed were destroyed in Fort Gibson; homes were damaged in Muskogee; and structural damage occurred at two marinas on Grand Lake 2 miles east of Cleora. Large trees were downed just north of Grove where a roof was also ripped off, and large trees were uprooted 5 miles southeast of Fairfield. Lightning struck a home in Whiteoak, and the resulting fire caused \$80,000 in damage.

OKOOC-OOE-Central and Eastern Oklahoma

14-Unknown	0	0	?	?	River Flooding
16					

Heavy rains once again resulted in major river flooding in central and eastern sections of the state. In Skiatook, flooding along Bird Creek resulted in evacuations and road closings. The Red Cross provided overnight shelter for 20 persons. The Deep Form (of the Canadian) River at Beggs was in flood from the 11th through the 24th. The crest of 31.2 feet on the 16th was 13 feet above floodwaters, a mini-warehouse was flooded to a depth of one foot, and several homes were sandbagged. In communities around Okmulgee, 20 people were evacuated. Approximately 100 homes and farmsteads were surrounded and isolated by the closing of Highway 56 and other county roads. Many other rivers and creeks were in flood during this time, but mostly rural areas were affected.

Kiowa County 8 N Mountain Park	23	0630CST	0	0	?	?	Hail (1.00)
Comanche County 5 E Meers	23	0640CST	0	0	?	?	Hail (1.00)
Kiowa County 12 S Mountain View	23	0655CST	0	0	?	?	?Hail (1.00)

Early morning thunderstorms produced quarter-size hail in southwest Oklahoma.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

OKLAHOMA Cont'd

OKZ00N- Northern Oklahoma	23- 24	2000CST- 1800CST			0	?	?	?	Freezing rain and Sleet
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Sleet, freezing rain, and snow across the northern half of Oklahoma resulted in numerous accidents, and some power outages due to ice accumulation on power lines. The northeast sections of the state were hardest hit by the wintry precipitation with widespread power outages in the Tulsa metropolitan area. At least 5 deaths were attributed to automobile accidents on the icy roads.

Canadian County Union City	24	1425CST			0	0	?	?	Hail (0.75)
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A thunderstorm produced dime-size hail in Union City. Surface temperatures were near freezing and freezing rain and sleet was also reported with the storm.

OREGON

Clackamas County Lake County Cascades	10	Day CST			0	0	4	0	Heavy Snow
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A cold upper trough produced showery precipitation across Oregon west of the Cascades and south-central sections of the state. Ten inches of snow fell at Diamond Lake, 8 inches at Timberline Lodge and 7 inches fell at Santiam Pass. In south-central Oregon, 3 inches of snow fell at Lakeview. A thunderstorm with hail in Clackamas County caused a car to lose control, cross over the center line and hit oncoming traffic. The 33-year-old female driver was killed.

PENNSYLVANIA, Eastern

PAZ07 Upper Susquehanna Zone	20	1300EST			0	0	3	0	Heavy Snow
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Rain or a mixture of rain and snow began falling over the north portion of eastern Pennsylvania by the afternoon of the 19th. The precipitation changed to mostly snow over the Upper Susquehanna Zone during the afternoon, but did not completely change to snow over all of the north portion of eastern Pennsylvania until near daybreak on the 20th. Accumulations of an inch or 2 of snow developed over some portions of the Upper Susquehanna Zone on the afternoon of the 19th, but snowfall then became light by evening. Heavier snowfall again developed toward daybreak on the 20th and accumulations of 6 inches were reached around 1300 EST on the 20th in the Upper Susquehanna Zone. Snowfall continued through the day, but became light by afternoon and did not completely end until after midnight. Final accumulations over the Upper Susquehanna Zone were 7 to 8 inches with up to 12 inches over some of the higher elevations. The accumulations over the remainder of the north portion of eastern Pennsylvania were 2 to 4 inches.

PENNSYLVANIA, Western

No reports received.

RHODE ISLAND

None reported.

SOUTH CAROLINA

Anderson County W of Iva	16	2025EST			0	0	2	0	Thunderstorm Winds
Abbeville County Calhoun Falls & Lowndesville	16	2026EST			0	0	3	0	Thunderstorm Winds

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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 CAROLINA Cont'd

Laurens County Ware Shoals Dragway	16	2100EST			0	0	4	0	Thunderstorm Winds
Greenwood County N Greenwood	16	2102EST			0	0	3	0	Thunderstorm Winds

A weakening line of severe thunderstorms moved into the lower sections of the upstate during the evening. A few trees and some large limbs were blown down and some outbuildings at Lake Russell were damaged. In Laurens County, an unoccupied mobile home and a recreational vehicle were turned over by thunderstorm winds. Also, in Laurens County, an awning was ripped from a frame house. Some trees were blown down in northern sections of Greenwood.

Greenville County Greenville Vic.	17	0500EST			0	0	5	0	Flash Flood
Pickens County Eastern sections	17	0615EST			0	0	4	0	Flash Flood
Greenville County Greenville Vic.	17	0800EST			0	0	?	0	Flash Flood
Near Marietta	17	0800EST			0	0	?	0	Flash Flood
Pickens County N of Clemson	17	0800EST			3	0	4	0	Flash Flood
Greenwood County Ware Shoals	17	0800EST			1	0	?	0	Flash Flood
Saluda County Saluda River	17	1000EST			0	0	?	0	Flooding
Newberry County Saluda River	17	1000EST			0	0	?	0	Flooding

Early morning thunderstorms over northwestern South Carolina produced very heavy rainfall which fell on ground saturated from 36 hours of more gradual heavy rains. This caused the worst flash flooding in Greenville and Pickens Counties in about the past 10 years. The Reedy River in Greenville almost reached 12 feet and remained very high for several hours. Other small streams across Greenville County flooded. At least 2 small earthen dams burst, and the Middle Saluda River near Marietta was several feet out of its banks, forcing several families from their homes. In Pickens County the flooding began in eastern sections, particularly the Easley area. Damage to roads and culverts was estimated at \$9,282. Four mudslides sent small trees down banks along shoulders of roads in the northern part of the county. Water entered some homes and several bridges and roads were damaged. Damage in Saluda and Newberry Counties was confined mainly to the Saluda River floodplain. North of Clemson, on an arm of Lake Hartwell, three people drowned as floodwater apparently surged over the Isaqueena Dam, swamping their fishing boat. A part of the structure of a dam on the Saluda River at Ware Shoals apparently failed, causing a surge of water downstream which swamped a boat, causing one death. Pickens - M100, M420, M300. Greenwood M390.

SCZ001-002-003- 004-005-006-007- 008	21 AM				0	0	0	7	Freeze
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Statewide

A freeze caused substantial damage to the state's peach crop. Preliminary estimates indicate that 62% of the crop was damaged in the upstate, 72% in the ridge area, and 32% in the coastal plain.

SOUTH DAKOTA

SDZ003-004-005- 006-007-008-009- 010-011-012-013 014-015-016-017- 018-019-020	6	0400CST-							
All except Northwest South Dakota	8	1000CST			0	0	?	0	Winter Storm

A winter storm developed in southwest South Dakota early on the 6th and worked its way across the state on the 7th and early the 8th, dumping snow in the southwest and depositing an icy glaze from freezing rain across the east. Up to 10 inches of snow was reported in parts of the

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

SOUTH DAKOTA Cont'd

Black Hills with lesser amounts in the western and central plains. In the east, ice-covered roads were blamed for several accidents, up to 100 in Sioux Falls alone. Ice-covered power lines caused a half-hour power outage in some parts of Mitchell. Schools throughout eastern South Dakota were closed for the day on the 7th. Some of the heavier snowfall reports in inches:

Deadwood, Rapid City, Hill City, Edgemont, Hot Springs, Oelrich, and Pine Ridge	4-10
Mission	3-6
Winner, White River, Hayes, and Pierre	2-3

SDZ003-009-010
014
Southwest, Central
and North Central
South Dakota

13	1600CST-					
14	1000CST	0	0	0	0	Snow

Snow fell across parts of southwest, central and north-central South Dakota from late afternoon on the 13th to the morning of the 14th. Accumulations up to 9 inches fell in the north-central with lesser amounts in the central and southwest. Some of the heavier snowfall amounts in inches:

Gettysburg	9
Pollock	8
Pine Ridge	5
Interior	4
Hosmer, Mission, Cottonwood Pierre, and Martin	1-2

SDZ001-002-003-
006-008-009-010-
013-014-015
Western and
Central
South Dakota

15	0400CST-					
16	1900CST	0	0	4	0	High Wind

A deep low pressure area across southern Canada moved slowly along the US and Canadian border on the 15th and 16th producing very strong winds across western and central South Dakota. Winds on the 15th caused some localized damage at the Sturgis Airport, where winds gusted up to 75 mph damaging an aircraft and some hangars. Some of the stronger wind reports on the 15th and 16th include: 75 mph at Sturgis, 63 mph in Rapid City and Buffalo, 58 mph at Ellsworth AFB, and 47 mph in Pierre.

TENNESSEE

Shelby County	08	0830CST	0	0	2	0	Wind
Gibson County	08	0850CST	0	0	5	0	Wind
Henderson County	08	0910CST	0	0	2	0	Wind
Hardin County	08	0915CST	0	0	2	0	Wind

In the wake of a rapidly moving storm system, strong winds blew for a couple of hours causing mostly minor damage to a number of counties in western Tennessee. The damage was confined mostly to tree limbs being broken and some trees knocked over. In Hardin County near Savannah, a tree fell on a mobile home and some roofs on houses were damaged by the wind. In Gibson County near Milan, a 1,050-foot-tall radio tower was toppled by strong wind and fell on a transmitter building. Wind gusts up to 39 mph were recorded at Memphis International Airport and up to 47 mph at Mekeller Field in Jackson.

Shelby County	14	2330CST	0	0	2	0	Thunderstorm Wind
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Thunderstorm wind knocked down several trees in the south part of Memphis.

Cocke County	17	0600CST	0	0	3	0	Flood
Sevier County	17	0700CST	0	0	2	0	Minor flooding
Bradley County	17	0800CST	0	0	2	0	Minor flooding

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

McMinn County	17	0800CST			0	0	2	0	Minor flooding
Polk County	17	0800CST			0	0	3	0	Flood
Rhea County	17	0800CST			0	0	2	0	Minor flooding
Hamilton County	17	0800CST			0	0	2	0	Minor flooding
Blount County	17	0830CST			0	0	2	0	Minor flooding

A frontal system moved slowly east across Tennessee and produced heavy rain, generally 3 to 4 inches, from Thursday to Saturday morning, resulting in flooding in a number of locations in southeast Tennessee. Most of the flooding resulted in minor damage, with flooding of low-lying areas and roads widespread. In Cocke County the Pigeon River overflowed and one family in the Newport area had to be evacuated, as water surrounded their home. In Polk County the Ocoee River was at bankfull and storm drainage systems were overflowing with water a foot deep in the streets of Copperhill. In Hamilton County the South Chickamauga Creek flooded, causing some streets to be flooded and threatening some homes in the East Ridge area.

Scott County	22	1630CST			0	0	2	0	Thunderstorm Wind
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A thunderstorm produced brief damaging wind that knocked over a few trees and tore the limbs off of several others in a community near Oneida.

TEXAS, Northern

Young County	06	1709CST			0	0	?	?	Hail (1.75)
South Bend	06	1730CST			0	0	?	?	Hail (1.75)
Graham	06	2004CST			0	0	?	?	Hail (4.50)
5 N Graham	06	2130CST-			0	0	?	?	Flash Flooding
Graham	06	2230CST			0	0	?	?	Flash Flooding

Several homes were flooded in Graham where 2.50 inches of rain fell in a short period of time.

Jack County	06	1812CST			0	0	?	?	Hail (1.75)
2 N Bryson	06	2037CST			0	0	?	?	Hail (1.75)
5 N Bryson	06	2037CST			0	0	?	?	Hail (1.75)
Stephens County	06	1825CST			0	0	?	?	Hail (1.75)
Crystal Falls	06	1825CST			0	0	?	?	Hail (1.75)
Palo Pinto County:	06	2220CST			0	0	?	?	Thunderstorm Wind
Possum Kingdom	06	2220CST			0	0	?	?	Thunderstorm Wind
Graford	06	2220CST			0	0	?	?	Thunderstorm Wind

A downburst overturned 4 boat docks and damaged 1 mobile home at Possum Kingdom Lake. A downburst blew in car windows, tore the roof off several homes and damaged two outdoor buildings in Graford.

Parker County	07	0155CST-			0	0	?	?	Flash Flooding
Springtown	07	0530CST			0	0	?	?	Flash Flooding

High water forced the closing of State Highway 51 at Springtown.

Hamilton County	07	0455CST			0	0	?	?	Thunderstorm Wind (G52)
8 SW Hamilton	07	0455CST			0	0	?	?	Thunderstorm Wind (G52)
McLennan County	07	0950CST			0	0	?	?	Lightning
Waco	07	0950CST			0	0	?	?	Lightning

Lightning ignited a fire in the attic and ceiling of one residence.

Cass County	07	1000CST			1	1	?	?	Lightning
1 N Linden	07	1000CST			1	1	?	?	Lightning

One person was killed and a second injured as lightning struck a road grader and traveled down a cable where the two persons were loading I-beams onto a tractor-semitrailer. M300

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Navarro County 07 1000CST-
 ERN Navarro County 1400CST 0 0 ? ? Flooding

High water up to 4 feet in depth was observed at the junction of Interstate 45 and State Highway 31 in Corsicana, while sections of U.S. Highway 287 between Corsicana and Eureka were also flooded.

Bosque County
 Valley Mills 07 1218CST 0 0 ? ? Hail (1.75)
 4 S Clifton 07 1310CST 0 0 ? ? Hail (0.75)

Wood County
 Yantis 07 1545CST 0 0 ? ? Hail (1.00)

Hopkins County
 Como 07 1615CST 0 0 ? ? Hail (0.75)

Franklin County
 Mount Vernon 07 1615CST 0 0 ? ? Hail (0.75)

Heavy rainfall amounts up to 5 inches resulted in numerous high water problems over mainly northeastern portions of northern Texas.

Red River County 07 2315CST
 08 0430CST 0 0 ? ? Flash Flooding

High water resulting from numerous creeks and streams out of their banks, flooded several city and county roads throughout Red River County.

Hopkins County 08 0100CST-
 0430CST 0 0 ? ? Flash Flooding
 08 0730CST-
 1100CST 0 0 ? ? Flash Flooding

Numerous city and county roads throughout Hopkins County were washed out while high water up to 8 inches in depth was reported over State Highway 19. Sulphur Springs observed over 4.50 inches of rain.

Northeast Texas 08

Excessive rainfall amounts of 3 to 8 inches resulted in considerable flash flooding and small stream overflow across Cass, Bowie, and Marion counties of northeast Texas. Several bridges, culverts, and roadways were subsequently washed out.

Bowie County 08 0145CST-
 1200CST 0 0 ? ? Flash Flooding

Cass County 08 0250CST-
 1200CST 0 0 ? ? Flash Flooding

Marion County 08 0940CST-
 1200CST 0 0 ? ? Flash Flooding

Titus County 08 0230CST-
 0500CST 0 0 ? ? Flash Flooding

08 0900CST-
 1130CST 0 0 ? ? Flash Flooding

High water resulted in the closing of numerous city and county roads throughout Titus County. Farm to Market Road 127 was almost entirely closed by high water over the roadway.

Morris County 08 0240CST-
 0600CST 0 0 ? ? Flash Flooding

Numerous county and farm to market roads were closed by high water, from creeks flowing out of their banks and crossing over road surfaces in Morris County.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Rains County	08	0250CST- 0500CST			0	0	?	?	Flash Flooding
	08	0950CST- 1115CST			0	0	?	?	Flash Flooding

High water in depth up to the hoods of cars flooded numerous county roads in Rains County. One automobile was completely washed off U.S. Highway 275 near Emory.

Franklin County	08	0710CST- 1130CST			0	0	?	?	Flash Flooding
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Several farm-to-market roads throughout Franklin County were impassable due to high water.

Upshur County	08	0725CST- 1130CST			0	0	?	?	Flash Flooding
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Two county roads were closed due to high water over the roadway.

Hamilton County Evant	11	0545CST			0	0	?	?	Thunderstorm Wind
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A downburst damaged the roofs of two barns and produced structural damage to several homes, carports, and another barn. Several power lines were also blown down.

North Central Texas	11								
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Heavy rainfall amounts ranging from 5 to 10 inches, combining with the already saturated conditions across north-central, Texas resulted in considerable high water problems in several counties.

Hood County	11	0630CST- 0830CST			0	0	?	?	Flash Flooding
	11	1615CST- 1830CST			0	0	?	?	Flash Flooding

Three and three-quarter inches of rain measured in Granbury resulted in the flooding of U.S. Highway 377 between Granbury and Cresson, while several homes were flooded by high water in the Brazos River Acres and Quail Ridge developments of Granbury. Extensive lowland flooding and high water over numerous city and county roads were also observed throughout the county. One automobile dealership in Grandbury had high water up to the headlights of several cars.

Denton County	11	0640CST- 1230CST			0	0	?	?	Flash Flooding
	11	1445CST- 1830CST			0	0	?	?	Flash Flooding
2 E Roanoke	11	1915CST			1	0	?	?	Flooding

Heavy rains ranging from 5 to 10 inches in Denton County resulted in considerable high water problems; the depth of water approached 1 foot in some sections. Approximately 15 county roads along or near Interstate 35, U.S. Highway 377, and State Highway 114 were closed and 3 bridges were washed out in northeastern Denton County. One fatality occurred when a teenager playing along a rain-swollen creek in the Trophy Club area (2 E Roanoke) slipped and fell into the water. M130

Tarrant County	11	0650CST- 0930CST			0	0	6	?	Flash Flooding
	11	1445CST- 1830CST			0	0	?	?	Flash Flooding

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

TEXAS Northern Cont'd

Fort Worth 11 0830CST-1200CST 0 0 ? ? **Flooding**

Heavy rainfall intensities of 1 inch per hour, and total rainfall amounts near 4.50 inches, stranded several automobiles in high water up to fender deep over parts of Tarrant County. A dozen residences were flooded by high water up to 4 feet in depth between Lake Como and the Trinity River in the Sunset Heights portion of Fort Worth. High water damage estimates of approximately \$1.1 million were expected in Tarrant County.

Collin County 11 0800CST-0930CST 0 0 ? ? **Flash Flooding**

Numerous roads east of U.S. Highway 377, north of State Highway 380, and U.S. Highway 114 between U.S. Highway 377 and Interstate 35 were closed due to high water.

Dallas County
Dallas 11 0810CST-0945CST 0 0 ? ? **Flash Flooding**
Dallas 11 0925CST 0 0 ? ? **Thunderstorm Wind**

High water over the roadway closed a portion of Interstate 35E, Interstate 635, and West Lawther Avenue near White Rock Lake Park in Dallas. A downburst blew the shingles off several houses and a school, and destroyed a metal building in Dallas.

Grayson County
Luella 11 0840CST 0 0 ? ? **Thunderstorm Wind**
Van Alstyne 11 0915CST 0 0 ? ? **Thunderstorm Wind**

A downburst demolished a barn and blew trees onto power lines in Luella. A downburst lifted an outdoor shed into a tree while a satellite dish was also damaged in Van Alstyne.

Hamilton County
Hamilton 11 1605CST 0 0 ? ? **Hail (0.75)**
Archer County
1 SE Holliday 13 1624CST 0 0 ? ? **Hail (0.88)**
1 E Holliday 13 1626CST 0 0 ? ? **Hail (1.00)**
3 NE Dundee 13 1745CST 0 0 ? ? **Funnel Cloud**

A funnel cloud was observed in open country, 3 miles northeast of Dundee.

Wichita County
Wichita Falls 13 1628CST 0 0 ? ? **Hail (1.00)**
Wichita Falls 13 1632CST 0 0 ? ? **Hail (0.75)**
Wichita Falls 13 1633CST 0 0 ? ? **Hail (0.88)**
Wichita Falls 13 1654CST 0 0 ? ? **Hail (1.00)**
Iowa Park 13 1808CST 0 0 ? ? **Hail (0.88)**
Kamay 13 1850CST 0 0 ? ? **Hail (0.75)**
Kadane Corner 13 1901CST 0 0 ? ? **Hail (0.88)**
Iowa Park 13 1915CST 0 0 ? ? **Hail (1.00)**
Clay County
2 S Jolly 13 1646CST 0 0 ? ? **Hail (1.00)**
Byers 13 1735CST 0 0 ? ? **Hail (1.00)**

Throckmorton County
15 SE Throckmorton 13 1730CST-1731CST **Short Narrow** 0 0 ? ? **Tornado (F0)**

A tornado touched down briefly in open country 15 miles southeast of Throckmorton.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Young County

Olney	13	1745CST	0	0	?	?	Thunderstorm Wind
2 NW Newcastle	13	1749CST					Funnel Cloud

A downburst blew down trees in Olney. Storm spotters observed a funnel cloud 2 miles northwest of Newcastle.

Wilbarger County

Lockett	13	2030CST	0	0	?	?	Hail (2.75)
2 N Vernon	13	2048CST	0	0	?	?	Hail (1.75)

Baseball-size hail at Lockett severely damaged a pickup truck.

Knox County

Munday	14	0045CST	0	0	?	?	Thunderstorm Wind
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A downburst blew down utility poles, signs, and a press box at a track field, and peeled the shingles and awnings off several homes.

Hardeman County

Chillicothe	14	0050CST	0	0	?	?	Thunderstorm Wind
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A downburst blew shingles off the roof of several homes, broke large tree branches, and damaged a couple of outdoor buildings.

North Texas

14

Rapidly falling surface pressures over north Texas, associated with a developing low pressure system in west Texas, coupled with a strong low level wind jet contributed to strong surface winds and subsequent high wind warnings for parts of north Texas, located generally east of a Cleburne to Paris line.

Smith County

Tyler	14	0100CST	0	0	?	?	High Wind (G52)
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Wichita County

6 W Burkburnett	14	0215CST	0	0	?	?	Hail (0.75)
Wichita Falls	14	0215CST	0	0	?	?	Thunderstorm Wind (G61) and Hail (1.75)

A downburst in Wichita Falls blew down power lines and trees, shattered windows, and blew the shingles off 125 residences. Power service to approximately 3,000 residences was cut off until 12 noon. Golf ball-size hail also damaged around 300 automobiles at two car dealerships, resulting in over \$60,000 in estimated damage.

Clay County

Byers	14	0235CST	0	0	?	?	Thunderstorm Wind (G61)
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A downburst damaged the roof and attic of a home while blowing off the roof of a lumberyard and a portion of a school gymnasium.

Bell County

Belton	14	0320CST	0	0	?	?	Thunderstorm Wind
Gray AAF	14	0335CST	0	0	?	?	Thunderstorm Wind

McLennan County

Waco	14	0340CST	0	0	?	?	Thunderstorm Wind (G65)
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A downburst damaged 3 aircraft hangar doors and damaged one airplane. A television antenna was also blown down, damaging the roof of a building.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Henderson County

Athens	14	0430CST			0	0	?	?	Thunderstorm Wind
Athens	14	0500CST			0	0	?	?	Lightning
Athens	14	0845CST- 1100CST			0	0	?	?	Flash Flooding

A downburst in Athens blew down several trees and the roof off a mobile home, while lightning ignited the roof of a residence, resulting in \$2,000 in damage. Rainfall amounts of 3.50 to 4.00 inches in Athens resulted in the flooding of several roads near Alligator Creek.

Coryell County Coryell

Coryell	14	0430CST			0	0	?	?	Thunderstorm Wind
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A downburst blew the roof off of a barn.

Ellis County

Ennis	14	0430CST			0	0	?	?	High Wind (G64)
2 W Garrett	14	0430CST			0	0	?	?	High Wind
Ferris	14	0445CST			0	0	?	?	High Wind
Bristol	14	0446CST			0	0	?	?	High Wind (G61)
Red Oak	14	0515CST			0	0	?	?	High Wind

High winds resulted in numerous downed power lines and trees in Ellis County. At Ennis, several trees and a tractor-semitrailer were blown over. Two miles west of Garrett, an outdoor shed was blown onto a pickup truck, while in Bristol a barn was destroyed and the roof of a mobile home was damaged. At Ferris, several large trees were uprooted while in Red Oak, a motel roof was damaged and a barn was destroyed.

Hopkins County Sulphur Springs

Sulphur Springs	14	0515CST			0	0	?	?	High Wind
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High winds blew down several trees and utility poles, the windows out of a business, a sign from a restaurant onto a power line, and leveled several barns.

Johnson County 2 W Venus Alvarado

2 W Venus	14	0525CST			0	0	?	?	High Wind
Alvarado	14	0530CST			0	0	?	?	High Wind

High winds blew over a tractor-semitrailer 2 miles west of Venus and a tree onto the roof of a child care center in Alvarado.

Rains County 10 W Emory

10 W Emory	14	0530CST			0	0	?	?	High Wind (G59)
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At Lake Tawakoni (10 W Emory), two boat stalls were destroyed while numerous power outages occurred due to fallen tree limbs onto power lines.

Kaufman County Kaufman

Kaufman	14	0530CST			0	0	?	?	High Wind (G52)
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High winds blew down power lines, highway signs and damaged a couple of traffic signal lights in Kaufman.

Red River County Clarksville

Clarksville	14	0545CST			0	0	?	?	High Wind
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High winds blew down several trees and the tin roof of an outdoor building.

Delta County Cooper

Cooper	14	0600CST			0	0	?	?	High Wind
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High winds blew down several power lines.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Henderson County
Cedar Creek Reservoir

14 0820CST 0 0 ? ? High Wind

High winds uprooted several trees along the southern portion of Cedar Creek Reservoir.

Coryell County
Gatesville

14 0830CST 0 0 ? ? Thunderstorm Wind

A downburst blew down several trees, the shingles off the roof of 20 homes, and damaged several carports and a barn.

Limestone County

14 0920CST-1130CST 0 0 ? ? Flash Flooding

High water from Plumbers Creek and Bain Creek produced moderate flooding in both Navasota and the low areas around Lake Mexia.

McLennan County
China Springs
West
Riesel

14 0940CST 0 0 ? ? Thunderstorm Wind
14 0940CST 0 0 ? ? Thunderstorm Wind
14 1000CST 0 0 ? ? Thunderstorm Wind

A downburst blew down trees and a couple of outdoor buildings in China Springs, a marquee in West, and street signs in Riesel.

Collin County
Princeton
McKinney

14 0945CST 0 0 ? ? Thunderstorm Wind
14 0945CST 0 0 ? ? Thunderstorm Wind

A downburst blew down numerous trees and fences while damaging the roof of a school, several mobile homes, and storage buildings in Princeton. A downburst blew down a barn and a patio cover, shattered several windows, and damaged the roof of a residence in McKinney.

Bell County
2 W Belton to Temple
Rogers
2 W Temple

14 0945CST-1005CST 9 150 0 0 5 ? Tornado (F3)
14 1013CST 0 0 ? ? Thunderstorm Wind
14 1105CST 0 0 ? ? Thunderstorm Wind (G50)

A tornado spotted by the Department of Public Safety, touched down near U.S. Highway 190, 2 miles west of Belton and moved northeast to the southern portion of Temple. Two miles west of Belton, 3 mobile homes were destroyed while 5 were heavily damaged by either being flipped over or dislodged from their foundations. A highway sign was also blown onto a camper trailer. In Temple, a tractor-semitrailer and a car were overturned, several trees were uprooted while numerous utility poles and power lines were blown down. Four aircraft hangars were also damaged at an airport in Temple. Damage estimates were over \$25,000. In Rogers, a downburst blew the roof off several buildings and a residence resulting in \$120,000 damage to the roof of one department store. A downburst 2 miles west of Temple damaged several buildings.

Hill County
2 S Hillsboro to Hillsboro

14 0959CST-1004CST Short Narrow 0 0 ? ? Tornado (F2)

A weak tornado damaged several buildings, blew the roof off one home and a business, overturned one mobile home, and destroyed several outdoor buildings. Approximately 12,000 homes were affected by power outages.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Dallas County	14	1015CST-			0	0	?	?	Flash Flooding
NRN Dallas County		1215CST							

Rainfall amounts of 2 inches in a two-hour period flooded three to five homes in Farmers Branch. High water forced the closing of three to five roads in both Carrollton and Farmers Branch and Central Expressway in northern Dallas.

Ellis County	14	1100CST			0	0	?	?	Thunderstorm Wind
2 E Garrett	14	1141CST			0	0	?	?	Thunderstorm Wind
Palmer	14	1200CST			0	1	?	?	Lightning
Milford									

A downburst destroyed an auto garage, dislodged a home 4 feet off its foundation, and damaged several trees 2 miles east of Garrett. A downburst damaged a residence and several trees in Palmer. Lightning struck a utility pole and injured a utility lineman in Milford.

Kaufman County	14	1135CST			0	0	?	?	Thunderstorm Wind
5 S Terrell	14	1135CST							Funnel Cloud
7 E Terrell									

A downburst blew the roof off a residence 5 miles south of Terrell, while a funnel cloud was observed 7 miles east of Terrell.

Hunt County	14	1149CST			0	0	?	?	Thunderstorm Wind (G50)
Greenville									

A downburst blew down several trees and outdoor buildings.

Rains County	14	1205CST-			0	0	?	?	Tornado (F2)
4 SW Point to Point		1215CST	4	50	0	0	?	?	Thunderstorm Wind
Emory	14	1215CST			0	0	?	?	

A tornado touched down 4 miles southwest of Point and moved northeast to Point. One mobile home, 3 barns, and a greenhouse were destroyed, while several trees were uprooted. In addition, a storage building and a boat house on Lake Tawakoni (4 SW Point) were damaged. At Emory, a downburst damaged several mobile homes, barns and storage buildings while blowing the shingles off a couple of homes and a television antenna and uprooting numerous trees.

Lamar County	14	1230CST			0	0	?	?	Thunderstorm Wind (G52)
Paris									

A downburst blew down a few trees.

Cherokee County	14	1500CST			0	0	?	?	Thunderstorm Wind
Alto									

A downburst blew down several trees.

Knox County	28	2120CST			0	0	?	?	Hail (2.75)
Knox City	28	2130CST			0	0	?	?	Hail (2.50)
Knox City	28	2140CST			0	0	?	?	Thunderstorm Wind (G52)
Benjamin									Hail (0.75)
Munday	28	2153CST			0	0	?	?	Hail (0.75)
Goree	28	2215CST			0	0	?	?	Hail (0.75)

Baseball-size hail in Knox City damaged 75 car windows and stripped the bark off trees, while damaging the roofs of several buildings.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Northern Cont'd

Young County Newcastle	29	0007CST			0	0	?	?	Hail (1.00)
Montague County Stoneburg	29	0031CST			0	0	?	?	Hail (1.00)
Jack County Jacksboro	29	0059CST			0	0	?	?	Hail (0.75)
North Texas	29								

Most creeks and streams were already at bank-full when widespread heavy rainfall amounts of 1 to 3 inches fell on the already saturated conditions across north Texas, resulting in a number of flash flood events across the area.

Wise County Bridgeport	29	0110CST			0	0	?	?	Hail (1.00)
Bridgeport	29	0140CST- 0430CST			0	0	?	?	Flash Flooding

U.S. Highway 114 in Bridgeport had water up to the hoods of cars.

Hopkins County	29	0345CST- 0800CST			0	0	?	?	Flash Flooding
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Several creeks and streams overflowed their banks in portions of Hopkins County.

Franklin County	29	0400CST- 0800CST			0	0	?	?	Flash Flooding
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Considerable low land flooding and creeks out of their banks were observed in Franklin County.

Fannin County	29	0405CST- 0800CST			0	0	?	?	Flash Flooding
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Rainfall amounts of 1 inch per hour caused numerous creeks and streams to overflow their banks in Fannin County.

Hunt County	29	0410CST- 0700CST			0	0	?	?	Flash Flooding
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Numerous creeks and streams were out of their banks in Hunt County.

Red River County Clarksville	29	0500CST- 0800CST			0	0	?	?	Flash Flooding
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High water was observed over several roadways in Clarksville.

Lamar County	29	0529CST- 0930CST			0	0	?	?	Flash Flooding
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State Highways 906, 79, and 197 were all washed out by high water.

Wood County	29	0730CST- 0945CST			0	0	?	?	Flash Flooding
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U.S. Highway 80 between Big Sandy and Mineola was closed due to high water. Several creeks and streams in the county were also out of their banks.

Gregg County	29	0840CST- 1045CST			0	0	?	?	Flash Flooding
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Three to 5 inches of rain over southern parts of Gregg County resulted in several small streams overflowing their banks.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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

Rusk County NRN Rusk County	29	0840CST- 1030CST			0	0	?	?	Flash Flooding
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Three to 5 inches of rain over northern parts of Rusk County resulted in several small streams overflowing their banks.

Navarro County Corsicana	29	1000CST			0	0	?	?	Lightning
Navarro County	29	1000CST- 1400CST			0	0	?	?	Flooding

Lightning struck an oil storage tanker and ignited a fire while over 4 inches of rainfall flooded several streets, homes, and businesses in Corsicana. High water up to 1 foot in depth was observed in some homes, while up to 50 cars were stranded by high water. Numerous roads located in the Chambers Creek floodplain were also washed out.

TEXAS, Southern

Val Verde County 10 NW Del Rio	11	0157CST			0	0	?	0	Thunderstorm Wind (?)
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High winds from a thunderstorm ripped the awning off a mobile home. Two other smaller trailers were blown off their foundation blocks.

Newton County Deweyville	14	1330CST			0	0	?	0	Thunderstorm Wind (?)
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Winds ripped part of a roof off a school building.

De Witt County Thomaston	29	1242CST			0	0	?	0	Thunderstorm Wind (G52)
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Winds gusted to an estimated 60 MPH at Thomaston. Damage not reported.

Calhoun County	29	1300CST			1	0	?	?	Thunderstorm Wind (?)
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High winds from a thunderstorm capsized a shrimp boat with 3 crewmen aboard in the San Antonio Bay near Seadrift. Two of the men were rescued. The third man drowned. M320

Calhoun County	29	1345CST			0	0	?	?	Hail (1.75)
	29	1345CST			0	0	?	?	Thunderstorm Wind (G61)

Golf ball-size hail fell on the extreme northeast end of Matagoda Island. The accompanying wind damaged some buildings and vehicles on the Island.

Matagorda County Bay City	29	1425CST			0	0	?	0	Thunderstorm Wind (G50)
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Austin County I W Sealy	29	1458CST			0	0	?	0	Thunderstorm Wind (?)
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High winds damaged a house and destroyed a shed 1 mile west of Sealy.

Brazoria County	29	1530CST			0	0	?	?	Thunderstorm Wind (G53)
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High winds from a thunderstorm gusted to 61 mph at the WSO at Alvin. The strong winds caused scattered damage to trees and signs in the area between Rosharon and Manvel.

Harris County	29	1550CST			0	5	?	?	Thunderstorm Wind (?)
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High winds from a thunderstorm caused scattered damage in and around the city of Houston. The winds toppled a tent and scaffolding at a FFA exhibit at a high school stadium. Five people were hurt, one seriously (broken leg).

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern Cont'd

Val Verde County
30 NW Del Rio 29 2250CST 0 0 0 0 Hail (0.75)

Kinney County
22 NE Del Rio 29 2330CST 0 0 ? ? Hail (1.75)

Hail the size of golf balls fell in the northwest part of the county near the intersection of Highways 2523 and 3008. A rancher reported hail drifts to about 1 foot deep. Hail was still visible on the ground on Sunday the 1st of April. The hail swath was estimated about 5 miles wide and 10 miles long. The storm killed 25 of the rancher's goats and some of his peacocks. The rancher reported that the goats suffocated (?).

TEXAS, Western

Deaf Smith County
Hereford 9 1800CST 0 0 0 0 Hail (0.75)

Hail stones, up to dime size (0.75), were reported by an off-duty police dispatcher.

Castro County
7 SW of Hart 9 1853CST 0 0 0 0 Hail (1.75)

The Castro County Sheriff's Office reported golf ball-size hail (1.75 inches) 7 miles southwest of Hart at 1853 CST.

Randall County 5 W of Canyon	9	1855CST-	0	0	0	0	Hail (0.75)
10 N of Canyon		1911CST	0	0	0	0	Hail (0.88)
Potter County SW Potter County		1915CST	0	0	0	0	Hail (0.75)
SE Potter County		1920CST	0	0	0	0	Hail (0.75)
Randall County Canyon		1922CST	0	0	0	0	Hail (0.88)
5 N of Canyon		1939CST	0	2	4	0	Thunderstorm Wind (?)
5 SW of Canyon		1955CST	0	0	0	0	Hail (1.75)
Canyon		1955CST	0	0	0	0	Flash Flooding
2 N of Canyon		2012CST	0	0	3	0	Thunderstorm Wind (?)
5 N of Canyon		2023CST	0	0	0	0	Hail (0.88)
		2028CST	0	0	0	0	Hail (1.00)
Potter County N Potter County		2052CST	0	0	0	0	Hail (0.75)

A regenerating complex of severe thunderstorms over northern Randall and Potter counties led to numerous reports of large hail, from dime-size (0.75 inches) up to golf ball-size (1.75 inches), as well as damaging wind gusts throughout almost a 2-hour period. The most significant damage occurred at 1939 CST in northern Randall County, when thunderstorm winds of unknown speed overturned and destroyed a mobile home, causing minor injuries to two persons inside. Two other mobile homes and a barn in the same area sustained damage at the same time. The huge complex of thunderstorms led to flash flooding along a portion of Interstate 27 in and north of Canyon for about an hour.

Winkler County
10 ENE of Kermit 9 1925CST 0 0 0 0 Hail (0.75)
1925CST 0 0 0 0 Thunderstorm Wind (G52)

The public reported dime-size hail and 60 mph wind gust 10 miles east of Kermit. No damage was reported.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Western Cont'd

Carson County
McBride

9 2030CST 0 0 0 0 Hail (0.75)

Dime-size hail fell in the community of McBride in northwest Carson County at 2030 CST as reported by a spotter.

Armstrong County
Claude

9 2135CST
2230CST 0 0 0 0 Hail (1.75)
0 0 0 0 Hail (1.75)

Golf ball-size hail (1.75 inches) was reported in Claude at two different times: first at 2135 CST by the Texas Department of Public Safety, then again at 2230 CST by the Armstrong County Sheriff's Office.

Lubbock County
Reese AFB
West Lubbock
Lubbock WSFO
Northwest Lubbock

9 2234CST 0 0 0 0 Thunderstorm Wind (G56)
2245CST 0 0 4 0 Thunderstorm Wind (?)
2255CST 0 0 0 0 Thunderstorm Wind (G62)
2300CST 0 0 3 0 Thunderstorm Wind (?)

A large thunderstorm complex collapsed just southwest of Lubbock, forcing a strong rush of winds to the north. Several roofs and porches in western Lubbock County were damaged.

Andrews County
Andrews
Gaines County
9 N of Seminole
Ector County
West Odessa
Midland County
5 SW of Midland
10 SE of Midland
Crane County
3 E of Crane

11 0345CST 0 0 4 0 Thunderstorm Wind (G61)
0345CST 0 0 4 0 Thunderstorm Wind (G62)
0350CST 0 0 3 0 Thunderstorm Wind (G53)
11 0414CST 0 0 0 0 Thunderstorm Wind (G50)
0440CST 0 0 0 0 Thunderstorm Wind (G52)
0439CST Funnel

A short line of thunderstorms rapidly developed over the western portion of the Permian Basin. The storms produced a series of downbursts as they moved east. A 40-foot pine tree was downed and damage was inflicted on four houses, according to the Andrews County Sheriff's Office. The public reported damage to outbuildings and silo tanks 9 miles north of Seminole. The public also reported large trees downed in West Odessa, wind gusts to 60 mph in Midland, and a funnel cloud 3 miles east of Crane. Winds gusted to 58 mph at the NWS office at Midland.

Yoakum County
Denver City
Lubbock County
Lubbock

11 0400CST 0 0 2 0 Thunderstorm Wind (?)
0500CST 0 0 3 0 Thunderstorm Wind (?)

A fast-moving line of strong thunderstorms caused sporadic light wind damage across the South Plains early the morning of the 11th. The most significant damage was to 15 vehicles, belonging to the city of Lubbock, that lost windows from blowing debris.

Dallam County
Dalhart

11 0550CST 0 0 0 0 Hail (1.75)

Hail the size of golf balls (1.75 inches) fell in Dalhart for a short time.

Carson County
Groom
Gray County
Pampa

13 0630CST 0 0 0 0 Hail (1.75)
0645CST 0 0 0 0 Hail (0.75)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Western Cont'd

Roberts County
1 SSE of Miami 0730CST 0 0 4 0 **Thunderstorm Wind (?)**

A severe thunderstorm formed in extreme eastern Carson County, dropping dime-size hail (0.75 inches) at Groom (0630 CST), then, Pampa (Gray County) at 0645 CST. In the storm's final stage, high winds destroyed a barn in Roberts County, near Miami.

Nolan County
Roscoe 13 1915CST 0 0 0 0 **Hail (1.75)**

Golf ball-size hail (1.75 inches) fell in Roscoe at 1915 CST.

Ector County
West Odessa 13 2220CST 0 0 0 0 **Hail (1.00)**
Penwell 2230CST 0 0 0 0 **Hail (1.00)**
Midland County
Midland 2305CST 0 0 0 0 **Hail (0.88)**

Severe thunderstorms moved through Midland and Ector Counties. The public and SKYWARN spotters reported hail up to quarter-size in Penwell and west Odessa, and up to nickel size in Midland. No damage was reported.

Dickens County
2 S of Dickens 13 2300CST 0 0 0 0 **Hail (1.75)**
Dickens 2330CST 0 0 0 0 **Thunderstorm Wind (G50)**
Cottle County
Paducah 2345CST 0 0 0 0 **Hail (1.75)**
King County
1 S of Guthrie 14 0015CST 0 0 0 0 **Hail (0.75)**

Severe thunderstorms moved out of Dickens County late the evening of the 13th and into Cottle and King Counties, by the early morning of the 14th. There were a few reports of large hail and one report of strong wind, but no apparent damage.

Permian Basin 14 Aftn 0 0 3 0 **High Wind (G50)**

Strong gradient winds gusted across the Permian Basin the afternoon of the 14th. The high winds blew debris onto U.S. 87 near Big Spring at about 1515 CST, causing damage to a pickup. Highest gust was 58 mph at the Midland NWS office.

UTAH

UTZ003-101-011-
Northern Mountains 04 1030MST 0 0 0 0 **Heavy Snow**
Northwest Valleys 06 0030MST

A Pacific cold front worked its way across the state, leaving snow amounts of up to 11 inches in the valleys around the Great Salt Lake, and 12 to 25 inches in the mountains.

UTZ003-005-006-
010-011- Portions 11 0100MST 0 0 1 0 **Heavy Snow**
of Northern and 13 1800MST
Western Utah and all
the Mountains

A strong front crossed the state during this period with a moist northwest flow behind the system. Some western valleys of Utah picked up from 4 to 13 inches of snow, with the greatest amounts falling along the mountains. The mountains themselves received from 14 to 36 inches, with the highest amounts in the south.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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		LOCAL STANDARD			KILLED	INJURED	PROPERTY	CROSSL	

UTAH Cont'd

UTZ003-010- Northern Mountains, Salt Lake and Utah Counties. 14 2200MST 15 0800MST 0 0 1 0 Heavy Snow

A small, fast-moving upper disturbance in northwest flow brought lake effect snow to areas downwind of the Great Salt Lake. Some valley locations received up to 4 inches, with up to 18 inches in the mountains.

Uinta County Naples 23 1230MST short 1-10 0 0 2 0 Tornado (FO)

Several residents of Naples watched a funnel cloud touch down briefly. The tornado took the roof off a "wood shed" and blew it into a trailer house causing about \$500.00 damage.

VERMONT

State-wide 20 AM 21 AM 0 6 6 ? Snow
State-wide 21 AM 21 PM 0 5 4 0 High Wind

Orange County Thetford 20 Unknown 0 0 3 0 Rock Slide

A late winter storm blanketed Vermont with snow. Amounts ranged from 4 to 28 inches, with the heaviest snow being reported in the Williamstown area. The heavy, wet snow brought down power lines in many communities. As the storm moved to the east, strong gusty winds continued to bring down additional power lines. During the storm, at the E.F. Knapp Airport in Berlin, a Lear jet slid 150 feet off the runway, due to the heavy wet snow. In Thetford, heavy wet snow loosened some rocks and created a small rock slide, which closed parts of Interstate 91.

VTZ001 Shores of Lake Champlain 23 AM 23 PM 0 0 4 0 Ice Breakup

Strong winds and high lake levels resulted in an ice breakup on Lake Champlain. Wind-driven blocks of ice crashed on to the shore damaging a large number of facilities including; docks, lake front cottages, boathouses, and stored marine vehicles. Local residents also noted the ice this year was exceptionally clear, and therefore very strong.

VIRGINIA

VAZ003-004-007 17 1300EST-1600EST 0 0 4 0 Thunderstorm Winds

Thunderstorms moved through southcentral Virginia, accompanied by locally strong winds. At Emporia, the winds (which lasted only about a minute) damaged two large buildings in a park, blew down a scoreboard, and uprooted a tree. Lawrenceville experienced brief power outages. Winds at Syringa damaged two barns.

VAZ009-014-015 19 1900EST 20 0600EST 0 0 4 0 Heavy snow

Five to 8 inches of snow in the areas at Lynch Station, Leesville, and Mentow, caused power outages for several hundred homes. Numerous traffic accidents in Carroll County on Interstate 77 involved a tractor semitrailer. The Lynchburg area reported 4 to 6 inches, with 2 inches at Roanoke.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

WASHINGTON

South Snohomish County 10 2000PST 0 0 0 0 Heavy Snow

A Puget Sound convergence zone which developed in a cold air mass over western Washington produced accumulations of snow up to 4 inches in the Everett and Mukilteo area. Snowfall was confined to south Snohomish County and caused no damage except for traffic problems on the hilly roads.

WAZ002-004-005 Coast and NW Interior 13 1800PST 0 0 0 0 High Wind

A frontal system extending from a low pressure area near Vancouver Island, produced large pressure differences across western Washington, with brief strong winds along the coast, the northwest interior, and over the Strait of Juan de Fuca. Cape Disappointment on the south Washington coast had 58 mph winds. Smith Island, 10 miles north of Port Townsend in the Strait of Juan de Fuca, recorded 48 mph winds with gusts to 58 mph. The nearby Whidbey Island Naval Air Station also had 41 mph winds, gusting to 51 mph. No significant damage was reported, due in large part to the fact that it was the fifth high-wind episode in western Washington in two months.

WEST VIRGINIA

None reported.

WISCONSIN

Brown County Green Bay 12 0655CST 3 31 4 0 Heavy Fog

A combination of dense fog and smoke from Tower Drive Bridge paper mills combined to produce zero visibility on the Tower Drive Bridge in Green Bay. The conditions caused a 52-vehicle pileup, leaving 3 dead and 31 injured. (F??V) (F??V) (M??V)

Racine County Burlington	13	1512CST	0	0	0	0	Hail (0.75)
Green County 5 S Monroe	13	1533CST	0	0	0	0	Hail (1.75)
Green County New Glarus	13	1535CST	0	0	0	0	Hail (1.75)
Walworth County 1 E Lake Geneva	13	1554CST	0	0	0	0	Hail (1.75)
Green County Juda	13	1600CST	0	0	6	0	Hail (1.50)
Racine County Burlington	13	1607CST	0	0	6	0	Hail (1.75)
Rock County Edgerton	13	1610CST	0	0	0	0	Hail (0.75)
Milwaukee County Wauwatosa	13	1615CST	0	0	0	0	Hail (1.75)
Milwaukee County Greenfield	13	1615CST	1	0	0	0	Lightning
Rock County Edgerton	13	1633CST	0	0	0	0	Hail (1.50)
Green County Albany	13	1640CST	0	0	5	0	Thunderstorm Wind
Dane County Brooklyn	13	1640CST	0	0	5	0	Thunderstorm Wind
Green County 2 S Brooklyn	13	1655CST	0	0	6	0	Thunderstorm Wind
Dane County Brooklyn	13	1700CST	0	0	6	0	Thunderstorm Wind
Dane County 2 N Stoughton	13	1715CST	0	0	0	0	Hail (1.75)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

WISCONSIN Cont'd

Grant County Hazel Green	13	1735CST			0	0	0	0	Hail (1.00)
Jefferson County 2 SW Lake Mills	13	1742CST			0	0	0	0	Funnel Cloud
Dane County Nora	13	1742CST			0	0	0	0	Hail (1.50)
Dane County East Bristol	13	1755CST			0	0	0	0	Hail (0.75)
Jefferson County Milford	13	1810CST			0	0	0	0	Hail (1.00)
Columbia County 1 S Lodi	13	1815CST			0	0	5	0	Thunderstorm Wind
Jefferson County Waterloo	13	1820CST			0	0	0	0	Hail (1.75)
Dane County Deforest	13	1828CST			0	0	0	0	Thunderstorm Wind
Dodge County Juneau	13	1835CST			0	0	0	0	Thunderstorm Wind
Dodge County Juneau	13	1835CST			0	0	0	0	Hail (0.75)
Dodge County Mayville	13	1900CST- 2200CST			0	0	5	0	Flash Flood
Dodge County Horicon	13	1900CST- 2200CST			0	0	5	0	Flash Flood
Dodge County Juneau	13	1908CST			0	0	0	0	Hail (1.75)
Dodge County 2 S Mayville	13	1920CST			0	0	0	0	Hail (1.75)
Sheboygan County Sheboygan	13	2030CST			0	0	6	0	Hail (1.00)

Clusters of severe thunderstorms swept through portions of southern Wisconsin producing large hail, destructive winds, flooding, and dangerous lightning. A severe thunderstorm cut a swath of damage along the Green-Rock-Dane county lines from Albany to north of Brooklyn. Over \$1 million in damage occurred to 18 barns, 19 homes, and several businesses. In addition, hundreds of trees were knocked down. Hail as large as golf balls pounded the Burlington (Racine County) and Sheboygan areas damaging numerous vehicles with losses up to \$4.5 million. A man was struck and killed by lightning while walking his dog. Torrential rains, especially in Dodge County, flooded basements, schools, and businesses in Mayville. The rain also washed out a railroad bed near Horicon, causing 3 locomotive cars to derail. (M300)

Statewide	15	Daytime			0	0	6	0	High Wind
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A deep low pressure area generated strong winds across the state. Many areas reported wind gusts between 55 and 70 mph with the airport in Waukesha measuring a 79 mph gust. The winds knocked down numerous power lines, trees, sheds, and barns. In addition, several tractor-semitrailers were tipped over and other widespread minor damage occurred.

WYOMING

WYZ009-013- Wind River Mountains Southwest	05	0400MST- 1400MST			0	0	0	0	Heavy Snow
---	----	---------------------	--	--	---	---	---	---	------------

Heavy snow occurred over the far west mountains and across extreme southwest Wyoming during the 5th. South Pass City, located 20 miles south of Lander, had 12 inches of new snow. Kemmerer reported 6 inches of snowfall and Evanston piled up to 8 new inches of snow.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

WYOMING Cont'd

WYZ011-012-015-016-017-

Central Plains
Eastern Plains
Southern Mountains
Laramie Valley
Southeast Plains

05	2000MST-								Heavy Snow
08	0200MST								

An intense and slow-moving storm system over the Southern Rockies caused a prolonged heavy snow event for roughly the southeastern quarter of the Cowboy State. The storm lasted for about 54 hours, from the evening of the 5th through the early morning on the 8th. The heaviest snow occurred during the 6th, when 24-hour snow totals ranged from 6 to 18 inches. Total snow amounts for the event were generally from 1 to 4 feet.

During the 6th and 7th, at least 300 miles of roads were closed. Nearly all travel to and from Cheyenne, the state capital, was halted. Additionally, there were power outages because of downed power lines due to the wet, heavy snow.

Storm totals of 3 to 4 feet of snow were common at several locations in the Laramie Range. Some other reports included: 20 inches at Centennial; 19.2 inches in Cheyenne; 18 inches at Wheatland; 16 inches in Laramie; 15 inches at Douglas; and 7 inches for Casper. For Cheyenne, this was the greatest single snowfall event ever in March and the storm tied for ninth place on the list of biggest snowstorms.

WYZ 016-
Laramie Valley

14	0400MST-								High Wind
	1200MST								

During the morning of the 14th, sustained 40 to 50 mph winds, with gusts up to 57 mph, occurred on the summit of Interstate 80, thirty miles west of Cheyenne. Travel became very difficult along Interstate 80, near the summit, because of considerable blowing and drifting of snow.

WYZ00E-
Eastern Wyoming

15	0300MST-								High Wind
	2000MST								

During much of the 15th, high winds blew across eastern Wyoming. Sustained winds of 40 to 55 mph were common. Some peak wind gusts were: 67 mph near Wheatland; 65 mph on the Interstate 80 summit; 30 miles west of Cheyenne; 60 mph in Sheridan; and 58 mph at Gillette. These winds produced widespread blowing and drifting snow and ground blizzard conditions across the far southeast portion of the state. During most of the 15th, almost all roads to and from Cheyenne and Laramie were closed because of the blowing snow. It was not until the afternoon of the 16th that the roads were reopened for travel.

WYZ016-
Laramie Valley

15	2030MST-								High Wind
16	0800MST								

From the evening of the 15th through the morning of the 16th, strong winds occurred on the Interstate 80 summit. Vedauwoo, 30 miles west of Cheyenne, logged 40 to 50 mph sustained winds with peak gusts up to 56 mph. The winds caused considerable blowing and drifting snow, along with periods of zero visibilities. Interstate 80 from Cheyenne to Laramie was closed during this event.

WYZ008-009-010-
Green River Basin
Wind River Mountains
Wind River Basin

27	1800MST-								Heavy Snow
28	0600MST								

From the evening of the 27th into the early morning of the 28th, heavy snow fell across west-central Wyoming. Some snowfall amounts were 9 inches at Cora, 8 inches in Pinedale, and 6.1 inches for Lander.

WYZ015-
Southern Mountains

28	0600MST								Heavy Snow
	1800MST								

During the 28th, 10 inches of new snow fell at The Snowy Range Ski Area, located in the Medicine Bow Mountains.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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	

ALASKA, Southern

Cook Inlet-Susitna Valley 2/28 N/A
3/2 **High Winds**
Heavy Snow

Series of lows moved northward out of the Gulf of Alaska and into interior western Alaska. Winds of 40 to 50 mph swept the Anchorage hillside and base of the mountains with peak gusts of 69 mph reported at Glen Alps and 53 mph at Fort Richardson. Winds along Glenn Highway near Fort Richardson created whiteout conditions on the 1st with numerous cars in the ditch. Heavy snow fell in Susitna Valley with about 3 feet falling at Talkeetna in a two-day period from 3 p.m. on February 28 to 3 p.m. March 2. Also heavy, wet snow fell in the Kenai-Soldotna area followed by rain. Eighteen inches reported at Nikiski in a 24-hour period from early on the 1st to early on the 2nd. At least 9 buildings-warehouses, homes, and a fire station, collapsed under the weight of the dense snow pack made heavier by rain, and there was widespread, small-scale damage to sheds and carports.

Western North Gulf Coast, Kodiak Island 5-6 N/A 4 **High Winds**

A 968 mb low moved out of the eastern North Pacific and into the northern Gulf of Alaska. Northwesterly winds gusted to 87 mph at Barwell Island, near Cape Resurrection, and to 76 mph at the airport in Kodiak. There was \$8,000 damage to a garage and several thousand to the F/V Nootka which was rolled onto its side, flooding the engine.

Western Aleutians 5-6 N/A **High Winds**

A strong front moved through the western Aleutians before weakening. Southeasterly winds gusted to 68 mph at Shemya and 63 mph at Amchitka on the evening of the 5th. Adak reported south winds gusting to 59 mph the next morning.

Western Aleutians 9 N/A **High Wind**
Blizzard

A strong 970 mb low moved eastward about 400 miles south of the western Aleutians causing winds of 50 to 60 mph in the western Aleutians along with visibilities one eighth of a mile in snow and blowing snow. Amchitka reported a peak wind of 60 mph.

Aleutians 13-14 N/A **High Winds**

A strong front moved through the western and central Aleutians. Southerly winds ahead of the front gusted to 60 mph at Shemya, 66 mph at Amchitka and 62 mph at Adak.

Yukon-Kuskokwim Delta 14-15 N/A **Blizzard**

Blizzard conditions ahead of a warm front moved into western Alaska from the Bering Sea, with east and southeasterly winds 35 to 50 mph, and visibilities down to near zero at times in snow and blowing snow. Saint Marys had peak wind of 51 mph.

Western Aleutians 16-17 N/A **High Wind**

A strong front moved through the western Aleutians on the evening of the 16th and early on the 17th, bringing sustained southeasterly winds 40 mph or more with peak gusts 61 mph at Amchitka and 59 mph at Shemya.

Western North Gulf Coast 17-19 N/A **High Winds**

Strong interior high pressure produced strong and gusty winds out of some bays and passes. Valdez had northerly winds to 67 mph on the 19th. Barwell had northwesterly gusts to 61 mph and Whittier had southwesterly winds gusting to 52 mph on the 17th and 18th.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

MARCH 1990

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, Southern Cont'd

Eastern Aleutians
Alaska Peninsula
Bristol Bay

21-23 N/A

High Winds

Moderate lows in the eastern North Pacific, blocked by a high pressure area over the Alaska mainland, moved northwestward toward the central Aleutians, bringing strong easterly and southeasterly winds to the eastern Aleutians, Alaska Peninsula, and southern Bristol Bay. Several ships south of the Alaska Peninsula reported easterly winds of 45 to 50 knots with gusts as high as 70 knots. Among land stations, Port Heiden had the highest winds, with gusts to 63 mph reported.

ALASKA, Southeastern

Juneau/Douglas

3/19 0500

N/A

0 0

Unk 0

Taku Wind

HAWAII

Hawaii
Oahu and Kauai

6 1700HST

0 0 5 0

Flash Flooding

Some intense showers occurred over central and northern Oahu with localized flooding of homes in the Wahiawa area. Also heavy showers reported over Kauai. Up to 6 inches of rain fell in 3 hours in spots on both islands.

PACIFIC

None reported.

PUERTO RICO

None reported.

VIRGIN ISLANDS

None reported.

STORM SUMMARY

March 1990

TYPE	ALABAMA	ARIZONA	ARKANSAS	CALIFORNIA	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA	IDAHOO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND & D.C.	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI	MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE
TORNADOES						0	0			0					0											0	
Number	3		3								2		17	23		6							4		15		
Days	0004?		11600								0100		30670	42175		0000?						00000		00004			
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HAIL																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
THUNDERSTORM WINDS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HIGH WINDS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
LIGHTNING																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
FLASH FLOODS																											
Deaths	13																										
Injuries	0008?																										
Property Damage																											
Crop Damage																											
FLOODS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HEAVY SNOWSTORMS AND BLIZZARDS a																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ICE STORMS #																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HURRICANES AND TROPICAL STORMS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ALL OTHERS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											

STORM SUMMARY

March 1990

TYPE	NEW JERSEY	NEW MEXICO	NEW YORK	NORTH CAROLINA	NORTH DAKOTA	OHIO	OKLAHOMA	OREGON	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA	SOUTH DAKOTA	TENNESSEE	TEXAS	UTAH	VERMONT	VIRGINIA	WASHINGTON	WEST VIRGINIA	WISCONSIN	WYOMING	ALASKA	HAWAII	PACIFIC	PURTO RICO	VIRGIN ISLANDS	& NATIONAL DEATHS	INJURY TOTALS
TORNADOES	0									0												7				0		
Number						10								4	1													3
Days																												102
Deaths																												
Injuries																												
Property Damage																												
Crop Damage																												
HAIL																												
Deaths																												
Injuries																												
Property Damage																												
Crop Damage																												
THUNDERSTORM WINDS																												
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Property Damage																												
Crop Damage																												
ALL OTHERS																												
Deaths																												
Injuries																												
Property Damage																												
Crop Damage																												

STORM DAMAGE CATAGORIES

REFERENCE NOTES

1	Less than \$50	0/Blank	None reported.
2	\$50 to \$500	*	Miles instead of yards.
3	\$500 to \$5,000	**	Yards instead of miles.
4	\$5,000 to \$50,000	@	Includes heavy sleet storm.
5	\$50,000 to \$500,000	#	Freezing drizzle and freezing rain, commonly known as glaze.
6	\$500,000 to \$5 Million	≠	Report incomplete.
7	\$5 Million to \$50 Million	≠≠	Report not received.
8	\$50 Million to \$500 Million	o/c	Indicates Crop Damage amount is included in the value given for property damage.
9	\$500 Million to \$5 Billion		

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.

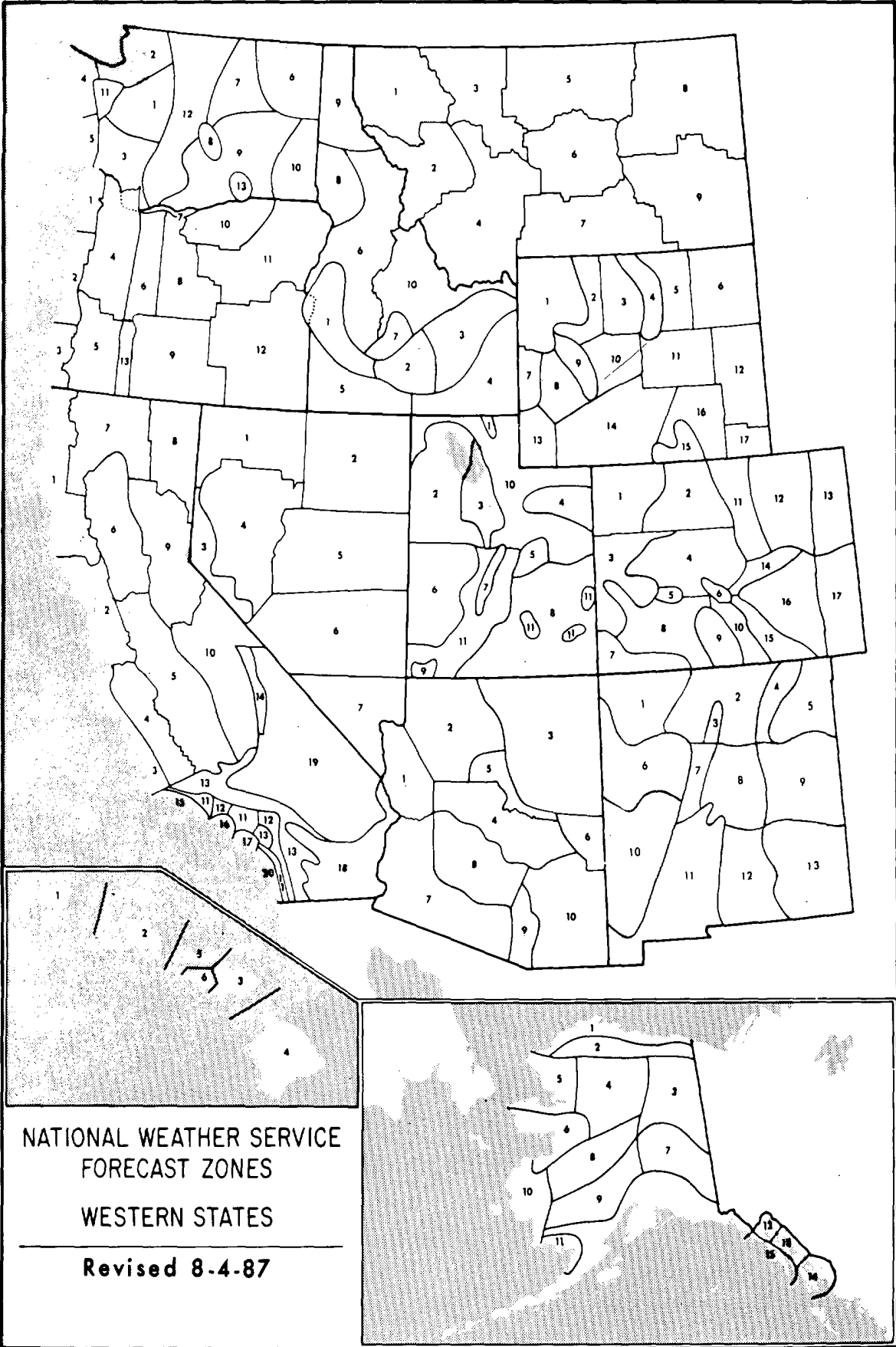
(F6-F12) (319 mph to Mach 1, the speed of sound):
The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

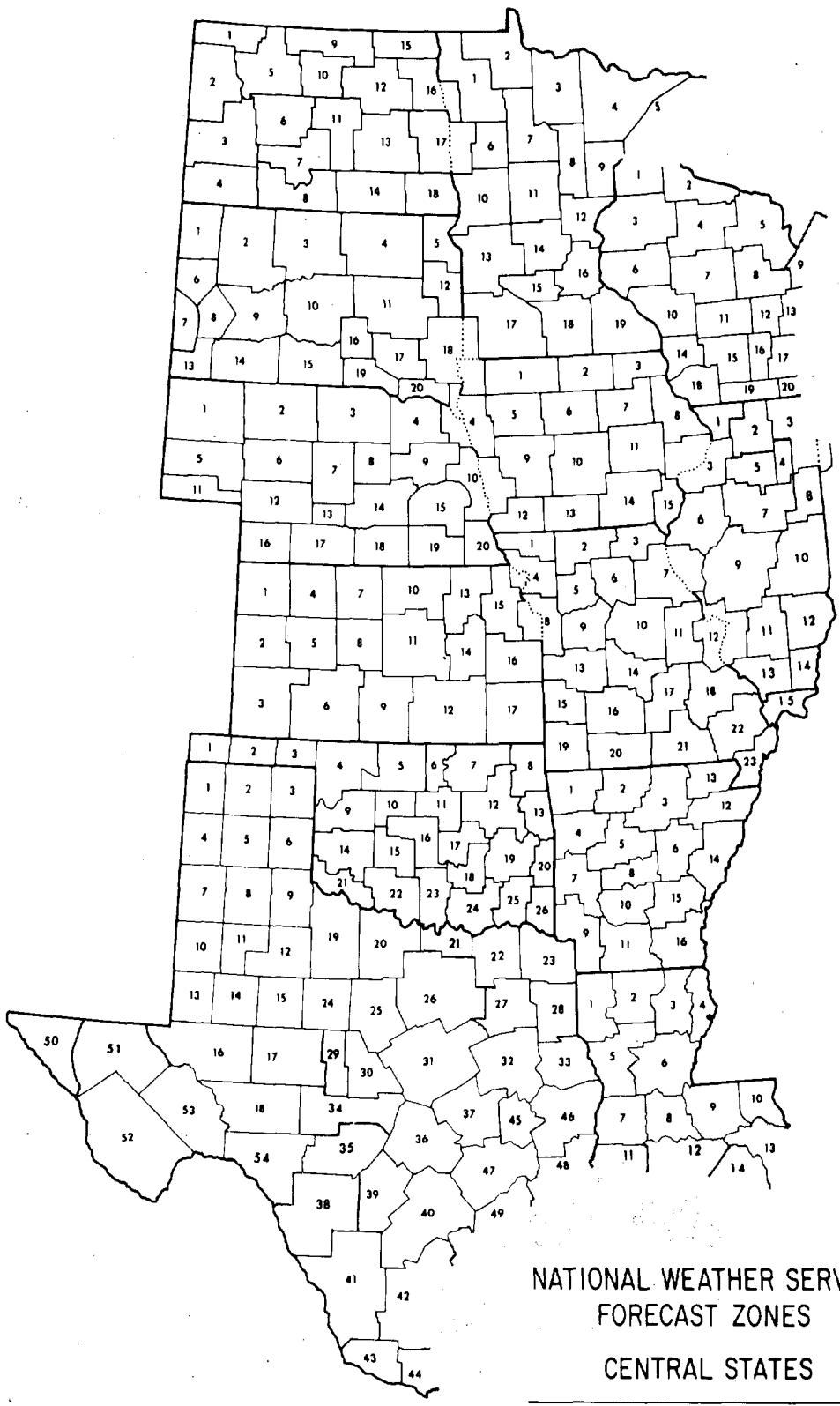
(F0+F1) *Weak Tornado*
(F2+F3) *Strong Tornado*
(F4+F5) *Violent Tornado*



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

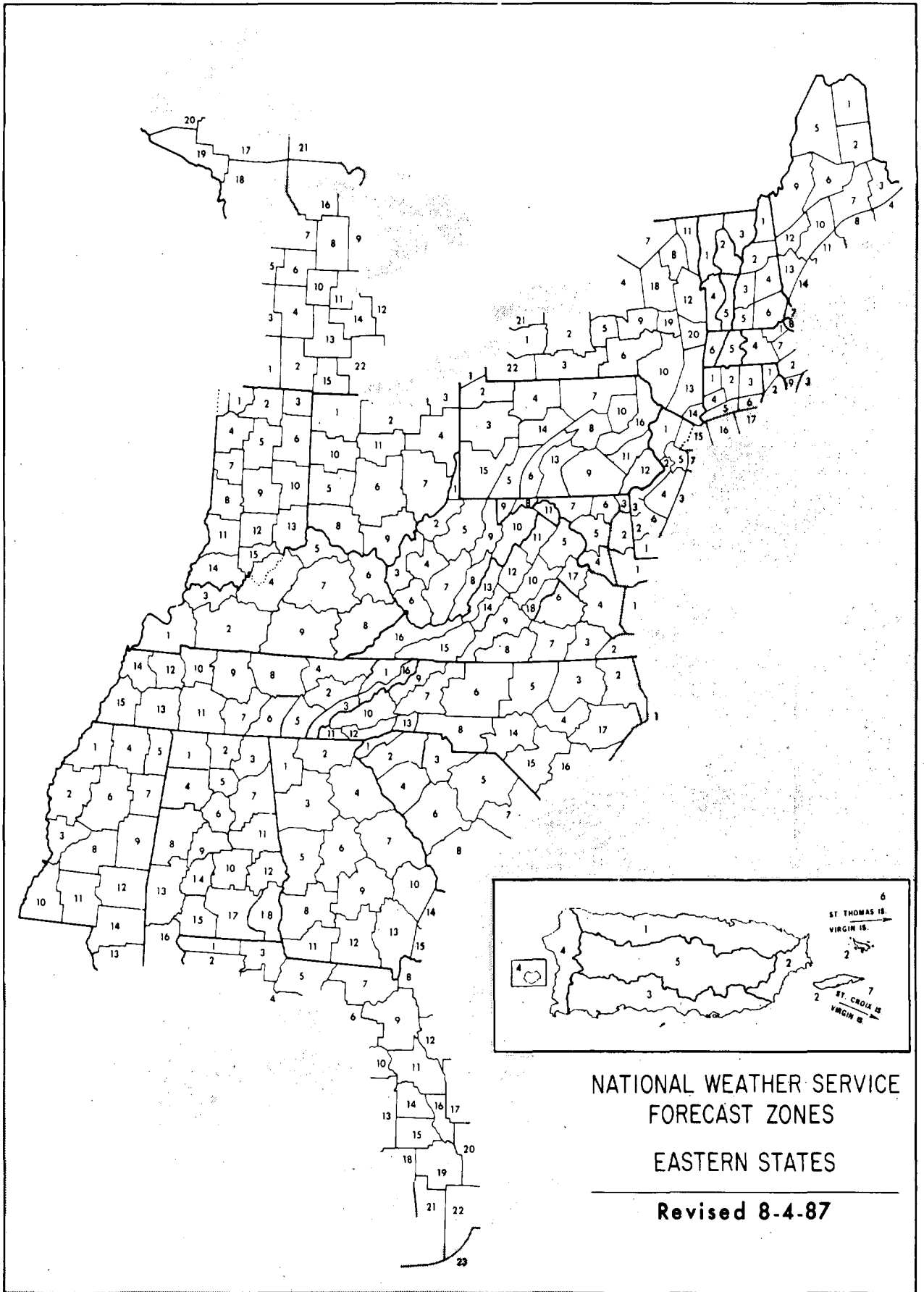
USCOMM-NOAA-ASHEVILLE, N.C. 1990-1800





NATIONAL WEATHER SERVICE
FORECAST ZONES
CENTRAL STATES

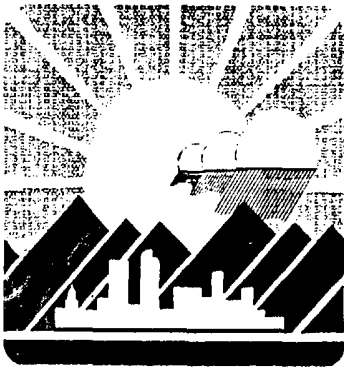
Revised 8-4-87





CALL FOR PAPERS

Association of State
Floodplain Managers, Inc.
15th Annual Conference
June 10-14, 1991
Denver, Colorado



INSPIRATION: *Come to the Headwaters*

The Association of State Floodplain Managers (ASFPM) invites all persons interested in presenting papers at the 15th annual conference in Denver, Colorado to submit abstracts for consideration. As the major floodplain management conference in the country, this yearly event attracts a broad audience including local, state, and federal officials, consultants, engineers, planners, representatives from non-profit organizations, researchers, educators, and involved citizens--all of whom have an interest or role in flood hazard reduction activities.

Conference Theme

This year's conference theme, *"INSPIRATION: Come to the Headwaters,"* focuses on developing the sound, clear, practical, and creative ideas necessary to meet the challenges of the 1990's.

The Platte, Arkansas, Rio Grande and the Colorado Rivers have their headwaters in Colorado. The Platte and the Arkansas are tributaries of the Mississippi River. The Mississippi, Rio Grande and Colorado River Basins are shared by 36 states and two foreign countries. At least once in each floodplain manager's career, he or she should journey to the highest point in the basin for inspiration at the source.

We're planning a conference in Denver that will precipitate a watershed of bold new approaches. Papers are invited for, but not limited to, the following issues and subjects:

- * Integration of Floodplain Management (FPM) with Water Resources Management
- * Watershed Approaches to FPM
- * Building FPM Capability
- * Multi-Objective FPM
- * Coastal Flooding Issues
- * Urban Stormwater Management
- * Flood Hazard Mitigation
- * Floodplain Mapping & Engineering
- * Floodplain Regulations
- * Assistance to Small Communities
- * Flood Control Projects
- * Flood Proofing
- * The Role of Disaster Assistance
- * Flood Warning Systems
- * Flood Insurance
- * Loss Indemnification
- * Public Awareness of Hazards
- * Quantifiable Measurement of Success or Failure
- * Flood Hazard Research
- * Floodplains and the Environment
- * Arid Regions Flood Issues
- * 15th Anniversary of the Big Thompson Flood



Submission of Abstracts

Prospective authors must submit three copies of the following items to Eve Gruntfest, Program Chair, by November 16, 1990:

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

Authors will receive timely notification of the status of their papers. All papers selected must be submitted by May 15, 1991 for inclusion in the conference proceedings. All attendees, including authors, are expected to pay the conference registration fee.

About the Conference

The conference program will run from Tuesday, June 11th through Thursday, June 13, 1991. A number of technical field trips and spouse tours in the Colorado Front Range and mountains are being planned. The ASFPM will conduct its committee and general membership meetings on Monday, June 10th. All members and conference participants are invited to attend.

Registration prior to May 1, 1991 will be \$190 for members and \$205 for non-members. Colorado local government officials and students will receive a discount.

The conference will be held at the Hyatt Regency Hotel in downtown Denver. Conference room rates are \$75 for single or double occupancy.

Hemispheric Travel, Inc. of Madison, Wisconsin is the official conference travel agency. They offer substantial savings and convenience. Call them at 1-800-356-9368.

About Denver

Denver is centrally located in the continental United States with direct flights between 109 cities. Stapleton Airport is the fifth busiest airport in the country with more than 1,100 flights daily. It's only a fifteen minute ride from the airport to the hotel.

In June, the sun shines about 70 percent of the time, and the average temperature is between 53 and 81 degrees F. Denver offers many local activities, and it is a gateway to numerous attractions in the Rocky Mountain region.

Exhibit Space


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


Deadlines


November 16, 1990 Abstracts Due


May 15, 1991 Papers Due

Conference Hosts

 Colorado Water Conservation Board

 Urban Drainage and Flood Control District

 University of Colorado at Colorado Springs

 Colorado Association of Stormwater and Floodplain Managers

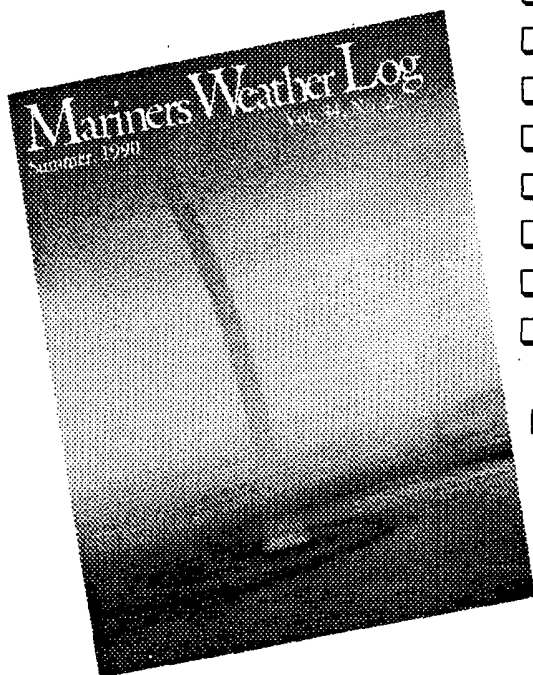
Conference Director - Bill Stanton
Colorado Water Conservation Board
721 Centennial Building
1313 Sherman Street
Denver, CO 80203
(303) 866-3441

Program Chair - Eve Gruntfest
Department of Geography
University of Colorado at Colorado Springs
P.O. Box 7150
Colorado Springs, CO 80933
(719) 593-3513

Exhibits Chair - Dan Accurti
Pennsylvania Department of Community Affairs
551 Forum Building
Harrisburg, PA 17129
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