

# STORM DATA



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## C O N T E N T S

Cover: Devastation at the Jones Valley School in Huntsville, Alabama after an F4 tornado plowed through the southern portion of the city on the afternoon of November 15th. The tornado killed 21 people and injured 463 along its 18.5 mile path, but most of the deaths, injuries, and damage occurred along only a one mile segment through a congested business area along Airport Road. At the school, which lost all of its second floor, classes had already let out for the day when the tornado struck, so there were only 12 adults and 37 children in the building, all of whom survived by taking refuge on the lower level. (See TORNADO at HUNTSVILLE, ALABAMA.....pages 6 through 17) ---Photo by Duane J. Stiegler, Wind Research Laboratory, University of Chicago, Chicago, IL.

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### STORM DATA (ISSN 0039-1972)

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

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

#### Publication Staff

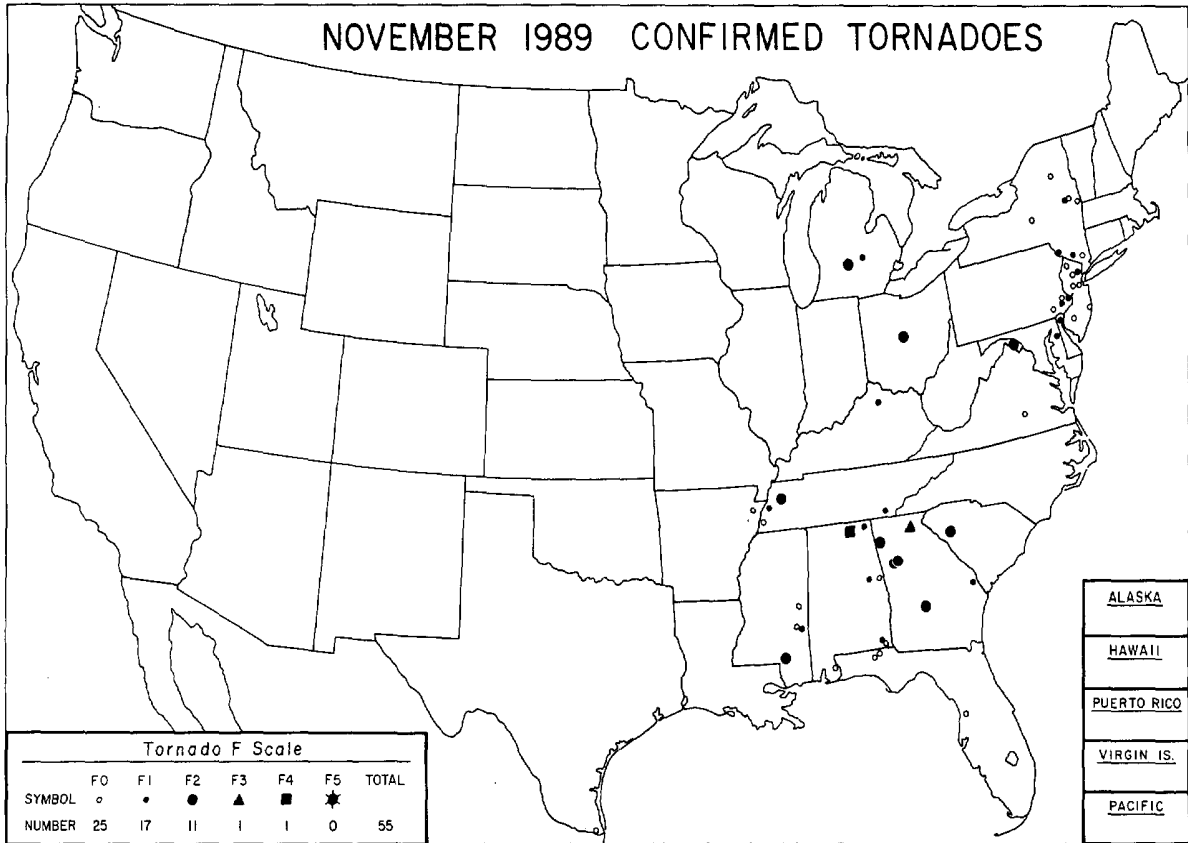
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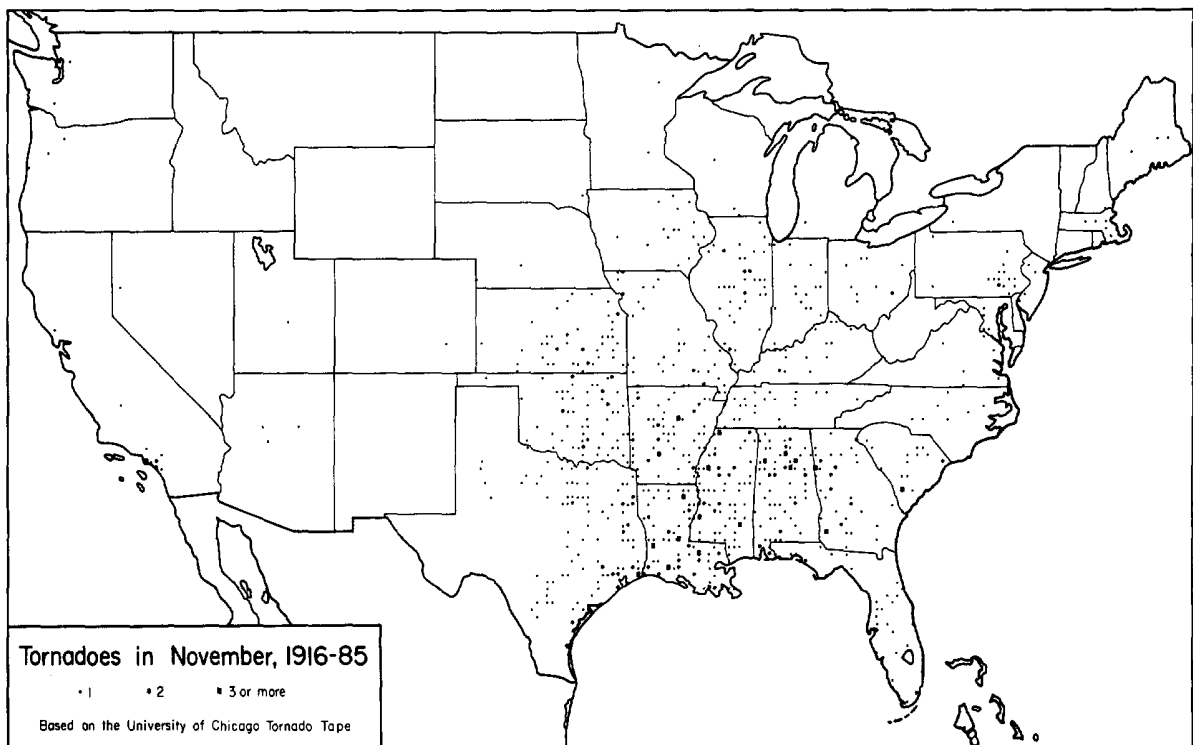
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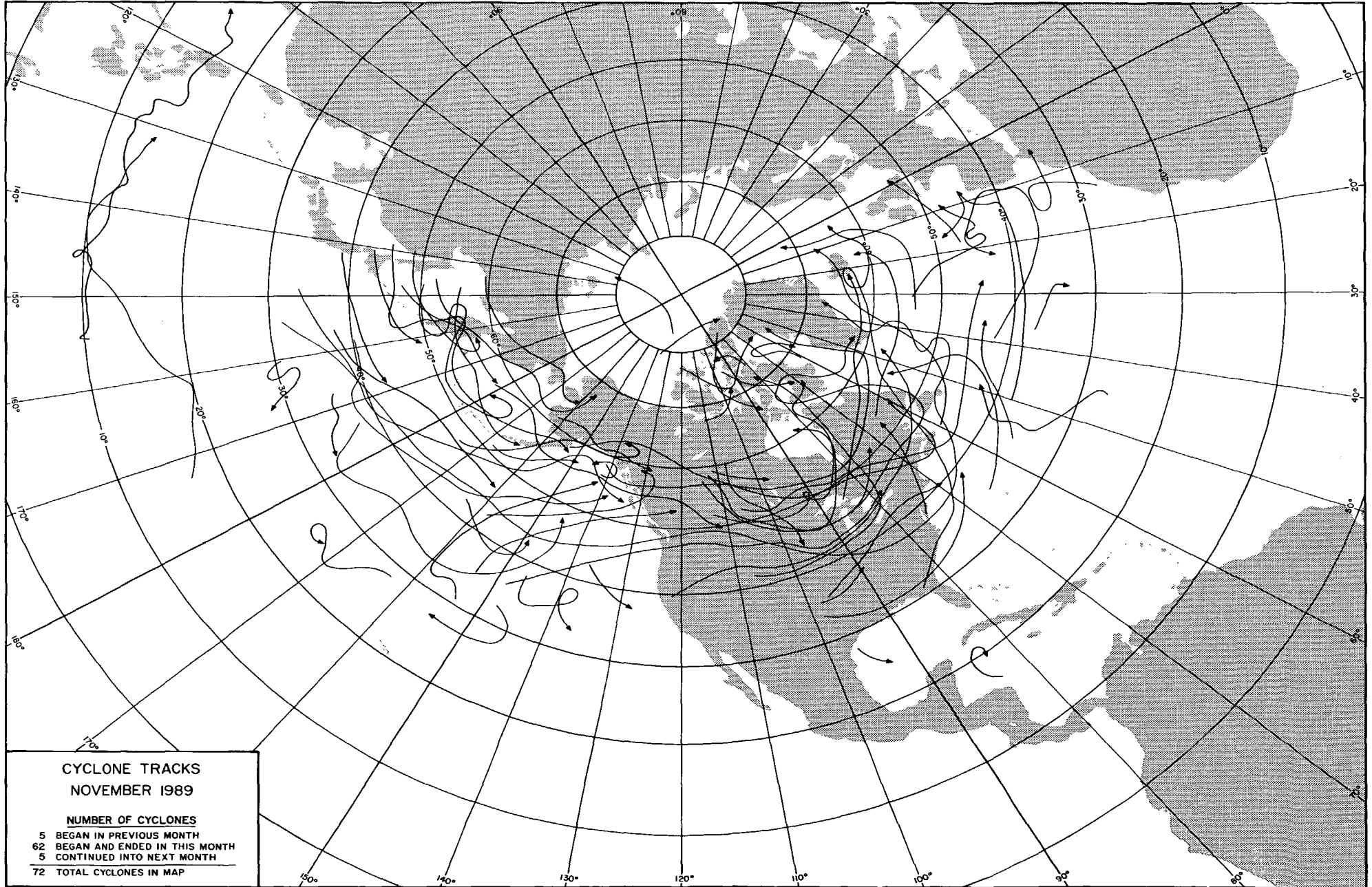
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# OUTSTANDING STORMS OF THE MONTH



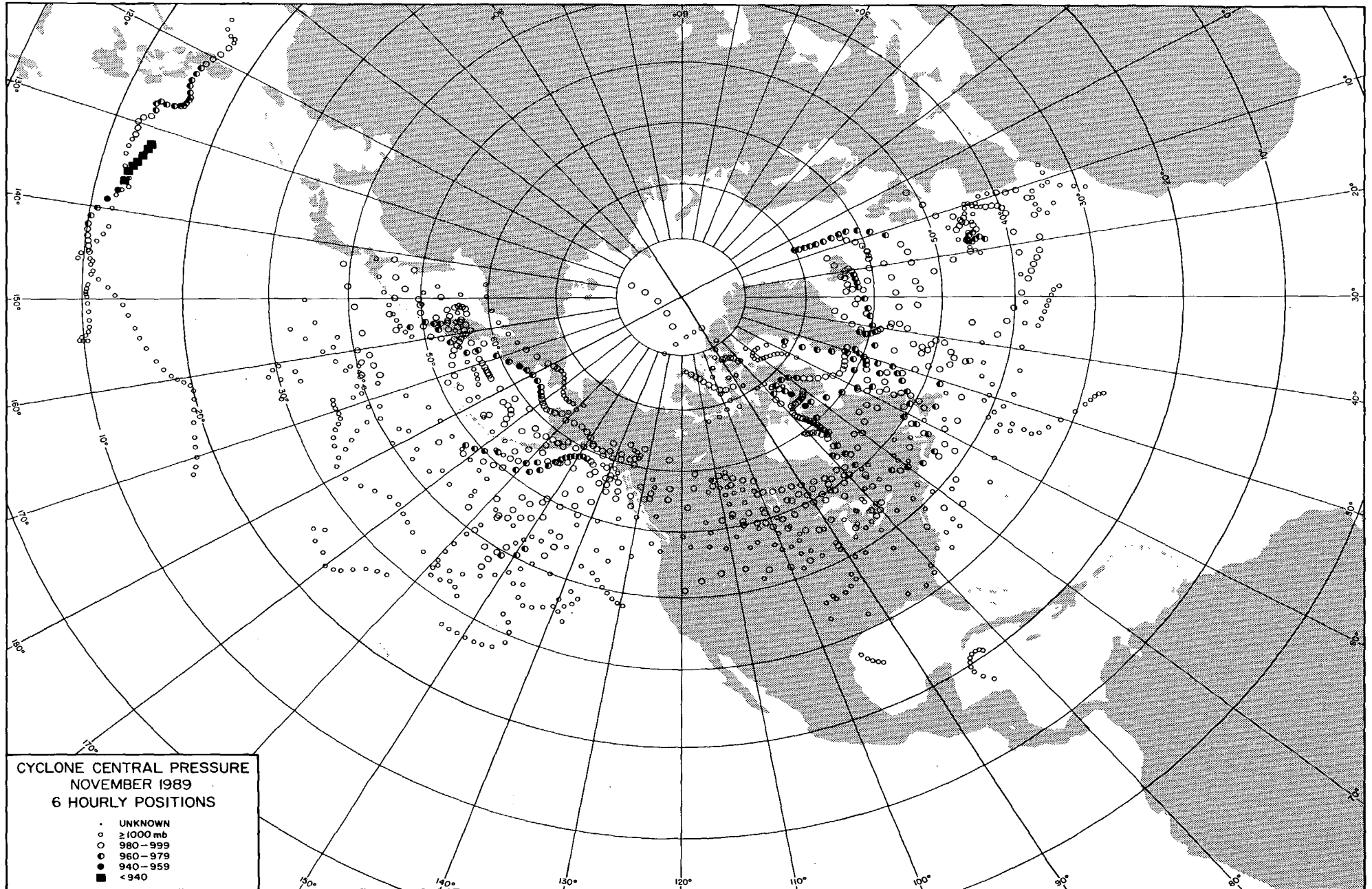
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Mapped at the University of Chicago from NMC, cyclone track data

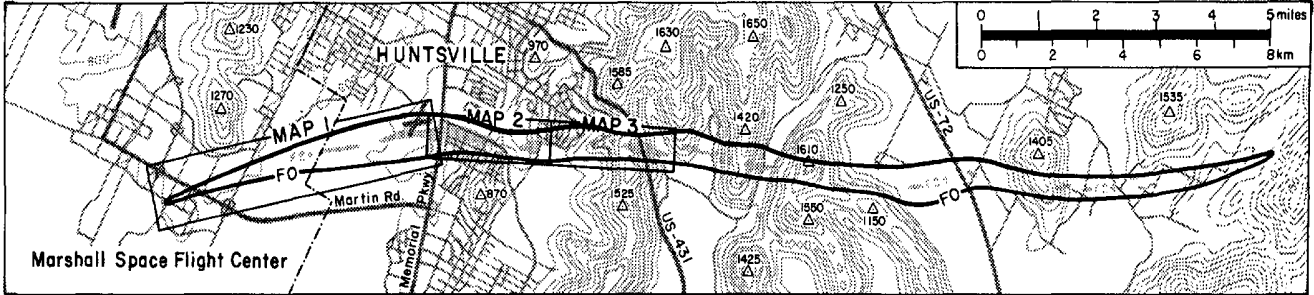




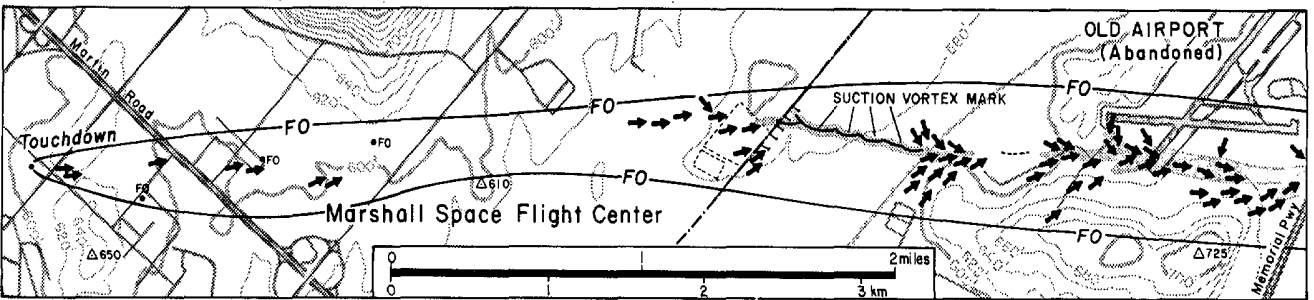
# 1. TORNADO at HUNTSVILLE, ALABAMA on November 15, 1989

As a line of severe thunderstorms moved eastward from the Central to Eastern U.S. during the afternoon of November 15th, a powerful tornado touched down southwest of Huntsville, Alabama at 1630CST and plowed through a busy business and residential area in the southern part of the city. The tornado caused 21 fatalities (18 immediately, 3 died later) and 463 injuries, and inflicted damage rated at up to F4 in intensity and estimated at \$100 million in value. It was only one of 39 tornadoes to touch down in the Southeast and Eastern U.S. on November 15th and 16th, but it was by far the deadliest and most devastating.

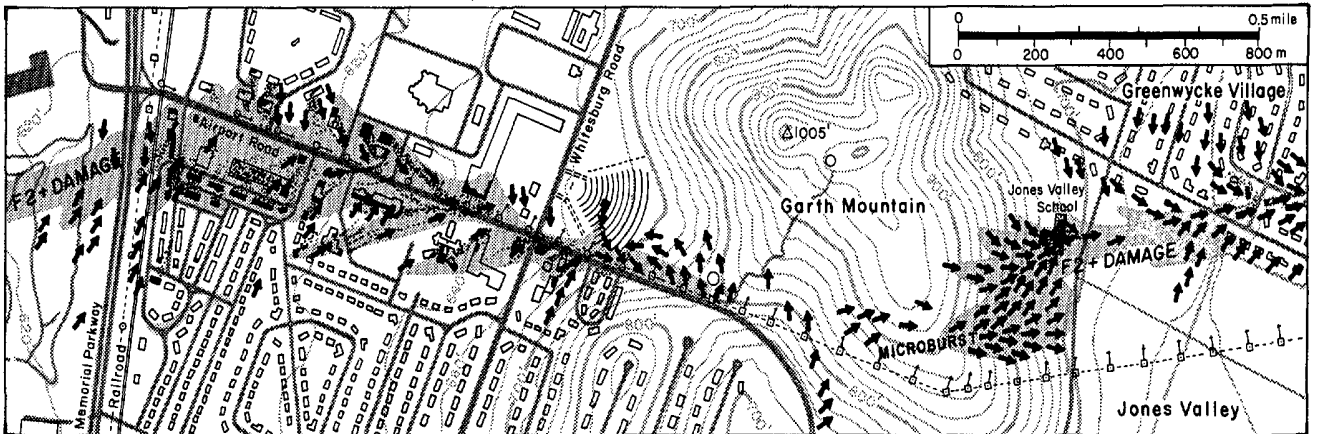
The tornado touched down in the Redstone Arsenal - Marshall Space Flight Center south-southwest of downtown Huntsville and moved generally east-northeast. Damage was mostly minor along the first 5 miles of its 18.5 mile



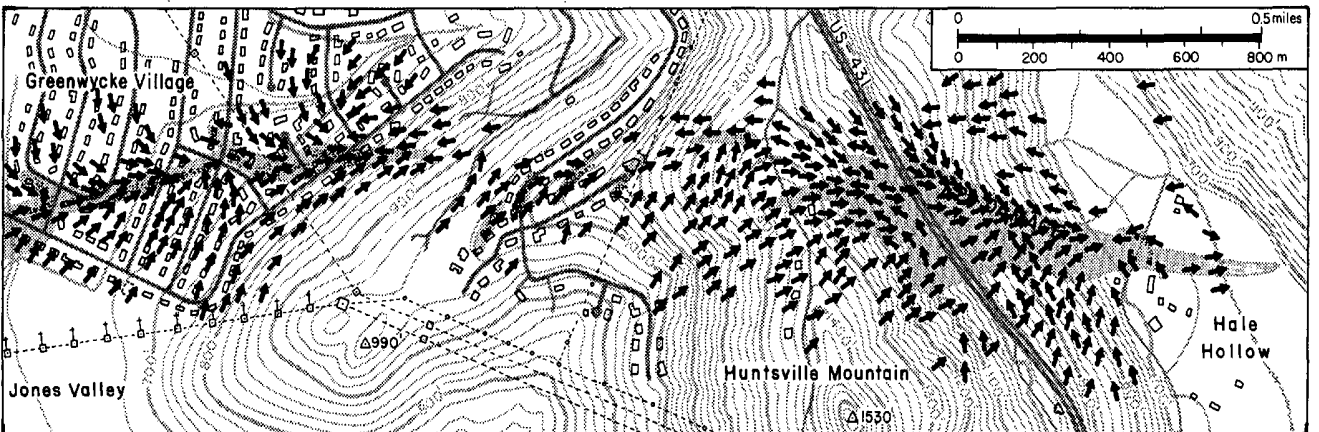
Path of the Huntsville tornado of November 15, 1989, with areas of enlargement maps below, indicated.



Enlargement Map 1: The first five miles of the path, including the arsenal and old airport areas.



Enlargement Map 2: The Airport Road and Garth Mountain areas of southern Huntsville.



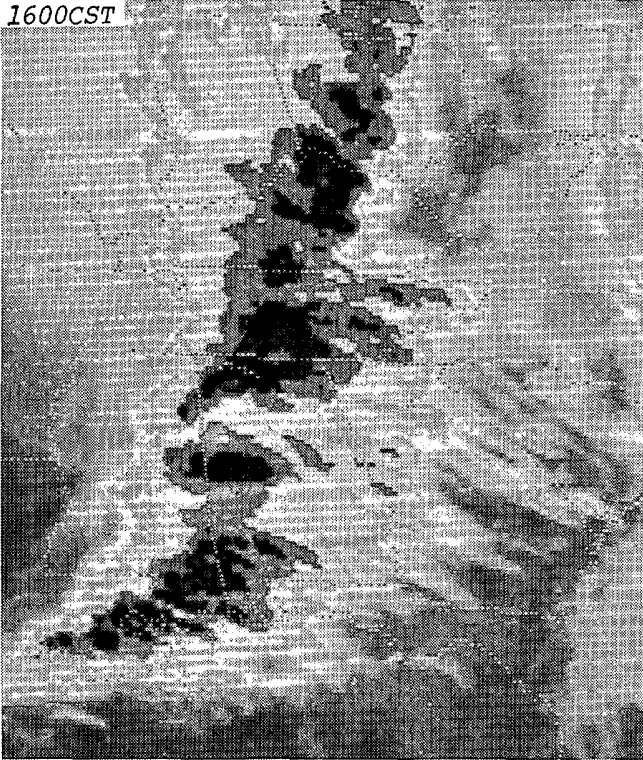
Enlargement Map 3: The Greenwycke Village and Huntsville Mountain areas of southeast Huntsville.

All of the above maps are orientated along the tornado's path and not to true north. Arrows indicate the direction of tree falls. ---Mapping by T. Theodore Fujita and Duane J. Stiegler, Wind Research Laboratory, The University of Chicago; based on aerial and ground surveys conducted by Stiegler on November 16-18, 1989.

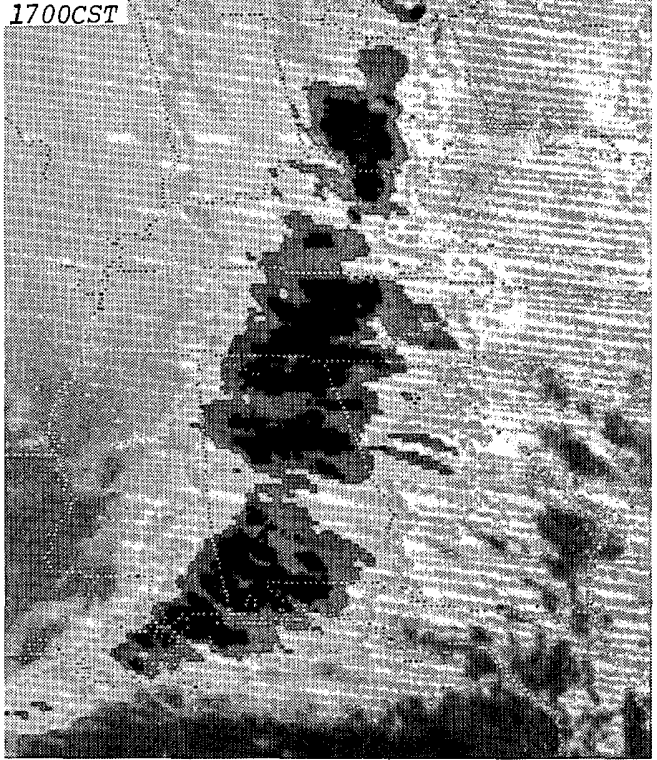
long path, reaching F2 in intensity only along small portions of the path area. Then, from Memorial Parkway (U.S. Highway 231) eastward, the damage increased and intensified significantly, occasionally reaching F4 in intensity through the next mile as the tornado temporarily moved due east up Airport Road. This is where most of the deaths, injuries and damage occurred, as the tornado destroyed shopping centers, office buildings, apartment complexes, churches and a school, and tossed hundreds of cars around like toys. Eighteen of the 21 deaths occurred along this stretch of Airport Road, between U.S. 231 and Whitesburg Road.

Beyond the Airport Road area, the tornado crossed Garth Mountain and destroyed the Jones Valley School at the eastern foot of the mountain. It then damaged or destroyed several hundred homes in the Greenwycke Village and Huntsville Mountain areas. Also, a 2.5 mile long stretch of high-tension towers from Memorial Parkway to the foot of Huntsville Mountain was pulled down by the tornado. After crossing Huntsville Mountain and U.S. Highway 431 southeast of Huntsville, the tornado never again exceeded F2 in intensity and only occasionally caused structural damage. It ended at a small lake at the headwaters of the Killingsworth Cove Branch which feeds into the Flint River.

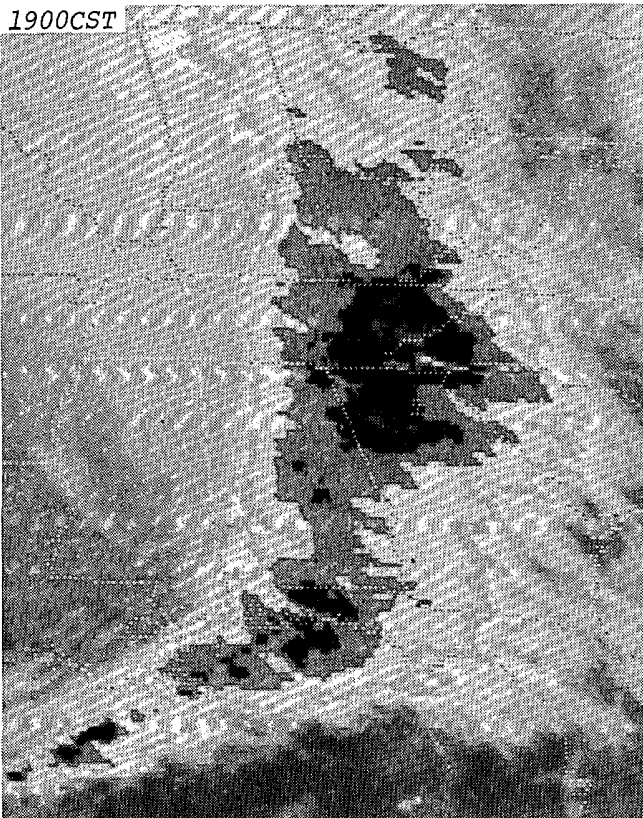
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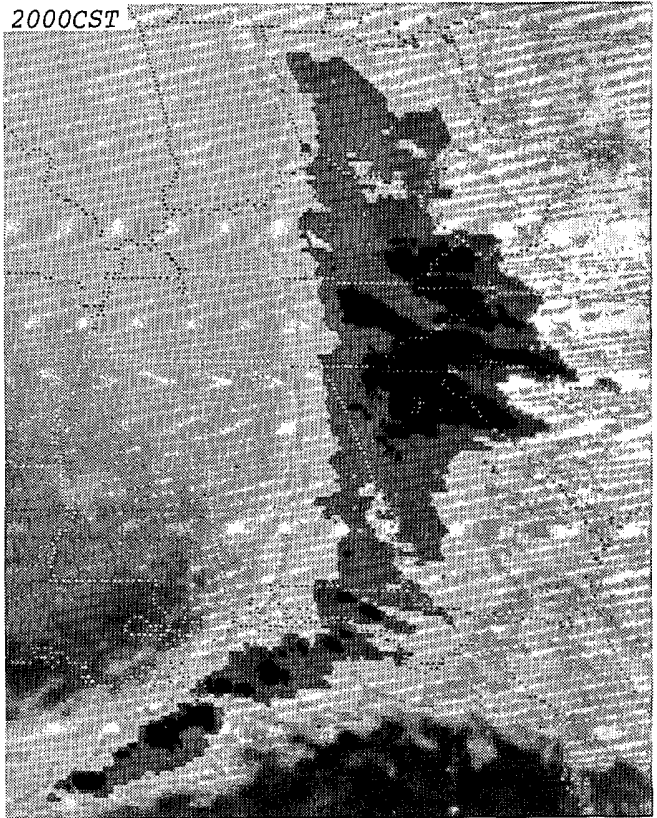
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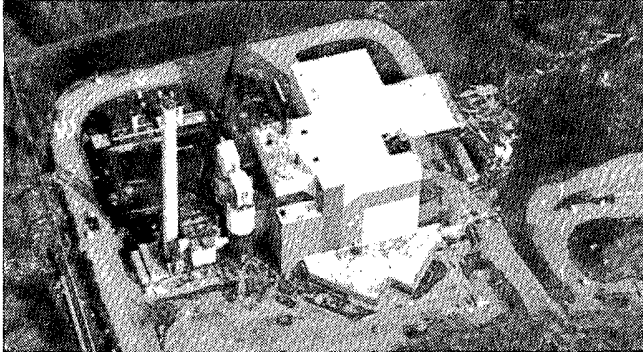
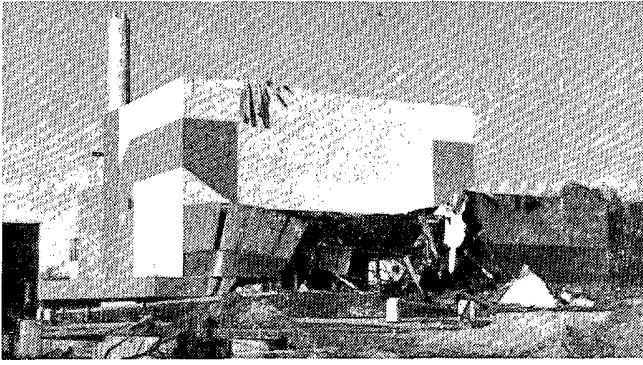
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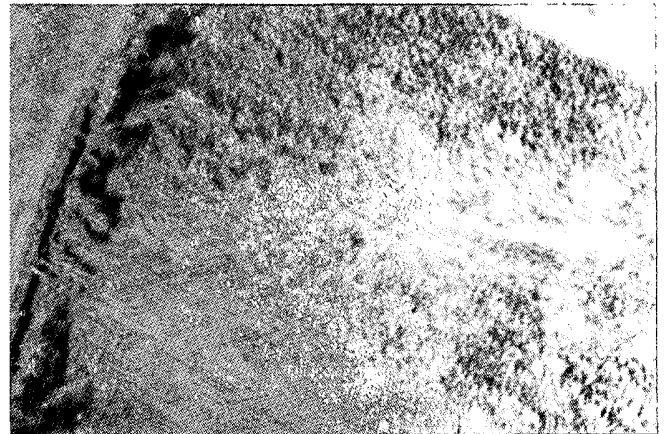
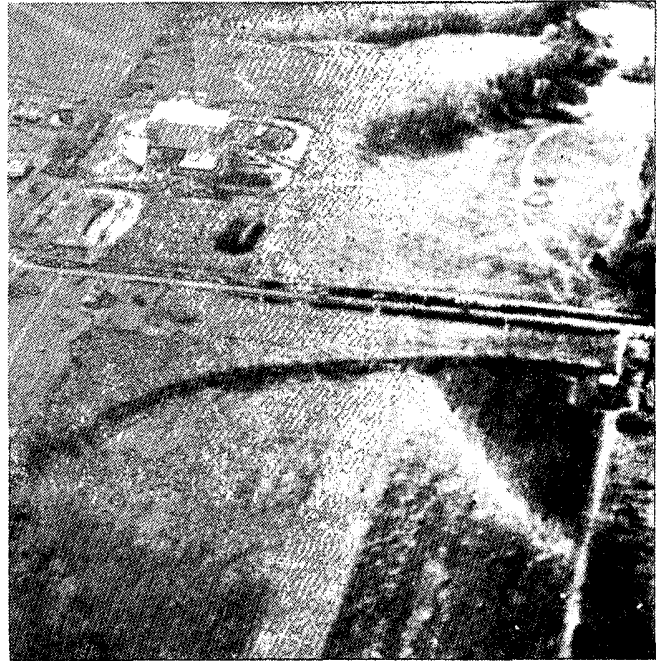
The line of storms associated with the tornado outbreak of November 15-16, 1989 is depicted in GOES 7 satellite, infrared images taken during the late afternoon and early evening of the 15th when tornado activity was most prevalent in the Southeast U.S. The Huntsville tornado started at 1630CST, between the times of the first and second photos above. ---Photos from NESDIS, Washington, DC.



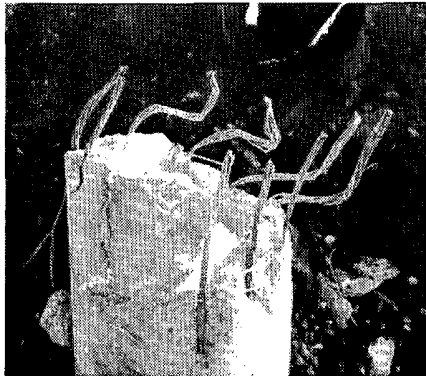
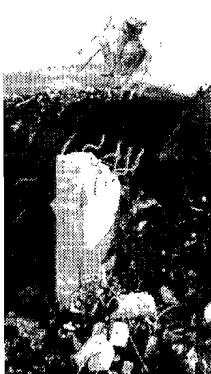
The Huntsville tornado was the only F4 tornado to occur during the two-day outbreak; there was also one F3 tornado in Georgia; and 7 F2, 14 F1, and 16 F0 tornadoes were scattered among several states. An NWS investigation attributed the deaths of 9 children at the Coldenham School in Orange County, New York to an F1 tornado that struck that county on the 16th, making it the only other death-causing tornado of the outbreak. However, two independent investigations including one by the University of Chicago attributed the deaths and damage at the school to microburst winds adjacent to the tornado as it was dissipating.



Ground-level and aerial views of the new garbage-burning steam plant along the eastern border of the Redstone Arsenal that was still under construction when hit by the tornado. Even though the tornado scored a direct hit on the plant, it was still in a formative stage and produced only borderline F1-F2 damage.



Aerial views above reveal a herringbone pattern composed of flattened crops in the field just east of the steam plant, marking a convergence line along the path of the tornado's maximum wind. A close-up, ground-level view of the flattened crops along the convergence line is seen below.

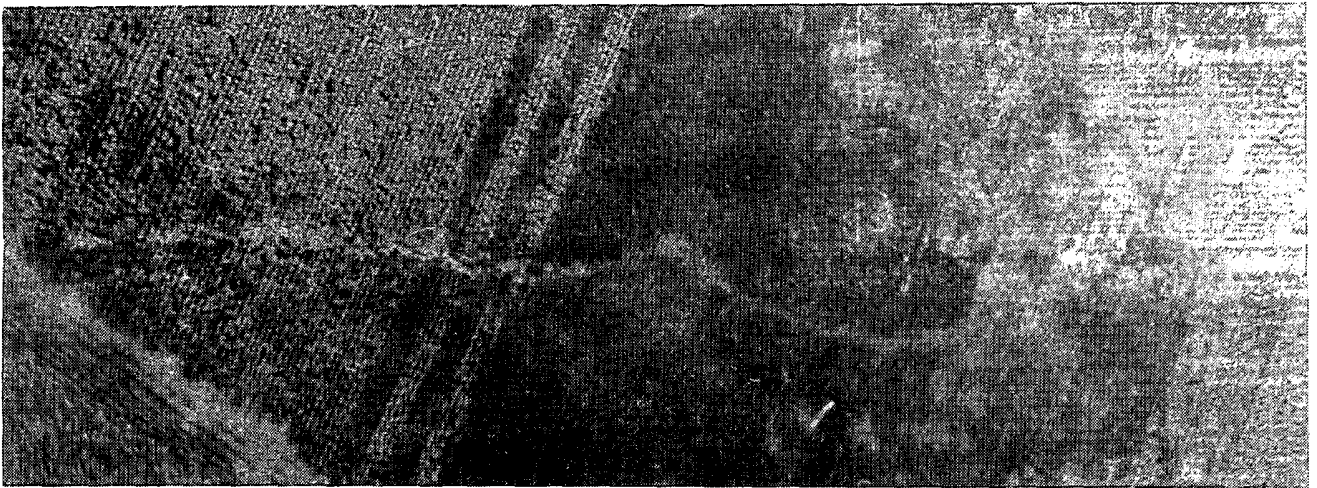


New, concrete power poles with steel cable reinforcement that were snapped like toothpicks along the road just east of the steam plant.

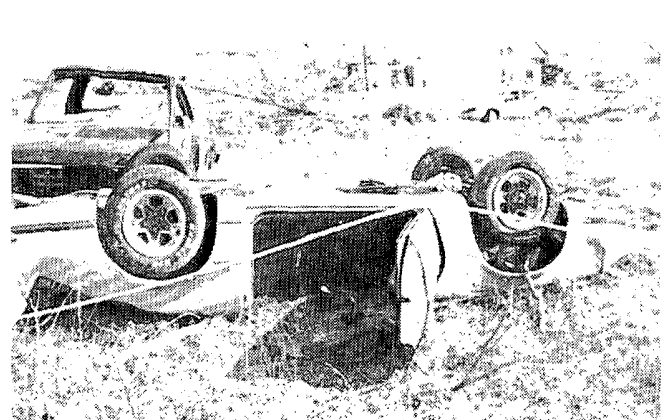


A field viewed toward the east-northeast along the center of the tornado's path from just east of the steam plant, shows crops that were raked down by the tornado's winds and cyclone fencing that was ripped away from the steam plant site.





An overhead view of suction vortex marks in a cotton field between the steam plant and the old Huntsville Airport.



Four of the many vehicles that were picked up from Memorial Parkway (U.S. Highway 231) and bounced about by the tornado. The tornado struck at the beginning of rush hour, and many people were caught in vehicles in the course of their normal driving routine as opposed to seeking the auto as a means to flee the oncoming tornado. Twelve of the 21 deaths caused by the tornado, approximately 57%, occurred to occupants of vehicles. The "OK" painted on the side of the vehicles (lower left) is part of Huntsville's efficient emergency plan, and indicates to emergency personnel arriving on the scene of such a disaster that the vehicle had already been checked for and cleared of occupants.



This apartment building immediately east of Memorial Parkway and south of Airport Road, lost its entire roof and half of its second floor, and even some of its first floor walls had been demolished. The view, of the building's rear, is toward the east.





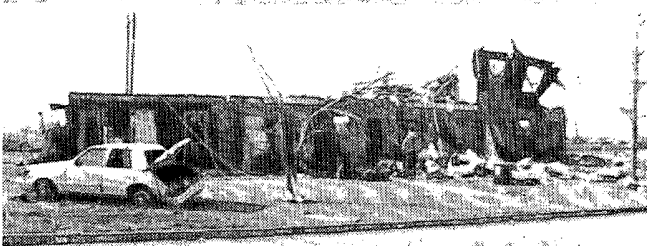
An aerial view along the Airport Road section of the tornado's path, with Memorial Parkway at bottom, and Garth Mountain and Jones Valley beyond it at top. It was in this area that the majority of deaths (18) and the worst of the damage occurred. Included in the damage and destruction pictured are 4 shopping centers, 3 churches, 2 schools, a hospital, a drive-in theater, and several small business, office, and apartment buildings.



One pole of a two-pole power line structure that was twisted off by the tornado, leaving its stub in an array of splinters.



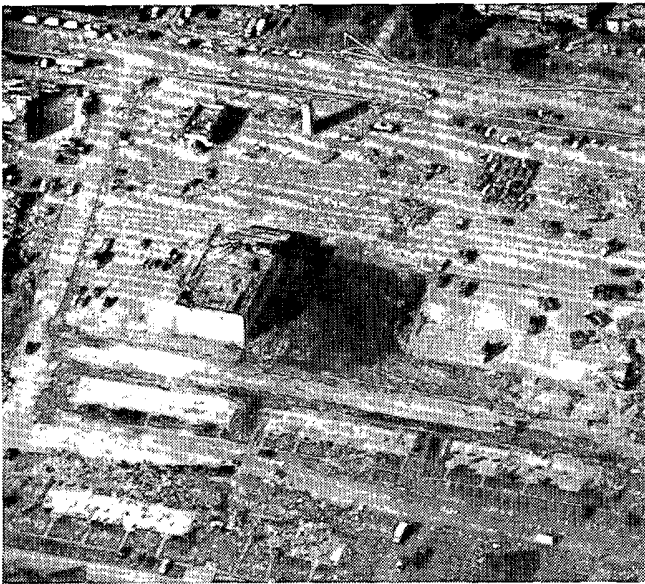
Only a small bit of the second level on this two-story apartment building was left by the tornado, the rest of the level having been scattered as debris to the structure's northeast (foreground).



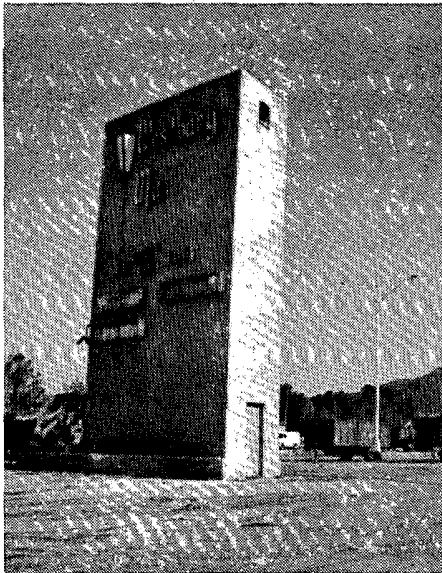
Two-story apartment buildings between Memorial Parkway and the Westbury Shopping Mall that lost their upper floors to the tornado.



Damage to other two-story apartment buildings at the southern edge of the tornado's path, about one block south of the Westbury Mall.



The Westbury Mall site in two aerial views toward the north, west half (left) and east half (right), shows empty foundations where numerous, formerly abutting stores and six separated, two-story apartment buildings to the mall's south had previously stood. Although many of the foundations had been bulldozed clean by the time these photos were taken, two days after the tornado's occurrence, all of the cleaned foundations were of structures that had been completely leveled by the tornado.



The Westbury Mall sign, a tall masonry structure north of the tornado's zone of maximum winds and which survived with only minor damage.



An overhead view of apartment building foundations immediately south of the Westbury Mall. Ground investigation of the site revealed that the two-story structures had no perceivable bolting system to their foundations, perhaps explaining in part the apparent ease with which the tornado swept these sizable structures away. Here, bulldozed (left) and unbulldozed (center) foundations can be compared.

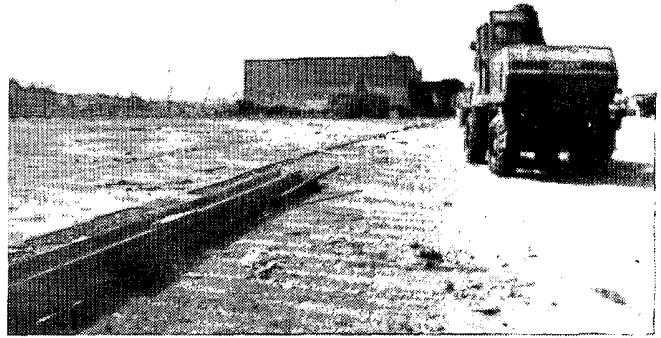


Ground-level view of one of the unbulldozed foundations where a two-story apartment building once stood.

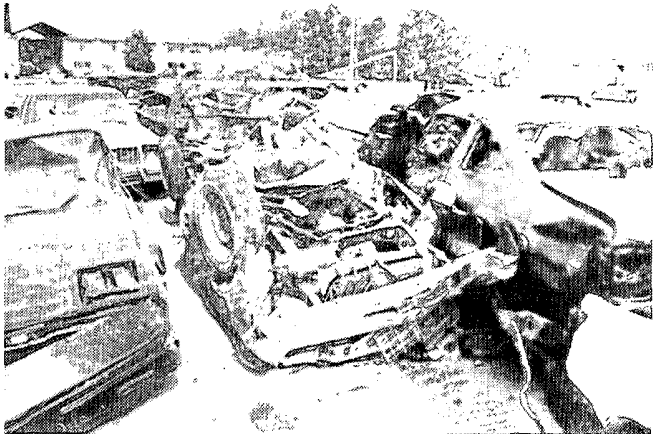
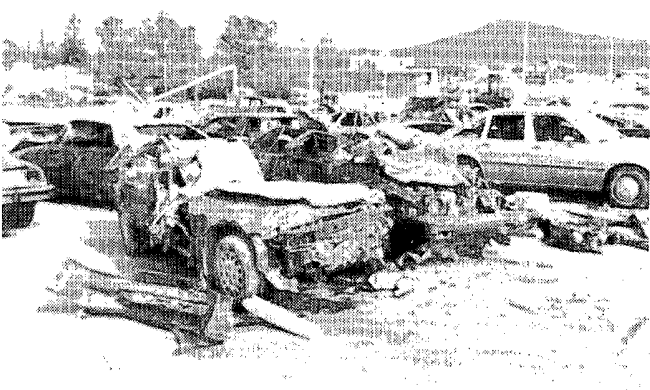
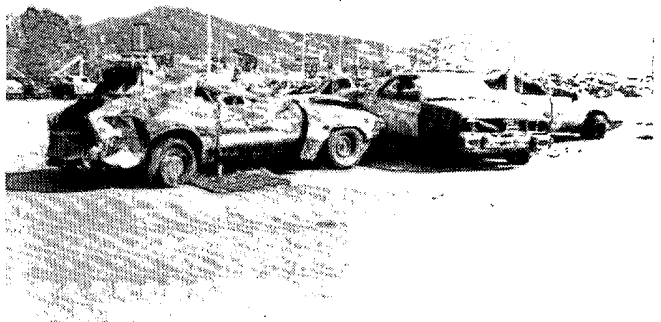
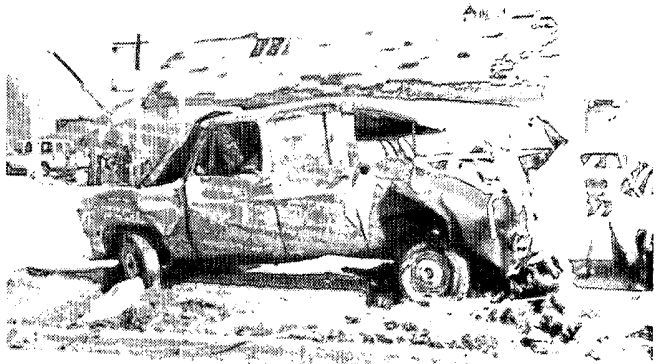
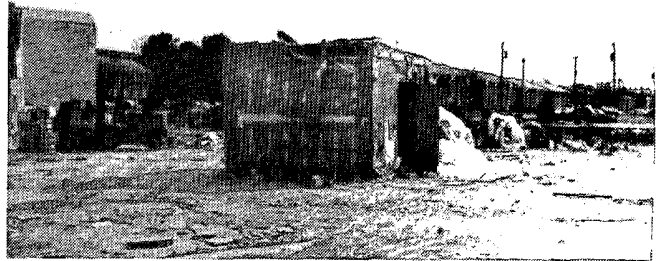


One of a pair of garbage dumpsters near the Westbury Mall sits perched atop a tree stump, one of the many strange quirks often found in a tornado's aftermath.



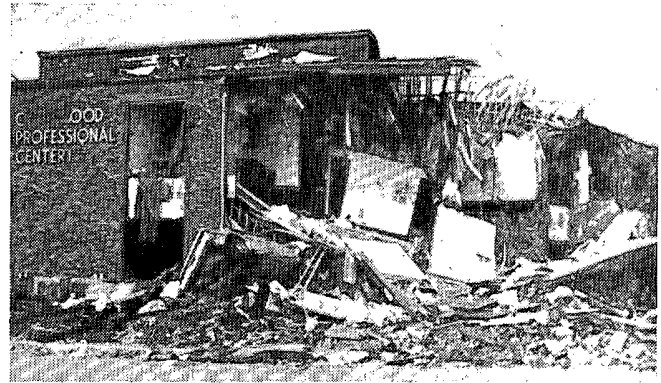


*CLOCKWISE FROM ABOVE: The front of one of the few stores in the Westbury Mall to have not been completely leveled by the tornado; empty foundations where several stores had once stood; and the walk-in safe of a leveled jewelry store in which several of the store's employees had wisely sought shelter during the tornado, as it was the only part of the store to survive intact.*



*More of the hundreds of autos destroyed by the tornado, these were all found in the vicinity of the Westbury Mall and were being gathered in the mall's huge parking area during the cleanup.*

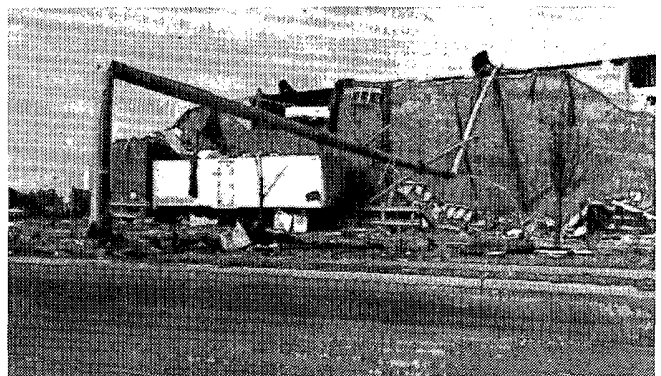
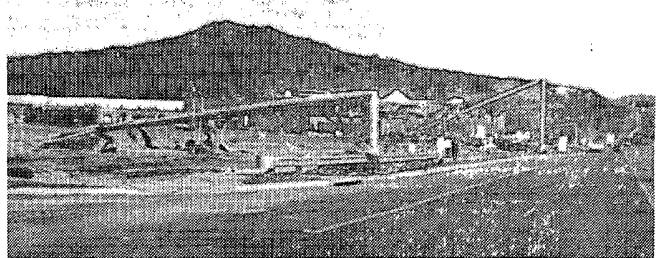




LEFT: Unroofed office buildings and nearby Crestwood Hospital (top of photo), all located on the north side of Airport Road, were structures that experienced the tornado's lesser winds at a given moment, being that they were caught in the left side of the vortex where its counterclockwise rotating winds opposed its direction of motion. The hospital received only minor damage, while its close proximity to the heavy damage area proved to be an asset in speeding the injured to the closest available medical attention. RIGHT: One of the office buildings of the Crestwood Professional Center is seen in two ground-level views from Airport Road. One vehicle had been tossed into the front of the building by the tornado.

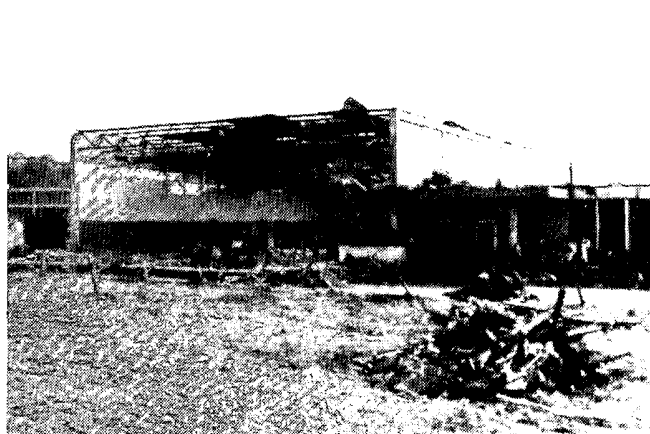
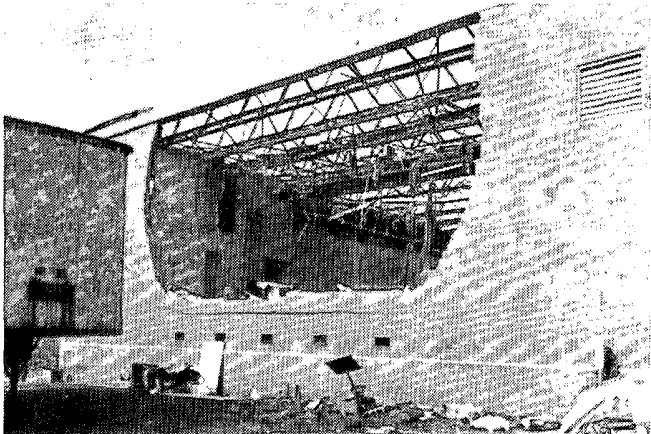
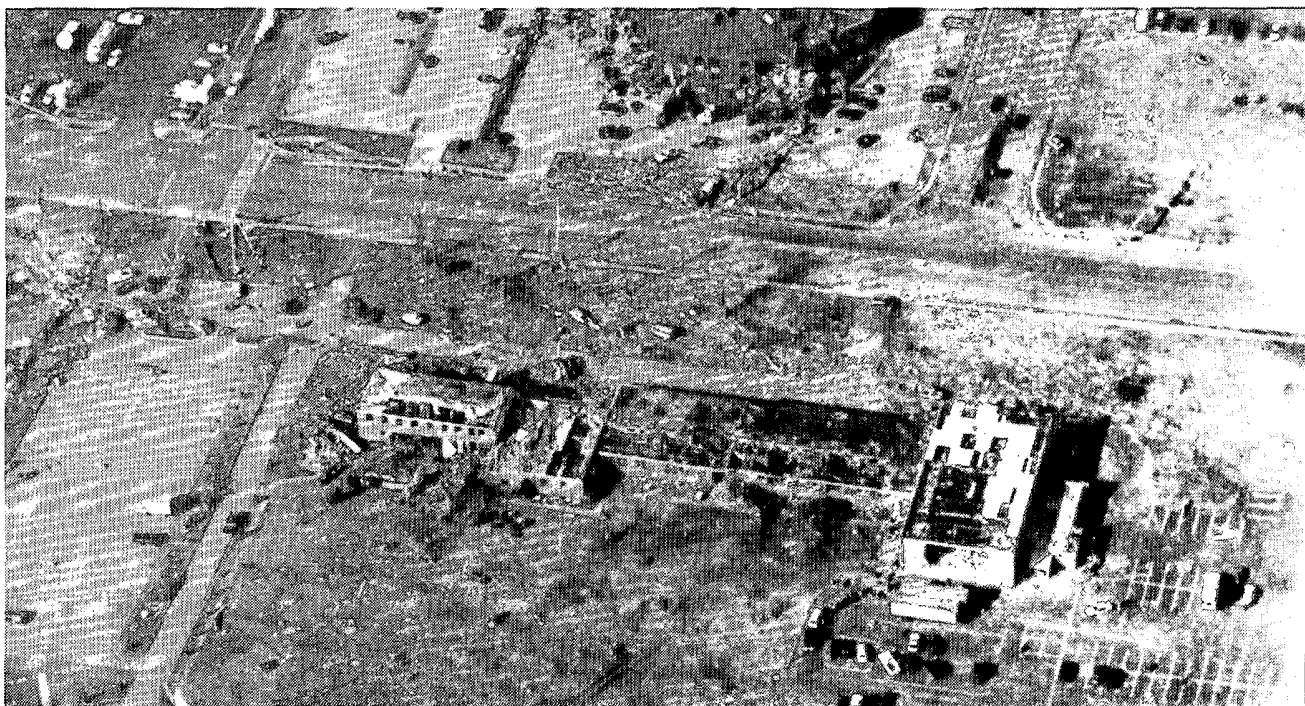


Two more mangled cars found along Airport Road.



Damage to shopping centers along Airport Road.

Toppled steel power poles along the north edge of Airport Road.



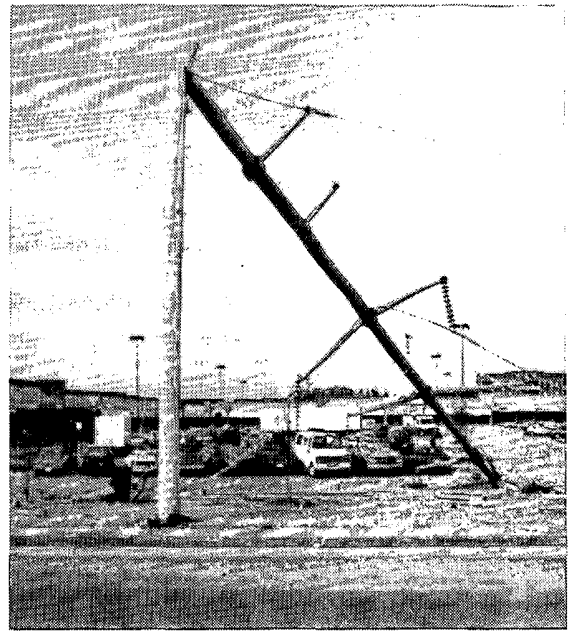
Damage to this school on the south side of Airport Road and across from the Crestwood Professional Center (top) included a hole being punched into the south-facing wall of the gymnasium (lower left) and the entire north-facing wall of the gymnasium being blown out (lower right).



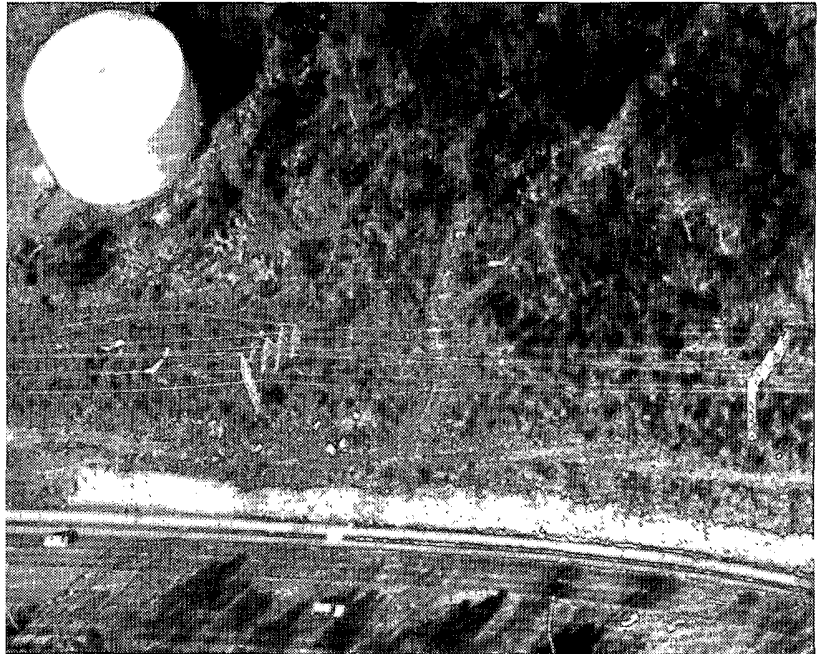
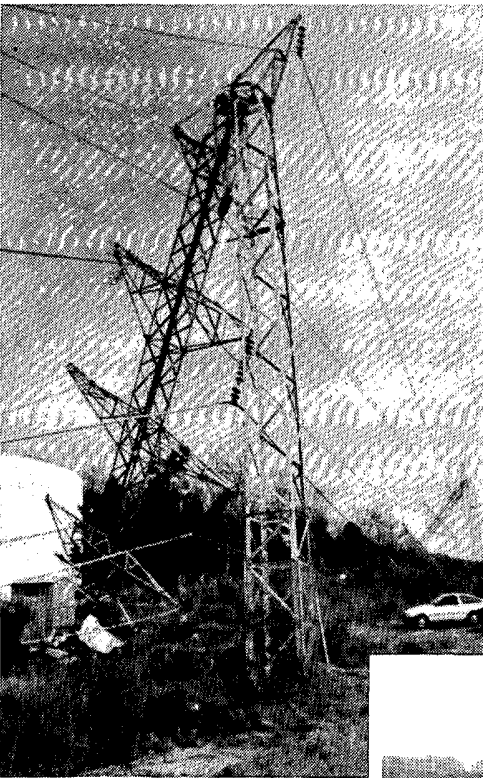
A strip-mall shopping center on the southwest corner of Airport Road and Whitesburg Road that received relatively minor damage, although the separate dry cleaning store closer to the intersection was totally demolished. RIGHT: A church/school structure adjacent to the shopping center that received mainly roof damage.



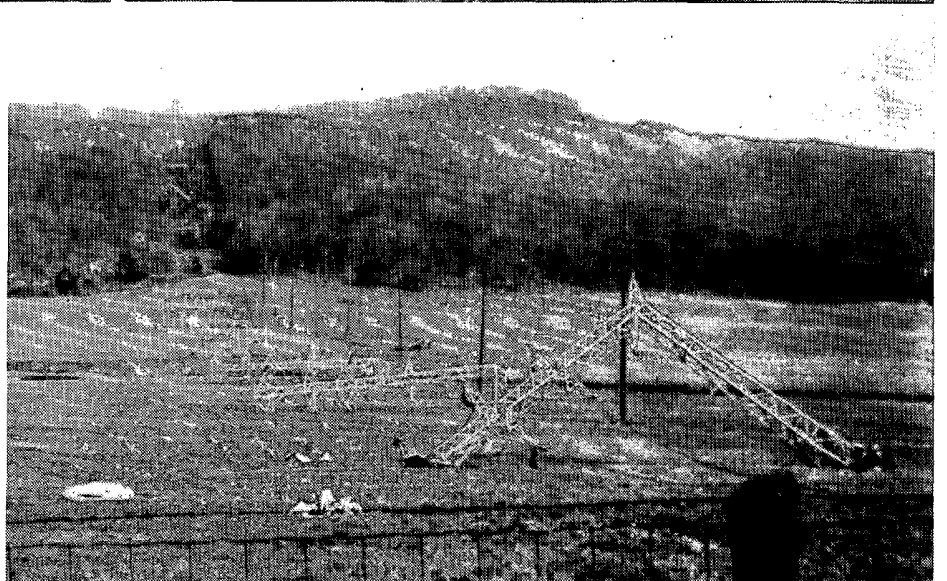




Aerial and ground-level views of toppled steel power poles along the north side of Airport Road at Whitesburg Road. In all, 42 of these and the more traditional, skeletal-type high-tension towers were toppled along a continuous, 2.5 mile long stretch from Memorial Parkway eastward to the foot of Huntsville Mountain.



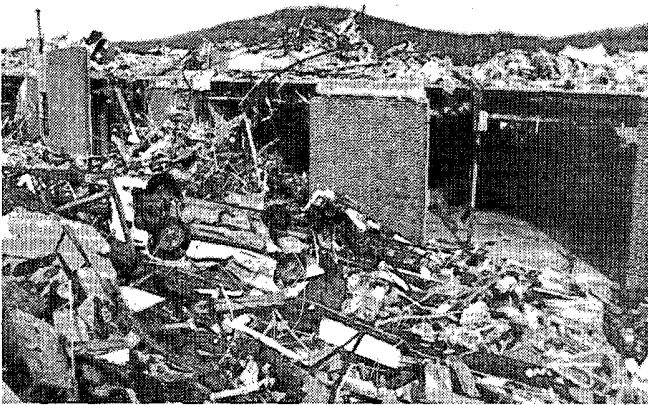
Some of the skeletal-type high-tension towers toppled by the tornado from Whitesburg Road eastward included these near the water tank on Garth Mountain (left and right above) and in Jones Valley as viewed toward Huntsville Mountain from Garth Road (right).



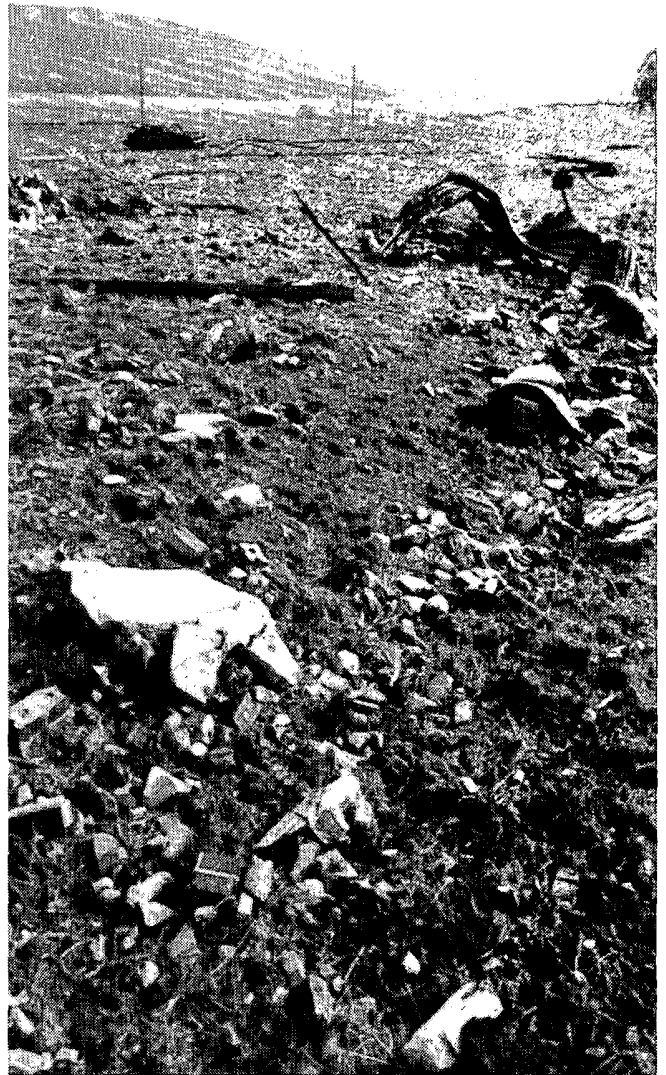
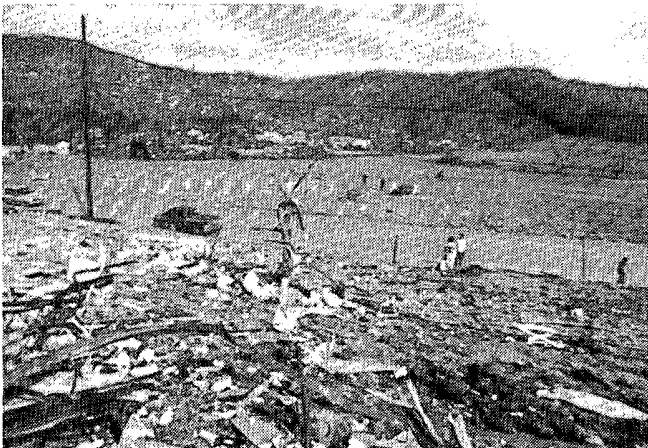


Two aerial views of the Jones Valley School along Garth Road at the eastern foot of Garth Mountain. The school suffered a direct hit as the tornado moved down the east face of the mountain, its path being easily identifiable in the spiralling pattern of snapped trees left on the side of the mountain as seen in the top photo. The school lost its entire second floor to the tornado, and large pieces of debris were strewn across Garth Road and into an open field.





Ground-level views of destruction at the Jones Valley School on this page include three vantages of the main building (above), an east-northeast view of debris from the school strewn along the tornado's path (below), and samples of the debris that was scattered in a field across Garth Road from the school (right column). Thirty-seven children, 5 teachers and 7 painters were in the school when the tornado struck, and all survived. The children were herded from the second floor to a lower-level stairwell where they huddled as the tornado struck. A woman driving to the school was killed however, when her car was picked up from Garth Road and thrown into the adjacent field.

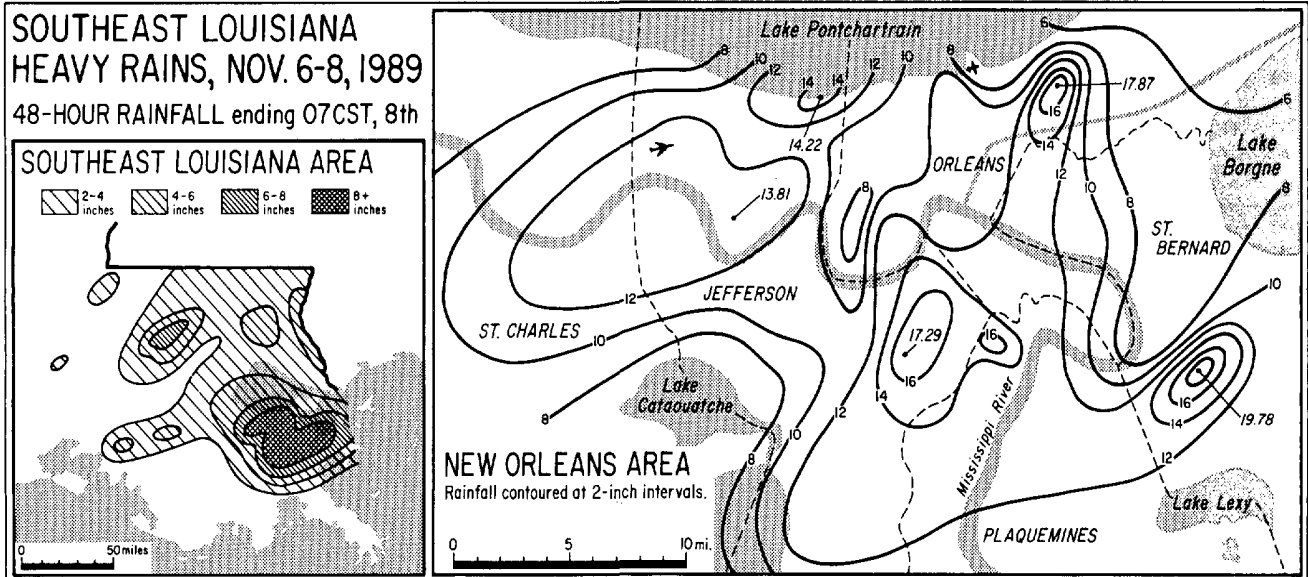


---All photos on pages 8 through 17 are by Duane J. Stiegler, Wind Research Laboratory, The University of Chicago.

## 2. HEAVY RAIN and FLASH FLOODING in SOUTHEAST LOUISIANA on November 7, 1989

Shortly after daybreak on November 7th, strong thunderstorms developed in a narrow but almost stationary, east-west band across the New Orleans area in southeast Louisiana. As a result, heavy rains persisted over the same area until mid-afternoon before tapering off, and triggered flash flooding across the five-parish area of Orleans, Jefferson, St. Charles, western St. Bernard and northern Plaquemine (see map below). Rainfall amounts across the area ranged from 8 to 12 inches for the 9-hour period of from 0900 to 1800 CST. The resulting flash flooding mainly affected streets in the New Orleans area, causing water damage to many vehicles and major traffic tie-ups; but approximately 6000 homes in the area received some type of water damage as well. An estimate of the total dollar value of the damage is not available. One death resulted from the flooding when a two year old girl drowned after being swept into a raging drainage canal.

A second area of strong thunderstorms during the afternoon of the 7th affected East Baton Rouge and Livingston parishes, also in the southeast part of the state. There, rainfall of up to 6.5 inches caused extensive street flooding in the Baton Rouge area, and water entered a few homes in Watson.



Analysis of 48-hour rainfall over southeast Louisiana and the New Orleans metropolitan area for the period ending at 0700CST on November 8, 1989. ---Graphic by the University of Chicago from mappings by Robin Radlein, NWSFO at Slidell, Louisiana (New Orleans area office).



Vehicles stalled in the flooding of November 7th, and the water itself, block the flow of traffic along Clearview Parkway at the Earhart Expressway in Metairie, Jefferson Parish. Photo by Ellis Lucia, The Times-Picayune, New Orleans, Louisiana; and provided through the NWSFO at Slidell, Louisiana.

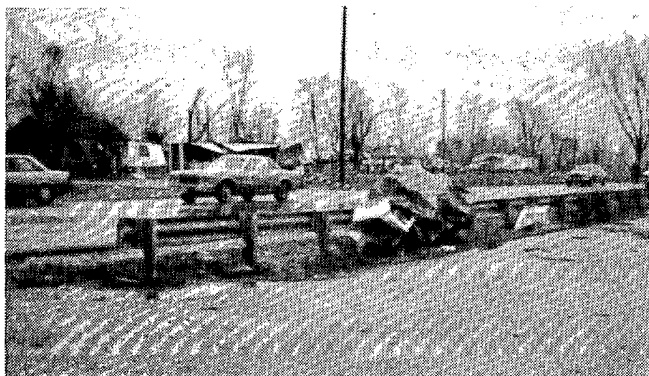
### 3. THUNDERSTORM WIND at ALORTON, ILLINOIS on November 15, 1989

At 0500CST on November 15th, a thunderstorm produced a strong downburst or series of downbursts in the East St. Louis area of southwest Illinois, creating a narrow path of damage that extended from Parks Airport in Cahokia through the village of Alorton to its northeast. The winds, estimated at 80 to 100 mph, occurred at the leading edge of the pre-dawn storm, and were clocked at 70 knots at the airport before the anemometer was blown away. At the airport, two hangars were destroyed and 40 planes badly damaged, resulting in a loss estimated at one million dollars. In Alorton, at least a dozen mobile homes were destroyed, several other mobile homes and estimated 50 permanent homes were damaged, a small church was destroyed, and dozens of trees were uprooted. Two schools had roof damage also. Debris was blown and trees uprooted in a general southwest to northeast direction throughout the area, and the winds were reportedly accompanied by hail and rain. One woman was killed during the downburst when a tree toppled over onto the house she occupied; 20 people were injured.



*Destroyed hangars at the Parks Airport in Cahokia, Illinois.*

*The rubble of a destroyed home in Alorton where the downburst winds were estimated at 100 mph.*



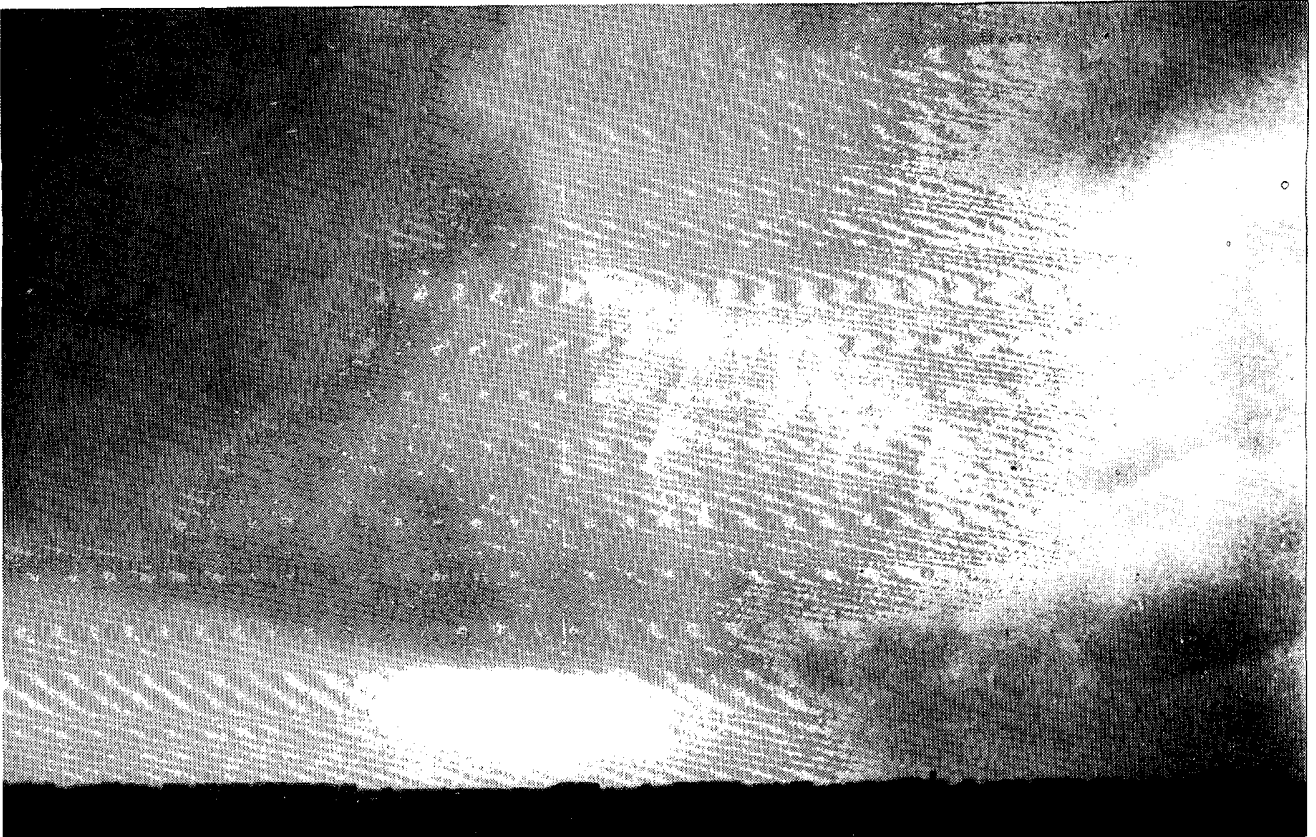
*Debris from the roof of a school on Old Missouri Road in Alorton, rests against a guardrail along the road. Some of the debris was blown across the road and into a mobile home park (background) where several of the homes also received damage. RIGHT: A cyclone fence at the school sags under the weight of its catch, a collection of windblown debris.*



---All above photos are by Guy Tucker, NWSFO at St. Charles, Missouri (St. Louis area office).

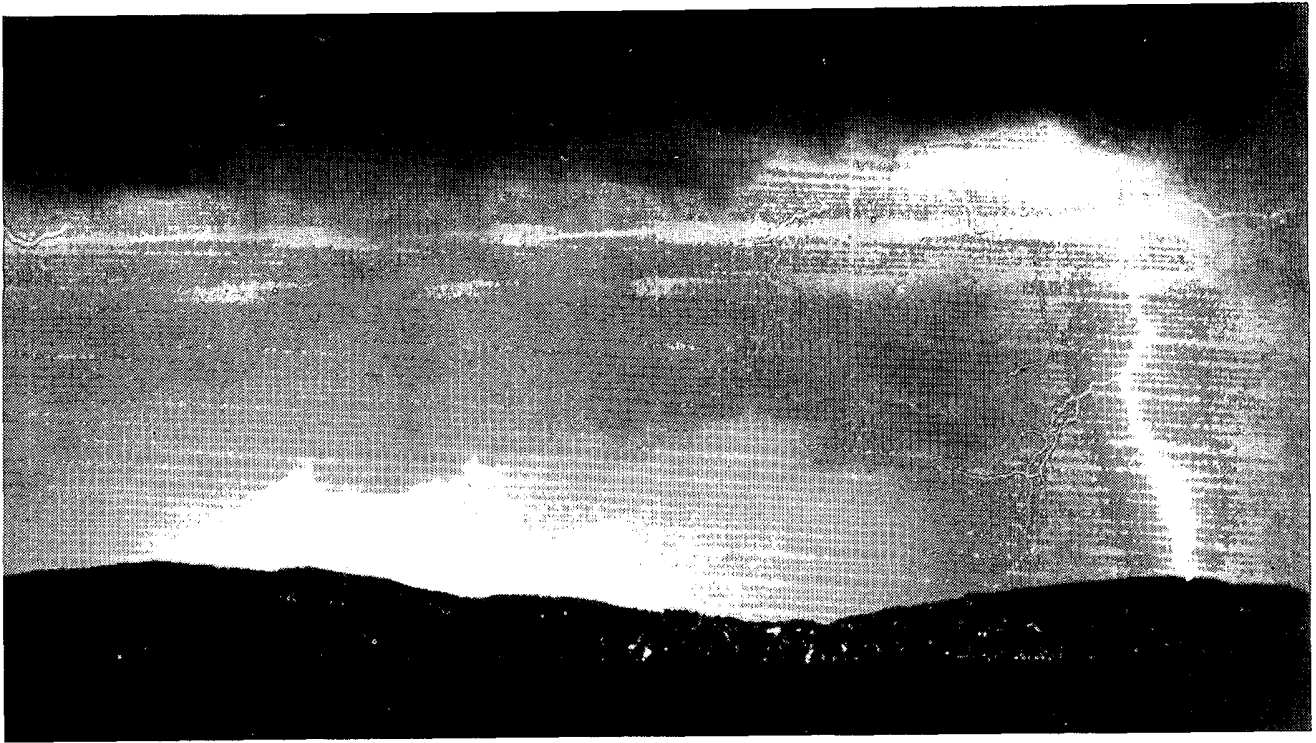


## STORM SHORTS . . .



A product of the same mid-latitude cyclone that produced the outbreak of 39 tornadoes on November 15th and 16th, this squall line was observed in New York City on the 16th as it passed across the south shore of Long Island. The impressive cloud line is seen as it passed overhead at Jones Beach (top) and as it moved away at Oak Beach (bottom). Of 22 tornadoes that occurred in the Eastern U.S. on November 16th, 8 touched down just west and northwest of New York City in northern New Jersey and extreme southeast New York State, only a short time before these photos were taken. ---Both photos by Jack "Thunderhead" Corso of Harrison, New York; copyright 1989.

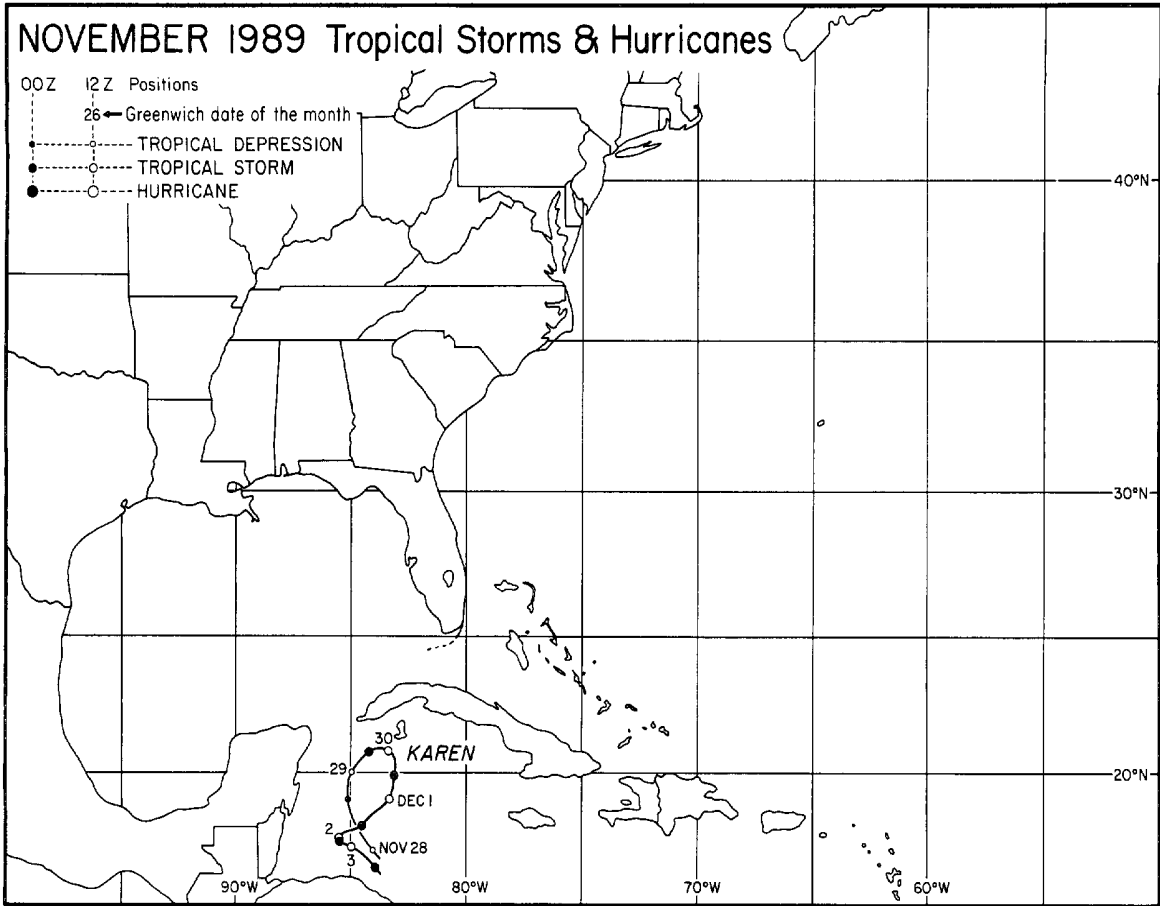




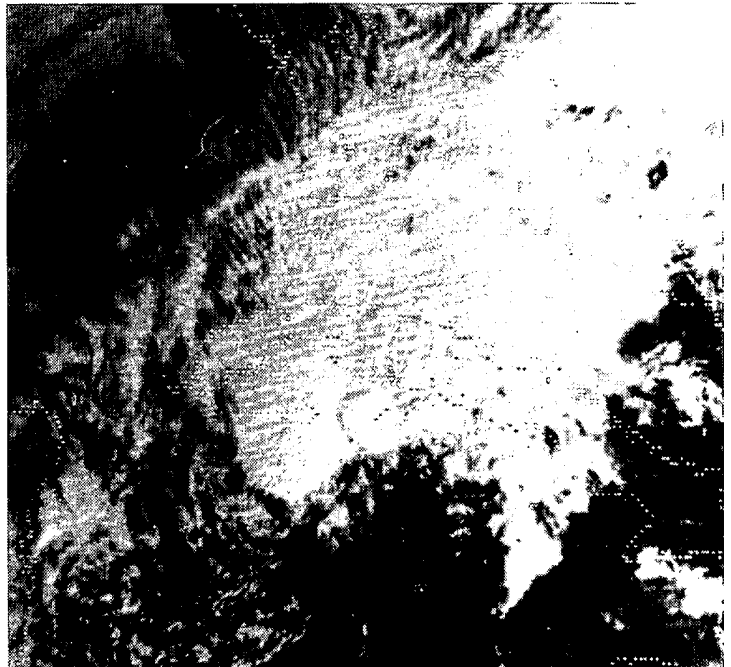
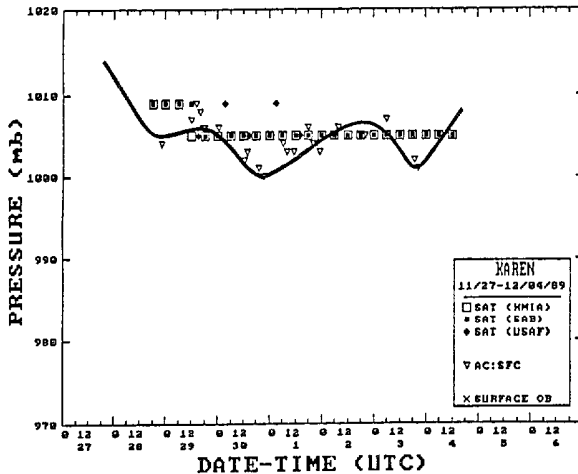
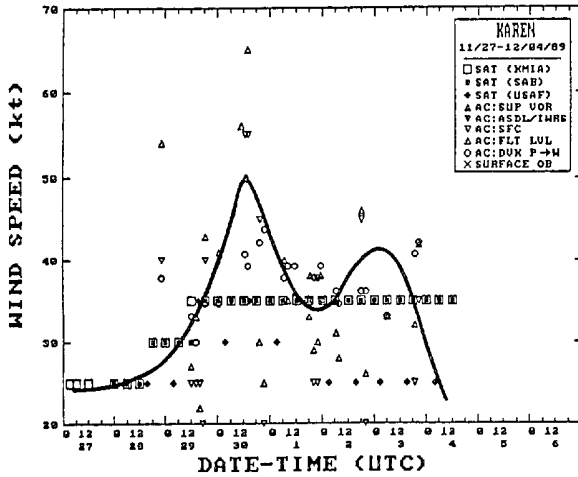
*Intra-cloud and cloud-to-ground lightning bolts with their common byproduct, sheet lightning illuminate the undulating cloud base of their parent storm over the Hudson River at Nyack, New York at 2115EST on November 20th. The discharge caused a short power failure in Nyack, the town viewed here toward the west from Tarrytown. The storm was one of several in the region that carried with it strong and damaging winds. The winds, recorded as gusting to as high as 76 mph at LaGuardia Airport in New York City, downed many trees and power lines. At right, one of the downed trees is seen blocking U.S. Highway 1 in Rye, New York at 2300EST, after the storm had passed. ---Both photos by Jack "Thunderhead" Corso of Harrison, New York; copyright 1989.*



# TROPICAL STORMS and HURRICANES



---Best track data from the National Hurricane Center, Miami, Florida.



Tropical Storm KAREN centered near 20.7°N, 83.3°W in the Caribbean at 1400UTC on November 30th. As can be seen, much of KAREN's cloudmass was situated over Cuba at the time, as the storm's convection was mainly contained within the north-east quadrant of the system.

LEFT: Plots of estimated maximum wind speed and minimum surface pressure versus time for Tropical Storm KAREN.

---Plots and photo from the National Hurricane Center and provided through the Hurricane Research Division of AOML, both of Miami, Florida.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>ALABAMA</b>									
Colbert County	06	0230CST			0	0	?	?	TSTM Wind Several trees and power lines were blown down, blocking roads at scattered locations in the county. One business, one house, and a mobile home were damaged. Damage estimates were unavailable.
Marion County	06	0400CST			0	0	?	?	TSTM Wind A large crane in downtown Huntsville blew over and damaged three to four buildings.
Baldwin County	07	0100CST	0.3	10	0	0	3	?	Tornado (F0) A small tornado touched down about 20 miles southeast of Bay Minette then moved east a short distance. A barn was damaged, trees were uprooted, and the roof was blown off a trailer cab. There were no injuries. Damage estimates were placed at \$2,000.
Houston County	08	0450CST	1.0	40	0	0	6	0	Tornado (F1) A tornado touched down along Highway 231 on the northeast edge of Dothan, then moved east about one mile through about a six to eight block area. Two homes were destroyed, and 40 to 50 car windows were blown out. Two businesses received major damage and one business received moderate damage. One office complex received major damage. Hundreds of trees were uprooted throughout Dothan. There were no known injuries. Damage estimates were placed between \$500,000 and \$750,000.
Coffee County	08	0645CST			0	0	?	?	TSTM Wind Trees were blown down five miles east of Elba.
Geneva County	08	0735CST			0	3	?	?	TSTM Wind Thunderstorm winds blew down telephone lines at Samson. One mobile home was blown into a pond and one home was damaged. Three persons received minor injuries.
Houston County	08	0750CST			0	0	?	?	TSTM Wind The porch of a ranch house was blown off by thunderstorm winds.
Henry County	08	0755CST			0	0	?	?	TSTM Wind In and around Headland, one house had a portion of the roof blown off and one barn had a wall blown out.
Geneva County	08	0800CST			0	0	?	?	TSTM Wind Trees and power lines were blown down at Fadette.
Geneva County	08	0930CST			0	0	?	?	TSTM Wind A house trailer and peanut wagons were damaged at Malvern.
Houston County	08	0944CST			0	0	-	-	Funnel Cloud
	08	0950CST	0.3	10	0	0	4	0	Tornado (F0) At 0944CST a funnel cloud was seen over the City of Dothan. At 0950CST a small tornado touched down on the south side of Dothan and moved east a short distance. One house had an awning blown off. Trees were uprooted and part of a church roof was blown off. Damage estimates were placed at around \$5,000.
Mobile County	08	1345CST			0	0	0	0	Waterspout A waterspout was seen just south of the Interstate 10 bridge over Mobile Bay. The waterspout moved northeast a very short distance and dissipated.
Greene County	08	1830CST			0	0	?	?	TSTM Wind (G60) Several trees were blown across roads in the City of Eutaw. Wind speeds were estimated at 60 mph.
Choctaw County	08	1950CST			0	0	?	?	TSTM Wind Trees were blown down in the vicinity of Gilbertown.
Dallas County	08	2105CST			0	0	?	?	TSTM Wind
	08	2115CST			0	0	?	?	TSTM Wind
	08	2130CST			0	0	?	?	TSTM Wind
	At 2105CST								trees and power lines were blown down at Five Points.
	At 2115CST								power poles were snapped at Serdis. At 2130CST trees and power lines were blown down at Carrollville.
Clay County	15	1415CST			0	0	?	?	TSTM Wind
	15	1420CST	0.5	20	0	3	4	0	Tornado (F1) At 1415CST trees were blown down along Highway 77 in western Clay County. At 1420CST a small tornado touched down in the Mellow Valley Community and moved northeast less than one mile. One home was destroyed. Three persons in the house received critical injuries. Damage estimates from the tornado were placed at nearly \$20,000.
Marion County	15	1425CST			0	0	?	?	Hail (1.75)
	15	1455CST			0	0	-	-	Funnel Cloud
	At 1425CST								golf ball size hail fell at Hamilton.
	At 1455CST								a funnel cloud was seen at Bear Creek.
Colbert County	15	1505CST			0	0	?	?	Hail (0.75)
	15	1545CST			0	0	?	?	TSTM Wind
	At 1505CST								dime size hail fell at Leighton and Cherokee.
	At 1545CST								thunderstorm winds caused several buildings to collapse in the same area.
Sumter County	15	1520CST			0	0	?	?	TSTM Wind Trees were blown down at York. Power lines were blown down at several other locations throughout Sumter County.
<b>ALABAMA</b>									
Lauderdale County	15	1522CST			0	0	?	?	TSTM Wind
	15	1530CST			0	0	?	?	TSTM Wind
	At 1522CST								trees were blown down at Florence. At 1530CST thunderstorm winds destroyed one house and blew several vehicles off the road at Killen. There were no known injuries.
Winston County	15	1530CST			0	0	?	?	TSTM Wind Several trees were blown across county roads in rural areas of the county.
Elmore County	15	1535CST			0	0	?	?	Hail (0.75)
	15	1545CST			0	0	?	?	TSTM Wind
	At 1535CST								nickel size hail fell 10 miles northeast of Wetumpka. At 1545CST trees were blown down at Claud.
Morgan County	15	1548CST			0	0	?	?	Hail (0.75)
	15	1600CST			0	0	?	?	Hail (1.75)
	15	1615CST			0	0	?	?	TSTM Wind
	At 1548CST								dime size hail fell at Decatur. At 1600CST golf ball size hail fell in the same area. At 1615CST thunderstorm winds blew down trees at Decatur. Large hail fell on most of Morgan County between 1548CST and 1615CST.
Lamar County	15	1600CST			0	0	?	?	TSTM Wind A few trees were uprooted in the Detroit Community.
Coosa County	15	1610CST			0	0	?	?	TSTM Wind Trees and power lines were blown down at Goodwater.
Bibb County	15	1620CST			0	0	?	?	TSTM Wind Trees were blown down in the Centreville area. Windows were blown out of a downtown Centreville bank and there was damage to a shopping mall.
Tallapoosa County	15	1620CST			0	0	?	?	TSTM Wind
	15	1630CST			0	0	?	?	TSTM Wind
	Trees and power lines were blown down at New Site at 1620CST and at Camp Hill at 1630CST.								
Randolph County	15	1621CST			0	0	?	?	Hail (1.75)
	15	1642CST			0	0	?	?	Hail (1.75)
	15	1643CST	0.3	20	0	0	4	?	Tornado (F0)
	15	1650CST			0	0	?	?	TSTM Wind
	At 1621CST								golf ball size hail fell at Wadley. At 1642CST golf ball size hail fell at Roanoke. At 1643CST a small tornado touched down about two miles east of Roanoke, then moved east a short distance. The tornado damaged several mobile homes. At 1650CST thunderstorm winds uprooted trees and blew down a barn at Rock Hills. Damage estimates from the tornado were placed at nearly \$30,000.
Madison County	15	1630CST-1650CST	18.5	0.5	21	463	8	0	Tornado (F4) A devastating tornado struck the southern portion of the City of Huntsville cutting a swath of destruction from southwest toward the northeast through a business section and a heavily populated residential area. Twenty-one people died and 463 people were injured as a result of the tornado. Eighteen people died in the tornado, and three others at later dates, from injuries sustained in the tornado. Total damage estimates were placed at around \$100 million. The tornado struck during the beginning of rush hour in Huntsville and, while at its strongest, moved through a business area, crossing two major north-south highways. Twelve of the 21 deaths (57 percent) occurred in automobiles. Most of those killed in the cars were in the process of performing normal tasks as opposed to fleeing in or seeking the automobiles for safety. The initial point of damage occurred 1 mile south-southwest of Madkin Mountain on the Redstone Arsenal. The tornado continued northeast, striking the Huntsville Police Academy and crossing the municipal golf course. The tornado entered a business and heavily populated area of Huntsville along and near U.S. Highway 231, a major north-south traffic artery. Here, the tornado destroyed a number of shopping complexes, office buildings, an apartment complex, and churches. It moved east up Airport Road and crossed Whitesburg Road, another relatively major north-south highway. Eighteen of the twenty-one fatalities occurred in the area between the intersection of Airport Road and U.S. Highway 231 and the intersection of Airport Road and Whitesburg Road. Twelve of the deaths occurred in automobiles, four in apartments, and four in commercial buildings. The tornado then moved up Garth Mountain as it continued northeast into a heavily wooded section. It moved down the east side of the mountain, then struck Jones Valley Elementary School. Thirty-seven children, five teachers, and seven painters were in the school when the tornado struck. The children were moved from the second floor of the school building into a small open area under a stairway. This action saved the lives of the children. One person, a woman, was killed in an automobile while driving along a nearby road enroute to the school. From the school, the tornado crossed Garth Road and moved across a portion of Jones Valley subdivision, a development of well-constructed single family homes. The tornado destroyed a number of homes here. It continued across Jones Valley then moved up Huntsville Mountain, generally a rural area, destroying whatever structures it encountered. The tornado topped Huntsville Mountain and moved down the east side, crossing U.S. Highway 431. Continuing, it later crossed

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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

## ALABAMA

U.S. Highway 72 one mile southeast of Brownsboro. The tornado continued to a small lake at the headwaters of the Killingsworth Cove Branch, a small creek which feeds into the Flint River. The tornado path ended at the southeast tip of this small lake.

The following is a summary of damage from reports gathered by the Huntsville Times:  
 259 homes destroyed; 130 homes, major damage; 148 homes, minor to moderate damage; 80 businesses destroyed; 8 businesses damaged; 3 churches heavily damaged; 2 schools destroyed; 10 public buildings destroyed or heavily damaged; 1.9 million dollars in public utility damage.

Summary of 21 fatalities, including age, gender, and location:

Sex	Age	Location	Sex	Age	Location
Female	68	Mobile Home	Female	86	Auto (Died 12/8/89)
Female	61	Commercial	Female	52	Apt. (Died 12/5/89)
Female	48	Auto	Male	46	Auto
Male	47	Commercial	Male	46	Auto
Male	45	Auto	Female	40	Auto
Male	36	Auto	Male	33	Commercial
Male	30	Auto	Female	50	Commercial
Female	67	Apartment	Female	23	Auto
Female	22	Apartment	Female	25	Apartment
Male	7	Auto	Female	2	Auto
Female	49	Auto			

Final count: Automobiles 12 Commercial 4  
 Apartments 4 Mobile Homes 1

Injured totaled 463 people.  
 A storm survey has been conducted and is obtainable from the National Weather Service, Southern Region Headquarters, in Fort Worth, Texas.

Tornado F68M, F86V, F610, F52P, F48V, M46V, M470, M46V, M45V, F40V, M36V, M330, M30V, F500, F67P, F23V, F22P, F25P, M07V, F02V, F49V.

Jefferson County	15 1640CST	0 0 ? ?	TSTM Wind
	15 1655CST	0 0 ? ?	TSTM Wind (G60)
	15 1655CST	0 0 ? ?	Hail (0.75)
	15 1740CST	0 0 ? ?	TSTM Wind
	15 1755CST	0 0 ? ?	TSTM Wind (G66)
	At 1640CST telephona poles were blown down at McCalla.		
	At 1655CST a wind gust of 60 mph was recorded at the National Weather Service in Homewood. At about the same time, dime size hail fell at Lakeshore Drive in Homewood. At 1740CST power lines were blown down at Pinson. At 1755CST a wind gust to 66 mph was recorded at the Birmingham Airport. At about the same time, a roof was blown off a barn in Trussville.		
Marion County	15 1640CST	0 0 ? ?	TSTM Wind
	Trees were blown down five miles north of Hamilton.		
Pickens County	15 1640CST	0 0 ? ?	TSTM Wind
	Trees were blown down at scattered locations in the county.		
Tuscaloosa County	15 1640CST	0 0 ? ?	TSTM Wind
	Trees were blown down along the side of Interstate 59 in eastern Tuscaloosa County.		
Winston County	15 1640CST	0 0 ? ?	TSTM Wind
	Trees and power lines were blown down five miles north of Haleyville.		
Chambers County	15 1700CST	0 0 ? ?	TSTM Wind
	Trees and power lines were blown down five miles northeast of Lafayette.		
Cullman County	15 1700CST	0 0 ? ?	TSTM Wind
	Trees were blown down at scattered locations, mainly in northwestern Cullman County.		
Walker County	15 1710CST	0 0 ? ?	TSTM Wind
	Several trees were blown down at Sipsey.		
Calhoun County	15 1715CST	0 0 ? ?	TSTM Wind
	Trees were blown down at scattered locations in the county.		
Shelby County	15 1718CST	0 0 ? ?	TSTM Wind
	15 1748CST	0 0 ? ?	TSTM Wind
	15 1755CST	0 0 ? ?	TSTM Wind (G80)
	At 1718CST power lines were blown down at Calera. At 1748CST trees were blown across the road at the intersection of U.S. 280 and Highway 119. At 1755CST a wind gust to 80 mph occurred at Montevallo.		
Cherokee County	15 1720CST	0 0 ? ?	Hail (1.75)
	Golf ball size hail fell in the Leesburg area.		
Marshall County	15 1730CST	0 0 ? ?	TSTM Wind
	Several large trees were blown down about five miles north of Guntersville.		

## ALABAMA

Jackson County	15 1734CST	0 0 ? ?	Hail (1.75)
	15 1750CST	0 0 ? ?	Hail (1.75)
	15 1755CST	1.0 20 0 0 5 ?	Tornado (F1)
	At 1734CST golf ball size hail fell at Scottsboro. At 1750 CST golf ball size hail fell at Rosalie. At 1755CST a tornado touched down at Stevenson and moved northeast about 1 mile. Several mobile homes and a few vehicles were destroyed. Large steel utility towers were twisted, and a school roof was damaged. There were no injuries. Damage estimates from the tornado were placed at \$100,000.		
Houston County	15 2053CST	0 0 ? ?	TSTM Wind
	15 2110CST	0 0 ? ?	TSTM Wind (G71)
	At 2053CST a roof was ripped off a house in Wicksburg. At 2110CST trees were blown down at Ashford and Dothan. A wind gust to 71 mph was recorded in Dothan at the Houston County Emergency Management Agency.		
Henry County	15 2105CST	0 0 ? ?	TSTM Wind
	Trees were blown down at Abbeville.		
Coffee County	22 1920CST	0 0 ? ?	TSTM Wind
	Thunderstorm winds damaged fifteen roofs of houses and several cars in Enterprise.		

## 2 ARIZONA ————— NONE REPORTED

## 3 ARKANSAS

Poinsett Co. 3 E Harrisburg	05 2110CST	0 0 ? ?	Thunderstorm Wind
	Thunderstorm winds blew down trees 3 miles east of Harrisburg.		
Pike Co. Antoine	08 0045CST	0 0 ? ?	Hail (1.00)
Lafayette Co. Stamps	08 0100CST	0 0 ? ?	Hail (1.00)
Columbia Co. 2 E Waldo	08 0110CST	0 0 ? ?	Hail (.75)
White Co. Beebe	08 0138CST	0 0 ? ?	Hail (1.00)
Crittenden Co. Marion	08 0400CST	0 0 ? ?	Thunderstorm Wind
	Several power poles were downed by thunderstorm winds on the east side of Marion.		
Jefferson Co. Hardin	15 1015CST	0 0 ? ?	Hail (1.75)
	Golfball size hail fell in Hardin.		
White Co. Providence	15 1020CST	0 0 ? ?	Hail (.75)
Greene Co. Paragould	15 1043CST	0 0 ? ?	Thunderstorm Wind
	Thunderstorm winds downed trees and power lines at the intersection of Highways 358 and 69 on the south side of Paragould.		
Jefferson Co. Pine Bluff	15 1046CST	0 0 0 0	Funnel Cloud
	The public reported a funnel cloud just south of Pine Bluff.		
Jefferson Co. 2 SW Reydell	15 1110CST	0 0 ? ?	Thunderstorm Wind
	Trees and power lines were downed at Little Bayou Meto Park 2 miles southwest of Reydell.		
Clay Co. Rector	15 1113CST	0 0 ? ?	Hail (.75)
Arkansas Co. Stuttgart Stuttgart	15 1115CST 15 1115CST	0 0 0 0 0 0 ? ?	Funnel Cloud Hail (.75)
	A funnel cloud was sighted just southwest of Stuttgart. Hail up to 3/4" in diameter also fell.		
Arkansas Co. 5 S Stuttgart	15 1120CST	0 0 ? ?	Thunderstorm Wind
	Thunderstorm winds downed several trees and power lines.		

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED <sup>1</sup> DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>— ARKANSAS —</b>									
Poinsett Co. Lepanto	15	1130CST	0.25	50	0	0	5	?	Tornado (FO)
									Most of the roof of the Lepanto High School gymnasium was taken off by a small tornado. Several homes in the area also suffered minor roof damage.
Mississippi Co. Leachville	15	1130CST			0	0	?	?	Hail (2.00)
									Hail the size of chicken eggs fell in Leachville.
Arkansas Co. Crocketts Bluff	15	1140CST			0	0	?	?	Thunderstorm Wind
									Thunderstorm winds downed trees and power lines in Crocketts Bluff.
Mississippi Co. Blytheville	15	1149CST			0	0	?	?	Hail (1.00)
									Hail up to 1" in diameter fell at Eaker Air Force Base.
Desha Co. McGehee	15	1230CST			0	0	4	?	Thunderstorm Wind
									At least 10 outbuildings were destroyed by thunderstorm winds. Numerous trees were also blown over and several homes suffered minor roof damage.
<b>4 CALIFORNIA, Northern</b>									
CAZ009-010 (northern half) and NVZ001-002 Sierra Nevada	25-26	0600PST-0600PST			0	0	0	0	Heavy Snow
									A cold moist Pacific storm brought heavy snow to the Sierra Nevada. Amounts ranged from one to three feet for the storm. Major highways to and from Lake Tahoe were closed, and there were hundreds of stranded travelers and numerous minor traffic accidents.
<b>4 CALIFORNIA, Southern</b>									
Los Angeles County, San Bernardino County, and Orange County	28-29	0600PST-0700PST			0	0	?	0	High Wind
									Strong Santa Ana winds occurred over Southern California. Areas affected were mainly the northern portions of the San Fernando Valley, areas near Ontario and eastward to the San Bernardino area, and the Santa Ana canyon area. Several tractor-trailer trucks were blown over along Interstate 10 and California Highway 60 east of Los Angeles. Winds of 50 miles per hour with gusts of 70 miles per hour were reported at the Rialto airport, and sustained winds of 43 mph were reported in Fontana.
<b>5 COLORADO</b>									
Jefferson County, Lakewood	1	morning			1	0	0	0	Cold
									A 39-year old man in a motorized wheelchair was found dead of exposure early in the morning at the end of an overnight snowstorm in Lakewood. The man left a friend's home at 8 PM the previous evening; his body was found in a parking lot near the nursing home where he lived.
Larimer County, 36 WNW Fort Collins	4	1040MST			0	0	0	0	High Wind (70)
Boulder County, Boulder	6	1445MST			0	0	0	0	High wind (54)
Front Range COZ011	7	afternoon			0	0	4	0	High winds
									Strong winds buffeted many areas in Larimer, Boulder, Clear Creek, and Gilpin counties. A power line was blown down west of Loveland in Larimer County, and a truck was blown off the road between Fort Collins and Loveland. Farther northwest at Virginia Dale, a shed was blown down as winds gusted to an estimated 90 mph. The strongest officially recorded gusts in populated areas were 60 to 70 mph between 1300 and 1600MST in Red Feather Lakes, Fort Collins, Wellington, and Waverly (Larimer Co.), and in Boulder and Longmont (Boulder Co.).
<b>— COLORADO —</b>									
Front Range COZ011	8-9				0	0	4	0	High winds
									Strong winds hit the Front Range again from the afternoon of the 8th through early morning on the 9th. At 0630MST on the 9th a wooden frame of a house under construction in Boulder was blown down. On the previous evening a power outage blackened Nederland, also in Boulder County. A power pole was blown down at Virginia Dale, in Larimer County. The peak winds recorded were 95 mph 4 miles south of Rollinsville in Gilpin County, and 97 mph atop Fritz Peak near that town, both around 1930MST on the 8th. These are both very exposed, sparsely settled spots. At lower elevations, winds reached 63 mph at Fort Collins at 1735MST on the 8th. At 0400MST on the 9th, a gust of 78 mph was noted 36 miles west-northwest of Fort Collins in Larimer County.
Front Range, Northeast Plains COZ011-012	14				0	0	0	0	High winds
									Wind gusts to speeds of 60 to 75 mph at several locations were noted in Larimer, Weld, and Morgan counties between 1155MST and 1345 MST. The peak gust recorded was 75 mph at Fort Morgan (Morgan Co.). Winds also exceeded 60 mph at Fort Collins (Larimer Co.), and at Nunn and Briggsdale (Weld Co.).
Northern, Central Mountains COZ002-004	14-15				0	0	0	0	Snow, wind
									A foot of early season snow fell at Winter Park (Grand Co.) in 24 hours. Breckenridge (Summit Co.) recorded a wind gust of 70 mph at 0430MST on the 15th.
Boulder County, Northwest Boulder	24	1346MST			0	0	0	0	High wind (56)
Northern, Central Mountains COZ002-004	24-25				0	0	0	0	Snow
									A storm dumped 12 to 18 inches of snow at a number of spots in the northern and central mountains, including Steamboat Springs (Routt Co.), Berthoud Pass and Mary Jane ski areas (Grand Co.), and Gothic (Gunnison Co.).
Northern, Central Mountains COZ002-004	26-27				0	0	0	0	Snow
									Another one to two feet of powder buried most spots in the area. Heaviest 24 hour snowfalls during this period included 19 inches at Beaver Creek ski area and 17 inches at Vail (Eagle Co.), and 12 to 14 inches at the Summit County and Aspen (Pitkin Co.) ski areas.
Elbert County, Elbert	26	1020MST			0	0	0	0	High wind (50)
Larimer County, Fort Collins	27	0150MST			0	0	0	0	High wind (52)
<b>6 CONNECTICUT</b>									
CTZALL Statewide	16	0800EST-1600EST			0	0	5	0	High winds
									Gale force winds from the south preceded a strong squall line and cold front. Wind gusts up to 52 mph were recorded at Bridgeport and 55 mph at Bradley International Airport in Windsor Locks during the afternoon. Tree limbs blown down by the strong winds resulted in scattered property damage. In Willamantic, part of the roof of a textile museum was blown off, and in Waterbury a large plate glass window was blown out. Up to 80,000 electric customers lost power statewide.
CTZALL Statewide	20-21	2100EST-1200EST			0	1	5	0	High winds
									Gale force northwest winds gusting up to 50 to 60 mph knocked out power to up to 30,000 electric customers statewide and caused scattered property damage. Two large picture windows were blown out in Bristol and a large tree limb crashed onto a police patrol car in Greenwich, causing minor injuries to the driver.
CTZ005-006 Coastal Connecticut	23	0000EST-1200EST			0	0	0	0	Heavy snow
									A Thanksgiving Day snowstorm brought totals of between 6 and 8 inches to coastal sections of the state. The heavy snow was a new record for coastal Connecticut for the holiday.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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					KILLED	INJURED	PROPERTY	CROPS	
<b>7 DELAWARE</b>									
Kent Co, Smyrna	16	0900EST			0	0	4	0	Thunderstorm Winds
									Thunderstorm winds downed trees and power lines.
Sussex Co, 4 SW Milford, and Georgetown	16	0900EST			0	0	5	0	Thunderstorm Winds
									Thunderstorm winds downed about 20 trees, demolished four outbuildings, damaged three mobile homes, and ripped half the roof off of a house 4 miles southwest of Milford. One tree fell on a car and another fell against a house. Most trees were sheared off several feet above the ground. State Police reported trees and power lines down just north of Georgetown.
New Castle Co, Hockessin	16	1015EST			0	0	4	0	Thunderstorm Winds
									Thunderstorm winds uprooted trees in a path 600 feet long in the North Star development. Some roofs of nearby houses were damaged. An on-site survey showed that the debris was blown in one direction.
New Castle Co, Southern Wilmington	16	1030EST	1	17	0	1	5	0	Tornado (F1) - Waterspout
									A tornado touched down in southern Wilmington on South Market Street. It blew off part of a large roof of a warehouse, ripped up part of a chain link fence, and damaged several vehicles as a result of flying debris. The tornado moved northeast and crossed the Christina River where it became a waterspout. One witness said that it picked up water and whistled like a freight train. Upon reaching shore, it destroyed a 40 by 50 foot boat shed and slightly injured the owner who was inside. In the same area, it ripped two large boats from their moorings and knocked beached boats off the tracks on which they were stored. It also ripped a door off of a nearby restaurant before dissipating. Classification F1,P1,P1.
New Castle Co, St. Georges	16	1035EST			0	1	4	0	Thunderstorm Winds and Hail (0.50)
									Thunderstorm winds almost blew a tractor-trailer off the Reedy Point Bridge over the Chesapeake and Delaware Canal. The trailer was dangling over the guardrail, and the driver was injured.
New Castle Co, Wilmington	16	1040EST			0	0	6	0	Thunderstorm Winds (78kt)
									Thunderstorm winds downed trees and caused significant structural damage at several locations in the greater Wilmington area, mostly southwest of the city. In Gordy Estates, the winds damaged seven houses, blew down a chimney, and peeled off a side of a trailer. On the side of Route 896 in Carpenters Park, tree tops were sheared off in different directions suggesting rotary wind motion. At the Hickory Woods development, 4 by 4 posts and fencing were snapped off and blown against the side of a house. Several large nails were popped from the posts and driven through the dry wall of the house. Ceiling tiles inside a neighboring house were buckled. Nearby, a 25 by 75 foot section of roof was torn off an apartment building. Gusts were estimated at 90 mph.
Statewide	20	2124EST			0	1	6	0	High Winds
									High winds which began shortly after 2100 EST continued overnight and much of the day of 21 November. Trees were downed, some onto buildings and vehicles, at numerous locations. Several buildings were damaged directly by the winds. There were also scattered power outages. The most severe damage occurred in northern Delaware and near the beginning of the onslaught of high winds. Maximum gusts were measured at 59 mph at Wilmington and 54 mph at Dover.
Statewide	22	Evening			0	0	0	0	Heavy Snow
									An unusually early winter storm brought 3 to 6 inches of snow throughout the state. Snow began on the eve of Thanksgiving and ended early Thanksgiving morning, and gave the state the first white Thanksgiving in memory. Numerous automobile accidents occurred on the snow-slicked roads.
<b>8 FLORIDA</b>									
Dade County 4S Key Biscayne	01	1255EST			0	0	0	0	Waterspout
									NWS personnel reported a waterspout.
Duval County Jacksonville	02	1800EST			0	0	0	0	TSTM Wind (50)
									Thunderstorm winds blew down three trees.
Dade County 3E Miami Beach	05	0810EST			0	0	0	0	Waterspout
									A waterspout was sighted by the beach patrol.
Washington County Caryville	08	0530EST	short ?		0	0	4	0	Tornado (F0)
									Two tin roofs were blown off and mobile homes were slightly damaged. Trees were downed and a new car was totally destroyed by flying limbs.
Holmes County 5N Bonifay	08	0700EST	short ?		0	0	4	0	Tornado (F0)
									Several barns were damaged and one was completely destroyed by a brief tornado.
Citrus County Inverness	09	0640EST			0	0	5	0	Lightning
									A lightning-initiated fire completely destroyed an unoccupied, \$200,000 house.
Hernando County Brooksville	09	0800EST	short ?		0	0	4	0	Tornado (F0)
									Outbuildings were destroyed and two houses suffered roof damage.
Citrus County Crystal River	10	0349EST			0	0	4	0	Lightning
									A lightning strike started a fire that destroyed a boat, two cars and a carport, causing \$32,500 in damage.
Monroe County 2S Marathon	11	1025EST			0	0	0	0	Waterspout
									The Coast Guard reported a waterspout.
Escambia County Warrington	15	2000EST			0	0	0	0	TSTM Wind (50)
									Trees were blown down.
Escambia County Pensacola	15	2015EST			0	0	0	0	TSTM Wind (65)
									Pensacola Naval Air Station and the NWS Office reported wind gusts of 65 knots and 50 knots, respectively.
Escambia County Warrington	15	2030EST			0	0	0	0	TSTM Wind
									A large oak tree was blown over.
Santa Rosa County Avalon Beach, Navarre, and Gulf Breeze	15	2030EST			0	0	3	0	TSTM Wind (55)
									Numerous trees were downed on power lines and signs, and large flower pots were blown around. Minor damage was done to a car and boat trailer.
Okaloosa County Fort Walton Beach	15	2110EST			0	0	0	0	TSTM Wind (60)
									Numerous trees and some signs were downed.
Jackson County countywide	15	2230EST			0	0	3	0	TSTM Wind (50)
									Numerous trees were downed. Damage was done to a house roof near Malone.
Columbia County 5S Lake City	23	0330EST			0	0	4	0	TSTM Wind (65)
									Two large trees were uprooted, damaging a house roof.
Martin County Lake Okeechobee	27	1455EST			0	0	0	0	Waterspout
									A fire department reported a waterspout on Lake Okeechobee.

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					KILLED	INJURED	PROPERTY	CROPS	
<b>9 GEORGIA</b>									
COBB COUNTY Kennesaw	07	1533EST			0	0	?	0	Flash Flood
WILCOX COUNTY Pineview	06	1735EST	0.8	100	1	8	5	?	Tornado (F2) and Hail
					<p>A tornado developed at Pineview and toppled trees along its path before moving across a peanut field into a residential area. Damage occurred at a peanut warehouse at the edge of the storm's path as it traveled northeast toward the homes. Several peanut wagons, weighing about a ton each were pushed hundreds of feet, some causing damage along the way. In the residential area, the tornado destroyed three mobile homes and took three others off their foundations. Two frame homes were totally destroyed, another had severe damage, and six others had minor damage. Numerous other properties and cars had damage. Debris was strewn over nearly two miles. Many large trees were uprooted, including pecans. One child was killed and his parents were critically injured when their mobile home was taken at least 200 feet airborne by the tornado. Six residents were treated for generally minor injuries. M03M</p>				
BULLOCH COUNTY 1E Statesboro	15	1600EST			0	0	0	0	Funnel Clouds
					<p>Two funnel clouds were sighted moving rapidly northeast from just east of Statesboro. Within the hour, a tornado touched down in Screven County at Oliver.</p>				
SCREVEN COUNTY Oliver	15	1645EST	1.0	50	0	5	4	0	Tornado (F1)
					<p>A tornado developed at Oliver, moved over a lake, treetops, and the tops of three homes before it destroyed a mobile home in its path. The untethered mobile home was lifted off its foundation and carried northward about 35 feet before the storm set it down. Large portions of the home were carried more than 75 feet away; the floor came to rest in the highway about 500 feet away. Although there were five occupants in the mobile home, two adults and three children, no fatalities occurred. All five sustained minor injuries, however. Aside from the destroyed mobile home, at least three other residences suffered roof damage and trees were toppled along the path.</p>				
SCREVEN COUNTY Oliver	15	1650EST			0	0	?	0	Lightning
					<p>Lightning struck the well pump and left most of the town's 350 residents without water.</p>				
FRANKLIN COUNTY countywide	15	1655EST			0	0	?	?	TSTM Wind
					<p>Scattered trees were blown down at several locations.</p>				
HEARD COUNTY countywide	15	1700EST			0	0	0	0	Hail (0.75)
					<p>Hail occurred at several locations in the county as thunderstorms intensified over northwest Georgia.</p>				
HEARD COUNTY SSW Franklin	15	1730EST			0	0	0	0	Hail (0.75)
SSW Franklin	15	1730EST			0	0	?	?	TSTM Wind
3S Centralhatchee Franklin	15	1745EST			0	0	0	0	Hail (1.25)
Franklin	15	1805EST			0	0	0	0	Funnel Clouds
4NW Franklin	15	1825EST			0	0	0	0	Hail (0.88)
					<p>Wind damage occurred near two miles from the Alabama line southwest of Franklin along Georgia Highway 34.</p>				
HABERSHAM COUNTY 6SW Clarkesville	15	1822EST			0	0	0	0	Funnel Cloud
COWETA COUNTY Sargent	15	1840EST			0	0	0	0	Funnel Cloud and Small Hail
countywide	15	1852EST			0	0	?	?	TSTM Wind
					<p>Small hail occurred in northwest Coweta County at 1745EST. Scattered trees were blown down, mainly over the western portion of the county.</p>				
LUMPKIN COUNTY 8E Dahlonega	15	1900EST			0	0	?	?	TSTM Wind
					<p>Scattered trees, blown down by the thunderstorm, blocked roads around Dahlonega.</p>				
COWETA COUNTY 8NE Newman	15	1900EST			0	0	0	0	Hail (0.88)
<b>GEORGIA</b>									
CHATTOOGA COUNTY countywide	15	1900EST			0	0	?	?	TSTM Wind
Summerville	15	1900EST			0	0	?	?	TSTM Wind
Summerville	15	1900EST			0	0	?	?	Flash Flood
Trion	15	1900EST			0	0	?	0	Lightning
					<p>Scattered trees and powerlines were downed across the county and around Summerville. Flash flooding did very minor damage at Summerville. Lightning struck a substation, blew out the transformers, and damaged the lightning arresters at Trion.</p>				
FLOYD COUNTY 17W Rome	15	1855EST			0	0	?	?	TSTM Wind
13W Rome	15	1905EST	8.0	450	0	1	6	?	Tornado (F2)
					<p>A tornado developed outside of Rome near Georgia Highways 20 and 100. The storm moved north-northeast from that area along Simms Mountain over sparsely populated farmland. Numerous trees were downed all along the path. From the start, considerable damage was done to many homes. Barns and outbuildings were either slightly damaged or totally destroyed, along with numerous vehicles. In the Big Texas Valley, one mobile home was overturned; another was heavily damaged. A large house about 200 yards away from the second mobile home was almost completely demolished, along with six cars and trucks. In that area, owned by one family, the damages amounted to near \$1,000,000. The total damage costs were estimated at over \$2,000,000, excluding timber and fruit-bearing trees. Only one minor injury occurred, but was not treated.</p>				
GORDON COUNTY countywide	15	1910EST			0	0	?	?	TSTM Wind
Calhoun	15	1915EST			0	0	?	0	TSTM Wind
					<p>Thunderstorm winds uprooted trees and tore down large billboards and signs at Calhoun. Two new semi-trucks were damaged when a large billboard fell upon them. At one home in Calhoun, winds ripped the front porch and awnings off. A trailer was capsized by the winds there also. No power outages occurred in Calhoun. Across the county, scattered trees and power lines were downed.</p>				
WHITE COUNTY 6SW Cleveland	15	1915EST			0	0	?	?	TSTM Wind
					<p>Powerlines and trees were downed by winds.</p>				
FULTON COUNTY Atlanta	15	1915EST			0	0	?	0	ISTM Wind
					<p>Scattered trees were blown down.</p>				
FAYETTE COUNTY 5W Fayetteville	15	1920EST			0	0	?	?	TSTM Wind (62)
					<p>Thunderstorm winds were estimated by doppler radar at a local television station to be about 72 miles an hour.</p>				
COWETA AND FULTON COUNTIES 4SSE Palmetto to 3E Palmetto	15	1925EST	4.0	300	0	0	6	0	Tornado (F2)
					<p>A tornado formed four miles south-southeast of Palmetto at a private golf club and moved northeast over the course. Several homes were damaged and trees were snapped along the greens and fairways. North of the clubhouse, extensive damage occurred to the poolhouse and large trees were uprooted. The remainder of the damage paralleled Interstate 85. By 1930EST, the tornado was sighted approaching two mobile home parks, located together on the county line, where more damage occurred. The tornado dissipated about three miles east of Palmetto in Fulton County.</p>				
HABERSHAM COUNTY 5W Clarkesville to 7WSW Tallulah Falls	15	1930EST	8.0	1320	0	3	6	?	Tornado (F3)
					<p>A tornado developed over a rural area west of Clarkesville near the intersection of Georgia Highways 17 and 105. The tornado moved over farmland, with winds estimated to be greater than 150 miles an hour. The tornado's maximum winds reached within ten feet of ground level, and did considerable property damage along the way. The worst damage occurred in the Stonepile community about five miles northwest of Clarkesville. There, the second stories of houses were totally removed and the lower brick walls of the homes were completely blown in. Shops along the path were devastated as the tornado traveled northeast. Six homes were destroyed, six other homes were heavily damaged, and three mobile homes were flattened. The tornado leveled seventeen chicken houses on a poultry farm and killed approximately 250,000 birds. Debris from the tornado was strewn for miles. Considerable property damage occurred in the New Liberty area. The tornado continued to the Habersham-Rabun county line, causing mainly tree damage, before it dissipated at the mountain ridge seven miles west-southwest of Tallulah Falls. The property damage costs were estimated near \$1,000,000.</p>				
COWETA COUNTY countywide	15	1930EST			0	0	?	?	TSTM Wind

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					KILLED	INJURED	PROPERTY	CROPS	
<b>— GEORGIA —</b>									
FULTON COUNTY Palmetto	15	1935EST			0	0	?	0	TSTM Wind
Palmetto	15	1935EST			0	0	0	0	Hail (1.75)
Union City	15	1935EST			0	0	?	0	TSTM Wind
Atlanta	15	1935EST	350		0	0	?	0	TSTM Wind(65)
<p>Downburst winds in southwest Atlanta caused major damage to several homes when large trees were snapped off twenty to forty feet above the ground. Wind speeds were estimated between 70 and 80 miles an hour. Minor structural damage to homes and damage to vehicles also occurred across the city.</p>									
COWETA COUNTY 2SE Palmetto	15	1935EST			0	0	0	0	Hail (0.75)
<p>Hail fell in Coweta County and in Sweet Briar Mobile Home Park along the county line.</p>									
COWETA AND FULTON COUNTIES 2SE Palmetto to 8NE Palmetto	15	1945EST	7.0	300	0	14	6	0	Tornado (F2)
<p>As the residents returned to the two damaged mobile home parks, a second tornado formed just southeast of Palmetto. The tornado moved northeast along Interstate 85 from extreme north Coweta County into Fulton County and devastated the already-damaged mobile home parks. The worst damage occurred at the entrance of the South Oaks Park, although the Sweet Briar Park was damaged considerably. Together, twenty-one homes were destroyed, thirteen homes were severely damaged, and another thirty-eight had minor damage. Numerous vehicles were either totaled or damaged. Although most of the injuries occurred in the home parks, one driver suffered serious injuries when the tornado flipped and rolled his car over a hundred yards. As the storm moved along the highway, four tractor-trailers were flipped and several drivers received minor injuries. A mobile news van, worth near \$250,000, was destroyed when the tornado picked it up and tossed it 400 feet into the air. By 1955EST, the tornado had moved to a gas station and a truck stop. There it uprooted the gasoline pumps and spilled gas over two lots. Numerous trees were downed. Scattered damage to about fifty-three homes and businesses occurred along the storm's path northeast. The tree damage ended about eight miles northeast of Palmetto, where the tornado dissipated just south of Fairburn. Damage costs were estimated near \$1,200,000, mostly from the trailer parks.</p>									
FULTON COUNTY 1SW Fairburn	15	1955EST			0	0	?	0	TSTM Wind
<p>One home was damaged between Palmetto and Fairburn by winds.</p>									
COWETA COUNTY Newnan	15	2000EST			0	0	?	0	TSTM Wind
<p>Scattered trees and powerlines were downed by winds. One tree damaged the primary substation, causing power outages.</p>									
HABERSHAM COUNTY Northwest Habersham County	15	2005EST			0	0	0	0	Hail (1.75)
2NE Turnersville	15	2005EST			0	0	0	0	Funnel Cloud
Turnersville and Hollywood	15	2010EST			0	0	?	?	TSTM Wind
<p>Large trees were uprooted or broken over northeast Habersham County.</p>									
DEKALB COUNTY 2N Decatur	15	2016EST			0	0	0	0	Hail (1.00)
COBB COUNTY Mableton	15	2018EST			0	0	0	0	Hail (0.75)
DEKALB COUNTY Tucker	15	2024EST			0	0	0	0	Hail (1.00)
Dunwoody and Chamblee	15	2025EST			0	0	?	0	TSTM Wind and Small Hail
<p>Trees and powerlines were blown down over the northern portion of the county.</p>									
CARROLL COUNTY Carrollton	15	2025EST			0	0	?	?	TSTM Wind
FLOYD COUNTY Crystal Springs	15	2025EST			0	0	?	?	TSTM Wind
Everett Springs	<p>Considerable damage to several homes in the northern portion of the county near the Chattoogs County line occurred.</p>								
GWINNETT COUNTY Lilburn	15	2025EST			0	0	0	0	Funnel Cloud
2S Lilburn	15	2030EST			0	0	4	0	TSTM Wind
<p>Thunderstorm winds downed trees and caused scattered power outages in Lilburn. A downburst wind event occurred just south of Lilburn. Numerous trees were blown down, causing generally minor damage to five homes. Power lines in the community were also blown down.</p>									
<b>— GEORGIA —</b>									
GWINNETT COUNTY Lilburn	15	2035EST			0	0	0	0	Hail (1.75)
DEKALB COUNTY Doraville	15	2037EST			0	0	?	0	TSTM Wind
Doraville	15	2037EST			0	0	0	0	Hail (0.75)
CARROLL COUNTY countywide	15	2045EST			0	0	?	?	TSTM Wind
Villa Rica	15	2105EST			0	0	?	?	TSTM Wind
<p>Scattered trees were blown down by thunderstorm winds. At Villa Rica, road signs were blown down by winds.</p>									
COBB COUNTY Powder Springs	15	2105EST			0	0	?	0	TSTM Wind
Marietta and Smyrna	15	2115EST			0	0	?	0	TSTM Wind
<p>Residents of Powder Springs and several other sections of Cobb County were left in darkness as winds tore down tree limbs and powerlines. At Marietta, winds gusted to 46 miles an hour. A four-story office building in Smyrna lost a section of its roof as thunderstorms moved across the area.</p>									
HALL COUNTY Belmont and Gainesville	15	2115EST			0	0	?	?	TSTM Wind
<p>Trees were uprooted and roofs were damaged in Hall County.</p>									
JACKSON COUNTY 4W Talmo and Maysville	15	2115EST			0	0	?	?	TSTM Wind
<p>Trees and powerlines were blown down and roof damage was done around Talmo. At Maysville, scattered wind damage occurred.</p>									
COWETA COUNTY 4S Newnan	15	2120EST			0	0	0	0	Funnel Cloud
4S Palmetto	15	2130EST			0	0	?	?	TSTM Wind
FULTON COUNTY Atlanta	15	2130EST			0	0	?	0	TSTM Wind
<p>Scattered trees were blown down over the city and just inside the city limits in extreme southwest Atlanta, north of Red Oak.</p>									
UNION COUNTY 7NE Blairsville	15	2135EST			0	0	?	?	TSTM Wind
between Blairsville and Young Harris	15	2135EST			0	0	?	?	Flash Flood
<p>Thunderstorm winds caused power outages, while flash flooding developed between Blairsville and Young Harris and at the Union-Towns County Jail.</p>									
SPALDING COUNTY Griffin	15	2140EST			0	0	?	?	TSTM Wind
HENRY COUNTY Hampton	15	2140EST			0	0	?	?	TSTM Wind
<p>Thunderstorm winds caused widespread power outages over Spalding and Henry counties. Scattered trees and power lines were blown down as the storms moved through the area.</p>									
SUMPTER COUNTY countywide	15	2140EST			0	0	?	?	TSTM Wind
Americus	15	2200EST			0	0	?	?	TSTM Wind
<p>Widespread power outages developed across Sumpter County, after thunderstorm winds tore down trees and power lines.</p>									
MONROE COUNTY Forsyth and Smarr	15	2200EST			0	0	?	?	TSTM Wind
LAMAR COUNTY countywide	15	2200EST			0	0	?	?	TSTM Wind
BUTTS COUNTY Jackson	15	2200EST			0	0	?	?	TSTM Wind
JASPER COUNTY Monticello	15	2200EST			0	0	?	?	TSTM Wind
<p>Widespread power outages resulted when thunderstorm winds tore down powerlines and damaged or uprooted trees across the four-county area.</p>									
STEWART COUNTY countywide	15	2200EST			0	0	?	?	TSTM Wind
WEBSTER COUNTY countywide	15	2210EST			0	0	?	?	TSTM Wind
MARION COUNTY countywide	15	2210EST			0	0	?	?	TSTM Wind
<p>Thunderstorms swept over Stewart, Webster, and Marion counties, resulting in scattered power outages. Most of the outages were caused when trees fell into power lines.</p>									
TERRELL COUNTY Parrott	15	2220EST			0	0	?	?	TSTM Wind
Pleasant Hill	15	2220EST			0	0	?	?	TSTM Wind
<p>Several medium to large trees were blown down by thunderstorm winds, resulting in scattered power outages.</p>									



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<b>GEORGIA</b>									
LEE COUNTY 10NW Albany	15	2230EST			0	0	?	?	TSTM Wind
	Winds caused scattered power outages in the southwest corner of Lee County near U.S. Highway 82 between Albany and Dawson. Many large trees were blown down and telephones poles were broken.								
EARLY COUNTY Hilton and Saffold	15	2230EST			0	0	?	?	TSTM Wind
Blakely	15	2240EST			0	0	?	?	TSTM Wind
Danascus	15	2245EST			0	0	?	?	TSTM Wind
	Most of the wind damage occurred near the Chattahoochee River around Hilton. Large trees were blown down in scattered areas of the county, resulting in a few power outages.								
CRISP COUNTY Lake Blackshear, Cordele and Arabi	15	2245EST			0	0	?	?	TSTM Wind
	Thunderstorm winds tore down trees, toppled major powerlines, and split power poles. Around Lake Blackshear, a forty-foot tree was uprooted and fell onto a pickup truck; the truck suffered minor damage. Scattered falling tree limbs tore down powerlines across the county.								
CLARKE COUNTY Athens	15	2256EST			0	0	?	0	TSTM Wind (51)
	Scattered power outages were caused by falling trees.								
MADISON COUNTY Hull	15	2300EST			0	0	?	?	TSTM Wind
	A home in Hull was damaged when a tree fell through the roof. Scattered trees were downed over the city.								
CLARKE COUNTY 2SW Hull	15	2300EST			0	0	?	?	TSTM Wind
	Scattered trees and limbs were blown down.								
OGLETHORPE COUNTY 5N Crawford	15	2300EST			0	0	?	?	TSTM Wind
Crawford	15	2310EST			0	0	?	?	TSTM Wind
	Scattered trees and limbs were blown down, blocking a road north of Crawford.								
ELBERT COUNTY Bowman	15	2310EST			0	0	?	?	TSTM Wind
8NW Elberton	15	2315EST			0	0	?	?	TSTM Wind
Fortsonia and Elberton	15	2320EST			0	0	?	?	TSTM Wind
Elberton	15	2325EST			0	0	?	?	Flash Flood
	Trees and power lines were downed across Elbert County, causing blockage along several roads. Northwest of Elberton, a home's roof sustained damage due to the winds. In Elberton, one house was heavily damaged by winds and rain when a tree fell upon it and cracked an inside wall. An elementary school had minor damage when it was flooded by heavy rainfall.								
GREENE COUNTY 7NW Union Point	15	2325EST			0	0	?	?	TSTM Wind
	Scattered trees and powerlines were blown down seven miles north-northwest of Union Point.								
WORTH COUNTY countywide	15	2325EST			0	0	?	?	TSTM Wind
Sylvester	15	2330EST			0	0	?	0	TSTM Wind
	Scattered trees were downed across Worth County by thunderstorm winds. At Sylvester, one house sustained minor damage to its wiring and siding when a tree fell down beside it.								
MITCHELL COUNTY Pelham	15	2330EST			0	0	?	0	TSTM Wind
	Winds tore down the awnings of two downtown businesses. The plate glass window was smashed at another building.								
TALIAFERRO COUNTY 7N Crawfordville	15	2350EST			0	0	?	?	TSTM Wind
	Scattered trees were blown down by winds.								
CRISP COUNTY Eastern Crisp County	15	2355EST			0	0	?	?	TSTM Wind
	Scattered trees and powerlines were downed by the thunderstorms.								
WILKES COUNTY Rayle	15	0005EST			0	0	?	?	TSTM Wind
4NW Washington	15	0005EST			0	0	?	?	TSTM Wind
	Scattered trees were blown down along and across U.S. Highway 78 northwest of Washington.								
<b>GEORGIA</b>									
BEN HILL COUNTY countywide	16	0005EST			0	0	?	?	TSTM Wind
Fitzgerald	16	0010EST			0	0	?	0	TSTM Wind
	Thunderstorm winds lifted and destroyed a shed and blew down a bannister on a county building. Numerous trees and several power poles were uprooted or broken by high winds estimated at over 50 miles an hour. Several power outages resulted over the county and in Fitzgerald. A falling tree damaged a car and one side of a residence in Fitzgerald. Several pecan trees were damaged in the county.								
TURNER COUNTY 2N Ashburn	16	0015EST			0	0	?	?	TSTM Wind
	Powerlines and power poles were blown down by winds. Numerous trees were uprooted around the city.								
TIFT COUNTY countywide	16	0015EST			0	0	?	?	TSTM Wind
Tifton	16	0020EST			0	0	?	0	TSTM Wind
	Scattered tree damage occurred in several areas across the county. The winds did minor damage in downtown Tifton.								
WILCOX COUNTY countywide	16	0020EST			0	0	?	?	TSTM Wind (52)
	Powerlines were blown down by winds. Numerous trees were uprooted and blown down all over the county. Wind speeds were estimated to be near 60 miles an hour.								
LAURENS COUNTY 12NW Dublin	16	0020EST			0	0	?	?	TSTM Wind
	At Georgia Highway 441, numerous trees were uprooted, resulting in traffic congestion.								
DODGE COUNTY 2S Eastman	16	0022EST			0	0	?	?	TSTM Wind
	Numerous trees were uprooted by winds at Georgia Highway 341.								
IRWIN COUNTY Ocilla	16	0030EST			0	0	5	?	TSTM Wind
	The scale shed/office, twelve cotton trailers and seven modules were damaged at a cotton gin and warehouse by thunderstorm winds. The metal cotton trailers were thrown into the street and banged around like toys. The cost of the damage at the warehouse alone was estimated at over \$75,000. A mobile home residence owned by the company was severely damaged also. The roof was carried 200 yards away by winds. Several private property owners suffered damages ranging from torn barn roofs to damaged satellite disks and uprooted trees. Falling trees and winds also caused power outages.								
LAURENS COUNTY 3NE Minter	16	0040EST			0	0	4	?	TSTM Wind
	Thunderstorm winds ripped the roof off a mobile home near Georgia Highway 86. The home was rolled a short distance. Powerlines and trees in the area were also downed.								
JOHNSON COUNTY Kite	16	0040EST			0	0	4	?	TSTM Wind
	The roof of a barn was blown off and several utility buildings were either damaged or destroyed, with debris being hurled nearly a thousand feet away. Shingles were also ripped from the roof of the farmer's home.								
MONTGOMERY COUNTY Mount Vernon and 5N Mount Vernon	16	0045EST			0	0	?	?	TSTM Wind
	Many trees were uprooted and blown down over the northern portion of the county near Mount Vernon. Powerlines were also blown down by the winds.								
JEFF DAVIS COUNTY Snipesville	15	0045EST			0	0	?	?	TSTM Wind
	Scattered trees were blown down across Georgia Highway 107.								
TELFAIR COUNTY Helena	16	0050EST			0	0	?	?	TSTM Wind
McRae	16	0055EST			0	0	?	?	TSTM Wind
3S McRae									
	Numerous trees were uprooted and blown down across Georgia Highway 341 around Helena and McRae and just south of McRae. The winds also tore down powerlines.								
WHEELER COUNTY countywide	16	0105EST			0	0	?	?	TSTM Wind
	Powerlines were blown down by winds and numerous trees were uprooted, mainly over central and eastern Wheeler County.								

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>— GEORGIA</b>									
JEFF DAVIS COUNTY Southeast Jeff Davis County	16	0115EST			0	0	?	?	TSTM Wind
									Thunderstorm winds caused scattered damage to smaller utility buildings and roofs. Winds also tore tree limbs down along the Alma Highway.
TURNER COUNTY 2N Ashburn	16	0115EST			0	0	?	?	TSTM Wind
MONTGOMERY COUNTY Mount Vernon	16	0115EST			0	0	?	?	TSTM Wind
TREUTLEN COUNTY countywide	16	0115EST			0	0	?	?	TSTM Wind
									Scattered trees were blown down onto powerlines, mainly over the western portion of the county.
WEBSTER COUNTY countywide	16	0130EST			0	0	?	?	TSTM Wind
RANDOLPH COUNTY countywide	16	0130EST			0	0	?	?	TSTM Wind
									Scattered large tree limbs were torn down by thunderstorm winds across Webster and Randolph counties.
CANDLER COUNTY Metter	16	0130EST			0	0	?	0	TSTM Wind
									Scattered trees were downed across Metter as thunderstorms moved through the area. One city-owned building had suffered wind damage when a wall fell in.
APPLING COUNTY countywide Baxley	16	0135EST			0	0	?	?	TSTM Wind
	16	0155EST			0	0	?	?	TSTM Wind
									Powerlines were downed and numerous trees were blown down across county roads and streets.
BACON COUNTY 5W Alma 5N Alma	16	0135EST			0	0	?	?	TSTM Wind
	16	0155EST			0	0	?	?	TSTM Wind
									Tree limbs were blown down around Alma.
TERRELL COUNTY 2SW Sasser	16	0200EST			0	0	?	?	TSTM Wind
									Scattered trees were uprooted along U.S. Highway 82.
CANDLER COUNTY countywide	16	0200EST			0	0	?	?	TSTM Wind
									Scattered trees were uprooted or broken, mainly over the eastern portion of the county. The debris blocked several roads and tore down powerlines.
LEE COUNTY Smithville Leesburg	16	0215EST			0	0	?	?	TSTM Wind
	16	0230EST			0	0	?	0	TSTM Wind
									High winds destroyed the county's aluminum building that served as the narcotics squad headquarters in Leesburg. Little was left of the building after it was lifted and thrown over a nearby house trailer. Scattered trees were uprooted and broken over the county, including Smithville and Leesburg, although no power outages occurred. Two county roads were impassable due to fallen trees, while limbs were screw along U.S. Highway 19.
EVANS COUNTY Claxton	16	0300EST			0	0	?	0	TSTM Wind
									The wall of a building was blown down in Claxton.
LONG COUNTY Ludowici	16	0300EST			0	0	?	0	TSTM Wind
									A church steeple was blown off in Ludowici.
RANDOLPH COUNTY Coleman Coleman	22	2200EST			0	0	?	0	TSTM Wind
	22	2230EST			0	0	?	0	TSTM Wind
									Throughout town of Coleman, high winds uprooted several trees. Many powerlines were blown down throughout the city.
<b>10 IDAHO</b>									
Kootenai Co., Post Falls	3	1807 PST			0	0	3	0	HIGH WIND
									Wind knocked a tree into power lines at the intersection of 10th Street and Henry Avenue, leaving residents in a one city block area without power until 8:30 PM PST.
Ada, Blaine, Cassia, and Valley Counties	26	all day			0	0	0	0	HEAVY SNOW
									A strong and wet Pacific storm dumped heavy snow on the mountains and some valleys above 5000 feet in Southwest and South-Central Idaho. On the mountains, Pomerelle received 5 inches, Bogus Basin 6 inches, and Brundage 8 inches. Sun Valley received 8 inches in the valley.
<b>11 ILLINOIS</b>									
St. Clair Co., Parks Bi-State Airport -Alorton	15	0500CST			1	20	7	0	Tstm. wind (70+)
									A very strong downburst or downbursts hit the Metro East St. Louis area in St. Clair County. A narrow path of damage extended from Parks Bi-State Airport through the village of Alorton. At least a dozen mobile homes were destroyed in Alorton and many others received damage. An estimated 50 homes were damaged and several dozen trees were uprooted. A small church was destroyed. High winds blew a large tree onto a wood-frame house in Alorton. A woman in the house at the time was killed and one man was seriously injured. At the Parks Bi-State Airport, two hangars were destroyed and 40 airplanes were badly damaged. Damage at the airport was estimated over one million dollars. One of the most heavily damaged areas was at Walnut and 43rd Street, where a number of mobile homes were damaged or destroyed. A mobile home park on Old Missouri Road had a half dozen mobile homes destroyed and many trees uprooted. Strong winds severely damaged the roofs of the Neeley and Freeman schools. A post storm survey indicated all debris were thrown from the southwest toward a northeast direction and all trees that were uprooted were leaning toward the northeast. Small debris was stuck to the south side of fences and on the southwest portions of several houses. The survey indicated that straight-line winds of 60 to 100 mph on the leading edge of thunderstorms produced the damage. Hail and rain were also reported during the period of strong winds. A meteorologist for KMOX Radio reported that his anemometer at the airport reached 70 knots before it was blown away by high winds.
Madison Co., Edwardsville	15	0503CST			0	0	?	0	Tstm. winds (58)
Clinton Co., Breese	15	0515CST			0	0	4	0	Tstm. winds and Hail (1.0)
									High winds blew down trees and did damage to a mobile home. One-inch hail was also reported.
Bond Co.	15	0540CST			0	0	?	0	Tstm. winds
									Strong winds blew down some trees in Bond County.
Marion Co.	15	0550CST			0	0	?	0	Tstm. winds (52)
Fayette Co., near Vandalia	15	0605CST			0	0	?	0	Tstm. winds (70)
Clinton Co., Carlyle	15	0615CST			0	0	3	0	Tstm. winds (52) and Hail (1.75)
									Strong winds blew the roof off a mobile home. Also, large hail was reported.
Effingham Co., 5 S. Effingham	15	0630CST			0	0	?	0	Hail (0.75)
Jasper Co., Newton	15	0710CST			0	0	?	0	Hail (0.88)
Union Co., McClure and East Cape Girardeau	15	1100CST			0	0	?	0	Hail (0.75)

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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					KILLED	INJURED	PROPERTY	CROPS	

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

12 INDIANA									
Grant County, Marion	5	2055 EST			0	0	?	0	Hail (1.00)
INZ001-002 far north-central and northwest Indiana	15	1845 EST-17 0245 EST			0	0	0	0	Heavy Snow
6 to 10 inches of lake-effect snow fell over far northwest and north-central Indiana, mainly during the day of the 16th. 10 inches fell at Bellville Park (4 miles south of South Bend) and 8 inches fell at North Liberty.									
Fountain County, 2E Covington	15	0840 EST			0	0	3	0	Tstm.Wind
Fountain County sheriff reported trees downed and a barn blown down.									
Vigo County, Terre Haute	15	0903 EST			0	0	?	0	Hail (0.88) and Tstm.Wind
State police reported nickle size hail and a few trees downed.									
Clay County, Brazil	15	0930 EST			0	0	?	0	Hail (0.75)
Tippecanoe County, Lafayette Battleground	15	0933 EST			0	0	?	0	Hail (1.00)
	15	0935 EST			0	0	?	0	Hail (1.00)
Nickle size hail fell at Lafayette and nickle to quarter size hail fell at Battleground.									
Carroll County, Pittsburg to Patton	15	0940 EST			0	0	?	0	Hail (1.00) and Tstm.Wind
Thunderstorms produced quarter size hail and downed several large trees from Pittsburg to Patton.									
Cass County, Logansport	15	1010 EST-1015 EST			0	0	4	0	Tstm.Wind
Thunderstorm winds downed trees, blew out plate glass windows and damaged a church roof in Logansport.									
Johnson County, Cordry-Sweetwater Lakes	15	1210 EST			0	0	3	0	Tstm.Wind
An amateur radio operator reported 3 trees blown down at a residence, one fell onto a roof.									
Pike County, 8W Huntingburg	15	1230 EST			0	0	?	0	Hail (2.50)
Wayne County, 2W Richmond Richmond	15	1325 EST			0	0	3	0	Tstm.Wind
	15	1328 EST			0	0	?	0	Hail (0.88)
A semi-trailer truck was blown over 2 miles west of Richmond and quarter size hail fell in Richmond.									
Allen County, Fort Wayne 2NE Woodburn Fort Wayne	27	2031 EST			0	0	5	0	Tstm.Winds (50)
	27	2045 EST			0	0	4	0	Tstm.Winds
	27	2052 EST			0	0	3	0	Tstm.Winds
Thunderstorm winds clocked at 58 mph at Baer Field produced \$60,000 in damage at the airport. Among the damage was \$30,000 to a light Cessna that was flipped and totaled. There was roof damage to the Fort Wayne Air Service hangar. There was also damage to several small buildings and the Airport Hilton sign. Power lines were down. 2 miles northeast of Woodburn thunderstorm winds uprooted a pine tree, blew out a window, blew a tree on a house, damaged a shed, and blew down powerlines. Several trees were blown down in the Times Corner and Weiser Park areas of Fort Wayne.									
13 IOWA ————— NONE REPORTED									
14 KANSAS ————— NONE REPORTED									

15 KENTUCKY									
McCracken Co.	08	0226CST			0	0	1	0	Hail (1.25)
Breckinridge Co.	15	1230CST			0	0	4	1	Thunderstorm Wind
A barn and several trees were blown down near Plains, Kentucky, 35 miles southwest of Louisville.									
Marshall Co. Hardin	15	1232CST			0	0	0	0	Hail (1.00)
Marshall Co. Draffenville	15	1248CST			0	0	0	0	Hail (0.75)
Meade Co.	15	1350EST			0	3	6	3	Thunderstorm Wind
Thunderstorm winds in excess of 110 mph ripped through Flashery, causing an estimated \$2 million in property damage and affecting nearly 50 families. Forty-seven homes and four businesses were either destroyed or damaged. Most of the damage occurred along a 3.5 mile stretch of KY 1816 from the edge of town to the Short-Hunt Road junction. One man was seriously injured as a barn fell on him. Two other people received minor injuries.									
Hardin Co.	15	1405EST			0	4	6	3	Thunderstorm Wind
Thunderstorm winds in excess of 100 mph inflicted nearly \$1 million in damage to the Glendale area. The winds cut a path of destruction two miles long. Along the way it destroyed at least four homes, a mobile home, seven barns and several storage buildings and garages. As the wind crossed Interstate 65, it overturned two tractor-trailers, a pickup truck, and a truck pulling a mobile home. Minor injuries to four people driving on the Interstate were reported.									
Lyon Co. Kuttawa	15	1310CST			0	0	0	0	Hail (0.75)
Bullitt Co.	15	1420EST			0	0	5	0	Thunderstorm Wind
Thunderstorm winds blew the roof off the North Bullitt High School gym. Although the damage to the gym was extensive and two physical education classes were in session, no injuries were reported. In addition, several cars and busses in the parking lot were damaged.									
Christian Co.	15	1348CST			0	0	0	0	Hail (1.00)
Shelby Co.	15	1450EST			0	0	5	2	Thunderstorm Wind
Strong thunderstorm winds blew down three barns, a garage and about a mile of fence near Finchville.									
Hardin Co.	15	1515EST			0	0	4	0	Thunderstorm Wind
Strong winds destroyed several mobile homes on the north side of Radcliff.									
Shelby Co.	15	1545EST			0	0	4	0	Thunderstorm Wind
Thunderstorm winds destroyed a barn and blew down trees near Simpsonville. In addition, a mobile home in Shelbyville was damaged.									
Nelson Co. LaRue Co.	15	1557EST			0	6	5	2	Thunderstorm Wind
Thunderstorm winds in excess of 100 mph, damaged homes, trailers, and barns in a two mile long path which began along the LaRue and Nelson county line and stretched northeast into Nelson County near the small community of New Haven. Six men were slightly injured as the storm destroyed a hunting lodge on a LaRue County farm.									
Nelson Co.	15	1558EST			0	0	0	0	Hail (1.25)
Pendleton Co. Morgan	15	1609EST	1/4	200	0	2	4	0	Tornado (F1)
Two house trailers were destroyed and a roof on an old school was ripped off as the tornado struck in the southwest portion of the county. The area hit was the small community of Morgan, eight miles southwest of Falmouth. A man and a woman in a destroyed mobile home were slightly injured.									
Marion Co.	15	1625EST			0	0	0	0	Hail (0.75)
Grayson Co.	15	1530CST			0	0	5	2	Thunderstorm Wind
A thunderstorm with winds approaching 110 mph, destroyed three houses and at least three barns. Also, numerous other residences and outbuildings were damaged.									
Grayson Co.	15	1530CST			0	0	0	0	Hail (3.00)
Green Co.	15	1545CST			0	0	4		Thunderstorm Wind Hail (1.25)
Strong thunderstorm winds damaged roofs on houses, destroyed several barns and also blew down a large billboard.									

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NOVEMBER 1989

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					KILLED	INURED	PROPERTY	CROPS	PROPERTY	CROPS	
<b>— KENTUCKY —</b>											
Taylor Co. Campbellsville	15	1645EST			0	0	0	0			Hail (1.25)
Lincoln Co.	15	1705EST			0	0	2	0			Thunderstorm Wind
					Strong thunderstorm winds blew down trees and power lines in the community of Stanford.						
Cumberland Co.	15	1753EST			0	0	0	0			Thunderstorm Wind
					Strong winds blew trees down at Burkesville.						
Monroe Co.	15	1655CST			0	0	1	0			Thunderstorm Wind
					Several trees were downed by thunderstorm winds along Route 163 just south of Tompkinsville.						
Wayne Co.	15	1833EST			0	2	4	0			Thunderstorm Wind
					Strong thunderstorm winds blew down trees and power lines across the county. Two people were injured at Griffin when a tree fell through a window. The breaking glass caused the injuries.						
Pulaski Co.	15	1840EST			0	0	0	0			Thunderstorm Wind
					Strong winds blew trees down near Somerset.						
Casey Co.	15	1845EST			0	0	0	0			Thunderstorm Wind
					Trees were blown down near Liberty.						
McCreary Co.	15	1915EST			0	0	0	0			Thunderstorm Wind
					Trees were downed over Highway 90 and Jennings Branch Road near Whitley City.						
Pulaski Co.	28	0140EST			0	0	3	0			Thunderstorm Wind
					A burst of high wind totally destroyed a mobile home and nearby barn in the northern portion of the county. The mobile home was found on its top and pieces of the barn were scattered over 250 yards.						
<b>16 LOUISIANA</b>											
LAZ009-013-014	07	0900CST-1800CST			0	0	?	?			Heavy Rain
SE Louisiana Orleans Parish	07	1000CST-1800CST			0	0	5	?			Flash Flood
Jefferson Parish	07	1000CST-1800CST			1	0	6	?			Flash Flood
St. Charles Parish	07	1000CST-1800CST			0	0	6	?			Flash Flood
St. Bernard Parish west portion	07	1000CST-1800CST			0	0	4	?			Flash Flood
Plaquemine Parish north portion	07	1000CST-1800CST			0	0	4	?			Flash Flood
					A narrow, east-west band of strong thunderstorms developed over southeast Louisiana from near Convent in St. James Parish across the New Orleans area to Chalmette in St. Bernard Parish shortly after daybreak. The thunderstorm activity persisted over the same area until mid-afternoon before decreasing. Rainfall amounts of 8 to 12 inches were common across the New Orleans metro area from 0900CST to 1800CST. The runoff from the rainfall overwhelmed local pumping capacity, resulting in widespread flooding of streets, houses, and autos. No damage estimate has been received at the time of this report. A parish by parish breakdown of rainfall and extent of flooding follows.						
					Orleans Parish: Rainfall amounts were less in Orleans Parish than surrounding areas, with 5 to 7 inches occurring over most of the parish. The hardest hit area was the Algiers area where approximately 65 houses received minor flood damage.						
					Jefferson Parish: Rainfall reports from several parish water pumping stations indicated 10 to 12 inches of rain occurred between 0800CST and 1400CST, and New Orleans International Airport in Kenner recorded 9.98 inches of rain in this time period. Approximately 4800 houses reported mostly minor flood damage in the parish. A two year old girl drowned at 1700CST when she was swept into a drainage canal. F020.						
					St. Charles Parish: Approximately 1100 houses had damage due to water entering the homes. Most of the houses were located in the Ormond subdivision where heavy rains overwhelmed drainage pumps. Some houses remained flooded until the afternoon of Nov. 8th.						
<b>— LOUISIANA —</b>											
					St. Bernard Parish: Between 6 and 8 inches of rain fell over the Chalmette area of St. Bernard Parish between 0600 and 1500CST. Street flooding was widespread and approximately 25 houses received minor flood damage.						
					Plaquemine Parish: Belle Chase Naval Air Station (NBG) recorded a little over 8 inches of rain between 0600CST and 1500CST. Street flooding was widespread and minor flooding affected 25 houses in the extreme north portion of the parish.						
					Another area of strong thunderstorms affected East Baton Rouge and Livingston parishes during the afternoon hours. Watson received 6.50 inches of rain and Baton Rouge had 6.14 inches during the 12 hours from 0600CST to 1800CST. Extensive street flooding was reported in the Baton Rouge area and water entered a few homes in Watson.						
East Carroll Parish Lake Providence Union Parish, 5 W Farmerville	08	1315CST			0	0	?	?			Hail (1.00)
Claiborne Parish, 5 SE Homer	08	1340CST			0	0	?	?			Hail (1.75)
Lincoln Parish, 6 N Ruston	08	1350CST			0	0	?	?			Hail (1.00)
Ouachita Parish, 2 S Sterlington	08	1355CST			0	0	?	?			Hail (1.50)
Morehouse Parish, 5 NW Bastrop	08	1410CST			0	0	?	?			Hail (0.88)
West Carroll Parish, 5 NW Bastrop	08	1420CST			0	0	?	?			Hail (1.00)
Oak Grove	08	1420CST			0	0	?	?			TSTM Wind (52)
Jackson Parish, 5 S Jonesboro	08	1450CST			0	0	?	?			Hail (1.00)
East Carroll Parish, 2 N Transylvania	08	1450CST			0	0	?	?			TSTM Wind
Transylvania to Lake Providence	08	1455CST			0	0	?	?			Hail (0.88)
Winn Parish, 5 S Dodson	08	1500CST			0	0	?	?			Hail (1.75)
West Carroll Parish, Forest	08	1510CST-1520CST			0	0	?	?			TSTM Wind
Forest	08	1505CST			0	0	?	?			Hail (1.00)
St. Landry Parish, 1 W Palmetto	08	1455CST			0	0	?	?			TSTM Wind
	08	1455CST			0	0	?	?			Hail (1.75)
	08	1840CST			0	0	?	?			Hail (0.75)
					A line of strong thunderstorms moved across north-central and northeast Louisiana producing large hail and damaging wind gusts which downed trees and large branches. Near Forest, hail damaged automobile windshields, and thunderstorm wind gusts damaged a mobile home and outbuildings. A large number of trees were downed by thunderstorm wind gusts between Transylvania and Lake Providence. Thunderstorms later developed in south-central Louisiana, but there was only one report of significant hail, near Palmetto.						
Jackson Parish, Vernon	15	1125CST			0	0	?	?			Hail (1.75)
Vernon	15	1125CST			0	0	?	?			TSTM Wind (52)
Eros	15	1140CST			0	0	?	?			TSTM Wind
Eros	15	1140CST			0	0	?	?			Hail (0.88)
Lincoln Parish, Choudrant	15	1135CST			0	0	?	?			Hail (1.00)
Ouachita Parish, 5 SW Monroe	15	1140CST			0	0	4	?			TSTM Wind
7 SW Monroe	15	1205CST			0	0	4	?			Hail (0.75)
10 SW Monroe	15	1210CST			0	0	4	?			TSTM Wind
Monroe	15	1220CST			0	0	4	?			TSTM Wind (56)
Richland Parish, Rayville	15	1240CST			0	0	?	?			TSTM Wind
East Carroll Parish, Sোধheimer	15	1315CST			0	0	?	?			Hail (1.75)
Madison Parish, Enoka	15	1320CST			0	0	?	?			Hail (1.75)
					A cluster of severe thunderstorms developed over north-central Louisiana during the late morning and moved east across northeast Louisiana, bringing damaging wind gusts and large hail. The most significant damage occurred in the vicinity of Lake Cheniere in Ouachita Parish. One house was destroyed, a barn was destroyed, several house roofs were damaged in the area, and numerous trees were downed in a mile wide swath. In the south part of Monroe, hail and roof material driven by 60 mph wind gusts shattered 40 to 50 automobile windows. The remainder of the damage in north Louisiana was confined to downed trees and power lines.						
Livingston Parish, Watson	15	1440CST			0	0	?	?			Hail (0.88)
Livingston	15	1445CST			0	0	4	?			TSTM Wind
Orleans Parish, Lakefront Airport (NEW)	15	1607CST			0	0	?	?			TSTM Wind (55)
					A few severe thunderstorms developed in southeast Louisiana in response to the same weather system which produced severe weather in northeast Louisiana earlier in the day. Numerous large trees were downed in Livingston, several of which fell onto a house, causing substantial damage. A wind gust to 62 miles an hour was reported at Lakefront Airport in New Orleans, and a few trees were toppled in the city.						

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>LOUISIANA</b>									
St. Landry Parish, Krotz Springs Iberia Parish, 5 S New Iberia	22	1230CST			0	0	3	?	TSTM Wind
	22	1240CST			0	0	3	?	TSTM Wind
	A line of thunderstorms in advance of a cold front produced strong wind gusts which caused damage in a few locations in south-central Louisiana. In Krotz Springs, thunderstorm wind gusts heavily damaged two commercial buildings. A mobile home was overturned, and several trees were downed just south of New Iberia.								
Jefferson Davis Parish, Hathaway	25	1300CST			0	0	5	0	Lightning
	A fire started by a lightning strike heavily damaged Hathaway High School.								
<b>17 MAINE</b>									
MEZ 001-002-003-004-005-006-007-008-009-010-011-012-013-014 All of Maine	16	1230EST-2300EST			0	5	5	0	High Winds
	High winds in association with a strong cold front passing through the state downed trees and power lines. Winds of 53 mph were reported in Brunswick, 52 mph in Augusta and 43 mph in Portland. High winds caused trees to topple on Wiscasset roads, sank an 18 foot boat in Wells, canceled North Haven ferries, felled power lines on Congress Street in Portland, brought tree limbs down at Old Orchard Beach, and left between 20,000 and 25,000 people without power across the state. A marine storm warning was posted along the Maine and New Hampshire coast. Record high temperatures preceded the front. Caribou hit 63 degrees, breaking the previous record of 53 set in 1960.								
MEZ 001-002-003-004-005-006-007-008-009-010-011-012-013-014 All of Maine	21	0050EST-2200EST			0	35	5	0	Blizzard
	Low pressure north of Lake Ontario moved southeast to a position near Casco Bay on the morning of the 21st before intensifying rapidly along the midcoast near Rockland. Sustained winds of hurricane force with gusts of 100 mph were reported at Matinicus Rock. Blizzard conditions were felt along much of the midcoast mountains and downeast Maine. Maximum snow amounts of 18 inches fell in interior Washington County. High winds up to 58 mph in Augusta and Bangor delayed flights. Downed power lines caused 40,000 customers to lose electricity, according to Central Maine Power. 3,500 people lost power in the Rockland area alone. Seven highways were closed across the state. Several accidents included a 12 car pile-up on Route 1 in Valdeboro and a pile-up in Buckfield. Lightning struck a garage in Orono as strong thunderstorms passed through the area. A pressure of 28.66 inches was reported in Bangor as the "eye" of the storm passed to the south. Some of the snow totals include:								
					Vanceboro	18 inches			
					Kingfield	15 inches			
					Farmington	13 inches			
					Houlton	12 inches			
					Bangor	11 inches			
					Guilford	10 inches			
					Albion	9 inches			
					Runford	8 inches			
					Waterville	8 inches			
					Camden	7 inches			
					Rockland	6 inches			
					Caribou	4 inches			
					Augusta	4 inches			
<b>18 MARYLAND and D.C.</b>									
Frederick County	16	0800EST			0	0	4	0	Thunderstorm Winds
	Thunderstorm winds downed trees and power lines at various locations in Frederick County. Some of the downed trees blocked roads.								
District of Columbia	16	0830EST			0	0	0	0	Thunderstorm Winds (51 kt)
Montgomery County	16	0845EST			0	0	5	0	Thunderstorm Winds, Heavy Rain
	Thunderstorm winds downed numerous trees and large limbs at various locations in Montgomery County and cut power to more than 20,000 customers. Heavy down-pours caused road flooding at various locations and briefly closed several small bridges.								
<b>MARYLAND and D.C.</b>									
Carroll County	16	0900EST			0	0	5	0	Thunderstorm Winds
	Thunderstorm winds downed numerous trees and power lines at various locations in Carroll County. About a dozen roads were blocked by downed trees. The storm also brought nearly an inch of rain.								
Prince Georges Co, Laurel	16	0910EST			0	0	4	0	Thunderstorm Winds (52 kt)
	Thunderstorm winds estimated at 60 mph caused some tree and power line damage in Laurel.								
Howard County	16	0915EST			0	3	5	0	Thunderstorm Winds
	Thunderstorm winds downed trees and caused other minor damage at various locations in Howard County. Near Clarksville, a house under construction was undermined and pushed off of its foundation. Then it collapsed and injured two construction workers. A 28 year old man suffered severe electrical burns when winds blew a live power line into the path of his car.								
Anne Arundel County	16	0915EST			0	0	5	0	Thunderstorm Winds (71 kt)
	Thunderstorm winds caused tree and building damage at various locations in Anne Arundel County with the most extensive damage in the northern part. The damage was especially heavy in Riviera Beach. The winds downed many trees, unroofed several houses, and caused widespread power outages. A gust of 82 mph was measured at the Port Annapolis Marina. Several car windows were blown out at the BWI Airport where 64 mph winds were measured. Also, briefly heavy rain caused minor flooding.								
Baltimore City, Baltimore County, Dundalk	16	0920EST			0	1	6	0	Thunderstorm Winds (65 kt), Hail
	Convective winds estimated at 75 mph caused extensive structural damage in Dundalk. The winds tore roofs off eight apartment buildings and partially collapsed a warehouse. Damage to the apartments was over 1 million dollars. A woman suffered facial cuts which were caused by flying glass. The debris was found to be blown in the same direction, and small hail was also reported. Besides, downed trees, power outages, and minor structural damage were reported at various other locations in Baltimore County and in Baltimore City, and briefly heavy rain caused minor flooding.								
Harford County	16	0950EST			0	0	5	0	Thunderstorm Winds
Cecil County	16	1015EST			0	0	5	0	Thunderstorm Winds (63 kt)
	Thunderstorm winds downed trees, cut power, and caused structural damage at various locations in Harford and Cecil counties. A gust of 73 mph was measured in Elkton, Cecil County.								
Queen Annes County Grasonville, Centerville, and Sudlersville	16	1010EST			0	0	4	0	Thunderstorm Winds
	Thunderstorm winds downed power lines and many large trees, and blew off half of a roof in Grasonville just east of the Bay Bridge. Five power poles were blown across a road in Centerville near the Chester River, and trees were downed in Sudlersville.								
Kent County, Millington	16	1020EST	4	440	0	0	5	0	Tornado (F1)
	A tornado touched down 2 miles east of Millington near No. 10 School House Road then moved east and cut a skipping path across Millington where it leveled a cinder block church building, damaged other buildings and snapped power poles. Damage to the church was estimated at \$250,000. The tornado continued east toward the Delaware border and cut an intermittent path through wooded areas. Classification F1,P2,P3.								
Kent County, Galena	16	1020EST			0	0	4	0	Thunderstorm Winds
	Thunderstorm winds destroyed an equipment shed near Galena and caused minor damage at scattered other locations in Kent County.								
Dorchester County, Galetstown	16	1020EST			0	0	3	0	Thunderstorm Winds
	Thunderstorm winds downed several large trees near Galetstown.								
Talbot County	16	1020EST			0	0	3	0	Thunderstorm Winds (42 kt)
	Thunderstorm winds downed several trees. Winds were measured at 48 mph near Easton.								
Wicomico County, Mardella Springs	16	1020EST			0	0	4	0	Thunderstorm Winds
	Thunderstorm winds downed power lines and large trees.								

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS	
<b>MARYLAND and D.C.</b>										<b>20 MICHIGAN</b>									
Worcester County, Ocean City	16	1200EST			0	0	5	0	Thunderstorm Winds (52 kt)	MIZ016-017-019-020-021 Upper Peninsula	01	0000EST			0	0	0		Heavy Snow
Wind gusts of over 60 mph downed trees and damaged several buildings in the north part of Ocean City.										Over the western Upper Peninsula heavy snow fell from midnight November 1 through 7p.m. November 3. 46 inches of snow fell at Ironwood; Wakefield had 24 inches. Over the central Upper Peninsula, 13 inches fell at Duke, 9 inches at Marquette. Over in the east, Sault Ste. Marie had 9 inches.									
Entire State and District of Columbia	20	Late Evening			1	3	6	0	High Winds (63 kt)	MIZ001-002-003-004-005-006-007-008-009-010-011-013-016-017-019-020-021 All but Southeast Lower Michigan	15	1900EST			0	0	0		Heavy Snow and High Wind
High winds associated with a strong, fast-moving cold front began at approximately 2000 EST in western Maryland, 2130EST in Baltimore and the District of Columbia, and by midnight at the Lower Eastern Shore. There were numerous reports of gusts reaching between 60 and 70 mph and a few reports of even higher gusts. The highest confirmed wind gust was 73 mph measured in northwest Washington D.C. at approximately 2200 EST. Reports of downed trees or large limbs, utility lines and poles, and significant structural damage were widespread. Power outages affected approximately 100,000 customers. An 80 year old woman was killed in the Little Italy section of east Baltimore City when the wall of a warehouse that was in the process of being renovated collapsed, fell across an alley, and smashed through the roof of her home. She was buried under the rubble. Her husband escaped with a leg injury. Two others were injured when a falling tree caused an automobile accident in Frederick County. The strongest winds and most of the damage occurred near the beginning of the onslaught of the high winds. Strong winds continued through much of 21 November as gusts occasionally reached 40 to 50 mph and caused some additional minor damage and intermittent power outages. A brief thunderstorm ushered in the high winds across parts of northern Maryland. In western Maryland, snow showers accompanied the sharply dropping temperatures, and a few automobile accidents occurred on slick roads during the early morning of 21 November. F80P.										A low pressure system over southeast lower Michigan on the morning of the 15th moved rapidly northeast across Lake Huron to Ontario by the morning of the 16th. The cyclonic flow kept lake-effect snow falling into the morning of the 17th. High winds occurred over the Upper Peninsula with numerous reports of winds gusting between 50 and 60 mph. Whitefish Point had wind gusts to 63 mph during the afternoon of the 16th. The high winds and heavy snow caused numerous traffic accidents. 8 deaths occurred in traffic accidents related to the storm. Snowfalls of 7 to 12 inches were common across most areas of both the Upper and Lower Peninsula. 19 inches of snow fell at Hart for the storm's maximum snowfall. Hart is 35 miles north of Muskegon in west-central lower Michigan. Over the Upper Peninsula the maximum snowfall was 16 inches at Michigamme, 35 miles west of Marquette.									
Entire State and District of Columbia	22	Afternoon			0	0	0	0	Snow	MIZ016 Northern Lower Peninsula	17	1900EST			0	0	0		Heavy Snow
An unusually early winter storm brought 3 to 6 inches of snow to most of Maryland and the District of Columbia. There were a few reports of 7 inches on the Eastern Shore. The snow began during the late afternoon or early evening of the day before Thanksgiving and ended early Thanksgiving morning. Numerous automobile accidents occurred on the snow-slicked roads.										A fast-moving storm crossed Lake Michigan during the late afternoon of the 17th as it moved northeast to northeast Lake Huron by the morning of the 18th. 12 inches of snow fell at Pellston during the night.									
<b>19 MASSACHUSETTS</b>										MIZALL All of Michigan									
MAZALL All of Massachusetts	16	0600EST-1800EST			0	2	5	0	High winds	MIZ020 Western Upper Peninsula	21	0700EST			0	0	0		Heavy Snow
Gale force winds from the south preceded a strong squall line and cold front across the state, resulting in scattered property damage and at least two personal injuries. In Willis, a large tree limb was blown down onto a moving auto, seriously injuring the driver. In Pittsfield, a large plate glass window was blown into a school cafeteria, injuring one person. In Worcester a large window blew out of a twenty-story building. Power outages affected up to 20,000 customers state-wide with up to 8,000 of that total reported to be in western Massachusetts.										High winds began blowing across the state at 0900EST on the morning of the 20th as a very strong storm passed north of the Great Lakes with a strong cyclonic flow across Michigan into the evening of the 20th. Numerous reports of wind gusts between 50 and 60 mph were reported between 0900EST and 1800EST on the 20th. The highest reported wind was 78 mph at Copper Harbor during the afternoon. Numerous reports of downed trees, minor structural damage and power outages were received. In Port Huron a small barn was smashed by a falling tree.									
MAZALL All of Massachusetts	20-21	2100EST-1500EST			0	0	5	0	High winds	MIZ007-016-017-019-020 Upper Peninsula	27	0700EST			0	0	0		Heavy Snow
Gale force northwest winds gusting up to 50 to 70 mph accompanied the arrival of very cold air in the wake of a strong cold front. A peak gust up to 55 mph was recorded by the National Weather Service at Logan International Airport in Boston and a gust to 75 mph was recorded at the Blue Hill Observatory in Milton. Throughout the state the high winds caused scattered property damage to autos and homes due to falling tree limbs. A few signs were also reported blown down. No injuries were reported.										Heavy snow began falling just after 0700EST over the western Upper Peninsula and over Northwest Lower Michigan at around 2300EST on the 27th. Snowfalls of 6 to 10 inches were common along the Lake Superior shore areas. Fifteen inches of snow fell at Ironwood between 0700EST on the 27th and 1900EST on the 28th. Over Northwest Lower Michigan, 4 to 5 inches fell. This was in Antrim, Charlevoix and Emmet counties.									
MAZ002-003-007-009 Southeast Massachusetts	23	0200EST-1500EST			0	0	5	0	Heavy snow	Ionia County 2S Portland	27	1835EST	6.0	100	0	0	5		Tornado (F2)
The southeastern portion of the state was blanketed by a record-breaking, heavy, Thanksgiving Day snowstorm. Snowfall totals ranged from 6 inches just south of Boston up to 10 to 14 inches over Cape Cod. On the Cape at South Yarmouth, a large tennis "bubble" collapsed under the weight of the heavy snow, resulting in damage estimated at \$50,000. Holiday travellers had to contend with very poor and hazardous road conditions.										At 1835EST, a tornado touched down 2 miles south of Portland and did considerable damage to many buildings along a 6 mile path. The F2 intensity classification is base on the many pictures of damage that were featured in local newspapers.									
										Shiawassee County 2SW Durand Vernon	27	1945EST	2.5	30	0	0	4		Tornado (F1)
										Lapeer County Metamora	27	2030EST			0	0	0		Thunderstorm Wind
										Wayne County 5E Ypsilanti western portion	27	2045EST			0	0	0		Thunderstorm Wind
											27	2056EST			0	0	0		TSTM Wind (63)
											27	2100EST			0	0	0		TSTM Wind (60)

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED <sup>1</sup> DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>21 MINNESOTA</b>									
MN2006-010-013-015-017-018-019 West-Central and Southern Third	27	Midnight			0	0	4	0	Heavy Snow
									Rain changed to snow across central and southern Minnesota during the early morning hours. The transformation to snow occurred first in west-central Minnesota. Six inches of snow fell between Moorhead and Detroit Lakes by 0313CST. Six to seven inches of snow fell over sections of southern Minnesota before tapering off late in the morning. Strong winds and falling temperatures through the afternoon and early evening reduced visibilities to near zero in the southwest. Motorists were stranded and three traffic deaths were indirectly related to the storm. Many schools were closed and events canceled. A thick glaze coated power lines which snapped as the winds increased near Marshall. A canvas hockey facility in Marshall was damaged by the wind. A construction crane was overturned in Rock County.
<b>22 MISSISSIPPI</b>									
Pontotoc County 3NW Thaxton	08	0415CST			0	0	?	0	Thunderstorm Wind
									Large trees were blown down over power lines in the Hurricane community in the northwestern section of the county, causing power outages.
Issaquena County Tallula	08	1315CST			0	0	?	0	Hail (0.75)
Sharkey County Cary	08	1325CST			0	0	?	0	Hail (0.75)
Issaquena County Fitler	08	1505CST			0	0	?	0	Thunderstorm Wind
									Several trees and power lines were blown down. Pea size hail was also reported.
Sharkey County Onward	08	1508CST			0	0	?	0	Hail (1.75) and Thunderstorm Wind
									Several trees were blown onto power lines.
Winston County 5NW Louisville	08	1530CST			0	0	?	0	Hail (1.75)
Yazoo County Phoenix 6N Bentonla	08	1533CST			0	0	?	0	Hail (0.75)
	08	1540CST			0	0	?	0	Hail (2.50)
Hinds County 2E Jackson 5NW Jackson 4NW Jackson 5W Jackson	08	1556CST			0	0	?	0	Hail (1.00)
	08	1610CST			0	0	?	0	Hail (1.75)
	08	1611CST			0	0	5	0	Hail (2.75)
	08	1612CST			0	0	?	0	Hail (2.75)
									There were numerous reports of large hail causing damage to automobiles and the roofs of homes, mainly in the western portions of the county.
Noxubee County Macon	08	1615CST			0	0	?	0	Hail (0.80) and TSTM Wind (G52)
Hinds County 5N Jackson 2W Jackson	08	1615CST			0	0	?	0	Hail (1.00)
	08	1620CST			0	0	?	0	Hail (1.75)
Rankin County Jackson Airport (JAN)	08	1624-- 1640CST			0	0	?	0	Hail (0.88)
Madison County Revive	08	1625CST			0	0	?	0	Hail (1.00)
Rankin County 2W Brandon Brandon 2W Brandon Brandon	08	1630CST			0	0	?	0	Hail (0.80)
	08	1640CST			0	0	?	0	Hail (1.00)
	08	1640CST			0	0	?	0	Hail (0.75)
	08	1642CST			0	0	?	0	Hail (1.00)
Leake County Good Hope	08	1644CST			0	0	3	0	Hail (1.75) and Thunderstorm Wind
									Tin was blown off of a building.
Leake County 6W Carthage	08	1644CST			0	0	?	0	Hail (1.75)
Rankin County Pelshatchie 1N Brandon	08	1645CST			0	0	?	0	Hail (1.00)
	08	1645CST			0	0	?	0	Hail (1.00)
<b>MISSISSIPPI</b>									
Leake County Walnut Grove	08	1700CST			0	0	?	0	Hail (1.50) and TSTM Winds (G61)
									Numerous large trees were blown down onto highways.
Leake County 2W Ofahoma	08	1700CST			0	0	?	0	Thunderstorm Wind
									Several trees were blown down.
Scott County Morton 5S Forrest	08	1705CST			0	0	?	0	Hail (1.75)
	08	1732CST			0	0	3	0	Thunderstorm Wind
									Several trees were blown down 5 miles south of Forrest; one tree fell on a car.
Newton County 12SW Newton	08	1745CST			0	0	?	0	Thunderstorm Wind
									Several trees and power lines were blown down.
Smith County N Raleigh	08	1748CST			0	0	2	0	Thunderstorm Wind
									Several trees were blown down across Highway 35 north of Raleigh. One tree fell on a car and broke out the windows.
Lauderdale County 5N Collinsville Suqualena Meridian	08	1807CST			0	0	?	0	Hail (0.75)
	08	1810CST			0	0	?	0	Hail (0.75)
	08	1815CST			0	0	?	0	Hail (0.75)
Jasper County Moutrose	08	1825CST			0	0	3	0	Thunderstorm Wind
									Winds damaged the roof of a house.
Lauderdale County 4NE Meridian	08	1830CST			0	0	?	0	Hail (1.00)
Clarke County 12SW Quitman 10NW Quitman	08	1845CST	0.5	20	0	0	?	0	Hail (1.75)
	08	1845CST			0	0	0	0	Tornado (F0)
									A tornado touched down briefly, did no damage, and went back up into the cloud base.
Lauderdale County Meridian	08	1855CST			0	0	?	0	Hail (0.75)
Clarke County 5N Quitman	08	1905CST	1.0	40	0	0	4	0	Tornado (F1)
									A tornado blew the roofs off of several buildings and also blew down several trees.
Jones County 11ENE Laurel	08	1910CST			0	0	?	0	Hail (0.80)
Wayne County 18NW Waynesboro	08	1910CST			0	0	?	0	Hail (0.80)
Panola County Batesville	15	1217CST			0	0	?	0	Hail (1.50)
Sunflower County Parchman	15	1314CST			0	0	?	0	TSTM Wind (G52)
LaFayette County Oxford	15	1315CST			0	0	?	0	Hail (0.75)
Warren County Eagle Lake	15	1315CST			0	0	?	0	Hail (0.75)
Lincoln County 7NW Brookhaven at Lloyd Star	15	1320CST			0	0	?	0	Hail (0.75)
Monroe County Amory	15	1340CST			0	0	?	0	Hail (1.25)
Marion County Columbia	15	1350CST			0	0	?	0	Hail (1.50)
Yalobusha County Coffeerville Water Valley 3N Coffeerville Water Valley	15	1407CST			0	0	?	0	Thunderstorm Wind
	15	1407CST			0	0	?	0	Thunderstorm Wind
	15	1410CST			0	0	4	0	Thunderstorm Wind
	15	1410CST			0	0	?	0	Thunderstorm Wind
									Several trees were blown down at Coffeerville and several power poles and lines were blown down at Water Valley at 1407CST. At 1410CST, thunderstorm winds caused roof damage to a factory and several other smaller buildings 3 miles north of Coffeerville and several telephone and power lines were again blown down at Water Valley.
Alcorn County 7SE Corinth	15	1420CST			0	0	?	0	Thunderstorm Wind
									Several trees were blown down onto power lines.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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					KILLED	INJURED	PROPERTY	CROPS	
<b>MISSISSIPPI</b>									
Monroe County 6SW Amory	15	1432CST			0	0	?	0	Hail (0.80)
Amory	15	1445CST			0	0	?	0	Hail (1.75)
Pontotoc County 5S Pontotoc	15	1445CST			0	0	?	0	Hail (0.80)
Jones County near Moselle	15	1455CST			0	0	?	0	Hail (0.75)
Leake County 6N Carthage and 3W Edinburg	15	1510CST			0	0	?	0	Thunderstorm Wind Several trees were blown down.
Lee County 2NW Tupelo	15	1515CST			0	0	?	0	Thunderstorm Wind Several power lines were blown down.
Jones County Moselle	15	1515CST			0	0	?	0	Hail (0.75)
Ittawamba County Fulton	15	1520CST			0	0	?	0	Thunderstorm Wind Several trees and power lines were blown down.
Newton County Union	15	1520CST			0	0	?	0	Thunderstorm Wind Several trees and power lines were blown down.
Neshoba County 12SE Philadelphia	15	1525CST			0	0	?	0	Thunderstorm Wind Close to 100 trees were blown down and there were several outbuildings damaged. Falling trees and limbs caused widescale power outages also.
Neshoba County 8E and 3E Philadelphia	15	1530CST			0	0	?	0	Thunderstorm Wind Several trees were blown down at both locations.
Harrison County 5N Gulfport	15	1530CST			0	0	?	0	Hail (1.75)
Kemper County 4SW Dekalb to 2N Dekalb	15	1550CST	5.0	18	0	0	3	0	Tornado (F0) Several trees were blown down or twisted off. A tin shed was totally destroyed.
Jones County Pine Belt Airport (PIB)	22	1445CST			0	0	?	0	TSTM Wind (G50)
Ellisville to northern Laurel	22	1510CST			0	0	?	0	Thunderstorm Wind Numerous trees and limbs were blown down from Ellisville to the northern portions of Laurel at 1510CST.
Lamar County 4NE to 7NE Lumberton	22	1530CST	2.5	400	0	0	5	0	Tornado (F2) Two homes were destroyed. Minor damage was done to 15 houses and barns. Also, numerous trees were blown down.
Jones County Soso	27	1800CST			0	0	4	0	Thunderstorm Wind A house trailer was overturned by winds estimated at 45 to 50 mph. Also, some trees were blown down.
<b>23 MISSOURI</b>									
Franklin County Stanton	15	0325CST			0	0	0	0	Hail (1.00)
St. Clair	15	0400CST			0	0	0	0	Hail (1.00) The hail ranged from 3/4 to one inch in diameter at St. Clair.
St. Louis County Ellisville	15	0427CST			0	0	3	0	Hail (0.75) and TSTM Wind (52) Hail of up to 3/4 inch in diameter fell and wind gusts of up to 60 mph produced power outages at Clarkson Valley and Ellisville.
St. Louis County Webster Groves	15	0443CST			0	0	0	0	Hail (0.75) and TSTM Wind (52)
<b>MISSOURI</b>									
St. Louis City and St. Louis County southern portions	15	0450CST			0	0	5	0	Hail (1.00) and TSTM Wind (61) A severe thunderstorm produced widespread damage and power outages due to winds and hail up to one inch in diameter in portions of extreme south St. Louis City and southern portions of the county. The winds were estimated at 70 mph. This same storm raced across the Mississippi River and produced much worse damage in Illinois.
Cape Girardeau County Dutchtown	15	1030CST			0	0	0	0	Hail (1.00)
<b>24 MONTANA</b>									
MTZ007 South-Central Montana	06	1700MST			0	0	0	0	High Wind (G50)
MTZ006-007 Central and South- Central Montana	07	1200- 1230MST			0	0	4	0	High Wind (G53) A plane was flipped over at Billings Logan Field. Winds gusted to 57 mph at Billings and 61 mph at Levistown.
MTZ003 Northwest Chinook	08	1115MST			0	0	0	0	High Wind (G65)
MTZ007 South-Central Montana	08	1751MST			0	0	0	0	High Wind (G56)
MTZ004 Southwest Montana	09	0600MST			0	0	3	0	High Wind A large sign was blown down near Anaconda.
MTZ007 South-Central Montana	09	1335MST			0	0	0	0	High Wind (G50)
MTZ003 Northwest Chinook	10	1150MST			0	0	5	0	High Wind (G98) Strong winds of 80 to 90 mph with gusts of 75 to 112 mph swept across the northwest chinook area of Montana. Considerable damage was done at Choteau along the Rocky Mountain front. Power lines, signs and trees were downed. In Augusta, several trailers and signs were blown over and campers were blown off of pickups. Cut Bank reported a wind gust of 72 mph.
Lincoln, Flathead, and northern Lewis & Clark Counties: Middle Fork and South Fork of the Flathead River, Bear Creek, Libby Creek, and North Fork of the Sun River	11- 12	1200- 1000MST			0	0	6	0	Flood Much of this area of northwest Montana was hit by the worst flooding since 1975. Rail lines along the Middle Fork of the Flathead River were washed out in two places and some water damage occurred in West Glacier. Many Forest Service bridges were washed out above Hungry Horse Reservoir. On Libby Creek near Libby, a house was washed into the river.
MTZ003 Northwest Chinook	11- 12	1700- 0800MST			0	0	4	0	Heavy Snow A foot of snow fell at Browning and 7 inches fell at Cut Bank.
MTZ007 South-Central Montana	20	0651MST			0	0	0	0	High Wind (G63)
MTZ003 Northwest Chinook	20	1200MST			0	0	3	0	High Wind (G70) Winds of 62 mph were reported at Cut Bank, as were winds of 81 mph at Choteau. Some minor damage occurred.
MTZ003-004-007 Northwest Chinook, and Southwest and South-Central Montana	26	0500- 2000MST			0	0	3	0	Heavy Snow Twelve inches of snow fell in the southern mountains. The heavy snow caused Interstate 90 to be closed for several hours during the afternoon. The Glacier area had 8 to 12 inches of snow.
<b>25 NEBRASKA</b> ————— NONE REPORTED									



# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
<b>26 NEVADA</b>											
NVZ001 Nevada portion of the Truckee-Tahoe Area	25	0800PST- 2200PST			0	0	0	0			Heavy Snow
<p>A strong Pacific storm dropped heavy snow on much of the Sierra Nevada in the extreme western part of Nevada. The heavy snow fell mainly in the higher elevations, above 7000 feet where two to three feet of snow was measured.</p>											
<b>27 NEW HAMPSHIRE</b>											
NH2 001-002-003-004- 005-006-007 All of New Hampshire	16	1230EST- 2300EST			0	5	5	0			High Winds
<p>A strong cold front entering New Hampshire warranted the issuance of a tornado watch during the period 1000EST-1800EST for the entire state. A few hours earlier, tornadoes passed through New York state, however, twisters were not reported in the Granite state. The high winds brought down electrical lines in Peterboro and trees in Sanbarton and Hudson. A car was struck by an 80 foot tree in Bedford. About 2900 customers lost power in blackouts, the largest being the Wiers Beach area where 1100 customers lost their electricity. Offshore, 45 kt winds and 15-16 foot swells were reported. Mount Washington received 3.73 inches of rain and 116 mph winds.</p>											
NH2 001-002-003-004- 005-006-007 All of New Hampshire	21	0010EST- 2100EST			0	15	4	0			High Winds, Heavy Snow
<p>Low pressure passed southeast through the state, bringing snow and strong winds. Wind gusts of 53 mph were reported in Concord and 51 mph in Portsmouth. Falling limbs caused 57 power outages across the state according to a public service coordinator. Public Service of New Hampshire totaled 13,000 without power and N.H. Electric Cooperative reported 10,000. Injuries were reported in Sanbornville, Milton, Northwood, Conic, Belmont, and Randolph. The weather fluctuated from temperatures in the 70's a week earlier to blizzard conditions in the White Mountains on the 21st. Snow totals included six inches in Errol and five at Big Diamond Pond.</p>											
<b>28 NEW JERSEY, Northern</b>											
NJ2015 Metropolitan New Jersey	09	1240EST			0	0	?	0			High Wind
<p>A warm and humid airmass across northern New Jersey gave way to a fast-moving cold front approaching from the west. A tightening pressure gradient between the warm and cold air resulted in very strong winds. In Bergen County at Norwood, Northvale and Paramus, numerous trees and power lines were downed. Also in Paramus, two homes received minor damage.</p>											
Somerset County Portersville	16	1106EST			0	0	?	0			Thunderstorm Wind
Gladstone	16	1110EST			0	0	?	0			Thunderstorm Wind
Hunterdon County Frenchtown	16	1110EST			0	0	?	0			Thunderstorm Wind
Warren County Phillipsburg	16	1120EST			0	0	?	0			Thunderstorm Wind
NJ2005 Watchung-Raritan area	16	1130EST			0	0	?	0			High Wind
Somerset County Branchburg Park	16	1130EST			0	0	?	0			Thunderstorm Wind
Sussex County Augusta	16	1130EST	0.5	50	0	0	?	0			Tornado (F0)
Warren County Broadway	16	1130EST			0	0	?	0			Thunderstorm Wind
Morris County countywide	16	1140EST			0	0	?	0			Thunderstorm Wind
Warren County Blairstown	16	1150EST			0	0	?	0			Thunderstorm Wind
Sussex County countywide	16	1150EST			0	0	?	0			Thunderstorm Wind
Monmouth County Asbury Park	16	1200EST			0	0	?	0			Thunderstorm Wind
Essex County Roseland	16	1200EST	short	15	0	0	?	0			Tornado (F0)
Middlesex County Piscataway	16	1204EST	0.5	15	0	0	?	0			Tornado (F0)
countywide	16	1204EST			0	0	?	0			Thunderstorm Wind
Essex County Millberg and Fairfield	16	1215EST			0	0	?	0			Thunderstorm Wind
Union County near Linden	16	1215EST			1	1	?	0			Thunderstorm Wind
Bergen County Wyckoff	16	1220EST			0	0	0	0			Hail (0.88)
Oakland	16	1220EST			0	1	?	0			Thunderstorm Wind
Lyndhurst	16	1220EST	0.5	30	0	0	?	0			Tornado (F1)
Hudson County Harrison	16	1223EST			0	0	?	0			Thunderstorm Wind
<b>NEW JERSEY, Northern</b>											
Union County Linden	16	1225EST	1.0	15	0	0	?	0			Tornado (F0)
Hudson County Kearney	16	1230EST			0	0	?	0			Thunderstorm Wind
Bergen County North Arlington	16	1230EST			0	0	?	0			Thunderstorm Wind
Passaic County Clifton and Wayne	16	1230EST			0	0	?	0			Thunderstorm Wind
Essex County Caldwell and Montclair	16	1230EST			0	0	?	0			Thunderstorm Wind
<p>An unseasonably warm airmass covered the eastern sections of the United States during the morning of the 16th. This warm air was being forced northward from the Gulf states by very strong southerly winds in excess of 50 knots. These winds produced considerable damage across Northern New Jersey. The damage associated with the southerly winds was quickly overshadowed by the approach of a squall line during midday. The squall line formed along a zone where warm air was being displaced by much colder air moving in from the west. This clash gave rise to numerous damaging thunderstorms and several tornadoes, making it one of the worst outbreaks of severe weather experienced in this area. It also proved to be the first time that tornadoes were observed in this region during November. A driver was killed near Linden when thunderstorm winds blew his semi-trailer truck over. M34V.</p>											
Sussex County countywide	20	2045EST			0	0	?	0			Thunderstorm Wind
Warren County countywide	20	2100EST			0	0	?	0			Thunderstorm Wind
Parsippany	20	2100EST			0	0	0	0			Hail (0.75)
Bergen County Oakland	20	2105EST			0	0	0	0			TSTM Wind (G52)
Essex County Caldwell	20	2110EST			0	0	0	0			TSTM Wind (G60)
Hunterdon County Lambertville	20	2115EST			0	0	?	0			Thunderstorm Wind
Somerset County countywide	20	2120EST			0	0	?	0			Thunderstorm Wind
Essex County Newark Airport	20	2123EST			0	0	0	0			TSTM Wind (G55)
Union County Granford and Westfield	20	2123EST			0	0	?	0			TSTM Wind (G61)
Hudson County Harrison	20	2125EST			0	0	0	0			TSTM Wind (G50)
Bergen County Fort Lee	20	2125EST			0	0	?	0			Thunderstorm Wind
Passaic County Wayne	20	2128EST			0	0	?	0			TSTM Wind (G74)
Middlesex County Bridgewater and Old Bridge	20	2145EST			0	0	?	0			Thunderstorm Wind
Monmouth County countywide	20	2150EST			0	0	?	0			Thunderstorm Wind
<p>For the second time within four days violent thunderstorms raced across Northern New Jersey. As with the severe weather on the 16th, they were similarly caused by an approaching front. A squall line formed along a zone where unseasonably warm air was being displaced by much colder air approaching from the west.</p>											
NJ2015 Metropolitan New Jersey	23	0700EST			0	0	0	0			Heavy Snow
<p>A storm along the North Carolina coast during the night hours intensified as it moved east-northeast over the Atlantic Ocean. This strong Nor'easter brought record-breaking snowfall amounts to metropolitan areas of northeastern New Jersey. Amounts ranged from 4 to 6 inches.</p>											
<b>28 NEW JERSEY, Southern</b>											
Salem County, Peapacktown	16	1045 EST			0	0	3	0			TSTM Wind
Thunderstorm wind gusts brought down trees.											
Camden County:											
Brial	16	1110 EST			0	0	3	0			TSTM Wind(51)
Camden	16	1110 EST			1	0	3	0			TSTM Wind
Lindenweld	16	1110 EST			0	0	3	0			TSTM Wind
Berlin	16	1110 EST			0	0	3	0			TSTM Wind
Waterford Works	16	1117 EST			0	0	3	0			TSTM Wind
Cherry Hill	16	1117 EST			0	1	4	0			TSTM Wind
2 N Berlin	16	1110 EST			0	0	3	0			TSTM Wind
Sicklerville	16	1127 EST			0	0	3	0			TSTM Wind
<p>Thunderstorm wind gusts downed trees and utility lines throughout the county. In Camden wind gusts picked a man up off the ground and slammed him down, head first, killing him. In Cherry Hill windows and portions of roofs were blown off stores at the Cherry Hill Mall. One man was injured by flying glass at the mall. Windows were broken in houses in Berlin, and north of Berlin a 150 foot tall radio tower was bent in half. In Waterford Works a concrete block dugout at a baseball field was demolished. M570</p>											

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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

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

## NEW JERSEY, Southern

**Gloucester County:**  
2 NE Weyanah  
Pitman  
Glassboro  
1 NE Franklinville  
Williamstown

16	1110 EST	0	0	5	0	TSTM Wind
16	1110 EST	0	0	3	0	TSTM Wind
16	1110 EST	0	0	3	0	TSTM Wind
16	1120 EST	0	0	4	0	TSTM Wind
16	1120 EST	0	0	?	0	TSTM Wind(52)

Thunderstorm wind gusts downed trees and utility lines throughout the county. In Deptford Township near Weyanah there was a damage path 1.5 miles wide and 5 miles long. In this path many trees were uprooted, 6 houses were damaged, one fire station and several commercial buildings were damaged and windows were broken in at least a dozen automobiles. In Franklinville such of the roof was blown off an industrial building. Wind gusts were estimated at 60 mph near Williamstown.

**Mercer County:**  
Western Trenton

16	1115 EST	4.0	800	0	0	5	0	Tornado (F1)
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This tornado first touched down in Yardley, Bucks County, Pennsylvania then crossed the Delaware River before moving over Mercer County, New Jersey. In Mercer County the tornado downed hundreds of trees, blew windows out of a school and blew out the end wall on an apartment building. At least 36 apartments were damaged and 20 residents evacuated. The damage path varied from 1/2 mile to 100 yards in width. At 1120 EST a funnel cloud was sighted in nearby Lawrenceville. The total path length of the tornado was 5 miles, the first mile occurring in Pennsylvania.

The maximum F scale rating, F1, occurred in both states. Classification (New Jersey only): FPP 124

**Gloucester County:**  
Williamstown

16	1120 EST	1.0	50	0	1	5	0	Tornado (F0)
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A tornado moved across a supermarket, taking off a section of the roof. One person was injured by a falling brick. Two trailers from tractor-trailer trucks were blown over. Several trees were twisted off and another steel building was damaged. Damage was over \$100,000. Classification: FPP 011

**Burlington County:**  
Palmyra  
Riverton  
Riverside  
Moorestown  
Lumberton  
Maple Shade  
Medford  
Marlton  
Mount Laurel  
Columbus

16	1120 EST	0	0	4	0	TSTM Wind
16	1120 EST	0	0	4	0	TSTM Wind
16	1120 EST	0	0	4	0	TSTM Wind
16	1120 EST	0	6	4	0	TSTM Wind
16	1120 EST	0	0	3	0	TSTM Wind
16	1120 EST	0	0	5	0	TSTM Wind
16	1120 EST	0	0	4	0	TSTM Wind
16	1120 EST	0	0	3	0	TSTM Wind
16	1120 EST	0	0	3	0	TSTM Wind
16	1130 EST	0	3	4	0	TSTM Wind

Thunderstorm wind gusts downed trees and utility lines throughout the county. In Maple Shade portions of the roof were stripped off a school, trees were broken off, trees fell on automobiles, a supermarket was damaged, an apartment roof was damaged and a tall radio tower was bent over. In Moorestown 4 construction workers received minor injuries when wind gusts collapsed a house under construction, and 2 people were injured when a tree fell on an automobile. Two office trailers at a landfill west of Columbus were rolled over by the wind, injuring 3 people. In Mansfield Township near Columbus, winds destroyed a building. In Mount Laurel winds blew into a school classroom and brought down ceiling tiles, and falling trees destroyed or damaged a couple dozen automobiles. Falling trees damaged a house in Palmyra. In Marlton, high school windows were broken by the wind. Wind gusts destroyed the top portion of a barn in Medford and took most of the roof off a barn in Lumberton. Just northwest of Marlton considerable damage was done to a warehouse, mostly to the roof. In Riverton and Riverside many trees were uprooted and some of them came down on automobiles. One store window was blown in in Riverside.

**Mercer County:**  
Mercer County Airport (TWN)  
Hamilton Square  
1 E Princeton  
4 N Hamilton Square

16	1125 EST	0	0	4	0	TSTM Wind(61)
16	1130 EST	0	0	?	0	TSTM Wind(50)
16	1145 EST	0	0	?	0	TSTM Wind(52)
16	1145 EST	0	0	3	0	TSTM Wind

Thunderstorm wind gusts downed trees and utility lines. In West Windsor Township (4 miles north of Hamilton Square) large trees were down in a path 1/4 mile long and 25 yards wide. Wind gusts were reported at 58 mph in Hamilton Square and 60 mph in East Princeton. Wind gusts estimated at 70 mph took portions of the roof off a hangar at the Mercer County Airport.

## NEW JERSEY, Southern

**Gloucester County:**  
Gibbstown  
Paulsboro  
Swedesboro  
Glassboro  
1 N Dewey  
1 E Sewell  
National Park  
Mantua  
Franklinville

20	2115 EST	0	0	3	0	TSTM Wind
20	2115 EST	0	0	3	0	TSTM Wind(52)
20	2120 EST	0	0	3	0	TSTM Wind
20	2130 EST	0	0	3	0	TSTM Wind
20	2130 EST	0	0	3	0	TSTM Wind
20	2130 EST	0	0	3	0	TSTM Wind
20	2131 EST	0	0	?	0	TSTM Wind(52)
20	2146 EST	0	0	4	0	TSTM Wind(52)
20	2146 EST	0	0	?	0	TSTM Wind(65)

Thunderstorm wind gusts downed trees and utility lines throughout the county. Trees fell on automobiles and houses. Windows, roofs and siding were damaged. The main area of damage was from Paulsboro southeast across Mantua to the Franklinville area. Wind gusts were reported at 60 mph in Paulsboro, National Park, Mantua and east of Sewell and at 75 mph in Franklinville.

**Mercer County:**  
Ewing Township  
Hamilton Square  
Princeton  
Hamilton Square  
Trenton  
Mercer County Airport(TWN)

20	2115 EST	0	0	3	0	TSTM Wind
20	2120 EST	0	0	3	0	TSTM Wind(52)
20	2125 EST	0	1	3	0	TSTM Wind
20	2128 EST	0	0	?	0	TSTM Wind(52)
20	2131 EST	0	0	?	0	TSTM Wind(61)
20	2131 EST	0	0	4	0	TSTM Wind(52)

Thunderstorm wind gusts downed trees and utility lines. Aluminum siding was blown off a house in Hamilton Square. Wind gusts were reported at 70 mph in Trenton and at 60 mph in Hamilton Square at 2120 and 2128 EST. Trees fell on a house and on a truck and automobile in Ewing Township. A tree fell on a man in Princeton, causing serious injuries. In Trenton the steeple was blown off a church, roofs were blown off two houses and roofing material was blown off a roof and onto parked vehicles. Small airplanes were tossed around at Mercer County Airport by 60 mph wind gusts that tore the tail off one airplane.

**Burlington County:**  
Delran  
4 SNE Burlington  
Cinnaminson  
Moorestown  
Maple Shade  
Mount Laurel

20	2123 EST	0	0	?	0	TSTM Wind
20	2123 EST	0	0	?	0	TSTM Wind(56)
20	2124 EST	0	0	3	0	TSTM Wind
20	2125 EST	0	0	?	0	TSTM Wind(54)
20	2125 EST	0	0	4	0	TSTM Wind
20	2127 EST	0	0	4	0	TSTM Wind(61)

Thunderstorm wind gusts downed trees and utility lines. A falling tree brought down a transformer in Cinnaminson. Falling trees came down on the houses in Mount Laurel. A section of roof blew off part of a high-rise apartment building in Maple Shade. A tree fell on a police car in Maple Shade. Wind gusts were estimated at 70 mph in Mount Laurel, 65 mph in Florence Township, east-northeast of Burlington, and at 62 mph in Moorestown.

**Salem County:**  
Penna Grove  
Carneys Point  
Pennsville

20	2130 EST	0	0	3	0	TSTM Wind
20	2130 EST	0	0	3	0	TSTM Wind
20	2130 EST	0	0	3	0	TSTM Wind

Thunderstorm wind gusts downed trees and utility lines.

**Camden County:**  
Cherry Hill  
Pennsauken  
1 E Glenside  
Atco

20	2130 EST	0	0	3	0	TSTM Wind
20	2130 EST	0	0	4	0	TSTM Wind
20	2131 EST	0	0	3	0	TSTM Wind(62)
20	2140 EST	0	0	3	0	TSTM Wind(52)

Thunderstorm wind gusts downed trees and utility lines in many parts of the county. One tree came down on an automobile in Pennsauken. Wind gusts were reported at 71 mph in Verbeke Township near Glenside and at 60 mph in Atco.

**Cape May County:**  
Cape May Court House  
countywide  
Ocean City  
1 SE Erma

20	2158 EST	0	0	?	0	TSTM Wind(66)
20	2220 EST	0	0	4	0	TSTM Wind
20	2225 EST	0	0	4	0	TSTM Wind
20	2230 EST	0	0	3	0	TSTM Wind

Thunderstorm wind gusts throughout the county from 2226 to 2245 EST took shingles off roofs at various locations. Wind gusts were reported at 76 mph in Cape May Court House. Signs and utility poles and lines were down in Ocean City and caused Ocean Drive to be closed. Trees and utility lines were down near Erma and in many locations in surrounding Lower Township.

**Cumberland County:**  
Vineland  
8 SW Millville

20	2200 EST	0	0	3	0	TSTM Wind(53)
20	2205 EST	0	0	3	0	TSTM Wind(62)

Thunderstorm wind gusts downed some utility lines. Wind gusts were reported at 61 mph in Vineland and at 71 mph southwest of Millville.

**Atlantic County:**  
Hammonden  
Atlantic City Intl.  
Airport(ACY)  
Somers Point

20	2200 EST	0	0	3	0	TSTM Wind(75)
20	2213 EST	0	0	3	0	TSTM Wind(53)
20	2218 EST	0	0	3	0	TSTM Wind(66)

Thunderstorm wind gusts downed trees and utility lines. Winds were reported at 86 mph in Hammonden, 76 mph in Somers Point and 61 mph at the Atlantic City International Airport.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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

## NEW JERSEY, Southern

Ocean County, Seaside Park	20	2200 EST	0.5	16	0	0	6	0	Tornado (F0)
The tornado took the roof off a building and caused extensive damage to the second floor. The windows were blown out of an automobile. Classification: FPP 000									
Ocean County, Beachwood	20	2200 EST			0	0	5	0	TSTM Wind
Thunderstorm wind gusts caused extensive damage to the facade of a shopping center.									

## 29 NEW MEXICO — NONE REPORTED

## 30 NEW YORK, Coastal

NYZ014-015 Metropolitan New York and Rockland and Westchester Counties Westchester County Peekskill	16	morning			1	0	?	0	High Wind
NYZ016 Suffolk County	16	1115EST	0.5	15	0	0	?	0	Tornado (F0)
An unseasonably warm airmass covered the eastern sections of the United States during the morning of the 16th. This warm air was being forced northward from the Gulf states by very strong southerly winds in excess of 50 knots. These winds produced considerable damage across extreme southeastern New York state. During the morning in Manhattan, the winds blew an I-beam off of a 21-story building, killing an elderly woman. Towards midday, a squall line produced a tornado in Peekskill. It was the first time a tornado had been observed in this region during the month of November. F770.									
Rockland County countywide	20	2110EST			0	0	?	0	Thunderstorm Wind
Westchester County countywide	20	2120EST			0	0	?	0	Thunderstorm Wind
Bronx County countywide	20	2128EST			0	0	?	0	Thunderstorm Wind
New York County Central Park	20	2130EST			0	0	0	0	TSTM Wind (G50)
Richmond County countywide	20	2130EST			0	0	0	0	TSTM Wind (G61)
Queens County LaGuardia Airport	20	2131EST			0	0	0	0	TSTM Wind (G66)
Kings County Canarsie	20	2140EST			0	0	0	0	TSTM Wind (G65)
Nassau County countywide	20	2145EST			0	0	?	0	Thunderstorm Wind
Suffolk County Farmingdale	20	2155EST			0	0	0	0	TSTM Wind (G50)
countywide	20	2230EST			0	0	?	0	Thunderstorm Wind
For the second time within four days violent weather hit sections of southeastern New York. The severe weather was caused by a squall line that formed along a zone where unseasonably warm air was being displaced by much colder air approaching from the west.									
NYZ015-016-017 Metropolitan New York and Long Island	23	0700EST			0	0	0	0	Heavy Snow
A storm along the North Carolina coast during the night hours intensified as it moved east-northeast over the Atlantic Ocean. This strong Nor'easter brought record-breaking snowfall amounts to metropolitan areas of New York City as well as across Long Island. Eastern sections of Long Island bore the brunt of this storm, receiving 6 to 9 inches of snow. In the New York City metropolitan area amounts ranged from 4 to 6 inches.									

## 30 NEW YORK, Central

Warren County	12	1300EST			0	0	4	4	High Wind
Strong gusty winds in excess of 44 mph felled trees and power lines in the communities of Brant Lake, Haque, Bolton, Warrensburg, Queensbury and Johnsbury.									
Broome County Binghamton	16	0755EST			0	0	3	0	TSTM Wind
Colesville	16	0800EST			0	0	4	0	TSTM Wind
Chenango	16	0800EST			0	0	2	0	TSTM Wind
Chenango County Oxford	16	0820EST			0	0	3	0	TSTM Wind
Norwich	16	0820EST			0	0	3	0	TSTM Wind
Sherburne	16	0820EST			0	0	2	0	TSTM Wind
Sherburne-Earlville	16	0830-0930EST			0	0	5	0	TSTM Wind
Otsego County Pittsfield	16	0830EST			0	0	4	0	TSTM Wind
Edmeston	16	0830EST			0	0	3	3	TSTM Wind
Madison County 2N Otselic	16	1015EST	1.7	100	0	0	5	?	Tornado (F0)
Hamilton	16	1031EST			0	0	?	0	High Wind (G75)
Herkimer County Little Falls	16	1055EST			0	0	?	0	High Wind (G60)
Little Falls	16	1100EST			0	0	6	0	Flash Flood
Little Falls	16	unknown			0	0	4	0	Mud Slide
Middleville	16	1100EST			0	0	5	?	Flash Flood
Dolgeville	16	1110EST			0	0	4	?	Flash Flood
Ulster County Marlboro	16	1100EST			0	0	4	0	TSTM Wind
Hamilton County countywide	16	1130EST			0	0	3	?	High Wind
Sullivan County Yulan	16	1135EST			0	0	?	0	Hail (1.50)
Barryville to Gramhamsville	16	1140-1158EST	1.5	200	0	0	7	?	Tornado (F1)
Warren County North Creek	16	1145EST			0	0	4	3	High Wind
Montgomery County countywide	16	1145EST			0	0	4	0	TSTM Wind
Orange County countywide	16	1200EST			0	2	7	?	TSTM Wind
Monroe to Coldenham	16	1205-1231EST	9.1	100	9	18	7	?	Tornado (F1)
Highland Mills	16	1210EST			0	0	4	0	TSTM Wind
Highland Falls	16	1210EST			0	0	4	0	TSTM Wind
Montgomery County Palatine Bridge	16	1205EST			0	1	3	0	Land Slide
Fulton County Vails Mills	16	1205EST			0	0	4	2	TSTM Wind
Broadalbin	16	1215EST			0	0	3	0	TSTM Wind
Dutchess County Poughkeepsie	16	1210EST			0	0	?	0	TSTM Wind (G58)
Beekman	16	1215EST			0	0	6	0	TSTM Wind
Putnam County countywide	16	1220EST			0	0	5	0	TSTM Wind
Ulster County countywide	16	1220-1300EST			0	0	6	0	TSTM Wind
Napanoch	16	1220EST			0	0	4	0	TSTM Wind
Marltown	16	1230EST			0	0	5	0	TSTM Wind
West Hurley	16	1235EST			0	0	5	?	TSTM Wind
Fulton County Gloversville	16	1300EST			0	0	4	0	TSTM Wind
Dutchess County countywide	16	1300EST			0	1	5	0	TSTM Wind
Columbia County countywide	16	1300EST			0	0	5	0	TSTM Wind
Chenango County 4NE Guilford	16	1306EST			0	0	3	0	Small Stream Flooding
Greene County Cairo	16	1318EST			0	0	5	0	TSTM Wind
Albany County Bethlehem	16	1322EST			0	0	4	3	TSTM Wind
Saratoga County Porters Corner	16	1320-1324EST	500**	20	0	1	5	0	Tornado (F1)
Malta	16	1322EST			0	0	5	0	TSTM Wind
countywide	16	1330-1500EST			0	2	5	3	High Wind
Fulton County Gloversville	16	1326EST			0	0	4	4	High Wind
Warren County Glens Falls	16	1342EST			0	0	4	3	High Wind (G52)
countywide	16	1344EST			0	0	?	0	High Wind (G60)
Saratoga County Gansevoort	16	1350-1358EST	150**	25	0	0	4	0	Tornado (F0)

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>NEW YORK, Central</b>									
Washington County countywide	16	1415-1500EST			0	0	4	4	High Wind
Buskirk	16	1430-1432EST	100**	17	0	0	4	0	Tornado (FO)
Chenango County Norwich	16	1420EST			0	0	3	0	Small Stream Flooding
New Berlin	16	1420EST			0	0	3	2	Small Stream Flooding
Broome County Link Field	16	1900EST			0	0	0	0	High Wind (G58)
Hamilton County Long Lake	16	unknown	1.7	100	0	0	?	5	Tornado (FO)
<p>Cold Canadian air and warm moist tropical air collided over eastern New York State. The resulting storm system produced several tornadoes, flash floods, mud slides, thunderstorm winds, hail and high winds. A total of 9 children were killed when a tornado of F1 intensity struck the Coldenham School in Orange County. In Chenango County, the Sherburne-Earlville School roof was peeled off by winds estimated to be in excess of 60 mph. Roof damage also occurred at the Marlboro Elementary School in Ulster County as a result of thunderstorm winds. States of Emergency were declared in East Coldenham where the tornado occurred, as well as in the village of Little Falls, Herkimer County where flash flooding forced local officials to close many roads. Flooding was also reported along the East and West Canada creeks and many of their tributaries, such as Cran Creek and Buttermilk Falls Creek. Flooding was also reported along the Mulramer Creek where flood waters washed out part of a retaining wall within feet of a rest home. In West Hurley, thunderstorm winds did considerable damage, including ripping out a 95 foot radio tower. Civil Air Patrol officials stated that one inch bolts buried in a concrete pad were stripped. Continental Express Flight 3650 was diverted to Albany County Airport after a passenger was injured as the plane flew through a major downdraft.</p>									
NYZ006 Southern Tier	17	AM			0	1	5	0	Winter Storm
Hamilton County countywide	17	0519EST			0	0	5	0	High Wind
Fulton County Johnstown	17	0534EST			0	0	4	0	High Wind
Courtland County Homer	17	0634EST			0	1	4	0	High Wind
Homer	17	0656EST			0	1	4	0	High Wind
<p>High winds accompanied by a winter storm created dangerous road conditions. In many areas, 5 to 7 inches of snow was measured.</p>									
Broome County Link Field	20	1905EST			0	0	?	0	TSTM Wind (G58)
Binghamton	20	1911EST			0	0	4	0	TSTM Wind
Binghamton	20	1925EST			0	0	3	0	Lightning
Nanticoke	20	1955EST			0	0	4	0	TSTM Wind
Tioga County countywide	20	1915EST			0	0	4	0	TSTM Wind
Chenango County Afton	20	1934EST			0	0	3	2	TSTM Wind
Delaware County Deposit	20	1950EST			0	0	4	3	TSTM Wind
Sullivan County Wurtsboro	20	2030EST			0	0	4	0	TSTM Wind
Forestburg	20	2030EST			0	0	4	0	TSTM Wind
Ulster County Ellenville	20	2030EST			0	0	5	3	TSTM Wind
Orange County New Milford	20	2050EST			0	0	3	0	TSTM Wind
Greenwood Lake	20	2100EST			0	0	4	0	TSTM Wind
Warwick	20	2131EST			0	0	2	2	TSTM Wind
Dutchess County Beacon	20	2100EST			0	0	3	0	Lightning
Dutchess County Airport	20	2100EST			0	0	?	0	ISTM Wind (G55)
Poughkeepsie	20	2100EST			0	0	?	0	ISTM Wind (G80)
Orange County Stewart International Airport	20	2100EST			0	0	?	0	TSTM Wind (G82)
Ulster County New Platz	20	2100EST			0	0	5	3	TSTM Wind
Putnam County countywide	20	2130EST			0	0	5	4	TSTM Wind
Dutchess County Beacon	20	2130EST			0	0	5	0	TSTM Wind
<p>Thunderstorm winds brought down trees, tree limbs and power lines. In Fishkill, fierce winds picked up a car and blew it into a tractor-trailer.</p>									
<b>NEW YORK, Central</b>									
Ulster County Ashokan Reservoir	21	morning			0	0	0	0	Waterspout
Saugerties	21	0700EST			0	0	5	0	High Wind
West Saugerties	21	1300EST			0	0	4	0	High Wind
Claryville	21	1300EST			0	0	4	?	High Wind
Dairyland	21	1300EST			0	0	4	3	High Wind
Mt. Tremper	21	1300EST			0	0	4	0	High Wind
Wittenberg	21	1300EST			0	0	5	0	High Wind
Dutchess County Poughquaq	21	1310EST			0	0	6	0	High Wind
Greene County Athens	21	1315EST			0	0	4	0	High Wind
New Baltimore	21	1320EST			0	0	4	0	High Wind
Columbia County Stockport	21	1330EST			0	0	5	0	High Wind
Srnyvesant	21	1332EST			0	0	5	?	High Wind
Stuyvesant Falls	21	1332EST			0	0	5	0	High Wind
<p>The Beekman school had its roof torn off by high winds. The school is located about 20 miles east-southeast of Coldenham.</p>									
Fulton County countywide	28	1300EST			0	0	4	4	High Wind
Perth	28	1450EST			0	0	4	0	High Wind
Caroga	28	1600EST			0	0	4	0	High Wind
Warren County countywide	28	1500EST			0	0	5	0	High Wind
Saratoga County countywide	28	1500EST			0	0	5	0	High Wind
Hamilton County countywide	28	1530EST			0	0	5	4	High Wind
<p>High winds brought down trees, tree limbs and power lines. About 5000 homes were without power for several hours.</p>									
NYZ007 St. Lawrence Valley	30	AM			0	0	5	?	Snowstorm
<p>Snow and high wind produced poor visibility over most of the zone.</p>									
<b>30 NEW YORK, Western</b>									
NYZ001-021-022 Westernmost area of Western New York	16	0830-1500EST			0	0	5	0	High Wind
<p>Intense low pressure over southern Ontario brought strong westerly winds to extreme western New York. Power outages and downed trees were reported from across the area. At the Buffalo Airport, winds were sustained at 35 knots and gusted to 48 knots. Other gusts from across the area included 50 knots at Dunkirk and 70 knots at Jamestown, both in Chautauqua County.</p>									
NYZ001-022 Area immediately East of Lake Erie	16-17	1600EST-0800EST			0	0	4	0	Heavy Snow
<p>A strong northwest flow of cold air over the relatively warm waters of Lake Erie produced snowsqualls over portions of southern Erie, Wyoming, and Chautauqua counties. Snowfall amounts of between 4 and 6 inches were common across the area. In Chautauqua County, 10 to 12 inches fell over Mayville and Sherman, and one foot was reported in Little Valley. Jamestown area schools were closed. The New York State Thruway was closed between Hamburg and Lackawanna. The Skyway leading south out of Buffalo was temporarily closed due to a ten car and truck accident.</p>									
NYZ001-003-004-021-022 Extreme Western, Southwestern, and North-Central New York	20	1200-1800EST			0	0	5	0	High Wind
<p>Circulation around low pressure north of Georgian Bay brought strong winds to portions of western and central New York. Nearly 50,000 homes and businesses were without power. Trees and signs were downed across the area. In Cheektowaga, Erie County, a roof was blown off of a mobile home. Reported gusts included: 70 knots at Jamestown; 55 knots at Elmira, Buffalo and Ithaca; 53 knots at Niagara Falls; and 51 knots at Oswego.</p>									
NYZ004 Area immediately East of Lake Ontario	24	0830-1800EST			0	0	4	0	Heavy Snow
<p>A snow squall developed off of Lake Ontario during the early morning hours over Jefferson County. The squall moved south to Oswego and northern Cayuga counties during the morning hours. The snow was reportedly falling at the rate of 3 inches per hour. Snowfall amounts of up to 12 inches were not uncommon. A part of Route 81 was closed during the afternoon after a 60 car accident occurred. No serious injuries were reported.</p>									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE				CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	KILLED	INJURED	PROPERTY	CROPS	
<b>NEW YORK, Western</b>													
NYZ001-002-003-004-005-021-022 Most of Western New York	27-28	2130EST-1200EST			0	0	4	0					High Wind
<p>Low pressure brought high winds to all of western and central New York. Reports of downed trees and power lines were numerous. In Middlesex, Yates County, a house was flattened by the wind. Wind gusts included: 68 knots at Hamburg and 47 knots at Dunkirk.</p>													
NYZ001-004-022 Areas immediately East of Lakes Erie and Ontario	29-30	1800-1800EST			0	0	4	0					Heavy Snow
<p>Cold air crossing the relatively warm waters of Lakes Erie and Ontario produced snow squalls to the lee of the lakes. Snowfall amounts for the two days included 15 inches at Chaffee, 14 inches at Highmarket, and 15 inches at Barnes Corners. In Chautauque County, the Cassadaga Valley Central School District closed all schools.</p>													
<b>31 NORTH CAROLINA</b>													
Henderson Co. Fletcher	15	2130EST			0	0	0	0					Hail (1.25)
Henderson Co. 8 W Hendersonville	15	2200EST			0	0	0	0					TSTM Winds
Wilkes Co. Traphill	15	2230EST			0	0	0	0					TSTM Winds
Henderson Co. Southeast	15	2240EST			0	0	0	0					TSTM Winds
Polk Co. Saluda Tryon	15	2245EST			0	0	4	0					TSTM Winds
Catawba Co. Newton	16	0038EST			0	0	0	0					Hail (0.75)
<p>Severe thunderstorm winds blew down trees and produced large hail over western North Carolina. In Henderson County thunderstorm winds blew down trees and destroyed a patio roof west of Saluda. In Saluda trees were blown down and a greenhouse was destroyed. Trees were blown down in Hendersonville, Traphill, and Tryon.</p>													
NCZ009-010 Mitchell, Yancey, Avery and Buncombe Counties	17	1800EST			0	0	0	0					Heavy Snow
<p>Heavy snow fell over the higher elevations of the North Carolina mountains. Most parts of the mountains received at least two inches. Four to six inches fell in Yancey, Mitchell, Avery, and Buncombe counties.</p>													
NCZ006-007 Rockingham, Wilkes, Surry, Stokes, Forsyth, and Guilford Counties	22	2300EST			0	0	4	0					Ice Storm
<p>Freezing rain fell in the Northern Foothills and the Northwest Piedmont bringing down trees and power lines.</p>													
<b>32 NORTH DAKOTA</b>													
NDZ003-004 southwestern North Dakota	07	1900CST to 1900CST			0	0	4	0					High winds
<p>High winds occurred over southwestern North Dakota, with gusts to 61 mph recorded at the Dickinson airport between 1800 and 1900 CST.</p> <p>The winds toppled a tree into a home and felled a stop light in the city of Dickinson. Otherwise, damage was minimal throughout the region.</p>													
NDZ013-017 southeastern North Dakota	21-22	0700CST to 0200CST			0	0	0	0					Heavy Snow
<p>Snow fell over the southeast quarter of North Dakota during the day of the 21st and into the night. Six inches of snow fell at Carrington and Fargo. The snowfall contributed to 80 traffic accidents, with three fatalities, in the Fargo-Moorhead area.</p>													
<b>NORTH DAKOTA</b>													
NDZ017-018 southeastern North Dakota	26-27	2200CST to 0900CST			0	0	4	0					Heavy Snow Ice Storm
<p>Nearly six inches of snow fell in parts of Cass and Traill counties in southeastern North Dakota. The snow occurred with winds of 45 mph, causing blowing snow and drifts to three feet high.</p> <p>Meanwhile in Richland County, at the southeast tip of North Dakota, freezing rain fell, causing damaging ice accumulations on roads.</p> <p>Many vehicles slid off the slick roads, while snowdrifts also severely hindered travel.</p> <p>The storm forced authorities to close parts of highways. Many schools and businesses also had to close.</p>													
<b>33 OHIO</b>													
Prebble County	15	1346 EST			0	0	?	0					Hail (0.75)
Champaign County	15	1515 EST			0	0	5	0					Thunderstorm Wind
Union County	15	1530 EST			0	0	5	0					Thunderstorm Wind
Delaware County	15	1600 EST			0	0	4	0					Thunderstorm Wind
Morgan County	15	1600 EST			0	1	0	0					Lightning
Wayne County	15	1722 EST			0	0	5	0					Thunderstorm Wind
Wayne County	15	1722 EST			0	0	?	0					Hail (0.75)
Cuyahoga County	15	1734 EST			0	0	4	0					Thunderstorm Wind
Portage County	15	1815 EST			0	0	5	0					Thunderstorm Wind
Trumbull County	15	1840 EST			0	0	4	0					Thunderstorm Wind
Morgan County	15	2000 EST			0	0	5	0					Thunderstorm Wind
<p>Thunderstorms moved across Ohio producing damaging winds, large hail and flooding. Large hail fell in West Manchester, Preble County and at the Wayne County Airport. Strong winds damaged a mobile home near Mutual and blew the roof off a house near Woodstock, Champaign County. Another house lost its roof in Milford Center and the Honda factory sustained damage in Marysville, Union County. Trees were damaged and blown down north of Delaware, Delaware County; in Middleburg Heights, Cuyahoga County; and in Warren Township, Trumbull County. A man was injured in Marengo, Morgan County, when he was struck by lightning. One garage was destroyed and a house and barn were damaged near Wooster, in Wayne County. Trees were blown down, roofs were damaged and a barn was destroyed near Rootstown, Portage County. Ten homes and ten mobile homes were damaged, and trees were blown down in McConnelsville, Morgan County.</p>													
Morrow and Richland Counties,	15	1600 to 23.0 1627EST	75		0	0	6	0					Tornado (F2)
Just north of Ashley to just south of Lexington	<p>A tornado touched down just north of Ashley in extreme southwest Morrow County and moved rapidly northeast. It damaged many homes and barns, and trees were blown down along the path in Morrow County. It crossed into Richland County east of Shauck and took the roof off of a home on Stout Road. It also destroyed a home and a mobile home south of Lexington before it dissipated.</p>												
OHZ002-003-011 Central Lakeshore, Northeast Lakeshore and Central Highlands	15	1630 EST- 2400 EST			0	0	5	0					Small Stream Flooding
<p>Thunderstorms produced one to two inches of rain causing numerous backups in sewers and rises in small streams. Roads were under water and basements were flooded. Some cars were trapped by high water in Cleveland's eastern suburbs.</p>													
OHZ003 Northeast Lakeshore	17	0130 EST			0	0	?	0					Heavy Snow
<p>Heavy lake-effect snow fell in extreme northeast Ohio. Total accumulations were four to six inches. Munson and Auburn Townships, in Geauga County received the most snow.</p>													
OHZ002-003 Central Lakeshore and Northeast Lakeshore	18	1100 EST			0	0	?	0					Heavy Snow
<p>Heavy lake-effect snow redeveloped over northeast Ohio at around 0600 EST. Total accumulations ranged from zero to twelve inches across Cuyahoga County, six to twelve inches across Lake County and 12 to 20 inches over Ashtabula and Geauga counties.</p>													
OHZ001-002-003-004-006-007-011 Northwest, Central Lakeshore, Northeast Lakeshore, Northeast Inland, Central, East- Central and Central Highlands	20	1500 EST- 2400 EST			1	0	5	0					High Wind
<p>Sustained winds of 30 to 40 mph with gusts between 50 and 60 mph blew down numerous trees and branches across much of Ohio. Many structures received damage from flying debris. One man was killed while traveling south on Route 250 in Huron County when an 80 foot tall tree blew over onto his car. High Wind H52V.</p>													

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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					KILLED	INJURED	PROPERTY	CROPS		
<b>OHIO</b>										
OH2003 Northeast Lakeshore	21	1300 EST			0	0	?	0		Heavy Snow
			Heavy lake-effect snow fell over Ashtabula County in extreme northeast Ohio. Total snowfall across the county was from four to fourteen inches. Andover and Dorset received the most snow.							
ORZALL Statewide	27-28	1700 EST- 0200 EST			0	0	5	0		High Wind
			Sustained winds of 30 to 40 mph with gusts between 50 and 70 mph blew down trees and branches, and damaged structures across Ohio. The highest winds were along Lake Erie's south shore.							
Butler County	27	2329 EST			0	0	5	0		Thunderstorm Wind
Butler County	27	2340 EST			0	0	?	0		Hail (1.0")
Hamilton County	28	0020 EST			0	0	4	0		Thunderstorm Wind
			Thunderstorms moved through extreme southwest Ohio destroying one home, damaging many others, downing trees and dropping large hail just south of Oxford, in Butler County. Trees and power lines were also blown down in College Hill, in Hamilton County.							
Huron County	27	2335 EST- 2347 EST	15.0	75	0	1	6	0		Tornado (F2)
1.25W North Fairfield to near Clarksville			A tornado touched down one and a quarter miles southwest of North Fairfield. It traveled northeast at about 70 mph. The last indication of damage was near the intersection of Chenango and Perry roads in the eastern part of the county. Three homes and many barns were destroyed. Many homes and barns were damaged, and hundreds of trees were blown down. One woman was injured from flying glass.							
Erie County	27	2250 EST			0	0	5	0		Thunderstorm Wind
Lorain County	27	2335 EST			0	0	5	0		Thunderstorm Wind
Cuyahoga County	28	0020 EST			0	0	?	0		Thunderstorm Wind
			Thunderstorms moved along Lake Erie's shore destroying a barn, damaging a house and downing trees in Sandusky, Erie County. Trees were down across northern Lorain County, and a house and barber shop received roof damage in Grafton Township, in Lorain County. Winds gusted to 74 mph at the Cleveland Light House, in Cuyahoga County.							
<b>35 OREGON</b>										
ORZ001-002-003 Clatsop, Tillamook and Curry Counties	23	0230- 1430PST			0	0	?	0		Wind
			A series of cold, unstable weather fronts marched into Oregon during the Thanksgiving weekend. Gale force wind was observed along the north Oregon coast. A 32 foot fishing vessel, insured for \$30,000, broke from its mooring at Port Orford in Curry County and was beached. Due to the extensive damage it received it had to be demolished after it was brought ashore.							
Lincoln County	24	1200PST			0	0	?	0		TSTM Wind
Depot Bay	24	1200PST			0	0	0	0		Funnel Cloud
3N Depot Bay	24	1200PST			0	0	?	0		Hail (0.50)
Depot Bay			A thunderstorm produced 1/2 inch diameter hail and winds with gusts estimated at 50 mph at Depot Bay. A retired meteorologist reported a funnel cloud 3 miles north of this coastal city. The funnel dissipated after about a 3 minute existence.							
ORZ004 Lane County Eugene	24	1430PST	0.25	40	0	0	4	0		Tornado (F1)
			Three witnesses and the Eugene Weather Service Office Meteorologist-in-Charge observed a 40 foot diameter funnel cloud. It lowered within 30 feet from the ground over the hills south of Eugene. The damage it caused included breaking power poles and uprooting several 100 foot tall fir trees. The trees landed on two homes and a camper causing significant damage but no serious injuries.							
Lane County	24	1430PST			0	0	0	0		Funnel Cloud
South of Eugene	24	1430PST			0	0	4	0		TSTM Winds
South of Eugene			Three witnesses and the Eugene Weather Service Office Meteorologist-in-Charge observed a 40 to 60 foot diameter funnel cloud that lowered to within 30 feet from the ground over the hills south of Eugene. Accompanying thunderstorm winds broke power poles off at 30 feet above the ground and uprooted several, 100 foot tall firs which landed on two homes and a camper, causing significant damage but no serious injuries.							
ORZ006-009-013 Cascades, Siskiyou Mountains, and South-Central Oregon	23-25				0	0	0	0		Heavy Snow
			A cold and unstable westerly flow of wind into the state provided significant orographic snowfall in the higher terrain of the state. An associated low pressure center crossed over the Cascades and into South-Central Oregon, prompting the issuance of a Winter Storm Warning that would be in effect for that area on the 25th. Snow accumulations of 8 to 18 inches were common in the mountains. Santiam Pass, on the Linn-Jefferson county line, received 23 inches of snow. Three to five inch accumulation occurred across the plateau of South-Central Oregon.							
<b>34 OKLAHOMA</b>										
Ellis County, north portion	18	unknown			3	0	0	0		Cold
			A Woodward man and his two young sons died from hypothermia on a rural ranch in northern Ellis County. The victims were apparently involved in an accident, and left their vehicle to find help. The state medical examiner ruled the deaths were due to hypothermia and not to injuries, which were minor, suffered in the accident. The three were found the next day. Overnight temperatures had dropped into the low 20s. M390 M030 M020							
OKZALL Statewide	1-31				0	0	?	?		Drought
			For the second consecutive month precipitation across Oklahoma was well below normal. All sections of the state reported less than 20 percent of normal monthly rainfall. This resulted in a record number of wildfires across the state, with over 2000 reported. In excess of 25,000 acres were destroyed. The fires resulted in one fatality when an 82 year old man was overrun by fire while burning debris in southeast Oklahoma. The effects of the drought on crops were not fully known, since many crops had suffered through a record wet summer, and an early season freeze. Statewide, November 1989 was the third driest on record.							
<b>36 PENNSYLVANIA, Eastern</b>										
Cumberland County, 2 W Mechanicsburg	16	0545 EST			0	0	4	?		TSTM Wind
			Thunderstorm wind gusts took the roof off a garage and brought down a tree onto a house near Millers Gap to the west of Mechanicsburg. The damage occurred between 0530 and 0600 EST.							
Dauphin County: Fishersville 1 NW Dauphin	16	0600 EST			0	0	6	?		TSTM Wind
	16	0600 EST			0	0	4	?		TSTM Wind
			Thunderstorm wind gusts brought down numerous trees and utility lines, and Route 147 on Peters Mountain was closed by downed trees. Roofs and portions of houses were blown off and other houses damaged by flying debris. Downed trees and utility lines closed Route 322 northwest of Dauphin. The damage occurred between 0500 and 0700 EST.							
Lebanon County: Bellegrove Annville 3 S Myerstown	16	0715 EST			0	0	5	?		TSTM Wind
	16	0715 EST			0	0	4	?		TSTM Wind
	16	0715 EST			0	0	4	?		TSTM Wind
			Thunderstorm wind gusts took part of the roof and the door off a barn. Three power poles were snapped off and trees and utility lines were knocked down in the Elko area to the south of Myerstown. A mobile home was rolled over and demolished and two houses were damaged near Bellegrove. Damage occurred between 0700 and 0730 EST.							
Adams County, 4 SW Cashtown	16	0540 EST			0	0	5	?		TSTM Wind(54)
			Thunderstorm wind gusts destroyed a house and two mobile homes. Numerous trees and utility lines were downed. The damage path was about 200 yards wide and about 5 miles long, and appeared to be caused by downburst winds. Damage occurred between 0540 and 0545 EST.							
<b>35 OREGON</b>										
ORZ010 Columbia Basin	07	0800PST			0	0	0	0		Wind
			A mostly dry but windy frontal system moved across the state. A High Wind Advisory was issued for the Columbia Basin. Wind gusts reached 58 mph at the Pendleton Weather Service Office. The wind subsided during the day.							

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>— PENNSYLVANIA, Eastern</b>									
Lackawanna County	16	0900 EST			0	0	4	0	Flood
Luzerne County	16	0900 EST			0	0	4	0	Flood
<p>Heavy rains of as much as 3 to 3.5 inches in 3 to 4 hours caused considerable urban and small stream flooding. Drainage flooding flooded many streets, parking lots, yards, fields and basements. Some roadways had several feet of water on them and some basements had up to 8 feet of water in them. The water also resulted in mudslides in some areas. Some small streams overflowed and flooded basements and roadways. About 25 to 30 families had to be evacuated from their homes. The flooding occurred mainly in and around Scranton in Lackawanna County and in West Wyoming, Exeter, and Jenkins townships in Luzerne County. Flooding occurred between 0900 and 1400 EST.</p>									
York County, Wintertown	16	0930 EST			0	0	4	?	TSTM Wind
<p>Thunderstorm wind gusts blew the roof off a barn near Wintertown. Numerous trees and utility lines were downed throughout the county between 0930 and 1100 EST.</p>									
Lancaster County:									
Wakefield	16	0945 EST			0	0	5	?	TSTM Wind
Lancaster	16	0945 EST			0	1	3	?	TSTM Wind(66)
2 E Lancaster	16	0950 EST			0	1	4	?	TSTM Wind
1 NE Quarryville	16	0950 EST			0	0	3	?	TSTM Wind
New Holland	16	0957 EST			0	0	6	?	TSTM Wind
1 N Churchtown	16	1030 EST			0	0	4	?	TSTM Wind
<p>Thunderstorm wind gusts destroyed 2 barns, downed trees, took roofs off mobile homes and damaged other farm buildings near Wakefield in Fulton Township. Thunderstorm wind gusts were measured at 76 mph at WGL TV in Lancaster. Half the roof was blown off a junior high school and major damage was sustained on a warehouse roof in New Holland. A barn was blown down in Cacermarver Township near Churchtown. Portions of a roof and one wall were blown down east of Lancaster, injuring a woman. Siding was blown off a building in Lancaster, injuring a man. Trees were down and a corn crib was destroyed near Quarryville.</p>									
Berks County:									
2 S Center	16	1015 EST			0	0	3	?	TSTM Wind
1 W Wymissing	16	1015 EST			0	0	4	0	TSTM Wind
2 NE Fleetwood	16	1020 EST			0	0	3	?	TSTM Wind
<p>Thunderstorm wind gusts tore a portion of the roof off of a house south of Centerport. Portions of a wall were blown off an apartment building west of Wymissing. Trees were blown down in the area northeast of Fleetwood.</p>									
Chester County:									
Parkeburg	16	1020 EST			0	0	5	?	TSTM Wind
2 N Malvern	16	1025 EST			0	0	?	?	TSTM Wind(87)
<p>Thunderstorm wind gusts downed trees and utility lines in Parkeburg. Many reefs were also damaged including 13,000 sq. ft. of steel anchored aluminum roof. In the Great Valley area north of Malvern a wind gust of 100 mph was reported.</p>									
Chester County, 4 ESE Coatesville	16	1024 EST	short narrow		0	0	?	?	Tornado (F0)
<p>A tornado touched down, bringing trees down and damaging buildings. Classification: FPP 001</p>									
Carbon County:									
Bewmanstown	16	1040 EST			0	0	3	?	TSTM Wind
Trachsville	16	1050 EST			0	0	3	?	TSTM Wind
<p>Thunderstorm wind gusts brought down large trees. One of the trees crushed a pavilion in Bewmanstown.</p>									
Lehigh County, (ABE) Allentown-Bethlehem Airport	16	1043 EST			0	0	0	0	Funnel Cloud
	16	1043 EST			0	0	4	?	TSTM Wind(53)
<p>Thunderstorm wind gusts were measured at 61 mph. In an industrial park next to the airport, one office building collapsed and reefs were badly damaged on about 15 buildings, mostly large warehouse buildings. In this same area, several homes had roof damage and several mobile homes were blown over and destroyed. A funnel cloud was seen at the Lehigh Valley Mall and at the airport.</p>									
Montgomery County, King of Prussia	16	1045 EST	1.5	50	0	3	5	?	Tornado (F1)
<p>A tornado downed hundreds of trees and utility lines and damaged many homes and offices. One of the office buildings was severely damaged. Three trailers were overturned. Three people were cut by flying glass. Total damage was estimated at \$250,000. Classification: FPP 111</p>									
Northampton County, 4 NE (ABE) Allentown-Bethlehem Airport	16	1045 EST			0	0	4	?	TSTM Wind
<p>Thunderstorm wind gusts downed many trees and damaged reefs.</p>									
<b>— PENNSYLVANIA, Eastern</b>									
Lackawanna County:									
Scranton	16	1045 EST			0	0	3	0	TSTM Wind
Madisonville	16	1050 EST			0	0	3	0	TSTM Wind
<p>Thunderstorm winds brought down at least 7 trees in Scranton and trees and utility lines in Madisonville.</p>									
Henree County:									
Kregeville	16	1050 EST			0	0	4	?	TSTM Wind
Stroudsburg	16	1100 EST			0	0	5	?	TSTM Wind
<p>Thunderstorm winds downed many trees and rolled over a camper in Kregeville. In Stroudsburg many trees were down, a roof and a door were torn off a garage, pieces of scrap metal were blown away from a scrap yard and a tent was blown down at a cemetery.</p>									
Carbon County	16	1050 EST			0	0	3	?	Flash Flood
<p>Heavy rain of up to 3 inches within an hour of the flash caused urban and small stream flooding. The Quakake Creek overflowed its banks and flooded the basement of a home and also an automobile parked nearby. Flooding occurred from 1050 to 1200 EST.</p>									
Wayne County:									
Hamilin	16	1050 EST			0	0	3	0	TSTM Wind
Vardean	16	1050 EST			0	0	3	0	TSTM Wind
Newfoundland	16	1055 EST			0	0	3	0	TSTM Wind
Lakeville	16	1055 EST			0	0	3	0	TSTM Wind
<p>Thunderstorm wind gusts brought down trees and utility lines.</p>									
Montgomery County:									
Collegeville	16	1100 EST			0	0	3	?	TSTM Wind
Norristown	16	1110 EST			0	0	3	?	TSTM Wind
Ardsley	16	1110 EST			0	0	3	?	TSTM Wind
3 E Lansdale	16	1110 EST			0	1	5	?	TSTM Wind
<p>Thunderstorm wind gusts brought down large trees in Collegeville and downed trees and utility lines in Norristown and Ardsley. East of Lansdale in Montgomery Township, wind gusts damaged an industrial building. Half the metal roof was torn off and cinder blocks were toppled. One person was slightly injured by flying debris. Automobiles were also damaged. Damage was estimated at \$200,000.</p>									
Montgomery and Bucks Counties,									
Franconia to 2 NE Perkasie	16	1100 EST	5.25	50	0	0	6	?	Tornado (F0)
<p>The tornado first touched down near Franconia, downing trees and damaging 25 reefs. The tornado then moved northeast, crossing into Bucks County, downing trees and damaging approximately 25 reefs in Sellersville. Continuing northeast it damaged trees and reefs in Perkasie and then damaged 2 houses in East Rockhill Township to the northeast of Perkasie before lifting off for the final time. Classification: FPP 021</p>									
Delaware County:									
Marcus Hook	16	1100 EST			0	0	4	?	TSTM Wind
Chester	16	1100 EST			0	0	4	?	TSTM Wind
4 ENE Chester	16	1100 EST			0	0	4	?	TSTM Wind
<p>Thunderstorm wind gusts took the roof off a house in Marcus Hook and damaged houses and downed trees and utility poles in Chester and in Tinticum Township east-northeast of Chester.</p>									
Philadelphia County:									
(PHL) Philadelphia International Airport	16	1110 EST			0	0	4	0	TSTM Wind
Center City Phila.	16	1115 EST			0	0	4	0	TSTM Wind
Northeast Phila.	16	1120 EST			0	0	?	0	TSTM Wind(69)
Roxborough	16	1120 EST			0	0	3	0	TSTM Wind
<p>Thunderstorm wind gusts blew off half of the roof on the overseas terminal at Philadelphia International Airport. In center city Philadelphia wind gusts blew construction materials off a high-rise building under construction and broke windows in numerous high-rise buildings. Wind gusts of 80 mph were measured in northeast Philadelphia and large trees were downed in Roxborough.</p>									
Bucks County:									
Wycocbe	16	1115 EST			0	0	?	?	TSTM Wind(52)
Daylestown	16	1115 EST			0	0	4	?	TSTM Wind
Warrington	16	1115 EST			0	1	3	?	TSTM Wind
Bristol	16	1130 EST			0	0	3	?	TSTM Wind
<p>Thunderstorm wind gusts of 60 mph were reported at Wycocbe. In Daylestown one roof was blown off, one garage was blown off its foundation and 90 automobiles were damaged at an auto dealership. In Warrington wind gusts broke windows at an elementary school and one student was injured by flying glass. Aluminum awnings were ripped off 3 trailers at a school in Bristol.</p>									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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

## PENNSYLVANIA, Eastern

<p><b>Bucks County, Yardley</b></p> <p>16 1115 EST 1.0 100 0 1 6 ? Tornado (F1)</p> <p>The tornado touched down, shattering windows and damaging the roof on a school. Many trees were also downed. Winds were estimated at greater than 75 mph. A woman was seriously injured when a tree fell on the automobile she was driving. After touching down in Yardley the tornado moved across the Delaware River and caused damage in Mercer County, New Jersey. This tornado was produced by the same storm that caused damage near Quarryville in Lancaster County and spawned tornadoes near Gettysburg in Chester County and in King of Prussia in Montgomery County. The total path length of this tornado was 5 miles, one mile in Pennsylvania and 4 miles in New Jersey. The maximum F scale rating, F1, was the same for both states. Classification (Pennsylvania only): FPP 112</p>	
<p><b>Tioga County:</b></p> <p><b>Knoxville</b> 20 1831 EST 0 0 2 4 0 ESTM Wind</p> <p><b>Lawrenceville</b> 20 1845 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Manafield</b> 20 1900 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts brought down trees and utility lines. In Knoxville a tree came down on an automobile and injured 2 people.</p>	
<p><b>Clinton County:</b></p> <p><b>Leek Haven</b> 20 1847 EST 0 0 3 0 0 TSTM Wind</p> <p><b>10 W Reneve</b> 20 1858 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Flemington</b> 20 1903 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Leek Haven</b> 20 1903 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Leek Haven</b> 20 1916 EST 0 0 3 0 0 TSTM Wind(61)</p> <p><b>Leek Haven</b> 20 1918 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Leek Haven</b> 20 1920 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts downed trees and utility lines. Some roads were blocked by fallen trees. The wind gusts were estimated at 65 to 70 mph in Leek Haven.</p>	
<p><b>Lycoming County:</b></p> <p><b>Waterville</b> 20 1852 EST 0 0 3 0 0 TSTM Wind(65)</p> <p><b>Jersey Shere</b> 20 1900 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Slate Run</b> 20 1904 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Marah Hill</b> 20 1905 EST 0 0 3 0 0 TSTM Wind</p> <p><b>1 W Garden View</b> 20 1912 EST 0 0 3 0 0 TSTM Wind(67)</p> <p><b>Eliaspert</b> 20 1920 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Williamsport</b> 20 1926 EST 0 0 4 0 0 TSTM Wind</p> <p><b>Williamsport</b> 20 1927 EST 0 0 4 0 0 TSTM Wind</p> <p><b>Slate Run</b> 20 1928 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Muncy</b> 20 1930 EST 0 0 3 0 0 TSTM Wind</p> <p><b>7 E Muncy</b> 20 1931 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Hepburnville</b> 20 1932 EST 0 0 3 0 0 TSTM Wind</p> <p><b>2 N Williamsport</b> 20 1938 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Mentoursville</b> 20 1945 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Collinsville</b> 20 1949 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Barbours</b> 20 1949 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts downed trees and utility lines in Jersey Shere, Slate Run, Marah Hill, Eliaspert, Williamsport, Muncy, Hepburnville, Mentoursville, Collinsville, Barbours, north of Williamsport and east of Muncy. The roof was blown off a house in Williamsport at 1926 EST. Windows were shattered and a large sign was blown off a metal roof in Williamsport at 1927 EST. A wind gust was measured at 77 mph in Grimesville just to the west of Garden View. Wind gusts were estimated at 75 mph in Waterville.</p>	
<p><b>Bradford County:</b></p> <p><b>Athens</b> 20 1901 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Athens</b> 20 1902 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Wyalusing</b> 20 1915 EST 0 0 4 0 0 TSTM Wind</p> <p><b>Canton</b> 20 1920 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Canton</b> 20 1923 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Litchfield</b> 20 1942 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Reno</b> 20 1945 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Bentley Creek</b> 20 1952 EST 0 0 3 0 0 TSTM Wind</p> <p><b>New Albany</b> 20 1958 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Heartzen</b> 20 2000 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts downed trees and utility lines. At least one tree fell on an automobile in Reno and in Heartzen. Trees fell on houses in some locations, Wyalusing being one of them.</p>	
<p><b>Franklin County:</b></p> <p><b>Greencastle</b> 20 1910 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Chambersburg</b> 20 1910 EST 0 0 3 0 0 TSTM Wind(72)</p> <p><b>1 E Chambersburg</b> 20 2030 to 2115 EST 0 0 4 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts uprooted trees and downed utility lines near Greencastle. A peak gust to 83 mph was reported near Chambersburg. Numerous trees and utility lines were down and a pickup truck was blown from a car lot onto a highway east of Chambersburg.</p>	
<p><b>Centre County:</b></p> <p><b>State College</b> 20 1910 EST 0 0 3 0 0 TSTM Wind(74)</p> <p><b>countywide</b> 20 1920-1945 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Spring Mills</b> 20 1945 EST 0 0 4 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts downed numerous trees and utility lines throughout the county between 1920 and 1945 EST. The roof was taken off a house in Spring Mills. A wind gust was measured at 85 mph at University Park (UNW) near State College.</p>	

## PENNSYLVANIA, Eastern

<p><b>Union County</b></p> <p>20 1930 EST 0 0 4 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts downed large trees and utility lines throughout the county, and some roads were blocked by downed trees.</p>	
<p><b>Northumberland County:</b></p> <p><b>Watsontown</b> 20 1930 EST 0 0 4 0 0 TSTM Wind</p> <p><b>Riverside</b> 20 1937 EST 0 0 4 0 0 TSTM Wind</p> <p><b>Shamokin</b> 20 1945 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts between 1930 and 2000 EST uprooted numerous trees in the Shamokin area. The roof was blown off a church in Watsontown. Many trees were down in Riverside, some came down on houses, automobiles and other buildings. The roof and side of a barn were blown off near Riverside. Trees and utility lines were down throughout the county.</p>	
<p><b>Wyoming County:</b></p> <p><b>countywide</b> 20 1930 EST 0 0 4 0 0 TSTM Wind</p> <p><b>3 NE Tunkhanneck</b> 20 1930 EST 0 0 4 0 0 TSTM Wind</p> <p><b>Tunkhanneck</b> 20 1930 EST 0 0 3 0 0 TSTM Wind</p> <p>Trees and utility lines were downed by thunderstorm wind gusts throughout the county, as were a number of barn roofs. Most of the roof and portions of one side of a barn were blown off northeast of Tunkhanneck and large trees were uprooted in Tunkhanneck.</p>	
<p><b>Juniata County,</b></p> <p><b>7 NE Mifflintown</b> 20 1930-2000 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts between 1930 and 2000 EST downed large trees and utility lines which blocked roads.</p>	
<p><b>Mifflin County,</b></p> <p><b>Lewistown</b> 20 1930-2000 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts between 1930 and 2000 EST downed numerous trees and utility lines in the Lewistown area.</p>	
<p><b>Montour County:</b></p> <p><b>countywide</b> 20 1930-2000 EST 0 0 3 0 0 TSTM Wind</p> <p><b>5 N Danville</b> 20 1937 EST 0 0 4 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts between 1930 and 2000 EST downed numerous trees and utility lines throughout the county. The roof was blown off a house near Danville between 1930 and 1945 EST.</p>	
<p><b>Snyder County:</b></p> <p><b>countywide</b> 20 1930-2015 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Middleburg</b> 20 1950 EST 0 0 4 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts between 1930 and 2015 EST downed numerous trees and utility lines throughout the county, including the Middleburg area.</p>	
<p><b>Sullivan County,</b></p> <p><b>Laporte</b> 20 1932 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts downed trees and utility lines. Small hail also was reported.</p>	
<p><b>Cumberland County:</b></p> <p><b>Carlisle</b> 20 1940 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Capital City Arpt(CXT)</b> 20 2010 EST 0 0 3 0 0 TSTM Wind(75)</p> <p><b>Newville</b> 20 2026 EST 0 0 4 0 0 TSTM Wind</p> <p><b>Camp Hill</b> 20 2032 EST 0 0 3 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts downed trees and utility lines. Part of a church roof was blown off near Newville. A tree was down on a house in Camp Hill. Wind gusts to 86 mph were measured at Capital City Airport(CXT).</p>	
<p><b>Luzerne County:</b></p> <p><b>3 NE Harveyville</b> 20 1945 EST 0 0 3 0 0 TSTM Wind</p> <p><b>Wilkes-Barre-Scranton Airport (AVP)</b> 20 1954 EST 0 0 3 0 0 TSTM Wind</p> <p><b>countywide</b> 20 2005 EST 0 0 4 0 0 TSTM Wind</p> <p>Thunderstorm wind gusts reached 60 mph at the Wilkes-Barre-Scranton Airport(AVP) and downed trees, branches and utility lines in the Wilkes-Barre and Avoca areas and in the area extending north to Harvey's Lake. Trees and utility lines were downed throughout the county with some trees falling on houses. Trees were downed at Broadway near Harveyville with at least one down on a house.</p>	
<p><b>Huntington County</b></p> <p><b>McAleveys Fort</b> 20 1900 EST 3.5 1232 0 0 4 0 Tornado FPP 224</p> <p>A tornado touched down about 1.5 miles south of McAleveys Fort and traveled north-northeast to around 2 miles northeast of McAleveys Fort. The tornado appeared to be a wide weak tornado with several separate funnel paths. Most of the damage was concentrated along the funnel paths with minimal damage between them. The individual funnel paths were about 300 feet wide with the entire tornado path about 0.7 of a mile wide. Hundreds of trees were downed or broken off, many of them around the 10 foot level. Several barns and outbuildings also were damaged. The maximum wind speed was estimated at 150 mph.</p>	



# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM							
					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS								
<b>PENNSYLVANIA, Eastern</b>										<b>PENNSYLVANIA, Eastern</b>																
Dauphin County:										York County:																
Harrisburg	20	1950 EST			0	0	?	0	TSTM Wind(64)	York	20	2025 EST			0	0	3	0	TSTM Wind(74)	Thunderstorm wind gusts uprooted large trees in front of the courthouse in York. The winds overturned five mobile homes north of Hanover between 2055 and 2100 EST. Wind gusts were measured at 85 mph in York. Part of the roof was blown off a lumber yard building near York and off an apartment building in York.						
Harrisburg	20	1950 EST			0	0	?	0	TSTM Wind(64)	5 N Hanover	20	2057 EST			0	0	4	0	TSTM Wind							
Halifax	20	2012 EST			0	0	3	0	TSTM Wind																	
									Thunderstorm wind gusts were measured at 74 mph on top of the Federal Office Building in Harrisburg. The winds downed trees and utility in the Halifax area between 2000 and 2025 EST. In Halifax the trailer portion of a tractor-trailer truck was blown onto its side and bleachers were blown onto the athletic field at the high school. Trees and utility lines were blown down throughout the county.																	
Lackawanna County:										Lehigh County:																
Scranton	20	2000 EST			0	0	3	0	TSTM Wind	countywide	20	2030 EST			0	0	4	0	TSTM Wind							
Dunmore	20	2005 EST			0	0	3	0	TSTM Wind	Allentown-Bethlehem Airport(ABE)	20	2034 EST			0	0	?	0	TSTM Wind(66)	Thunderstorm wind gusts caused widespread damage throughout the county as trees, utility lines, billboards and road signs were downed. Wind gusts reached 70 mph at Allentown-Bethlehem-Easton Airport (ABE).						
									Thunderstorm wind gusts brought down trees and utility lines throughout the county; and a number of trees were downed in Scranton and Dunmore.																	
Adams County:										Monroe County	20	2030 EST			0	0	4	0	TSTM Wind							
Essexton	20	2002 EST			0	0	4	0	TSTM Wind											Thunderstorm wind gusts caused widespread damage throughout the county as trees, utility lines, billboards and road signs were downed.						
New Oxford	20	2100 EST			0	0	4	0	TSTM Wind																	
									Thunderstorm wind gusts blew over two modular homes in the Hampton area and blew down a house in New Oxford. Wind gusts to 55 mph were reported in Heidlersburg.																	
Lebanon County:										Pike County	20	2030 EST			0	0	4	0	TSTM Wind							
1 N Lebanon	20	2005 EST			0	0	3	0	TSTM Wind											Thunderstorm wind gusts caused widespread damage throughout the county as trees, utility lines, billboards and road signs were downed.						
Cornwall	20	2025 EST			0	0	?	0	TSTM Wind(69)																	
1 N Lebanon	20	2040 EST			0	0	4	0	TSTM Wind	Northampton County	20	2035 EST			0	0	4	0	TSTM Wind	Thunderstorm wind gusts caused widespread damage throughout the county as trees, utility lines, billboards and road signs were downed.						
									Thunderstorm wind gusts downed trees and utility lines. The trees and utility lines were downed in North Lebanon Township just north of Lebanon between 2000 and 2010 EST. The winds were estimated at 60 to 80 mph at Cornwall. The winds damaged two mobile homes and brought a tree down on a house just north of Lebanon in North Lebanon Township.																	
Columbia County:										Lancaster County:																
Blossburg	20	2005 EST			0	1	3	0	TSTM Wind	Neffsville	20	2040 EST			0	0	?	0	TSTM Wind(52)							
									Thunderstorm wind gusts downed trees, limbs and utility lines along the Susquehanna Valley from Blossburg to Berwick. A man was injured when a tree fell on the automobile he was driving in Hemlock Township, just west of Blossburg. The roof was blown off a building in Blossburg. Trees and utility lines were downed throughout the county.	Lancaster	20	2045 EST			0	0	3	0	0	0	TSTM Wind(65)					
										Lancaster Airport(LMS)	20	2050 EST			0	0	5	0	TSTM Wind(60)							
										2 NE Lititz	20	2100 EST			0	0	5	0	TSTM Wind	Thunderstorm wind gusts of 60 mph were reported at Neffsville. At WGAL-TV in Lancaster a peak wind of 73 mph was measured. At Lancaster Airport(LMS) winds were over 55 mph for nearly 20 minutes (2040 to 2100 EST) and had a peak gust of 69 mph. Thirteen airplanes were damaged, with some of them being flipped over. About one third of a large tobacco shed was demolished, a tree fell on an automobile and a silo was blown over in Warwick Township near Lititz. Trees and utility lines were down throughout the county.						
Huntingdon County:										Montgomery County:																
Oriskania	20	2007 EST			0	0	3	0	TSTM Wind	Reyersersford	20	2045 EST			0	0	5	0	TSTM Wind							
3 S Oriskania	20	2030 EST			0	0	4	0	TSTM Wind	Pottstown	20	2050 EST			0	0	4	0	TSTM Wind(56)							
									Thunderstorm wind gusts between 1945 and 2030 EST blew part of the roof off a mobile home near Oriskania. South of Oriskania the wind collapsed a barn.	Telford	20	2055 EST			0	0	3	0	0	0	TSTM Wind(56)					
										Narristown	20	2105 EST			0	0	3	0	0	0	TSTM Wind(52)					
Schuylkill County:										Harleysville	20	2110 EST			0	0	3	0	0	0	TSTM Wind(52)					
countywide	20	2015 EST			0	0	4	0	TSTM Wind	Telford	20	2115 EST			0	0	3	0	0	0	TSTM Wind					
Hegins	20	2030 EST			0	0	4	0	TSTM Wind	Reckledge	20	2115 EST			0	0	4	0	0	0	TSTM Wind					
									Thunderstorm wind gusts did widespread damage throughout the county as trees, utility lines, billboards and road signs were downed. Near Hegins the roof was blown off a barn. In Pottsville a store window was blown out and a tree fell on an automobile. Windows were blown out at a pharmacy in Pine Grove.	Hatboro	20	2120 EST			0	0	4	0	0	0	0	0	0	0	TSTM Wind	Thunderstorm wind gusts downed trees and utility lines throughout the county. Some of the reported wind gusts were: Pottstown 65 mph, Telford 64 mph, Narristown 60 mph and Harleysville 60 mph. Plate glass store windows were blown out in Pottsville and a tree fell on a house nearby, causing extensive damage. Much of the roof was torn off an apartment building in Pottstown and a huge limb came down on three automobiles in Stowe. The roof was blown off an apartment building in Reckledge. In Reckledge a huge tree came down and crashed right through a house. In the Hatboro area plate glass store windows were blown in and at least a portion of the roof was blown off several buildings.
Perry County:										Chester County:																
3 W Marysville	20	2020 EST			0	0	3	0	TSTM Wind	Kennett Square	20	2100 EST			0	0	4	0	0	0	TSTM Wind					
									Thunderstorm wind gusts downed trees and utility lines west of Marysville. Wind gusts to 56 mph were reported two miles west of Marysville.	2 W Coatesville	20	2100 EST			0	0	?	0	0	0	0	0	TSTM Wind(61)			
Berks County:										West Chester	20	2105 EST			0	0	3	0	0	0	TSTM Wind					
countywide	20	2020 EST			0	0	4	0	TSTM Wind	Coatesville	20	2110 EST			0	0	?	0	0	0	TSTM Wind(52)					
Wyeissing	20	2020 EST			0	0	4	0	TSTM Wind	West Chester	20	2112 EST			0	0	?	0	0	0	TSTM Wind(65)					
Hereford	20	2025 EST			0	0	4	0	TSTM Wind	Oxford	20	2120 EST			0	0	?	0	0	0	TSTM Wind(56)					
									Thunderstorm wind gusts caused widespread damage throughout the county as trees, utility lines, billboards and road signs were downed. A tree fell on a house in Hereford, causing considerable damage. Most of the aluminum roof covering was blown off a hotel in Wyeissing.	West Chester	20	2125 EST			0	0	4	0	0	0	0	0	TSTM Wind(57)			
Carbon County:										Coatesville	20	2125 EST			0	0	3	0	0	0	TSTM Wind					
countywide	20	2020 EST			0	0	4	0	TSTM Wind	Parksville	20	2125 EST			0	0	3	0	0	0	TSTM Wind					
New Mahoning	20	2020 EST			0	0	4	0	TSTM Wind	Phoenixville	20	2125 EST			0	0	5	0	0	0	TSTM Wind	Thunderstorm wind gusts downed trees and utility lines throughout the county. Some of the reported wind gusts were: west of Coatesville 70 mph, Oxford 65 mph, Coatesville 60 mph, West Chester 75 mph and West Chester Airport 66 mph. In West Chester a tree fell on an automobile, trapping the driver inside. A tree fell on an automobile and portion of the roof blew off a farm building in Kennett Square. A barn was blown apart in East Brandywine Township roofs were off several buildings in West Brandywine Township and off one building in West Whiteland Township. Roofs were blown off houses in Phoenixville.				
Sultana County	20	1945-2045 EST			0	0	3	0	TSTM Wind																	
									Thunderstorm wind gusts between 1945 and 2045 EST downed numerous trees and utility lines throughout the county. The strongest winds were reported to have occurred around 2030 EST.																	

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>— PENNSYLVANIA, Eastern</b>									
Ducks County: Warrington	20	2100 EST			0	0	?	0	TSTM Wind(52)
Daylestown	20	2110 EST			0	0	?	0	TSTM Wind(63)
Daylestown	20	2116 EST			0	0	4	0	TSTM Wind(52)
Thunderstorm wind gusts were reported at 60 mph in Warrington and at 73 and 60 mph in Daylestown. Trees and utility lines were down throughout the county. Roofing was blown off a shopping center in Dublin and reefs were off a number of houses in Daylestown. Windows were blown out of a bank in Quakertown.									
Delaware County: Wayne	20	2107 EST			0	0	4	0	TSTM Wind(69)
Newtown Square	20	2125 EST			0	0	?	0	TSTM Wind(52)
Villanova	20	2125 EST			0	0	?	0	TSTM Wind(52)
Springfield	20	2125 EST			0	0	3	0	TSTM Wind
Media	20	2125 EST			0	0	3	0	TSTM Wind
Thunderstorm wind gusts downed trees and utility lines throughout the county. Large trees were uprooted in Wayne and one automobile was damaged. Wind gusts were reported at 60 mph in Newtown Square and Villanova and at 88 mph in Wayne.									
Philadelphia County: Dustleton	20	2117 EST			0	0	?	0	TSTM Wind(61)
Dustleton	20	2125 EST			0	0	?	0	TSTM Wind(52)
Philadelphia Intl. Airport (PHL)	20	2125 EST			0	0	?	0	TSTM Wind(53)
Germantown	20	2125 EST			0	0	4	0	TSTM Wind
2 W Germantown	20	2141 EST			0	0	4	0	TSTM Wind
Thunderstorm wind gusts caused roof damage to apartments in Fairmont Park to the west of Germantown. The marquee was blown off an old movie theatre in Germantown. Wind gusts were reported at 70 and 60 mph in northeast Philadelphia near Dustleton and were measured at 61 mph at Philadelphia International Airport (PHL).									
PAZ012 Southeast Zone	23	0400 EST*			0	0	3	0	Heavy Snow
Snow began falling around 2000 EST on the 22nd and continued until around 0700 EST on the 23rd, accumulating to 4 to 5 inches in amount. (* time 4-inch accumulation was reached, not starting time)									
<b>36 PENNSYLVANIA, Western</b>									
Clearfield County 85 Clearfield	16	0725EST			0	0	3	0	Thunderstorm Wind
A horse trailer was destroyed by thunderstorm winds.									
PAZ001 Lakeshore	16	1718EST			0	0	0	0	High Wind
A nonconvective wind gust of 59 mph occurred at Erie County airport.									
PAZ002 Northwest	16	1730EST			0	0	0	0	High Wind
Nonconvective winds downed power lines in Venango and Crawford counties.									
PAZ015 Southwest	16	1735EST			0	0	0	0	High Wind
A nonconvective wind gust of 60 mph occurred at Beaver Falls in Beaver County.									
PAZ003 Western	16	1745EST			0	0	0	0	High Wind
Trees and power lines were downed by nonconvective winds in Union, Beaver and Newcastle in Lawrence County.									
PAZ003 Western	16	1746EST			0	1	3	0	High Wind
Nonconvective winds blew a tree down onto a car in Slippery Rock, Butler County.									
PAZ004 Northern Mountains	16	1810EST			0	0	0	0	High Wind
Trees and power lines were downed by nonconvective winds in Wilcox, Elk County.									
PAZ003 Western	16	1830EST			0	0	0	0	High Wind
Nonconvective winds downed tree limbs and power lines in Grove City, Greenville, Mercer and Sharon in Mercer County.									
<b>— PENNSYLVANIA, Western</b>									
PAZ003 Western	16	1830EST			0	0	0	0	High Wind
Nonconvective winds downed trees and power lines in Newcastle, Ellwood City and Beaver in Lawrence County.									
PAZ003 Western	16	1830EST			0	0	0	0	High Wind
Nonconvective winds downed trees and power lines in Jefferson County.									
PAZ005 Laurel Mountains	16	1830EST			0	0	3	0	High Wind
Nonconvective winds caused a house wall to collapse in Stoyestown in Somerset County.									
PAZ002 Northwest	17	0430EST			0	0	0	0	Heavy Snow
Six inches of snow fell in Crawford County and up to six inches fell in western Warren County.									
PAZ004 Northern Mountains	20	1830EST			0	0	0	0	High Wind
Nonconvective winds downed trees and power lines through McKean, Elk and Cameron counties.									
PAZ003 Western	20	1835EST			0	0	0	0	High Wind
A nonconvective wind gust of 69 mph occurred in Beaver Falls, Beaver County. The nonconvective winds downed tree limbs in Mercer, Grove City and Sharon in Mercer County and trees and power lines in Newcastle and Ellwood City in Lawrence County.									
PAZ014 North-Central Mountains	20	1845EST			0	0	0	0	High Wind
Nonconvective winds downed trees and power lines in Clearfield and Madera in Clearfield County.									
PAZ003 Western	20	1855EST			0	0	0	0	High Wind
Nonconvective winds downed trees and power lines in Brockway, Jefferson County.									
PAZ005 Laurel Mountains	20	1900EST			0	0	0	0	High Wind
Nonconvective winds brought down trees and utility lines in Cambria and Somerset counties.									
PAZ015 Southwestern	20	1900EST			0	0	0	0	High Wind
Nonconvective winds blew trees onto utility lines in Indiana County.									
PAZ003 Western	20	1904EST			0	1	3	0	High Wind
Nonconvective winds blew a tree onto a home in Mars, Butler County. One person was injured.									
PAZ015 Southwestern	20	1910EST			0	0	0	0	High Wind
Nonconvective winds blew down trees and power lines in Washington, Washington County.									
PAZ015 Southwestern	20	1915EST			0	0	0	0	High Wind
Nonconvective winds downed power lines in Montroseville, Allegheny County.									
PAZ005 Laurel Mountains	20	1922EST			0	0	0	0	High Wind
A 67 mph, nonconvective wind gust occurred at the Johnstown Flight Service Station in Cambria County.									
PAZ003 Western	20	1925EST			0	0	0	0	High Wind
A 63 mph, nonconvective wind gust occurred at Dubois in Jefferson County.									
PAZ015 Southwestern	20	1925EST			0	0	2	0	High Wind
Nonconvective winds blew down trees and a shed in Connellsville in Fayette County.									
PAZ015 Southwestern	20	1925EST			0	0	0	0	High Wind
Seventy mph, nonconvective winds blew down trees at Washington in Washington County.									
PAZ015 Southwestern	20	1945EST			0	0	0	0	High Wind
Nonconvective winds blew down trees and power lines in Waynesboro, Greene County.									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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

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

## PENNSYLVANIA, Western

PAZ015 Southwestern	20	1946EST							High Wind	
A nonconvective wind gust of 58 mph occurred at the Greater Pittsburgh Airport.										
PAZ006 South-Central Mountains	20	1949EST							High Wind	
A 60 mph, nonconvective wind gust occurred at the Altoona Flight Service Station. Display windows were shattered in downtown Altoona, Blair County.										
PAZ006 South-Central Mountains	20	1950EST							High Wind	
Nonconvective winds downed trees and power lines in Bedford, Bedford County.										
PAZ015 Southwestern	20	2000EST							High Wind	
Nonconvective winds tore siding off of a house and blew down trees in Brownsville, Fayette County.										
PAZ005 Laurel Mountains	20	2012EST							High Wind	
A 61 mph, nonconvective wind gust occurred at Johnstown in Cambria County.										
PAZ015 Southwestern	20	2015EST							High Wind	
Nonconvective winds downed a shed in Moon, Allegheny County.										
PAZ003 Western	20	2020EST							High Wind	
Nonconvective winds downed trees and power lines in Clarion, Clarion County.										
PAZ015 Southwestern	20	2025EST							High Wind	
Nonconvective winds downed trees and power lines in Latrobe, Westmoreland County.										
PAZ002 Northwest	21	0700EST							Heavy Snow	
Six to ten inches of snow fell in Crawford County.										
PAZ004 Northern Mountains	21	0700EST							Heavy Snow	
Six inches of snow fell at Kane in McKean County.										
PAZ003 Western	28	0300EST							High Wind	
Nonconvective winds downed trees in Mars, Butler County.										

## 37 RHODE ISLAND

RIZALL Statewide	16	0800EST- 1800EST							High winds	
Gale force winds from the south preceded a strong squall line and cold front across the state, with wind gusts up to 50 mph resulting in scattered property damage and scattered power outages.										
RIZALL Statewide	20- 21	2100EST- 1500EST							High winds	
Gale force northwest winds in the wake of a strong cold front which ushered in much colder air, gusted up to 50 to 60 mph statewide, resulting in scattered property damage and scattered power outages.										
RIZ002 Southern Rhode Island	23	0200EST- 1500EST							Heavy snow	
A heavy Thanksgiving Day snowstorm brought from 6 to 10 inches of snow to the southern portion of the state, setting new records for the holiday. Motorists experienced very hazardous and difficult driving conditions for their holiday travel.										

## 38 SOUTH CAROLINA

Greenwood County: Greenwood	15	1523EST							Funnel Cloud	
3 NE Greenwood	15	1534EST	0.75	269	0	1	5	0	Tornado (F2)	
Laurens County: near Mountsville S of Clinton near Joanna	15	1555EST							Tstm. Winds	
	15	1610EST							Tstm. Winds	
	15	1615EST				1	0	0	Lightning	
A funnel cloud was spotted near the intersection of the Hwy. 72/221 bypass and SC Hwy. 100 at 1523EST. The white vortex funnel was witnessed by many people prior to touchdown. A policeman followed the funnel cloud in his patrol car until it touched down and became a tornado in the Country Homes subdivision northeast of Greenwood. At least four homes had their roofs blown off and a total of 47 homes received varying amounts of damage from the tornado. One car was overturned and moved 20 feet. The impression from all eyewitnesses was that the main part of the tornado never got to the ground. The vortex was much larger than the damage path. One man suffered very minor injuries (scratches and bruises). A total of 47 homes were damaged by the tornado. Damage was estimated at about \$200,000. Previously, the parent cell was non-severe as it passed over the City of Greenwood. The storm continued moving northeast and although no additional tornadoes were reported, it did produce some wind damage near Mountsville and south of Clinton. In both locations, trees and power lines were blown down. Near Joanna, a man was struck and injured by lightning.										
Spartanburg County, Duncan	15	2211EST							Hail (0.75)	
Oconee County: Long Creek and Westminster	15	2221EST							Hail (1.75)	
Westminster and Seneca	15	2245EST							Tstm. Winds and Hail (1.0)	
Pickens County, N of Pickens	15	2300EST							Tstm. Winds	
Greenville County, near Tigerville	15	2323EST							Tstm. Winds (G70)	
Anderson County, Starr	15	2335EST							Tstm. Winds	
Spartanburg County, Fingerville to Chesnee	15	2345EST							Tstm. Winds	
Abbeville County, S of Honea Path	15	2345EST							Tstm. Winds	
Laurens County, Princeton	15	2356EST							Tstm. Winds	
Abbeville County, Abbeville	16	0015EST							Tstm. Winds	
Spartanburg County, Central portions	16	0025EST							Tstm. Winds	
Greenwood County, N of Greenwood	16	0030EST							Tstm. Winds	

At around 2015EST on November 15th, the storm that produced the tornado in Habersham County, Georgia moved across the border and through a remote section of Oconee County, South Carolina. The storm was still very strong and contained suspicious radar configurations during this time. However, no one reported any damage and limited ground surveys revealed no damage. A hiker reported some hail from the storm, but the size was not given.

A line of decaying severe thunderstorms moved into northwestern South Carolina late in the evening of November 15. While there were a number of reports of severe weather, two steady-state storms produced most damage. The first moved through Oconee, Pickens, northern Greenville, and northern Spartanburg counties. The most damage with it occurred near Tigerville where a number of trees were downed by winds estimated at 70 knots by a NWS employee. He was on the way to work and narrowly escaped injury when a tree was blown across his car. In the same area, a number of outbuildings and a mobile home were damaged or destroyed. The same storm moved into northern Spartanburg County where a mobile home had its roof blown off near Fingerville. A mobile home was blown off of its foundation near Chesnee, also in Spartanburg County. A similar storm produced winds that blew a pickup truck off the road near Starr, in Anderson County; it then demolished a mobile home just south of Honea Path, in Abbeville County. Thunderstorm winds also caused power outages and damaged several homes in Abbeville.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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

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

## 39 SOUTH DAKOTA

SD2001-002-006-008-009-013-014 Western third of South Dakota	07- 1800MST-08 0400EST									High Wind
A strong cold front moved rapidly across western South Dakota during the afternoon and early evening hours, producing strong northwesterly winds. The maximum gust recorded was 57 mph at Buffalo in the northwest corner of the state at around 2300MST.										
SDZALL All of South Dakota	26- early evening to 27 late afternoon					1	0	0	0	Winter Storm
Snow began falling in western South Dakota during the early evening on the 26th and swept across the state that night and on much of the 27th. Almost two feet of snow fell in parts of the Black Hills while only one to two inches fell in the southeast part of the state. icy roads caused by rain that preceded the snow in central and east parts of the state, combined with strong north winds on the 27th to make for very dangerous traveling conditions. Numerous accidents were reported, and many cars went into ditches. A 69 year old Haakon County man was a victim of the storm as he tried to walk four miles from his stranded vehicle to his home located near Philip. The following are some of the heavier snow-fall amounts in inches:										
	Galena									18
	Ft. Meade									14
	Spearfish									12
	Belle Fourche									8
	Newell, Lemmon, Deerfield and Leola									6
	Mellette and Onida									5
	Rapid City, Custer, Eureka, Faulkton and Aberdeen									4
	M690									

## 40 TENNESSEE

ROBERTSON COUNTY	05 2303CST									THUNDERSTORM WIND
Damaging thunderstorm winds knocked down large tree limbs and power lines in Springfield.										
SHELBY COUNTY	05 2330CST					0	0	2	0	THUNDERSTORM WIND
South Memphis and the southeastern part of Shelby County had large tree limbs, some trees and power lines knocked down by powerful thunderstorm winds.										
RUTHERFORD COUNTY	07 1737CST					0	0	2	0	THUNDERSTORM WIND
SHELBY COUNTY	07 2000 to 0.5 2001CST	17	0	0	4	0	0	0	0	TORNADO (FO)
NE Bartlett	07 2035CST					0	0	1	0	THUNDERSTORM WIND
SHELBY COUNTY	07 2100CST					0	0	4	0	THUNDERSTORM WIND
FAYETTE COUNTY	07 2200CST					0	0	3	0	THUNDERSTORM WIND
HARDMAN COUNTY	08 0900CST					0	0	4	0	THUNDERSTORM WIND
FENTRESS COUNTY										

A cold front moving west to east across Tennessee caused widespread thunderstorms, some of them producing severe weather. In the northeast part of Bartlett in Shelby County, a severe thunderstorm produced small hail, winds around 80 mph and a small tornado. It first touched down along Billy Maher Road, just south of St. Elmo. It traveled northeast for 1/2 mile and lifted up. It did mostly minor damage to 7 homes. One house had a board driven halfway through a wall, another house had shingles and a section of roof taken off. A 15 foot section of fence was torn out and a shed was destroyed. Other houses had some shingles and windows damaged. Total estimated damage was \$5000 to \$10,000. Thunderstorm winds knocked down trees and power lines in Smyrna and in Arlington. At about 2 miles north of Oakland, thunderstorm winds tore part of a roof off a house, tore an add-on room of a trailer off, tore up a fence and knocked over several trees. In Fentress County between Bamer Springs and Roslin, thunderstorm winds damaged one home and a mobile home.

## TENNESSEE

SHELBY COUNTY	15 1230CST									THUNDERSTORM WIND
LAUDERDALE COUNTY	15 1230 to 5.0 75					0	0	4	0	TORNADO (F1)
5SW to .5W Ripley	15 1235CST					0	0	1	0	HAIL (2.75)
MADISON COUNTY	15 1236CST					0	0	0	0	FUNNEL CLOUD
TIPTON COUNTY	15 1245CST					0	0	4	0	TORNADO (F2)
GIBSON COUNTY	15 1255 to 5.0 80					0	0	4	0	TORNADO (F2)
SW to 3E Trenton	15 1301CST					0	0	4	0	THUNDERSTORM WIND
GIBSON COUNTY	15 1300CST					0	0	3	0	THUNDERSTORM WIND
HENRY COUNTY	15 1308CST					0	0	3	0	THUNDERSTORM WIND
HENDERSON COUNTY	15 1330CST					0	0	3	0	THUNDERSTORM WIND
MONTGOMERY COUNTY	15 1348CST					0	0	1	0	HAIL (1.00)
RUTHERFORD COUNTY	15 1622CST					0	0	3	0	THUNDERSTORM WIND
LINCOLN COUNTY	15 1646CST					0	0	5	0	THUNDERSTORM WIND
WARREN COUNTY	15 1700CST					0	0	0	0	FUNNEL CLOUD
WARREN COUNTY	15 1730CST					0	0	2	0	THUNDERSTORM WIND
COFFEE COUNTY	15 1730CST					0	0	2	0	THUNDERSTORM WIND
FRANKLIN COUNTY	15 1735CST					0	0	2	0	THUNDERSTORM WIND
WHITE COUNTY	15 1740CST					0	0	2	0	THUNDERSTORM WIND
MOHAWK COUNTY	15 1800CST					0	0	2	0	THUNDERSTORM WIND
HAMILTON COUNTY	15 1840CST					0	0	3	0	THUNDERSTORM WIND
MARION COUNTY	15 1845CST					0	1	4	0	THUNDERSTORM WIND
BRADLEY COUNTY	15 1845 to 3.0 30					0	0	4	0	TORNADO (F1)
4.5SW to 2SE Cleveland	15 1851CST					0	0	3	0	THUNDERSTORM WIND
BRADLEY COUNTY	15 1845CST					0	0	3	0	THUNDERSTORM WIND
MORGAN COUNTY	15 1900CST					0	0	3	0	THUNDERSTORM WIND
BLOUNT COUNTY	15 1925CST					0	0	2	0	THUNDERSTORM WIND

A very strong cold front moved rapidly from west to east across Tennessee, producing widespread severe weather, especially in the southern parts of the state. Many trees and power lines were knocked down in the 21 counties mentioned. In Shelby County a business had a section of its tin roof torn off in Bartlett. In Lauderdale County a tornado touched down about 5 miles southwest of Ripley and traveled northeast to about 1/2 mile west of Ripley. Two homes were damaged, numerous outbuildings and sheds were were torn up. In Tipton County, a funnel cloud was sighted one mile south of Minford.

In Gibson County, a tornado touched down briefly in the Trenton area. It first touched down on Livery Road just southwest of Trenton. It moved northeast leaving spotty damage to roofs of a few houses, and tearing up a patio and knocking down power lines. It last touched ground near Highway 104E where it knocked down numerous trees in a wooded lot about 3 miles east of Trenton. Thunderstorm winds produced spotty damage throughout the eastern part of Gibson County. Total estimated damage in Gibson County was \$65,000.

In Henry County there was widespread damage, with the most significant damage just southwest of Paris where a barn and a house had considerable damage to their roofs. In Rutherford County the roofs of a house and barn were damaged. In Lincoln County, thunderstorm winds knocked a tree onto a car, tore some shingles from the roof of a house and tore a section of roof off of a barn, all near Fayetteville. A number of barns and trailers had minor damage in the southwest part of Lincoln County. In Marion County, an auto shop sustained extensive damage and a beam from the roof fell on a man, injuring him in the town of Witwell.

In Bradley County a tornado touched down near the Old Chattanooga Pike about 4.5 miles southwest from the center of Cleveland and traveled northeast to about 2 miles southeast of Cleveland. It knocked down numerous trees and destroyed a number of outbuildings, destroyed a brick chimney from a house and leveled an unoccupied older building.

OVERTON COUNTY	28 0130CST									THUNDERSTORM WIND
PUNNAM COUNTY	28 0130CST					0	0	4	0	THUNDERSTORM WIND

A cold front moving east through the state produced spotty damage in the southwest part of Cookeville and in the northern part of Overton County. In Cookeville several homes and businesses were damaged. A camper was pushed against the side of a house by thunderstorm winds and a part of it was blown into the top of a tree. A small shed was destroyed and part of a fence was knocked down. In northeast Overton County part of the roof was damaged on one house and a satellite dish was destroyed, and an old barn at another residence was heavily damaged. There were several trees knocked down in both counties.

## 41 TEXAS, Northern ——— NONE REPORTED

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

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

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

## 41 TEXAS, Southern

Cameron County	17	1450CST	1	narrow	0	0	4	0	Tornado (F0)
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A small tornado touched down on the east side of Brownsville and moved north-northwest, creating an intermittent damage path about 1 mile long. The tornado did only minor damage at one business where it turned over some portable buildings. The tornado moved over the International airport and moved some airplanes around at the terminal. At the National Weather Service Office, personnel reported that acoustical panels in the ceiling moved up and down. There was also a sharp pressure fall on the barograph chart. The tornado had the weak dynamics of a waterspout. The tornado came out of a towering cumulus cloud that was producing only a light shower at the time.

## 41 TEXAS, Western ————— NONE REPORTED

## 42 UTAH

UTZ010-011 Northern and Central Utah Mountains	25-27	2000MST-2300MST	0	0	0	0	0	0	Heavy Snow
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A moist upper-level trough moving through Utah brought over 60 inches of snow to the Alta ski resort in the Wasatch Mountains and totals of over 24 inches in many other mountain locations above 7000 feet in elevation in Northern and Central Utah.

UTZ001-002-003 Northwest Utah Valleys	26-27	1300MST-1500MST	0	0	0	0	0	0	Heavy Snow
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The same upper-level trough mentioned above and lake-effect snow off the Great Salt Lake combined to produce up to 14 inches of snowfall in valley locations of Northwest Utah.

Davis County 10W Bountiful	26	1300MST	0	0	0	0	0	0	Waterspout
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A waterspout was sighted by several persons over the Great Salt Lake. Its movement was not determined.

Davis County 1S Bountiful	26	1317MST	0	0	0	0	0	0	Funnel Cloud
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A funnel cloud was sighted from the tower at Salt Lake Airport. It lasted about 8 minutes.

UTZ008 Southeast Utah	26	1400-1700MST	0	0	0	0	0	0	High Winds
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A cold front associated with the upper-level trough passing across Utah on this day brought high winds to Southeast Utah. Winds of up to 60 mph were reported at the Bullfrog Marina.

## 43 VERMONT

Chittenden County Burlington International Airport	16	1000EST	0	0	0	0	0	0	Record Heat
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Chittenden County Burlington International Airport	16	1300EST	0	0	?	0	0	0	High Wind (G54)
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Franklin County St. Albans	16	1100EST	0	1	5	?	?	?	High Wind (G66)
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Windham County Brattleboro	16	1330EST	?	?	?	?	?	?	TSTM Wind
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Windham County Westminster	16	1335EST	0	0	4	0	0	0	TSTM Wind
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Addison County Bridport	16	1400EST	0	0	5	4	0	0	TSTM Wind
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Addison County countywide	16	1400EST	0	0	4	0	0	0	TSTM Wind
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Chittenden County Charlotte	16	1400EST	0	0	5	0	0	0	TSTM Wind
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Bennington County Arlington	16	1415EST	0	0	5	0	0	0	Lightning
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In Charlotte, straight-line winds damaged the roof of the Charlotte Central School. In Addison County, several homes were also damaged by straight-line winds. The hardest hit community was Bridport. Winds in this community were estimated at being in excess of 70 mph. Meanwhile, in Burlington winds gusted to 62 mph, and at Ferrisburg's Thompson Point winds were measured at 68 mph. An all-time record high temperature for the date was recorded at 1000EST at Burlington International Airport, 73°F. The old record was 66°F.

## VERMONT

VTZALL Statewide	20-21	PM-AM	1	0	5	0	0	0	Snow
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Snowfall in excess of 6 inches covered most of the state. The highest snowfall total was at Brandon Gap where 15 inches fell overnight. Heavy snowfall also contributed to the downing of power lines. One male died of heart failure while freeing his car from a snowbank.  
M820

VTZALL Statewide	30	AM-PM	1	4	4	0	0	0	Snow
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Icy, snow-covered roads resulted in a multiple vehicle accident on Interstate 91 near Brattleboro. The victim of the accident was in a tractor-trailer that crashed through guardrails and came to rest with half of the tractor hanging out over the West River. The victim had been tossed through the windshield of the vehicle, fell about 150 feet, crashed through the river's ice, and has been presumed drowned.  
M320

## 44 VIRGINIA

Grayson County	15-16	Overnight	0	0	4	0	0	0	Flash Flooding
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Carroll County	15-16	Overnight	0	0	4	0	0	0	Flash Flooding
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Thunderstorm rains caused flash flooding of numerous creeks in Grayson and Carroll counties. Some roads were covered with up to 3 feet of water. Rainfall at Galax was measured at 3.39 inches in a four-hour period centered around midnight.

Grayson County	16	0030EST	0	0	4	0	0	0	Thunderstorm Winds
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Carroll County	16	0100EST	0	0	4	0	0	0	Thunderstorm Winds
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Thunderstorm winds downed trees and cut power at various locations in Grayson and Carroll counties.

VAZ005-009-010-011-012-013-014-015-016 Northern and Western Virginia	16	Morning	0	0	3	0	0	0	Heavy Rain
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Thunderstorms brought general rainfalls of 1 to 3 inches which caused flooding of low-lying areas. Parts of the Southern Highlands received more than 3 inches.

Montgomery County Floyd County	16	Early Morning	0	0	4	0	0	0	Flash Flooding
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Roanoke County	16	Early Morning	0	0	4	0	0	0	Flash Flooding
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City of Roanoke	16	Early Morning	0	0	4	0	0	0	Flash Flooding
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Thunderstorm rains caused flash flooding of several creeks and low-lying roads in Montgomery, Floyd, and Roanoke counties. At Roanoke, rainfall was gaged at 3.14 inches, and most of the rain fell between 0100 and 0300 EST. The hardest-hit area appeared to be the Sun Valley in Roanoke County. Strong winds also accompanied the storm.

Montgomery County	16	0200EST	0	0	4	0	0	0	Thunderstorm Winds
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Thunderstorm winds downed trees which blocked roads.

Patrick County	16	0200EST	0	0	5	0	0	0	Thunderstorm Winds
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Henry County	16	0200EST	0	0	5	0	0	0	Thunderstorm Winds
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City of Martinsville	16	0200EST	0	0	5	0	0	0	Thunderstorm Winds
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Thunderstorm winds caused damage at various locations in Patrick and Henry counties. Numerous trees and large limbs were downed and power outages were widespread. In Martinsville, a cinder block cannery building collapsed, and the adjacent school was damaged. Some airplanes were damaged at the Blue Ridge Regional Airport.

City of Lynchburg	16	0230EST	0	0	3	0	0	0	Thunderstorm Winds (57 kt)
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Campbell County, Long Island and Altavista	16	0300EST	0	0	4	0	0	0	Thunderstorm Winds
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Charlotte County, Phenix and Old Well	16	0300EST	0	0	4	0	0	0	Thunderstorm Winds
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Thunderstorm winds caused scattered damage and downed several trees and large limbs in an area from Altavista to Long Island to Phenix. In Old Well, the winds destroyed a shed, and a nearby garage was pierced by a board from that shed.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED <sup>1</sup> DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED <sup>1</sup> DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

**— VIRGINIA**

Halifax County, Northwest Part	16	0310EST				0	0	4	0	Thunderstorm Winds Thunderstorm winds uprooted or snapped off numerous trees and knocked out power in the Republican Grove area and along Route 650.
Augusta County	16	Morning				0	0	4	0	Thunderstorm Winds
Albemarle County	16	Morning				0	0	4	0	Thunderstorm Winds
Fluvanna County	16	Morning				1	0	4	0	Thunderstorm Winds Thunderstorm winds downed trees at various locations in Augusta, Albemarle, and Fluvanna counties at several times during the morning. A 31 year old woman died when she drove her car into a tree that had fallen across Route 630 in Fluvanna County. F31V
Clarke County	16	0430EST				0	0	4	0	Thunderstorm Winds (52 kt)
Frederick County	16	0430EST				0	0	4	0	Thunderstorm Winds (52 kt)
Warren County	16	0430EST				0	0	5	0	Thunderstorm Winds (52 kt) Thunderstorm winds unroofed the press booth at the Warren County Middle School near Front Royal and downed trees and power lines at numerous locations in Clarke, Frederick, and Warren counties. Winds were estimated at 60 mph.
Orange County, Somerset	16	0430EST				0	0	3	0	Thunderstorm Winds Thunderstorm winds downed several large trees.
Loudoun County	16	0515EST				0	0	4	0	Thunderstorm Winds Thunderstorm winds downed large trees onto power lines near Lovettesville and in Hillsboro. Downed trees blocked roads in the St. Louis and Arcola areas.
Goochland County, Central Part	16	0805EST				0	0	0	0	Thunderstorm Winds (51 kt)
Goochland County, Northeast Part	16	0830EST				0	0	3	0	Thunderstorm Winds (52 kt) Thunderstorm winds estimated at 60 mph downed several large trees.
Amelia County, Route 616 (exact location is unknown)	16	0815EST	0.25	15		0	0	5	0	Tornado (F0) A small tornado touched down briefly along Route 616. It blew out one window and tore off part of the tin roof of a country store, and leveled a tin house which which was located approximately 30 feet southeast of the store. Several small trees were blown over. About a quarter mile west of the store, a house with a composition type roof had numerous shingles pulled off the south side of the roof but none from the north side. A car parked in the driveway sustained a few scratches from flying debris. One eyewitness reported seeing a funnel. Also, strong winds downed a few trees in the area. Classification: F0, P0, P0.
Louisa County, Central Part	16	0830EST				0	0	3	0	Thunderstorm Winds (52 kt) Thunderstorm winds estimated at 60 mph downed several large trees across roads.
Hanover County, Central Part	16	0900EST				0	0	3	0	Thunderstorm Winds (55kt) Thunderstorm winds estimated at over 60 mph downed several trees and road signs.
City of Alexandria, S. Pickett St.	16	0905EST				0	0	4	0	Thunderstorm Winds (60 kt) Thunderstorm winds estimated at 70 mph toppled the upper part of a brick and cinder block wall of a warehouse. The roof remained intact. Some debris fell onto and damaged a pickup truck. Damage was \$12,000.
York County	16	1045EST				0	0	3	0	Thunderstorm Winds Thunderstorm winds downed several trees at scattered locations in York County and swamped a small Navy boat as it was crossing the York River.
Accomack County, Gargatha	16	1115EST				0	0	4	0	Thunderstorm Winds Thunderstorm winds heavily damaged a sturdy barn, blew an above-ground swimming pool into a nearby woods, and destroyed a large greenhouse east of Gargatha.

**— VIRGINIA**

Entire State	20	Late Evening				0	0	6	0	High Winds (72 kt) High northwest winds which accompanied and followed a strong cold front with sharply dropping temperatures, set in over extreme northern Virginia at around 2100 EST and reached the southern tier of counties before daybreak of 21 November. Gusts reached between 40 and 60 mph at most locations, and a few places had gusts over 70 mph. The greatest wind gust reported was 83 mph in Winchester, Frederick County, in extreme northern Virginia at 2330 EST. The winds downed trees and large limbs at scattered locations throughout the state. Tree limbs falling onto or blowing against power lines caused numerous short circuits and resulted in numerous power outages and brush or forest fires. The winds caused such fires to spread and made them very difficult to control. There were also reports of isolated structural damage and overturned mobile homes. Strong winds with gusts of 30 to 50 mph continued at times through the day of 21 November, causing intermittent power outages, then diminished during the evening. However, the strongest gusts and most of the damage occurred during the initial three hours of the tempest.
Entire State	22	Afternoon				0	0	5	0	Winter Storm An unusually early winter storm overspread the state during the afternoon before Thanksgiving and ended early Thanksgiving morning. In many areas, it was the first white Thanksgiving in memory. Snow began in extreme western Virginia around midday and spread northeast across the remainder of the state during the afternoon, reaching the Virginia D.C. suburbs before evening. The snow changed to sleet or freezing rain across the southern third of the state, and the change-over held snow accumulations to an inch or less. However, the deposit of glaze was enough to snap hundreds of tree limbs and power lines, resulting in numerous power outages. Power line damage averaged near \$10,000 per county. Farther north, precipitation continued as snow and accumulated 3 to 6 inches except for a narrow band of 1 to 3 inches just north of the change-over area. The heaviest accumulations, 5 to 6 inches, covered the Northern Tidewater and Piedmont zone and the southern suburbs of Washington D.C. Holiday travel became very difficult statewide, and numerous traffic mishaps occurred.
<b>45 WASHINGTON</b>										
Whatcom and Skagit Counties	9	0900 PST				0	0	7	0	Flood Six western Washington rivers rose above flood stage from the 9th through the 11th after 8 days of moderate to heavy rainfall over the northwest interior and Cascade west slopes. Rainfall over the mountain slopes between the 3rd and 10th ranged from 14 to 24 inches. High freezing levels also caused the early-season snowpack to melt, adding to the runoff in the rain-swollen rivers. The Skagit River rose above flood stage at Concrete on the morning of the 9th and remained above flood stage downstream at Mount Vernon until the morning of the 12th. The Nooksack River was above flood stage at Dealing from early morning on the 9th through the early morning of the 11th. Damage was heaviest in Whatcom County where the Nooksack River washed out or damaged 3 bridges, closed 30 roads and forced 200 people to evacuate their homes. Nearly \$6,000,000 damage, mainly to roads and bridges, was reported. In Skagit County, the Skagit River caused \$1,100,000 damage, mostly to property. The Skykomish, Snoqualmie, Snohomish and Stilliguamish rivers in King and Snohomish counties also crested above flood stage, but caused little damage.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE	CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE	CHARACTER OF STORM	
					KILLED	INJURED	PROPERTY	CROPS								KILLED	INJURED	PROPERTY	CROPS			
<b>46 WEST VIRGINIA</b>																						
Jefferson County, Summit Point to Charles Town	16	0500-0600EST	9.0	50	0	3	5	0	Tornado (F2)													
Structural damage occurred to a house and several buildings at Summit Point. A one to two inch diameter branch was driven through a shingle roof built with one-half inch thick plywood. Along the path, roofs were peeled or torn off, outbuildings demolished, and large trees snapped and uprooted. A concrete-block garage was unroofed and the walls collapsed outward. A trailer was pulled off of its tie-downs and overturned several times about one-half mile south of WV Route 15 and one-half mile west of WV Route 9. Three people were injured, two seriously. Another person escaped unharmed.																						
Kanawha County	20	2030EST			0	0	0	0	High Winds													
High winds howled through the Kanawha Valley. Gusts of up to 40 mph shook down power lines and knocked out cable services.																						
Upshur County	20	2100EST			0	0	0	0	High Winds													
High winds felled trees and caused power outages. Gusts began in the early evening and peaked at 50 miles per hour at around 2100EST.																						
<b>47 WISCONSIN</b>																						
WIZ001-002 Lake Superior Snowbelt	01-02	night-night			0	0	?	0	Heavy Snow													
Lake-effect snow hit the Lake Superior snowbelt region of northern Wisconsin with local snowfall amounts of up to 40 inches. Businesses and schools were closed. Roads were piled so high with snow that plows were useless. Snowfall included 40 inches at Hurley (Iron County), and 10 inches at both Poplar (Douglas County) and Bayfield (Bayfield County).																						
WIZ017-020 Extreme Southeast Wisconsin	22	morning-evening			0	0	?	0	Heavy Snow													
Heavy lake-effect snow squalls dumped snow in amounts of up to 9 inches within several miles of the Lake Michigan shoreline over Milwaukee, Racine, and Kenosha counties. Numerous accidents occurred, including over 100 in Racine County. Snowfall amounts included 9.0 inches at Milwaukee's Mitchell International Airport and 6.5 inches at Racine.																						
<b>48 WYOMING</b>																						
WYZ002 NORTHWEST CHINOOK	02	1930 TO 2300MST			0	0	0	0	HIGH WIND													
DURING THE EVENING OF THE 2ND, STRONG WINDS WERE REPORTED AT CODY. SUSTAINED WINDS OF 40 MPH WITH A PEAK GUST TO 60 MPH OCCURRED.																						
WYZ010-012-016 WIND RIVER BASIN, EASTERN PLAINS, LARAMIE VALLEY	04	1030 TO 1730MST			0	0	0	0	HIGH WIND													
ON THE 4TH, STRONG WINDS WERE REPORTED OVER PORTIONS OF CENTRAL AND SOUTHEAST WYOMING. DURING THE DAY, VEDAÜWO, LOCATED 30 MILES WEST OF CHEYENNE, EXPERIENCED 45 TO 50 MPH SUSTAINED WINDS WITH PEAK GUSTS UP TO 70 MPH. THERE WERE ALSO SUSTAINED WINDS OF 50 MPH WITH GUSTS TO 71 MPH REPORTED 5 MILES SOUTHEAST OF WHERTLAND. FINALLY, AT 1708MST LANDER HAD A PEAK WIND GUST TO 58 MPH.																						
WYZ014-016-017 RED DESERT, LARAMIE VALLEY, SOUTHEAST PLAINS	07	0800 TO 1500MST			0	0	3	0	HIGH WIND													
FIERCE WINDS OCCURRED OVER THE SOUTHERN PART OF THE COWBOY STATE ON THE 7TH. CHEYENNE HAD SEVERAL PEAK WIND GUSTS ABOVE 58 MPH. WITH THE HIGHEST BEING 62 MPH. RAWLINS HAD SEVERAL GUSTS GREATER THAN 60 MPH, WITH 66 MPH BEING THE HIGHEST REPORTED. FROM THE MORNING THROUGH THE MID AFTERNOON, VEDAÜWO, 30 MILES WEST OF CHEYENNE, HAD 50 MPH SUSTAINED WINDS WITH PEAK GUSTS UP TO 75 MPH. THE STRONGEST WINDS WERE OVER THE LARAMIE RANGE, WHERE GUSTS UP TO 82 MPH OCCURRED. IN CHEYENNE, THE WINDS CAUSED DAMAGE TO THE ROOF OF A MOBILE HOME. THERE WERE ALSO SPORADIC REPORTS OF BROKEN WINDOWS AND DAMAGE TO THE DECKS OF HOUSES BETWEEN LARAMIE AND CHEYENNE.																						
<b>WYOMING</b>																						
WYZ002 NORTHWEST CHINOOK	08-09	0800MST-0200MST			0	0	3	0	HIGH WIND													
A LONG-LIVED SEVERE WINDSTORM HIT BOTH CODY AND POWELL FROM THE MORNING OF THE 8TH THROUGH THE EARLY MORNING OF THE 9TH. SUSTAINED WINDS BETWEEN 50 AND 80 MPH WITH GUSTS UP TO 100 MPH WERE REPORTED. POWELL WAS WITHOUT ELECTRIC POWER DURING THE EVENING OF THE 8TH AND THE CODY AIRPORT WAS CLOSED IN THE LATE AFTERNOON OF THAT DAY. DAMAGE INCLUDED A TREE THAT FELL ONTO A CODY MOTEL, BROKEN WINDOWS ON BOTH AUTOMOBILES AND HOMES, BLOWN DOWN FENCES AND DOWNED POWER LINES.																						
WYZ016 LARAMIE VALLEY	08-09	1000MST-2330MST			0	0	0	0	HIGH WIND													
VERY STRONG AND PERSISTENT WINDS OCCURRED ON THE SUMMIT OF INTERSTATE 80, 30 MILES WEST OF CHEYENNE, FOR ABOUT A 36-HOUR PERIOD FROM THE LATE MORNING OF THE 8TH THROUGH THE LATE EVENING OF THE 9TH. VEDAÜWO, NEAR THE INTERSTATE 80 SUMMIT, HAD 45 TO 60 MPH SUSTAINED WINDS WITH PEAK GUSTS UP TO 72 MPH.																						
WYZ002-012-017 NORTHWEST CHINOOK, EASTERN PLAINS, SOUTHEAST PLAINS	09	0800 TO 1900MST			0	0	0	0	HIGH WIND													
ANOTHER FIERCE WIND EPISODE OCCURRED OVER PARTS OF WYOMING FROM THE MORNING THROUGH EARLY EVENING OF THE 9TH. OVER THE FAR SOUTHEAST AND EAST SECTIONS, GUSTS BETWEEN 58 AND 65 MPH WERE COMMON. A PEAK WIND OF 70 MPH WAS REPORTED 25 MILES NORTHEAST OF CHEYENNE. AT 1200MST, CODY LOGGED A WIND GUST OF 58 MPH.																						
WYZ002 NORTHWEST CHINOOK	10	0200 TO 1300MST			0	0	0	0	HIGH WIND													
FROM THE EARLY MORNING THROUGH THE EARLY AFTERNOON OF THE 10TH, CODY HAD PEAK WINDS ABOVE 58 MPH. THE HIGHEST WAS 61 MPH AT 0200MST.																						
WYZ001-002 NORTHWEST MOUNTAINS, NORTHWEST CHINOOK	13-14	1200MST-0400MST			0	0	0	0	HEAVY SNOW													
FROM 1200MST ON THE 13TH THROUGH THE EARLY MORNING OF THE 14TH, LOCALIZED HEAVY SNOW OCCURRED OVER NORTHWEST WYOMING. A FEW MOUNTAIN PASSES IN YELLOWSTONE NATIONAL PARK LOGGED 10 INCHES OF NEW SNOW DURING THIS PERIOD. FROM THE LATE AFTERNOON THROUGH THE EVENING OF THE 13TH, CODY HAD 12 INCHES OF NEW SNOW.																						
WYZ017 SOUTHEAST PLAINS	14	0930 TO 1100MST			0	0	0	0	HIGH WIND													
DURING THE LATE MORNING OF THE 14TH, A BRIEF HIGH WIND EPISODE OCCURRED AT CHEYENNE. PEAK WINDS OF 58 MPH WERE REPORTED.																						
WYZ002-016 NORTHWEST CHINOOK, LARAMIE VALLEY	18	0200 TO 1300MST			0	0	0	0	HIGH WIND													
FROM THE EARLY MORNING THROUGH THE EARLY AFTERNOON OF THE 18TH, STRONG WINDS OCCURRED OVER BOTH FAR NORTHWEST AND SOUTHEAST WYOMING. CODY HAD PEAK WIND GUSTS UP TO 62 MPH. VEDAÜWO, 30 MILES WEST OF CHEYENNE, HAD SUSTAINED 40 TO 45 MPH WINDS WITH GUSTS UP TO 60 MPH.																						
WYZ016 LARAMIE VALLEY	21	0900 TO 1230MST			0	0	0	0	HIGH WIND													
VEDAÜWO, LOCATED 30 MILES WEST OF CHEYENNE, HAD 45 MPH SUSTAINED WINDS WITH PEAK GUSTS TO 58 MPH.																						

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>--- WYOMING</b>									
WYZ016 LARAMIE VALLEY	24	0100 TO 0600MST			0	0	0	0	HIGH WIND
<p>ON THE EARLY MORNING OF THE 24TH, VEDAUNOO, 30 MILES WEST OF CHEYENNE, REPORTED 45 TO 50 MPH SUSTAINED WINDS WITH GUSTS UP TO 59 MPH.</p>									
WYZ001-009 NORTHWEST MOUNTAINS, WIND RIVER MOUNTAINS	25- 26	1800MST- 1200MST			0	0	0	0	HEAVY SNOW
<p>FROM THE EVENING OF THE 25TH THROUGH THE MORNING OF THE 26TH, HEAVY SNOW OCCURRED OVER THE NORTHWEST AND WIND RIVER MOUNTAINS. JACKSON HOLE ACCUMULATED 14 INCHES OF NEW SNOW DURING THIS PERIOD. TWELVE INCHES OF SNOWFALL OCCURRED AT GRANT VILLAGE IN YELLOWSTONE NATIONAL PARK. IN ADDITION, SOUTH PASS, LOCATED IN THE WIND RIVER MOUNTAINS, LOGGED 8 INCHES OF NEW SNOW BETWEEN 1800 MST ON THE 25TH AND 0600 MST ON THE 26TH.</p>									
WYZ006-010-015 NORTHEASTERN PLAINS, WIND RIVER BASIN, SOUTHERN MOUNTAINS	26- 27	1200MST- 1200MST			0	0	0	0	HEAVY SNOW
<p>FROM THE AFTERNOON OF THE 26TH THROUGH THE MORNING OF THE 27TH, HEAVY SNOW OCCURRED IN THE NORTHEASTERN PLAINS, WIND RIVER BASIN AND SOUTHERN MOUNTAINS OF WYOMING. SOME NEW SNOW AMOUNTS INCLUDED SUNDANCE WITH 12 INCHES, 10 INCHES AT ALVA AND 8 INCHES IN STORY. THE SNOWY RANGE SKI AREA REPORTED 15 INCHES OF SNOWFALL. FINALLY, HUDSON LOGGED 6.3 INCHES OF NEW SNOW, WHICH FELL ON THE EARLY MORNING OF THE 27TH.</p>									
49 ALASKA, Northern ----- NO REPORT RECEIVED									
49 ALASKA, Southern									
Aleutians		03							High Winds
<p>A moderate low pressure system moved east over the western Aleutians producing winds gusting to 62 mph from the Shemya Island area to the Adak Island area.</p>									
Aleutians and Yukon-Kuskokwim Delta area		14-15							High Winds and Blizzard
<p>A strong, 958 mb low pressure system moved from the western Bering Sea toward the Bering Strait producing strong winds of 60 to 80 mph over the western Aleutians on the night of November 14th. The storm produced blizzard conditions with wind gusts of up to 60 mph at Mekoryuk on Nunivak Island and up to 50 mph at Bethel and Saint Marys in southwest Alaska.</p>									
49 ALASKA, Southeastern ----- NONE REPORTED									
<b>50 HAWAII</b>									
Oahu		02 forenoon			0	0	3	0	High Surf
<p>A large ocean swell emanating from an old Typhoon FORREST that was becoming extratropical with 60 knot winds south of the Aleutians at the end of October, arrived in Hawaiian waters on November 2nd and produced surf reported as high as 30 feet. Some minor property damage occurred to a shoreline dwelling as the large waves washed away a porch in the Sunset Beach area on the north shore of Oahu.</p>									
51 PUERTO RICO ----- NONE REPORTED									
52 VIRGIN ISLANDS ----- NONE REPORTED									
53 PACIFIC ----- NONE REPORTED									





## FIRST CONFERENCE ANNOUNCEMENT

THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
Invites you to attend

OPERATIONAL SATELLITES:  
SENTINELS FOR THE MONITORING OF CLIMATE AND GLOBAL CHANGE  
OCTOBER 16-19, 1990  
HOTEL WASHINGTON, WASHINGTON, D.C.

The changing nature of the Earth and its climate is a growing area of study that is being undertaken by scientists throughout the world. These changes may affect future human activities and habitability. Warming of the global climate, depletion of ozone, redistribution of snow and ice cover, trends in ocean temperatures, deforestation, and drought are but some of the subjects of immediate concern to the scientific and public communities. Certain changes are viewed as anthropogenic in origin while others may be the result of interrelated natural processes. Regardless of the process, the ability to monitor these changes is fundamental to all research and decision making. The National Oceanic and Atmospheric Administration (NOAA) is responsible for in situ and operational satellite observations and climate monitoring within the U.S. Global Change Research Program. This Conference will provide a forum for the exchange of information between the providers of these observations and the user community who are studying climate and global change.

### THE CONFERENCE PROGRAM

This is a 3 1/2 day program of general sessions addressing Atmospheric, Land surface, and Oceanic topics. Sessions on Calibration/Validation and Data availability/Accessibility are also scheduled. Presentations on both domestic and international operational remote sensing systems, current and planned, are being organized. The Conference will be held at the Hotel Washington in the heart of the Washington, D.C. business district. The conference registration begins on the morning of October 16th, and sessions will convene at 10:00 A.M.. The conference will conclude with a session, Friday morning, October 19th, that will detail the constellation of future satellite systems that are planned to meet the data requirements for the study of climate and global change. An evening reception is planned on October 16th. A registration fee will be charged. The preliminary program brochure, containing the technical program as well as Conference registration fees and hotel reservation information will be available early in the summer of 1990. Conference papers will be published as post-conference proceedings. For more information, please contact: Dr. Donald B. Miller, NOAA/NESDIS, Satellite Applications Laboratory, E/RA21, World Weather Building Rm. 601, Washington, D.C. 20233.

### ANOTHER EVENT OF INTEREST

Washington, D.C. offers many business and vacation opportunities. Conference attendees may wish to extend their visit and participate in the co-sponsored OAA/NASA/ERIM Conference, Earth Observations and Global Change Decision Making: A National Partnership; to be held the following week, October 23-24, 1990, in Washington, D.C.

# STORM SUMMARY

NOVEMBER 1989

TYPE	ALABAMA	ARIZONA	ARKANSAS	CALIFORNIA	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA	IDAHO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND & DC	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI	MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE
<b>TORNADOES</b>		0											0	0											0	0	
Number	7		1				1	3	6						1			1		2		4					
Days	3		1				1	2	2						1			1		1		3					
Deaths	21		0				0	0	1						0			0		0		0					
Injuries	466		0				0	0	31						0			0		0		0					
Property Damage	8		5				5	4	7						2			0		5		5					
Crop Damage	?		0				0	0	?						0			0		0		0					
<b>HAIL</b>																											
Deaths	0		0								0	0			0	0						0	0				
Injuries	0		0								0	0			0	0					0	0	0				
Property Damage	?		?								?	?			2	4					5	5					
Crop Damage	?		?								0	0			0	?					0	0					
<b>THUNDERSTORM WINDS</b>																											
Deaths	0		0				0	0	0		1	0			0	0		0			0	0	0				
Injuries	3		0				0	0	0		20	0			15	5		4			0	0	0				
Property Damage	?		4				6	4	6		6	5			6	?		6			5	5					
Crop Damage	?		?				0	0	?		0	0			4			0			0	0					
<b>HIGH WINDS</b>																											
Deaths				0	0	0	0			0							0	1	0					0		0	
Injuries				0	0	1	1			0							5	3	2					0		5	
Property Damage				?	4	5	6			3							5	6	5					5		5	
Crop Damage				0	0	0	0			0							0	0	0					0		0	
<b>LIGHTNING</b>																											
Deaths							0		0							0											
Injuries							0		0							0											
Property Damage							5		?							5											
Crop Damage							0		0							0											
<b>FLASH FLOODS</b>																											
Deaths									0							1											
Injuries									0							0											
Property Damage									?							7											
Crop Damage									0							0											
<b>FLOODS</b>																											
Deaths																								0			
Injuries																								0			
Property Damage																								6			
Crop Damage																								0			
<b>HEAVY SNOWSTORMS AND BLIZZARDS @</b>																											
Deaths																	0		0					0		0	
Injuries																	35		0		0			0		15	
Property Damage																	5		0		4			4		5	
Crop Damage																	0		0		0			0		0	
<b>ICE STORMS #</b>																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
<b>HURRICANES AND TROPICAL STORMS</b>																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
<b>ALL OTHERS</b>																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

# STORM SUMMARY

NOVEMBER 1989

TYPE	NEW JERSEY	NEW MEXICO	NEW YORK	NORTH CAROLINA	NORTH DAKOTA	OHIO	OKLAHOMA	OREGON	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA	SOUTH DAKOTA	TENNESSEE	TEXAS	UTAH	VERMONT	VIRGINIA	WASHINGTON	WEST VIRGINIA	WISCONSIN	WYOMING	ALASKA	HAWAII	PACIFIC	PUERTO RICO	VIRGIN ISLANDS	NATIONAL DEATH & INJURY TOTALS
<b>TORNADOES</b>		0													0						4		0	0	0		
Number	8		8			2		1	5		1		4	1			1		1								
Days	2		1			2		1	2		1		2	1			1		1								
Deaths	0		9			0		0	0		0		0	0			0		0							31	
Injuries	1		19			1		0	4		1		0	0			0		0							529	
Property Damage	6		8			6		4	6		5		5	4			5		0								
Crop Damage	0		6			0		0	?		0		0	0			0		0								
<b>HAIL</b>																											
Deaths						0		0			0		0														
Injuries						0		0			0		0														
Property Damage						?		?			?		2														
Crop Damage						0		0			0		0														
<b>THUNDERSTORM WINDS</b>																											
Deaths	1		0	0	0	0		0	0		0		0			0	0									2	
Injuries	2		3	0	0	0		0	7		0		1			0	0									56	
Property Damage	?		8	4	6	6		6	6		4		5			5	6										
Crop Damage	0		C	0	0	0		0	0		0		0			4	0										
<b>HIGH WINDS</b>																											
Deaths	0		1	0	0	0		0	0		0		0			0					0					2	
Injuries	0		4	0	0	0		0	2		0		0			1					0					24	
Property Damage	?		6	4	6	?		?	4		4		5			5					4						
Crop Damage	0		5	0	0	0		0	0		0		0			?					0						
<b>LIGHTNING</b>																											
Deaths			0			0					0					0	0									0	
Injuries			0			1					1					0	0									2	
Property Damage			4			0					0					5	5										
Crop Damage			0			0					0					0	0										
<b>FLASH FLOODS</b>																											
Deaths			0																0							1	
Injuries			0																0								
Property Damage			7																7								
Crop Damage			0																0								
<b>FLOODS</b>																											
Deaths									0																		
Injuries									0																		
Property Damage									4																		
Crop Damage									0																		
<b>HEAVY SNOWSTORMS AND BLIZZARDS @</b>																											
Deaths			0		0	0			0			1				2										3	
Injuries			1		0	0			0			0				4										55	
Property Damage			5		4	?			3			0				6											
Crop Damage			0		0	0			0			0				0											
<b>ICE STORMS #</b>																											
Deaths				0	0																						
Injuries				0	0																						
Property Damage				4	4																						
Crop Damage				?	0																						
<b>HURRICANES AND TROPICAL STORMS</b>																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
<b>ALL OTHERS</b>																											
Deaths			0			0	3	0	0								0									4	
Injuries			1			0	0	0	4								0									1	
Property Damage			4			5	?	?	?								3										
Crop Damage			0			0	?	?	0								0										

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM DAMAGE CATEGORIES

REFERENCE NOTES

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

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

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

Definition of Fujita Tornado Scale (F scale)

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

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

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

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

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

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

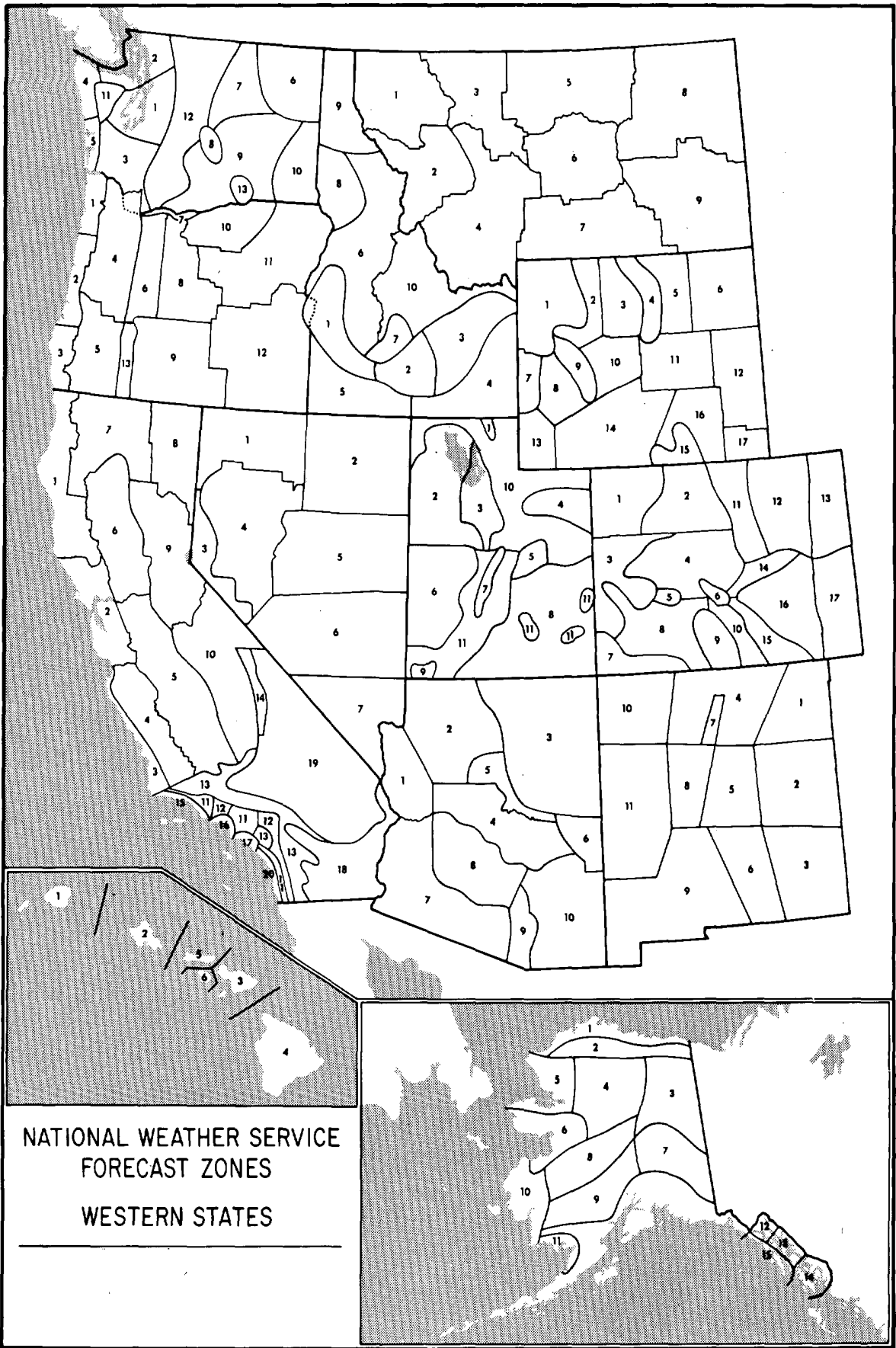
(F6-F12) (319 mph to Mach 1, the speed of sound):  
The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

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

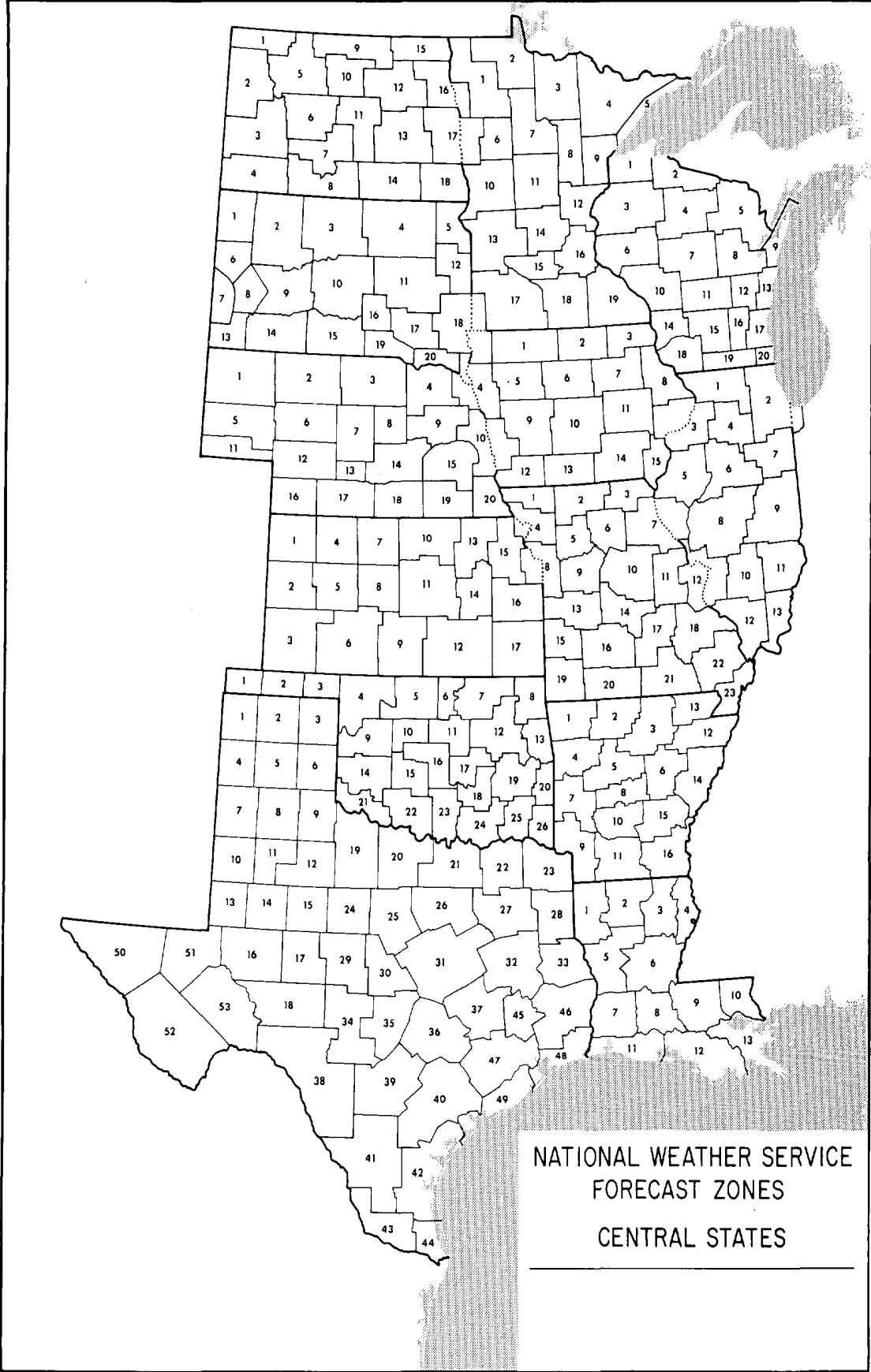


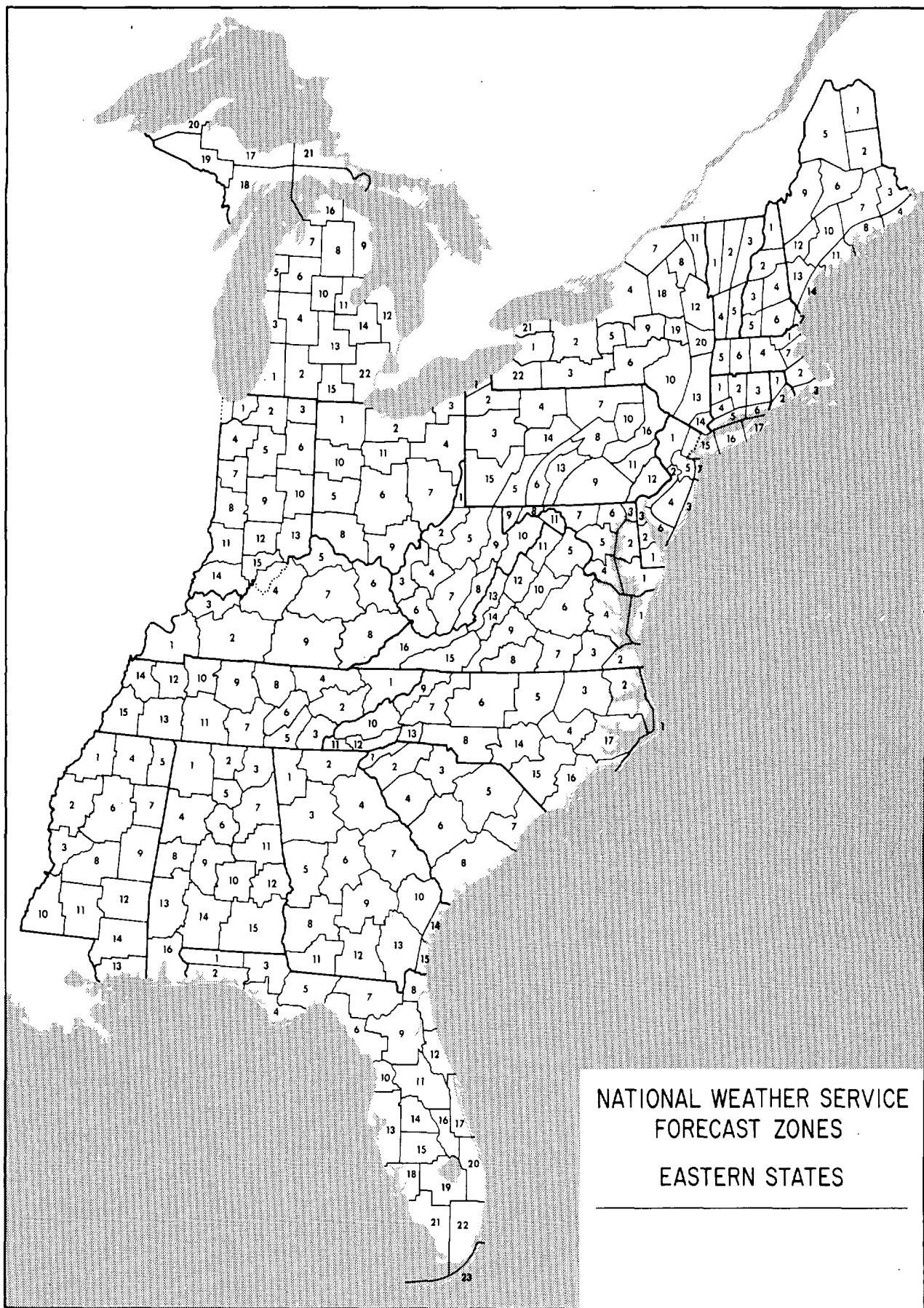
From J. Atmos. Sci., August 1981, p. 1517-1519





NATIONAL WEATHER SERVICE  
FORECAST ZONES  
WESTERN STATES





NATIONAL WEATHER SERVICE  
FORECAST ZONES  
EASTERN STATES

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