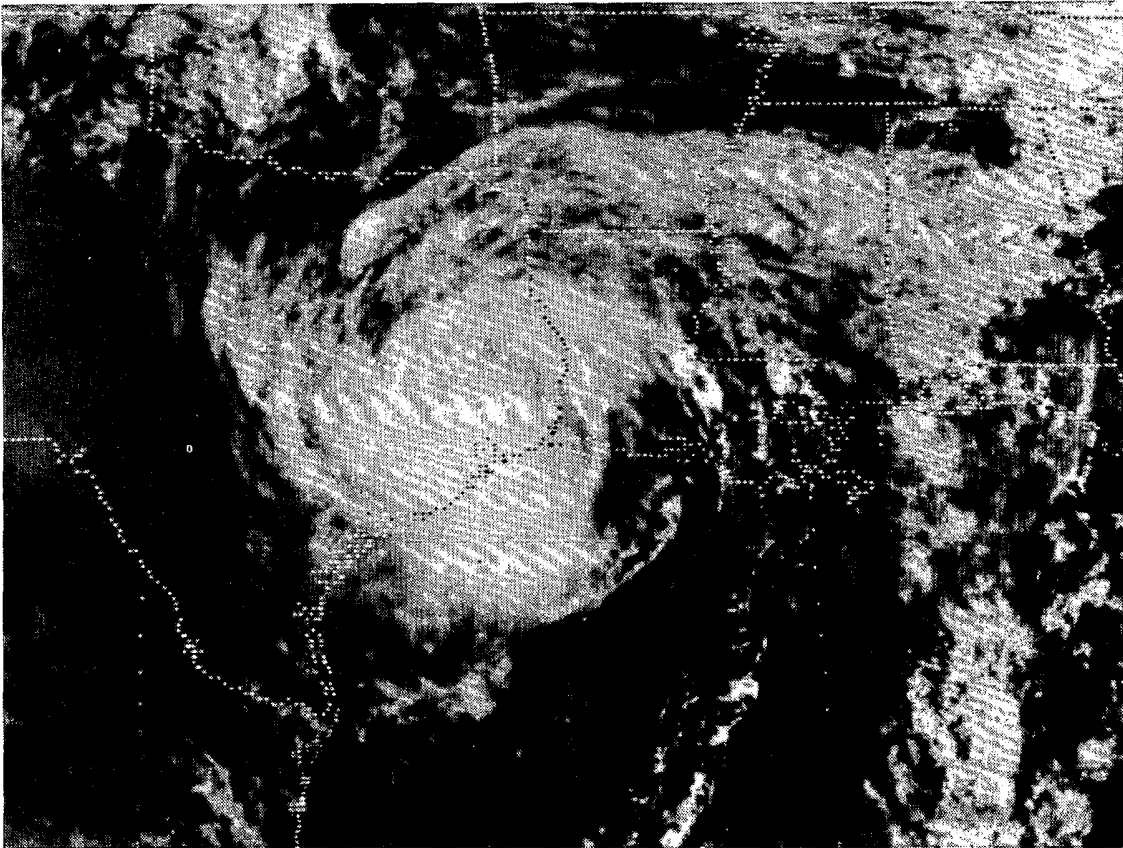


STORM DATA



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Kenneth D. Walden

DIRECTOR
NATIONAL CLIMATIC DATA CENTER

Support for this publication is provided in part by the Office of Naval Research, Marine Meteorology Program, Dr. Robert F. Abbey, Jr., Director. Extensive data collection efforts are provided by the National Weather Service.

C O N T E N T S

Cover: Hurricane CHANTAL is seen shortly after its landfall at High Island, Texas in a GOES 7 satellite, visible image taken at 1430 UTC on August 1, 1989. Although a minimal hurricane, CHANTAL did result in 13 deaths, all drownings, 11 of which occurred during two separate incidents involving an oil rig and a vessel in the Gulf of Mexico. Inland, CHANTAL's main impact was in the form of heavy rains that resulted in flooding (see pages 6 through 8). ---Photo from the National Environmental Satellite Data and Information Service, Washington, DC.

	<u>Page</u>
Outstanding Storms of the Month.....	3
Storm Data and Unusual Weather Phenomena.....	17
Storm Summary.....	54
Reference Notes and "F" Scale Definitions.....	56

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

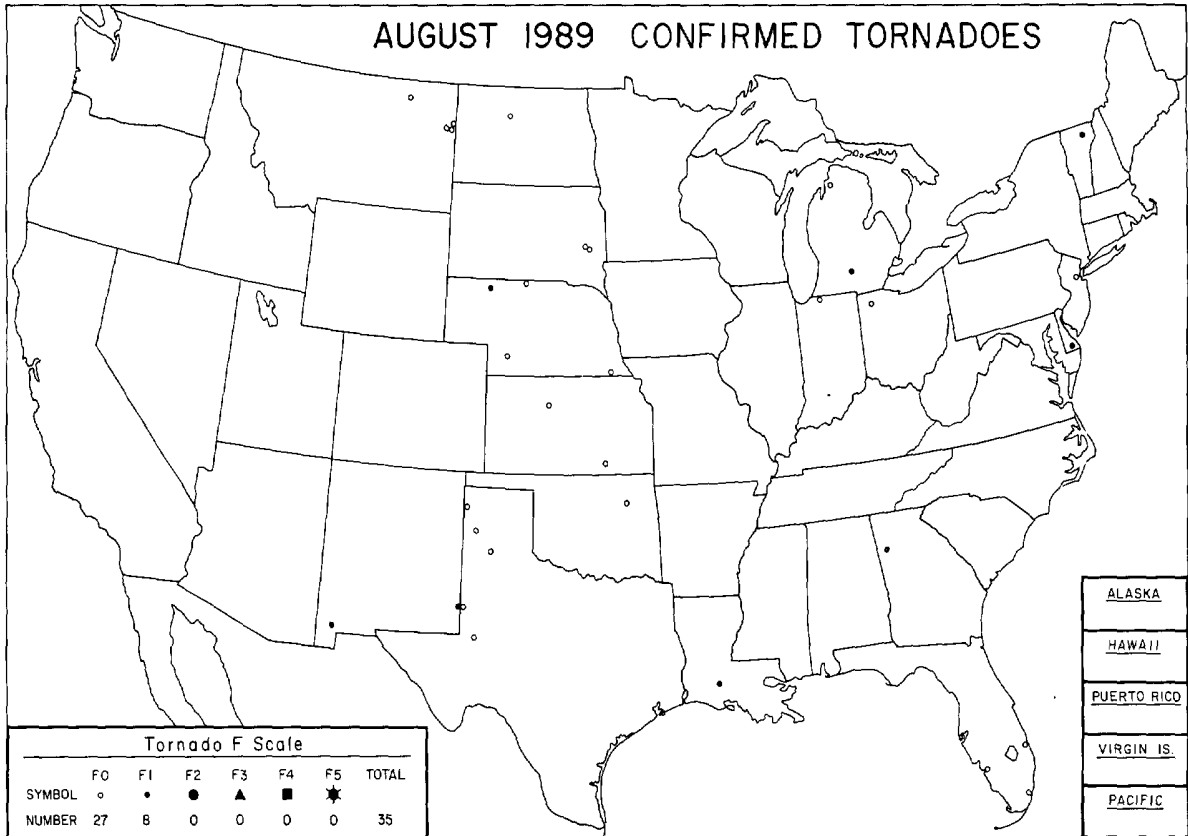
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S. C. Lackey

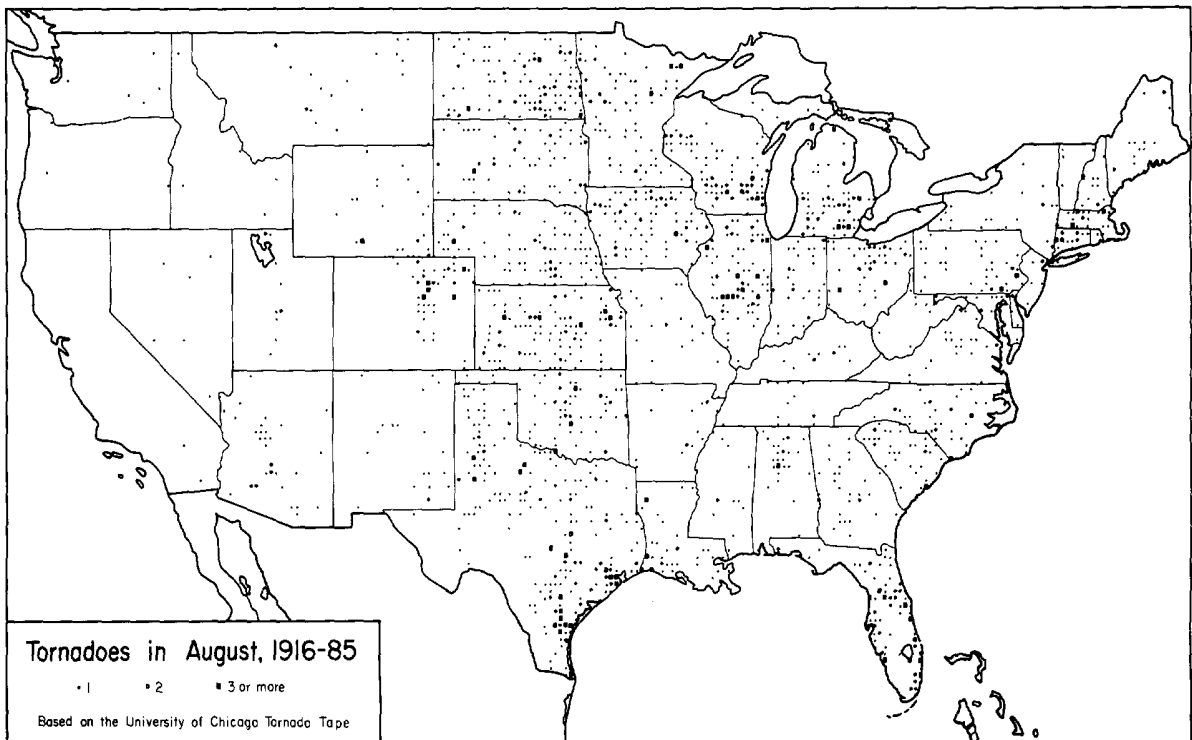
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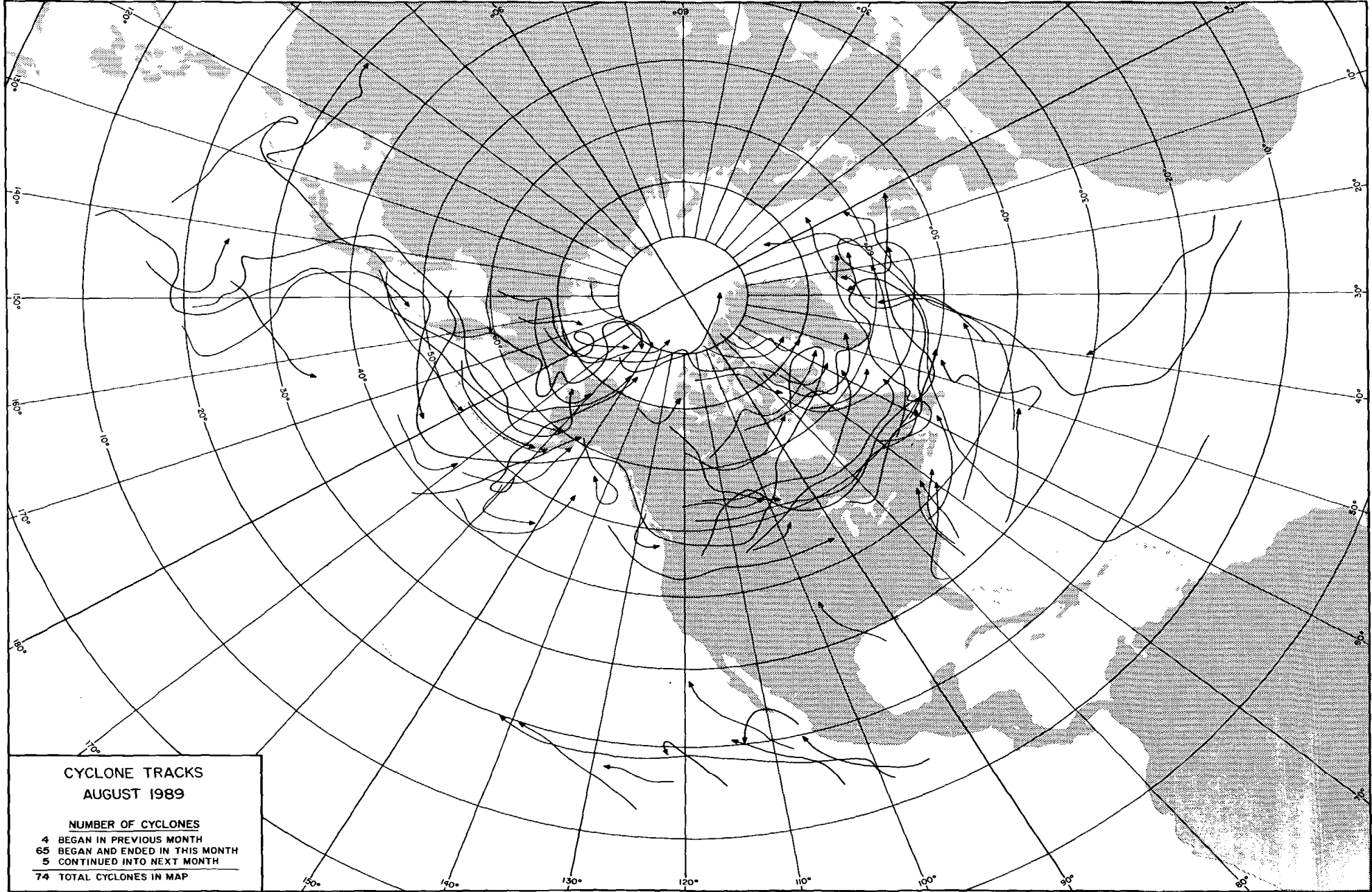
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OUTSTANDING STORMS OF THE MONTH



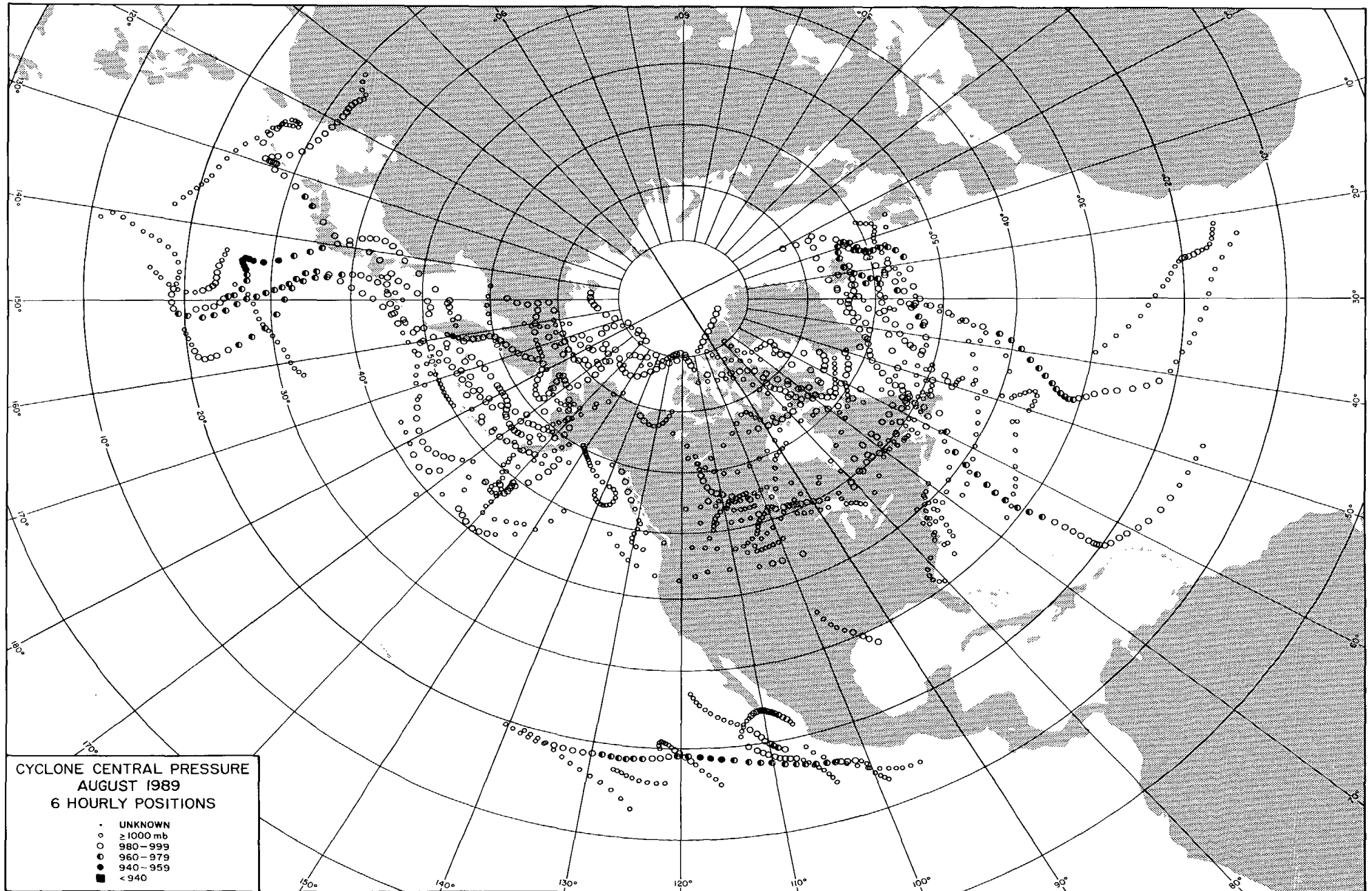
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CYCLONE TRACKS
AUGUST 1989

NUMBER OF CYCLONES
4 BEGAN IN PREVIOUS MONTH
65 BEGAN AND ENDED IN THIS MONTH
5 CONTINUED INTO NEXT MONTH
74 TOTAL CYCLONES IN MAP



1. FLASH FLOODING at YUMA, ARIZONA on August 9, 1989

In less than two weeks after receiving its worst storm of record on July 27, 1989 when 2.55 inches of rain resulted in flash flooding, Yuma, Arizona was again visited by a record rain-producing thunderstorm at 1830 MST on August 9th. This time 3.5 inches was recorded in just three hours at the airport, and a maximum storm total of 5.25 inches was reported from the Yuma Quartermaster Depot, exceeding this oldest Arizona recording station's all-time, 24-hour rainfall record of 4.10 inches set in 1909. This rainfall was nearly double the normal annual rainfall.

Damage to water mains, streets and private property due to the resulting flash flooding was widespread in Yuma, as between 500 and 1000 homes were inundated. Some homes had water 4 to 5 feet deep in them. Also, many vehicles were washed away or otherwise water damaged, but occupants managed to escape or were rescued so no deaths or injuries resulted.



Eighteenth Street in Yuma which at the height of the flooding was covered by water 3 feet deep. ---Photo by Beth Bidne, The Yuma Daily Sun, Yuma, Arizona.

2. HURRICANE CHANTAL, July 30 to August 3, 1989

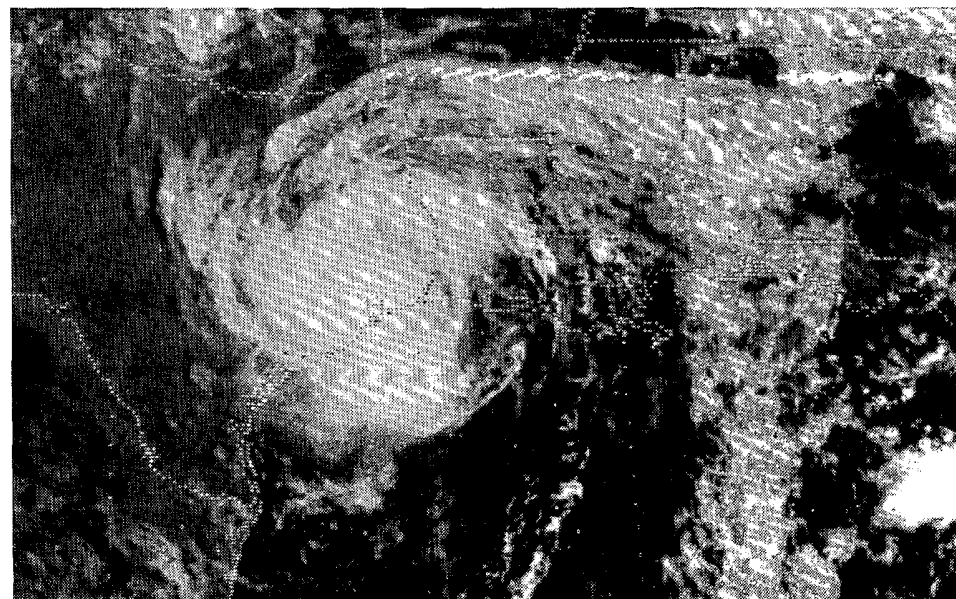
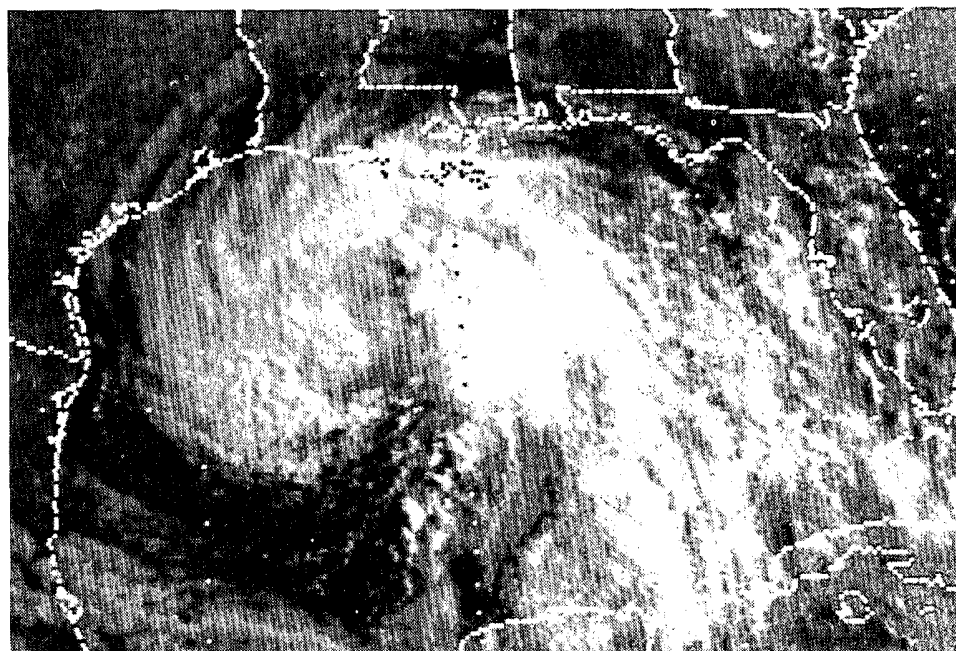
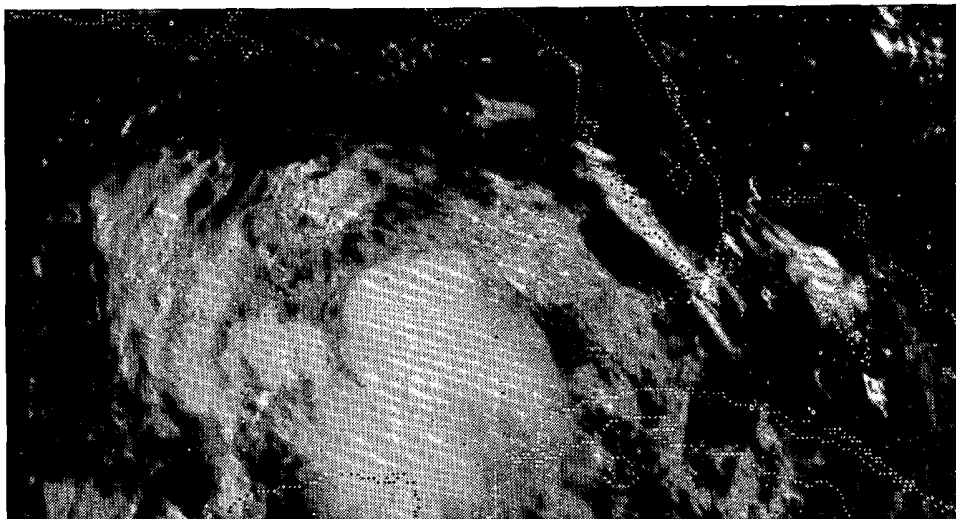
CHANTAL formed over the Gulf of Mexico just off the shore of Yucatan near Progreso, Mexico on July 30th and began moving steadily north then northwest over the Gulf waters (see July Storm Data for path map). The system attained storm status by 0600 UTC on the 31st and, due to a rapid intensification, minimal hurricane status by 2200 UTC of the same day. By 1300 UTC of August 1st, CHANTAL's center crossed the U.S. coastline and entered southeast Texas near High Island, the hurricane bringing with it a tide of up to 7 feet MSL, sustained winds estimated at 70 knots and some very heavy rains.

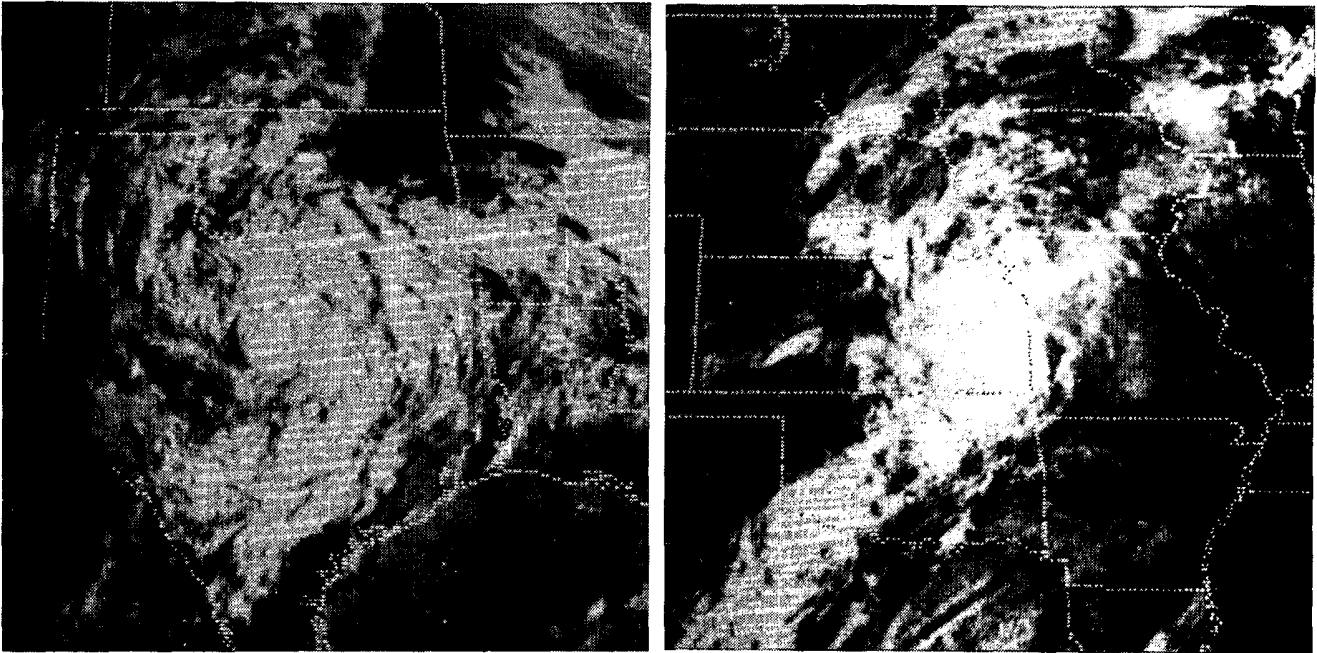
CHANTAL's rains were perhaps the most significant feature of the hurricane as amounts of up to 12.1 inches officially and 20 inches unofficially were reported from locations in an east-west band about 20 miles south of downtown Houston and extending from Texas City to Rosenberg. The resultant flooding affected hundreds of homes across southeast Texas. In addition to the flooding, beach erosion occurred along the coast in the High Island area, and although wind damage was relatively weak, numerous trees, power lines, fences and signs were blown down and some roof damage was done to homes, mobile homes and carports. There were about 3000 homes in Texas that had either water or wind damage, and the total damage from CHANTAL is estimated to be near 100 million dollars.

There were only two weak tornadoes spawned by CHANTAL that could be confirmed, one on Crystal Beach of the Bolivar Peninsula in Texas and the other near Iota, Louisiana.

Of thirteen deaths attributed to CHANTAL, only two occurred inland — two teenage boys drowned while rafting in floodwaters in College Station, Texas. The other 11 deaths occurred in the Gulf of Mexico, one a 48 year old man who had drowned about 100 miles south of New Orleans as he attempted to leave an oil rig, the other 10 all males of which 7 are known to be drowned and 3 are missing but presumed to be drowned after an oil service vessel capsized about 20 nautical miles south of Morgan City, Louisiana. Four men were rescued from the vessel.

CHANTAL's rapid development and quick traverse of the Gulf are evident in these three GOES 7 satellite, visible images taken daily at 1330 UTC (top), 1330 UTC (middle) and 1430 UTC (bottom) on July 30th, July 31st and August 1st, respectively. ---All three photos from NESDIS, Washington, DC.

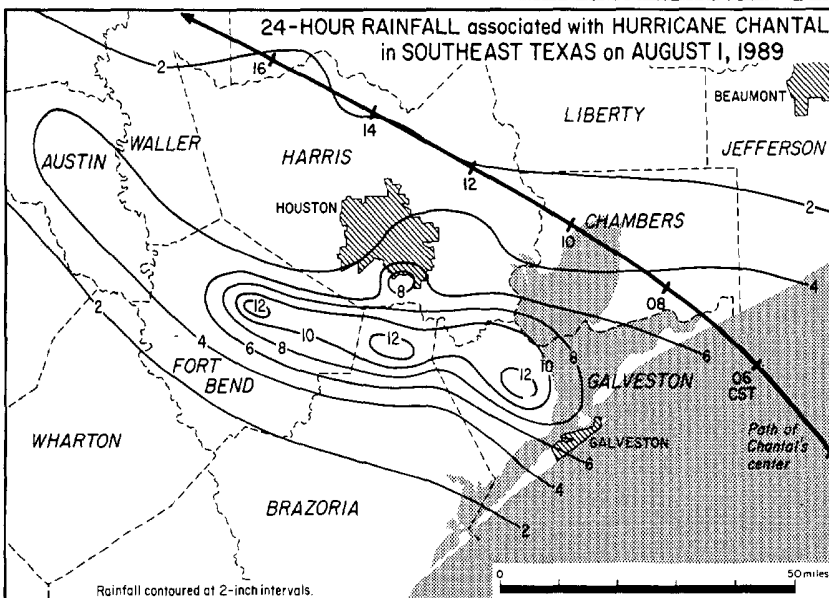




In two additional GOES 7 satellite, visible images taken at 1330 UTC on August 2nd (left) and 1430 UTC on the 3rd (right), CHANTAL's post-landfall demise is apparent in its gradual shrinkage and the loss of a rainband cloud structure. ---Both photos from NESDIS, Washington, DC.

Location	Minimum sea-level pressure		Maximum surface wind speed (knots)			Storm tide (tide height above MSL) (ft)	Rain (24-hr total) (in)
	Pressure (mb)	Date/time (UTC)	1-minute average	Peak gust	Date/time (UTC)*		
Texas							
Houston Inter. Aprt.	993.5	1700	NE/28	NE/49	1550		2.05
Houston Hobby Aprt.	996.3	1538	W/35	W/66	1428		8.58
Houston WSO Alvin			24	39	1547		7.01
Galveston WSO	997.4	0935	NW/60	W/71	1132		6.56
Downtown Houston							4.25
Galveston Flagship Pier						3.5	
Galveston Pier 21						2.9	
Kemah						3.8	
High Island						7.0	
Port Arthur	1002.0	1220	26	43	1353		1.19
Sabine Pass						4.0	
Louisiana							
Lake Charles	1006.4	1026	150/23	140/32	1640		
Cameron						4.2	
New Orleans Moisant A.	1013.5	0100	130/24	130/36	31/1501		2.29
New Orleans Lakefront			120/14	120/24	0003		
Mid Lake Ponchartrain Cswy.			080/25	150/34	31/2000		
E. Lake Ponchartrain Hwy 11			160/22	160/33	31/1600		
Paris Road						3.26	
Mississippi							
Biloxi						2.5	

*Time of 1-min wind speed



ABOVE: Selected surface observations on August 1, 1989 from the three-state area of the Gulf coast affected by CHANTAL's landfall. ---Table from the National Hurricane Center and provided through the Hurricane Research Division of AOML, both of Miami, Florida.

An isohyet analysis of 24-hour rainfall associated with Hurricane CHANTAL in the Houston-Galveston area of southeast Texas on August 1, 1989. The heaviest rainfall, generally 6 to 12 inches, occurred to the south of the path of CHANTAL's center, in a band from southern Galveston Bay westward to near Rosenberg in central Fort Bend County. ---Graphic by the University of Chicago from data and mapping supplied by the NWSFO at San Antonio, Texas.

3. HEAVY RAIN and MUD SLIDES at YELLOWSTONE N.P. in WYOMING on August 10, 1989

On August 10th, late afternoon and evening thunderstorms produced very heavy rainfall over Yellowstone National Park in northwest Wyoming between 1600 and 1730 MST, which resulted in 15 mud slides. The slides occurred along a 4 to 5 mile stretch of road between Gibbon Falls and Gibbon Meadow in the west-central part of the park. About 30 vehicles were temporarily stranded, and heavy road equipment had to be used to clear the road. The worst slide, just north of Gibbon Falls, forced a camper/pickup into the adjacent river and nearly buried the vehicle. The occupants were rescued and uninjured. Park officials estimated that 4 inches of rain had fallen in the area during a 20 minute period.



The portion of the roadway near Gibbon Falls that was covered by the worst of the mud slides.



A park ranger and road crew prepare for the removal of the camper top of the struck vehicle from the river bed beside the slide.



An engineer supervises the removal of slide debris from the roadway.



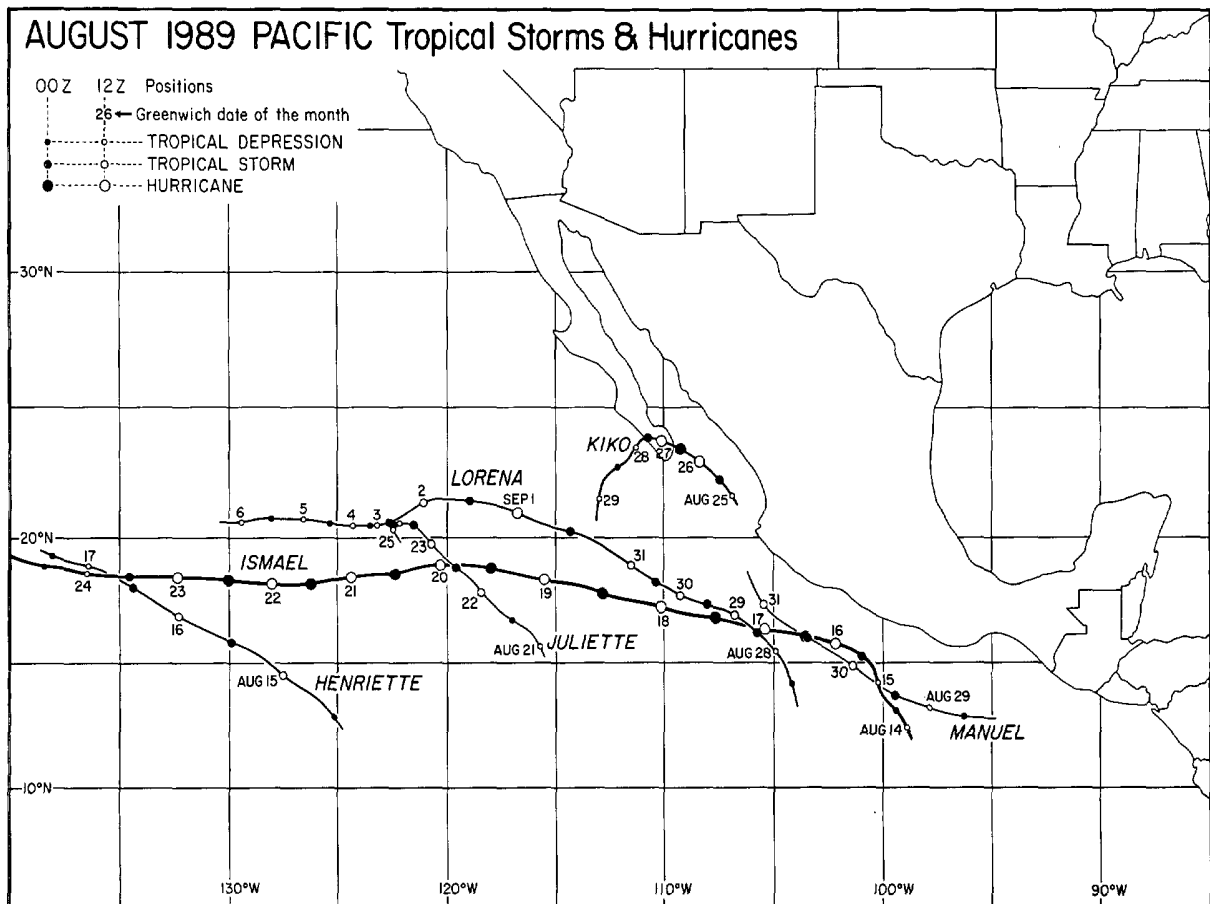
A park ranger points out the location of the victimized pickup (left) shown to have been almost completely buried by the slide (right) as it was pushed into the river.



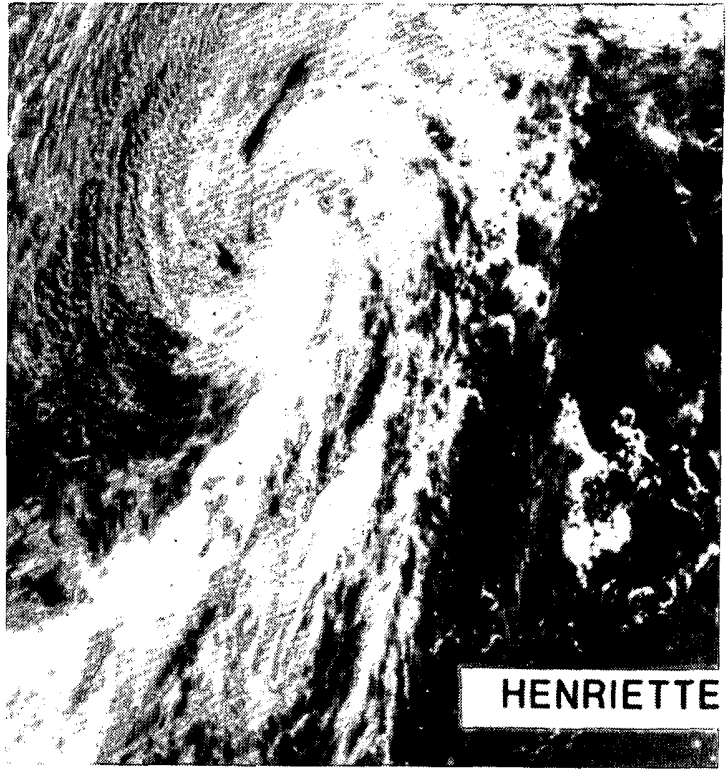
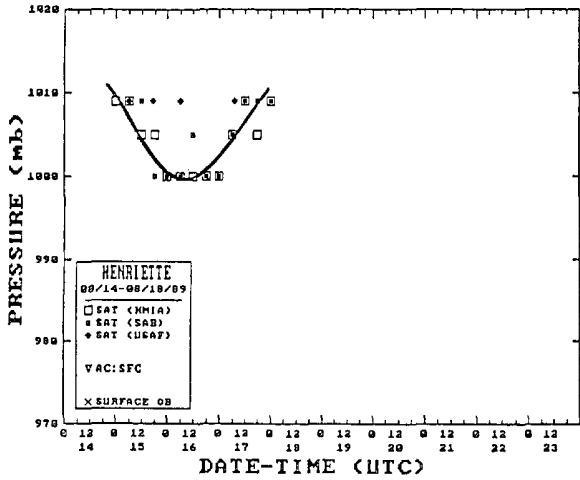
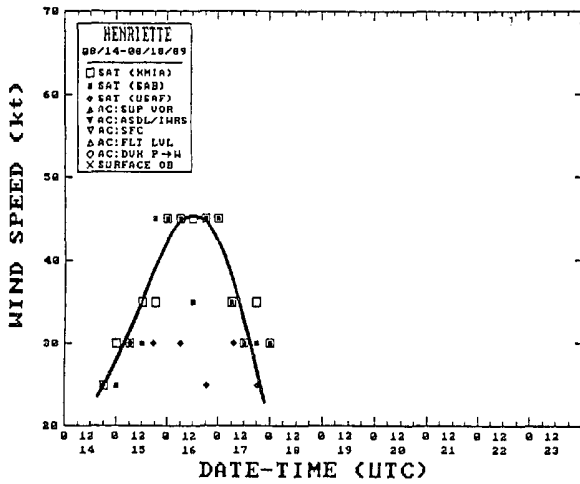
A close-up view of the partially submerged and almost buried cab of the destroyed pickup.

---This and all photos on pages 9 and 10 are from *The Powell Tribune, Powell, Wyoming*; and are supplied by Edward K. Berry, NWSFO at Cheyenne, Wyoming.

TROPICAL STORMS and HURRICANES

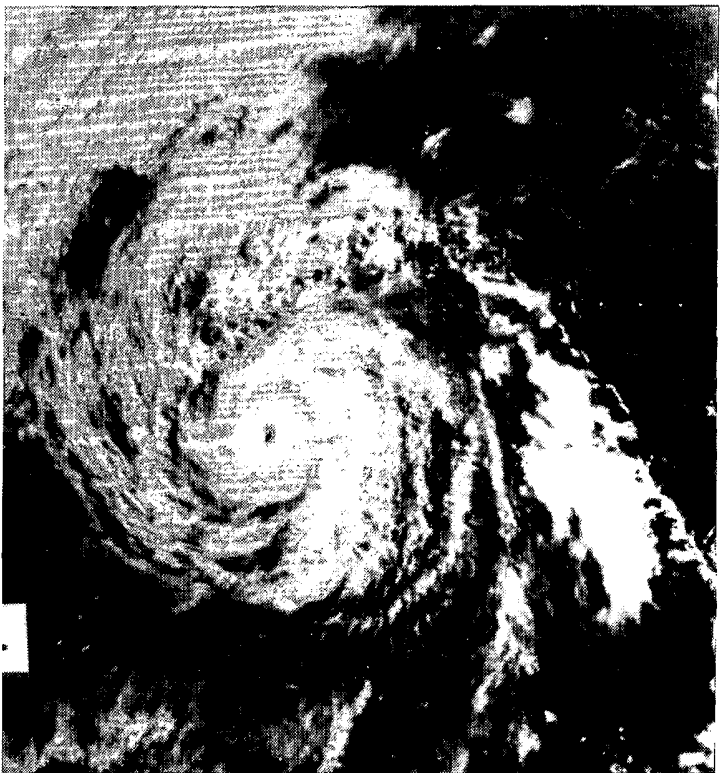
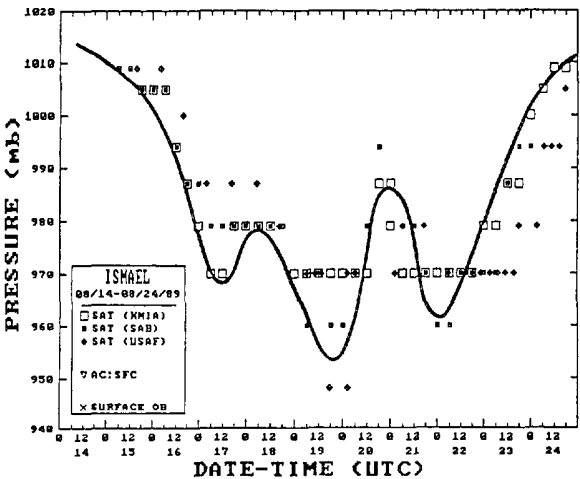
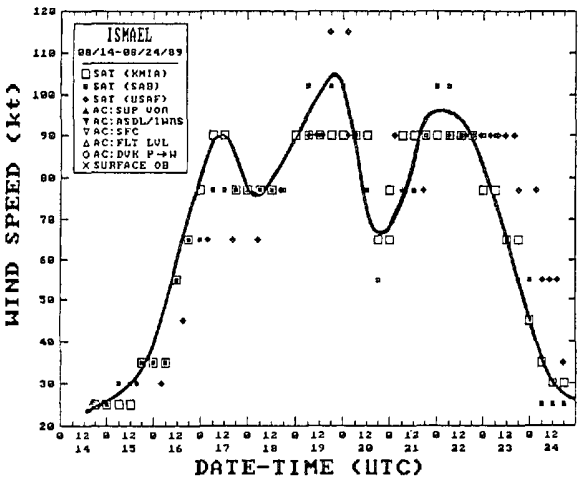


---Best track data from the National Hurricane Center, Miami, Florida.



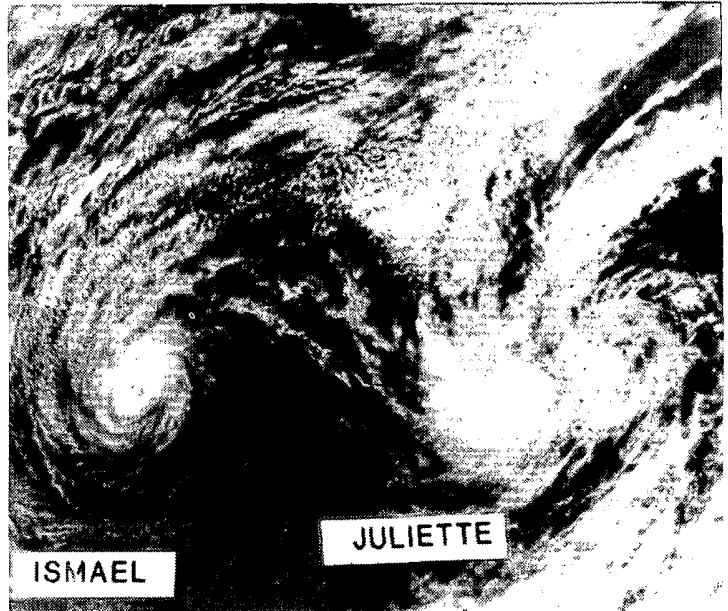
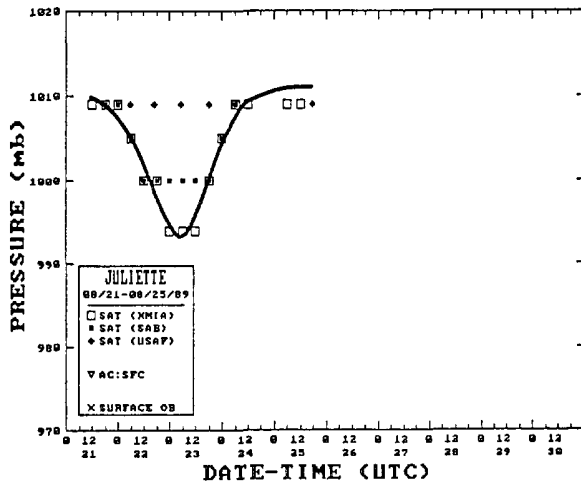
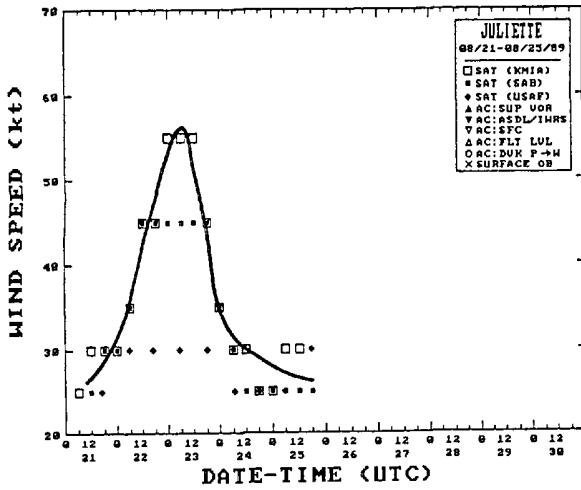
Tropical Storm HENRIETTE centered near 134°W, 18°N in the Eastern Pacific at 2200 UTC on August 16th.

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



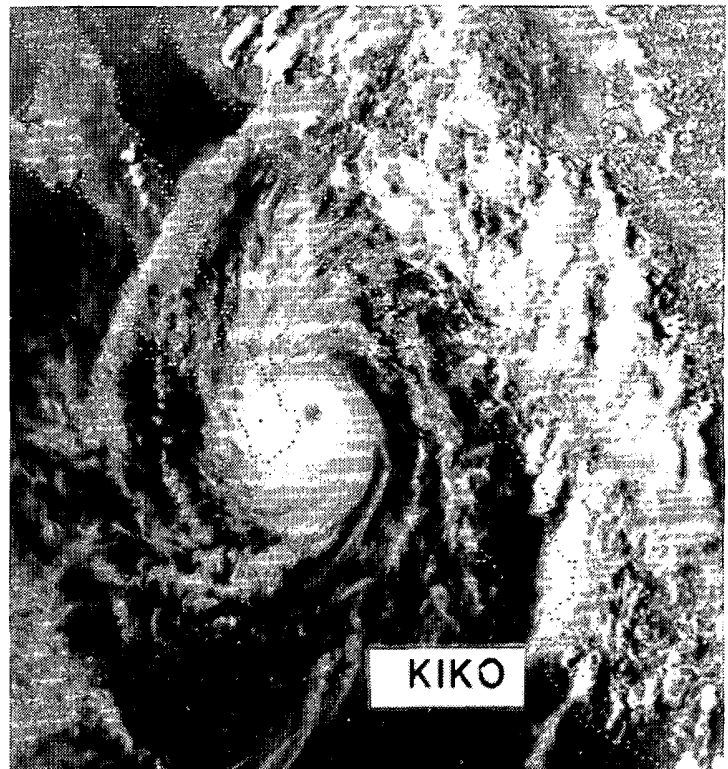
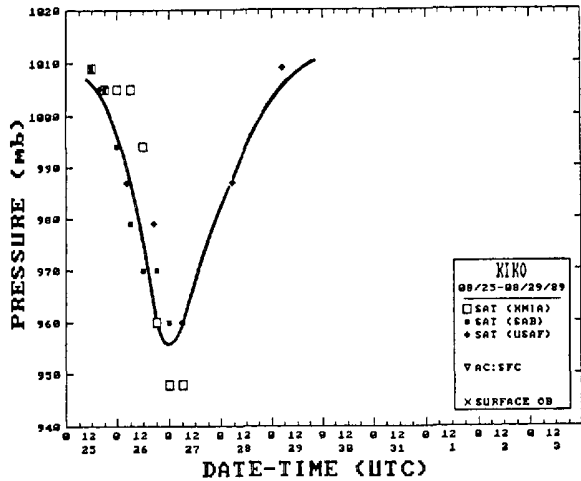
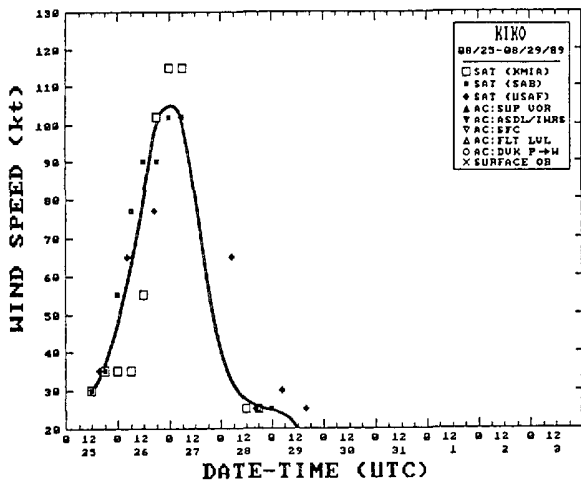
Hurricane ISMAEL displays a well-defined eye centered near 116.5°W, 18.5°N in the Eastern Pacific at 1630 UTC on August 19th. Once having attained hurricane strength, the well-organized system maintained an almost due west course from the 16th to the 25th of August.

LEFT: Plots of estimated maximum wind speed and minimum surface pressure versus time for Hurricane ISMAEL.



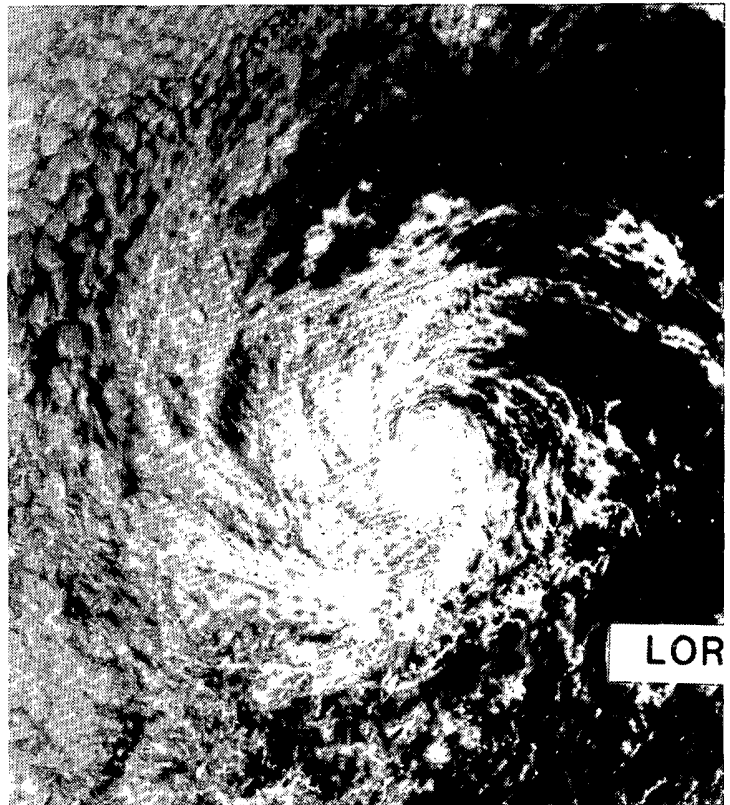
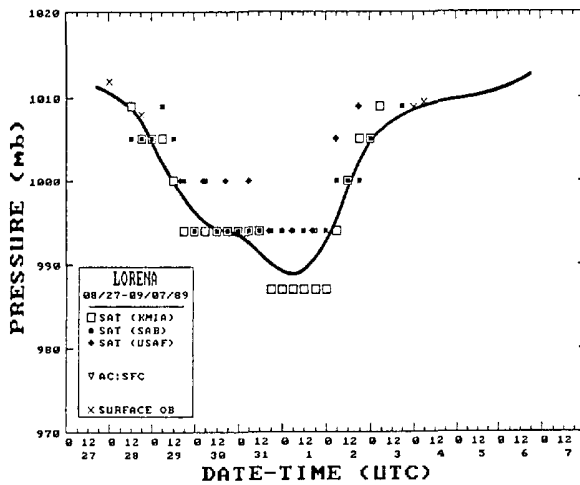
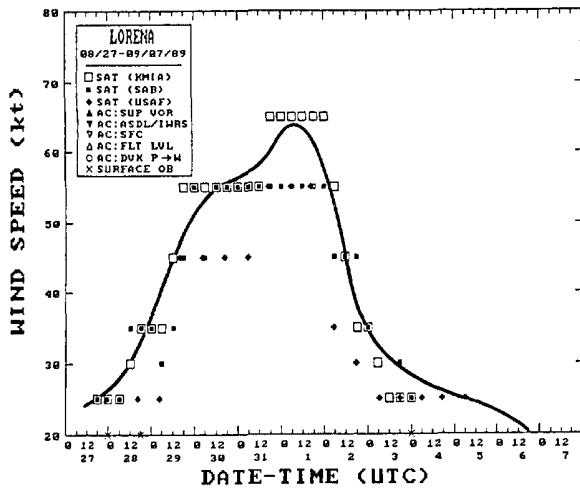
Tropical Storm JULIETTE (right storm in photo), centered here near 119.5°W, 18.5°N in the Eastern Pacific at 2230 UTC on August 22nd, followed in ISMAEL's wake on a more northwesterly course.

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



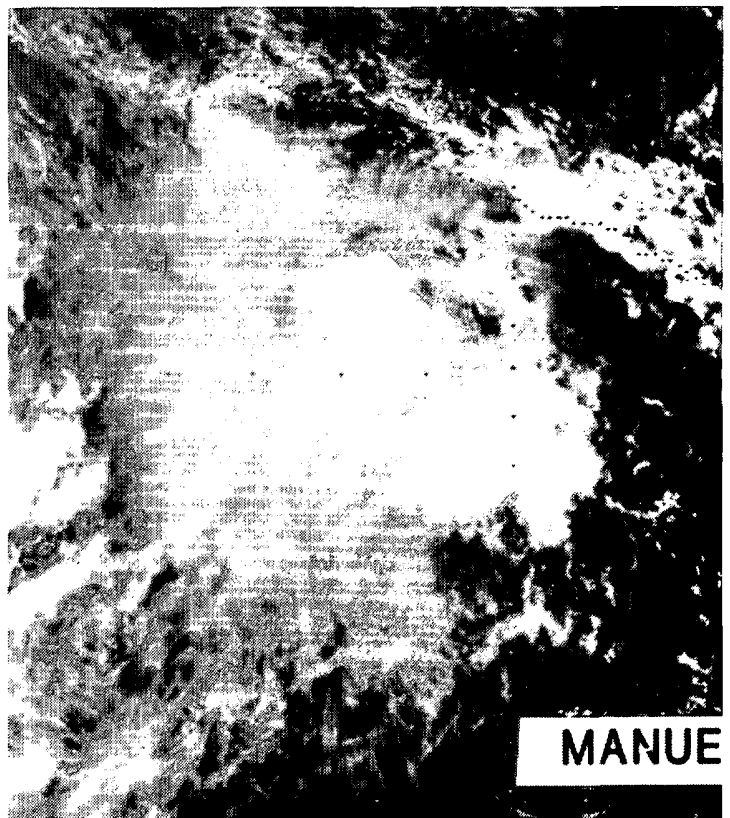
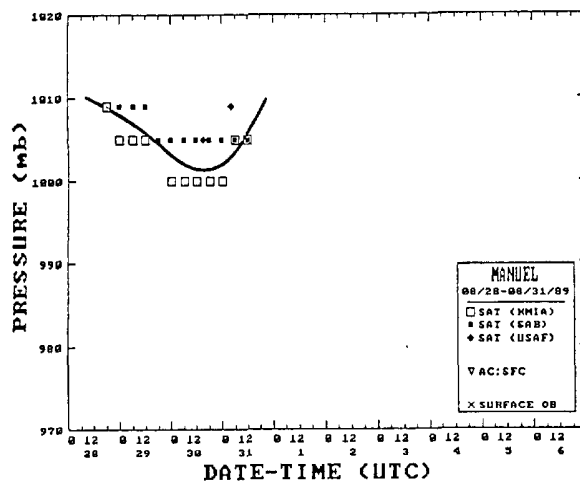
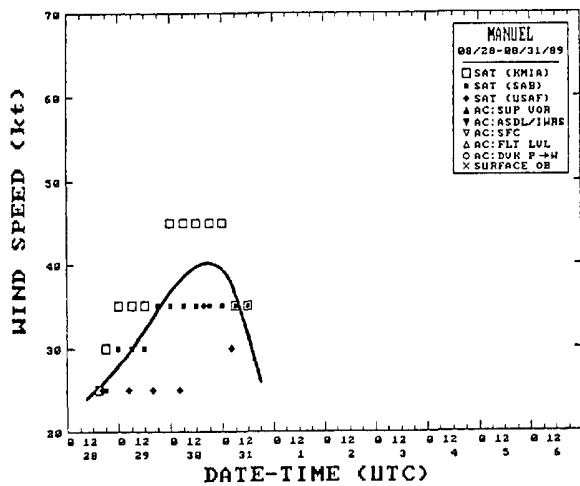
Hurricane KIKO centered off the tip of Baja California in the Gulf of California at 2230 UTC on August 26th. KIKO weakened considerably as it travelled west across the peninsula. No information from the Mexican government as to KIKO's effects on the peninsula has been made available.

LEFT: Plots of estimated maximum wind speed and minimum surface pressure versus time for Hurricane KIKO.



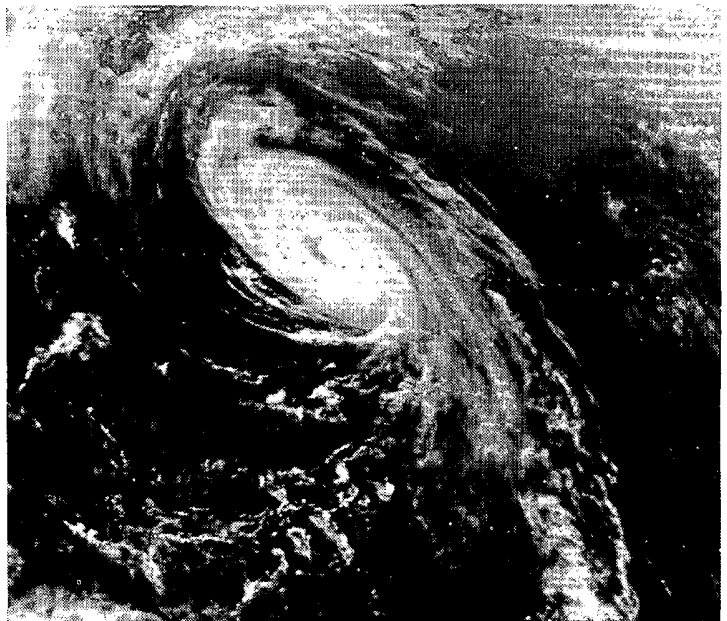
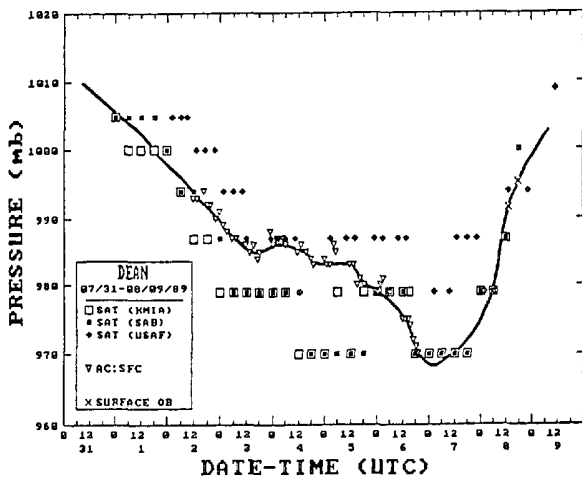
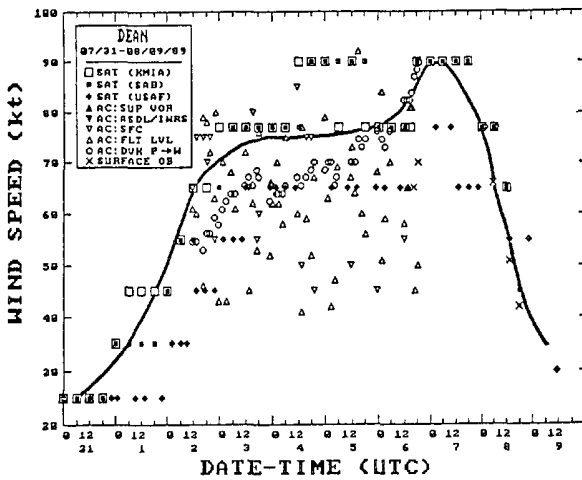
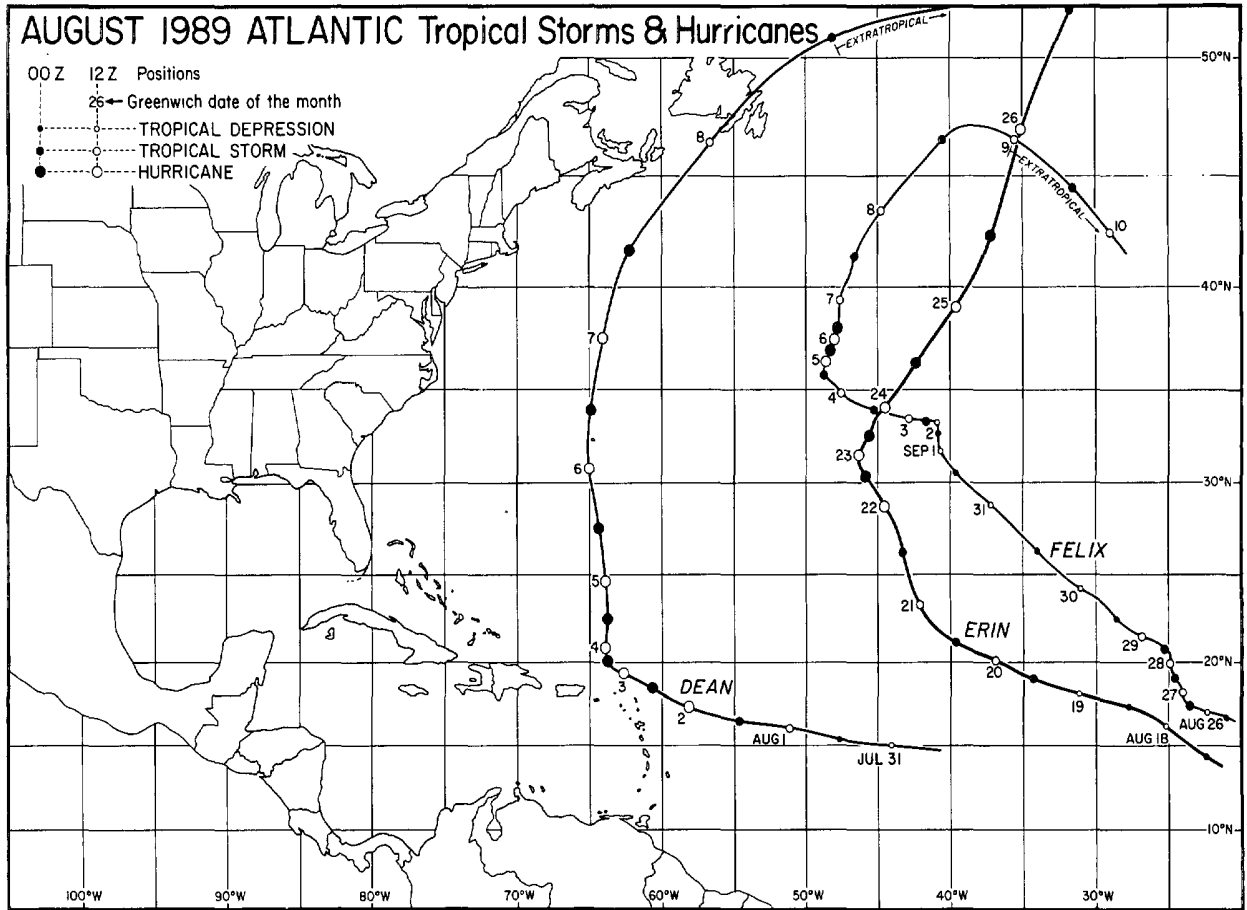
Hurricane LORENA centered near 118.5°W, 21°N in the Eastern Pacific at 1630 UTC on September 1st.

LEFT: Plots of estimated maximum wind speed and minimum surface pressure versus time for Hurricane LORENA.



Tropical Storm MANUEL centered about 180 nautical miles southwest of Acapulco, Mexico near 102.5°W, 15.5°N in the Eastern Pacific at 1630 UTC on August 30th.

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

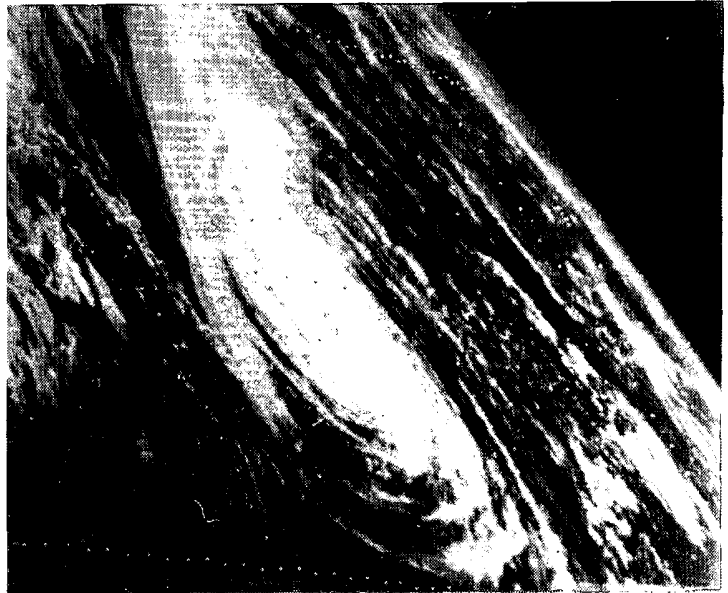
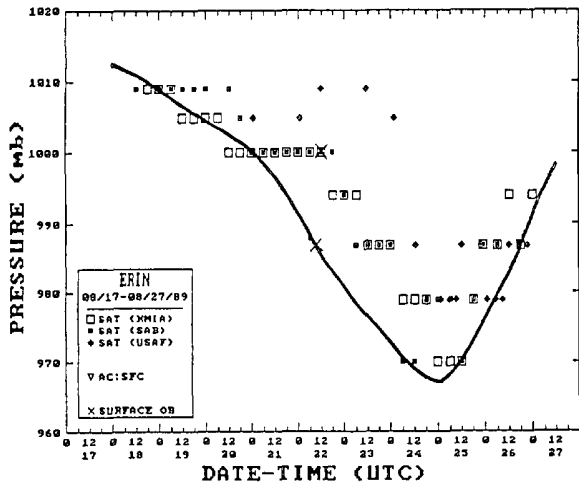
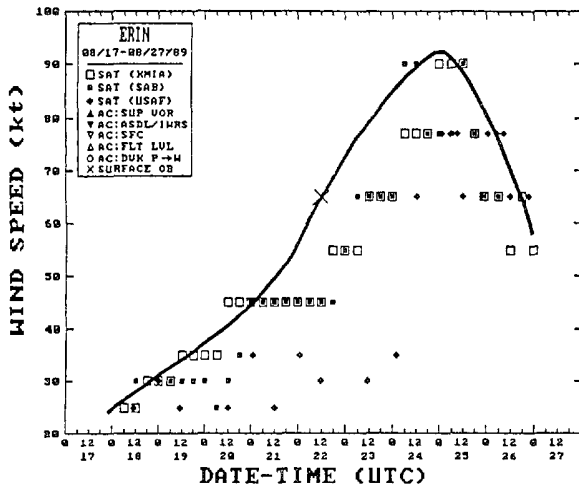


Hurricane DEAN centered about 280 nautical miles south of Halifax, Nova Scotia near 63°W, 40°N in the North Atlantic at 2000 UTC on August 7th.

Location	Date/Time (UTC)	Min. Press. (mb)	Max. Wind (kt)
Bermuda	ship at U.S. Naval Annex	-----	65 675
Bermuda	U.S. Naval Annex	-----	70 680
Bermuda	U.S. Naval Annex	-----	698
Nova Scotia	Sable Island	978.8	66 677
Newfoundland	St. Pierre Island	991.6	51 671
Newfoundland	Bonavista	995.4	42 655

Plots of estimated maximum wind speed and minimum surface pressure versus time for Hurricane DEAN.

Selected meteorological surface observations for Hurricane DEAN, July 31 to August 9, 1989.

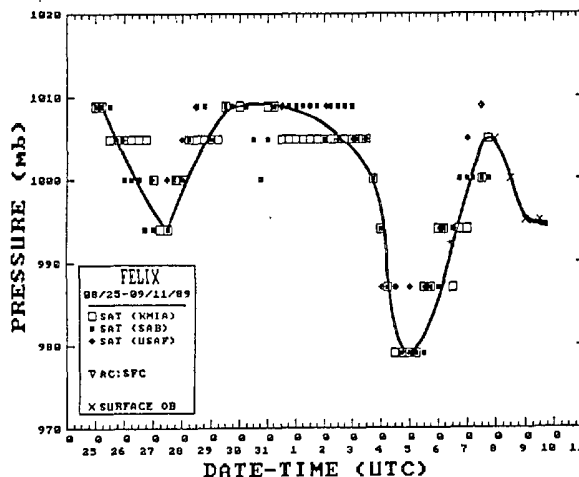
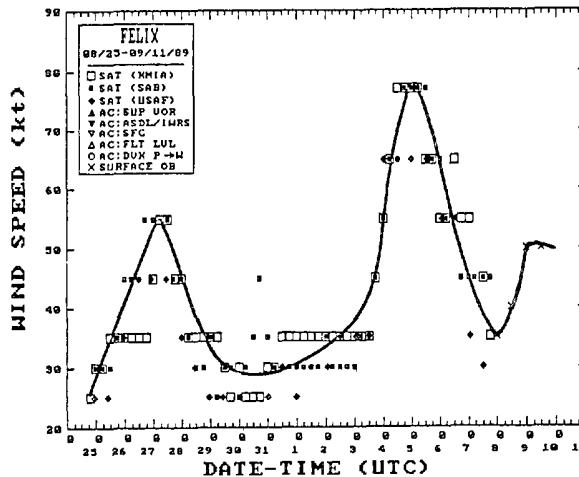


Hurricane ERIN centered near 44.5°W, 34°N in the North Atlantic at 1300 UTC on August 24th.

LEFT: Plots of estimated maximum wind speed and minimum surface pressure versus time for Hurricane ERIN.

DATE	TIME (UTC)	STATION	POSITION		PRESSURE (mb)	WIND (dir/kt)
			LATITUDE	LONGITUDE		
8/22	1200	CSDN	28.5	45.0	1000.3	270/65
8/22	1200	FNSL	31.9	41.5	1017.2	160/40
8/24	0000	EWJR	30.7	43.8	1013.4	170/35
8/24	1200	XCIE	32.1	43.5	1011.5	200/55
8/25	0000	DOQS	35.8	39.7	1015.0	160/37
8/26	0000	YSGN	45.5	35.6	1012.5	110/37
8/26	0600	YSGN	46.1	33.6	1010.5	120/45
8/26	1200	YSGN	46.7	31.4	1012.0	130/43
8/26	1800	C6DN3	49.0	32.0	1003.5	160/50
8/26	1800	ELDM3	49.4	31.9	1002.1	160/37

Wind and pressure data reported from ships passing within Hurricane ERIN's influence.



Hurricane FELIX centered near 48.5°W, 36.5°N in the North Atlantic at 1400 UTC on September 5th.

LEFT: Plots of estimated maximum wind speed and minimum surface pressure versus time for Hurricane FELIX.

--All tropical storm and hurricane materials presented on pages 11 through 16 are from the National Hurricane Center and provided through the Hurricane Research Division of AOML, both of Miami, Florida.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
1 ALABAMA									
Madison County	06	1200CST			0	0	?	?	TSTM Wind Several trees were blown onto power lines in northwest Huntsville.
Lauderdale County	06	1320CST			0	0	?	?	TSTM Wind Numerous trees were blown down 2 miles west of Florence. One large tree severely damaged a house.
Colbert County	06	1336CST			0	0	?	?	TSTM Wind (G60) Straight-line thunderstorm winds gusted to 60 mph at the Muscle Shoals airport. The winds damaged several homes, the roof of a business, and one large sign.
Cullman County	06	1400CST			0	0	?	?	TSTM Wind 06 1445CST 0 0 ? ? TSTM Wind 06 1515CST 0 0 ? ? TSTM Wind At 1400CST numerous trees and power lines were blown down, especially in the eastern part of Cullman County in the towns of Holly Pond, New Home, Baileyston, and Joppa. At 1445CST tin roofs were blown off chicken houses 7 miles west of the City of Cullman. At 1515CST more trees were blown down at locations throughout Cullman County.
Lawrence County	06	1445CST			0	0	?	?	TSTM Wind Trees were blown down at scattered locations throughout Lawrence County.
Blount County	06	1515CST			0	0	?	?	TSTM Wind Numerous trees were blown down, especially in the northern part of Blount County.
Marion County	06	1517CST			0	0	?	?	TSTM Wind Trees were blown down which blocked roads in the Byrd Community about 8 miles west of the City of Hamilton.
Jefferson County	06	1614CST			0	0	?	?	TSTM Wind 06 1620CST 0 0 ? ? TSTM Wind (G60) At 1614CST part of the roof was blown off a branch bank in Hoover. At about the same time, numerous trees and power lines were blown down throughout the City of Birmingham and Jefferson County. Many roads were blocked by downed trees and at least three trees were blown onto occupied vehicles. There were no injuries. At 1620CST straight-line thunderstorm winds gusted to 60 mph at Hueytown.
Shelby County	06	1615CST			0	0	?	?	TSTM Wind Numerous trees were blown down in the northern part of Shelby County and in Wilsonville.
Saint Clair County	06	1630CST			0	0	?	?	TSTM Wind Numerous trees and power lines were blown down in the Pell City area. Also, a roof was blown off an apartment complex near Logan Martin Lake, about 4 miles south of Pell City.
Talladega County	06	1630CST			0	0	?	?	TSTM Wind Trees were blown onto power lines at scattered locations mainly in northern Talladega County, especially near Logan Martin Lake. One tree was downed near the City of Talladega.
Tuscaloosa County	06	1630CST			0	0	?	?	TSTM Wind Numerous trees were blown down in the northern and western parts of the City of Tuscaloosa.
Calhoun County	30	1500-1700CST			0	0	?	?	Flash Flooding Flash flooding began in the City of Jacksonville shortly after 1500CST. By 1700CST the water began to subside. The western part of town was the hardest hit, with some streets under as much as 3 feet of water. One street caved in and a few homes required evacuation. A rain gauge in the City of Jacksonville recorded nearly three and one-half inches of rain, most of which fell during a one hour period.
2 ARIZONA									
Pima and Cochise Counties:									
Rincon Valley	03	1500 MST			0	0	0	?	Hail (0.50)
Rincon Valley	03	1600 MST			0	0	?	0	Flash Flooding
Thunderstorms resulted in street and stream flooding. The Catalina and Rincon mountains received more than one inch of rain in 20 minutes. Half-inch hail damaged crops in the Bowie area which also had a 1.4 inch rainfall in about 90 minutes.									
— ARIZONA									
Pima County, SE Portion	04	1145 MST			0	0	0	0	Flash Flooding Nearly stationary thunderstorms left one to three inch rains in this area. Minor flooding of washes and low-lying areas was reported.
Cochise County, 25 SE Sierra Vista	04	1200 MST			0	0	0	0	Funnel Cloud The lone funnel cloud moved southeast to near Naco.
Pima County, Tucson	05	1800 MST			0	0	4	0	Thunderstorm Wind Peak gusts of 63 mph hit a portion of east and northeast Tucson. Rainfall amounts were about 1 1/2 inches.
Pinal County, Mannoah	05	1852 MST			0	0	?	0	Thunderstorm Wind Sheriff's office reported power outages due to winds.
Maricopa County, Cave Creek	06	1945 MST			0	0	3	0	Thunderstorm Wind A storm spotter reported downburst winds that did roof damage.
Santa Cruz County, 10 N Nogales	07	1400 MST			0	0	0	0	Hail (0.25) Hail about 1/4 inch in diameter fell on Interstate 19.
Maricopa County, 25 SE Phoenix	07	1900 MST			0	0	4	0	Thunderstorm Wind Winds of 40 to 50 mph from distant thunderstorms moved across the deserts and lowered visibility to near zero in many locations. Some power outages in the east valley resulted when at least two power poles went down. Power lines fell across Arizona Ave. in Gilbert and shut down traffic for about 2 hours.
Pima County, Green Valley	09	1655 MST			0	0	3	0	Thunderstorm Wind Trees were uprooted and street signs downed.
Yuma County, Yuma	09	1830 MST			0	0	7	4	Thunderstorm Wind (52) Flash Flooding This area was hit by the second disaster in 2 weeks. Thunderstorms formed rapidly over much of northwest Mexico late in the afternoon and intensified while moving to the northwest. Strong winds preceded some very heavy downpours. Winds were generally 40 to 60 mph. Trees and power poles were downed. Extensive flooding occurred around the city due to record rainfalls of nearly double the annual amount. The Quartermaster Depot received 5.25 inches. Governor Mofford declared Yuma a disaster area. One of the city's water mains had extensive damage. Eighteenth Street was under 3 feet of water. Many cars were stuck, some were washed away but the occupants in the vehicles managed to escape or were rescued.
Santa Cruz County, Nogales	10	1430 MST			0	0	0	0	Flash Flooding Heavy rain caused street flooding in Nogales and water was running over I-19 from Rio Rico south to Nogales.
Pima County, Tucson	11	2130 MST			0	0	0	0	Thunderstorm Wind Minor street flooding resulted from thunderstorms. Winds were clocked at 50 mph at 9:30 pm.
Pima County, Green Valley	12	1800 MST			0	0	3	3	Thunderstorm Wind, Hail Rural Fire Dept. reported uprooted trees, street signs blown down and some roof damage. Hail damaged some crops in the San Simon area.
Maricopa County, Mesa	15	0100 MST			0	1	3	0	Lightning Thunderstorms knocked out power and lightning damaged at least 4 houses in east Mesa. A 22 year old man was knocked unconscious after holding onto a metal awning.
Pima County, Tucson	15	1715 MST			0	0	4	0	Thunderstorm Wind Slow-moving thunderstorms left up to 1 3/4 inch rain in about 2 hours. Strong winds damaged porches and trees and tore the roof off a house.

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ARIZONA									
Maricopa County, Desert Hills and Paradise Valley	15	2230 MST			0	1	4	0	Lightning
									Lightning struck a home in Desert Hills and a fire resulted in about \$10,000 in damages. A man in New River was struck and injured by lightning. The Paradise Valley police station was struck, which knocked out 911 service. A home on East Sparkling Lane was hit by lightning and the resulting fire damaged most of the house. Damage there was about \$450,000. Thunderstorms gradually ended after 1 am on the 16th.
Coconino County, Sedona	16	afternoon			0	0	3	0	Lightning
									Lightning struck a home in Sedona.
Maricopa County, West Phoenix	17	2120 MST			0	1	5	0	Thunderstorm Wind
									A warehouse roof collapsed and critically injured a man. Power lines were also downed near Luke AFB due to the strong winds. Considerable damage occurred at the Estrella Vista Planned Community. High winds sheared off about 65 APS power poles. Light poles and trees were downed along Litchfield Road.
Coconino County, Flagstaff	17	afternoon			0	0	3	0	Lightning
									A house fire resulted from a lightning strike.
Navajo County, Winslow	18	1700 MST			0	0	0	0	Thunderstorm Wind (58)
									Heavy rains accompanied the severe thundersorm.
3 ARKANSAS									
Jefferson Co., Pine Bluff	05	2100CST			1	0	0	0	Heat
									A woman died from heat-related causes. She was found in her home, with all the windows closed, and only a small box fan for cooling. High temperatures the past few days had been in the middle 90s. F66P
Saline Co., Bauxite	06	1600CST			0	0	?	?	Thunderstorm Wind (61)
Benton	06	1600CST			0	0	?	?	Thunderstorm Wind (61)
Bryant	06	1600CST			0	0	?	?	Thunderstorm Wind (61)
Salem	06	1600CST			0	0	?	?	Thunderstorm Wind (61)
Sardis	06	1600CST			0	0	?	?	Thunderstorm Wind (61)
									A severe thunderstorm produced wind gusts to 70 mph, downing trees and power lines throughout eastern Saline County. Widespread power outages occurred along with the closing of several roads due to fallen trees and power lines.
Lonoke Co., Carlisle	06	1610CST			0	0	?	?	Thunderstorm Wind (61)
									Thunderstorm winds downed trees and power lines throughout the city. Several homes also suffered minor roof damage. One-half inch hail also fell during the storm.
Ouachita Co., Camden	06	1700CST			0	0	?	?	Thunderstorm Wind
Camden	06	1700CST			0	0	4	?	Lightning
									Thunderstorm winds downed trees and power lines, causing widespread power outages. Lightning struck a private club, starting a fire which caused extensive damage.
Pulaski Co., Little Rock	16	1650CST			0	0	4	?	Lightning
									Lightning struck a Little Rock home, which started a fire resulting in about \$10,000 damage.
4 CALIFORNIA, Northern									
Mono County	09	1640PST-11-1500PST			0	0	7	6	Flash Floods
									A series of heavy thunderstorms over the 48 hour period flooded numerous highways and agricultural areas. Extensive damage occurred to the Los Angeles Aqueduct as well as homes, farms and highways.
4 CALIFORNIA, Southern									
Southern California	8-11								Thunderstorms
									During the four days from 8/8/89 - 8/11/89 one of the most severe convective outbreaks in recent memory occurred over Southern California. Summer monsoon convection over the Desert Southwest shifted from its normal position over Arizona and New Mexico to Southern California.
Inyo Co., IOS Lone Pine	8	1609PST			0	0	?	0	Flash Flood
									Heavy rains in the mountains caused mud to cover all four lanes of U.S. 395 approximately two feet deep, closing it for 12 hours.
Inyo Co., Olancho	8	1806PST			0	0	?	0	Flash Flood
									Approximately one mile north and south of the Highways 395 and 190 junction, flow from mountain thunderstorms washed considerable debris into the Los Angeles Aqueduct, completely damming it. Water and mud was over the highway junction area. One mile of the Aqueduct was completely filled with debris. It is estimated it will require 10-14 days to clear.

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					KILLED	INURED	PROPERTY	CROPS	PROPERTY	CROPS	
CALIFORNIA, Southern											
Inyo Co. Sherwood Creek	8	1830PST			0	0	0	0			Flash Flood
Riverside Co. Blythe	9	1600PST			0	0	0	0			Flash Flood
Riverside Co. Desert Center	9	1620PST			0	0	5	0			Flash Flood, Tstm.Wind (70)
			Phone lines were downed and trailers were flipped over in 70 mph thunderstorm winds.								
Riverside Co. Cathedral City	9	1800PST			0	0	6	0			Flash Flood
Imperial Co. Winterhaven	9	1820PST			0	0	5	0			Flash Flood, Tstm.Wind (60)
			Torrents of water up to two feet deep poured into homes in Winterhaven. Four homes near 3rd and G streets were evacuated due to water 3 to 4 feet deep. Water 3 feet deep closed Interstate 8 near Winterhaven and winds of 60 mph were reported.								
Riverside Co. Palm Springs	9	2030PST			0	0	0	0			Flash Flood
Riverside Co. Desert Hot Spring	9	2100PST			0	0	0	0			Hail (0.75)
Inyo Co. Olancho Creek	10	1400PST			0	0	6	0			Flash Flood
			Flooding began along Olancho Creek, again filling the Los Angeles Aqueduct with mud and debris along a two mile stretch. Large boulders were carried by the flood waters into the Aqueduct and the concrete walls buckled and began to give way under the force of the water from outside the channel. Eighty of the 10 x 14 foot concrete panels that make up the walls of the Aqueduct had failed or been damaged. Water again streamed across U.S. 395 and Route 190 and the roads were closed. Motorists, stranded by the floodwater were evacuated by Inyo County Sheriffs Department. Damage to the Aqueduct including the flash flooding that occurred on the 8th is estimated to be over half a million dollars.								
Inyo Co. McAlley Wash	10	1530PST			0	0	0	0			Flash Flood
Inyo Co. Silver Canyon	10	1730PST			0	0	0	0			Flash Flood
5 COLORADO											
Boulder County, Longmont	4	1620MST			0	0	0	0			Tstm.Wind (54)
Baca County, Walsh	6	evening			0	0	0	0			Tstm.Wind (52)
Gilpin County, Colorado Sierra	6	evening			0	0	0	0			Hail (0.75)
Garfield County, Rifle	9	0430MST			0	0	4	0			Tstm.winds
			Strong winds blew a large tree branch on top of a Chevy Blazer in Rifle, totaling the vehicle.								
San Miguel County, Telluride	9	afternoon			0	1	0	0			Lightning
			A 34 year old man working on the roof of a house in Telluride was hit in the right hip by lightning. The bolt disintegrated his right pantleg and knocked him off the roof. The owner of the house, a doctor, administered CPR on the spot and probably saved the man's life. He suffered burns and a broken pelvis.								
Gunnison County, Crested Butte	10	afternoon			0	0	4	0			Lightning
			Lightning hit a house in Crested Butte, setting a fire. The building suffered extensive smoke and water damage, the latter caused when the blaze was extinguished.								
Larimer County, Red Feather Lakes	11	afternoon			0	1	0	0			Lightning
			A 23 year old woman was seriously injured by lightning while backpacking. She suffered six wounds on her legs and back, and 3rd degree burns on her feet. The lightning hit her metal frame backpack, entered her body at each spot where the pack frame touched her, and traveled down her leg. After being temporarily paralyzed, she crawled for two hours to a road and received help.								
COLORADO											
Otero County, La Junta	14	afternoon			0	0	5	4			Hail (1.75)
			Golfball size hail hit La Junta, breaking hundreds of windows on the north sides of buildings. Nearby hay fields were damaged. The same area was hit by large hail again on the following day.								
Baca County, Campo	15	1530MST			0	0	5	6			Hail
			Hail of undetermined size cut a swath 10 miles long and 3 miles wide through southern Baca County, wiping out grain and milo.								
Otero County, La Junta	15	1630MST			0	0	6	0			Hail (1.75)
			Hail up to golfball size pummeled La Junta. Windows were broken in many buildings, and cars suffered extensive damage. In all, 1000 to 1200 buildings and 1200 to 1500 vehicles were damaged by the hail.								
Jefferson County, Intercanyon	16	1140MST			0	0	0	0			Hail (1.75)
El Paso County, Colorado Springs	16	1400MST			0	0	0	0			Hail (0.75)
			3/4 inch hail fell 5 miles northeast of the Colorado Springs airport. Lightning from the same thunderstorm knocked out power in the western part of the city and in the adjacent community of Manitou Springs.								
El Paso County, Black Forest	16	1400MST			0	0	0	0			Hail (1.75)
Boulder County, SW Boulder	19	1235MST			1	1	0	0			Lightning
			Lightning killed a 31 year old man and injured his 10 year old nephew when it hit a tree they were walking under in the foothills about 5 miles west of Boulder. The boy received mouth to mouth resuscitation on the scene and recovered after being hospitalized overnight. Three other people were knocked to the ground by the bolt, but were uninjured.								
Baca County, Walsh	19	2157MST			0	0	4	0			Hail (3.0)
			Golfball to tennis ball size hail fell in Walsh, breaking windows and damaging a trailer. 5 miles southeast of the town, stones up to 3 inches in diameter broke some irrigation pipe. 1.10 inches of rain fell in the town.								
Boulder County, Longmont	24	1800MST			0	0	5	0			Lightning
			Lightning hit a barn in Longmont. The barn was used as a storage area by an adjacent housing complex, and when the barn burned down, two boats, three cars, a camper, motorcycles, trucks, and antiques were destroyed.								
Denver County, Denver	29	1845MST			0	0	5	0			Lightning
			A spectacular lightning display knocked out power to 300 blocks in southeast Denver. One bolt started a fire in a lumber yard in the northeast part of the city, and an attic of a home in the same area was set ablaze by a bolt.								
6 CONNECTICUT											
CT2001-002-003-004-005	11-13				0	0	5	?			Heavy Rain
			Four to eight inches of rainfall occurred during the three day period as a result of thunderstorm activity which occurred intermittently within a very tropical airmass. Hartford received 7.7 inches of rain, while Norfolk in the northeast corner of the state reported 3.8 inches. Considerable street and basement flooding was reported throughout the area. Flood-prone areas were inundated and small streams overflowed their banks. Flooding forced the evacuation of apartment buildings in both Greenwich and Hartford.								
Litchfield and Fairfield Counties	14	evening up to 1945EST			0	0	4	?			Heavy Rain
			Extreme southeast Litchfield County and extreme northeast Fairfield County unofficially reported 3.5 to 4 inches of rain during the evening hours. In Watertown, the Steel Brook, Turkey Brook and Nonnewaug Brook were out of their banks. Some road washouts and ponding from blocked drains were reported.								
Hartford County, Simsbury, Avon, and Canton	21	1410-1430EST			0	0	5	0			TSTM Winds (60)
			A severe thunderstorm moved eastward through the western suburbs of Hartford including the communities of Simsbury, Avon, and Canton, with wind gusts estimated at up to 70 mph. As many as 23,000 electric customers were left without power.								
Hartford County, Farmington	21	1415EST			0	0	0	0			Hail (0.75)
			Three-quarter inch diameter hail was reported in Farmington.								

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7 DELAWARE									
Sussex Co., Georgetown	12	0500EST			0	0	?	0	Flash Flood
									Torrential rains of 6 inches in amount fell in Georgetown. A road leading up to a bridge was closed when large chunks of the road washed away.
Sussex Co., 10 miles west of Frankford	15	1409EST	15	20	0	0	0	0	Tornado (F1)
									A small tornado developed 10 miles west of Frankford and moved east-northeast at 10 mph. The last sighting occurred 35 minutes later 5 miles north-northeast of Frankford. No damage was reported, since the tornado moved over rural and swamp areas. FPP Classification: F1, P3, P1
DE3001 Southern Delaware	18	2330EST			0	0	6	?	Flash Flood
									Six to ten inches of rain fell in 4 to 6 hours in the zone. There were some local reports of 13 to 20 inches. Twenty-six major roads were closed or damaged, and 14 bridges were washed out. Selbyville was the worst hit, and several families had to be evacuated from their homes. In all, nearly 40 families in the zone were evacuated. Nearly 250,000 chickens were killed, and heavy crop damage was expected. Damages to local businesses was estimated at \$3.5 to \$4 million.
8 FLORIDA									
Lake Co., Lady Lake	01	1930EST			0	0	4	0	Tstm.wind(50)
									Several mobile homes were damaged.
Clay Co., Orange Park	02	1505EST			0	0	0	0	Tstm.wind(55)
									Nine trees were blown down.
St. Johns Co., 12WNW St. Augustine	02	1540EST			0	0	3	0	Tstm.wind(50)
									Power lines were blown down.
Flagler Co., Bunnell	02	1632EST			0	0	3	0	Tstm.wind(50)
									The Sheriffs Office reported that trees and power lines were downed.
Orange Co., Eithlo	02	1745EST			0	0	3	0	Tstm.wind(50)
									Several trees were downed and a carport awning was blown away.
Marion Co., Eureka	02	1815EST			1	0	0	0	Lightning
									A woman was struck and killed as she exited her car. Her daughter in the car was not injured although lightning punctured the car. F740.
Monroe Co., 5N Cudjoe Key	03	1620EST							Waterspout
									Air Force personnel observed waterspout.
Collier Co., Naples	03	1700EST			0	0	0	0	Tstm.wind(50)
									Trees were downed.
Monroe Co., 15N Key West	05	0852EST							Waterspout
									A waterspout was reported by a pilot.
FLORIDA									
Monroe Co., Craig Key	06	1120EST							Waterspout
									A waterspout was reported.
Duval Co., Jacksonville	07	1420EST			0	3	5	0	Tstm.wind(60)
									Three people were cut by flying glass when wind blew in the window of a car dealership. Damage to new cars was estimated at near \$50,000. Signs and roofs were also damaged.
Putnam Co., 30E Gainseville	08	1700EST			0	0	0	0	Tstm.wind(55) Hail(1.00)
									One-inch hail and wind gusts to 55 knots were reported.
Volusia Co., Daytona Beach	09	0923EST			0	0	0	0	Tstm.wind(59)
									A wind gust to 59 knots was measured at the airport.
Martin Co., Jensen Beach	09	1340EST	short	?	0	0	4	0	Tornado(F0)
									A brief tornado touchdown did minor damage to six houses.
Collier Co., Marco Island	09	1415EST			0	1	0	0	Lightning
									An 18 year old male standing on the beach was injured by a lightning strike.
Pinellas Co., Clearwater	10	0940EST			0	0	4	0	Lightning
									A fire started by lightning did \$5000 damage to a condominium.
Martin Co., E Coast	10	1320EST							Waterspout
									A waterspout was reported by a pilot.
Pinellas Co., Treasure Island	10	1435EST	short	?	0	0	5	0	Tornado(F0)
									A tornado touched down briefly and damaged five roofs and several cars and boats.
Hillsborough Co., Tampa	10	1800EST- 2145EST			0	0	4	0	Lightning
									Lightning-initiated fires did \$13000 damage to two apartments.
Escambia Co., Pensacola	10	1855EST			0	0	0	0	Tstm.wind(50)
									A wind gust of 50 knots was measured at the Pensacola Naval Air Station.
Volusia Co., 10E Daytona Beach	10	1917EST							Waterspout
									Several waterspouts were reported off the coast.
Lee Co., Ft. Myers	12	1300EST	short	?	0	0	4	0	Tornado(F0)
									A very brief tornado touched down and damaged mobile homes, cars and outbuildings.
Citrus Co., Floral City	12	1355EST			0	0	4	0	Tstm.wind(60)
									Six or seven residences suffered mainly roof damage.
Orange Co., 3E Orlando	12	1600EST			0	0	0	0	Hail(1.75)
									Golf ball size hail was reported.
Brevard Co., Indialantic	12	1800EST			0	0	0	0	Funnel Cloud
									Several funnel clouds were sighted about 1/2 mile off shore.

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— FLORIDA									
Monroe Co., 7NE Key West	13	0858EST							Waterspout
			A Weather Service observer sighted a waterspout.						
Dade Co., Miami	14	1600EST			0	0	3	0	Tstm.wind(50)
			A large tree was downed.						
Dade Co., 15SE Miami	14	1910EST							Waterspout
			A park ranger spotted a waterspout.						
Monroe Co., 3S Key West	15	0727EST							Waterspout
			A Weather Service employee observed a waterspout.						
Monroe Co., 5N Key West	15	1515EST							Waterspout
			A Weather Service employee observed a waterspout.						
Broward Co., Fort Lauderdale	16	1515EST			0	0	3	0	Tstm.wind(65)
			Trees were downed and minor damage was done to residences.						
Dade Co., Miami	16	1540EST			0	0	0	0	Tstm.wind(55)
			Several trees were downed.						
Martin Co., Jensen Beach	16	1915EST			0	1	0	0	Lightning
			A 14 year old boy was critically injured while under a tree.						
Dade Co., 2E Miami	17	1915EST	short ?		0	0	3	0	Waterspout-Tornado(F0)
			A waterspout moving across Biscayne Bay touched down briefly on Biscayne Island and, as a tornado, did minor damage to a house.						
Volusia Co., Port Orange	18	1200EST			0	1	0	0	Lightning Hail(0.88)
			A plumber was injured when lightning struck a pipe on which he was leaning. Nickel size hail was reported.						
Polk Co., Winter Haven	18	1530EST			0	0	3	0	Tstm.wind(50)
			Trees and power lines were downed and outbuildings were damaged.						
Polk Co., Lakeland	18	1640EST			0	0	3	0	Tstm.wind(55)
			Two mobile homes were damaged.						
Nassau Co., Callahan	18	1700EST			0	0	0	0	Hail(0.75)
			Dime size hail was reported.						
Charlotte Co., Port Charlotte	18	1730EST			0	0	3	0	Tstm.wind(50)
			A house under construction was damaged by strong wind.						
Escambia Co., Molino	18	1735EST			0	0	0	0	Hail(0.75)
			Dime size hail was reported.						
Sarasota Co., 25SE Sarasota	18	1745EST			0	0	3	0	Tstm.wind(50)
			Trees and power lines were downed.						
— FLORIDA									
Manatee Co., Bradenton	19	1500EST			0	1	3	0	Lightning
			A 19 year old male was injured by a lightning strike to a radio antenna from which he was broadcasting.						
Pinellas Co., St Petersburg	19	1600EST			0	0	4	0	Tstm.wind(50)
			Several trees and power lines were downed and damage occurred to a trailer and a house.						
Dade Co., 5SE Miami	20	0725EST							Waterspout
			A Weather Service employee sighted a waterspout in Biscayne Bay.						
Monroe Co., Key Largo	22	0730EST							Waterspout
			The Florida Marine Patrol reported a waterspout.						
Monroe Co., 5N Key West	22	1338EST							Waterspout
			A Weather Service employee sighted a waterspout.						
Sarasota and Manatee Counties	22	1930EST			0	0	0	0	Tstm.wind(50)
			Trees and power lines were downed.						
Seminole Co., Sanford	25	1430EST			0	0	3	0	Lightning
			A lightning-initiated fire damaged a house roof.						
Monroe Co., 1S Cudjoe Key	26	0614EST							Waterspout
			Air Force personnel sighted a waterspout.						
Columbia Co., Lake City	26	1514EST			0	0	3	0	Tstm.wind(50)
			Trees were downed and shingles were blown off roofs.						
Lee Co., Cape Coral	26	1600EST			0	0	3	0	Tstm.wind(60)
			A patio roof was torn from its foundation and blown into a neighbor's pool.						
Washington Co., Vernon	26	1800EST			0	0	3	0	Tstm.wind(50)
			Power lines were downed and minor damage was done to a house.						
Manatee Co., Oneco	26	1800EST			0	0	4	0	Tstm.wind(50)
			Three or four sheds were damaged by high winds.						
Washington Co., Chipley	26	2200EST			0	0	3	0	Tstm.wind(50)
			Trees were downed and a house roof was damaged.						
Hillsborough Co., Tampa	27	1730EST			0	1	0	0	Lightning
			A 20 year old male under a picnic shelter was critically injured.						
Palm Beach Co., 5NE Palm Beach	28	0735EST							Waterspout
			A waterspout was sighted from an airport control tower.						
Monroe Co., 1S Key West	29	1239EST							Waterspout
			A waterspout was reported by a pilot.						
Sarasota Co., Venice	29	1550EST			0	0	0	0	Funnel Cloud
			A newspaper employee photographed a funnel cloud in South Venice.						

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	
FLORIDA									
Monroe Co., 7W Key West	29	1915EST							Waterspout
									Weather Service personnel sighted a waterspout.
9 GEORGIA									
DOUGLAS COUNTY 5N Villa Rica	17	0830EST	0.7	34	0	0	4	?	Tornado (F1)
									A small tornado developed at Legion Lake and moved northeast over a wooded area near three-fourths of a mile long. Numerous trees were snapped or uprooted. Trees felled by the tornado damaged three homes, two of which were mobile. Smaller utility buildings and utility poles were damaged also.
DOUGLAS COUNTY 5N Villa Rica Douglasville Douglasville	17	0930EST			0	0	?	?	TSTM Wind
	17	0930EST			0	0	4	0	TSTM Wind
	17	0940EST			0	0	?	0	Lightning
									At Villa Rica, downburst winds uprooted and damaged trees in an area the size of a football field. Even the grass was flat. Thunderstorm winds at Douglasville felled numerous trees and overturned a tractor trailer. In the storm, store windows were blown out, billboards were blown down, and minor property damage occurred. Lightning struck two homes and caused minor damage.
BIBB COUNTY 11N Macon	17	1225EST			0	0	0	0	Hail (.75)
JONES COUNTY 20NE Macon	17	1320EST			0	0	0	0	Hail (.75)
	17	1320EST			0	0	?	?	TSTM Wind
BIBB COUNTY 12W Macon	17	1340EST			0	0	0	0	Hail (.75)
MERIWETHER COUNTY 3SE Greenville	17	1930EST			0	0	?	?	TSTM Wind
BEN HILL COUNTY Fitzgerald Fitzgerald	23	1445EST			0	0	?	?	TSTM Wind
	23	1445EST			0	0	0	0	Flash Flood
									Winds uprooted and damaged scattered trees at Fitzgerald and over western Ben Hill County. At Fitzgerald, a tree ripped off a room attached to a mobile home. Signs, a television antenna and power lines were also blown down. The winds scattered concrete blocks that had been cemented into the ground. Although flash flooding developed in Fitzgerald, little damage occurred.
IRWIN COUNTY Ocilla	23	1515EST			0	0	?	?	TSTM Wind
									Thunderstorm winds damaged trees and power lines at Ocilla and over the western portion of Irwin County.
WAYNE COUNTY Jesup	24	1700EST			0	0	?	?	TSTM Wind
NADISON COUNTY 2NE Danielsville	25	1555EST			0	0	?	0	Lightning
									Lightning caused a fire that destroyed a barn.
STEPHENS COUNTY 2SE Toccoa	25	1630EST			0	0	?	0	Hail (.88)
									Hail caused minor damage to several automobiles.
DOUGHERTY COUNTY Albany	25	1834EST			0	0	0	0	TSTM Wind (55)
OCONEE COUNTY 3NW Wadkinsville	25	2100EST			0	0	?	?	TSTM Wind, Small Hail
									Large tree limbs tore down power lines.
MORGAN COUNTY countywide Hard Labor State Park	25	2130EST			0	0	?	?	TSTM Wind
	25	2130EST			0	0	?	0	TSTM Wind, Small Hail
									Thunderstorm winds caused power outages when falling limbs tore down lines at several locations in the county. At Hard Labor State Park, falling trees caused roof damage to buildings.
10 IDAHO									
Franklin Co., Dayton and Preston	8	1430 MST			0	0	4	3	TSTM WIND
									Strong winds associated with a thunderstorm leveled a hay shed and dumped it into a pickup truck and a large cattle trailer. Many trees were uprooted.
Bannock Co., Pocatello	8	1700 PST			0	0	4	0	TSTM WIND
									Strong thunderstorm winds toppled numerous trees. Ten large trees near the Pocatello Zoo were blown down and one of the downed trees ruptured a sprinkler line.
Twin Falls and Cassia Counties, Buhl and Oakley	9	1745 MST			0	0	4	3	HAIL (.50) FLASH FLOOD
									Heavy rain allowed mud and water to flood a house basement. Hail destroyed vegetable gardens and grain fields.

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					KILLED	INJURED	PROPERTY	CROPS	
IDAHO									
Boundary Co.	12	1600 PST			0	0	4	0	TSTM WIND (55)
					Strong thunderstorm winds downed numerous trees.				
Bonner Co.	12	1600 PST			0	4	5	0	TSTM WIND (65)
					Many trees were blown down due to strong winds associated with thunderstorms. Four people were injured by falling trees and broken branches. A roof of a boat dock was blown off at Priest Lake, with two boats being slightly damaged. Dozens of power poles were snapped.				
Kootenai Co., Coeur d'Alene	12	1600 PST			0	1	0	0	LIGHTNING
					A man on a roofing job was injured when lightning struck nearby during a thunderstorm.				
Shoshone Co., SS Kingston	12	1600 PST			1	0	4	0	TSTM WIND (65)
					Strong winds associated with a thunderstorm felled a large cottonwood tree. A woman was hit and killed by the tree. Wind F220				
Benewah Co.	12	1600 PST			0	0	3	0	TSTM WINDS (50)
					Strong and gusty thunderstorm winds downed many trees.				
Oneida Co., Malad	17	1730 MST			0	1	5	5	TSTM WIND (55)
					Strong thunderstorm winds downed many trees. A man was blown off his roof and injured. Many small metal sheds were blown away. A few homes reported roof damage and a wheel line sprinkler was damaged.				
Caribou Co., Bancroft	18	1100 MST			0	0	4	5	HAIL
					Hail left the streets looking like a winter storm had moved through the area. Leaves were stripped and shredded. There was considerable grain damage as far north as Blackfoot Reservoir.				
Bonneville Co., Idaho Falls	19	1810 MST			0	0	3	0	LIGHTNING
					Two homes across town from each other were struck by lightning. House wiring was burned out of one house while the other sustained roof damage from a minor fire.				
Adams Co., 30WNW McCall	22	afternoon			0	0	6	0	TSTM WIND (65) HAIL
					A line of strong thunderstorms downed an estimated 5 million board feet of timber over 600 to 700 acres.				
Fremont Co., Ashton	25	1600 MST			0	0	0	5	HAIL (.50)
					Hail destroyed barley and oat fields in a seven mile long strip of farmland. The hailstorm cut a path at least a mile wide. Hail was one to two inches deep in some areas.				
ILLINOIS									
Winnebago Co., Rockford	3-4	2253- 0100CST			0	0	4	0	Tstm.wind, Heavy rain
					Strong thunderstorms produced microbursts and high winds that blew down trees and power lines in Rockford. 1.62 inches of rain fell at the Rockford Airport and 3.00 inches fell at Machesney Park. 16,000 households were without power for a time. Wind gusts to 54 mph were recorded at the Rockford Airport.				
N. Cook Co.; Du Page Co.; N. Kane Co.	4	0000- 0600CST			0	0	?	0	Heavy rain, Flooding
					Clusters of heavy thunderstorms produced rainfall amounts in the 2 to 5 inch range during a six hour period across parts of northeast Illinois and the northwest and northern suburbs of Chicago. The storm was associated with the remnants of Hurricane Chantal that moved northward from Texas. The heaviest rain fell generally along a 20 mile wide band that extended across extreme northern Kane County and the city of Elgin, and through extreme northern Cook County to Wilmette. Flooding temporarily closed Edens Expressway and the north end of Lake Shore Drive. Numerous streets and basements were flooded in the area where the heaviest rain fell. The rain also cause some flooding along creeks and low-lying areas.				
					Rainfall amounts of 3 inches or more: 5.00 inches Barrington 4.61 Arlington Heights 4.45 Carpentersville 4.17 Wilmette 4.06 Hoffman Estates 3.45 O'Hare Intl. Airport 3.28 Buffalo Grove 3.19 Palatine 3.02 Elgin 3.01 Woodale 3.00 Elk Grove				
Kane Co., Aurora and Geneva	4	2346CST			0	0	5	0	Tstm.winds
					Numerous trees and power lines were blown down. A very large tree fell onto a house in Geneva and did extensive damage.				
Du Page Co., Westmont and Hinsdale	5	0000CST			0	0	5	0	Tstm.winds
					High winds peeled the roof off a condominium at 25 Willow Way Lane in Westmont. Trees were reported blown down in Hinsdale.				
Cook Co., Orland Park	5	0010CST			0	0	5	0	Tstm.winds, Downbursts
					Strong thunderstorms produced downbursts and high winds that did damage in Orland Park. A 12 unit condominium under construction in the 9900 block of Treetop Drive collapsed. An occupied condominium unit across the street lost a large part of its roof. A house under construction at 10500 Misty Hill Road was blown down by strong winds. Trees were uprooted at 151st and Huntington Court and at 153rd Street and Highland Avenue.				
Cook Co., Lemont	5	0030CST			0	0	4	0	Tstm.winds
					High winds blew down trees and power lines near 109th and State in Lemont.				
Coles Co., Charleston	5	2200CST			0	0	3	0	Tstm.winds
					Several trees were reported down.				
Edgar Co., near Kansas	5	2230CST			0	0	?	0	Tstm.winds
					High winds blew down trees near Kansas.				
Jasper Co., Newton to Willow Hill	5	2250CST			0	0	3	0	Tstm.wind
					Thunderstorm winds downed trees and power lines.				
Crawford Co., Robinson	5	2300CST			0	0	3	0	Tstm.wind
					Power lines and tree limbs were downed by thunderstorm winds.				
Lawrence Co., Lawrenceville	5	2355CST			0	0	3	0	Tstm.wind
					Thunderstorm winds downed trees and power lines.				
Du Page Co., Darien	9	1620CST			1	3	0	0	Lightning
					Lightning struck four golfers at the Carriage Greens Country Club in Darien. One person died two days later from his lightning injuries. The foursome were under an umbrella mounted on a hand-pulled golf cart when the lightning struck. Lightning H310.				
Du Page Co., Wheaton	11	1350CST			0	3	0	0	Lightning
					Three golfers were struck by lightning as they huddled under a large oak tree at the Arrowhead Golf Club in Wheaton.				
Cook Co., North Riverside	12	1300CST			0	7	0	0	Lightning
					Seven persons attending a picnic at a forest preserve in North Riverside were injured when they were hit by lightning. The seven injured were gathered around picnic tables that were between two tall trees.				
Cook Co., Arlington Heights	13	1700CST			0	2	0	0	Lightning
					Lightning hit a barn at Arlington International Race Course and struck one worker who was turning on a light switch when the strike occurred. Another person at the racetrack was slightly injured by lightning while talking on a telephone.				
Bond Co., Greenville	20	1600CST			0	0	3	0	Tstm.winds, Heavy rain
					High winds blew down some large trees and power lines.				
Clay Co., Flora	24	0521CST			0	0	2	0	Flooding
					2 to 5 inches of rain flooded streets and lowlands, especially in the Flora area. Highway 50, west of Flora, and several city streets were flooded.				
Champaign Co., Fisher	31	1622CST			0	0	?	0	Tstm.winds
					High winds uprooted trees.				
Iroquois Co., Clifton	31	2030CST			0	0	?	?	Hail (1.75)
Lee Co., 1.5 E Steward	31	2320CST			0	1	0	0	Lightning
					Lightning struck a 20 year old man while he was working in a farm field.				
Winnebago Co., Loves Park	31	2350CST			0	0	?	0	Tstm.winds (52)
					Strong winds blew down some large trees and tree limbs.				

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12 INDIANA										
St. Joseph Co. South Bend	05	0200 EST	0	0	2	?	Tstm.Wind			Thunderstorm winds of 55 MPH were reported at North Sample and Olive Street. Large tree limbs were blown down in this vicinity.
Lake Co.	05	0200 EST	1	0	4	?	Tstm.Wind			Thunderstorm winds downed power lines and trees, interrupting service to 20,000 customers. A 29 year old female drowned at Cedar Lake at approximately 0200 EST while swimming from a pontoon boat which was blown away from her by strong thunderstorm winds. 60 mph winds were reported at Valparaiso at 0200 EST. Tents for a Valparaiso air show were blown down and several small aircraft were damaged.
La Porte Co.	05	0245 EST	?	?	0	0	?	?	Tornado(F0)	The sheriff confirmed that a tornado touched down at State Road 2 along the La Porte-St. Joseph county line. No damage was reported.
Steuben Co.	05	0320 EST	0	0	3	?	Tstm.Wind			Numerous trees and limbs were blown down by thunderstorm winds across the county. A mobile home was damaged (\$3000) at Silver Lake.
Allen Co.	05	0420 EST	0	0	2	?	Tstm.Wind			Trees were reported down just east of Roanoke and in the Poe area in southern Allen County.
Delaware Co. Muncie	05	0615 EST	0	0	?	?	Flash Flooding			5.25 inches of rain was reported between 0500EST and 0615 EST.
Hendricks Co. 3E Avon	05	1400 EST	0	0	?	?	Hail(.75)			
Marion Co. Indianapolis	05	1433 EST	0	0	?	?	Tstm.Wind			Wind gusts to 60 mph occurred at the Indianapolis Power and Light Southport Station in southern Marion County.
Franklin Co.	05	1543 EST	0	0	4	0	Tstm.Wind			Trees were blown down in southwest Franklin County and near Batesville in Ripley County. Later trees were blown down on Route 62 at Friendship and Holden in Ripley County, and across Route 56 in Switzerland County.
Ripley Co.	05	1556 EST	0	0	4	0	Tstm.Wind			
Ripley Co.	05	1715 EST	0	0	4	0	Tstm.Wind			
Switzerland Co.	05	1740 EST	0	0	4	0	Tstm.Wind			
Monroe Co. Ellitsville	05	1548 EST	0	0	2	?	Tstm.Wind			Trees were blown down by thunderstorm winds.
Decatur Co. 1N Sandusky	05	1604 EST	0	0	?	?	Flash Flooding			Three to four inches of water were reported to be over the roadway one mile north of Sandusky.
Bartholomew Co. Hope	05	1636 EST	0	0	?	?	Tstm.Wind			Trees were blown down by thunderstorm winds.
Marion Co. Indianapolis	05	1637 EST	0	0	2	?	Tstm.Wind			Trees were blown down at State Road 37 and Epler in southern Marion County.
Lawrence Co. Springville	05	1800 EST	0	0	3	?	Tstm.Wind			Numerous trees were downed by thunderstorm winds. Also, two barns were destroyed in eastern Marion County.
Daviess Co. Odom	05	1935 EST	0	0	1	?	Tstm.Wind			Thunderstorm winds downed large tree limbs.
INDIANA										
Martin Co. Shoals	05	1940 EST	0	0	2	?	Tstm.Wind			Thunderstorm winds downed large trees and twisted tops off of others.
Lawrence Co. 7N Bedford	05	2145 EST	0	0	4	?	Tstm.Wind			Trees and power lines were downed by thunderstorm winds. The Williams covered bridge had a 100 foot section of the west side blown off. Estimated repairs were expected to be costly.
Hamilton Co. Westfield	06	0040 EST	0	1	2	?	Tstm.Wind			Trees were downed by thunderstorm winds at State Roads 32 and 31 in Westfield. One personal injury from a falling tree was reported.
Hancock Co. Pendleton	06	0048 EST	0	0	2	?	Tstm.Wind			Trees were blown down by thunderstorm winds at State Road 38 near Pendleton.
Knox Co. Vincennes	06	0105 EST	0	0	3	?	Tstm.Wind			Thunderstorm winds downed trees and power lines.
Monroe Co. 2W Bloomington	06	0115 EST	0	0	2	?	Tstm.Wind			Roof and awning damage from thunderstorm winds occurred 2 miles west of Bloomington.
Delaware Co. Daleville	06	0125 EST	0	0	?	?	Tstm.Wind			Power lines were blown down by thunderstorm winds at Daleville.
Shelby Co.	06	0130 EST	0	0	5	?	Tstm.Wind			Trees and power lines were downed by thunderstorm winds. Damage done to several homes and a business in Shelbyville by the strong winds and lightning was estimated to be near \$80,000.
Johnson Co. 3S Franklin	06	0135 EST	0	0	3	?	Tstm.Wind			Trees were blown down and a roof was removed from a building by thunderstorm winds 3 miles south of Franklin. Damage to a vehicle and the loss of farm animals was estimated to be \$4000 to \$5000.
Marion Co. Indianapolis	06	0135 EST	0	0	4	?	Tstm.Wind			A 12 by 60 foot storage trailer was blown over at the Indianapolis International Airport in southwestern Marion County. Lightning destroyed a mini-barn in northern Marion County; the barn's estimated value was \$6000.
Morgan Co. Mooreville	06	0205 EST	0	0	?	?	Tstm.Wind			A truck was overturned by thunderstorm winds at Mooreville. Trees were blown down also.
Johnson Co.	06	0235 EST	0	0	3	?	Tstm.Wind			Trees and power lines were blown down by thunderstorm winds 1.5 miles north of State Road 44.
Dearborn Co.	06	0315 EST	0	0	4	0	Tstm.Wind			Trees and power lines were blown down in Lawrenceburg.
Ripley Co.	09	1858 EST	0	0	4	0	Tstm.Wind			Trees and power lines were blown down across the county.
Marion Co. Indianapolis	11	1646 EST	0	0	?	?	Hail(.75)			Three-quarter inch diameter hail was reported at 8th and Harcourt in northern Marion County.
Jackson Co. Medora	11	1736 EST	0	0	?	?	Hail(.75)			
Carroll Co. Camden	11	1940 EST	0	0	?	?	Hail(.75)			

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INDIANA									
Tipton Co. Sharpsville	12	1742 EST	0	0	?	?	Hail(.75)		
Putnam Co. Bainbridge	12	1915 EST	0	0	?	?	Hail(.75)		
			Three-quarter inch diameter hail was reported at the intersection of Routes 36 and 231.						
Vigo Co. 10N Terre Haute	15	1502 EST	0	0	?	?	Tstm.Wind		
			Trees were blown down by thunderstorm winds 10 miles north of Terre Haute.						
Parke Co. Clinton	15	1505 EST	0	0	?	?	Tstm.Wind		
			Trees were blown down by thunderstorm winds.						
Shelby Co. 5W Shelbyville	23	0830 EST	0	0	?	?	Flash Flooding		
			Water was over State Road 9 near Norristown and on State Road 144 5 miles west of Shelbyville.						
Owen Co. Coal City	23	1310 EST	0	0	?	?	Hail(.75)		
Owen Co. Coal City	23	1310 EST	0	0	?	?	Tstm.Wind		
			Large trees were blown down by thunderstorm winds along State Road 157 south of Coal City.						
Switzerland Co.	23	1440 EST	0	0	5	0	Tstm.Wind		
			Trees and power lines were blown down in Vevay, and between Vevay and the Markland Dam on Route 350.						
Clinton Co. Frankfort	28	1610 EST	0	0	?	?	Flash Flooding		
			Street flooding occurred in downtown Frankfort. Three inches of rain was reported at Frankfort between 1430 and 1600 EST.						
Ebone Co. Thornton	28	1630 EST	0	0	5	?	Lightning		
			A 250 seat restaurant at the Old Indiana Theme Park was destroyed by fire as a result of a lightning strike. Estimated damage was \$200,000.						
Hamilton Co. Sheridan	28	1642 EST	0	0	?	?	Flash Flooding		
			Street flooding was reported in Sheridan.						
Tiptecanoe Co.	28	1730 EST	0	0	?	?	Flash Flooding		
			State Road 28 was under water and many basements were flooded in southern Tiptecanoe County.						
Tiptecanoe Co.	28	1800 EST	0	0	?	?	Flash Flooding		
			It was reported that water was over State Road 136.						
Fountain Co.	28	2025 EST	0	0	?	?	Flash Flooding		
			Water was reported as being over State Road 136.						
Cass Co. Logansport	21	1005 EST	0	0	?	?	Flash Flooding		
			Street flooding from heavy rains was reported in Logansport.						
White Co. 2N Monticello	31	1058 EST	0	0	?	?	Flash Flooding		
			Street flooding from heavy rains was reported 3 miles north of Monticello.						
INDIANA									
White Co. Monon	31	2107 EST	0	0	3	?	Tstm.Wind		
			Windows were blown out of a house and trees were blown down by thunderstorm winds.						
White Co. Buffalo	31	2131 EST	0	0	?	?	Tstm.Wind		
			Houses were damaged by thunderstorm winds in northern White County.						
Clinton Co.	31	2350 EST	0	0	?	?	Flash Flooding		
			Street flooding occurred in the vicinity of State Roads 26 and 75.						
13 IOWA									
Clinton County, Clinton	03	2131 CST	0	0	4	0	Lightning		
			Lightning struck a garage in Clinton, causing about \$5,000 damage. At the same time, lightning struck a tree, causing it to fall onto two cars and a motorcycle in Clinton.						
Fayette County, Delwain	04	1625 CST	0	0	3	4	Hail (1.00)		
Delaware County	04	1700 to 1800 CST	0	0	4	5	Hail (1.75)		
			There were numerous reports of hail the size of golf balls across the county.						
Delaware County: Delhi	04	1714 CST	0	0	3	4	Hail (1.75)		
Manchester	04	1715 CST	0	0	4	3	Tstm.Winds (50+)		
Earlville	04	1729 CST	0	0	3	4	Hail (1.75)		
Dubuque County: Worthington	04	1755 CST	0	0	0	0	Funnel Cloud		
Farley	04	1800 CST	0	0	4	0	Lightning		
Jackson County, Bellevue	04	1815 CST	0	0	4	3	Tstm.Winds (50+)		
			A cluster of thunderstorms developed over Northeast Iowa. There were many reports of pea to golfball size hail. There were also some gusty winds, but not much in the way of severe wind reports were received. Two semi-trailers were overturned by winds in Manchester. One funnel cloud developed over Dubuque County. Lightning struck and killed nine cattle in a field near Farley. Losses were placed at about \$10,000.						
Howard County, Cresco	04	1914 CST	0	0	4	2	Tstm.Winds (52)		
Winneshiek County: Highlandville	04	1932 CST	0	0	5	3	Tstm.Winds (61)		
Hesper	04	1937 CST	0	0	5	4	Tstm.Winds (65)		
Chickasaw County: 2N Hampton	04	1955 CST	0	0	0	0	Funnel Cloud		
Fredricksburg	04	2005 CST	0	0	4	4	Tstm.Winds (50+)		
Fredricksburg	04	2010 CST	0	0	2	4	Hail (.75)		
Fayette County, West Union	04	2050 CST	0	0	3	2	Tstm.Winds (50+)		
Bremer County, Sumner	04	2145 CST	0	0	3	2	Tstm.Winds (50)		
			A second round of thunderstorms dropped southeast, out of Minnesota, into Iowa. Unlike the first round a few hours earlier, this one featured high winds. There were numerous reports of trees and power lines down. There was some pea to marble size hail. The largest hail was in Chickasaw County, where dime size hail fell near Fredricksburg. One funnel cloud was reported north of New Hampton, in Chickasaw County.						
Mills County, Glenwood	04	2050 CST	0	0	3	1	Tstm.Winds (50+)		
			A severe thunderstorm developed over Southwest Iowa. High winds broke several large tree limbs and caused scattered power outages in Glenwood.						
Woodbury County: Sioux City Airport	05	0544 CST	0	0	3	2	Tstm.Winds (51)		
Sioux City	05	0555 CST	0	0	4	2	Tstm.Winds (50+)		
Sergeant Bluff	05	0600 CST	0	0	3	2	Tstm.Winds (50+)		
Harrison County: Woodbine	05	0558 CST	0	0	5	5	Tstm.Winds		
Little Sioux	05	0620 CST	0	0	4	2	Tstm.Winds (52)		
Little Sioux	05	0620 CST	0	0	4	4	Hail (.75)		
Mondamin	05	0625 CST	0	0	4	3	Tstm.Winds (50+)		
Missouri Valley	05	0628 CST	0	0	4	4	Tstm.Winds (50+)		
Dunlap	05	0630 CST	0	0	4	4	Tstm.Winds (50+)		
Logan	05	0635 CST	0	0	4	4	Tstm.Winds (50+)		
Monona County, Onawa	05	0615 CST	0	0	3	2	Tstm.Winds (60+)		
Pottawattamie County, Council Bluffs	05	0628 to 0640 CST	0	0	4	3	Tstm.Winds (54)		
Humboldt County, Humboldt	05	0630 CST	0	0	3	4	Hail (1.00)		

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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	
IOWA									
Ida County, Battle Creek	05	0640 CST			0	0	3	3	Tstm.Winds (50+)
Shelby County, Harlan	05	0645 CST			0	0	5	4	Tstm.Winds (50+)
Crawford County, Manilla	05	0650 CST			0	0	4	3	Tstm.Winds (52)
Webster County: Gowrie	05	0650 CST			0	0	5	4	Tstm.Winds (61)
Dayton	05	0705 CST			0	0	4	4	Tstm.Winds (50+)
Carroll County, Manning	05	0655 CST			0	0	5	5	Tstm.Winds (70)
Crawford County: 2W Denison	05	0655 CST			0	0	0	0	Funnel Cloud
1E Denison	05	0658 CST			0	0	4	4	Tstm.Winds (50+)
Westside	05	0705 CST			0	0	3	2	Tstm.Winds (52)
Pottawattamie County, Walnut	05	0700 CST			0	0	4	4	Tstm.Winds (50+)
Shelby County, Elk Horn	05	0710 CST			0	0	4	4	Tstm.Winds (50+)
Carroll and Greene Counties	05	0710 to 0745 CST			0	7	5	7	Tstm.Winds (50+)
Damage was widespread in Carroll and Greene counties. Seven injuries were reported in Carroll County. Crop damage was placed around \$10 million as about one-third of the crop was destroyed.									
Carroll County: Breda	05	0710 CST			0	0	5	4	Tstm.Winds (65)
Carroll	05	0712 CST			0	0	5	4	Tstm.Winds (74)
Lidderdale	05	0713 CST			0	0	5	5	Tstm.Winds (70)
Deaham	05	0714 CST			0	0	4	5	Tstm.Winds (70)
Glidden	05	0720 CST			0	0	5	5	Tstm.Winds (74)
Coon Rapids	05	0722 CST			0	0	5	5	Tstm.Winds (70)
Audubon County, Audubon	05	0714 CST			0	0	5	4	Tstm.Winds (60)
Greene County: Jefferson	05	0728 CST			0	0	4	4	Tstm.Winds (89)
Grand Junction	05	0740 CST			0	0	5	5	Tstm.Winds (70)
Dallas County, Perry	05	0741 CST			0	0	4	3	Tstm.Winds (72)
Boone County: Ogden	05	0752 CST			0	0	5	4	Tstm.Winds (61)
Boone	05	0800 CST			0	0	4	5	Tstm.Winds (70)
Dallas County, Woodward	05	0757 CST			0	0	5	4	Tstm.Winds (72)
Story County, Slater	05	0805 CST			0	0	4	4	Tstm.Winds (50+)
Folk County: Urbandale	05	0805 CST			0	0	5	3	Tstm.Winds (61)
Ankeny	05	0809 CST			0	0	4	4	Tstm.Winds (52)
Des Moines Airport	05	0814 CST			0	0	4	3	Tstm.Winds (53)
Story County: countywide	05	0815 CST			0	0	4	4	Tstm.Winds (65)
Ames	05	0823 CST			0	0	3	4	Hail (.88)
Story City	05	0825 CST			0	0	4	4	Tstm.Winds (50+)
Hardin County, Hubbard	05	0840 CST			0	0	5	4	Tstm.Winds (69)
Jasper County: Colfax	05	0840 CST			0	0	5	4	Tstm.Winds (50+)
Prairie City	05	0845 CST			0	0	3	2	Tstm.Winds (52)
Newton	05	0852 CST			0	0	5	4	Tstm.Winds (50+)
Hardin County: countywide	05	0847 CST			0	0	5	4	Tstm.Winds (61)
Eldora	05	0847 CST			0	0	3	0	Lightning
Lightning struck a house in Eldora, causing a minor fire.									
Marion County, Pella	05	0850 CST			0	0	3	2	Tstm.Winds (50+)
Marshall County: Melbourne	05	0855 CST			0	0	4	3	Tstm.Winds (50+)
Marshalltown	05	0915 CST			0	0	4	4	Tstm.Winds (61)
Poweshiek County: Grinnell	05	0902 CST			0	0	5	4	Tstm.Winds (50+)
7-10E Grinnell	05	0907 CST			0	0	4	5	Tstm.Winds (70)
5W Montezuma	05	0910 CST			0	0	3	5	Hail (.88)
Montezuma	05	0915 CST			0	0	5	4	Tstm.Winds (50+)
Tama County: Chelsea	05	0910 CST			0	0	4	3	Tstm.Winds (50+)
Tama	05	0915 CST			0	0	5	4	Tstm.Winds (50+)
IOESE Tama	05	0925 CST			0	0	4	4	Tstm.Winds (57)
Black Hawk County, Cedar Falls	05	0915 CST			0	0	4	4	Tstm.Winds (50+)
Keokuk County: Keswick	05	0919 CST			0	0	5	5	Tstm.Winds (65)
What Cheer	05	0930 CST			0	0	3	2	Tstm.Winds (50+)
Sigourney	05	0930 CST			0	0	5	4	Tstm.Winds (61)
2W South English	05	0935 CST			0	0	4	5	Hail (1.75)
Iowa County, Marengo	05	0930 CST			0	0	4	2	Tstm.Winds (50+)
IOWA									
Benton County: Belle Plaine	05	0932 CST			0	0	4	3	Tstm.Winds (61)
Vinton	05	0940 CST			0	0	4	3	Tstm.Winds (52)
Iowa County, Williamsburg	05	0940 CST			0	2	5	4	Tstm.Winds (50+)
Johnson County: Oxford	05	0955 CST			0	0	4	3	Tstm.Winds (50+)
Linn County: Iowa City Airport	05	1010 CST			0	0	4	3	Tstm.Winds (54)
Linn County: Cedar Rapids	05	1000 CST			0	0	5	4	Tstm.Winds (60)
Central City	05	1005 CST			0	0	5	4	Tstm.Winds (60)
Cedar County: Mechanicsville	05	1015 CST			0	0	4	4	Tstm.Winds (58)
Stamwood	05	1020 CST			0	0	4	3	Tstm.Winds (50+)
Lowden	05	1040 CST			0	0	4	4	Tstm.Winds (59)
Jones County: Anamosa	05	1030 CST			0	0	4	4	Tstm.Winds (50+)
Wyoming	05	1047 CST			0	0	4	4	Tstm.Winds (50+)
Jackson County: countywide	05	1020-1110 CST			0	0	4	4	Tstm.Winds (50+)
Maquoketa	05	1055 CST			0	0	5	5	Tstm.Winds (61)
Bellevue	05	1110 CST			0	0	4	3	Tstm.Winds (50+)
A thunderstorm complex developed over Eastern Nebraska during the early morning hours. It became a Derecho as it swept across Iowa. The main feature with the storm complex was the high winds. Considerable damage to trees, power lines, and buildings was reported in a broad swath extending from West-Central through Central into East-Central Iowa. A funnel cloud was reported west of Denison in Crawford County. The leading edge of the complex produced high winds some 50 to 60 miles ahead of it. Wind gusts of 80 MPH and higher were reported at several locations. Among the hardest hit areas were Greene and Carroll counties. Winds of 85 MPH were observed at the Carroll Airport, with 102 MPH gust recorded at Jefferson. The high wind in Jefferson blew 2x4s through the roof of one building. Over \$200,000 damage occurred to a grain elevator cooperative in Manning. There were 7 people injured in the county. Of the injuries, two were attributed to flying glass as the window of a house blew in near St. Anthony. Four people were injured when their van was rolled and destroyed near Arcadia on U.S. Highway 30. The last injury occurred as a trailer being pulled by a semi was blown into the oncoming traffic near Lidderdale. The crops in the area were completely flattened. In Keokuk County, high winds downed several grain bins near Sigourney. As the storms moved through Iowa County, trees were felled in Marengo and Williamsburg. In Williamsburg, a tree fell on a car, injuring 2 people. Small hail, pea to marble size, was reported at numerous locations. A few areas received dime size and larger hail. The largest hail was golfball size west of South English.									
Pocahontas County: Havelock	13	1358 CST			0	0	3	5	Hail (1.00)
Fonda	13	1456 CST			0	0	4	2	Tstm.Winds (50+)
A line of thunderstorms formed in Northwest Iowa, on the west edge of an outflow boundary caused by earlier showers. Most of the storms produced heavy rains, gusty winds, and some small hail. One of them became severe over Pocahontas County. One-inch diameter hail fell at Havelock, covering the ground. Marble size hail covered the ground 6 miles northeast of Fonda. Considerable crop damage from the hail occurred. About 7 minutes after the hail occurred northeast of Fonda, high winds downed trees in the city of Fonda.									
Wapello County, Ottumwa	14	1330 CST			0	0	4	2	Tstm.Winds (70)
A thunderstorm moved through the Ottumwa area. What was apparently a microburst hit a construction site, toppling a wall of a building.									
Sioux County: 7W Rock Valley	21	1630 CST			0	0	0	0	Funnel Cloud
5W Rock Valley	21	1640 CST			0	0	4	5	Hail (1.75)
6NW Sioux Center	21	1654 CST			0	0	3	3	Tstm.Winds (52)
Sioux Center	21	1705 CST			0	0	4	3	Tstm.Winds (53)
Hospers	21	1715 CST			0	0	4	3	Tstm.Winds (50+)
Lyon County, Inwood	21	1635 CST			0	0	3	0	Lightning
O'Brien County, 9 W Pringhar	21	1740 CST			0	0	4	3	Tstm.Winds (52)
Clay County, 9S Royal	21	1821 CST			0	0	3	5	Hail (1.00)
Thunderstorms moved into Western Iowa. One storm became severe over Northwest Iowa. A funnel cloud was observed in Sioux County just after the storm crossed the Missouri River. There were numerous reports of marble size hail with golfball size west of Rock Valley. Winds of 50 to 60 MPH were common. The storm dropped quarter size and larger hail in southern Clay County before it dissipated. Lightning struck a house in Inwood, putting a hole in the freezer and kitchen cabinets.									
Pottawattamie County, 4S Council Bluffs	21	1755 CST			0	0	0	0	Funnel Cloud
Page County, Essex	21	2300 CST			0	0	4	4	Tstm.Winds (50+)
An area of strong thunderstorms moved into Southwest Iowa. As they did, a funnel cloud as observed south of Council Bluffs. High winds broke a few windows and downed trees and power lines in Essex. Upwards of 5 inches of rain caused local crop damage by erosion.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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	
IOWA										14 KANSAS									
Clayton County, St. Olaf	22	1640 CST			0	0	4	4	Tstm. Winds (50+)	Osborne Co. 7SW Tipton	04	1645CST			0	0	3	3	TSTM Wind
Fayette County, Hawkeye	22	1703 CST			0	0	4	3	Tstm. Winds (50+)	Mitchell Co. Tipton	04	1656CST			0	0	3	3	TSTM Wind (52)
Dubuque County: 15NW Dubuque	22	1820 CST			0	0	4	3	Tstm. Winds (50+)	Beloit	04	1729CST			0	0	3	0	TSTM Wind
Balltown and 3N Dubuque	22	1840 CST			0	0	4	3	Tstm. Winds (57)	Beloit	04	1742CST			0	0	3	0	TSTM Wind
Osceola County, May City	22	2005 CST			0	0	4	5	Hail (1.75)	2E Beloit	04	1745CST			0	0	3	3	TSTM Wind
Bremer County, Tripoli	22	2132 CST			0	0	4	3	Tstm. Winds (50+)	Cloud Co. Jamestown	04	1708CST			0	0	3	3	Hail (.75), TSTM Wind (56)
Delaware County, Manchester	22	2205 CST			0	0	4	3	Tstm. Winds (50+)	Concordia Airport 7E Concordia	04	1825CST			0	0	3	3	TSTM Wind (52)
Fayette County: West Union	22	2230 CST			0	0	4	0	Lightning	Republic Co. 5S Courtland	04	1845CST			0	0	3	3	TSTM Wind (52)
Arlington	22	2310 CST			0	0	5	0	Lightning	Belleville	04	1743CST			0	0	3	3	TSTM Wind (52)
<p>A scattered line of very strong thunderstorms developed across Northern Iowa in advance of a cold front. Scattered reports of severe weather were received. High winds occurred in several counties from north of Waterloo to Dubuque. Golfball size hail fell in Osceola County. Lightning struck a barn in Fayette County, killing 750 hogs. Losses were placed at over \$100,000. Lightning also struck a tree in West Union causing it to fall on a house.</p>										<p>A series of severe thunderstorms developed in extreme eastern Osborne County and moved slowly east and north. Strong straight winds damaged crops and farm homes, uprooted trees and downed power poles.</p>									
Page County, 2 1/2 SE Essex	24	1400 CST			0	0	5	4	Tstm. Winds (50+)	Russell Co. 8W Wilson	04	2145CST			0	0	3	3	Hail (.75)
<p>An isolated thunderstorm developed over Southwest Iowa. High winds caused considerable damage to a farm southeast of Essex.</p>										<p>Bunker Hill</p>									
Carroll County, Coon Rapids	26	1515 CST			0	0	4	2	Tstm. Winds (52)	Ellsworth Co. Wilson	04	2145CST			0	0	3	3	TSTM Wind
Greene and Guthrie Counties, 4N Bagley to Bagley	26	1635 CST			0	0	4	5	Hail (1.75)		04	2150CST			0	0	3	3	Hail (.75)
Polk County, Des Moines	26	1637 CST			0	0	3	0	Lightning	<p>A severe thunderstorm developed east of Russell and moved east into northwest Ellsworth County. The storm dropped 3/4 inch hail and took the roof off a shed near Bunker Hill.</p>									
Guthrie County, Guthrie Center	26	1755 CST			0	0	5	3	Tstm. Winds (50+)	Kearny Co. 1W Lakin	06	1430CST			0	0	3	3	Hail (1.0) TSTM Wind (51)
Madison County: 1S DeSoto	26	1855 CST			0	0	4	2	Tstm. Winds (52)	Grant Co. Ulysses	06	1455CST			0	0	3	0	TSTM Wind (51)
Earlham	26	1855 CST			0	0	4	5	Hail (1.50)	Clark Co. Clark Co. Lake	06	1515CST			0	0	0	0	TSTM Wind (51)
Adams County, Corning	26	2030 CST			0	0	5	3	Tstm. Winds (50+)	Meade Co. Fowler	06	1530CST			0	0	0	0	TSTM Wind (51)
Taylor County, Lenox	26	2050 CST			0	0	4	3	Tstm. Winds	<p>Strong thunderstorms moved northwest to southeast across Southwest Kansas. The storms dropped large hail just west of Lakin and produced wind gusts around 60 mph at Ulysses, Clark County Lake and Fowler.</p>									
Ringgold County: Diagonal	26	2115 CST			0	0	3	4	Hail (1.00)	Sherman Co. 8W Goodland	15	1547CST			0	0	3	4	Hail (1.0)
Mt. Ayr	26	2133 CST			0	0	4	3	Tstm. Winds (52)	10SW Goodland	15	1554CST			0	0	3	4	Hail (1.0)
<p>Thunderstorms developed along a cold front moving through Iowa. A few became severe in West-Central, Central and South-Central Iowa. Trees and power lines were downed in Carroll, Madison, Adams, and Ringgold counties. Spotty wind damage also occurred in Greene and Taylor counties. One to one and one-half inch diameter hail accompanied the storms at Earlham and Diagonal. Marble to golf ball size hail struck parts of Greene and Guthrie counties. Lightning struck a bowling alley 3 times in Des Moines. The lightning strikes caused damage to the roof. A small electrical fire started about 24 hours later as smoldering wires ignited.</p>										<p>A thunderstorm developed just west of Goodland and dumped 1.5 inches of rain and hail 6 inches deep in a small area west and southwest of Goodland. Severe crop damage resulted.</p>									
Wayne County, Allerton	31	0500 CST			0	0	4	4	Tstm. Winds (50+)	Anderson Co. Garnett	16	0130CST			0	0	5	0	Lightning
Wapello County, Ottumwa	31	0729 CST			0	0	3	2	Tstm. Winds (50)	<p>Lightning struck the television antenna and set fire to a home in Garnett. The home and its contents were a total loss.</p>									
<p>A band of thunderstorms swept across Iowa during the morning hours. Only two or three of them became severe. The first severe storm moved through the Allerton area. Winds caused damage in the city itself, with winds and small hail affecting the surrounding countryside. The second severe storm passed over the Ottumwa area, packing winds of 58 MPH.</p>										<p>Thunderstorms produced wind gusts 60 to 70 miles an hour at Goodland and dropped one-inch hail at Kanorado.</p>									
All of Iowa	01-22				0	0	0	8	Drought	Crawford Co. Pittsburg	19	1836CST			0	0	0	0	Funnel
<p>Persistent drought conditions continued to take their toll on the corn and soybean crops. The extremely dry conditions broke on the 23rd, but not before an additional \$50-\$60 million loss occurred to both the corn crop and the soybean crop.</p>										<p>A sheriff's deputy sighted a funnel cloud just east of Pittsburg.</p>									
										Finney Co. Kalvesta	19	2245CST			0	0	0	0	TSTM Wind (51)
										Stanton Co. Manter	19	2335CST			0	0	0	4	Hail (1.0)
										Morton Co. Richfield	20	0015CST			0	0	0	4	Hail (1.5)
										Stevens Co. 7W Hugoton	20	0030CST			0	0	0	4	Hail (1.0)
										Haskell Co. 13N Satanta	20	0135CST			0	0	0	0	TSTM Wind (51)
										Seward Co. 8N Liberal	20	0200CST			0	0	0	3	Hail (1.0)
										<p>Thunderstorms dropped large hail at Manter, Richfield and 8 miles north of Liberal. Thunderstorm winds estimated around 60 mph hit Kalvesta and north of Satanta. The storms also produced heavy rainfall in some areas that resulted in minor flooding.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS	
— KANSAS										— KANSAS									
Reno Co. Hutchinson Hutchinson Buhler	20	0246CST			0	0	0	0	Hail (.75)	Osborne Co. 16S & 3W Osborne	21	1826CST			0	0	3	3	Hail (.75)
	20	0330CST			0	0	0	0	Hail (.75)	Mitchell Co. SE Tipton	21	1830CST			0	0	3	3	Hail (.75)
	20	0340CST			0	0	2	0	TSTM Wind	Russell Co. 10N Russell 10NE Russell NW side of Wilson Lake	21	1858CST			0	0	3	4	Hail (1.75)
A line of severe thunderstorms developed rapidly across northern Reno County. The storms dropped dime size hail on several locations in Hutchinson and produced wind gusts that broke 5 to 6 inch tree limbs at Buhler.										21	1920CST			0	0	3	3	Hail (1.75)	
										21	1953CST			0	0	3	3	TSTM Wind (61)	
Cowley Co. Winfield Dexter	20	0600CST			0	0	4	0	Lightning	Lake 6S Wilson Lake Wilson Dam	21	2002CST			0	0	3	3	Hail (.75)
	20	0700CST			0	0	4	0	Lightning	21	2005CST			0	0	3	3	TSTM Wind (78)	
Lightning struck a small grocery store in Winfield, causing a fire that resulted in considerable damage. A lightning-set fire also destroyed a home in Dexter.										21	2020CST			0	0	4	3	TSTM Wind (91)	
										21	2025CST			0	0	3	3	TSTM Wind (52)	
Harvey Co. Newton	20	0800CST			0	0	4	0	Lightning	Linn Co. 3W Sylvan Grove Ellsworth Co. 5N Black Wolf	21	2100CST			0	0	3	3	TSTM Wind (52)
Lightning set fire to the roof and attic of a home in Newton.										A severe thunderstorm developed in southern Osborne County and moved slowly southeast into Ellsworth County and dissipated. The storm dropped large hail up to golfball size, and produced a wind gust stronger than 100 mph at Wilson Dam. The gust recorder at Wilson Dam only reads to 100 mph. One camper was overturned at Wilson Lake.									
Wyandotte Co. Kansas City	20	1000CST			0	0	5	0	Lightning	Rice Co. near Chase	22	0430CST			2	0	5	0	Lightning
Lightning set fire to a large stack of railroad ties. More than 30,000 ties burned.										Lightning set fire to a rural farm home near Chase. Two people died in the fire that destroyed the home. MSOP, F48P									
Sumner Co. 2W Belle Plaine Cowley Co. 2.5SW Burden	20	1830CST			0	0	4	0	TSTM Wind	Marion Co. Goessel Marion	22	1941CST			0	0	0	2	Hail (1.0)
	20	1915-1930CST	0.1	50	0	0	2	0	Tornado (FO)	22	2035CST			0	0	2	0	TSTM Wind (54)	
A large cluster of thunderstorms moved northeast out of Oklahoma and produced wind gusts that took the roof from one mobile home and twisted another on its foundation just west of Belle Plaine. A funnel was seen southwest of Burden. It moved northeast and touched ground briefly on the east edge of Burden at about 1930CST, where it uprooted several trees.										A thunderstorm dropped 1 inch hail and more than 2 inches of rain in a 20 minute period at Goessel. The storm moved northeast and produced 65mph wind gusts at Marion.									
Butler Co. 7NW Douglas	20	1930CST			0	0	0	0	Funnel	Sedgwick Co. Haysville	22	2040CST			0	0	3	0	TSTM Wind
A funnel was seen 7 miles north and 3 miles west of Douglas.										Thunderstorm wind gusts broke 6-inch diameter limbs from trees in Haysville. The canopy of a drive-in restaurant was blown down, and a large trash dumpster was blown into an automobile.									
Decatur Co. Jennings Norton Co. New Alamo	20	1930CST			0	0	3	4	Hail (2.0)	Chase Co. 4S Cottonwood Falls	23	0430CST			2	0	4	0	Lightning
	20	2000CST			0	0	3	4	Hail (1.75)	Lightning caused a fire that totally destroyed a house 4 miles south of Cottonwood Falls. A man and his wife were killed in the fire. MSOP, F??P									
Thunderstorms dropped hail the size of golfballs or a little larger that battered gardens, stripped milo stalks and broke windows from homes around Jennings and New Alamo. Hail piled up in 2 foot deep drifts on the north side of some buildings in New Alamo.																			
										Miami Co. Paola	21	0030CST			0	0	4	0	TSTM Wind
Thunderstorm winds took the roof from a mobile home in Paola.										Thunderstorm winds laid down a path of damage from 8 miles northwest of Ellis to 8 miles southeast of the town. The wind ripped the roof from the Ellis High School gymnasium, and damaged many homes in Ellis. Outbuildings at several farms southeast and northwest of town were damaged or destroyed. Lightning set fire to an oil tank battery northwest of town.									
Republic Co. Munden Narka	21	1548CST			0	0	3	3	Hail (.75)	Harvey Co. 5W Hesston	24	2155CST			0	0	0	2	Hail (1.75)
	21	1555CST			0	0	3	3	Hail (.75)	A thunderstorm dropped golfball size hail 5 miles west of Hesston.									
A severe thunderstorm developed in northeast Republic County and moved northeast into Nebraska. The storm dropped large hail across the northeast part of Republic County.																			
										Osborne Co. 1E Natoma	21	1717CST			0	0	0	0	Funnel
A funnel was sighted one mile east of Natoma.										Thunderstorm winds knocked down a brick wall and roof of a car wash. Debris collapsed on an automobile inside the car wash. Two people in the car suffered minor injuries.									
Osborne Co. 3E Natoma	21	1725CST	Short Narrow	0	0	0	0	0	Tornado (FO)	Lyon Co. 10SW Emporia Lyon Co. Emporia	25	1725CST			0	0	0	0	Funnel
A tornado touched down briefly in an open field three miles east of Natoma. No damage resulted.										A torrential downpour lasted less than an hour but runoff flooded several streets in Emporia. The airport measured 3.05 inches of rain, and amounts across the city varied from just over an inch on the east side of town to around 6 inches on the west side. Most of the flooding occurred on the northwest side of town. A funnel was sighted southwest of town, but it did not touch ground. Thunderstorm winds ripped the roof from a mobile home just west of Emporia.									
Woodson Co. 4SE Yates Center Wilson Co. 5W Altoona	21	1800CST			0	0	4	0	TSTM Wind	25	1730-2000CST			0	0	4	0	Flash Flood	
	21	1800CST			0	0	3	0	TSTM Wind	25	1740CST			0	0	4	0	TSTM Wind	
A short line of severe thunderstorms destroyed one barn, damaged three others and took the roof off a farmhouse southeast of Yates Center. Windows were blown out of Altoona-Midway High School, as well as several school buses and a pickup in the school parking lot. The pickup was blown across the road into a ditch.										A short line of severe thunderstorms destroyed one barn, damaged three others and took the roof off a farmhouse southeast of Yates Center. Windows were blown out of Altoona-Midway High School, as well as several school buses and a pickup in the school parking lot. The pickup was blown across the road into a ditch.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
— KANSAS —									
Osage Co. Lake Melvern Dam	25	1914CST			0	0	3	0	TSTM Wind (61) A thunderstorm wind gust was measured at 70 mph at the dam at Lake Melvern.
Barton Co. 19NE Great Bend Ellsworth Co. 1W Holyrood	26	1723CST			0	0	3	3	Hail (1.0) A severe thunderstorm dropped large hail across northeast Barton and southwest Ellsworth Counties.
Republic Co. 4S Belleville Scandia	27	1227CST			0	0	4	3	Hail (2.75) 27 1300CST 0 0 3 3 Hail (1.0) A severe thunderstorm dropped large hail across parts of Republic County.
Russell Co. Milberger	27	1520CST			0	0	5	0	Lightning Lightning hit a building that housed a farm implement dealership. The resulting fire destroyed the building and its contents.
Ford Co. Bellefont	27	1600CST			0	1	4	0	TSTM Wind Thunderstorm winds destroyed a mobile home and injured a person inside it at Bellefont.
Reno Co. Buhler Harvey Co. Hesston	27	1900CST			0	0	0	2	Hail (1.75) 27 1950CST 0 0 3 0 TSTM Wind Thunderstorms dropped golfball size hail at Buhler, and produced winds that knocked down 6 power poles just west of Hesston.
Wyandotte Co. Kansas City	28	1544CST			0	1	2	0	Lightning A 29 year old construction worker was struck by lightning while operating a crane in the northwest part of Kansas City. The man suffered minor injuries.
Elk Co. Grenola 5N Howard	28	1712CST			0	0	0	0	Hail (.75) 28 1720CST 0 0 0 0 Hail (.75) A thunderstorm dropped hailstones the size of dimes at Grenola and along Highway 99 north of Howard.
Pratt Co. Pratt	28	1715CST			0	0	3	0	TSTM Wind Thunderstorm winds caused considerable tree damage in Pratt.
Harvey Co. Newton Newton	28	2055CST			0	0	3	0	TSTM Wind 28 2100CST 0 1 3 0 TSTM Wind Thunderstorm winds destroyed a small building and damaged the roof of an adjacent business in Newton. An elderly Newton man was injured when his pickup truck was blown off the road into a rain-swollen stream. The man was rescued by a young man who carried him to safety.
Washington Co. Hanover	28- 29	2200- 0000CST			0	0	3	3	Flash Flood Heavy downpours in northeast Washington County caused flash flooding. Water covered several county roads for about two hours.
Allen Co. Iola	29	0800CST			0	0	5	0	Lightning A lightning-set fire destroyed a two-story building in Iola.
Meade Co. 10W Englewood Comanche Co. Protection	30	1730CST			0	0	0	0	TSTM Wind (51) 30 1820CST 0 0 4 4 Hail (.75) TSTM Wind (51) Thunderstorms moved out of the Oklahoma Panhandle into Southwest Kansas and produced wind gusts estimated at 60 mph west of Englewood and at Protection. Three-quarter inch hail also fell at Protection.
									SPECIAL HAIL SUMMARY
									Kansas-Oklahoma Hail Loss Service reports indicate hail was especially damaging to crops in the listed counties on the following dates:
	06	Grant, Stanton							
	18	Thomas							
	24	Sheridan							
	27	Republic							
15 KENTUCKY									
Whitley Co.	01	1330EST			1	0	0	0	Lightning James Auther Tye, age 11, was struck and killed by lightning at Silver Pond.
Payette Co.	01	1720EST			1	0	0	0	Lightning A 16 year old girl from Lexington, Casey Sandford, was struck and killed by lightning while raking leaves in her yard.
Washington Co.	05	0835EST			1	0	0	0	Lightning Forty-six year old Lillian Walton, of Willisburg, was struck and killed by lightning while trying to cover articles on a clothesline.
Kenton County	05	1730EST			0	0	5	0	Thunderstorm Wind Trees were downed by thunderstorm winds in several locations across the county. A roof was blown off of a house in Fort Mitchell.
Gallatin Co.	05	1730EST			0	0	4	0	Thunderstorm Wind A large barn at a nursery was leveled as strong thunderstorm winds blew through Warsaw. In addition a wall and part of the roof of a boat barn were blown away. Trees and limbs blocked many streets throughout the city, and an uprooted tree damaged two house trailers.
Henry Co.	05	1845EST			0	0	4	0	Thunderstorm Wind Strong thunderstorm winds ripped through the Sulphur-Sligo areas, downing power lines and uprooting trees. One large maple tree in Sulphur crushed two parked vehicles as it was blown over. In Sligo, a porch of an old mill was blown over.
Shelby Co.	05	1915EST			0	0	3	5	Thunderstorm Wind A strong thunderstorm damaged tobacco crops, barns, outbuildings, and trees as it moved across the northern part of the county. In one area a metal calf building was toppled and several large trees uprooted. The county extension agent estimated 150 to 200 acres of tobacco were damaged, destroying about \$200,000 worth of plants.
Franklin Co.	05	1945EST			0	0	3	2	Thunderstorm Wind Thunderstorm winds uprooted numerous large trees near the Anderson County border. In addition several road signs were damaged.
Woodford Co.	05	2011EST			0	0	4	4	Thunderstorm Wind The eastern part of the county was hardest hit as trees were knocked across roads, through fences and into power lines. In addition a 9 acre field of tobacco was destroyed. The tobacco loss was estimated at approximately \$40.00.
Elliott Co.	05	2020EST			0	0	4	2	Thunderstorm Wind Strong thunderstorm winds peeled the roof off a trailer located 8 miles west of Sandy Hook. The wind blew the roof about 50 yards east of the house. At approximately the same time a garage of a neighbor was moved 10 feet off its foundation. Also a satellite dish was lifted out of the ground and a tree was knocked into a house.
Jessamine Co.	05	2040EST			0	0	4	3	Thunderstorm Wind Strong thunderstorm winds blowing through the county uprooted several large trees and downed utility lines. One large oak tree fell on a late model van and several cars in a car lot were also damaged.
Floyd Co.	05	2045EST			0	1	3	2	Thunderstorm Wind Strong thunderstorm winds moving through the area blew shingles off a house and tree limbs down in Prestonsburg. In Minnie, three buildings were damaged by high wind and one woman was injured by flying glass.
Pike Co.	05	2105EST			0	0	2	2	Thunderstorm Wind Numerous trees and power lines were reported down throughout the county as strong thunderstorms moved through the area.
Christian Co. 5 S Hopkinsville	06	0810CST			0	0	3	0	Thunderstorm Wind Thunderstorm winds downed power lines.
Pulaski Co.	17	1830EST			0	0	0	3	Hail (1.00) Hail damaged tobacco crops 10 miles south of Nancy. Eight to ten acres of tobacco were damaged.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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 ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

KENTUCKY

Scott Co.	17	1900EST			0	0	5	4	Thunderstorm Wind Hail
Thunderstorm winds gusting to greater than 70 mph pounded a small area of Scott County just north of Stamping Ground. Strong winds knocked down trees, flipped a mobile home, tossed branches onto power lines and ripped roofs off two barns. One barn collapsed. Hail destroyed several acres of tobacco crops in the area also.									
Floyd Co.	18	0600EST			0	0	4	3	Flash Flood
Nearly two and one-half inches of rain in a short period of time fell over the county. Water covered city streets in Prestonsburg and many downtown businesses had water in them.									
Knox Co.	18	2100EST			0	0	2	2	Hail (1.00)
Spencer Co.	23	1200EST			0	0	3	0	Thunderstorm Wind
Thunderstorm winds overturned an aluminum shed in the community of Taylorsville.									
Graves Co.	23	1235CST			0	0	2	1	Thunderstorm Wind
Trees and power lines were reported down in the city of Mayfield.									
Gallatin Co.	23	1450EST			0	0	3	0	Thunderstorm Wind
Strong thunderstorm winds blew down trees and power lines along U.S. 42 between Ghent and Markland Dam.									
Knox Co.	23	1815-2110EST			0	0	5	3	Flash Flood
Heavy rain produced flash flooding in Big Creek and Stinking Creek, 40 miles north of Middlesboro. Stinking Creek Volunteer Fire Department reported water levels of 12 to 14 feet above bank full. Some small bridges were washed out in Walker and one rescue vehicle was trapped by high water.									
Barren Co.	24	0730CST			0	0	2	1	Flash Flood
Repeating thunderstorms flooded streets and low-lying areas. Highway 90 and Pecerscreek Road were both closed due to high water.									
Monroe Co.	24	0730CST			0	0	2	1	Flash Flood
Torrential rains flooded numerous streets and roads throughout the county. Four inches of rain were received at Jefferey and Gamaliel, and amounts in excess of five inches fell over Tompkinsville. Roads closed included Highway 100 west and Highway 63 east.									
Fulton Co.	29	1300CST			0	0	3	2	Thunderstorm Wind
Heavy rain and strong winds caused power outages and damaged property, mainly in the northwest section of the county. The Riceville area was one of the hardest hit areas, with trees knocked down and limbs and other debris strewn throughout the area.									
Robertson Co.	29	1300EST			0	0	4	3	Thunderstorm Wind
Strong winds nearly destroyed a 12-vent barn 3 miles from Mt. Olivet. Over \$15,000 in damage was done to the barn and tobacco.									
Owen Co.	29	1350EST			0	0	2	1	Thunderstorm Wind
Strong winds uprooted trees and broke large tree limbs at Perry Park, 7 miles west of Owenton.									
Boone Co.	29	2015EST			0	0	3	0	Thunderstorm Wind
Strong winds downed power lines in Constance along Rt. 8. Also numerous trees were blown down in Burlington and Hebron.									
Bell Co.	30	0515-0915EST			0	0	4	3	Flash Flood
Over three inches of rain in an hour produced flash flooding throughout the county. A bridge at Mill Creek was washed out and several families were stranded by high water at Old Jenson Road at York Branch.									
Caddo Parish, Rodessa	06	2010CST			0	0	0	0	Hail (0.88)
Severe thunderstorms over northeast Texas moved into the extreme northwest corner of Caddo Parish and produced hail at Rodessa.									
Acadia Parish, Crowley	07	1330CST	0.2	30	0	0	4	0	Tornado (F1)
Crowley	07	1330CST			0	0	3	0	TSTM Wind
A severe thunderstorm spawned a tornado which tore a portion of the roof and siding off of a shopping center in Crowley. Strong winds associated with the thunderstorm also ripped large branches from trees which downed power lines.									

16 LOUISIANA

Livingston Parish, Watson	07	1515CST			0	0	4	0	TSTM Wind
An apparent thunderstorm downburst wind knocked down several large trees and ripped numerous large branches from trees along Louisiana Highway 16 in the vicinity of Watson. A car was heavily damaged by the falling branches, and the highway was blocked by debris for several hours.									
Livingston Parish, Killian	27	1710CST			2	0	0	0	Lightning
Lightning struck a boat in the Tickfaw River, knocking two of the four occupants into the river. One of the victims was pulled from the river unconscious and responded to CPR treatment, but died the following day. The other victim's body was not recovered until the following day. Drowning was listed as the cause of death in both instances, though the lightning strike precipitated the drownings. The two other boat occupants were not injured. F180, M190									
Terrebonne Parish, Schriever	27	1930CST			0	0	5	0	Lightning
A fire, started by a lightning strike, caused \$80,000 damage to a large house.									
Livingston Parish, Springfield	28	1515CST			1	0	0	0	Lightning
Lightning struck a trailer, or one of the electrical wires, leading into the trailer, and electrocuted a man leaning against one of the metal walls. Investigators found the electrical system not grounded. M220									
Rapides Parish, England AFB (AEX)	28	1655CST			0	0	?	?	TSTM Wind (50)
Bienville Parish, Roy	28	1845CST			0	0	?	?	TSTM Wind
Natchitoches Parish, 2 NE Campti	28	1845CST			0	0	?	?	TSTM Wind
2 NE Robeline	28	1900CST			0	0	?	?	TSTM Wind
Caddo Parish, Shreveport	28	1920CST			0	0	?	?	TSTM Wind
Bianchard	28	1927CST			0	0	?	?	Hail (0.88)
Red River Parish, Cross Roads	28	1920CST			0	0	?	?	TSTM Wind
Caddo Parish, Shreveport	28	2000CST			0	0	?	?	TSTM Wind
Wind damage was reported from scattered locations in northwest and central Louisiana as intense thunderstorms developed in the late afternoon and early evening. Most of the damage was confined to downed trees. England Air Force Base near Alexandria reported wind gusts to over 55 mph, and in Shreveport, several cars were pushed off a highway by wind gusts around 2000CST.									

17 MAINE

Penobscot Co.	07	1630EST			0	1	3	0	Lightning
Lightning struck a home in the town of Veazie late in the afternoon causing damage to portions of the interior of the house. The same bolt struck an elderly woman in the house causing injury to the head area. The injury was not life threatening and she recovered rapidly.									
	21	1530EST-1545EST			0	0	4	0	Thunderstorm Winds
In East Corinth and Hudson winds estimated 70-80 mph took trees and power lines down. The heaviest hit areas were on Marsh Road and Smith Road near Little Pushaw Pond and along Route 221.									
	21	1545EST-1600EST			0	0	4	0	Thunderstorm Winds
In Kenduskeag, Levant, and Glenburn trees, branches, and power lines blew down.									
	21	1600EST-1615EST			0	0	4	0	Thunderstorm Winds
In Alton, Old Town, Milford, Hermon, Bangor, and Orono trees, large branches, and power lines downed by the wind from passing thunderstorms.									
	21	1610EST			0	0	1	0	Hail (0.75)
In Old Town dime size (3/4 inch) hail fell.									
	21	1615EST-1630EST			0	0	4	0	Thunderstorm Winds
In Hampden, Brewer, Eddington, Bradley, Veazie, Orrington, Holden, and Clifton trees, branches, and power lines were blown down.									
Kennebec Co.	21	1618EST			0	0	3	0	Thunderstorm Winds
In Gardiner trees were blown down by a thunderstorm.									
	30	1358EST			0	0	3	0	Thunderstorm Winds
At Rome Corner trees and wires were blown down on route 27.									
	30	1415EST			0	0	3	0	Thunderstorm Winds
In Oakland trees were blown down on the Belgrade Road.									

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					KILLED	INJURED	PROPERTY	CROPS	
17 MAINE									
	30	1418EST			0	0	4	0	Hail (0.75)
		In Belgrade dime size (3/4 inch) hail fell.							
	30	1425EST			0	0	4	0	Thunderstorm Winds Hail (0.75)
		In Sidney trees were blown down and dime size (3/4 inch) hail fell on the Middle Road. Power lines were blown down on a school bus on the Pond Road.							
	30	1435EST			0	0	1	0	Hail (1.0)
		In China nickel size (once inch) hail fell.							
Lincoln Co.	30	1515EST			0	0	3	0	Thunderstorm Winds
		In Waldoboro utility poles and power lines were downed by thunderstorm winds on route 235.							
18 MARYLAND and D.C.									
MD2001 Lower Eastern Shore	18	2100EST			0	0	?	?	Heavy Rain
		Rain began Friday evening and continued on and off until 0300 EST Saturday the 19th. Worcester and Wicomico counties received the most damage. Eight to 10 inches of rain was reported. Nearly 46 roads were closed and 25 bridges were closed or washed out. The Pocomoke River crested at 6 feet above bankfull at 1130 EST on the 19th. A sewage treatment plant in Snow Hill was swamped. Nearly 500,000 chickens were killed by rising waters.							
Anne Arundel Co.	28	2300EST			0	0	?	?	Flash Flood
		Nearly 2.5 inches of rain fell over the north portions of the county in just over 2 hours. Several roads were flooded, as were 15 to 20 basements. There were also several auto accidents.							
19 MASSACHUSETTS									
Suffolk County Boston	02	1530-1600EST			0	0	3	0	TSTM Winds (52)
		A thunderstorm formed near Boston, then crept slowly southeastward over Boston Harbor. Winds at Logan Airport gusted to 52 knots at 4:50 PM EDT. A number of sailboats were overturned in the Harbor and the Coast Guard rescued several from the water.							
Norfolk County Quincy and Squantum	02	1600-1630EST			0	0	3	0	TSTM Winds (50)
		A thunderstorm moved southeast along the coast, knocking down trees and causing scattered power outages. Small hail was reported at Squantum.							
Franklin County Gill, Turners Falls, and Millers Falls	06	1415-1440EST			0	0	5	0	TSTM Winds (70)
		A severe thunderstorm moved eastward through northern Franklin County with strong winds knocking down trees and power lines. The area that bore the brunt of the damage included the communities of Gill, Turners Falls and Millers Falls. Up to 2500 customers lost electric power.							
Franklin County Gill	06	1430EST			0	0	0	0	Hail (0.75)
		Hail up to the size of a penny was reported.							
Worcester County West Brookfield	06	1519EST			0	0	4	0	TSTM Winds (50)
		Strong thunderstorm winds blew down trees and knocked power out in the West Brookfield area.							
Middlesex County Burlington	06	1710EST			0	0	0	0	Hail (0.75)
		Dime size hail was reported.							
Middlesex County Newton	06	1715EST			0	1	0	0	Lightning
		A jogger was hit by lightning and knocked unconscious. His life was saved when he was resuscitated by a passerby.							
Berkshire County Pittsfield	06	1717EST			0	0	4	0	TSTM Winds (50+)
		Several trees and limbs were blown down by strong thunderstorm winds.							
Berkshire County West Stockbridge	06	1717EST			0	0	3	0	TSTM Winds (50)
		Trees and limbs were blown down by strong thunderstorm winds.							
Franklin County Shelburne Falls	06	1747-1755EST			0	0	3	0	TSTM Winds (50)
		Strong thunderstorm winds downed trees and limbs in the area.							
MASSACHUSETTS									
Worcester County Hubbardston	06	1810-1820EST			0	0	3	0	TSTM Winds (50)
		Trees and limbs were knocked down by strong thunderstorm winds.							
Worcester County Barre	06	1910-1930EST			0	0	3	0	TSTM Winds (50)
		Trees and limbs were blown down by strong thunderstorm winds in Barre.							
Bristol County Taunton and Berkley	07	1525-1545EST			0	0	5	0	TSTM Winds (55)
		Up to 3000 electric customers lost power when a severe thunderstorm with wind gusts reported at near 65 mph passed through the Taunton and Berkley areas. Heavy rains flooded streets and low-lying areas.							
MA2002-004-005-007	11-13				0	0	5	0	Heavy Rain
		Five to eight inches of rain fell over much of the state during this three day period from the 11th through the 13th. On the 13th, many locations had more-or-less continuous thunderstorms lasting up to 12 hours from pre-dawn to the late afternoon. The maximum precipitation was 7.24 inches at Mansfield, and 4.62 inches was recorded at Worcester. In Western Massachusetts, Chicopee and Sunderland both reported 4.9 inches. Buildings were evacuated and basements were flooded due to high water. Several motorists were rescued from stalled autos in flooded streets and underpasses. Also, scattered power outages occurred.							
20 MICHIGAN									
Alger County Grand Marais	02	0430EST			0	0	0	?	TSTM Wind
		Several large limbs were blown down.							
Muskegon County Fruitport	04	0115EST			0	0	5	?	Lightning
		Three buildings were set afire by lightning strikes.							
Allegan County Wayland	04	0130EST			0	0	0	?	TSTM Wind
St. Joseph County Sturgis	04	0230EST			0	0	0	?	TSTM Wind
		Several trees were blown down.							
Wayne County Canton	04	1045EST			0	2	5	?	TSTM Wind
		Two workmen were injured when a building under construction was blown down.							
Oscego County Gaylord	04	1945EST			0	0	0	?	TSTM Wind
		Several trees were blown down.							
Manistee County	04	2245EST			0	0	2	?	TSTM Wind
Mason County	04	2300EST			0	0	0	?	TSTM Wind
Oceana and northern Muskegon Counties	05	0000EST			0	0	0	?	TSTM Wind
Oceana County	05	0000EST			0	0	0	?	Hail (0.75)
Montcalm County Lakeview and Trufant	05	0045EST			0	0	3	?	TSTM Wind
Allegan County	05	0110EST			0	0	4	?	TSTM Wind
Van Buren County South Haven	05	0115EST			0	4	5	?	TSTM Wind (62)
Berrien County Coloma	05	0125EST			0	0	0	?	Hail (0.75)
Berrien County St. Joseph	05	0155EST			0	0	4	?	TSTM Wind (55)
Kalamazoo County	05	0200EST			0	0	4	?	TSTM Wind
Calhoun County ION Albion	05	0215EST	1.5	100	0	0	5	?	Tornado (F1)
Cass County	05	0215EST			0	0	2	?	TSTM Wind
St. Joseph County	05	0217EST			1	0	4	?	TSTM Wind
Branch County Union City	05	0225EST			0	0	2	?	TSTM Wind
		A tornado touched down on Duck Lake and damaged property along the east shore. Residents heard a loud roaring noise. A barn was blown off its foundation, a house was unroofed, and several large trees were blown down. A pontoon boat collided with a tree 20 feet above the ground. Elsewhere, many trees were blown down and there was minor damage done to several structures by thunderstorm winds. Damage was heaviest in South Haven where four persons were hurt slightly by flying debris. A man was electrocuted by a fallen live wire during cleanup operations in Allegan County. A motorcyclist was killed by a falling tree in Sturgis. MJOV.							

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					KILLED	INJURED	PROPERTY	CROPS	
— MICHIGAN —									
Chippewa County 2NW Bay Mills	05	1610EST			0	0	0	?	Hail (2.50)
Washtenaw County Ann Arbor	10	1750EST			1	3	0	?	Lightning Soccer players took refuge from the rain under a tree. Four were hospitalized with injuries after lightning struck the tree. One of the men later died. M300.
Oakland County Rochester Hills	11	1730EST			0	1	0	?	Lightning A man was slightly injured by lightning while he was using a telephone.
Southern Saginaw Bay	11	0948EST			0	0	0	0	Waterspouts At least two separate waterspouts were seen.
Chippewa County Sault Ste. Marie	11	1440EST			0	0	0	?	Hail (1.25)
Ingham County Lansing	12	2205EST			0	0	0	?	Hail (1.00)
Kent County Cascade	14	1407EST			0	0	4	?	TSTM Wind (54) Many trees were blown down. Several houses were slightly damaged.
Crawford County Camp Grayling	14	1800EST			0	1	0	?	Lightning A man on sentry duty was struck by lightning.
Lapeer County 45W Lapeer	14	evening			0	0	3	?	TSTM Wind Several trees were blown down along the north shore of Lake Nepesing.
Kent County Wyoming	21	0615EST			0	0	4	?	Lightning A house was set afire by a lightning strike.
Charlevoix County 3ESE East Jordan	21	0910EST	0.8	50	0	0	2	?	Tornado (F0) A small boat and the roof of a shed were lifted and blown considerable distances to the east-southeast. The tornado's condensation funnel was seen to have touched down at this time.
21 MINNESOTA									
Kittson County Donaldson to Pelan	03	1600- 1650CST			0	0	4	4	Hail (1.00) Some farms reported nearly 100% damage to crops across portions of southeastern Kittson County.
Roseau County Greenbush to Roseau	03	1610- 1730CST			0	0	3	4	Wind (65) Severe thunderstorms moved east-northeast along Highway 11 east of Pelan to Greenbush and on to Roseau, causing considerable property damage. Almost every farm along the storm track reported some damage, pole sheds and barns being especially devastated. Downed power lines resulted in a loss of power to nearly 99% of Roseau between 1615 and 1700 CST. Also, widespread hail caused up to 50% crop losses over several townships in southwestern Roseau County.
Pennington County 25N Thief River Falls	03	1731CST			0	0	?	?	Hail (1.50) Hail was reported as approaching the size of golf balls.
Lake of the Woods Co. Baudette	03	1820CST			0	0	?	0	Wind (74) Some tree and power line damage occurred.
Beltrami County Ponemah (34N Bemidji)	03	1832CST			0	0	0	0	Hail (0.75)
Koochiching County Ray (20SE Inter- national Falls)	03	1930CST			0	0	?	0	Wind A barn was blown down by strong winds.
Northern St. Louis County Lake Kabetogama area	03	1940CST			0	3	4	0	Wind (est. 65) Hail (4.50) Large hail damaged boats and vehicles at several local resorts. Also, some windows were broken and there were reports of several individuals receiving injuries after being caught out in the hail. Wind downed many trees and capsized some boats.
St. Louis County 12SW Cook	03	2100- 2200CST			0	0	0	0	Funnel Clouds Wind Hail (1.75) Several funnel clouds were reported south and southwest of Cook. Winds were estimated at 65 mph. The storm felled many trees and power lines.
St. Louis County Lake Vermillion, Oak Narrows area	03	2210CST			0	0	?	0	Lightning Lightning struck a cabin which resulted in extensive fire damage.
— MINNESOTA —									
Cass County Gull Lake	04	0033CST			0	0	?	?	Thunderstorm Wind Wind damage was done to resorts on Gull Lake on Bar Harbor. Also, there were unconfirmed reports of a funnel cloud.
Kanabec County near Woodland	04	0115CST			0	0	?	0	Thunderstorm Wind Trees were downed along Highway 65 in northern Kanabec County.
Olmstead County 9W Rochester	04	1535CST			0	0	?	?	Hail (1.00)
Steele County Owatonna	04	1603CST			0	0	?	?	Hail (1.75)
Winona County Leviston (30E Rochester)	04	1610CST			0	0	0	0	Thunderstorm Wind (52)
Wabasha County Millville	04	1615CST			0	0	?	?	Hail (1.00) Area crops were stripped by hail.
Dodge County Claremont	04	1615CST			0	0	?	?	Hail (2.50) Corn was stripped and other massive crop damage was done by hail of golfball size and larger in and around Claremont. A farmer reported hailstones of up to 2.5 inches in diameter 3 miles north-east of Claremont.
Olmstead County 7NE Rochester	04	1618- 1625CST			0	0	?	?	Thunderstorm Wind Hail (1.00) There were numerous reports of hail 1/2 to 1 inch in diameter, and wind damage was done to trees and power lines.
Fillmore County Rushford (26W LaCrosse)	04	1634CST			0	0	?	?	Hail (1.75)
Olmstead County 2W Byron (11W Rochester)	04	1635CST			0	0	?	?	Hail (1.00)
Olmstead County Rochester	04	1708CST			0	0	?	?	Lightning Hail (0.75) Generally minor damage occurred in and around Rochester. Lightning strikes disrupted power to 3,000 customers and damaged two homes, one of which started on fire.
Winona County Leviston (13SW Winona)	04	1710CST			0	0	0	0	Thunderstorm Wind (52)
Waseca County Waseca	04	1718CST			0	0	?	?	Hail (1.00)
Olmstead County Rochester	04	1718CST			0	0	0	0	Hail (1.00)
Olmstead County Eyota (12E Rochester)	04	1729CST			0	0	?	?	Thunderstorm Wind (52) Hail (1.50)
Olmstead County Rochester	04	1740CST			0	0	?	?	Hail (1.25) This was the third significant hail event to sweep the area in just over half an hour.
Hubbard County 42S Bemidji	12	1640CST			0	0	?	0	Thunderstorm Wind Trees and power lines were downed near Park Rapids.
Ottertail County 46NW Alexandria	12	1810CST			0	0	?	0	Thunderstorm Wind (65) A wind gust to 65 mph was reported at the Fergus Falls municipal airport.
Isanti County Cambridge	13	1850CST			0	0	?	?	Hail (1.00)
Mille Lacs County Princeton	13	1850CST			0	0	0	0	Thunderstorm Wind (50)
Carver County Watertown	13	1950CST			0	0	0	0	Thunderstorm Wind (52)
Hennepin County Loretto	13	2005CST			0	0	0	0	Thunderstorm Wind (52)
Big Stone and Swift Counties Correll to 10N Appleton	21	1600- 1700CST			0	0	?	?	Hail (2.75) Extensive crop damage was done from Correll to 10 miles north of Appleton by hail up to 2.75 inches in diameter. Crop damage on some farms was near 100%. Most of Swift County also received 4 to 8 inches of rain.
Chippewa County 6E Monteideo	21	1651CST			0	0	0	0	Funnel Cloud
Kandiyohi County Willmar	21	1700- 1800CST			0	0	?	?	Hail (1.75) Widespread crop damage was done by up to golfball size hail. Three different hail events were recorded during the hour.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS		
MINNESOTA										
Mille Lacs County Princeton	21	1740CST			0	0	0	0		Thunderstorm Wind (60)
Mille Lacs County Princeton	21	1745CST			0	0	0	0		Funnel Clouds Two funnel clouds were sighted south and west of Princeton.
Meeker County Litchfield	21	1820CST			0	0	0	0		Thunderstorm Wind Thunderstorm winds knocked down trees and caused power outages around Litchfield.
Wright County Howard Lake area	21	1845CST			0	0	?	0		Thunderstorm Wind Trees and power lines were downed.
Chisago County Rush City	21	1855CST			0	0	?	0		Thunderstorm Wind Numerous trees were downed in Rush City.
McLeod County Hutchinson	21	1940CST			0	0	0	0		Thunderstorm Wind (61)
Lac Qui Parle County Lac Qui Parle	21	1950CST			0	0	0	0		Hail (0.75)
Hennepin County Edina	21	2136CST			0	0	0	0		Thunderstorm Wind (57)
Fillmore County Spring Valley	28	0200CST			0	0	?	?		Lightning Fire resulting from a lightning strike damaged a tire storage and repair shop.
Crow Wing County Pequot Lakes	28	1700CST			0	0	?	?		Hail (2.75) Hail from golfball to baseball size fell on the city of Pequot Lakes and as far east as Highways 11 and 3.
Norman County Halstad	30	2008CST			0	0	?	?		Hail (1.25)
Aitkin Co. Aitkin	30	2230CST			0	0	5	0		Thunderstorm wind Strong thunderstorm winds caused minor structural damage to buildings. Numerous trees, mostly pine, were uprooted.
Todd Co. N of Sauk Centre	31	0915CST			0	0	?	?		Hail (1.75)
Stearns Co. St. Rosa	31	0934CST			0	0	0	0		Hail (1.0)
Pope Co. Lowry	31	1113CST			0	0	0	0		Hail (0.75)
Ramsey Co. St. Paul	31	1412CST			0	0	?	?		Hail (1.00) Hail was reported at Holman Field, the downtown St. Paul airport.
Ramsey Co. Lauderdale	31	1414CST			0	0	?	?		Hail (1.75)
Wright Co. Buffalo	31	1447CST			0	0	?	?		Thunderstorm wind Thunderstorm winds toppled trees in and around the city of Buffalo.
Wright Co. Hanover	31	1454CST			0	0	?	?		Hail (1.50)
Wright Co. St. Michael	31	1455CST			0	0	5	?		Hail (2.75)
Washington Co. Forest Lake	31	1501CST			0	0	0	0		Funnel cloud
Hennepin Co. Maple Grove	31	1515CST			0	0	?	?		Hail (1.75)
Hennepin Co. Medina	31	1524CST			0	0	?	?		Hail (1.00)
Hennepin Co. Brooklyn Park	31	1525CST			0	0	?	?		Hail (1.75) Funnel
Hennepin Co. Osseo	31	1528CST			0	0	?	?		Hail (1.50)
Hennepin Co. New Hope	31	1532CST			0	0	?	?		Hail (1.50)
Hennepin Co. Brooklyn Park	31	1552CST			0	0	?	?		Hail (1.50)
Martin Co. Fairmont	31	1900CST			0	0	?	?		Hail (2.50)
Brown Co. near Comfrey	31	2025CST			0	0	?	?		Hail (1.00)
Watsonwan Co. near St. James	31	2030CST			0	0	?	?		Hail (1.75)
Steele Co. Owatonna	31	2105CST			0	0	?	?		Thunderstorm wind Three grain bins were knocked over and damaged by strong thunderstorm winds. One steel bin was moved about 1/8 mile.
MINNESOTA										
Stevens Co. Hancock	31	2121CST			0	0	?	?		Hail (1.00)
McLeod Co. 65N Hutchinson	31	2210CST			0	0	?	?		Hail (2.75)
McLeod Co. Hutchinson	31	2225CST			0	0	?	?		Hail (1.75)
22 MISSISSIPPI										
Tishomingo County 5NE Burnsville	06	1315CST			0	0	?	0		TSTM Wind Several large trees and power lines were blown down in the J.P. Coleman State Park, causing several hours of power outages.
Tishomingo County 3SW Tishomingo	06	1335CST			0	0	?	0		Hail (1.50), TSTM Wind Quarter to half dollar size hail fell at the Bay Springs Marina. Large trees were blown down one to two miles south of the Bay Springs Lock and Dam.
Prentiss County 4E Booneville	06	1400CST			0	0	?	0		TSTM Wind Several large trees and power lines were blown down in east-central Prentiss County east of Booneville.
Lee County Chapelville	06	1415CST			0	0	?	0		Hail (0.75), TSTM Wind (52) Dime size hail fell and winds estimated at 60 mph blew down several large trees.
Nonroe County 2W Amory	06	1430CST			0	0	3	0		TSTM Winds Several small trees were blown down. Minor damage was done to a mobile home and the roof of a permanent home.
Itawamba County 1N Tremont	06	1430CST			0	0	?	0		TSTM Wind Several trees and power lines were blown down.
Lee County Tupelo	06	1527CST			0	0	3	0		TSTM Winds Several large trees and power lines were blown down. Minor damage was done to a couple of homes.
Clay County Montpelier	06	1700CST			0	0	?	0		TSTM Wind Several large trees and power lines were blown down.
Tippah County 3NW Ripley	06	1641CST			0	0	?	0		Hail (1.00)
Chickasaw County Houston	06	1900CST			0	0	?	0		TSTM Wind Several large trees were blown down.
Attala County 1N Kosciusko	06	1930CST			0	0	?	0		TSTM Wind One tree was blown down onto power lines. Several large limbs and branches in the area were blown down also.
Holmes County 2W Lexington	06	1930CST			0	0	?	0		TSTM Wind Several trees, large limbs and branches were blown across a road.
Panola County Sardis Lake Dam	17	1215CST			2	0	0	0		Lightning Lightning struck and killed two men sitting on metal lounge chairs. M250, M290
Rankin County 3E Brandon	23	2030CST			0	0	4	0		Lightning Lightning struck a church and burned out the telephone system, and damaged its computerized lighting system, fire alarm, and portions of the organ system. Damage was estimated at 7 thousand dollars.
Hinds County 3SW Jackson	24	1940-2140CST			0	0	?	0		Flash Flood Rain amounting to 4.25 inches fell in less than an hour. This caused some minor flooding in southwest Jackson.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
23 MISSOURI											
Atchison County Rockport	04	2056CST			0	0	3	2			TSTM Wind (52)
Hickory County	25	1515CST			0	0	?	?			Heavy Rain Rainfall amounting to 1.5 inches in 30 minutes followed several previous days of heavy rain.
Camden County	25	1715CST			0	0	4	?			Flash Flooding Rainfall amounts of 3 to 5 inches produced flash flooding in several locations across the county.
Harrison County Bethany	26	2240CST			0	0	2	2			TSTM Wind (52)
Harrison County Eagleville	26	2245CST			0	0	2	2			TSTM Wind (52)
Mercer County Princeton	26	2255CST			0	0	4	2			TSTM Wind and Heavy Rain Trees and power lines were downed. Several buildings had roofs blown off and major structural damage. Lake Daho had more than 4.2 inches of rain in 45 minutes. Winds exceeded 52 knots.
Sullivan County Sullivan City	26	2345CST			0	0	3	2			TSTM Wind Trees were damaged.
Carroll County Carrollton	27	0115CST			0	0	3	2			TSTM Wind Some trees were uprooted.
Buchanan County St. Joseph	27	1630CST			0	0	3	2			Hail (1.75)
Buchanan County St. Joseph	27	1645CST			0	0	4	3			TSTM Wind
Buchanan County St. Joseph	27	1700CST			0	0	3	3			Hail (1.50) Winds in excess of 70 mph moved a C-130 aircraft at the Rosecrans Airport in St. Joseph. Trees and buildings were blown down. The anemometer at the airport was blown down also. Hail of up to golfball size and one and one-half inch diameter fell at 1630 and 1700CST, respectively.
Clay County Claycom	27	1700CST			0	0	3	3			Hail (1.75)
Clay County Excelsior Springs	27	1745CST			0	0	2	2			Hail (0.75)
Jackson County Kansas City	27	1750CST			0	0	2	2			TSTM Wind
Jackson County Blue Springs	27	1750CST			0	0	3	2			Hail (1.75) Large tree limbs were downed in Kansas City.
Cole County 10NW Jefferson City	27	1755CST			0	0	3	2			TSTM Wind
Cole County W edge of Jefferson City	27	1800CST			0	0	0	0			Hail (1.00)
Cole County 15S Jefferson City	27	1810CST			0	0	0	0			TSTM Wind (52) Large trees were blown down 10 miles northwest of Jefferson City and winds up to 60 mph were observed at Brazito, 15 miles south of Jefferson City.
Callaway County 7N Jefferson City	27	1810CST			0	0	0	0			TSTM Wind (52) Winds up to 60 mph were observed at KRCC-TV.
Osage County west portions	27	1840CST			0	0	3	0			TSTM Wind and Hail (0.75) Strong winds downed power lines and hail up to 3/4 inch in diameter fell in western portions of the county.
Clay County Liberty	28	1625CST			0	0	3	2			Hail (1.75)
Lafayette County Odessa	28	1800CST			0	0	0	0			Hail (0.75)
Johnson County Fayetteville	28	1850CST			0	0	2	2			TSTM Wind (52)
Buchanan County Buchanan	28	2254CST			0	0	0	0			Flooding
Buchanan County Buchanan	28	2310CST			0	0	0	0			Flooding
Buchanan County Buchanan	29	0100CST			0	0	4	0			Flooding At 2254CST, Highways 45 and 59 were closed near Sugar Lake due to flooding. At 2310CST, County Road 257 was washed out near Sugar Creek Cemetery. Highway 45 was washed out at Lewis & Clark State Park at the same time. At 0100CST, railroad tracks were washed out near Highway 59 and Lewis & Clark State Park, resulting in a train derailment.
Andrew County Amazonia	29	0215CST			0	0	0	0			Flooding The intersection of Highways T and K was closed due to flooding.
MISSOURI											
Dunklin County 1W Senath	29	1252CST			0	0	3	2			TSTM Wind Winds of 55 to 60 mph were reported by State Emergency Management officials.
24 MONTANA											
Granite County Drummond	01	1315MST			0	0	4	3			TSTM Wind (G55) Trees were downed and several roofs were damaged.
Custer County Miles City	02	1715MST			0	0	0	0			TSTM Wind (G55)
Madison County Sheridan	05	afternoon			0	0	3	0			TSTM Wind A sign was blown down and some trees were damaged.
Northern Valley County	07	1730MST			0	0	0	0			TSTM Wind (G52)
Granite County near Philipsburg	12	afternoon			0	0	4	3			Flash Flood Three inches of rain fell in the Willow Creek Drainage, causing flooding along Willow Creek. Several bridges were damaged.
Sanders County near Plains	12	afternoon			0	0	5	4			TSTM Winds Power poles and trees were blown down.
Lake County Svan Lake to Bigfork	12	1600MST			0	0	4	0			Hail (0.75), TSTM Wind Trees were downed.
Missoula County Clinton and West Missoula	12	1700MST			0	0	5	3			TSTM Wind (G51) Trees were blown across power lines and some structures were damaged.
Judith Basin County near Hobson	14	2043MST			0	0	0	0			TSTM Wind (G57)
Flathead County Bigfork	14	evening			0	0	0	0			Hail (0.75)
Valley County Clasgow	18	1852MST			0	0	0	0			TSTM Wind (G63)
Valley County 15N Clasgow	18	1900MST	?	?	0	0	0	0			Tornado (FO), TSTM Wind
Roosevelt County 28W Wolf Point	18	2000MST			0	0	0	0			TSTM Wind
Daniels County Scobey	18	2000MST			0	0	0	0			TSTM Wind (G63)
Choteau County SSW Big Sandy	20	1515MST			0	0	0	0			TSTM Wind (G52)
Hill County 20SW Havre	22	2000MST			0	0	4	4			TSTM Wind Two houses were damaged in the Bear Paw Mountains. Trees were downed and heavy rain fell.
Hill County Havre	22	2030MST			0	0	2	0			TSTM Wind (G61) Minor wind damage was done in the city.
Richland County 4E Sidney	23	1600MST	?	?	0	0	0	0			Tornado (FO)
Richland County 2S Crane	23	1900MST	?	?	0	0	0	0			Tornado (FO)
Richland County 2S Crane	23	1900MST	?	?	0	0	0	0			Tornado (FO)
Yellowstone County Billings	24	1600-1700MST			0	0	5	4			Flash Flood Rain of 1.5 inches in amount fell in about an hour. Basements flooded and sewers backed up.
Big Horn County 7N Hardin	24	1730MST			0	0	6	6			Hail (1.75), TSTM Wind Widespread crop and structural damage occurred. Heavy rain also fell.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	
MONTANA									
Treasure County Hysham	24	1745MST			0	0	5	6	Hail (1.75), TSTM Wind
									Widespread crop damage occurred.
Rosebud County Rock Springs	24	1900MST			0	0	6	6	Hail (1.75), TSTM Wind
									Crop and structural damage occurred. Hail collected into 3 to 4 foot drifts in the ditches.
Garfield County Jordan	24	1930MST			0	0	5	3	TSTM Wind (G66)
									Windows and roofs were damaged and trees were downed.
Lincoln County Libby	25	afternoon			0	0	5	4	Hail (1.50)
									Severe damage was done to roofs and windows in the town of Libby.
McCone County Brockway	30	1700MST			0	0	5	4	Hail (1.75), TSTM Wind
									Severe damage was done to windows and roofs.
Treasure County Hysham	30	1730MST			0	0	5	6	Hail (1.75), TSTM Wind (G61)
									Widespread crop, roof and window damage was done.
Richland County Sidney	30	1745MST			0	0	3	3	TSTM Wind
									Heavy rainfall accompanied the high wind.
Dawson County	30	1800-1900MST			0	0	6	5	Flash Flood
									Three inches of rain fell, causing flooding of basements, streets and low-lying areas.
Dawson and Wibaux Counties	30	1800-1900MST			0	0	4	6	Hail (1.75), TSTM Wind
									Hail fell in a swath that began near Lindsay, passed southwest of Glendive and continued east into North Dakota southwest of Wibaux. Severe crop damage occurred.
25 NEBRASKA									
Chase Co. Imperial	02	1800CST			0	0	3	1	Thunderstorm Wind
									Strong wind gusts blew down trees.
Nuckolls Co. Superior	04	1830CST			0	0	5	2	Thunderstorm Wind
									Strong winds blew down trees and power lines. The roof was blown off of a building and a number of homes had windows blown out.
Lancaster Co. Hallam	04	1935CST			0	0	4	3	Thunderstorm Wind Hail (1.00)
Firth	04	1945CST			0	0	4	3	Thunderstorm Wind (60)
Lincoln	04	1950CST			0	0	3	2	Thunderstorm Wind
									Strong gusts broke large tree limbs and downed power lines. Hail broke windows at Hallam.
Cass Co. Plattsmouth	04	2040CST			0	0	3	2	Thunderstorm Wind
									Wind gusts blew down power lines and broke tree limbs on the south side of Plattsmouth.
Antelope Co. Heligh Egin	05 05	0410CST 0410CST			0 0	0 0	5 5	4 3	Thunderstorm Wind Thunderstorm Wind
									Very strong winds blew a portion of the roof off of the country club and heavily damaged a road department barn. A large number of trees were uprooted and power lines downed. Some of the downed trees fell on buildings and vehicles.
NEBRASKA									
Madison Co. Tilden	05	0430CST			0	0	4	2	Thunderstorm Wind
Meadow Grove	05	0435CST			0	0	5	3	Thunderstorm Wind
Battle Creek	05	0440CST			0	0	4	3	Thunderstorm Wind
Norfolk	05	0449CST			0	0	5	2	Thunderstorm Wind (71)
Pierce Co. Hadar	05	0440CST			0	0	5	3	Thunderstorm Wind
									Very strong winds uprooted trees, broke numerous limbs and downed power lines. A gust to 82 m.p.h. was recorded at the Norfolk National Weather Service Office with the passage of the storm. A number of trees fell on homes and vehicles, causing damage. Small outbuildings were damaged, signs damaged, shingles blown off of roofs and a number of windows blown out.
Stanton Co. Stanton Pilger	05 05	0500CST 0505CST			0 0	0 0	4 4	2 2	Thunderstorm Wind Thunderstorm Wind
									Strong winds uprooted trees, broke numerous limbs and downed power lines. Shingles were blown off of roofs and signs damaged.
Dixon Co. Ponca	05	0505CST			0	0	5	5	Thunderstorm Wind (52)
Wakefield	05	0520CST			0	0	4	5	Thunderstorm Wind
									Winds gusted to 60 m.p.h. at Ponca. Tree limbs and power lines were damaged through the county. Half inch hail with the storm heavily damaged crops.
Wayne Co. Wayne	05	0510CST			0	0	4	2	Thunderstorm Wind
									Strong winds broke tree limbs and downed power lines.
Cuming Co. Wisner Beemer West Point	05 05 05	0530CST 0532CST 0533CST			0 0 0	0 0 0	5 5 5	3 3 3	Thunderstorm Wind Thunderstorm Wind Thunderstorm Wind
									Very strong wind gusts downed trees, broke numerous limbs and downed power lines. Downed trees fell on a number of buildings and vehicles. Outbuildings were damaged, signs blown down and portions of roofs damaged.
Burt Co. Oakland Lyons Tekamah	05 05 05	0537CST 0545CST 0550CST			0 0 0	0 0 0	5 5 6	5 4 5	Thunderstorm Wind Thunderstorm Wind Thunderstorm Wind
									Very strong winds blew windows out in Tekamah and blew down the front entry of a downtown business. Shingles were blown off of roofs. Windows were also blown out in Lyons. In Oakland walls of a brick building were blown down at the fairgrounds. Numerous trees and power poles and lines were blown down through the county. Some trees fell on buildings and vehicles. Signs were also blown down. Quarter inch hail fell at times, with the winds adding to crop damage.
Dakota Co. Dakota City	05	0540CST			0	0	4	3	Thunderstorm Wind
									Tree limbs were broken by strong wind gusts. Broken limbs damaged power lines.
Dodge Co. Fremont and Dodge	05	0545CST			0	0	5	3	Thunderstorm Wind
									Strong wind gusts blew down trees and power lines. A number of fallen trees landed on buildings and vehicles.
Saunders Co. Cedar Bluffs	05	0555CST			0	0	4	2	Thunderstorm Wind
									Strong winds blew a tree onto a home.
Washington Co. Herman and Blair	05	0600CST			0	0	6	4	Thunderstorm Wind (69)
									Strong winds estimated near 80 m.p.h. blew down numerous trees, broke limbs, snapped power poles, and blew down power lines through the county. A number of trees fell on buildings and vehicles, inflicting damage. A quarter of Blair was without power along with Fort Calhoun and Herman.
Douglas Co. Omaha	05	0620CST -0635CST			0	0	5	3	Thunderstorm Wind (54)
									Winds gusted to 62 m.p.h. at the Omaha airport at 0628CST and to 55 m.p.h. at the North Omaha National Weather Service Forecast Office at 0623CST. Trees were blown down, limbs broken and power lines downed mainly in the north and central areas of the city. Thirty streets were reported blocked by fallen trees.
Scottsbluff Co. Scottsbluff	11	1640CST			0	0	4	3	Flash Flood
									Upwards to 4 and 1/2 inches of rain in a short period of time flooded streets to a depth of 3 feet and caused the roof of a business to collapse.

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AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
NEBRASKA											
Knox Co. 8W Niobrara 2E Verdel	13	1830CST			0	0	2	2	Hail (0.75)		
	13	1830CST			0	0	5	2	Thunderstorm Wind		
	Strong winds damaged a number of homes and storage sheds. A mobile home was tipped over. A number of awnings, boats and boat docks were damaged or destroyed east of Verdel.										
Scottsbluff Co. Mitchell	16	1830CST			0	0	4	4	Hail (1.00)		
Box Butte Co. 2W Hemingford	16	2038CST			0	0	2	3	Hail (0.75)		
Perkins Co. Venango	18	1630CST			0	0	4	2	Thunderstorm Wind		
	Strong gusts blew down trees and power lines and damaged a number of small buildings.										
Dawson Co. 4E Lexington	18	2200CST			0	0	3	0	Thunderstorm Wind		
	Strong wind gusts blew down a crane boom at a construction site.										
Holt Co. Ewing	20	1410CST			0	0	4	4	Hail (1.75)		
Madison Co. Norfolk	20	1557CST			0	0	4	2	Thunderstorm Wind (50)		
	Winds gusted to around 58 m.p.h. at the Norfolk airport. Tree limbs were broken.										
Boone Co.	21	1530CST			0	0	2	4	Flash Flood		
	Five inches of rain fell in about one and half hours around Boone, flooding small creeks and damaging crops.										
Jefferson Co. Fairbury	21	1535CST			0	0	3	4	Hail (1.75)		
Platte Co. 4S Humphrey	21	1600CST			0	0	3	2	Thunderstorm Wind (56)		
	Winds gusted to 65 m.p.h. blowing a spotter's car off of the road along with breaking tree limbs and downing power lines.										
Colfax Co. 8S Clarkson 7S Clarkson	21	1640CST			0	0	3	4	Hail (1.00)		
	21	1645CST			0	0	3	2	Thunderstorm Wind		
	Strong gusts broke limbs and downed power lines. Hail upwards to 1 inch damaged crops and roofs.										
Lancaster Co. 6S Lincoln	21	1645CST			0	0	5	3	Hail (2.75)		
	Two and three-quarter inch hail fell 6 miles south of the Lincoln airport in the south side of Lincoln. Damage was sustained by roofs and vehicles.										
Platte Co. Columbus	21	1700CST			0	0	5	3	Hail (1.00)		
	One-inch hail damaged roofs and vehicles.										
Fillmore Co. Grafton	21	1800CST			0	0	3	4	Hail (1.50)		
Dodge Co. Fremont	21	1815CST			0	0	3	2	Thunderstorm Wind		
	Strong wind gusts downed a number of trees and broke limbs.										
Lancaster Co. Lincoln	21	2020CST			0	0	4	3	Flash Flood		
	Upwards of 5 inches of rain in south Lincoln flooded intersections to the depth of 3 feet, stalling vehicles. Beal Slough overflowed its banks and a number of businesses in low-lying areas were flooded.										
Hayes Co.	24	1645CST			0	0	5	5	Flash Flood		
	Four to five inches of rain in the area north of Hayes Center washed out some roads, bridges and culverts. Crops were washed out and erosion washed out certaces.										
Hayes Co. 3W Hayes Center	24	1700CST	0.1	30	0	0	2	2	Tornado (F0)		
	A tornado touched down briefly in open country 3 miles west of Hayes Center.										
Hayes Co. 9NE Hayes Center	24	1710CST			0	0	0	0	Funnel Cloud		
Lincoln Co. 1W Wellfleet	24	1800CST			0	0	0	0	Funnel Cloud		
Deuel Co. Chappell	25	2258CST			0	0	4	5	Hail (1.75)		
Boyd Co. 4SW Butte	26	0300CST			0	0	2	3	Flash Flood		
	Four inches of rain fell causing some crop damage and erosion.										
NEBRASKA											
Pawnee Co. Pawnee City	26	1825CST			0	0	3	2	Thunderstorm Wind		
	Strong gusts blew down power lines and broke tree limbs.										
Dawson Co.	27	Morning			0	0	3	4	Flash Flood		
	4.67 inches of rain fell at Lexington and 4.00 inches at Overton in a 2 to 3 hour span, causing local flash flooding.										
Gage Co. 2SE Barneston	27	1355CST	0.1	20	0	0	2	3	Tornado (F0)		
	A tornado touched down briefly 2 miles southeast of Barneston and did minor damage.										
Gage Co. Liberty	27	1405CST			0	0	3	2	Thunderstorm Wind (60)		
	Wind gusts up to 70 m.p.h. were reported with damage to trees.										
Richardson Co. Dawson	27	1510CST			0	0	3	4	Hail (1.75)		
Lancaster Co. SS Lincoln	27	1930CST			0	0	5	4	Hail (2.50)		
	Two and a half inch hail damaged roofs on the south side of Lincoln.										
Johnson Co.	28	Early Morning			0	0	3	4	Flash Flood		
	4.50 inches of rain around Cook heavily eroded fields and flooded a few county roads.										
Nemaha Co.	28	Early Morning			0	0	4	5	Flash Flood		
	4.65 inches of rain around the Auburn and Brownville areas washed out some county roads and culverts, disrupted telephone service and damaged crops.										
Nemaha Co. Brownville	28	2148CST			0	0	3	2	Thunderstorm Wind (50)		
	Winds gusted 55 to 60 m.p.h. at the Cooper Power Plant.										
Nemaha Co.	29	0300CST			0	0	4	3	Flash Flood		
	Heavy rains washed out a bridge near Peru. Water covered and damaged some county roads. Fields suffered erosion damage.										
Sheridan and Cherry Counties, 3.5SE to 7E Gordon	29	1735CST	5.0	30	0	0	4	1	Tornado (F1)		
	A tornado touched down intermittently from 5 and 1/2 miles south-east of Gordon to 7 miles east of Gordon, entering Cherry County approximately 6 miles east-southeast of Gordon. Much of the track was in open rangeland, but damage was sustained by power lines and a corral and windows were broken in a ranch building.										
Cherry Co. 8S Merriman	29	1800CST			0	0	2	3	Hail (2.00)		
Cherry Co. 5NE Valentine	29	1830CST	0.1	20	0	0	1	1	Tornado (F0)		
	A tornado touched down briefly in open rangeland 5 miles northeast of Valentine.										
Cherry Co. 5NE Valentine	29	1830CST			0	0	2	4	Hail (1.50)		
26 NEVADA											
Clark County	08	1703PST			0	0	7	0	TSTM Wind (101)		
	Two microbursts occurred in the Las Vegas area that caused an estimated \$14 million damage. The first one was at Henderson Sky Harbor Airport. About fifteen minutes later the second one hit McCarran International Airport in Las Vegas. These microbursts did considerable damage to several hangars and damaged or destroyed around 82 aircraft. Twelve power poles were knocked down just north of McCarran International Airport. There were no deaths or injuries.										
Mineral County	09	1600PST-1730PST			0	0	3	0	Flash Flood		
Esmeralda County	09	1600PST-1900PST			0	0	3	0	Flash Flood		
	U. S. Highway 6 in Esmeralda County and nearby State Highway 360 in Mineral County were closed due to flash flooding. Highway 6 was washed out in three spots between Tonopah and Coaldale.										

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INURED	PROPERTY	CROPS	
NEVADA									
Churchill County	09	1830PST-1930PST		0	0	3	0		Flash Flood
		A flash flood washed out a culvert bridge and part of U. S. Highway 50 near Middlegate in the eastern part of Churchill County.							
Esmeralda County	10	1530PST-1630PST		0	0	3	0		Flash Flood
		Very heavy rain produced a flash flood that washed mud, boulders and other debris over U. S. Highway 6 near Montgomery Pass. Motorists were stranded for a time at the summit.							
Clark County	17	1245PST-1315PST		0	0	4	0		TSTM Wind (75)
		A severe thunderstorm produced a strong microburst over central Las Vegas. Winds estimated at more than 75 MPH uprooted over a dozen elm and pine trees, dropping them on houses and cars. Power poles and lines were broken leaving 15,000 people without power. Several light poles were bent over to the ground. Half inch hail, heavy rain, and street flooding were also reported. There were no reports of injuries.							
27 NEW HAMPSHIRE									
Coos County	06	afternoon		0	0	4	0		Thunderstorm Winds
Rockingham County	06	afternoon		0	0	4	0		Lightning
		In the towns of Groveton and Errol, at least one hundred trees were blown down, with many striking power lines and houses. In East Derry, a mobile home was consumed by fire after a lightning strike, and a house was hit by lightning three separate times, with considerable damage being done to a bedroom and hallway.							
Cheshire County	20	1400-1500EST		0	0	4	0		Thunderstorm Winds, Lightning
		Strong winds from a thunderstorm knocked down numerous power lines and trees in the area around Keene. One residence reported multiple lightning strikes that caused heavy damage to the house. Power outages were reported throughout the county.							
28 NEW JERSEY, Northern									
Union County	23	1705EST		0	0	?	0		Thunderstorm Wind
Plainfield		A small but very heavy thunderstorm produced a local downburst that downed three large trees and a power line. One of these trees struck a home, causing some damage.							
Middlesex County	29	1843EST **300	30	0	0	1	?	0	Tornado (F0)
Keasbey (just west of Perth Amboy)		A tornado touched down briefly in the town of Keasbey near Exit 127 of the Garden State Parkway. It picked up and tossed a 5 ton trailer nearly 150 feet. Other damage included six trailers and several cars being overturned. A utility pole was broken off at about 10 feet above ground level. One minor injury was also reported.							
28 NEW JERSEY, Southern									
Mercer County	06	2225EST		0	0	3	?		TSTM Wind (52)
2S Hopewell		Thunderstorm wind gusts of 60 mph brought down trees.							
29 NEW MEXICO									
Lea County	02	1648MST	25	50	0	0	4	?	Tornado (F1)
3E Hobbs		Hobbs Civil Defense reported a tornado that touched down three miles east of Hobbs and which damaged four buildings and a barn.							
Colfax County	05	1730MST		0	0	?	?		Flash Flood
near Cimarron		County roads were washed out due to an overflowing arroyo near Cimarron.							
NEW MEXICO									
Torrance County	13	late afternoon		0	0	5	?		Hail (1.75)
Moriarty		A new-car lot in Moriarty received \$70,000 damage from large hail.							
Grant County	13	2115MST	?	?	0	0	?	?	Tornado (F1)
Hachita		Half of a mobile home was ripped off. The owner claimed he was certain that it was a tornado.							
Lea County	13	2300MST		0	0	?	?		Thunderstorm Wind (52)
10N Hobbs		The Lovington Police Department reported that power lines were downed 10 miles north of Hobbs. A gust to 60 mph was recorded at the Lea County Airport.							
Curry County	15	1719MST		0	0	?	?		Thunderstorm Wind (57)
Cannon AFB		A thunderstorm wind gust to 66 mph was reported at Cannon Air Force Base (CVS).							
Roosevelt County	15	1752MST		0	0	?	?		Hail (0.75)
Portales		Dime size hail fell in Portales.							
Union County	16	1705MST		0	0	?	?		Hail (0.75)
1W Clayton WSO									
San Miguel County	17	1430MST		0	0	6	?		Flash Flood
		Heavy rain fell in the El Cerrito-Villanueva area — 5 to 7 inches in 90 minutes — causing the worst flash flood in the known history of the area. The Pecos River Bridge was heavily damaged and condemned. Several cars, tractors, cows, horses, pigs, and chickens were washed away. Wheat and alfalfa fields were under one to two feet of silt. Boulders up to 11 feet in diameter were washed into yards. Water damaged nearly every home in El Cerrito.							
Taos County	17	1600MST		0	2	0	0		Lightning
		Two people were struck by lightning; one was knocked unconscious, the other received burns on five percent of his body.							
Rio Arriba County	21	1600MST		0	0	4	0		Lightning
		Lightning caused \$10,000 damage to a home.							
Eddy County	21	2330MST		0	0	?	?		Flash Flood
		Roads flooded near Highway 285 in the vicinity of Carlsbad.							
30 NEW YORK, Coastal									
Massau and Suffolk Counties	11	midday		0	0	7	0		Flood
		A moist northeasterly surface flow and an equally moist southerly wind flow aloft set up a very strong overrunning pattern. This produced very heavy rain across Long Island. Amounts generally ranged from 2 to 5 inches, however, in the Shirley-Center Moriches area of Suffolk County reports of 8 to 10 inches were common. Numerous roads and several major highways were closed due to severe and widespread flooding. Considerable damage to homes and cars were reported.							
30 NEW YORK, Central									
St. Lawrence County	04	1430EST		0	0	4	0		Urban Flood
Massena		Thunderstorms produced over one inch of rainfall in twenty minutes. As a result, a tunnel which runs under the Eisenhower Locks flooded to a depth of 8 feet. The tunnel was closed for three hours as several cars and trucks were removed.							
Fulton County	04	1653EST		0	0	3	3		TSTM Wind
Gloversville									
Oneida County	04	1955EST		0	0	5	0		Lightning
Munnsville									
Utica	04	2004EST		0	0	5	0		Lightning
Chenango County	04	2055EST		0	0	2	2		TSTM Wind
Sherburne									
Corrland County	04	2048EST		0	0	3	3		TSTM Wind
Marathon									
Broome County	04	2104EST		0	0	4	0		TSTM Wind
countywide									
Binghamton	04	2104EST		0	0	3	0		Lightning
Hillcrest	04	2115EST		0	0	2	0		Lightning
		Lightning struck power lines, knocking power out to over 6000 homes. Tree limbs were also snapped off by intense thunderstorm winds.							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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	
NEW YORK, Central											
Cortland County Cortland	06	1300EST			0	0	2	0			TSTM Wind
Tioga County countywide	06	1330EST			0	0	0	?			Hail (0.25)
Berkshire	06	1330EST			0	0	0	3			TSTM Wind
Otsego County Gilbertsville	06	1400EST			0	0	3	0			TSTM Wind
countywide	06	1415EST			0	0	0	?			Hail (0.25)
Morris	06	1415EST			0	0	3	2			TSTM Wind
Cooperstown	06	1417EST			0	0	3	0			TSTM Wind
Gilbertsville	06	1455EST			0	0	2	0			TSTM Wind
Davenport	06	1456EST			0	0	3	0			TSTM Wind
Delaware County Walton	06	1445EST			0	0	3	0			TSTM Wind
Davenport	06	1455EST			0	0	2	2			TSTM Wind
Otsego County Cooperstown	06	1450EST			0	0	3	1			TSTM Wind
Cooperstown	06	1456EST			0	0	2	2			TSTM Wind
Broome County Coleville	06	1500EST			0	0	3	0			TSTM Wind
Schoharie County Middleburg	06	1540EST			0	0	2	2			TSTM Wind
Rensselaer County Hoosick	06	1705EST			0	0	3	0			TSTM Wind
Oneida County Annsville	06	1735EST			2	0	?	0			Heavy Rain and Flash Flood
Dutchess County Poughkeepsie	06	1840EST			0	0	4	2			TSTM Wind
					Severe thunderstorms moved across parts of eastern New York during Sunday afternoon, August 6th. In Otsego County, thunderstorm winds ripped through the county fairgrounds. Fair goers reported that the main stage felt as though it was about to be lifted off the ground by the strong winds. Many areas experienced downed trees, tree limbs and power lines. In Oneida County, heavy rains produced very swift currents in Fish Creek. These currents swept away two young adults who were swimming in the creek. M210 (swimming) F140 (swimming)						
Orange County Greenwood Lake	16	1704EST			0	0	3	0			Lightning
					Lightning strikes started a house fire.						
Rensselaer County North Greenbush	20	1415EST			0	0	3	0			TSTM Wind
Sand Lake	20	1415EST			0	0	3	0			TSTM Wind
					Trees, tree limbs and power lines were downed.						
Dutchess County Poughkeepsie	29	0145EST			0	0	3	0			TSTM Wind
					Tree limbs and power lines were downed.						
30 NEW YORK, Western											
STEBEN COUNTY Town of Wayne	04	1810EST			0	0	3	0			TSTM Wind
TOMPKINS COUNTY Lansing	04	1931EST			0	0	4	0			TSTM Wind
					Thunderstorm winds took the tops off trees and downed others during the evening hours. In Lansing, the thunderstorm winds downed power lines and caused scattered power outages.						
STEBEN COUNTY Cohocton	06	1130EST			0	0	3	0			TSTM Wind
Avoca	06	1130EST			0	0	3	0			TSTM Wind
YATES COUNTY Dundee	06	1155EST			0	0	3	0			TSTM Wind
OSWEGO COUNTY Fulton	06	1230EST			0	0	3	0			TSTM Wind
New Haven	06	1240EST			0	0	3	0			TSTM Wind
					Thunderstorms crossed the area during the late morning and early afternoon hours. In Steuben County, thunderstorms downed trees, blocking Interstate Route 21 near Loon Lake. Several trees were reported down by the Yates County Sheriff in the town of Dundee. Numerous reports of limbs down and power outages were received from the Oswego County Fire Control.						
31 NORTH CAROLINA											
Peraon Co. Roxboro	05	1500EST			0	0	3	0			TSTM Winds
					Thunderstorms blew down trees and slightly damaged a mobile home near Roxboro.						
Bertie Co. Windsor	07	1702EST			0	0	4	0			TSTM Winds
Northampton Co. Lasker	07	1715EST			0	0	0	0			TSTM Winds
					Thunderstorms blew down trees and destroyed barns near Windeor. Trees were also blown down in Lasker.						
Edgecombe Co. Tarboro	15	1745EST			0	0	4	0			Flash Flood
					Water up to 3 feet deep was reported on some Tarboro streets. Some cars were flooded.						
Rowan Co. China Grove	17	1420EST			0	0	0	0			TSTM Winds
Iredell Co Statesville	17	1735EST			0	0	4	0			Lightning
					Thunderstorm winds blew down trees in China Grove. Fire from lightning burned a house in Statesville. Damage was set at \$26 thousand.						
Moore Co. West End	17	1942EST			0	0	0	0			Flash Flood
Hertford Co. Ahoskie	17	2000EST			0	0	5	0			Flash Flood
Harnett Co. 2 W Angier	17	2135EST			0	0	0	4			Flash Flood
Harnett Co. Bunnlevel	17	2140EST			0	0	4	4			Flash Flood
Hoke Co. Northern	17	2215EST			0	0	5	0			Flash Flood
Wake Co. Garner	17	2250EST			0	0	4	0			Flash Flood
					Torrential rains of four to six inches fell over central and eastern North Carolina producing widespread minor flash flooding. In Ahoskie, sudden heavy rain flooded 20 streets, putting water in cars and in one home. Thunderstorm rain also produced flash flooding in Harnett, Hoke, Moore and Wake counties. Most reports were of flooded roads, bridges and highways. Rushing flood waters collapsed a porch on a house near Anger. Ten houses were flooded around Raeford. One house was flooded in Garner. Flooding lasted until about 0100 EST the next morning in Moore County.						
New Hanover Co. Wilmington	19	0830EST			0	1	0	0			Lightning
					A man was slightly injured by lightning while walking in Wilmington.						
Gulford Co. Monticello	23	1810EST			0	1	0	0			Lightning
Forsyth Co. Rural Hall	23	1820EST			0	0	0	0			TSTM Winds
Forsyth Co. Union Cross	23	1842EST			0	0	0	0			TSTM Winds
					Thunderstorm winds blew down trees near Rural Hall and Union Cross. Lightning struck a fireman while he was fighting a fire near Monticello.						
Carteret Co. Radio Island	24	1925EST			0	0	6	0			Lightning
					Large jet fuel storage tanks were set on fire by lightning on Radio Island.						
Greene Co. Maury	24	1930EST			0	0	0	0			TSTM Winds
					Thunderstorm winds blew down trees near Maury.						
Transylvania Co. Brevard	28	0200EST			0	0	0	0			Mud Slide
					Heavy rains produced a mud slide that blocked U.S. Highway 276 near Brevard.						

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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		
32 NORTH DAKOTA										
Dickey County: Ellendale Dakes	02	1745CST			0	1	4	0	TSTM Wind (61)	
	02	1815CST			0	1	4	0	TSTM Wind (57)	
	In Ellendale, winds in excess of 70 mph blew down large trees, liabs and powerlines, took off shingles, and blew over trailers and machinery. One of the trees fell into a car, injuring the occupant. In the nearby town of Dakes, strong winds blew down trees and one person was injured by a falling tree.									
Barnes County, Litchville	02	1800CST			0	0	4	0	TSTM Wind (61)	
Ward County, 10 E Minot	02	1833CST	short	10	0	0	0	0	Tornado (F0)	
	A tornado touched down briefly.									
Nelson County: Lakota Whitman Lakota	02	2015CST			0	0	5	0	TSTM Wind (68)	
	02	2018CST			0	0	0	0	TSTM Wind (67)	
	02	2055CST			0	0	0	0	TSTM Wind (58)	
	Two severe thunderstorms occurred in the town of Lakota within one hour. In addition, 4 inches of rain occurred with the prolonged high winds. This combination caused street flooding, broke numerous street and railroad signs, flattened an airplane hangar, flipped trailers and trash dumpsters, and broke large tree liabs and power lines.									
	Severe winds also occurred over other parts of northern Nelson County.									
Raasey County: 20 E Devils Lake 6 N Hamar	02	2043CST			0	0	?	0	TSTM Wind (56)	
	02	2100CST			0	0	4	0	TSTM Wind	
	Winds destroyed a 30 x 60 foot shed 6 miles north of Hamar.									
Pembina County, 4 SSW Hamilton	03	1429CST			0	0	0	0	Hail (1.00)	
Dickey County, Dakes	03	2020CST			0	0	0	0	TSTM Wind (65)	
Cass County, Horace	12	1805CST			0	0	4	0	TSTM Wind	
	Winds blew down tree branches 10 inches in diameter.									
Logan County, Burnstad	13	1800CST			0	0	5	5	Hail (2.50)	
	Baseball size hail broke windows, stripped paint and trees, damaged vehicles and battered crops. The hail was a foot deep, and up to three feet deep against some buildings.									
Morton County: 8 SE Judson	18	1330CST			0	0	5	5	TSTM Wind	
					0	0	5	5	Hail (1.75)	
Mandan	18	1430CST			0	0	5	0	TSTM Wind (57)	
Burleigh County, Bismarck	18	1430CST			0	0	5	0	TSTM Wind (52)	
	Microburst winds occurred in the Bismarck-Mandan area in Burleigh and Morton counties. The winds uprooted trees, blew down large tree liabs that then blocked streets, damaged roofs, blew down large signs, soved boats and trailers, and damaged farm buildings and roofs.									
	In rural Morton County, winds blew over a concrete bunker silo 8 miles southeast of Judson. The wind and hail also disintegrated straw bales, shredded cornfields, broke windows, blew down a 1200 gallon water tank, broke trees, and damaged farm buildings and roofs.									
Emons County, 3 SW Braddock	21	1138CST							Funnel Cloud	
Stutsman County: 15 N Streeter	21	1457CST			0	0	0	0	Hail (1.00)	
Medina	21	1500CST			0	0	0	0	Hail (1.75)	
Montpelier	21	1600CST			0	0	4	4	Hail (1.00)	
Montpelier	21	1613CST			0	0	4	4	Hail (1.50)	
	One-inch hail fell at the Streeter exit on Interstate 94 at 1457CST. At 1500CST, golfball size hail fell at Medina, two miles northeast of the exit. At 1613CST, walnut size hail damaged sunflower crops in the Montpelier area.									
Barnes County, Litchville	21	1710CST			0	0	0	0	Hail (1.00)	
— NORTH DAKOTA										
Morton County: 10 NW Bismarck 5 S Mandan	21	1735CST			0	0	0	0	Hail (0.75)	
	21	1745CST			0	0	0	0	Hail (1.75)	
Burleigh County, Bismarck	21	1745CST			0	0	0	0	Hail (1.00)	
	Hail fell over parts of the Bismarck-Mandan area; mainly in central and northern Bismarck, northern Mandan, and just north of the two cities. However, golfball size hail fell 5 miles south of Mandan at Ft. Lincoln State Park.									
Ransom County: 10 NW Lisbon	21	1803CST			0	0	4	4	Hail (2.75)	
					0	0	4	4	TSTM Wind	
					0	0	0	0	Funnel Cloud	
5 N Ft. Ransom 6 E Lisbon	21	1830CST			0	0	4	4	Hail (1.75)	
	21	1845CST			0	0	4	0	TSTM Wind	
	Strong winds 10 miles northwest of Lisbon blew the roof off of a stable and soved a horse trailer in a semi-circle. The winds also damaged and destroyed various farm buildings, uprooted trees, flipped wagons and scattered hay bales northwest of Lisbon.									
	Six miles east of Lisbon, the winds uprooted trees.									
Williams County: 5 SW Williston 10 NE Williston 23 N Williston	23	1700CST			0	0	0	0	TSTM Wind (52)	
	23	1800CST			0	0	4	0	TSTM Wind	
	23	1810CST			0	0	4	0	TSTM Wind	
	Winds blew down a power pole 10 miles northeast of Williston, and blew an auger into a grain bin 23 miles northeast of Williston.									
McKenzie County	23	2000CST			0	0	?	?	Lightning	
	Lightning started a prairie fire that burned 1000 acres of grassland and trees.									
Dunn County: Halliday	24	1600CST			0	0	0	0	TSTM Wind (52)	
					0	0	0	0	Hail (0.75)	
Manning	24	1610CST			0	0	0	0	Hail (0.75)	
1 S Dunn Center	24	1610CST			0	0	4	0	TSTM Wind (53)	
	Winds uprooted trees and destroyed a pole barn one mile south of Dunn Center.									
Burke County, Bowbells	24	1620CST			0	0	4	4	Hail (1.00)	
									TSTM Wind	
	Winds destroyed a barn and damaged other farm buildings in eastern Burke county.									
Mountrail County: 1 E New Town 2 N Manitou	24	1655CST			0	0	4	0	TSTM Wind	
	24	1722CST							Funnel Cloud	
	Winds blew down power lines just east of New Town. The winds also destroyed trailer homes and damaged farm structures and homes. Wind damage occurred along a six-mile strip east and northeast of New Town.									
Ward County, 2 NW Donnybrook	24	1730CST			0	0	4	0	TSTM Wind	
	Strong winds lifted the roof off of a cattle barn and deposited it 200 yards away.									
Stark County: Dickinson 5 N Dickinson	24	1755CST			0	0	0	0	Hail (1.75)	
	24	1814CST			0	0	0	0	Hail (1.00)	
Morton County, Hebron	24	1759CST			0	0	0	0	Hail (0.75)	
Emons County, Linton	27	1715CST			0	0	5	5	Hail (1.75)	
									Heavy Rains	
	An intense thunderstorm dumped six inches of rain in the town of Linton between 1630CST and 1730CST on the 27th. The heavy rains were accompanied by an intense hailstorm at 1715CST.									
	The rains filled basements, soaked carpets, flooded creeks and roads, and drowned calves.									
Logan County, Napoleon	27	1730CST			0	0	4	4	Hail (0.75)	
	The hail was accompanied by three inches of rain.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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	

NORTH DAKOTA

Griggs County: 15 W Cooperstown	28	0801CST			0	0	5	5	Hail (1.75)
8 NE Cooperstown	28	0820CST			0	0	5	5	Hail (1.50)
Walnut size hail fell 8 miles northeast of Cooperstown, where a 10-mile swath of hail damage to crops occurred in northeastern Griggs County. The hail also broke windows, flattened gardens and stripped trees.									
Cass County: Casselton	30	1925CST			0	0	0	0	Hail (1.00)
Mapleton	30	1939CST			0	0	0	0	Hail (1.75)
West Fargo	30	2007CST			0	0	0	0	Hail (1.00)
Golden Valley County: Beach	30	2015CST			0	0	0	0	Hail (1.75)
15 E Beach	30	2045CST			0	0	0	0	Hail (0.75)
Billings County: Medora	30	2110CST			0	0	0	0	Hail (0.75)
12 S Medora	30	2130CST			0	0	5	5	Hail (1.75)
20 S Medora	30	2130CST			0	0	5	5	Hail (3.00)
Large quantities of hail fell over parts of Billings County. Golfball size hail and larger fell along a strip from 12 to 20 miles south of Medora. One hailstone, 20 miles south of Medora, measured three inches in diameter. The hail damaged cars and broke many windows.									
Barnes County, Dazey	30	2230CST			0	0	0	0	Hail (1.75)
Griggs County	30	2230CST			0	0	0	0	Hail (1.50)
Foster County, 5 SE Carrington	30	2320CST			0	0	4	4	Hail (1.75)
Slope County, Ardon	31	0115CST			0	0	0	0	Hail (1.75)
Hettinger County, New England	31	0200CST			0	0	0	0	Hail (0.75)

OHIO

Ashland County	04	1500 EST			0	0	4	0	Thunderstorm Wind
Summit County	04	1520 EST			0	0	5	0	Thunderstorm Wind
Portage County	04	1535 EST			0	0	5	0	Thunderstorm Wind
Trumbull County	04	1535 EST			0	0	4	0	Thunderstorm Wind
Licking County	04	1600 EST			0	0	4	0	Thunderstorm Wind
Guernsey County	04	1645 EST			0	0	4	0	Thunderstorm Wind
Muskingum County	04	1645 EST			0	0	4	0	Thunderstorm Wind
Licking County	04	1653 EST			0	1	0	0	Lightning
Thunderstorms developed over north-central Ohio during the afternoon, producing damaging winds. Trees and power lines were blown down in the cities of Ashland, Loudonville and in Hanover Township of Ashland County. Trees and power lines were also blown down across Summit and Portage counties. A newly constructed building was blown down in Warren, in Trumbull County. Trees and power lines were blown down around Utica, in Licking County, and around Cambridge, in Guernsey County. Winds gusted to 74 mph at the Zanesville airport. Lightning struck a house in Newark, in Licking County. A 20 year old man on the phone was injured.									
Williams County	05	0338 EST			0	0	4	0	Thunderstorm Wind
Defiance County	05	0350 EST			0	0	4	0	Thunderstorm Wind
Henry County	05	0420 EST			0	0	4	0	Thunderstorm Wind
Wood County	05	0440 EST			0	0	4	0	Thunderstorm Wind
Thunderstorms moved through northwest Ohio producing damaging winds. Trees and power lines were blown down across Williams County, and the northern part of Henry County. A garage was destroyed 5 miles north of Defiance, in Defiance County; and trees were blown down around Bowling Green, in Wood County.									

OHIO

Morrow County	05	1500 EST			0	0	4	0	Thunderstorm Wind
Crawford County	05	1530 EST			0	0	4	0	Thunderstorm Wind
Logan County	05	1615 EST			0	0	4	0	Thunderstorm Wind
Union County	05	1620 EST			0	0	4	0	Thunderstorm Wind
Hamilton County	05	1645 EST			0	0	4	0	Thunderstorm Wind
Warren County	05	1645 EST			1	2	0	0	Lightning
Champaign County	05	1650 EST			0	0	4	0	Thunderstorm Wind
Delaware County	05	1700 EST			0	0	4	0	Lightning
Madison County	05	1700 EST			0	0	4	0	Lightning
	05	1705 EST			0	0	4	0	Thunderstorm Wind
Franklin County	05	1715 EST			0	0	5	0	Thunderstorm Wind
	05	1715 EST			0	1	0	0	Lightning
Highland County	05	1715 EST			0	0	4	0	Thunderstorm Wind
Pickaway County	05	1720 EST			0	0	4	0	Thunderstorm Wind
Fayette County	05	1730 EST			0	0	5	0	Thunderstorm Wind
Licking County	05	1730 EST			0	0	4	0	Thunderstorm Wind
	05	1730 EST			0	0	5	0	Lightning
Fairfield County	05	1740 EST			0	0	4	0	Thunderstorm Wind
Clermont County	05	1745 EST			0	0	4	0	Thunderstorm Wind
Ross County	05	1750 EST			0	0	4	0	Thunderstorm Wind
Hocking County	05	1810 EST			0	0	4	0	Thunderstorm Wind
Perry County	05	1820 EST			0	0	4	0	Thunderstorm Wind
Gallia County	05	1840 EST			0	0	4	0	Thunderstorm Wind
Morgan County	05	1840 EST			0	0	4	0	Thunderstorm Wind
Gallia County	05	1915 EST			0	0	4	0	Thunderstorm Wind
Pike County	05	1930 EST			0	0	4	0	Thunderstorm Wind
Washington County	05	1930 EST			0	0	4	0	Thunderstorm Wind
Lawrence County	05	1950 EST			0	0	4	0	Thunderstorm Wind
	05	1950 EST			0	0	?	?	Hail (1.00")
Thunderstorms erupted across western Ohio during the afternoon and moved southeast through central, southwest and southeastern Ohio, with almost every county in these areas receiving damage. Trees and power lines were blown down across Morrow and Crawford counties. Sixty-five mph winds were reported in West Mansfield, and trees and power lines were blown down in Bellefontaine, in Logan County. Trees were blown down near Marysville, in Union County, and at Loveland and Cleves, in Hamilton County. Lightning struck 3 people in a parking lot at Kings Island Amusement Park near Foster, in Warren County. One 39 year old male died and two other males were injured. Trees and power lines were blown down in Urbana and Mechanicsburg, in Champaign County. Lightning struck a house in Powell, in Delaware County. The ensuing fire did \$20,000 damage. Lightning also struck a barn near Plain City, in Madison County. The fire that followed caused \$20,000 damage. Also in Madison County, trees were blown down across the county and a mobile home was destroyed near Plain City. Trees were blown down across Franklin and Highland counties. One man was injured when struck by lightning in the northwest part of Franklin County. Trees were blown down across eastern Pickaway County. Trees were downed and buildings were damaged in Washington Court House, in Fayette County. Trees were downed across Licking County, in Oakland, in Fairfield County, and the eastern part of Ross County. Lightning struck 3 homes near Utica, in Licking County. One was destroyed and the others were damaged by fire. Total damage was around \$100,000. Trees were blown down near Wurts Corner Road and Interstate 275, in Clermont County. Trees and power lines were downed across Hocking, Perry, Morgan and Pike counties. Trees were downed across State Route 35 near Centerville, while a short time later trees and power lines were blown down in Gallipolis, both in Gallia County. Trees were blown down and large hail fell in Belpre, in Washington County. Trees were blown down across Lawrence County, while large hail fell in Chesapeake. Lightning M390.									
Washington County	05	2000 EST			0	0	5	?	Flash Flood
Rainfall of 3 to 4 inches fell between 1900 and 2000 EST across Washington County. Rainfall of 1 to 2 inches fell earlier in the day over southern Ohio, which saturated the ground. Numerous roads throughout the county were covered with water. Four feet of water was over State Route 550 west of Marietta. Several people were trapped in their homes 3 miles west of Marietta. State Route 60 was closed by a landslide. Numerous basements were flooded. A woman escaped from her car on County Road 59, in Decatur Township, before it was completely submerged.									
Stark County	13	1215 EST			0	0	5	0	Lightning
Lightning struck a building in North Canton. Fire resulted in \$110,000 in damage.									
Henry County	23	1420 EST	0.10	25	0	0	4	0	Tornado (F0)
A tornado briefly touched down at 9229 Road N in Napoleon. A barn lost its roof and was moved a foot off its foundation.									
Darke County	29	1845 EST			0	0	4	0	Thunderstorm Wind
Trees were blown down in Greenville and just east of New Madison.									
Clinton County	29	1905 EST			0	0	4	0	Thunderstorm Wind
Trees and power lines were blown down across the county.									
Franklin County	29	2030 EST			0	0	4	0	Thunderstorm Wind
Trees were blown down in Bexley and Reynoldsburg.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	
OHIO									
Tuscarawas County	29	2115 EST			0	0	4	0	Thunderstorm Wind
			Trees and power lines were blown down across the county.						
Athens County	29	2130 EST			0	0	4	0	Thunderstorm Wind
Vinton County	29	2130 EST			0	0	4	0	Thunderstorm Wind
Meigs County	29	2200 EST			0	0	4	0	Thunderstorm Wind
			Trees and power lines were blown down in many areas of these counties.						
Butler County	29	1915 EST			0	0	5	?	Flash Flood
Warren County	29	1915 EST			0	0	5	?	Small Stream Flooding
Hamilton County	29	1930 EST			0	0	5	?	Small Stream Flooding
			Rainfall of 2 to 4 inches fell at West Chester, in southeast Butler County and at Mason, in southwest Union County between 1830 and 2030 EST. Rainfall of 1 to 3 inches fell over much of Hamilton County. The excessive runoff caused Gregory Creek, in southeast Butler County, to rise 20 feet in about one hour. The creek reached a depth of 5 feet at the Gregory Creek Mobile Home Park, in Liberty Township. One mobile home was destroyed and 27 received minor to severe damage. Twenty-five vehicles were damaged. Maud Hughes Road was washed out in Union Township. Flooding in Warren and Hamilton counties was mainly confined to small streams, sewer systems and basements. Mud slides toppled trees and blocked Duck Creek Road near Addyston, in southwest Hamilton County. The roof of a restaurant in Mason, in southwest Warren County, collapsed from the excessive rainfall.						
34 OKLAHOMA									
Devey County, 3 W Vici	05	1650CST			0	0	?	?	TSTM Wind
Osage County, Osage Co.	05	1655CST			0	0	?	?	TSTM Wind (57)
Major County, 6 SW Ames	05	1658CST			0	0	?	?	Hail (0.75)
Washington County, 3 W Copan	05	1700CST			0	0	?	?	TSTM Wind (57)
Washington County, Copan	05	1703CST			0	0	?	?	Hail (1.75)
Garfield County, Lahoma	05	1715CST			0	0	?	?	TSTM Wind
Major County, Meno	05	1718CST			0	0	?	?	Hail (1.00)
Major County, Ringwood	05	1725CST			0	0	?	?	Hail (1.00)
Major County, Meno	05	1737CST			0	0	?	?	Hail (1.00)
Washington County, Bartlesville	05	1738CST			0	0	5	?	TSTM Wind (61)
Nowata County, Nowata	05	1745CST			0	0	?	?	TSTM Wind (59)
Osage County, 8 S Barnsdall	05	1745CST			0	0	?	?	TSTM Wind (61)
Osage County, 8 S Barnsdall	05	1745CST			0	0	?	?	Hail (1.00)
Blaine County, Okeene	05	1800CST			0	0	?	?	TSTM Wind (52)
Rogers County, Oologah	05	1810CST			0	0	5	?	TSTM Wind (65)
Washington County, 10 S Bartlesville	05	1815CST			0	0	?	?	TSTM Wind (61)
Rogers County, 5 E Owasso	05	1820CST			0	0	?	?	TSTM Wind (57)
Tulsa County, 1 E Owasso	05	1825CST			0	0	?	?	TSTM Wind (55)
Osage County, 12 SE Fairfax	05	1830CST			0	0	?	?	Hail (0.88)
Pawnee County, 3 W Blackburn	05	1830CST			0	0	?	?	Hail (0.88)
Kay County, 2 E Tonkawa	05	1915CST			0	0	?	?	Hail (0.75)
Alfalfa County, 4 W Carmen	05	1930CST			0	0	?	?	TSTM Wind
Kingfisher County, 1 S Loyal	05	2009CST			0	0	?	?	TSTM Wind (52)
Payne County, Ingalls	05	2030CST			0	0	?	?	TSTM Wind (61)
Lincoln County, Tryon	05	2043CST			0	0	?	?	TSTM Wind (65)
Lincoln County, 3 E Hecker	05	2110CST			0	0	?	?	TSTM Wind (52)
Oklahoma County, Edmond	05	2145CST			0	0	?	?	Hail (0.88)
Cleveland County, Northern Portion	05-	2305CST-			0	0	?	?	Flash Flood
Oklahoma County, Southern Portion	05-	2305CST-			0	0	?	?	Flash Flood
	06	0115CST							
OKLAHOMA									
			Thunderstorms produced hail up to the size of golf balls, damaging winds, and flash flooding. In Bartlesville, several buildings sustained wind damage, including the roof of the American Legion Hall, an automobile dealership, and a department store. Total damage was estimated at 200,000 dollars. A mobile home was destroyed, and the roofs of a home and several other properties sustained damage. Trees were downed in Lahoma, Vici, Ingalls, and 4 miles west of Carmen, and a roof of a home in Ingalls sustained damage. In southern portions of the Oklahoma City metropolitan area, heavy rains resulted in flash flooding which closed Interstate 35 in southern Oklahoma and northern Cleveland counties.						
Harper County, 5 NW Buffalo	06	1508CST			0	0	?	?	Hail (1.75)
Harper County, 5 NW Buffalo	06	1608CST			0	0	?	?	TSTM Wind (52)
Harper County, 5 NW Buffalo	06	1630CST			0	0	?	?	Hail (2.50)
Harper County, West Half	06	1700CST-			0	0	?	?	Flash Flood
Harper County, Buffalo	06	1652CST			0	0	?	?	TSTM Wind (52)
Harper County, Buffalo	06	1652CST			0	0	?	?	Hail (0.75)
Texas County, Guymon	06	1736CST			0	0	?	?	TSTM Wind (61)
Woodward County, 4 NW Woodward	06	1748CST			0	0	?	?	Hail (0.75)
Woodward County, 4 NW Woodward	06	1748CST			0	0	?	?	TSTM Wind (52)
Ellis County, 8 S Harmon	06	1802CST			0	0	?	?	Hail (1.00)
Woodward County, 3 N Sharon	06	1830CST			0	0	?	?	TSTM Wind (52)
Roger Mills County, 4 N Crawford	06	1840CST			0	0	?	?	Hail (1.25)
Roger Mills County, 4 N Crawford	06	1840CST			0	0	?	?	TSTM Wind (52)
Beckham County, 4 W Elk City	06	1840CST			0	0	?	?	TSTM Wind
			Thunderstorms produced hail up to tennis ball size, damaging winds, and flash flooding. In and near Buffalo, tennis ball size hail broke out many windows and downed 70 power lines. A barn was destroyed and many other buildings suffered roof damage. Flash flooding from up to 6 inches of rain closed a state road west of Buffalo and washed out numerous bridges. A large cattle feeder was blown over and destroyed north of Crawford, and trees and power lines were downed 4 miles west of Elk City. Trees were also downed north of Sharon.						
Cimarron County, 8 E Boise City	15	1720CST			0	0	?	?	Hail (1.75)
			A severe thunderstorm produced golfball size hail in the western Oklahoma panhandle.						
Logan County, Guthrie	15	All Day			0	0	?	?	River Flood
			The Cottonwood Creek at Guthrie crested at 25 feet, which is 3 feet above flood stage, on the 15th. Many businesses were flooded by water one-half to one foot deep. Noble Avenue was closed during the flooding due to high water. Damage estimates were not available.						
Seminole County, 6 E Seminole	16	0745CST			0	0	5	?	Lightning
Pontotoc County, entire county	16	1145CST			0	0	5	?	Flash Flood
			Intense, slow-moving thunderstorms produced up to 7 inches of rain which resulted in flash flooding. Many streets were closed by up to 3 feet of water. Damage to roads and parks in the city was estimated at 141,000 dollars. Lightning struck a home 6 miles east of Seminole and the resulting fire resulted in damage estimated at 50,000 dollars.						
Nowata County, 1 S South Coffeyville	19	1800CST			0	0	?	?	Hail (1.00)
Craig County, 6 NE Welch	19	1930CST			0	0	?	?	Hail (0.88)
Ottawa County, Peoria	19	2000CST			0	0	?	?	TSTM Wind (61)
Osage County, Pawhuska	19	2245CST			0	0	?	?	TSTM Wind (52)
Nowata County, countywide	19-	2300CST-			0	0	?	?	Flash Flooding
Washington County, countywide	20	0100CST-			0	0	?	?	Flash Flood
Osage County, countywide	20	0000CST-			0	0	?	?	Flash Flood
Tulsa County, Tulsa and Broken Arrow	20	0200CST-			0	0	5	?	Flash Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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	

OKLAHOMA

									Thunderstorms produced quarter size hail and flash flooding along with strong winds. Flash Flooding in Nowata, Osage, Washington, and Tulsa counties. Closed roads east of Lenapah, between Hulah and Copan, and in Tulsa and Broken Arrow. In Tulsa up to 6 inches of rain resulted in the partial evacuation of a mobile home park along Mill Creek. Many cars were stranded and at least one was swept into a ditch. Some roads were closed by water 10 to 12 feet deep. In Broken Arrow the rains caused the collapse of a portion of the roof at City Hall. Damage was estimated at "around 8,000 dollars."
Ellis County, 15 S Guymon	20	1624CST			0	0	?	?	Hail (1.00)
Garfield County, 3 NE Lahoma	20	1628CST			0	0	?	?	TSTM Wind (52)
Texas County, Guymon	20	1630CST			0	0	?	?	TSTM Wind (52)
Texas County, Guymon	20	1634CST			0	0	?	?	Hail (1.50)
Garfield County, 8 W Enid	20	1646CST			0	0	?	?	TSTM Wind (61)
Major County, eastern portion	20	1654CST			0	0	?	?	TSTM Wind (65)
Garfield County, Western Enid	20	1705CST			0	0	?	?	TSTM Wind (52)
Kay County, 4 NW Branan	20	1739CST			0	0	?	?	Hail (0.88)
									Thunderstorms produced hail up to the size of quarters and damaging winds. Power lines and 2.5 foot diameter trees were downed in eastern Major County.
Tillman County, 4 W Davidson	21	UNKNOWN			1	0	?	?	Excessive Heat
									A 78 year old Davidson man died of exposure to excessive heat after he collapsed while walking from his truck. When found, the man had a body temperature of 120 degrees F. M780
Texas County, 8 W Guymon	22	1623CST			0	0	?	?	TSTM Wind (56)
Texas County, 8 W Guymon	22	1634CST			0	0	?	?	TSTM Wind (61)
Garfield County, Enid	22	1815CST			0	0	?	?	TSTM Wind
									Thunderstorms produced localized wind damage that was likely the result of microbursts. In Enid, part of the roof of a shopping center was ripped off, and trees were downed.
Custer County, Clinton	28	2000CST			0	0	?	?	TSTM Wind
									A thunderstorm microburst caused substantial damage. The roof of a lumber yard building was ripped off, and several buildings at the Clinton airport were damaged, numerous windows were blown out, and trees were downed. Much of the town was without power after the storm.
Tulsa County, Tulsa	29	1240CST			0	0	?	?	Hail (1.00)
Rogers County, 10 NE Claremore	29	1300CST			0	0	?	?	TSTM Wind (52)
Wagoner County, 6 NNW Oneta	29	1312CST	short	20	0	0	?	?	Tornado (F0)
Rogers County, 5 W Inola	29	1330CST			0	0	?	?	TSTM Wind
Pottawatomie County, 4 E Tecumseh	29	1610CST			0	0	?	?	Hail (0.88)
Jackson County, 9 E Blair	29	1730CST			0	0	?	?	TSTM Wind
Grady County, Rush Springs	29	1822CST			0	0	?	?	Hail (0.88)
Grady County, Norge	29	1904CST			0	0	?	?	TSTM Wind (56)
Grady County, Norge	29	1907CST			0	0	?	?	Hail (1.00)
Grady County, Chickasha	29	1912CST			0	0	?	?	Hail (1.75)
									Thunderstorm winds produced hail up to the size of golf balls, damaging winds, and one tornado. An F0 tornado touched down 6 miles north-northwest of Oneta but caused no known damage. Thunderstorm wind damaged a roof 10 miles northeast of Claremore, and damaged a mobile home and downed trees 5 miles west of Inola. Strong thunderstorm winds blew over a farm shed, downed a residential outdoor TV antenna, and downed trees 9 miles east of Blair.
Beaver County, Beaver	30	1700CST			0	0	?	?	Hail (1.75)
									A thunderstorm in Beaver County produced golfball size hail that broke out many windows on the south side of town.

35 OREGON

ORZ009 Klamath Co.	08	1410 PST	10		0	0	5	6	Thunderstorm, Hail
									A severe thunderstorm struck Merrill, at about 3:10 pm PDT. The storm had very strong rain and wind estimated at 75 to 100 mph. Marble size hail accumulated to depths of 3 inches in some areas. Thousands of trees were damaged and about 100 were uprooted. The storm lasted 20 minutes in Merrill and moved northeast. Potato fields were heavily damaged by the hail and grain fields were reduced to near ground level. No funnel-type clouds were observed.
ORZ011 Union Co.	08	1650- 1900 PST			0	0	3	0	Flash Flood
									A heavy thunderstorm moved through here with brief heavy rain. Based on reports from local fire and sheriff departments, a flash flood warning was issued for Union County. Firefighters said a 3 foot high wall of water came down the narrow canyon. The creek rose only one foot or less downstream.
ORZ008 Deschutes Co.	22	1100 PST			0	0	4	?	Thunderstorm Wind
									Wind from a thunderstorm ripped up fences and sheds, and uprooted trees with roots 6 inches in diameter. Windows in one house shattered in the storm sending a shard of glass 6 inches long into the wall like a knife. Wind gusts were estimated at 50 to 70 mph.
ORZ006 Deschutes Co. Bend	22	1200PST	1	10	0	0	4	0	Tornado (F1)
									An air mass thunderstorm spawned a tornado that moved west to east from a point about 5 miles east of Bend. A small shed roof was blown off. Later a 20' x 40' shed roof was removed and portions of it were never found. Broken window glass from a home was embedded into a wall and chest of drawers. Juniper and poplar trees were selectively uprooted while others were untouched. One witness saw large metal pieces rotating up in the sky and were not found later.
ORZ005 Southern Douglas Co. ORZ013 Northern Jackson Co.	29	1630 PST			0	0	?	0	Severe Thunderstorm Hail (0.75)
									A thunderstorm developed very quickly and moved north-northeast over the county line. Hail up to 3/4 inch in diameter fell near Diamond Lake.

36 PENNSYLVANIA, Eastern

Lycoming County: Montoursville	06	1513EST			0	0	?	0	TSTM Wind (53)
Williamsport	06	1520EST			0	0	3	0	TSTM Wind
Williamsport	06	1524EST			0	0	3	0	TSTM Wind
3NE Muncy	06	1530EST			0	0	3	0	TSTM Wind
Hughesville	06	1531EST			0	0	3	0	TSTM Wind
Lairdsville	06	1550EST			0	0	3	0	TSTM Wind
									Thunderstorm wind gusts downed trees and utility lines and were measured at 61 mph at the Williamsport-Lycoming County Airport (IPT) in Montoursville.
York County	06	2120EST			0	0	?	?	Flood
									Torrential rains caused flooding of many roads and highways near Thomasville to the west of York Airport and near the Adams County line, just east of Abbottstown which is in Adams County. Flooding occurred from 2120 to 2230 EST.
Bucks County, Doylestown	06	2135EST			0	0	4	0	TSTM Wind (55)
									Thunderstorm wind gusts of up to 63 mph brought down trees. At least one automobile was crushed by a falling tree.
Montgomery County	12	1615EST			0	0	?	0	Flood
									Heavy rain caused considerable street flooding in Norristown. Flooding occurred between 1615 and 1700 EST.
Bucks County	13	1015EST			0	0	?	0	Flood
									Heavy rain caused roadway flooding and also flooded several basements in Quakertown. Three inches of rain fell in one hour in Quakertown and 2.5 inches fell in 45 minutes in Perkasie. The flooding occurred between 1015 and 1115 EST.
Bucks County	15	1400EST			0	0	3	?	Flood
									Thunderstorm downpours with as much as 2.3 inches of rain in one hour caused considerable roadway flooding and some basement flooding. The area from Doylestown east across Buckingham and Solebury townships was the only area that received significant rainfall. Flooding occurred between 1400 and 1600 EST.
Montgomery County	15	1600EST			0	0	4	?	Flash Flood
									Thunderstorm downpours with up to 2 inches of rain or slightly more in less than an hour caused flooding in two locations in the county. In the west end of Pottstown and in West Pottsgrove Township many streets and some basements were flooded. As much as 2 to 3 feet of water was on some streets. The flooding occurred from 1600 to 1800 EST. In Green Lane and Sunnyside many roads were flooded with as much as 4 feet of water in spots. Basements and first floors of buildings were flooded. The Unami Creek and other small streams overflowed their banks. Forty feet of one road was washed out. Portions of lawns and driveways were washed out. Flooding occurred between 1645 and 1900 EST.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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		
36 PENNSYLVANIA, Western										
Cambridia County Ebensburg	04	2032EST			0	0	0	0		Thunderstorm Wind Trees were downed near Ebensburg due to thunderstorm wind.
Indiana County 14SW Indiana	05	1915EST			0	0	0	0		Thunderstorm Wind Trees were downed in the Clarksburg area due to thunderstorm wind.
Cambridia County 16N Ebensburg 16NE Ebensburg 9N Ebensburg	05	1945EST 2005EST 2015EST			0	0	0	0		Thunderstorm Wind Thunderstorm Wind Lightning Tree damage was done in Barnesboro and Hastings, and a house was struck by lightning in St. Benedicts.
Armstrong County 14E Kittanning 5E Kittanning	06	1600EST 1605EST			0	0	4	0		Thunderstorm Wind Thunderstorm Wind At 1600EST, trees were downed in Elderton, Sagamore and Cowan-shannock, and a tree fell on a trailer in Meredith. At 1605EST, power outages occurred along Route 85 east of Kittanning due to falling trees.
Indiana County 14SW Indiana	06	1645EST			0	0	0	0		Thunderstorm Wind Trees were downed in Clarksburg.
Indiana County 8SW Indiana	08	1115EST			0	0	2	0		Thunderstorm Wind A shed was blown down in Aultman.
Erie County 12SW Erie 10SW Erie 7SW Erie	15	2235EST 2240EST 2243EST			0	0	0	0		Hail (1.75) Thunderstorm Wind Thunderstorm Wind Golfball size hail fell at Lake City. At 2240EST, falling trees resulted in power outages in Girard, and at 2243EST, large trees were also downed northwest of McKean.
Erie County 10SW Erie 16S Erie 14S Erie 27SE Erie	22	1530EST 1540EST 1540EST 1605EST			0	1	4	0		Thunderstorm Wind Thunderstorm Wind Thunderstorm Wind Thunderstorm Wind At 1530EST, one person was injured in Fairview when a window shattered due to thunderstorm wind, and four houses and one barn were damaged. At 1540EST, another person was injured in Edinboro when a tree fell on a car. At the same time, two homes were nearly destroyed in Waterford, two others sustained damage, and two trailers were blown off of their foundations and destroyed. At 1605EST, two houses were damaged in Corry.
Warren County Warren	22	1700EST			0	0	4	0		Thunderstorm Wind Trees were downed and the roof was blown off of a business in Warren.
Westmoreland County 10SW Greensburg 10SW Greensburg 6SE Greensburg 12SW Greensburg	23	1830-2100EST 1845EST 1845EST 2012EST			0	0	4	0		Flash Flood Lightning Thunderstorm Wind Flash Flood Flooding occurred along tributaries of Sewickley Creek in South Huntingdon and Mt. Pleasant, where one hundred homes had basement flooding. At 1845EST, a house was struck by lightning in South Huntingdon and trees were downed in Mt. Pleasant, causing the blockage of roads. At 2012EST, heavy rains washed out a culvert near West Newton, causing a train to derail. Thirty-two of the railcars went off the track.
37 RHODE ISLAND - NONE REPORTED										
38 SOUTH CAROLINA										
GREENVILLE COUNTY southern portions Fountain Inn Mauldin	01	1430EST 1430EST 1445EST			0	0	5	4		LIGHTNING TSTM WINDS(G52) FLASH FLOODING Slow-moving thunderstorms developed over Greenville County and moved south. The main storm was marginally severe and produced some wind damage in the southern part of the county - some power lines were downed by winds. The lightning and heavy rains were the most significant feature of the storms. Water was reported four feet deep on US Hwy. 276 in Mauldin and some homes were flooded or Adams Mill Road. Intense lightning caused some scattered damage.
LAURENS COUNTY Laurens	01	PM			0	0	?	?		LIGHTNING Lightning struck the county's law enforcement and emergency medical service transmitting tower, damaging communications equipment.
BAMBERG COUNTY Orange Grove Community	01	1730EST			0	0	4	0		TSTM WINDS Thunderstorm winds knocked over several pecan trees, and damaged a mobile home. Also damaged were an addition to the mobile home and a barn.
GEORGETOWN COUNTY Litchfield-by-the-Sea	01	2015EST			0	0	4	0		LIGHTNING A lightning-sparked fire destroyed a duplex under construction.
ANDERSON COUNTY 9 NNE Anderson	06	1515EST			0	0	?	?		HAIL(0.75)
PICKENS COUNTY near Clenson	06	1528EST			0	0	?	?		TSTM WINDS
ANDERSON COUNTY near Pelzer Pendleton	06	1534EST 1538EST			0	0	?	?		TSTM WINDS HAIL(0.75)
GREENWOOD COUNTY near Ware Shoals Greenwood	06	1603EST 1625EST			0	0	3	?		TSTM WINDS(G52) LIGHTNING & TSTM WINDS(G52)
ANDERSON COUNTY Anderson	06	1630EST			0	0	4	0		TSTM WINDS
LAURENS COUNTY Waterloo Community	06	1630EST			0	0	?	?		LIGHTNING
GREENWOOD COUNTY southern portions	06	1645EST			0	0	4	0		TSTM WINDS Lightning struck a screen door at a residence in Greenwood, injuring a woman. Severe thunderstorms developed over northern Anderson and southern Pickens counties and moved southward through the western part of the upstate. Anderson and Greenwood counties were the hardest hit areas - wind damage to trees and power lines was common there. The worst storm developed near Ware Shoals and moved through Greenwood City and on to the south. Damage was quite extensive there. Lightning started an attic fire, also in Greenwood, that was quickly extinguished.
YORK COUNTY Lake Wylie Lake Wylie Port Mill	06	1645EST 1645EST 1710EST			0	1	0	0		LIGHTNING TSTM WINDS TSTM WINDS Thunderstorm winds overturned a pontoon boat carrying 5 adults near the Buster Boyd Bridge and heavily damaged a marina. A man (age 30) standing under a tree at the lake was seriously injured when lightning struck the tree. All passengers were able to swim to shore safely. In Port Mill, winds toppled a tree, causing it to fall on a home.
CHESTER COUNTY Blackstock 5 S Chester	06	1730EST 1730EST			0	0	4	0		TSTM WINDS TSTM WINDS A large oak tree was blown on a car. Telephone poles were felled along the northbound land of the S.C. Hwy. 97, about 4 miles south of the Chester County Hospital.
YORK COUNTY countywide near River Hills	06	1730EST 1745EST			0	0	?	?		TSTM WINDS LIGHTNING Lightning struck a tree, injuring a 30 year old man while he was standing near it at a home on Bonum Road off S.C. Hwy. 49. Thunderstorm winds knocked over trees and caused power outages throughout the county.
PICKENS COUNTY Pelzer	07	0100EST			0	0	3	0		LIGHTNING Lightning apparently caused a small fire in an elevator at the Gerber Childrens Wear Plant.
CHARLESTON COUNTY between Bulls Bay and Kiawah Island James Island	07	1300EST 1310EST			0	0	?	?		WATERSPOUTS TSTM WINDS & HAIL (UNK) Waterspouts were reported between Kiawah Island and Bulls Bay for 15 minutes. Thunderstorm winds blew a tree down on a pickup truck and hail was observed on James Island.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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	

SOUTH CAROLINA

BEAUFORT COUNTY Hilton Head Island	14 0724EST	0	0	?	?	LIGHTNING
SC2007-00E COAST	14 1236EST	0	0	?	?	URBAN FLOODING Slow-moving thunderstorms caused isolated urban flooding. Some of the worst flooding occurred on Hilton Head Island, where five inches or more of rainfall occurred in the morning hours. Some parts of the island had water knee-deep. Also on Hilton Head Island, lightning struck a transformer, knocking out power to 4,000 customers.
ANDERSON COUNTY Williamston	14 1445EST	0	0	2	0	TSTM WINDS Large trees were blown down.
ANDERSON COUNTY Powdersville	16 1430EST	0	0	?	?	LIGHTNING
GREENVILLE COUNTY Taylors and Greer	16 1445EST	0	0	?	?	FLOODING & FLASH FLOODING An almost stationary thunderstorm produced up to 3.5 inches of rain in about an hour, causing flooding of some roads and US Hwy. 29 between Greer and Taylors. It also disrupted power in Anderson County and caused urban and small stream flooding in Greenville County.
UNION COUNTY near Jonesville	17 1706EST	0	0	?	?	TSTM WINDS An isolated severe thunderstorm blew down several trees.
LEXINGTON COUNTY 7 E Lexington	18 1700EST	0	0	?	?	HAIL(1.75) Hail from one inch to golf ball size was reported.
SPARTANBURG COUNTY Holly Springs	18 1930EST	0	0	4	2	LIGHTNING & TSTM WINDS Lightning struck a barn, setting it on fire. Two trees also fell in the storm.
MARION COUNTY Marion	18 PM	0	0	?	?	TSTM WINDS Thunderstorm winds uprooted many trees.
RICHLAND COUNTY Columbia	20 1245EST	1	0	0	0	LIGHTNING Lightning struck and killed a man at a cemetery during a funeral. He was 15 feet from a tent used to shelter the grave, and was standing in the open (M500).
LEE COUNTY N of Bishopville	20 1815EST	0	0	4	0	LIGHTNING Lightning caused a fire that burned a house to the ground.
SPARTANBURG COUNTY Spartanburg Southern Spartan- burg City countywide Glenn Springs	23 1635EST 23 1653EST 23 1700EST 23 1720EST	0 0 0 0	0 0 5 0	3 4 5 3	0 0 0 0	TSTM WINDS TSTM WINDS LIGHTNING TSTM WINDS
CHEROKEE COUNTY countywide Blacksburg	23 1730EST 23 1730EST	0 0	0 0	4 3	0 0	FLASH FLOOD TSTM WINDS & LIGHTNING
UNION COUNTY near Union	23 1800EST	0	0	3	0	TSTM WINDS Thunderstorms developed over northern Greenville and Spartanburg counties and became severe as they moved southeast. One dominant storm moved slowly through Spartanburg and produced a fair amount of wind damage, mostly to trees and power lines, as it moved into Union County. The left portion of the storm complex produced up to 5 inches of rain over Cherokee County causing the most significant flooding there in some time. Bridges and roads were washed out or flooded in several areas, and there was one report of trees being blown down near Blacksburg. Intense lightning caused a number of problems in both counties.
RICHLAND COUNTY Columbia	23 2045EST	0	0	?	0	LIGHTNING Lightning struck a home.
LAURENS COUNTY Clinton	24 1335EST	0	0	2	0	TSTM WINDS Trees were blown down onto a road.
OCCONEE COUNTY Seneca	24 1435EST	0	0	?	?	HAIL(1.75) Golfball size hail was reported.

SOUTH CAROLINA

CHARLESTON COUNTY Union Heights Area N of Mt. Pleasant Chas. Naval Base James Island countywide Charleston	24 1500EST 24 1500EST 24 1500EST 24 1500EST 24 1500EST 24 1515EST	0 0 0 0 0 0	0 0 3 3 0 ?	4 0 6 3 0 ?	0 0 0 0 0 0	TSTM WINDS TSTM WINDS TSTM WINDS LIGHTNING TSTM WINDS URBAN FLOODING & HAIL (UNK)
A line of heavy thunderstorms accompanied by strong winds and hail moved through Charleston County in the late afternoon. Power was out to an estimated 18,500 customers as result of the storms. Two people were injured when thunderstorm winds toppled a guard shack at the Charleston Naval Base, while another person was injured at the base when a tree hit a shipyard worker. Lightning burned a hole in the wall and roof of a James Island home and injured one person. A mobile home blew over north of Mount Pleasant off S.C. Hwy. 41. Downburst winds blew off roofs of two houses and overturned a trailer. More than 4 inches of rain fell during the episode, causing some urban flooding. Nearly two inches (1.89") of rain fell in 24 minutes in downtown Charleston.						
BEAUFORT COUNTY Port Royal countywide	24 1525EST 24 1530EST	0 0	0 0	3 ?	0 ?	LIGHTNING LIGHTNING Lightning caused a house fire in Port Royal. Lightning caused widespread power outages throughout the county.
GEORGETOWN COUNTY Georgetown	24 1530EST	0	0	?	?	TSTM WINDS Thunderstorm winds uprooted several trees and broke many limbs, disrupting power when lines were damaged.
HORRY COUNTY Socastee Myrtle Beach	24 1700EST 24 1700EST	0 0	0 0	?	?	LIGHTNING URBAN FLOODING A thunderstorm affected the Socastee and Myrtle Beach areas in the late afternoon. In Socastee, lightning hit a drive-in restaurant, causing minor damage to the roof and breaking a couple of umbrellas that customers had left outside in front of the store. There were scattered power outages throughout the Myrtle Beach and Socastee areas. There was urban flooding along US Hwy. 17-A.
OCCONEE COUNTY Salem Walhalla	26 1630EST 26 1630EST	0 0	0 0	2 2	0 0	TSTM WINDS LIGHTNING
PICKENS COUNTY near Central	26 1700EST	0	0	3	0	TSTM WINDS & FLASH FLOODING A band of thunderstorms moved out of the mountains across the northern part of the upstate. One of the storms briefly became severe in Oconee and Pickens counties and heavy rain caused minor flooding near Central. Lightning set a clubhouse afire at Walhalla. Winds blew trees down near Salem.
FLORENCE COUNTY Florence	28 PM	0	0	3	0	URBAN FLOODING Flooding occurred along Chevis Street during a rain storm.
BEAUFORT COUNTY Hilton Head	31 0352EST	1	4	0	0	LIGHTNING Lightning knocked out a radio emergency dispatch center on Hilton Head. A dispatcher was slightly injured.

39 SOUTH DAKOTA

Bennett County, Harrington	02 1500 CST	0	1	2	0	TSTM Wind Windows blown out by thunderstorm winds injured one person with flying glass. Some tree damage also occurred.
Hughes County, Blunt	02 1610 CST	0	0	0	0	TSTM Wind (57) Large tree limbs were blown down.
Brown County, 20N Aberdeen	03 2015 CST	0	0	0	0	Hail (1.75)
Brown County, BW Hecla	03 2030 CST	0	0	0	0	Hail (1.75)
Marshall County, Amherst	03 2200 CST	0	0	6	6	Hail (1.75) TSTM Wind (70) Strong thunderstorm winds drove golfball size hail through most of the windows on the west side of buildings. Corn crops were stripped of their leaves and the ears were shattered leaving just a stalk; small grain crops were beaten down. A total of 1800 acres were badly damaged.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	
— SOUTH DAKOTA									
Clark County, 9N 2W Clark	04	0100 CST			0	0	2	0	TSTM Wind
		Thunderstorm winds damaged a barn and trees on a farmstead.							
Clark County, Clark	04	0110 CST			0	0	0	0	TSTM Wind (70)
Codington County, Watertown	04	0145 CST			0	1	5	0	TSTM Wind (65)
		Strong thunderstorm winds damaged several mobile homes and injured one person. The storm also downed numerous tree limbs and power lines. Damages from the storm were estimated between \$150,000 and \$200,000.							
Hanlin County, Castlewood	04	0200 CST			0	0	0	0	TSTM Wind (70)
Codington County, Florence	12	2020 CST			0	0	0	0	TSTM Wind (52)
Codington County, 2W Watertown	12	2027 CST			0	0	0	0	TSTM Wind (52)
Brown County, 15NW Aberdeen	13	1502 CST			0	0	0	0	Hail (1.75)
Aberdeen	13	1510 CST			0	0	3	0	Hail (0.75)
		Hail caused minor damage to cars and trees.							
Brown County, 2W Aberdeen	13	1511 CST			0	0	0	0	Hail (0.75)
6W Aberdeen	13	1513 CST			0	0	0	0	Hail (1.00)
6NW Aberdeen	13	1517 CST			0	0	0	0	Hail (1.25)
3NW Aberdeen	13	1537 CST			0	0	0	0	Hail (0.75)
3NW Aberdeen	13	1540 CST			0	0	0	0	Hail (1.00)
Stratford	13	1600 CST			0	0	0	0	Hail (0.75)
1N Stratford	13	1600 CST			0	0	5	0	Hail (1.25)
		Hail completely stripped 1500 acres of corn and sunflowers and accumulated to a depth of 4 to 6 inches on the roadways north of Stratford.							
Marshall County, 6SE Veblen	13	1630 CST			0	0	0	0	Hail (0.67)
Bon Homme County, Avon	13	1800 CST			0	0	0	0	Hail (1.00)
Custer County, E Custer	16	1700 MST			0	0	0	0	Hail (1.75)
Edmunds County, Roscoe	18	1910 CST			0	0	0	0	Hail (0.75)
Edmunds County, 5S Mina	18	2145 CST			0	0	?	0	Lightning
		Fire caused by lightning burned down a hog barn.							
Spink County, 2W Redfield	20	2145 CST			0	0	0	0	Hail (0.75)
Clark County, 26W Watertown	21	1310 CST			0	0	0	0	TSTM Wind (56)
Codington County, Watertown	21	1330 CST			0	0	0	0	TSTM Wind (61)
Lincoln County, 5SW Worthing	21	1536 CST			0	0	0	0	Funnel
Worthing	21	1547 CST			0	0	0	0	Funnel
6NE Beresford	21	1550 CST			0	0	0	0	Funnel
		Hail (1.00)							
Deuel County, 7E Brvant	21	1350 CST			0	0	0	0	Hail (0.75)
Hemlin County, 7E Estelline	21	1550 CST			0	0	0	0	Hail (0.75)
		Funnel							
Deuel County, 6W 3S Clear Lake	21	1630 CST			0	0	?	?	Hail (1.75)
		Hail broke several windows on outbuildings and stripped leaves from corn and soybeans.							
Dav County, Enemy Swim Lake	21	1645 CST			0	0	0	0	Hail (1.75)
Codington County, 3E Florence	21	1706 CST			0	0	0	0	Hail (1.75)
Codington County, Florence	21	1711 CST			0	0	0	0	Hail (2.00)
Deuel County, 3NE Kranzburg	21	1740 CST			0	0	0	0	Hail (2.75)
Grant County, 1NW Milbank	21	1810 CST			0	0	0	0	Hail (0.75)
— SOUTH DAKOTA									
Pennington Co., Rapid City Airport	24	1720 MST			0	0	0	0	Hail (1.00)
Meade County, Ellsworth AFB	24	1737 MST			0	0	0	0	Hail (1.75)
Custer County, Hermosa	24	1752 MST			0	0	0	0	Hail (1.75)
Meade County, Goal	24	1820 MST			0	0	0	0	Hail (1.25)
Meade County, 40N Rapid City	24	1825 MST			0	0	0	0	Hail (0.75)
Miner County, 1N Howard	26	1850 CST .5	50		0	0	?	0	Tornado (F0)
		A roof was blown off a barn.							
Lake County, Winfree	26	1955 CST .3	30		0	0	?	0	Tornado (F0)
		A tornado touched down briefly on a farm.							
Fall River Co., Edgemont	27	1555 MST			0	0	0	0	Hail (0.75)
Pennington Co., 12W Rapid City	31	1410 MST			0	0	0	0	Hail (1.50)
15W Rapid City	31	1410 MST			0	0	0	0	Hail (1.50)
Rapid City	31	1430 MST			0	0	0	0	Hail (0.75)
40 TENNESSEE									
MCNAIRY COUNTY	24	1500CST			0	0	4	0	LIGHTNING
		Lightning struck a church steeple during a thunderstorm in Selmer. It blew out the bricks and started a fire that totally destroyed the steeple. Fire fighters put out the blaze and estimates of the damage were around \$20,000.							
SUMNER COUNTY	26	1000CST			0	0	4	0	THUNDERSTORM WIND
WILSON COUNTY	26	1030CST			0	0	4	0	THUNDERSTORM WIND
	26	1230CST			0	1	0	0	LIGHTNING
		Damaging thunderstorm winds hit the Lebanon and Gallatin areas in the late morning hours. In Gallatin a marina had its roof ripped off and extensive damage done to the supporting structure by thunderstorm wind. In Lebanon thunderstorm winds snapped a dozen telephone poles in a row. A number of trees and power lines were downed as well. On a farm near Lebanon, a man was struck by lightning while riding on a tractor. He was hospitalized due to his injuries.							
BLOUNT COUNTY	26	1330CST			0	0	5	0	LIGHTNING
	26	1335CST			0	1	0	0	LIGHTNING
		A thunderstorm produced a lot of cloud-to-ground lightning in Maryville, causing damage and injury. On the campus of Maryville College a woman was injured as she was holding a metal door open when lightning struck nearby. She was held overnight in the hospital for observation. A Maryville electric substation was hit by lightning, damaging a transformer and destroying a regulator station.							
FUTNAM COUNTY	26	1400CST			1	0	0	0	LIGHTNING
		A teenage boy was killed by lightning while cutting tobacco in a field near Baxter. M160							
MAURY COUNTY	30	1100CST			1	0	0	0	LIGHTNING
		A man was killed at his Columbia home when lightning struck a tree next to his driveway. This caused a large limb to fall through the windshield of the car he was driving as he pulled into his driveway. M58V							
41 TEXAS, Northern									
Erath County	02	0830CST-1100CST			0	0	?	?	Flash Flooding
		Heavy rains produced high water over several streets in Stephenville. Highest rainfall amounts were recorded at Dublin in southern Erath County where 4.75 inches fell.							
Eastland County	02	0800CST-1100CST			0	0	?	?	Flash Flooding
		Approximately 3 inches of rain fell in a few hours and flooded several streets and low water crossings over scattered parts of Eastland County.							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	
TEXAS, Northern									
Stephens County	02	1030CST-1200CST			0	0	?	?	Flash Flooding
					Heavy rains of 3 inches in a two hour period and total rainfall amounts up to 6.50 inches produced high water over a number of highway crossings in the northeastern and eastern portions of Stephens County. Several highway bridges along Park Road 33 and one bridge along State Highway 717, just off State Highway 180, were temporarily closed due to high water of unknown depth over the roadways.				
Tarrant County:									
Keller	06	1400CST			0	0	?	?	Hail (0.88)
Keller	06	1428CST			0	0	?	?	TSIM Wind
Ft Worth	06	1430CST			0	0	?	?	TSIM Wind
					Strong winds broke off several large limbs from trees in Keller. Power outages to approximately 1,300 homes occurred in northwest Fort Worth due to large tree limbs being blown down onto power lines.				
Collin County:									
3 N Plano	06	1420CST			0	0	?	?	Hail (0.75) and TSIM Wind (56)
Plano	06	1425CST			0	0	?	?	Hail (0.75) and TSIM Wind
					Dime size hail broke the window out of a Plano police squad car. A downburst uprooted a few trees, damaged an awning, and ripped the tile from the side of a building in Plano. Approximately 1,500 homes or businesses lost electrical power for an hour when 15 utility poles were snapped in Plano.				
Dallas County:									
Dallas	06	1428CST			0	0	?	?	Hail (0.88) and TSIM Wind
Dallas	06	1500CST			0	0	?	?	Lightning
Dallas	06	1520CST-1700CST			0	0	?	?	Flash Flooding
					A downburst blew down several trees onto power lines, resulting in power outages to more than 7000 residents in Dallas. Also, lightning ignited an apartment fire while several parts of downtown Dallas were flooded. Portions of Central Expressway were flooded also.				
Kaufman County	06	1603CST			0	0	?	?	TSIM Wind
5 NE Terrell					A downburst blew down several trees on Farm to Market Road 429 located north of U.S. Highway 80 about five miles northeast of Terrell.				
Cass County	06	2010CST			0	0	?	?	Hail (0.88)
Bivins	10	0735CST			0	0	?	?	Lightning
Somervell County									
Glen Rose					Lightning ignited a well house at a residence in Glen Rose.				
Archer County	16	1615CST			0	0	?	?	Hail (1.75)
Archer City									
Harrison County	16	1830CST			0	0	?	?	Hail (1.00) and TSIM Wind
Hallsville					A downburst damaged a barn and blew power lines down and the roof off of a feed store in Hallsville. In addition, dozens of pine trees were uprooted and fell onto six mobile homes at a mobile home park in Hallsville.				
Tarrant County:									
Bedford	17	1310CST-1500CST			0	0	?	?	Flash Flooding
	17	1330CST			0	0	?	?	TSIM Wind
Hurst	17	1310CST-1500CST			0	0	?	?	Flash Flooding
					A downburst blew several street signs and power lines down, and a few power transformers off their utility poles in Bedford. Meanwhile, a heavy downpour of two and one-half inches of rain in a thirty minute period flooded numerous homes and businesses in both Bedford and Hurst. Accumulated water caused the partial collapse of the roof of one business in Hurst.				
Callahan County	17	1345CST			0	0	?	?	TSIM Wind
Clyde					Strong winds ripped a metal roof off a building in Clyde.				
Palo Pinto County	17	1500CST			0	0	?	?	TSIM Wind
5 W Mineral Wells					A downburst blew down two doors attached to a barn located five miles west of Mineral Wells.				
Collin County	24	1458CST			0	0	5	?	Lightning
Plano					Lightning ignited a house fire in Plano that resulted in \$136,000 in damage.				
Uptar County	29	1445CST			0	0	?	?	TSIM Wind
Bettie					In Bettie, a downburst blew down several trees onto power lines resulting in power outages to 140 residents for one and one-half hours. A high school had shingles ripped off the gymnasium roof, a window broken in the school's van, and a portion of its roof damaged.				
41 TEXAS, Southern									
Southeast Texas	1-3				2	?	8	?	Hurricane "Chantal"
					Early on the 30th of July, a tropical depression formed in the south-central Gulf of Mexico. The depression continued to strengthen and became the first Atlantic hurricane of the season at 4 PM CST on the 31st and was named Chantal. The hurricane continued northwest during the evening and nighttime hours and made landfall on the Upper Texas Coast near High Island at 7 AM CST on the 1st. The storm continued to track northwest during the day to north of Houston and to near College Station by dark. The hurricane was downgraded to tropical storm strength at 0845 CST and to a depression at 1900 CST. Maximum winds at the time of landfall were in the 80 to 90 MPH range which would categorize the storm strength on the Saffir-Simpson scale as a category 1 storm.				
					The main effects from the storm were from flooding that was produced by the heavy torrential rains that fell to the west of where the storm made landfall. 10 to 12 inches of rain fell from northern Galveston County west and northwest to central Fort Bend County. This area would include northern Brazoria and southern Harris counties (see Outstanding Storms). Serious flooding developed in these counties and is described below by counties.				
					Wind damage across the area would have to be classified as relatively light. However, numerous trees, power lines, fences and signs were blown down. There was some roof damage to homes, carports and mobile homes but the damage was mostly roofing material that was blown off. There was little structural damage except where trees fell onto residences, vehicles and mobile homes.				
					There were estimated to be about 3000 homes in the area that suffered either water or wind damage.				
					Total damage from the storm was estimated to be in the neighborhood of 100 million dollars.				
					Storm surge heights on the Gulf side beaches were a maximum of 5 to 7 feet on Bolivar Peninsula near High Island where some beach erosion took place. The high water and wave action eroded more than a mile of Tx.Hwy. 87 that runs near the dune line. More than 15 miles of the highway was covered with debris and sand. Heights were reported at 3.5 feet on Galveston Island. Kemah, on Galveston Bay, measured 3.6 feet above normal. Trinity and Galveston bays had little damage from the storm surge or tidal flooding. Very little beach erosion occurred on Galveston Island.				
					There were two deaths attributed directly to the storm. Two teenage boys drowned in Brazos County when their raft on which they were riding capsized in flood waters and they were swept into a drainage pipe. M160, M170.				
					There were a few minor injuries. Hundreds of persons were evacuated by airboats and high water vehicles in flooded areas.				
					There were 18 persons rescued by U.S. Coast Guard helicopters and rescue boats. Most of these were fishermen whose boats capsized in the rough waters of the Gulf of Mexico mainly near Bolivar Peninsula. Several of these rescues were near the jetties at Sabine Pass.				
					There was one confirmed tornado reported in Galveston County.				
					Specific damage and details of the storm is listed below by counties.				
Brazoria County	1-3	0600CST			0	0	?	?	Flooding
	1	Morning			0	0	?	?	Wind (?)
					Up to 12 inches of rain fell over the northern part of the county and flooded areas mainly in the Pearland-Manvel area. The entire town of Manvel was inundated at one time from flood waters. At least 100 homes in the area had water damage. High water persisted in the area and was still a problem until the 3rd as flood waters were slow to recede, especially in the area just south of Clear Creek. About 500 homes in the county suffered some kind of water or wind damage but mostly due to high water.				
Chambers County	1	Morning			0	2	?	?	Wind (?)
	1-2	Morning			0	0	?	?	Flooding
					High winds tore roofing material off of some homes and mobile homes. About 100 homes in the county were affected. Damage was light and scattered. Flooding occurred over the southern part of the county where up to 6 inches of rain fell.				

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 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	
TEXAS, Southern									
Fort Bend County	1-3	1200CST			0	0	?	?	Flooding
	1	?			0	0	?	?	Wind (?)
	<p>Between 8 and 12 inches of rain fell over the eastern part of the county which resulted in significant flooding. Hardest hit area was the Fresno and Arcola area. There were at least 60 homes in the Fresno area that had water in them and families had to be evacuated. The Richmond area reported local flooding with 9.7 inches of rain. Several mobile homes reported wind damage.</p>								
Galveston County	1-2	0631CST			0	0	?	?	Flooding
	1	0710CST			0	0	?	?	Wind(71)
	1	0820CST	Short	Narrow	0	0	?	0	Tornado (F0)
	<p>Up to 12 inches of rain fell in the northern portions of the county from La Marque to League City. In the cities of League City, Dickinson and Friendswood, streets remained flooded 24 hours after the storm moved through. At least 100 homes were flooded in the Friendswood area. 70 percent of the homes in Dickinson had water in them. About 500 homes in the county had either wind or water damage from the storm. The NWS office in Galveston had just over 6.50 inches of rain which produced serious street flooding and ponding of water in lower areas. Some homes and businesses were flooded.</p> <p>Storm surge heights on the Gulf side beaches in Galveston were about 3.5 feet above normal. Tides were reported higher, 5 to 7 feet at High Island. Just northeast of High Island, one mile of Tx.Hwy.87 that runs along the beach area of Bolivar Peninsula, was completely washed out. Debris and sand covered another 15 miles of the roadway. The highway was expected to be closed for 5 to 6 weeks.</p> <p>Winds from the storm peaked at 82 MPH at the Galveston Airport at 0710 CST while the NWS downtown office had a sustained wind of 53 MPH with a gust to 69 MPH at 0945 CST. There was some roof damage to beach homes in the High Island-Gilchrist area on Bolivar Peninsula. However there was very little damage on the western end of Galveston Island.</p> <p>Minimum sea level pressure at the WSO Galveston was 997.4 millibars at 0835 CST.</p> <p>A small tornado (F0) was confirmed to have touched down briefly at Crystal Beach on Bolivar Peninsula close to Gilchrist. The tornado tore up a boat shed.</p>								
Harris County	1-3	0600CST			0	0	?	?	Flooding
	1	0935CST			0	0	?	?	Wind(67)
	<p>8 to 12 inches of rain in the southern part of the county produced significant flooding. Harris County emergency crews rescued several hundred stranded persons in high water. There were 500 homes in the southern part of the county that suffered water damage. High winds did scattered damage over the county. Winds tore the roof off of a mobile home in Highlands. Also in the same area a portable building and a fence were destroyed when they were blown over. There were some trees and lots of limbs downed. A red cross shelter in Pasadena had wind damage. High winds blew out windows in a hospital in Baytown. In La Porte, winds gusted to near 70 MPH and blew over 40 large trees at a golf course, and at the airport a plane was flipped on its back. The highest gust at Hobby Airport was 76 MPH at 0935CST. Over the county, numerous trees, signs and fences were downed. The high wind destroyed 2 mobile homes, 49 apartment units and 24 businesses suffered damage.</p>								
Jefferson County	1	0648CST			0	0	?	?	Wind(43)
	<p>There was only superficial wind damage in the county. There were some downed trees and limbs. Some roof damage was reported in the southern part of the county. Jefferson County Airport reported a wind gust to 49 MPH at 0648CST. Sustained winds at Sea Rim State Park at Sabine Pass reached 54 MPH. Some beach erosion was reported below Sabine Pass.</p>								
Liberty County	1	Morning			0	0	?	?	Wind(?)
	<p>There was little damage in the county from Chantal. Falling tree limbs did some damage to vehicles and portable buildings.</p>								
Brazos County	1	Evening			2	0	0	0	Flooding
	<p>In College Station, heavy rains from Chantal produced local flooding of streets. Two teenage boys drowned when the rubber raft in which they were riding capsized and the boys were swept into a drainage pipe. Two other youths, also on the raft, managed to make it to safety. M160, M170</p>								
41 TEXAS, Western									
Gaines County	2	1546 CST	0.6	10	0	0	3	0	Tornado (F0)
	<p>A tornado demolished a fireworks stand in the western part of the county along U.S. Highway 26, 28 miles west of Seminole.</p>								
Lubbock County	2	1600 CST			0	0	3	0	Tstm.Wind (53)
		1610 CST			0	0	3	0	Tstm.Wind (52)
	<p>Thunderstorm wind measured at 53 knots at Lubbock International Airport downed several fences in Shallowater, 10 miles northwest of the airport. Ten minutes later the same storm generated winds that overturned a mobile home being towed down Southeast Drive near Quirt, in the southeast part of the City of Lubbock.</p>								
Swisher County	2	1619 CST	5.0	80	0	0	0	0	Tornado (F0)
		1645 CST			0	0	0	0	Tstm.Wind (52+)
	<p>Several law enforcement agencies reported a tornado 1 mile east of Tulia. The small tornado was on the ground for approximately 10 minutes, moving across open country and inflicting no damage. At 1645 CST thunderstorm wind gusted to at least 60 mph (52 knots) three miles northeast of Tulia, according to the Sheriffs Department.</p>								
Ector County	2	1654 CST	0.5	10	0	0	0	0	Tornado (F0)
		1702 CST			0	0	0	0	Tstm.Wind (52+)
	<p>The Odessa Fire Department reported a tornado in West Odessa. Thunderstorm wind associated with the parent supercell gusted to more than 60 mph (52 knots).</p>								
Gaines County	2	1715 CST			0	0	0	0	Tstm.Wind (52)
	<p>A cooperative observer reported thunderstorm wind gusts to 60 mph (52 knots) at the Community of Loop.</p>								
Dawson County	2	1725 CST			0	0	3	0	Tstm.Wind (51)
	<p>Thunderstorm wind gusting to 51 knots downed fences in the northern part of the county.</p>								
Tom Green and Concho Counties	6	Est. 1635 CST							Funnels
	<p>Funnel clouds were reported by the public near the communities of Veribest, Vancourt, Harriet, and Eola during a 15 minute period around 1635 CST.</p>								
Roberts County	6	1755 CST			0	0	4	0	Hail (1.75)
	<p>The Miami Police Department reported golf ball size hail 1 mile north of town. Within 5 minutes of that time a police car 1 mile west of Miami sustained extensive damage from the hail.</p>								
Dallam County	6	1811 CST			0	0	0	0	Tstm.Wind (Est. 52)
	<p>Thunderstorm wind estimated at 60 mph (52 knots) was reported 6 miles west of Dalhart.</p>								
Hansford County	6	1830 CST			0	0	0	3	Tstm.Wind (52)
	<p>A local cable television company recorded thunderstorm winds as high as 60 mph (52 knots). At 1831 CST large tree limbs were reported to have been snapped by the windstorm 3 miles southwest of Gruver.</p>								
Hartley County	6	1835 CST			0	0	0	0	Tstm.Wind (52)
	<p>A Skywarn storm spotter encountered thunderstorm wind gusts to 50 mph (52 knots) four miles east-southeast of Hartley.</p>								
Gray County	6	1850 CST			0	0	5	4	Tstm.Wind Est. (89)
	<p>Thunderstorm wind estimated at 100 mph (89 knots) blew the roof off a building 13 miles east of Pampa. Large steel beams and a radio transmission tower were bent to the ground in the process. In addition, a large cherry tree was snapped off 1 1/2 feet above the ground. About a mile west of the building a mobile home was unroofed and a power pole snapped by flying debris.</p>								
Hutchinson County	6	1908 CST			0	0	0	0	Tstm.Wind (61)
	<p>Thunderstorm winds of 60 to 70 mph (52 to 61 knots) were reported by a Department of Public Safety (DPS) officer 1 mile west of Borger.</p>								
Carson County	6	1930 CST			0	0	0	0	Tstm.Wind (52)
	<p>Thunderstorm wind reaching 60 mph whistled through the Community of Panhandle, according to the DPS.</p>								
Oldham County	6	1936 CST			0	0	0	0	Tstm.Wind (54)
	<p>Thunderstorm wind gusted to 63 mph (54 knots) at Vega, according to the Sheriffs Office. In fact, wind gusted in excess of 60 mph (52 knots) just north of Vega for much of the period between 1936 and 2000 CST.</p>								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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

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

TEXAS, Western

Potter County	6 1950 CST 1957 CST				0 0	4 0	0 0	Tstm.Wind (76) Tstm.Wind (53)	
	Thunderstorm wind gusting to 61 mph (53 knots) at the National Weather Service Office in Amarillo (WSO-AMA) downed power lines in town. Seven minutes earlier the storm produced wind measured at 87 mph (76 knots) by Amarillo television station KFDA.								
Gray County	6 1950 CST				0 0	0 0	5 0	Hail (1.75)	
	The McLean Police Department reported that golf ball size hail inflicted significant damage to the cotton crop just west of the Community of Alanreed, in the southern part of the county.								
Collingsworth County	6 Est. 2000 CST				0 0	0 5	0 0	Flash Flooding	
	Torrential rains of up to 6 inches inundated parts of the City of Wellington, according to the police department. Flood waters entered houses along the lower parts of 14th Street in Wellington, and water was reported high in the residential area of northeast Wellington. In addition, several commercial businesses sustained flood damage along U. S. Highway 83. The flooding inflicted widespread damage to roadways and culverts as well.								
Deaf Smith County	6 2015 CST				0 0	4 4		Tstm.Wind (52+)	
	The Oldham County supercell moved south and brought winds in excess of 60 mph (52 knots) across Deaf Smith County. In Hereford a Sheriff's Deputy encountered downed power lines and large trees that were uprooted by the winds.								
Armstrong County: Claude									
Randall County: Palo Duro Canyon	6 2030CST				0 0	0 0	0 0	Tstm Wind (61)	
	Thunderstorm wind gusting 70 mph (61 knots) was observed in Claude and at Palo Duro Canyon State Park at the same time, according to the Sheriff's office and a Park Ranger.								
Parmer County	6 2110 CST				0 0	4 0		Tstm.Wind (52)	
	Thunderstorm wind gusting to 60 mph (52 knots) caused roof damage at Black and Friona, both in the northern section of the county, according to the Sheriff's Office.								
Castro County	6 2115 CST				0 0	0 0		Tstm.Wind (52)	
	The Marshall in Hart reported thunderstorm wind up to 60 mph.								
Swisher County	6 2115 CST				0 0	0 0		Tstm.Wind (61)	
	The Tulia Police Department observed thunderstorm wind gusting to 70 mph (61 knots) two miles west of town.								
Briscoe County	6 2125 CST				0 0	0 0		Tstm.Wind (57)	
	Thunderstorm wind gusting to 65 mph (57 knots) was encountered by a Sheriff's Deputy 1 mile north of Silverton.								
Hale County	6 2154 CST				0 0	0 0		Tstm.Wind (54)	
	Thunderstorm wind that gusted to 62 mph (54 knots) was measured at Radio Station KVOP in Plainview.								
Hall County	6 2202 CST				0 0	0 0		Flash Flooding	
	Thunderstorm rains, totaling 1.91 inches in 45 minutes at Memphis, sent 8 to 10 inches of water over U. S. Highway 287 and forced its closure for approximately 3 hours.								
Motley County	6 2245 CST				0 0	0 0		Tstm.Wind (Est. 52)	
	The Matador Fire Department reported thunderstorm wind that gusted to an estimated 60 mph (52 knots) in the City of Matador.								
Moore County	12 1630 CST 1630 CST				0 0	0 0		Tstm.Wind (70) Hail (1.75)	
	A supercell moved across the county, accompanied by thunderstorm winds that gusted to 80 mph (70 knots) and hail the size of golf balls in the City of Dumas. Amazingly, no damage was reported.								
Moore County	12 Est. 1740 CST Est. 1740 CST 1800 CST 1800 CST				0 0	0 0	0 4 0 4	Tstm.Wind (Est. 65) Hail (1.50) Flash Flooding Lightning	
	Thunderstorm wind gusting to an estimated 75 mph (65 knots) and 1.50 inch diameter hail pounded the northern part of the county between the communities of Etter and Sunray, according to the Sheriff's Office. The storm generated torrential rains that measured between 3 and 4 inches, sending flood waters through the streets of Dumas and nearby rural highways. Flooding entered several residences in Dumas in the northern sections of town. In addition, power outages were widespread over the city because of several lightning strikes to transformers.								

TEXAS, Western

Lamb County	13 2000 CST								Funnel
	The fire department reported a funnel cloud over Olton.								
Oldham County	15 1615 CST 1630 CST 1635 CST	2.5	60		0 0	0 0	0 0	Hail (1.75) Hail (1.25) Tornado (F0)	
	A powerful supercell moved slowly across the county, bringing golf ball size hail 6 miles north of Vega, according to the Sheriff's Office. At 1630 CST off-duty personnel from the WSO-AMA encountered half dollar size hail 8 miles west of Wildorado. Five minutes later a pilot reported a tornado 5 miles southwest of Vega.								
Deaf Smith County	15 1740 CST 1825 CST				0 0	0 0	3 0	Hail (2.75) Hail (2.75)	
	The Oldham County supercell moved south into Deaf Smith County, bringing golf ball to baseball size hail to a location 12 miles north of Hereford. At that point the hail broke out the windshield of a storm spotter's automobile. At 1825 CST the Hereford Police Department reported golf ball to baseball size hail 1 mile east of Hereford.								
Castro County	15 1903 CST				0 0	0 0		Hail (2.75)	
	Hail ranging in size from peas to baseballs fell 7 miles north of Dimmitt, according to the Sheriff's Office. The hail covered the ground 12 miles north of Dimmitt.								
Dallam County	15 1904 CST 1910 CST 1920 CST				0 0	0 0	0 0	Hail (0.75) Hail (0.75) Hail (2.75)	
	The Dalhart Police Department reported dime size hail 10 miles north of Dalhart along U. S. Highway 385. Six minutes later hail of the same size fell 7 miles north of Dalhart on U. S. Highway 87. Then, at 1920 CST, golf ball to baseball size hail pounded the area 4 miles southeast of the Ware Community. The hail inflicted severe damage to the local corn crop.								
Hartley County	15 1945 CST 1954 CST 2000 CST 2015 CST	3.0	90		0 0	0 0	0 0	Hail (0.75) Tornado (F0) Hail (1.50) Hail (0.75)	
	The public reported dime size hail 6 miles southwest of Dalhart, in the northern part of the county. Nine minutes later the public also observed a tornado just east of the state line near the Middlewater Community. The storm moved through the Middlewater vicinity, delivering hail the size of ping pong balls at Middlewater. At 2015 CST the DPS observed that dime size and larger hail stripped leaves from trees 6 miles southwest of Middlewater.								
Cottle County	21 Est. 2300 CST				0 0	0 0		Tstm.Wind	
	A Skywarn storm spotter at Latimer Ranch, 14 miles southwest of Paducah, reported that thunderstorm winds unroofed his barn.								
Pecos County	22 1400 CST								Funnel
	The public reported a small funnel cloud 8 miles west of Fort Stockton.								
Ector County	22 1611 CST				0 0	0 0		Hail (1.00)	
	Spotters reported dime to quarter size hail in West Odessa.								
Reeves County	28 1340 CST								Funnels
	The Civil Defense director relayed a public report of two funnel clouds west of Toyah.								
Garza County	28 Est. 1420 CST				0 0	4 0		Lightning	
	According to plant employees an air compressor at a natural gas processing facility, located 10 miles south of Post, was struck by lightning. The compressor was a total loss.								
Lubbock County	28 Est. 2300 CST				0 0	4 0		Tstm.Wind	
	Thunderstorm wind of unknown speed struck a farm house located 5 miles west of Wolfforth, in the extreme southwest corner of the county. The porch roof was ripped from the house and deposited 300 feet away.								
Ector County	31 2022 CST				0 0	?	?	Hail (1.75)	
	Hail the size of golf balls pounded West Odessa, according to numerous law enforcement, media, and public reports.								
Midland County	31 2030 CST				0 0	4 0		Tstm.Wind (64)	
	Thunderstorm winds measured at 64 knots destroyed a 14 x 40 foot storage barn, blew off a 14 x 20 foot porch roof, and blew a pickup into a roadway.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
42 UTAH											
Carbon County, Wellington	02	1705MST			0	0	4	0			Flash Flood
			A flash flood on Coal Creek east of Wellington, produced some damage to a highway and nearly took the lives of two boys.								
Kane County, Bullfrog Marina	03	1340MST			0	0	1	0			Tstm.Wind (54)
			A thunderstorm downburst's wind was measured at 62 mph at the Bullfrog Marina at Lake Powell.								
Davis County, Bountiful	10	2200MST			0	0	3	0			Lightning
			Lightning set the roof of a Bountiful home on fire, causing minor damage.								
Tooele County	17	1625MST			0	0	1	0			Tstm.Wind (57)
Salt Lake County	17	1655MST			0	0	1	0			Tstm.Wind (51)
Salt Lake County	17	1703MST			0	0	1	0			Tstm.Wind (58)
Weber County	17	1745MST			0	0	4	0			Tstm.Wind (53)
Davis County	17	1803MST			0	0	4	0			Tstm.Wind
			Thunderstorm downburst winds ripped through the Wasatch Front on this date. The winds stirred up a lot of dust but produced mostly minor damage, except for a power outage that affected 16,000 homes. The first report was a gust to 57 knots at Michaels AFB at Dugway, followed by a reported gust to 51 knots at the KTVX TV station in West Valley city, then a gust to 58 knots at the Salt Lake International Airport, then 53 knots at the Ogden Airport, then a report of roof damage in Layton.								
San Juan County, Lake Powell	17	2145MST			0	0	6	0			Flash Flood
			A flash flood in the Piute Farms Wash on the San Juan arm of Lake Powell destroyed a marina. According to the marina manager, the flood ripped the docks away from the shore and carried the docks and boats 500 yards downstream into Piute Farms Bay. Four fishing boats and two patio boats sank. Damage was estimated at between \$1 and \$2 million.								
Carbon County	19	1400MST			0	0	1	0			Hail (1.00)
Box Elder County	19	1400MST			0	0	1	0			Hail (0.75)
			Thunderstorms produced large hail in two locations on this afternoon. One was about 2 miles east of Price in Carbon County and the other was in the small town of Yost in extreme northwest Box Elder County near the Idaho border.								
Duchesne County	20	1650MST			0	0	1	0			Hail (0.75)
			Hail stones between 1/2 and 1 inch diameter fell in Duchesne.								
Tooele County, Wendover	23	1700MST			0	0	5	0			High Winds (60)
			A Utah Highway Patrolman using a hand held anemometer estimated wind gusts in the 57 to 60 knot range. A semi was blown over, a trailer being pulled by a pickup was overturned and a double-wide trailer was overturned.								
Box Elder County, Willard Bay	24	1030MST			0	0	1	0			Waterspout
			A Utah Highway Patrol trooper spotted a waterspout over Willard Bay, on the east side of the Great Salt Lake. The waterspout lasted for approximately 7 minutes, but never moved onshore or caused any damage.								
43 VERMONT											
Washington County	04	2000EST-			0	0	6	?			Flash Flood
	05	0800EST			0	0	6	?			Flash Flood
Caledonia County	04	2000EST-			0	0	6	?			Flash Flood
	05	0800EST			0	0	5	?			Flash Floods
Eastern Addison County	05	2000EST			0	0	4	3			TSTM Wind
Addison County	05	2000EST			0	0	4	3			TSTM Wind
			Remnants of Tropical Storm Chantal produced rainfall in excess of 6 inches near the Washington, Caledonia and Orange county lines. The resulting flash flood knocked down bridges, swept away homes, cars and debris, and destroyed summer crops.								
Essex County, Maidstone Lake	06	1535EST			0	0	5	?			Downburst Wind
Cuildhall	06	1540EST			0	0	5	?			TSTM Wind
Caledonia County, East Burke	06	1540EST			0	0	5	5			Downburst Wind
Essex County, Bloomfield	06	1545EST			0	0	4	3			TSTM Wind
East Haven	06	1545EST			0	0	5	3			TSTM Wind
Addison County, Bristol	06	1635EST			0	0	3	0			TSTM Wind
Middlebury	06	1645EST			0	0	4	3			TSTM Wind
Lincoln	06	1652EST			0	0	2	2			TSTM Wind
VERMONT											
Washington County, Plainfield	06	1730EST			0	0	4	2			TSTM Wind
Marshfield	06	1730EST			0	0	2	1			TSTM Wind
Orange County, Randolph Center	06	1745EST			0	0	3	2			TSTM Wind
Brookfield	06	1755EST			0	0	4	0			TSTM Wind
Rutland County, northern portion	06	1800EST			0	0	3	3			TSTM Wind
Killington Mountain	06	1810EST			0	0	4	0			Flash Flood
Orleans County, SN Greensboro to 3.5NE Greensboro	06	1820EST	1.5	100	0	0	3	3			Tornado (F1)
Glover	06	1835EST			0	0	3	0			TSTM Wind
Orange County, East Baintree	06	PM			0	0	0	0			Funnel Cloud
			Thunderstorms rolled across the state of Vermont, leaving a wide path of destruction. Many communities reported trees uprooted, tree limbs being broken off and sent flying through the air, and power lines being knocked down or snapped. A tornado was reported near Greensboro. Damage in this area was confined to trees and power lines. A funnel cloud was reported in East Baintree.								
Orleans County, Westmore	13	afternoon			0	0	3	0			Lightning
			A lightning strike killed a Jersey cow sometime during the afternoon of Sunday the 13th.								
44 VIRGINIA											
VAZ015 Southern Highlands	1	0700-0300EST			0	0	?	0			Heavy Rain
			Rainfall of more than 2 inches in some areas flooded some roads and caused urban flooding in Galax, Carroll County.								
Shenandoah Co, Northern and Central parts	6	1600EST			0	0	?	?			Thunderstorm Wind Flash Flooding
			Thunderstorm winds downed many trees and large limbs and caused numerous power and telephone outages. Rainfall of 1 to 3 inches in an hour caused flash flooding of small streams and flooded some basements. Most of the damage was inflicted in the vicinities of Woodstock, Toms Brook, and Edinburg.								
Clarke Co, Berryville	6	Evening			0	0	?	0			Thunderstorm Wind (45kt)
			Thunderstorm winds caused minor damage.								
Accomack Co, Wachapraque	7	1200EST			0	0	0	0			Waterspout
			A waterspout was observed for several minutes offshore from the Virginia Institute of Marine Science Dock.								
VAZ002-004 Greater Hampton Roads and Central Tidewater	7	Early Afternoon			0	0	0	0			Heavy Rain
			Rainfall of 2.5 inches in one and a half hours was measured at the Denbigh section of Newport News and 1.3 inches at Patrick Henry Field. The storm then moved through York and Gloucester counties.								
VAZ003 Interior Southeast	12	All Day			0	0	?	0			Heavy Rain
			Heavy rain caused minor flooding. Six inches of rain fell at Franklin, Southampton County.								
VAZ001 Eastern Shore	12-13	All Day			0	0	?	?			Heavy Rain
			Heavy rains flooded numerous roads and washed away some sections of pavement. Flooded fields resulted in some crop damage. Two-day rainfall totals as much as 7 inches were reported.								
Virginia Beach Co, Norfolk	16	1600EST			0	0	?	0			Urban Flooding
			A thunderstorm localized to downtown Norfolk caused considerable urban flooding. Rainfall of 1.42 inches fell in one hour.								
Dinwiddie Co.	17	2000-2300EST			0	0	?	0			Small Stream Flooding
			Rainfall of over 2 inches caused minor flooding of small streams and some roads.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
— VIRGINIA									
VA2001-002-004-006 Eastern Virginia	18	All Day			0	0	?	?	Heavy Rain
			Very heavy rain fell on many parts of eastern Virginia especially during the late morning and afternoon. The heaviest rainfall totals occurred in James City and York counties where up to 12 inches was measured. Details of some of the resultant flooding are described below.						
Henrico Co, Richmond	18	Morning			0	0	?	0	Urban Flooding
			Nearly 2 inches of rain caused urban flooding in parts of the Richmond area.						
James City Co, Williamsburg	18	0600-1100EST			0	1	6	?	Flash Flooding
			Torrential rains, officially measured at 11.32 inches, caused major flash flooding throughout the Williamsburg area. A 36 year old man was injured when he was swept into the raging Queens Creek. He was later rescued. Three motorists were rescued from their vehicles on the Colonial Parkway as flood waters rose to the roof tops. Most of the rain, 10.78 inches, fell between 0600 and 1000 EST including 6.72 inches within two hours. The damage estimate was nearly \$900,000.						
York Co. Gloucester Co. Mathews Co.	18	0700-1600EST			0	0	?	?	Flash Flooding
	18	0700-1600EST			0	0	?	?	Flash Flooding
	18	0700-1600EST			0	0	?	?	Flash Flooding
			Torrential rains caused major flooding throughout York, Gloucester, and Mathews counties. Many roads became flooded and some road surfaces were washed away. Some rainfall amounts include 12.00 inches at Yorktown, 9.75 inches at Onemo, 6.5 inches at Dutton, more than 6 inches at Gloucester and Toano, and 5.9 inches at Moon.						
Virginia Beach Co, Virginia Beach	18	1000EST			0	0	?	0	Urban Flooding
			Locally very heavy rain fell on parts of Virginia Beach and caused urban flooding. Rainfall was measured at 6.95 inches at Great Neck, including 2 inches in a 15 minute period, and 5.52 inches at the Oceana Naval Air Station.						
Middlesex Co.	18	1100EST			0	0	?	0	Urban Flooding
			Rainfall of up to 3.5 inches flooded numerous roads.						
Accomack Co. Northampton Co.	18	All Day			0	0	6	7	Flash Flooding
	18	All Day			0	0	6	6	Flash Flooding
			Very heavy rainfall, which was measured as high as 7.73 inches, caused major flash flooding throughout the Eastern Shore. Several sections of road surface were washed out, and crop damage was very heavy. This was the worst fresh water flooding in the memories of many long-time residents. Total damages were nearly 12 million dollars.						
Giles Co.	18	Afternoon			0	0	?	?	Flash Flooding
			Heavy rain of more than 2 inches caused major flash flooding in Giles County. Wolf Creek overflowed its banks and forced 12 families from their homes in the Narrows area and another 12 at Hungry Hollows. Numerous roads were flooded, and mud or rock slides blocked some roads. The worst flooding occurred in the western part of the county.						
Montgomery Co, Plum Creek	18	1400-1700EST			0	0	?	?	Flash Flooding
			Heavy rains measured at 2.4 inches caused flash flooding of Plum Creek. One home in Christiansburg was evacuated.						
Wise Co, St. Paul and Honey Branch	18	1400EST			0	0	?	0	Thunderstorm Wind
			Thunderstorm winds downed numerous trees and utility poles. Heavy rain accompanied the storm.						
York County	21	1500-1800EST			0	0	0	0	Urban Flooding
			One and a half to 2 inches of rain caused some road flooding.						
— VIRGINIA									
Campbell Co, Brookneal	22	1600EST			0	0	?	?	Thunderstorm Wind Urban Flooding
			A localized thunderstorm generated winds that uprooted or snapped off numerous trees, some of which fell on houses and cars. A large limb was carried 400 yards. Two sheds were blown off their foundations. The winds also pushed more than 10 acres of tobacco flat against the ground. Also, the storm dropped nearly 3 inches of rain in a half hour which caused severe urban flooding.						
Rockingham Co. Bridgewater	24	1400EST			0	0	?	?	Urban Flooding
			Heavy rain which was measured at 3 inches in one hour flooded or washed out some roads in Bridgewater and surrounding parts of Rockingham County as well as nearby parts of Augusta County.						
Augusta Co, Staunton to Fishersville	24	1430EST			0	0	?	?	Thunderstorm Wind (65kt) Rail (2.75) Urban Flooding
			Thunderstorm winds inflicted major damage from Staunton to Fishersville. Many trees were downed, utility poles snapped, and fences ripped out of the ground. Also, several barns were unroofed. Winds were sustained for 10 minutes at a speed estimated at 75 mph. Golfball to baseball size hail broke many windows, and 2.5 inches of rain in less than an hour flooded some roads and washed debris onto others.						
Albemarle Co.	24	1500EST			0	0	?	?	Thunderstorm Wind
			Thunderstorm winds downed trees at isolated locations. Also, heavy rains caused isolated small stream and urban flooding.						
Nelson Co, Northern and Eastern parts	24	1500EST			0	0	?	?	Thunderstorm Wind
			Thunderstorm winds downed many trees especially in the vicinities of Woods Mill and Shipman. Also, heavy rains caused isolated small stream and urban flooding.						
Alleghany Co.	24	1500EST			0	0	?	?	Small Stream Flooding
			A brief but very intense thunderstorm produced flooding of small streams, especially in the Covington area. The runoff deposited up to several inches of mud on some roads.						
Buckingham Co.	24	1610EST			0	0	?	?	Thunderstorm Wind
			Thunderstorm winds downed several trees at scattered locations in Buckingham County.						
Highland Co.	24	1500-1900EST			0	0	4	?	Flash Flooding
			Six inches of rain within two hours triggered flash flooding of streams in the Bullpasture and Cowpasture river valleys between McDowell and the Bath County border. The freshets washed out several sections of road pavement and carried large boulders onto some roads. The cost of road repairs was \$25,000.						
Henrico Co, Richmond	29	1755EST			0	0	5	0	Lightning
			Lightning set fire to and caused approximately \$100,000 damage to a home.						
45 WASHINGTON									
Chelan County	19	1430PST			0	0	5	?	Flash Flood
			Thunderstorms developed during the afternoon and evening over lower Chelan County around Wenatchee. Thunderstorm cells over the Entiat Valley, 25 miles north of Wenatchee, produced brief heavy rains over a pair of canyons with very little vegetation due to a forest fire during the summer of 1988. Rainfall amounts of a half inch in 20 minutes led to rapid runoff down the Dinkleman and Mill canyons with a wall of water and mud up to 7 feet tall running down Dinkleman Creek. Mud flows ran into orchard areas, sweeping out 5 acres of one orchard and leaving over a foot of mud in another orchard. One building was destroyed and several houses and packing sheds sustained damage and mud invasion. Mud and debris covered the road where the Dinkleman and Mill creeks join together and debris also clogged an irrigation ditch temporarily. Initial damage estimates were placed at about \$300,000.						

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	
WASHINGTON									
Whatcom County	21	1530PST		0	0	4	0		Urban Flooding
									Heavy rainfall from afternoon thunderstorms over the Bellingham area caused local urban flooding and also caused scattered temporary power outages. Rainfall amounts between one and two inches over a three hour period flooded dozens of basements, overflowed storm drains and filled roads and intersections with enough water to cause cars to stall.
Clark County	22	1600PST		0	0	4	0		Urban Flooding
									Afternoon thunderstorms passing over Vancouver and the local area dumped an inch of rainfall in an hour, causing storm sewers to overflow and several residential basements to flood. A local paper plant reported having 16 inches of water flood one of their departments, closing it down for two and a half hours. The afternoon commute was hampered by the water standing in downtown intersections, underpasses and freeway on-ramps.
46 WEST VIRGINIA									
Marshall County	04	1800EST		0	0	0	0		TSTM Wind
									Trees were downed in Moundsville near the courthouse.
Marshall County	05	1815EST		0	0	0	0		TSTM Wind
									Trees were downed in Moundsville.
Mason County	05	1935EST		0	0	0	0		TSTM Wind
									Trees and power lines were downed across the county.
Cabell County	05	2000EST		0	0	1	0		TSTM Wind
									Numerous trees and power lines were downed. One car was damaged by a falling tree.
Lincoln County	05	2030EST		0	0	0	0		TSTM Wind
									Many large trees were downed across the county.
Putnam County	05	2045EST		0	0	0	0		TSTM Wind
									Many large trees were downed across the southern portion of the county.
Fayette County	05	2053EST		0	0	0	0		TSTM Wind
									A HAM radio operator in Hico reported extremely high winds and that some trees were downed.
Marion County	05	2110EST		0	0	?	0		TSTM Wind
									Many trees were downed across sections of the county, and there were power outages as well.
Harrison County	05	2115EST		0	0	0	0		TSTM Wind
									Trees were downed and power outages occurred in Shinnston, West Milford, Mt. Clair, and Bridgeport.
Taylor County	05	2115EST		0	0	0	0		TSTM Wind
									Many trees were downed across the county.
Wyoming County	05	2130EST		0	0	0	0		TSTM Wind
									Trees were downed across the county.
Preston County	22	?			1	1	0	0	Lightning
									A Preston County boy was struck and killed by lightning as his football practice was ending. Another person was injured. The exact time and location are unknown. M??0
Gilmer County	23	1515EST		0	0	?	0		Flash Flood
									Severe flooding occurred at Little Bull Run. A family was evacuated at Cedar Creek State Park. Nutter Run Road was washed out, and water was covering Alice and Dust Camp roads.
Braxton County	23	1530EST		0	0	2	0		Flash Flood
									Flooding occurred at Rosedale. Two roads were washed out by 1730EST.
Wayne County	23	1605EST		0	0	0	0		Flash Flood
									Streets and roads were flooded in the southern portion of the county. State Road 52 was blocked north of Dunlow.
Wayne County	23	2035EST		0	0	?	0		Flash Flood
									Whites Creek went out of its banks and caused minor damage to homes in the Centerville and Prichard areas.
WEST VIRGINIA									
Cabell County	24	1505EST		0	0	?	0		Flash Flood
									Flooding occurred on Bowen Creek. Several homes and cars were damaged along State Road 10 at Salt Rock. Damage was estimated at \$40,000.
Lincoln County	24	1515EST		0	0	?	0		Flash Flood
									Flooding occurred along Bowen Creek. Several homes were damaged along State Road 10 near West Hamlin. Damage was estimated at \$25,000.
47 WISCONSIN									
Florence Co., Long Lake	04	1405CST		0	0	?	?		Hail (1.00)
Buffalo Co., Buffalo	04	1650CST		0	0	?	?		Thunderstorm Wind
Fountain City	04	1657CST		0	0	?	4		Hail (1.00)
Fountain City	04	1657CST		0	0	?	?		Thunderstorm Wind
Trempealeau Co., Galesville	04	1715CST		0	0	4	?		Thunderstorm Wind
Trempealeau	04	1715CST		0	0	?	?		Hail (0.75)
LaCrosse Co., LaCrosse	04	1720CST		0	0	?	?		Hail (1.75)
LaCrosse	04	1735CST		0	0	4	?		Hail (2.25)
LaCrosse	04	1735CST		0	0	?	?		Thunderstorm Wind
Door Co., Gills Rock	04	1730CST		0	0	?	?		Thunderstorm Wind (50)
Baileys Harbor	04	1740CST		0	0	?	?		Thunderstorm Wind
Vernon Co., Coon Valley	04	1750CST		0	0	?	?		Hail (2.50)
Coon Valley	04	1750CST		0	0	?	?		Thunderstorm Wind
SE Viroqua	04	1800CST		0	0	5	?		Thunderstorm Wind (52)
Westby	04	1805CST		0	0	5	?		Thunderstorm Wind
Westby Hillsboro	04	1805CST		0	0	?	?		Hail (1.50)
	04	1815CST		0	0	5	?		Thunderstorm Wind
Juneau Co., Elroy	04	1910CST		0	0	?	?		Thunderstorm Wind (56)
New Lisbon	04	1910CST		0	0	?	?		Thunderstorm Wind (56)
Lyndon Station	04	1940CST		0	0	?	?		Thunderstorm Wind
Grant Co., Boscobel	04	1925CST		0	0	?	?		Thunderstorm Wind
Muscoda	04	1930CST		0	0	?	?		Thunderstorm Wind
Richland Co., Richland Center	04	1945CST		0	0	?	?		Thunderstorm Wind
Bear Valley	04	1958CST		0	0	?	?		Thunderstorm Wind
Sauk Co., Lake Delton	04	1945CST		0	0	?	?		Thunderstorm Wind
Iowa Co., Avoca	04	1955CST		0	0	5	?		Thunderstorm Wind
Dodge Co., Lowell	04	2010CST		0	0	?	?		Thunderstorm Wind
Dane Co., Madison	04	2029CST		0	0	?	?		Thunderstorm Wind (56)
Mt. Horeb	04	2029CST		0	0	?	?		Thunderstorm Wind (52)
Waunakee	04	2030CST		0	0	?	?		Thunderstorm Wind (52)
Deerfield	04	2040CST		0	0	?	?		Thunderstorm Wind
Stoughton	04	2040CST		0	0	?	?		Thunderstorm Wind
Cambridge	04	2045CST		0	0	?	?		Thunderstorm Wind
Columbia Co., Portage	04	2030CST		0	0	?	?		Thunderstorm Wind

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AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS	
WISCONSIN									
Jefferson Co., Lake Mills	04	2045CST			0	0	?	?	Thunderstorm Wind
Watertown	04	2047CST			0	0	?	?	Thunderstorm Wind (50)
Watertown	04	2102CST			0	0	?	?	Thunderstorm Wind (55)
Fort Atkinson	04	2110CST			0	0	?	?	Thunderstorm Wind
Whitewater	04	2115CST			0	0	?	?	Thunderstorm Wind (61)
Washington Co., Richfield	04	2055CST			0	0	?	?	Thunderstorm Wind (50)
4SW Jackson	04	2122CST			0	0	?	?	Thunderstorm Wind (50)
Dane Co., Marshall	04	2103CST			0	0	?	?	Thunderstorm Wind (52)
Madison	04	2110CST			0	0	?	?	Thunderstorm Wind
Waukesha Co., Oconomowoc	04	2124CST			0	0	?	?	Thunderstorm Wind
Muskego	04	2130CST			0	0	?	?	Thunderstorm Wind
Waukesha	04	2130CST			0	0	?	?	Thunderstorm Wind (52)
Genesee Depot	04	2130CST			0	0	4	?	Thunderstorm Wind
Walworth Co., 2N Elkhorn	04	2128CST			0	0	?	?	Thunderstorm Wind (50)
Delevan	04	2130CST			0	0	?	?	Thunderstorm Wind
Ozaukee Co., Saukville	04	2128CST			0	0	?	?	Thunderstorm Wind
Iowa Co., Blanchardville	04	2140CST			0	0	?	?	Hail (1.00)
Milwaukee Co., Whitefish Bay	04	2140CST			0	0	?	?	Thunderstorm Wind
Milwaukee	04	2142CST			0	0	?	?	Thunderstorm Wind (65)
Milwaukee	04	2154CST			0	0	?	?	Thunderstorm Wind (56)
Greendale	04	2158CST			0	0	?	?	Thunderstorm Wind
Racine Co., Racine	04	2209CST			0	0	?	?	Thunderstorm Wind (50)
Green Co., New Glarus	04	2215CST			0	0	?	?	Thunderstorm Wind (52)
Rock Co., Evansville	04	2215CST			0	0	?	?	Thunderstorm Wind
2W Janesville	04	2220CST			0	0	?	?	Thunderstorm Wind (52)
<p>Numerous violent severe thunderstorms marched across mainly the southern half of Wisconsin causing widespread damage to hundreds of trees and power poles with winds gusting to 75 mph. Some storms dumped hail up to the size of tennis balls, causing windows to break in LaCrosse and inflicting severe crop damage. Several sheds and barns were flattened or moved off their foundations by the winds. Forty-five sailboats were tipped over in Lake Nagawicka near Oconomowoc. A roof was peeled off a large warehouse containing frozen pizzas near Genesee Depot.</p>									
Green Co., Albany	05	1235CST			0	0	?	?	Thunderstorm Wind
Rock Co., Janesville	05	1237CST			0	1	?	?	Thunderstorm Wind
Milton	05	1245CST			0	0	?	?	Thunderstorm Wind
Walworth Co., Whitewater	05	1256CST			0	0	?	?	Thunderstorm Wind (61)
Jefferson Co., Sullivan	05	1315CST			0	0	?	?	Thunderstorm Wind
<p>Several severe thunderstorms packing winds up to 70 mph hit portions of south-central and southeast Wisconsin. Several trees and power poles were toppled. In Janesville, a construction worker was injured when severe thunderstorm winds knocked down a 20-foot high cement block wall on him as he was trying to shore it up.</p>									
Wauzara Co., Coloma	11	1527CST			0	0	?	?	Hail (0.75)
<p>A severe thunderstorm dumped hail up to 3/4 inch in diameter near Coloma.</p>									
WISCONSIN									
Outagamie Co., Black Creek	12	1425CST			0	0	?	?	Hail (1.75)
Black Creek	12	1425CST			0	0	?	?	Thunderstorm Wind (52)
<p>A severe thunderstorm produced hail up to golfball size and winds to 60 mph at Black Creek.</p>									
Pierce Co., River Falls	13	2048CST			0	0	?	?	Thunderstorm Wind
<p>Several trees were downed along with some power lines when winds from a severe thunderstorm struck River Falls.</p>									
Barron Co., 1NE Chetek	21	2255CST			0	0	?	?	Thunderstorm Wind
<p>Severe thunderstorm winds knocked down 80 trees and caused a chimney to collapse at a residence near Chetek.</p>									
Lafayette Co., 2N Leadmine	22	1830CST			0	0	?	?	Thunderstorm Wind
<p>Strong winds from a severe thunderstorm downed trees, causing damage to 2 cars and ripping off a garage door near Leadmine.</p>									
Marathon Co., Wausau	31	1840CST			0	0	?	?	Thunderstorm Wind (50)
<p>A severe thunderstorm with winds gusting to 58 mph knocked down trees near Wausau.</p>									
48 WYOMING									
CARBON COUNTY, RAWLINS	05	1355MST			0	0	0	0	THUNDERSTORM WIND(50)
<p>DURING THE AFTERNOON OF THE 5TH, A THUNDERSTORM PRODUCED A WIND GUST OF 58 MPH AT THE RAWLINS AIRPORT.</p>									
LARAMIE COUNTY, 6NE CHEYENNE	06	1910MST			0	0	0	0	THUNDERSTORM WIND(50)
LARAMIE COUNTY, 10SW ALBIN	06	1920MST			0	0	0	0	HAIL (1.00)
<p>ON THE EVENING OF THE 6TH, THUNDERSTORMS CAUSED ISOLATED SEVERE WEATHER ACROSS EXTREME SOUTHEAST WYOMING. A WIND GUST OF 58 MPH WAS OBSERVED 6 MILES NORTHEAST OF CHEYENNE AT 1910MST. IN ADDITION, AT 1920MST, QUARTER SIZE HAIL WAS REPORTED 10 MILES SOUTHWEST OF ALBIN.</p>									
TETON COUNTY, 9S JACKSON	10	1415MST			0	0	0	0	HAIL (0.75)
<p>ON THE AFTERNOON OF THE 10TH, DIME SIZE HAIL FELL 9 MILES SOUTH OF JACKSON.</p>									
TETON COUNTY, YELLOWSTONE NATIONAL PARK	10	1600 TO 2200MST			0	0	4	0	MUD-SLIDES
PARK COUNTY, YELLOWSTONE NATIONAL PARK	10	1600 TO 2200MST			0	0	4	0	MUD-SLIDES
<p>DURING THE LATE AFTERNOON AND EVENING OF THE 10TH, THUNDERSTORMS PRODUCING VERY HEAVY RAINFALL BETWEEN APPROXIMATELY 1600MST AND 1730MST CAUSED 15 MUDSLIDES AT YELLOWSTONE NATIONAL PARK. THESE SLIDES OCCURRED BETWEEN GIBBON FALLS AND GIBBON MEADOW OVER A 4 TO 5 MILE STRETCH OF ROAD. ROUGHLY 30 VEHICLES WERE TEMPORARILY STRANDED, BUT THERE WERE NO INJURIES. HEAVY ROAD EQUIPMENT HAD TO BE USED TO CLEAR THE ROAD. PARK OFFICIALS ESTIMATED THAT UP TO 4 INCHES OF RAIN OCCURRED IN ABOUT A 20 MINUTE PERIOD IN THE AREA OF THE SLIDES.</p>									
<p>THE MOST SEVERE SLIDE OCCURRED JUST NORTH OF GIBBON FALLS WHERE ONE AUTOMOBILE WAS FORCED INTO A RIVER. THE OCCUPANTS WERE RESCUED FROM THE CAR AND WERE NOT INJURED.</p>									

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AUGUST 1989

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					KILLED	INJURED	PROPERTY	CROPS		
WYOMING										
PLATTE COUNTY, 5W WHEATLAND	14	1533MST			0	0	0	0		FUNNEL CLOUD
										DURING THE AFTERNOON OF THE 14TH, A THUNDERSTORM SPAWNED A FUNNEL CLOUD 5 MILES WEST OF WHEATLAND.
LINCOLN COUNTY, AFTON	18	1345MST			0	0	3	0		THUNDERSTORM WIND(52)
										ON THE AFTERNOON OF THE 18TH, WINDS FROM A SEVERE THUNDERSTORM GUSTED TO 60 MPH AT AFTON; CAUSING SOME MINOR DAMAGE. AT LEAST 2 PINE TREES WERE BLOWN DOWN. ALSO, ELECTRICAL POWER WAS OUT IN PARTS OF THE TOWN FOR A FEW HOURS.
NATRONA COUNTY, CASPER	18	1625MST			0	0	0	0		HAIL (1.50)
NATRONA COUNTY, CASPER	18	1625MST			0	0	4	0		THUNDERSTORM WIND(70)
										ON THE LATE AFTERNOON OF THE 18TH, AN ISOLATED BUT SEVERE THUNDERSTORM HIT CASPER. WINDS GUSTED TO 81 MPH ON THE WEST SIDE OF THE TOWN. THESE WINDS UPROOTED TREES AND DAMAGED A FEW STREET SIGNS AND LIGHTS. THE EAST SIDE OF THE COMMUNITY WAS PELTED WITH WALNUT SIZE HAIL. THIS HAIL WAS DESCRIBED AS SOFT AND DID RELATIVELY LITTLE DAMAGE. SOME GARDENS WERE DESTROYED.
CONVERSE COUNTY, GLENROCK	18	1715MST			0	0	0	0		THUNDERSTORM WIND(50)
CONVERSE COUNTY, DOUGLAS	18	1745MST			0	1	4	0		HAIL (0.75)
										FROM THE LATE AFTERNOON THROUGH EARLY EVENING OF THE 18TH, A SEVERE THUNDERSTORM MOVED EASTWARD THROUGH CONVERSE COUNTY. AS THE STORM PASSED THROUGH GLENROCK, WINDS GUSTED TO 58 MPH. MINOR TREE DAMAGE RESULTED. ONE-HALF HOUR LATER, THE STORM HIT DOUGLAS AND PRODUCED CONSIDERABLE PEA TO DIME SIZE HAIL. THE HAIL CAUSED MINOR DAMAGE TO SOME HOMES AND CARS. A PERSON WAS INJURED TRYING TO SEEK SHELTER FROM THE HAIL. THIS OCCURRED WHEN A BOY RAN THROUGH THE GLASS PANE WINDOW OF A DOOR, CAUSING SEVERE LACERATIONS TO HIS LEFT ARM.
TETON COUNTY, YELLOWSTONE NATIONAL PARK	18	1830 TO 2200MST			0	0	3	0		MUD-SLIDES
PARK COUNTY, YELLOWSTONE NATIONAL PARK	18	1830 TO 2200MST			0	0	3	0		MUD-SLIDES
										ABOUT 1 WEEK AFTER A PREVIOUS EPISODE OF MUD-SLIDES, THE SAME AREA AS BEFORE IN YELLOWSTONE NATIONAL PARK EXPERIENCED ANOTHER ROUND OF THEM. THESE SLIDES WERE NOT AS SEVERE. THEY WERE CAUSED BY BRIEF HEAVY RAIN FROM THUNDERSTORMS. THERE WERE APPROXIMATELY 13 MUDSLIDES THAT TEMPORARILY STRANDED 8 VEHICLES. AT LEAST ONE CAR WAS COVERED BY THE MUD AND HAD TO BE TOWED.
LARAMIE COUNTY, CHEYENNE	19	1222MST			0	0	0	0		THUNDERSTORM WIND(51)
										ON THE EARLY AFTERNOON OF THE 19TH, A SEVERE THUNDERSTORM PRODUCED 59 MPH WINDS AT CHEYENNE. ONLY MINOR TREE LIMB DAMAGE OCCURRED.
CAMPBELL COUNTY, 4N GILLETTE	23	2355MST			0	0	4	0		THUNDERSTORM WIND(70)
										DURING THE NIGHT OF THE 23RD, A THUNDERSTORM PRODUCED A DOWNBURST EVENT OF 81 MPH WINDS 4 MILES NORTH OF GILLETTE. THE DAMAGE PATH WAS DESCRIBED AS A HALF A MILE WIDE AND 10 TO 12 MILES LONG. THERE WAS CONSIDERABLE TREE DAMAGE. ALSO, A SATELLITE DISH WAS MOVED 30 FEET AND SET ON TOP OF A CAR BY THE WIND.
LARAMIE COUNTY, CHEYENNE	28	1607MST			0	0	0	0		HAIL (1.25)
										ON THE LATE AFTERNOON OF THE 28TH, A THUNDERSTORM DROPPED HALF DOLLAR SIZE HAIL OVER THE NORTHERN PART OF CHEYENNE.
ALASKA										
49 ALASKA, Northern	NO REPORT RECEIVED									
49 ALASKA, Southern										
South-Central Alaska	21	1400AST			2	2	?	0		High Winds and Seas
										The coupling of a moderate, 996 mb low in the northeast Gulf of Alaska and a high pressure to the west produced strong winds in Passage Canal and off the glaciers in Prince William Sound. Two kayakers lost their lives in Passage Canal.
South-Central Alaska	25-26				?	?	7	0		Heavy Rain and Floods
										A moderate low pressure moved north along the west coast of Alaska producing large amounts of rain, especially over the Anchorage Bowl. Anchorage received nearly 5.50 inches of rain during this two day period. Slightly over 4 inches of rain fell during a 24 hour period within the two days. Numerous flood warnings were issued for south-central Alaska.
49 ALASKA, Southeastern	NONE REPORTED									
50 HAWAII										
All Islands	20-21				0	0	5	0		Flash Flooding
										The remnant circulation of Tropical Storm Henriette moved through the southern portion of the Hawaiian chain near Big Island on August 20th. Heavy showers along the windward side of the Big Island during the forenoon hours caused some minor flash flooding. Some flash flooding also occurred over southeast Kauai near Poipu on the morning of the 21st as up to 5 inches of rain fell locally during intense showers within about two hours.
51 PUERTO RICO	NONE REPORTED									
52 VIRGIN ISLANDS	NONE REPORTED									
53 PACIFIC	NONE REPORTED									

STORM SUMMARY

AUGUST 1989

TYPE	ALABAMA	ARIZONA	ARKANSAS	CALIFORNIA	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA	IDAHO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND & DC	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI	MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE
TORNADOES																											
Number							1	4	1			1		2		1				2				4	4		
Days							1	4	1			1		2		1				2				2	2		
Deaths							0	0	0			0		0		0				0				0	0		
Injuries							0	0	0			0		0		0				0				0	0		
Property Damage							0	0	0			0		0		0				0				0	0		
Crop Damage							0	0	?			?		0		0				0				0	4	3	
HAIL																											
Deaths		0	0		0				0	0	0	0	0	0	0		0				0	0	0	0	0	0	0
Injuries		0	0		0				0	0	0	0	0	0	0		0				3	0	0	0	0	0	0
Property Damage		0	?		6				?	6	?	?	5	4	2		4				3	?	3	6	5	5	6
Crop Damage		?	?		6				?	6	?	?	6	5	5		0				4	?	3	6	6	6	6
THUNDERSTORM WINDS																											
Deaths	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Injuries	?	1	0	0	0	0	3	0	6	0	1	7	7	4	1	0	0	0	0	7	0	0	0	0	0	0	0
Property Damage	?	7	4	5	4	5	5	5	5	5	5	7	7	5	6	4	4	4	5	5	5	4	4	6	7	5	7
Crop Damage	?	?	?	0	0	?	0	?	5	5	0	?	7	4	6	0	0	0	0	0	?	3	6	5	0	0	
HIGH WINDS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
LIGHTNING																											
Deaths		0	0		1			1	0	0		0	0	4	3	1	0		0	1	0	2					0
Injuries		2	0		3			5	0	1	16	0	0	1	0	0	1		1	4	0	0	0	0	0	0	0
Property Damage		5	4		5			4	4	3	0	5	5	6	0	5	3		0	5	5	4	4	6	5	4	4
Crop Damage		0	0		0			0	0	0	0	0	0	0	0	0	0		0	0	?	0	?	6	6	6	0
FLASH FLOODS																											
Deaths	0	0	0	0		0	0	0	0	0	0	0	0	0	0		0		0			0	0	0	0	0	0
Injuries	?	?	?	?		?	?	?	?	?	?	?	?	?	?		?		?			?	?	?	?	?	?
Property Damage	?	?	?	?		?	?	?	?	?	?	?	?	?	?		?		?			?	?	?	?	?	?
Crop Damage	?	?	?	6		0	0	0	0	3	?	?	3	5		?		?			0	?	?	6	6	0	0
FLOODS																											
Deaths											0												0				
Injuries											0												0				
Property Damage											?												?				
Crop Damage											0												0				
HEAVY SNOWSTORMS AND BLIZZARDS @																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ICE STORMS #																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HURRICANES AND TROPICAL STORMS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ALL OTHERS																											
Deaths			1			0							0					0	0				0				
Injuries			0			0							0					0	0				0				
Property Damage			0			5							0					?	5				?				
Crop Damage			0			?							8					?	0				?				

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM SUMMARY

AUGUST 1989

TYPE	NEW JERSEY	NEW MEXICO	NEW YORK	NORTH CAROLINA	NORTH DAKOTA	OHIO	OKLAHOMA	OREGON	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA	SOUTH DAKOTA	TENNESSEE	TEXAS	UTAH	VERMONT	VIRGINIA	WASHINGTON	WEST VIRGINIA	WISCONSIN	WYOMING	ALASKA	HAWAII	PACIFIC	PUERTO RICO	VIRGIN ISLANDS	NATIONAL DEATH & INJURY TOTALS
TORNADOES										0																	
Number	1	2		1	1	1	1	1				2	6			1											
Days	1	2		1	1	1	1	1				1	3			1											
Deaths	0	0		0	0	0	0	0				0	0			0											0
Injuries	1	0		0	0	0	0	0				0	0			0											1
Property Damage	?	4		0	4	?	?	4				?	?			?											
Crop Damage	0	?		0	?	?	?	0				0	0			3											
HAIL																											
Deaths		0		0	0	0	0	0			0	0	0	0			0				0	0					
Injuries		0		0	0	0	0	0			0	0	0	0			0				0	0					
Property Damage		5		6	?	?	?	5			?	6	4			1					5	4					
Crop Damage		?		6	?	?	?	6			?	6	5			0					?	0					
THUNDERSTORM WINDS																											
Deaths	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0				0	0					2
Injuries	0	0	0	0	2	0	0	0	2		3	2	0	0	0	0	0				1	0					40
Property Damage	3	?	5	5	6	6	5	4	5		6	5	5	5	4	6	?				5	4					
Crop Damage	?	?	0	0	0	0	?	?	0		?	0	0	?	0	6	?				?	0					
HIGH WINDS																											
Deaths															0												
Injuries															0												
Property Damage															5												
Crop Damage															0												
LIGHTNING																											
Deaths		0	0	0	0	1	0	0	0		1	0	1	0	0	0	0			1	1						18
Injuries		2	0	2	?	4	0	5	?		5	0	2	0	0	0	0			0	0						50
Property Damage		4	5	6	?	5	5	?	4		6	?	5	4	3	3	5			0	0						
Crop Damage		0	0	0	?	0	?	?	0		0	0	0	?	0	0	0			0	0						
FLASH FLOODS																											
Deaths		0	2	0	0	0	0	0	0		0	0	0	0	0	0	0			0	0		0				2
Injuries		0	0	0	0	0	0	0	0		0	0	0	0	0	0	1			0	0		0				1
Property Damage		6	0	5	?	6	3	?	5		5	?	5	6	7	7	?				5	5		0			
Crop Damage		0/c	0	0	?	?	?	0	?		0		4	0	0	0	7			0	?						
FLOODS																											
Deaths			0				0		0																		
Injuries			0				0		0																		
Property Damage			7				?		3																		
Crop Damage			0				?		?																		
HEAVY SNOWSTORMS AND BLIZZARDS @																											
Deaths																											
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HURRICANES AND TROPICAL STORMS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ALL OTHERS																											
Deaths			0		0		1				0					0	0			0	0						2
Injuries			0		0		0				0					0	0			0	0						
Property Damage			4		?		5				4					4	?			4	1						
Crop Damage			0		?		0				0					3	?			0	0						

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM DAMAGE CATAGORIES

REFERENCE NOTES

1	Less than \$50	0/Blank	None reported.
2	\$50 to \$500	*	Miles instead of yards.
3	\$500 to \$5,000	**	Yards instead of miles.
4	\$5,000 to \$50,000	@	Includes heavy sleet storm.
5	\$50,000 to \$500,000	#	Freezing drizzle and freezing rain, commonly known as glaze.
6	\$500,000 to \$5 Million	≠	Report incomplete.
7	\$5 Million to \$50 Million	≠≠	Report not received.
8	\$50 Million to \$500 Million	o/c	Indicates Crop Damage amount is included in the value given for property damage.
9	\$500 Million to \$5 Billion		

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

Definition of Fujita Tornado Scale (F scale)

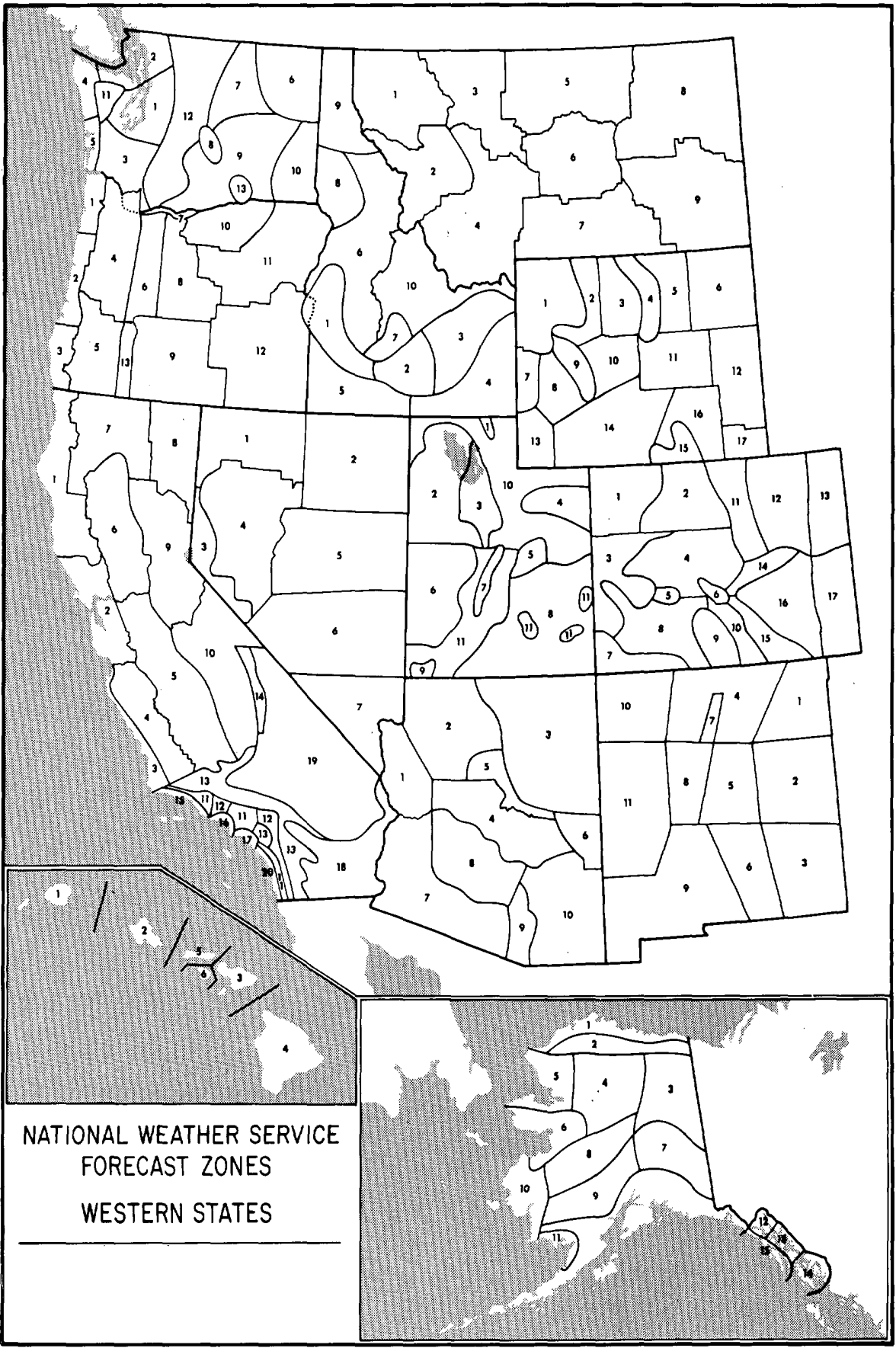
- (F0) Gale tornado (40-72 mph): Light damage
Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage sign boards.
- (F1) Moderate tornado (73-112 mph): Moderate damage
The lower limit (73 mph) is the beginning of hurricane wind speed; peel surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads.
- (F2) Significant tornado (113-157 mph): Considerable damage
Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
- (F3) Severe tornado (158-206 mph): Severe damage
Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.
- (F4) Devastating tornado (207-260 mph): Devastating damage
Well-constructed houses leveled; structure with weak foundation blown off some distance; cars thrown and large missiles generated.
- (F5) Incredible tornado (261-318 mph): Incredible damage
Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 m; trees debarked; incredible phenomena will occur.
- (F6-F12) (319 mph to Mach 1, the speed of sound):
The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

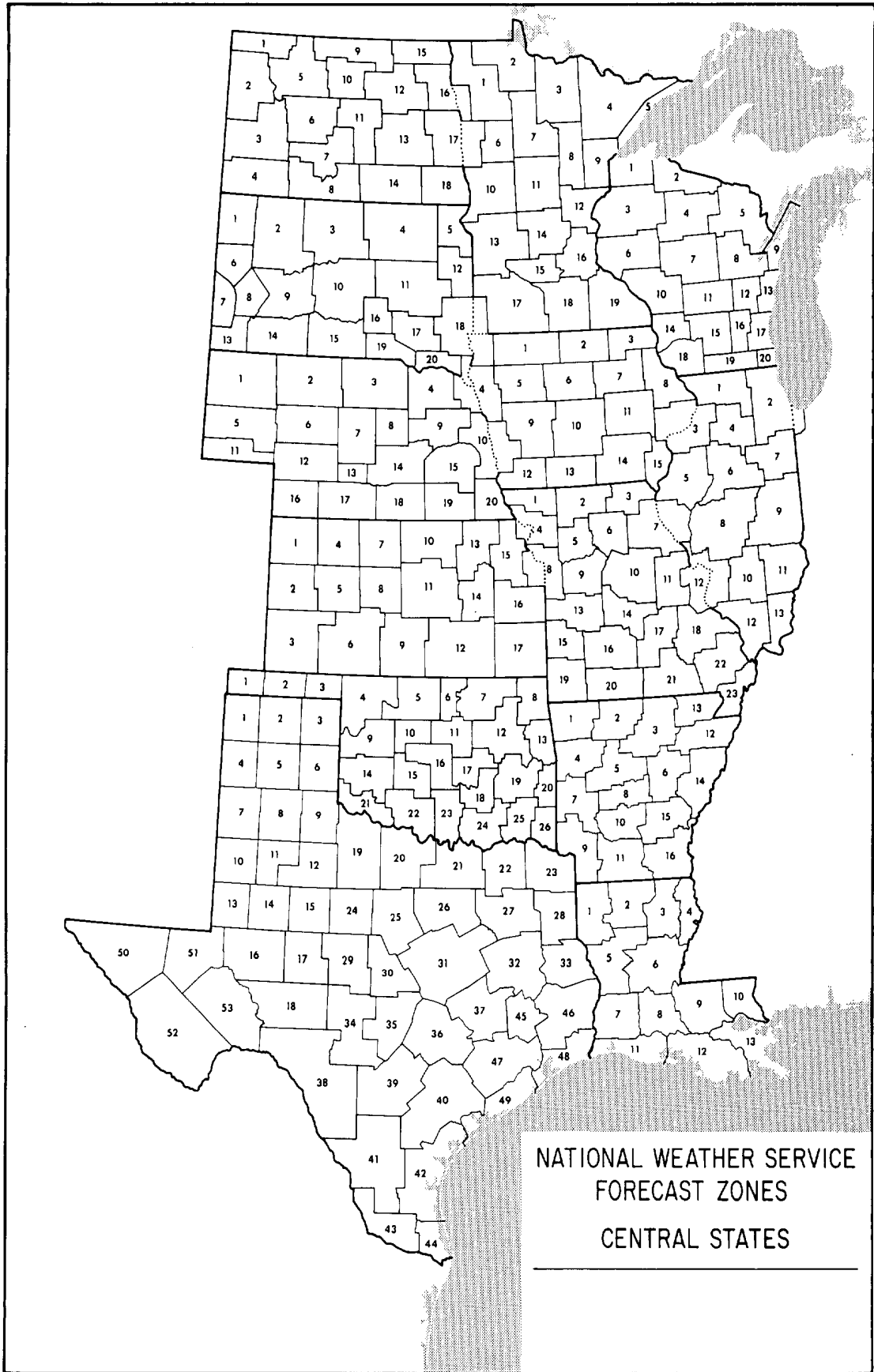


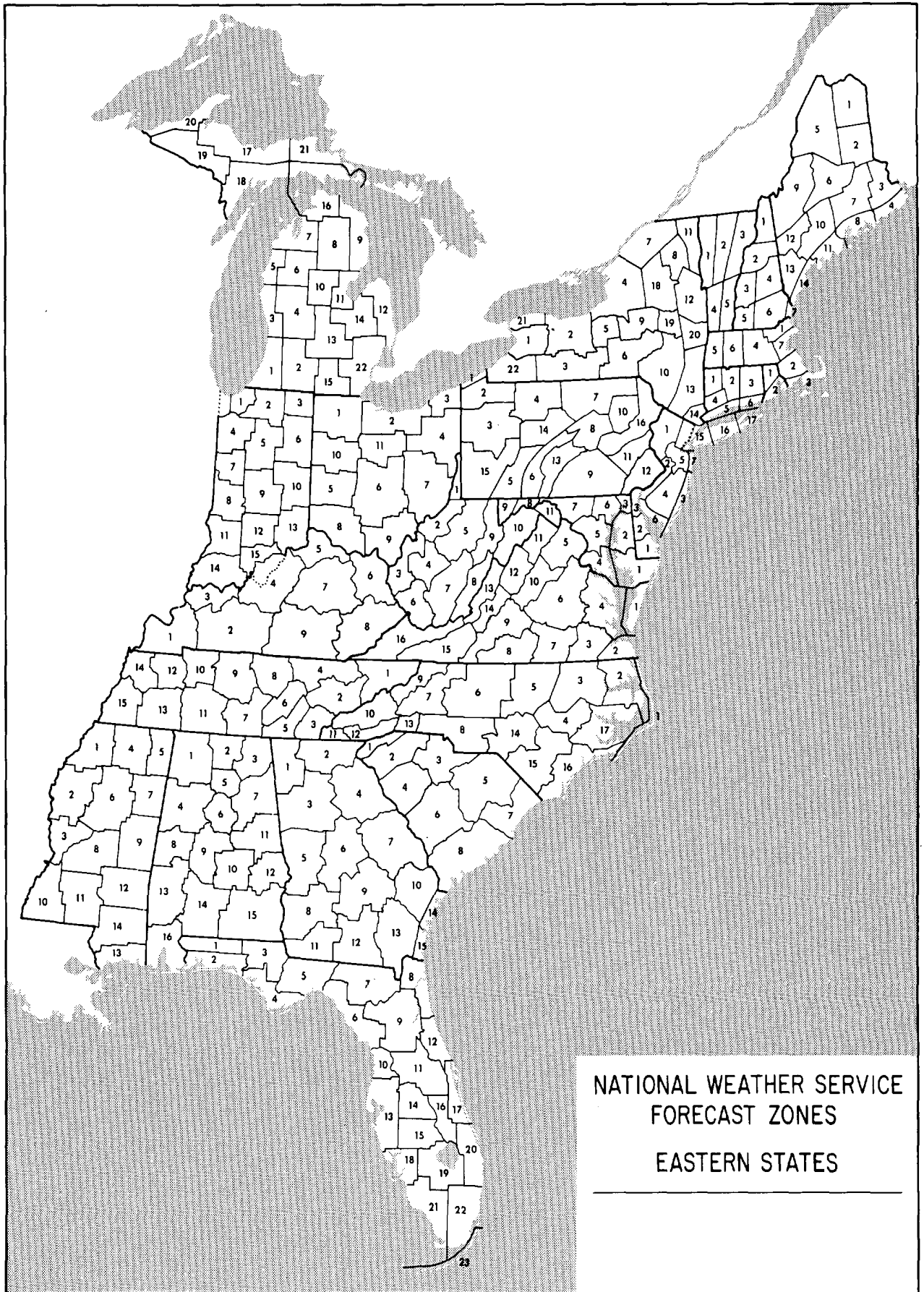
(F0+F1) Weak Tornado
 (F2+F3) Strong Tornado
 (F4+F5) Violent Tornado

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

USCOMM-NOAA-ASHEVILLE, N.C. 1989-1800







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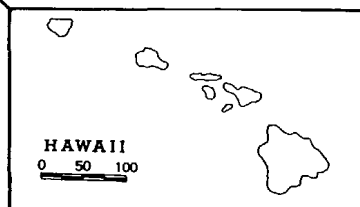
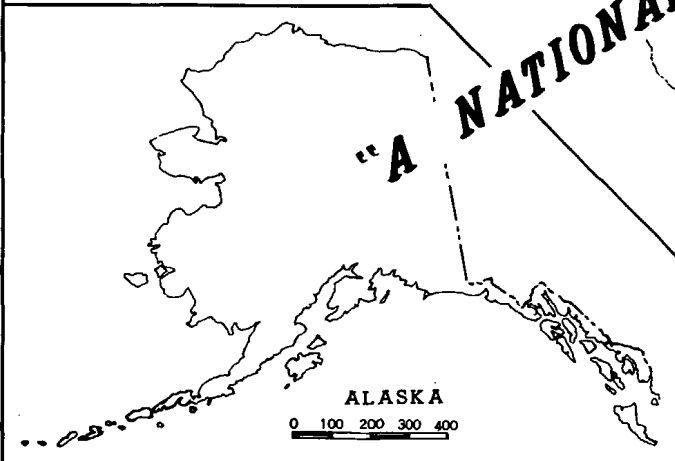
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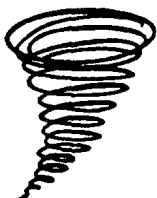
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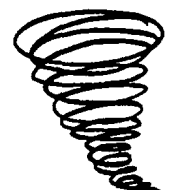
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**HOURLY
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ARIZONA**

DECEMBER
WITH ANNUAL SUPPLEMENT

ISSN 0361-6084

**CLIMATOLOGICAL DATA
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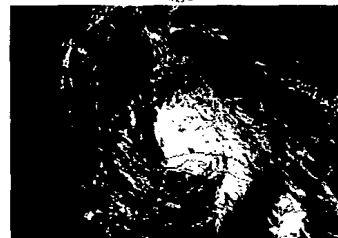
**CLIMATOLOGICAL DATA
ARIZONA**

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**LOCAL
CLIMATOLOGICAL DATA
Monthly Summary**

STATION	DATE	TEMPERATURE	PRECIPITATION	RELATIVE HUMIDITY	WIND	SEA LEVEL PRESSURE	SEA LEVEL TEMPERATURE	SEA LEVEL DEW POINT	SEA LEVEL WIND DIRECTION	SEA LEVEL WIND VELOCITY	SEA LEVEL WIND GUST	SEA LEVEL WIND VELOCITY DIRECTION	SEA LEVEL WIND VELOCITY GUST	SEA LEVEL WIND VELOCITY GUST DIRECTION	SEA LEVEL WIND VELOCITY GUST DIRECTION	SEA LEVEL WIND VELOCITY GUST DIRECTION	SEA LEVEL WIND VELOCITY GUST DIRECTION	SEA LEVEL WIND VELOCITY GUST DIRECTION	SEA LEVEL WIND VELOCITY GUST DIRECTION
TUCSON	JAN 1973	55.0	0.00	65	10	30.01	55.0	55.0	100	10	10	100	10	10	10	10	10	10	10

STORM DATA

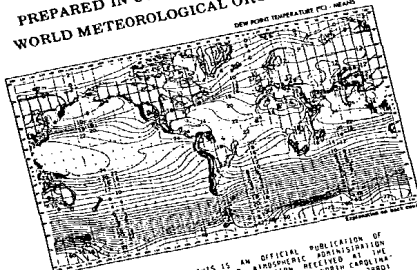


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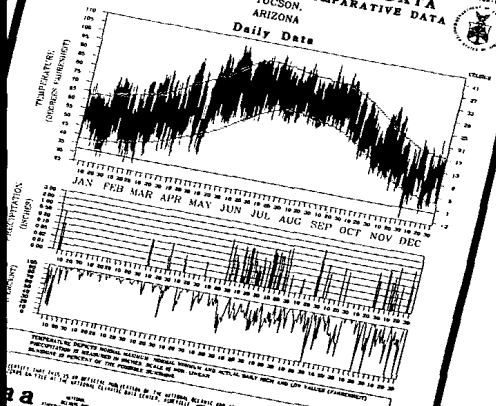


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ANNUAL SUMMARY WITH COMPARATIVE DATA
TUCSON,
ARIZONA
Daily Data**



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

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

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

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

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

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

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

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

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

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

Submission of Abstracts

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

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

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

About the Conference

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

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

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

Exhibit Space

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

Deadlines

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

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



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

About Asheville

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

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14TH ANNUAL CONFERENCE
ASHEVILLE, NORTH CAROLINA
JUNE 11-14, 1990



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

CHALLENGES AHEAD:

FLOOD LOSS REDUCTION STRATEGIES FOR THE '90s

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