

JULY 1981

VOLUME 23

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# STORM DATA



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NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

ENVIRONMENTAL DATA AND  
INFORMATION SERVICE

NATIONAL CLIMATIC CENTER  
ASHEVILLE, N.C.

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Storm Data, which had been slated to end with the June 1981 issue, is given a new lease on life in a revised and expanded format. Coordination among the National Climatic Center, the National Weather Service, and Dr. T. Theodore Fujita, Professor of Meteorology at Chicago University and an acknowledged tornado authority, has made this possible.

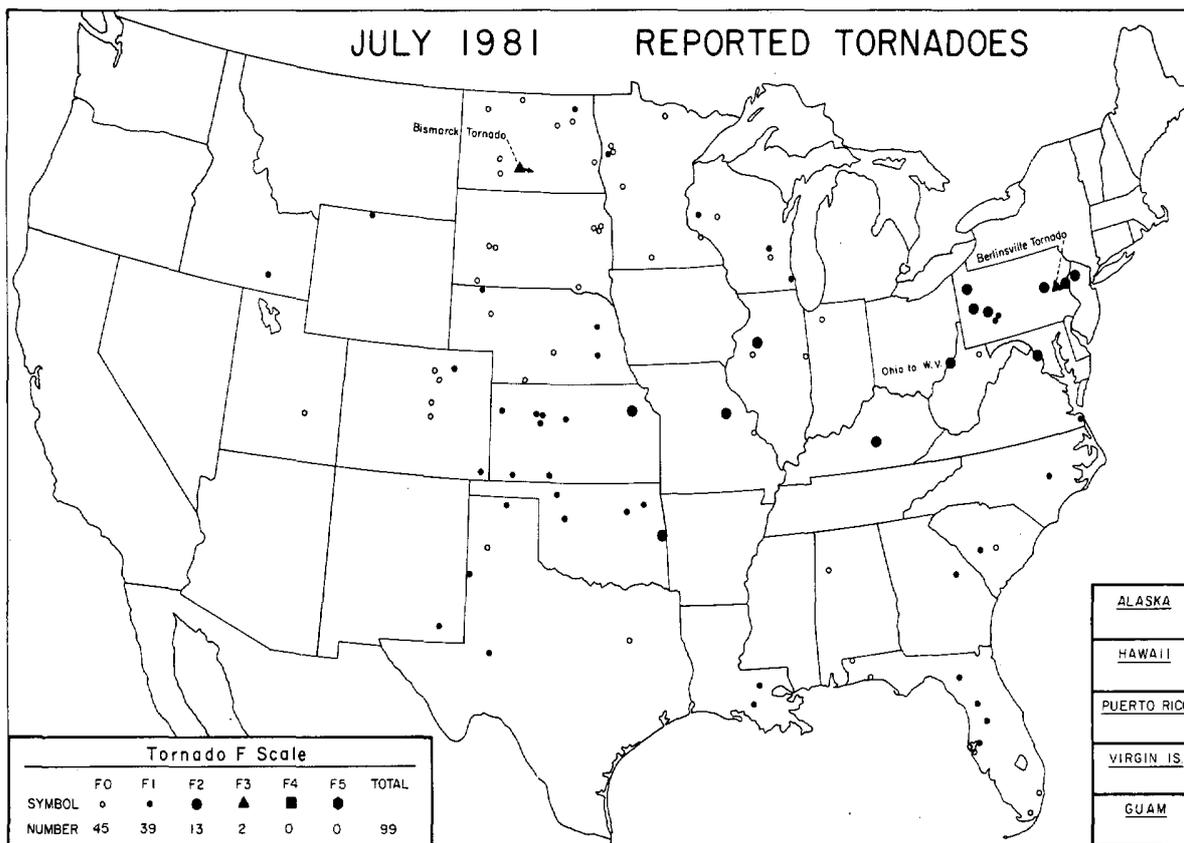
Beginning with the July 1981 issue, Dr. Fujita will review the reports provided by the National Weather Service; assign tornado F scale numbers, and add narratives and pictures on outstanding storms. NWS narratives on tropical storms will also be carried. The National Severe Storm Forecast Center will also participate in the review. Storm Data will be published by the NCC after these reviews, but likely with a slightly longer time lag.

Storm Summary reports that normally appeared in the Climatological Data National Summary are included in the Late Reports and Corrections for January through June 1981. The December issue will include an annual general summary of tornadoes and lightning, hailstorm and wind losses.

NOTE: 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 in the month following receipt of these data.

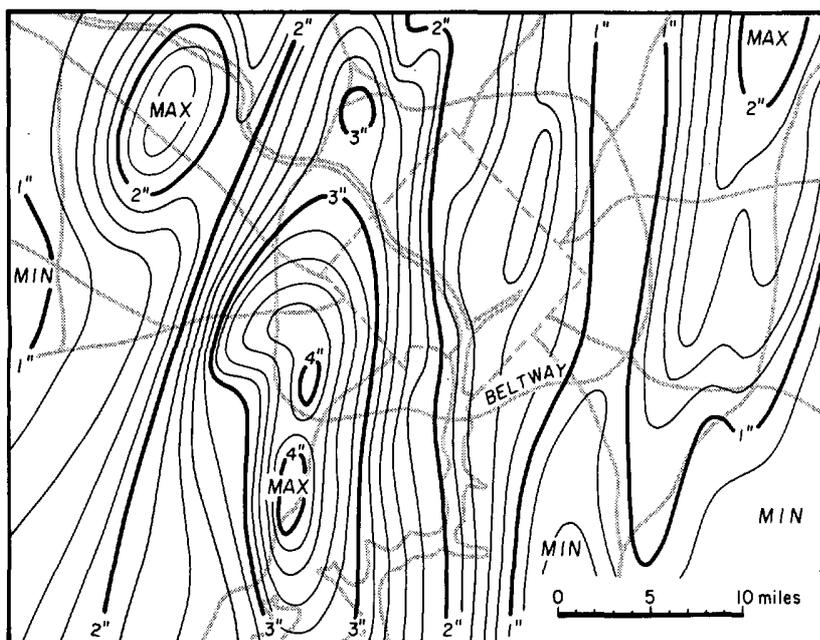
SEVERE WEATHER - (USPS 363-010) is published monthly by the National Climatic Center, Environmental Data and Information Service, NOAA, Federal Building, Asheville, NC 28801.

# OUTSTANDING STORMS OF THE MONTH



● REPORT RECEIVED					○ NO REPORT RECEIVED						
●1AL	●5CO	●10ID	●15KY	●20MI	●25HE	●30NYcoastal	●33OH	○37RI	●41TXsouthern	●45WA	●50HI
●2AZ	○6CT	●11IL	●16LA	●21MN	●26NV	○30NYcentral	●34OK	●38SC	●41TXwestern	●46WV	●51PR
●3AR	●7DE	●12IN	●17ME	●22MS	●27NH	●30NYwestern	●35OR	●39SD	●42UT	●47WI	●52VI
●4CA northern	●8FL	●13IA	●18MD	●23MO	●28NJ	○31NC	●36PAeastern	●40TN	○43VT	●48WY	●53GU
●4CA southern	●9GA	●14KS	○19MA	●24MT	●29NM	●32ND	●36PAwestern	●41TXnorthern	●44VA	●49AK	

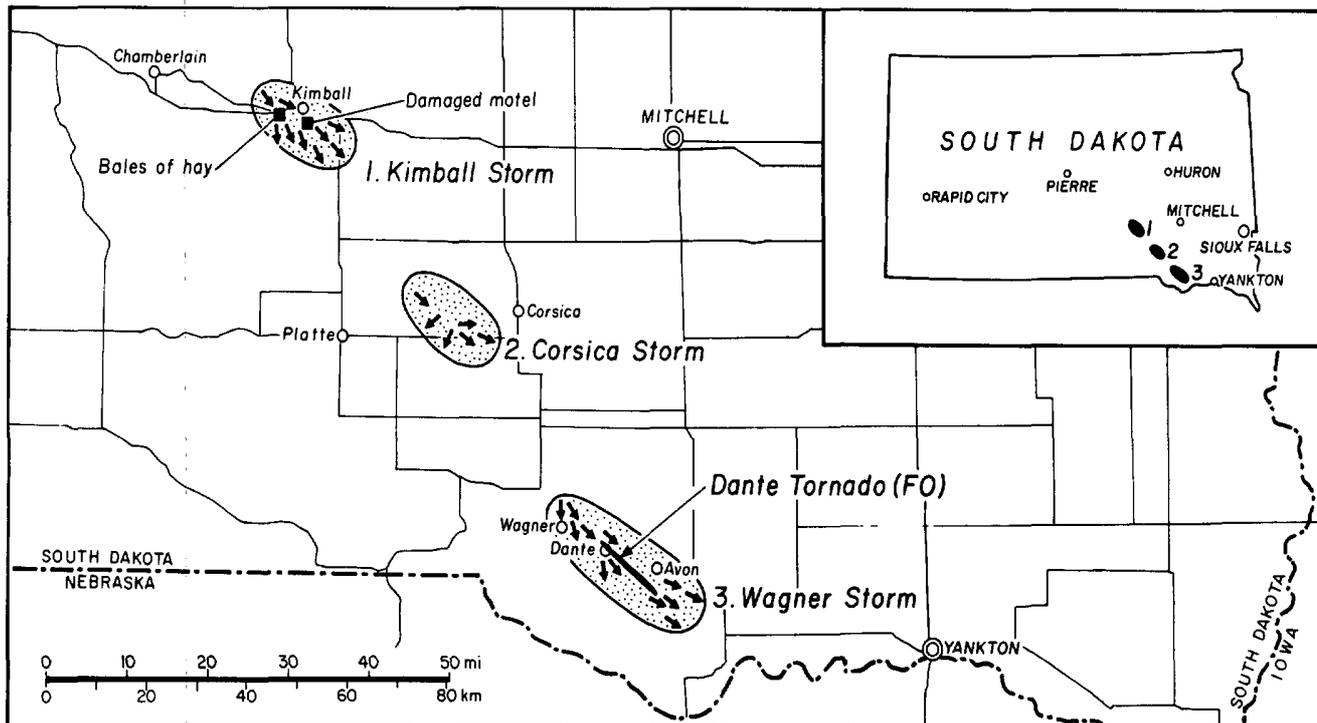
## 1. RAINSTORM in Washington D.C. and Vicinity on July 3 - 4.



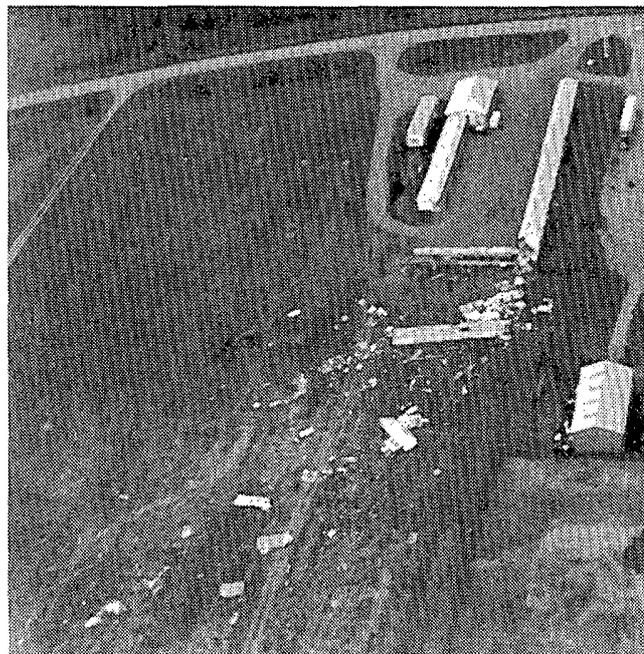
The 4th of July was the fireworks day in Washington D. C. Rain fell intermittently on the 3rd, becoming heavy before dawn of the 4th. Rain ended around noon and skies remained cloudy until early evening. Clearing took place in time for good firework displays in Downtown Washington.

The largest rainfall measured was 4.15". One station measured 1.20" in 25 min between 0635 and 0700 EST. (data from Metropolitan Climatological Summaries, National Capital Area - rainfall map plotted by Angela Byers).

2. TORNADO AND HIGH WINDS in South Dakota on July 19.



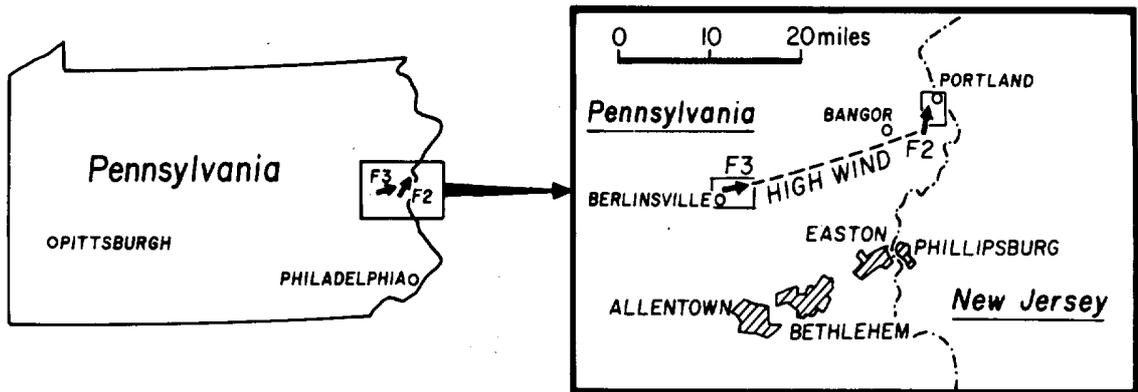
Three areas of high-wind damage in southeastern South Dakota. Damaging winds in Kimball started at 1520 CST; west of Corsica at 1630 CST; and in Avon at 1800 CST. The Dante tornado occurred at 1730 CST. Surveyed jointly by the NWS, Sioux Falls and the University of Chicago.



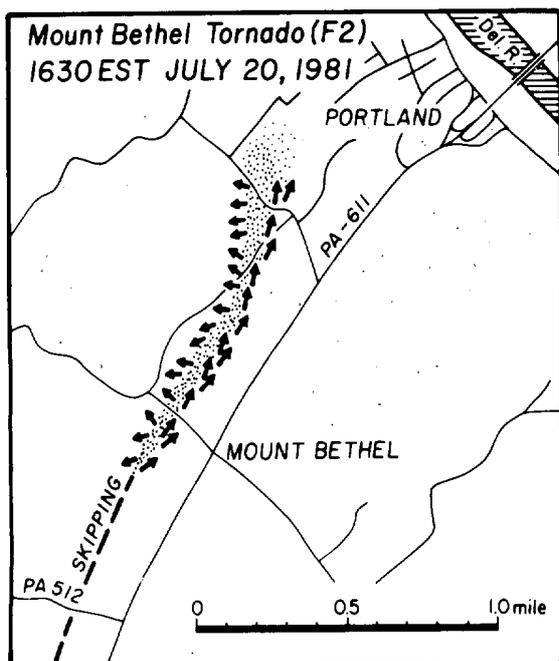
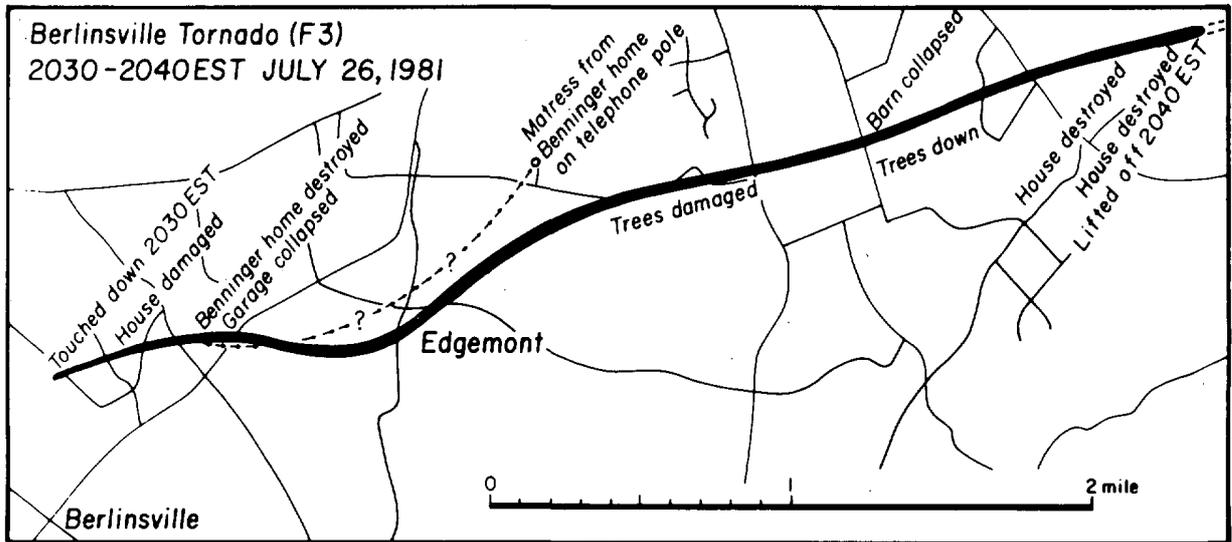
(Left)-- Bales of hay blown apart by high winds west of Kimball. Photo looking east.

(Right)-- A damaged motel southeast of Kimball. The east section of the motel was blown away toward the southeast. Aerial photos by Neil J. Levine, U of C.

3. TWO TORNADOES in Eastern Pennsylvania on July 20 and 26.



Eight tornadoes were reported from Pennsylvania in July. Two tornadoes near Allentown were surveyed and mapped by the National Weather Service.



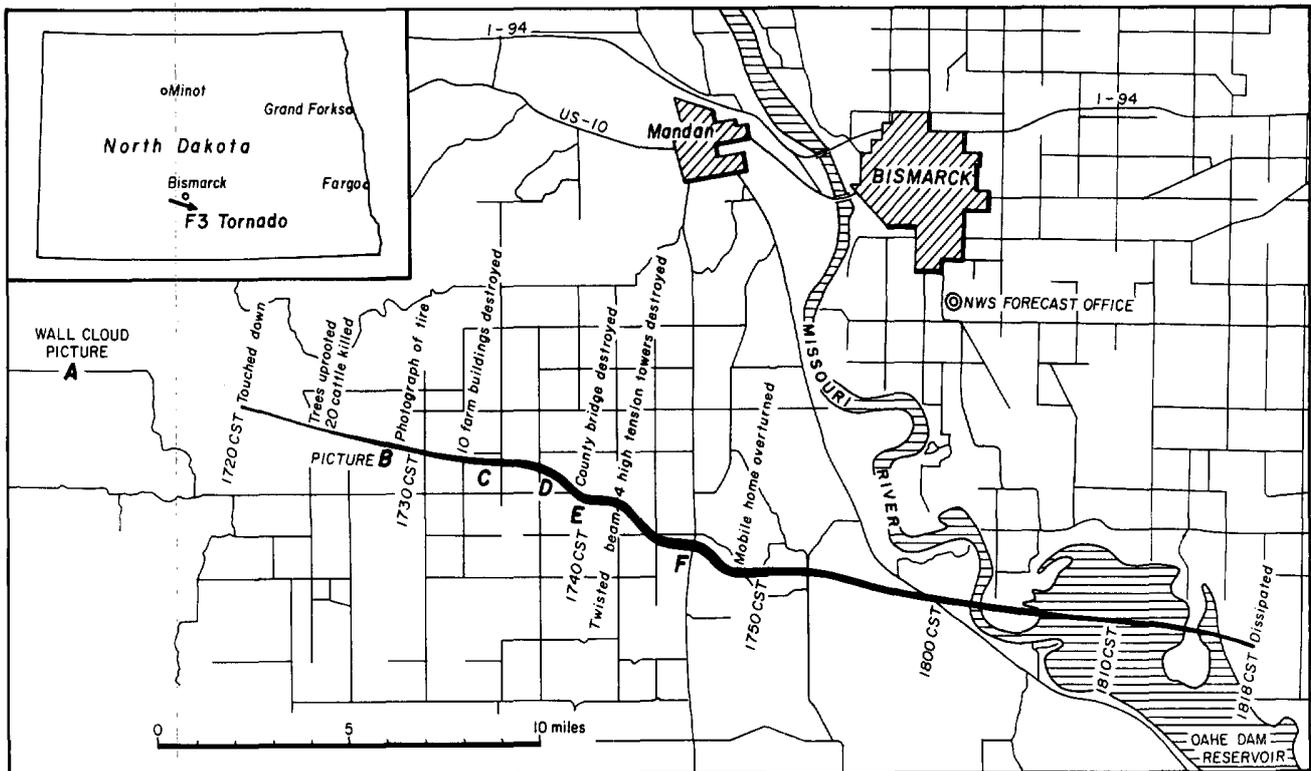
Above: Berlinsville tornado (F3) on July 26. The path length of this tornado, as measured on the map, was less than 4 miles. However, a band of high winds extended further some 20 miles to the Delaware River.

Left: Mount Bethel tornado (F2) on July 20. The first 2 mile path of this tornado was skipping followed by a continuous path, approximately one mile long and 200 ft wide. The path width fanned out near the end of the path.

Mapped by Steven H. Porter and Richard Hosler of National Weather Service, Allentown, Pennsylvania.

#### 4. TORNADO southwest of Bismarck N.D. on July 30

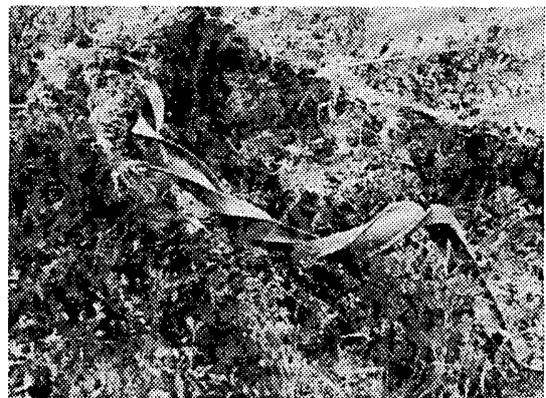
Operation Skywarn organized by the National Weather Service, Bismarck four years ago had a perfect opportunity to put the training into operation on July 30. A spotter 20 miles west of NWS identified the rotation of a wall cloud 10 minutes before the tornado touch down. The strong tornado, rated by the NWS at F3 (photos B, C, D, E, F), left behind an 18-mile long path of destruction. The force of the storm drove a stick between a tire and rim (see photo below). A 6-inch steel beam (twisted) was found near the high-tension tower which had been toppled. Data were supplied by Karl A. Silverman, NWS at Bismarck, N.D.



Path of the F3 tornado near Bismarck, N.D. surveyed by NWS Forecast Office.



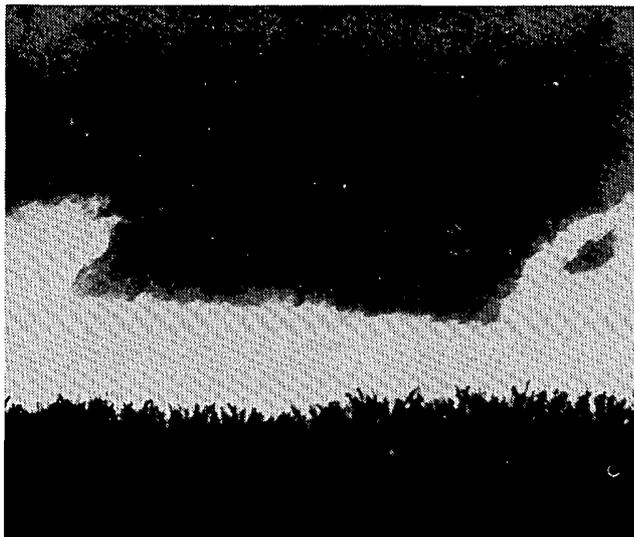
A rare view of tire and stick. (courtesy of Patrick Miller, The Bismarck Tribune)



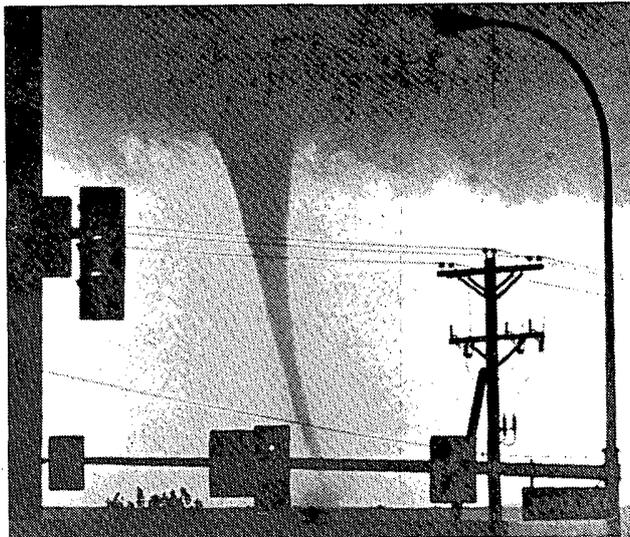
A twisted steel beam. This photo does not imply that the steel beam was twisted by the swirling motion of the wind in tornado. Photo was taken by the National Weather Service at Bismarck.

TORNADO southwest of Bismarck, N.D. -----continued

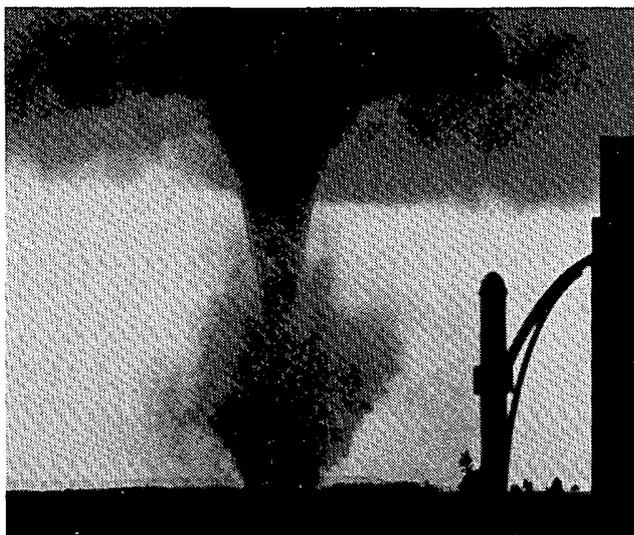
Photos: Courtesy of Patrick Miller, The Bismarck Tribune



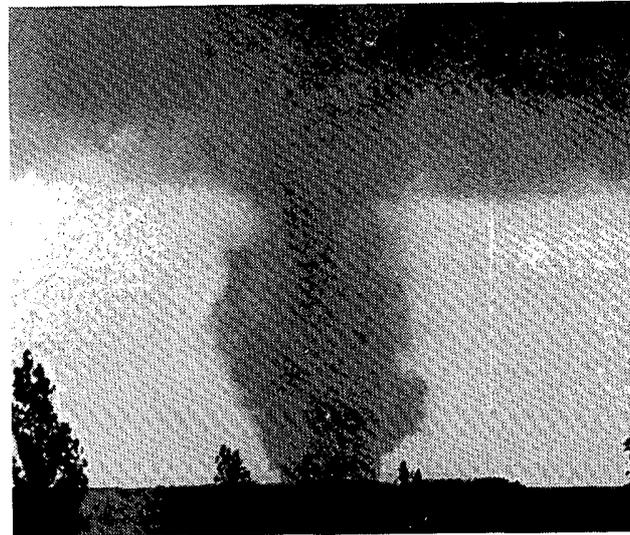
A. Wall cloud 10 min before touchdown



B. Tornado 8 min after touchdown



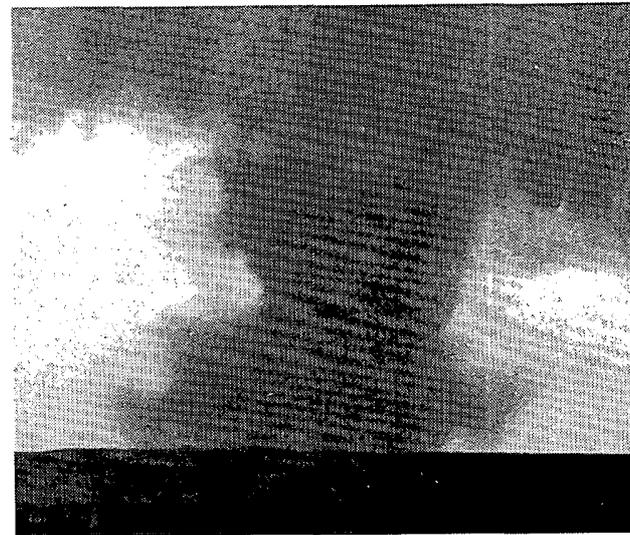
C. Tornado 13 min after touchdown



D. Tornado 17 min after touchdown



E. Tornado 19 min after touchdown



F. Tornado 25 min after touchdown

## 5. Lake Pontchartrain WATERSPOUT of July 4

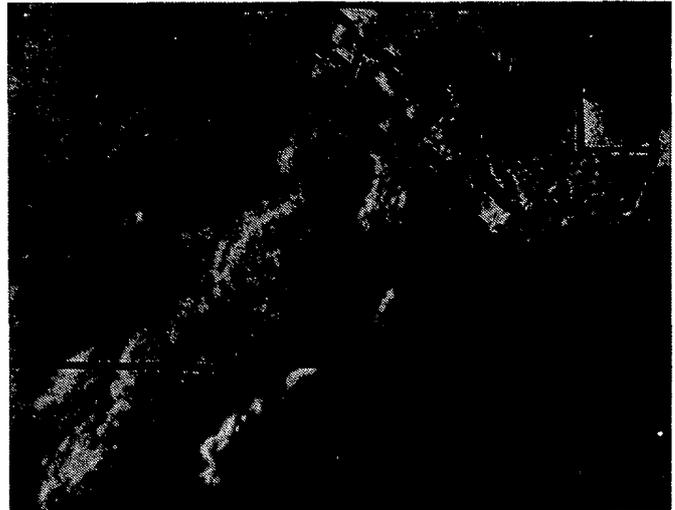
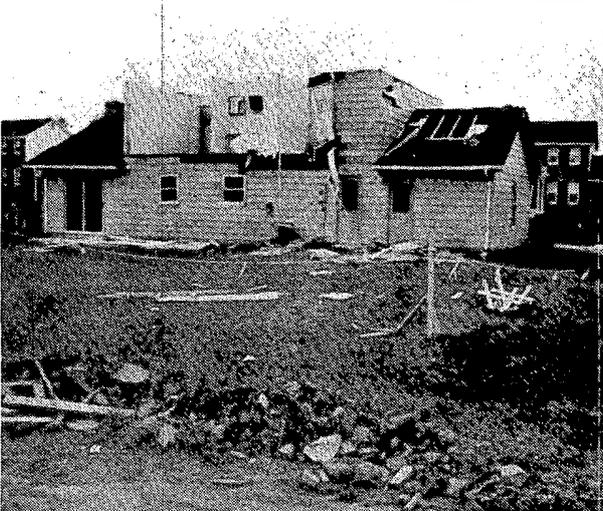


The 4th of July waterspout over Lake Pontchartrain occurred at 1330CST, when a lot of people in the outdoor were watching the rare phenomenon in the area.

The waterspout, characterized by a tornado-like funnel, was much larger before this picture was taken.

Photo: Courtesy of Dr. Glenn Hamilton, USN Captain, retired and NWS Forecast Office at Slidell, La.

## 6. Chantilly, Va. TORNADO of July 28



A small, short lived tornado (F2) occurred at Chantilly at 1820EST. An observer saw the roof "spinning like a top" over the power lines. It was carried about one block and piled against the brick wall of a church.

A satellite picture taken by GOES East at 1800EST shows that there was a very small cloud over Cantilly (shown with an arrow in satellite picture). No tornado was reported from beneath other thunderstorm clouds over Virginia.

Damage photo: By Richard W. Schwerdt of NWS Forecast Office, World Weather Building.

Satellite photo: From NESS, World Weather Building.

Description of tornado: From the text in Storm Data in the section of Virginia.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED <sup>1</sup> DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>ALABAMA</b>									
Childersburg, Talladega County	2	8:00a All times CST			0	0	4	0	Lightning
									Lightning struck a large tree in front of a home. An automobile was demolished when the tree fell. A large hole was knocked in the roof of the home with damage to the front door and porch.
Mobile County	3	11:00a							Funnel cloud
									A brief funnel cloud was reported 4 miles southwest of Mullet Point on the eastern shore of Mobile Bay.
Northeast Fayette County	5	10:20a	7	20	0	0	3*	C	Tornado (F0)
									A small tornado touched down in open country, but did pass within 1/2 mile of a rural church where Sunday services were in progress. Witnesses described the tornado as, "like a rat's tail hanging out of the clouds and dancing along the ground". The slow-moving tornado was in view for 10 to 15 minutes and was accompanied by very little rain. Damage was mostly to trees and one barn with very minor crop damage.
Clay and Calhoun Counties	5	2:00p - 3:00p			0	0	2	0	Wind
									Thunderstorm winds estimated at 50mph in Ashland caused tree damage. Winds gusted to 54mph at the Anniston airport.
Opp, Covington County	5	5:50p			0	0	4	0	Wind
									Apparent straight-line winds accompanying a severe thunderstorm did extensive damage to a building supply store. A mobile home was also damaged with minor damage to a school. Trees and utility lines were blown down in several locations in the city.
Covington County	9	5:00p			0	0	4	0	Lightning
									A severe electrical storm caused power outages all over Covington county. Lightning also blew a hole in a water line in Andalusia.
Mobile area, Mobile County	9	7:25p			0	1	5	0	Lightning/wind
									Damage to trees and utility lines by thunderstorm winds and lightning. Some areas, including the State Docks complex were still without power that next morning. The lightning was reported as "very intense". One man was struck by lightning while holding onto a crane. He was treated and released at a local hospital. Lightning was also thought to be the cause of a fire that destroyed a warehouse. Winds were clocked to about 60 mph on the Bay front north of Dog River while gusts to 45 mph were recorded at Bates Field.
Dothan area, Houston County	10	11:00a			0	0	4	0	Thunderstorm
									Strong winds associated with a thunderstorm caused damage to trees, power lines, signs and some roofs, mostly along a one-mile stretch of the Ross Clark Circle. Three automobiles were damaged. One car was completely destroyed when a 90-foot pine tree was uprooted and fell across the vehicle, spitting it at the passenger seats. A baseball field dugout at the Boy's Club collapsed across a chain link fence. Nail up to marble size also damaged some automobiles.
Troy, Pike County	10	3:28p			0	0	0	0	Wind
									A thunderstorm produced wind gusts to 61 mph at the Troy airport.
Atmore, Escambia County	10	3:30p			0	0	4	0	Wind
									Thunderstorm winds damaged 2 hangars and 2 airplanes at the Atmore airport. Several trees were also blown down.
Mobile, Mobile County	10	3:56p			0	0	0	0	Wind
									Thunderstorm wind gusts to 56 mph at Bates Field.
Semmes, Mobile County	10	4:05p			0	0	3	0	Wind
									Thunderstorm winds downed trees and a stone fence.
Limestone and Madison Counties	10	4:30-5:15p			0	0	3	0	Thunderstorm
									Thunderstorm winds downed power lines at Atmore in NE Limestone County at 4:30 pm. Nail up to marble size covered Interstate 65 near Athens in Limestone County around 4:47 pm. In Madison County, minor flooding occurred at Hazel Green around 5 pm and small hail was reported at Farley around 5:15 pm.

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<b>ALABAMA</b>									
Demopolis area, Marengo County	10	7:00p			0	7	1	0	Lightning
									Lightning struck a light pole at Demopolis Academy and shot a ball of fire down a chain link fence shocking 5 or 6 baseball players and 2 coaches. No serious injuries were reported. One baseball player did walk away from the fence and lay down on the ground, but he never lost consciousness.
Gadsden, Etowah County	10	8:15p			0	3	3	0	Wind
									Strong winds associated with a thunderstorm blew out a glass wall at one end of the Gadsden Shopping Mall. Three people suffered minor injuries mostly from flying glass.
Limestone and Morgan Counties	17	2:30p			0	1	4	0	Thunderstorm
									Thunderstorm winds caused mostly minor damage throughout Limestone and Morgan counties. In Decatur, one motorist was injured when struck by debris blown through his car windows. Trees and power lines were downed in some places. One tree smashed through a mobile home. Also, lightning caused one tree fire.
Gadsden, Etowah County	17	3:00p			0	0	2	0	Wind
									Thunderstorm wind gusts to near 70 mph and tree damage in Gadsden reported by Etowah County Civil Defense.
Pisgah, Jackson County	17	3:30p			1	0	0	0	Lightning
									A 15 year old boy was killed by lightning while waiting underneath a big tree at Pisgah High School. The bolt of lightning apparently hit the outh in the left hip and killed him instantly. Reports stated that the lightning struck a nearby fence and then jumped from the fence and struck the youth in the hip.
Brewton, Escambia County	19	2:15p			0	0	4	0	Wind
									Strong winds accompanying a severe thunderstorm damaged the roof of Brewton Elementary School. Trees were blown onto 2 residences causing extensive damage. One power pole was snapped and power outages occurred throughout the area.
Montgomery area, Montgomery County	19	5:10p			0	0	0	0	Wind
									Wind gusted to 58 mph at Maxwell Air Force Base.
Selma area, Dallas County	19	6:00p			0	0	4	0	Lightning/wind
									Severe lightning damaged two homes in Selma. Two fires were caused by the lightning. One home received major damage to one bedroom when lightning hit a tree near the house. Some power lines were blown down in north Selma. Storm damage caused power to be out in at least 1/4 of the city.
Mobile Bay	20	6:05p							Water spout/wind
									Public reported 2 waterspouts at the entrance of Mobile Bay. Winds of 52 to 63 mph and very high seas reported by boats near the east end of Dauphin Island.
Escambia County	21	7:25p			0	0	4	0	Wind
									Thunderstorm winds uprooted numerous trees. U.S. Highway 31 was partially blocked for a brief period in the Wauveek area. Two large trees fell through the roof of a mobile home in Wauveek, where a barn was partially unroofed. Residents of the mobile home were away from home when the trees fell through the roof. Trees also fell onto some residences and barns in the Canoe Area.
Cullman County	24	3:30p			0	0	4	0	Thunderstorm
									Severe thunderstorms hit mainly the southern and western parts of Cullman County including the city of Cullman and caused widespread damage. Winds were estimated at near 60 mph and damaged a marina and some boats on Smith Lake at Big Bridge. Downed trees and tree limbs blocked some roads. One automobile was damaged by a falling tree and some residences had roof damage. Nail up to golf ball size accompanied the storm. Extensive street flooding occurred in the western and northern sections of Cullman. Police reported floor-board deep water on some streets. Water also reached near the floor level of some houses. Street flooding also occurred in the Hanceville area.
Gunters Mountain area, Marshall County	24	5:30p			0	0	4	0	Thunderstorm
									Several homes and other buildings were reported damaged in the Gunters Mountain area by strong winds. Lots of trees were blown down with some of them falling across power lines and blocking roads. About 1,000 homes were without electricity. Lightning also knocked out phone service to some homes.

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<b>ALABAMA</b>									
Greensboro area, Hale County	25	1:30p			1	0	0	0	Lightning
					A man was struck by lightning and killed while on a golf putting green at Lakeview Country Club.				
Mobile Bay	28	6:45a							Waterspout
					Waterspout reported in Mobile Bay southeast of Fowl River.				
Vance, Tuscaloosa County	29	12:20p			0	0	4	0	Lightning
					Fifty head of beef cattle, weighing about 800 lbs. each were killed when struck by lightning. The lightning appeared to have struck a tree and then spread out along the wet ground, killing the cattle. All of the cattle were headed in the same direction when hit. A short distance away, about 30 head of cattle under another tree were not harmed.				
Birmingham area, Jefferson County	29	2:00p							Funnel cloud
					Funnel cloud reported from Enley to around Leeds as an intense thunderstorm moved eastward over Jefferson County.				
Mobile, Mobile County	29	2:50p			0	0	4	0	Lightning
					Lightning ripped a hole in the roof of a three story building and ignited a small fire on the roof. Lightning also hit a tree at another location and ignited a utility shed that contained 5				
Mobile, Mobile County (Continued)	29	2:50p			0	0	4	0	Lightning
					butane storage tanks. The shed was destroyed when one of the tanks exploded. Another fire occurred when lightning hit the side of a house. The fire was contained to the side of the home.				
Mobile, Mobile County	29	2:55p							Funnel Cloud
					Funnel cloud reported by the public 4 miles southeast of Batts Field moving southeast.				
<b>2 ARIZONA</b>									
Flagstaff (Coconino Co.)	08	1205-1215MST			0	0	4	0	THUNDERSTORM Hail
					Hail up to 3/4 inch diameter at the airport with minor damage in the area.				
Tucson (Pima Co.)	09	2130MST			0	0	5	0	THUNDERSTORM Wind, Heavy Rain
					A severe thunderstorm with winds estimated at over 60mph ripped the roofing off most of the buildings, including the gymnasium at Sunnyside High School. Total wind and water damage put at \$100,000.				
Wittman-Beardsley (Maricopa Co.)	10	12030-12100MST			0	0	5	4	THUNDERSTORM Wind, Heavy Rain
					A severe thunderstorm with winds estimated at well over 60mph caused major damage in the area. Wind snapped 89 poles, downing four miles of a 69,000 volt power line. There was considerable damage to houses, barns and mobile homes. Total damage was put at \$250,000.				
Tucson (Pima Co.)	10	1220MST			0	0	5	0	THUNDERSTORM Lightning
					During a severe electrical storm, a lightning strike set off a fire that did major damage to a \$90,000 home on the east side.				
Tucson (Pima Co.)	11	1600MST			0	3	0	0	THUNDERSTORM Lightning
					Three men, a short distance apart, were struck virtually simultaneously by lightning. They received minor injuries.				
Roll (Yuma Co.)	15	1830MST			0	0	5	4	THUNDERSTORM Wind
					A severe thunderstorm with winds estimated at over 80mph struck across the area and damaged farm machinery, sheds, three crop-dusting planes, a hangar, houses and power lines. Total damage in the area estimated at \$200,000.				
<b>ARIZONA</b>									
Colorado City (Mohave Co.)	16	Afternoon			0	0	5	5	THUNDERSTORM Flash Flooding, Hail
					Massive flashflooding resulting from very heavy rains caused \$250,000 damage in this small town at the Utah border. Roads, streets, water and sewer lines were destroyed and basements filled with water and mud. Ravines 3 to 6 feet deep were cut into the streets. The large hail that preceded the heavy rain accumulated to a depth of 1/2 inch and severely damaged crops. The area was declared a disaster area by the county board.				
Page (Coconino Co.)	21	1830MST			0	0	5	0	THUNDERSTORM Wind
					A severe thunderstorm with wind gusts measured at 72 mph ripped through Wauveap Marina on Lake Powell just northwest of here leaving havoc in its place. Cables were snapped from moorings with considerable damage to docks and boats. Total damage was put at close to \$100,000.				
Scottsdale (Maricopa Co.)	22	0040MST			0	0	5	0	THUNDERSTORM Lightning
					A lightning strike caused fire engulfed a large home causing damage estimated at \$70,000.				
Tanque Verde Falls (Pima Co.)	26	1700MST			8	0	0	0	FLASH FLOODING
					Eight persons lost their lives when a wall of water 15 feet high rushed down the canyon and over the 100 ft. falls. Most of the victims were killed when their bodies were battered against the rocks and debris. Some of the bodies were not recovered for several days. Tanque Verde Falls is about 15 miles east of Tucson.				
<b>3 ARKANSAS</b>									
Malvern - Hot Spring County	1	6:00 PM - 8:30 PM CDT			0	0	?	0	Heavy Rains/ Flooding
					Heavy rains produced flooding in the downtown area. Eight businesses suffered water damage as the water rose to a depth of up to 3 feet in the downtown area.				
Near Lefe - Greene County	20	9:30 PM CDT			0	0	0	0	Hail
					Thunderstorms produced one inch hail. No damage was reported.				
Near Turrell - Crittenden County	20	11:45 PM CDT							Funnel Cloud
					A funnel cloud was reported by the public. No direction of movement was given.				
Gillett - Arkansas County	21	5:20 AM CDT			0	0	4	0	High Winds
					Thunderstorms produced high winds which heavily damaged the city's post office and some other outbuildings.				
Little Rock Air Force Base - Pulaski County	21	6:10 AM CDT			0	0	0	0	Hail
					Thunderstorms produced three-quarter inch hail. No damage was reported.				
Jacksonville - Pulaski County	21	6:19 AM CDT			0	0	0	0	Hail
					Thunderstorms produced one-inch hail. No damage was reported.				
Fort Smith - Sebastian County	21	3:00 PM CDT			1	0	0	0	Lightning
					A thirty-nine year old man was killed by lightning while working on the roof of Southside High School.				
Mayflower - Faulkner County	21	5:00 PM CDT			0	0	5	0	Lightning
					Lightning caused a fire which destroyed a residence.				
Mayflower - Faulkner County	21	5:25 PM CDT			0	0	5	0	Lightning
					Lightning caused a fire which destroyed a residence. Damage was estimated at over 50 thousand dollars.				

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					KILLED	INURED	PROPERTY	CROPS	
<b>ARKANSAS</b>									
Western Little Rock - Pulaski County	21	5:25 PM CDT			0	0	3	0	High Winds
									Thunderstorms produced winds up to 60 MPH. Minor tree and power line damage was reported.
Little Rock - Pulaski County	21	5:31 PM CDT			0	0	0	0	Hail
									Thunderstorms produced golf-ball sized hail briefly. No damage was reported.
McDougal - Clay County	23	10:55 AM CDT			0	0	0	0	Hail
									Thunderstorms produced golf-ball sized hail. No damage reported.
Newport - Jackson County	25	3:45 PM CDT			0	0	4	0	High Winds
									Thunderstorms produced winds up to 65 MPH at the airport. Two small airplanes were overturned by the winds.
Texarkana - Miller County	27	2:37 PM CDT							Funnel Cloud
									A funnel cloud moving northward was reported by FAA Tower personnel at the city's airport.
4 CALIFORNIA, Southern									NONE REPORTED
4 CALIFORNIA, Northern									NONE REPORTED
<b>5 COLORADO</b>									
Colorado Springs	1	1700-1730 MST			0	1	3	0	Lightning
									Lightning in Colorado Springs injured one man, hit a liquid hydrogen tank and six other buildings. A few small fires were started, and minor power outages occurred.
Prowers County	1	evening			0	0	0	3	Hail, heavy rain
									1.5 inches of rain fell in a short time near Granada, along with hail. The storm damaged about 100 acres of onions and cantaloupes.
Weld, Washington Cys.	1	1800-2100			0	0	4	?	Hail, heavy rain
									4 to 5 inches of rain fell south of Akron in Washington County. Many areas in Weld County received about 2 inches of rain; that much fell in just 30 minutes near Briggsdale. Two roads were washed out in the area.
Las Animas County	2	2230			2	0	5	0	Heavy rain, Flash Flooding
									Very heavy rains deluged the Trinidad area. 3.66 inches fell at Trinidad itself in less than three hours. A railroad bridge 15 miles southeast of the city was washed out. Shortly thereafter, a train was wrecked when it plunged into the creek formerly spanned by the bridge. Two people in the engine were killed. Numerous county roads in the area were also washed out.
Bent County	4	afternoon			0	0	3	4	Severe Thunderstorms
									A severe thunderstorm brought heavy rain, hail, and strong winds to Bent County, damaging wheat and barley. Several trailers were damaged at John Martin Dam, and the wind knocked down several trees. 1.10 inches of rain fell in 45 minutes at John Martin Reservoir.
Denver area	7	1600-1700			0	0	0	0	Severe thunderstorm
									A thunderstorm produced 3/4 inch hail in east Denver; about 1 1/2 inches of rain fell in Littleton.
Chaffee County	8	1515			0	0	3	0	Heavy Rain
									Heavy rain caused rapid rises in streams in Chaffee County; one road was washed out.
Larimer County	9	afternoon			0	0	5	0	Hail, heavy rain
									Heavy rain caused two rockslides on Fall River Road in Rocky Mountain National Park, trapping 24 people in cars between the slides. Repairs to the road will cost an estimated \$200,000. The storm dumped 4 to 6 inches of hail along Trail Ridge Road.
Pitkin County	11	afternoon			0	2	4	0	Heavy rain
									Heavy rain caused a mudslide on Colorado Hwy. 133 11 miles south of Carbondale, closing the highway. A vehicle was swept into the adjacent Crystal River, injuring the driver and a passenger. Several houses in the area were damaged in the storm.
Colorado Springs area	12	1615-1730 MST			0	0	3	0	Severe Thunderstorm
									A severe thunderstorm hit the Colorado Springs area. High wind blew off a patio roof in Fountain; lightning strikes caused minor damage. Torrential rain fell; two inches deluged the Broadmoor area in just 30 minutes.
<b>COLORADO</b>									
Larimer, Weld Counties	12	1500-2100			0	0	3	3	Severe Thunderstorms
									Heavy thunderstorms hit numerous spots in Larimer and Weld counties. 3/4 inch hail fell near Waverly and Buckeye in Larimer County, and also just east of Estes Park. 9/10 of an inch of rain fell six miles north of Wellington in just 13 minutes; many spots reported 2 to 3 inches; total rainfall from the storm. A rockslide occurred on Colorado Hwy. 14 just east of Poudre Park. Street flooding was reported in Fort Collins, and wheat was damaged near Nunn.
Glenwood Springs	12	afternoon			0	0	5	0	Heavy Rain
									Two inches of rain fell in Glenwood Springs, causing mudslides that damaged about 25 homes. A couple of houses had 6 to 12 inches of mud inside. Several roads in the area were washed out. Total damage was estimated at over \$100,000.
Prowers, Bent Counties	14	evening			0	0	2	4	Lightning, Hail
									Heavy thunderstorms produced hail that damaged melons and onions northeast of Rocky Ford. Later in the evening lightning caused minor damage to a carport in Lamar.
San Juan Mountains	12-16				0	0	6	0	Heavy rain, floods
									Heavy rains fell for several days in the San Juan Mountains and elsewhere in southwest Colorado, causing all sorts of problems. The worst damage was in Ouray, where Main Street was washed, 10 bridges were washed out, and homes and businesses were flooded. Total damage was estimated at \$500,000-\$700,000. Elsewhere in the San Juans, mudslides stranded dozens of travelers as numerous washouts of roads and bridges occurred. The Durango-Silverton train was delayed four hours on the 14th by mudslides on the track. Street flooding also occurred in extreme southwest Colorado in Cortez, with road damage in that area. The rain was very persistent; for example, an inch or more fell at the town of Rico on three successive days.
Montrose County	17	afternoon			0	0	3	3	Heavy rain
									Heavy rain caused flooding near Montrose. Three road bridges and some crops in the area were damaged.
Northeastern Foothills	18	1300-1500 MST			0	0	?	0	Heavy Rain, Hail
									Three inches of hail piled up at Glen Haven in Larimer County, with some stones as large as an inch in diameter. The same thunderstorm dumped 8/10 of an inch of rain in just 20 minutes 4 miles east of Estes Park. Another thunderstorm bombed Evergreen with about two inches of rain in 45 minutes, and an extremely heavy hailstorm left 5 to 7 inches of hail on the ground in some places. Some stones were as large as golf balls. This made it very difficult to play in the Colorado Open golf tournament at Hewan; the tournament was halted out for the day.
Chaffee County	18	afternoon			1	0	0	0	Lightning
									A man was killed by lightning near Monarch Pass.
Pueblo	22	1410			0	2	4	0	High winds
									Strong winds collapsed a frame house under construction, injuring two carpenters, one critically, who were caught in the wreckage. The wind also broke a few windows around town. A peak gust of 62 mph was recorded at the Pueblo airport.
Craig	23	1735			0	0	3	0	High winds
									Winds of 70 mph blew off part of a roof on a house in Craig.
Eastern Colorado	23	1800-2130 MST			0	0	4	3	Severe Thunderstorms
									Scattered thunderstorms caused a variety of minor damage in eastern Colorado. 80 mph winds knocked down power lines in Western Weld County at Johnstown; 65 mph winds were recorded in Loveland. Minor damage to property and crops was reported near Sterling, along with up to 1 1/2 inches of rain. In Colorado Springs, two homes were struck by lightning, causing slight damage at one.
Weld County	24	evening 1/2	30	0	0	0	0	0	Tornado (FPP 001)
									A tornado touched down briefly 7 miles south of Prospect Valley at 6:25 pm mst.
Weld County	24	Evening			0	0	0	0	Heavy rain, hail
									Ping pong ball sized hail fell in New Raymer; heavy rain was reported in several areas. Over half an inch fell in 10 minutes just west of Greeley.
Denver area	24	1900-2000			0	0	3	0	High winds
									Strong winds downed power lines in northeast Denver; gusts of over 50 mph were noted at Chatfield Reservoir in the southwestern part of the metro area.
Logan, Phillips Cys.	25	early eve.			0	0	5	7	Severe Thunderstorms
									Severe thunderstorms cut a massive swath of destruction 3 to 7 miles wide through farmland in Logan and Phillips counties. Heavy rains of up to 6 inches, hail, and winds as strong as 80 mph destroyed or severely damaged over 25,000 acres of corn, sugar beets, beans, and alfalfa. Total crop damage was estimated at just under 12 million dollars. The storms also caused property damage of over \$100,000 in the two counties. Windows were broken, roofs and cars damaged, and a trailer home just west of Sterling was destroyed by high winds.
Weld, Morgan Counties	25	Early eve.			0	0	5	4	Hail
									Golfball sized hail pelted the southwest section of Greeley, damaging about 300 homes and 500 vehicles. The total loss was estimated at about \$500,000. Some damage to corn was reported in Morgan County north of Brush.
Weld County	25	1746 1/4	30	0	0	0	0	0	Tornado (FPP 001)
									A tornado touched down briefly 5 miles east of Kersey. Several funnel clouds were also reported in the area.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>COLORADO</b>									
Morgan County	25	1815	1	40	0	0	0	0	Tornado (FPP 111)
A tornado was sighted three miles north of Fort Morgan. It uprooted a tree as it moved toward the east at about 15 mph.									
Baca County	26	1800-1900	1	40	0	0	0	0	Tornado (FPP 111)
A tornado was sighted between Springfield and Walsh at about 6:20 MST									
Baca County	26	1800-1900	MST		0	0	4	?	Hail, high winds
A thunderstorm produced hail and winds up to 90 mph in Campo. Some windows were broken in the town, and a house was unroofed.									
Douglas County	27	1128			0	0	0	0	Hail
3/4 inch hail fell 7 miles south southeast of Larkspur.									
Douglas County	27	1130	1/2	30	0	0	0	0	Tornado (FPP 001)
A tornado touched down briefly near Monument.									
El Paso County	27	1150	1/2	30	0	0	0	0	Tornado (FPP 001)
A tornado was sighted a short distance northeast of the Colorado Springs airport.									
Southeast Colorado	27	Afternoon			0	0	?	4	Severe Thunderstorms
Marble size hail piled up near Pumpkin Center in southern Lincoln County, causing crop damage. In Las Animas County, three inches of rain fell at Kim, along with large hail and damaging winds. Two inches of pea size hail piled up at Galatea in Kiowa County.									
<b>6 CONNECTICUT</b> - NO REPORT RECEIVED									
<b>7 DELAWARE</b>									
New Castle County	20	TIMES EST 7:00P			0	0	3	0	Wind
Line of thunderstorms was accompanied by gusts between 40 and 50 mph. Some tree and power line damage reported during the brief storm.									
Dover & Vicinity	21	4:00P			0	0	3	0	Wind, Lightning
Locally violent thunderstorm activity associated with very humid air. Winds to near 50 mph were observed over some sections and power outages lasted up to almost 5 hours in downtown Dover.									
Note....Prolonged high temperatures and little, if any rainfall, for a two-week period, from the 5th thru the 20th. Agricultural activities in the state were seriously affected, especially over the southern portion.									
<b>8 FLORIDA</b>									
Broward County	2	8:49AM EST	1/2	15	0	0	3	0	(FPP 000) Waterspout-tornado, severe thunderstorm
A waterspout-tornado, lasting about 4 minutes, was observed to touch down on the water just off Fort Everglades and move onshore into Berth 7. Damage was described as minimal, with a small storage shed blown over and several power lines blown down. No injuries were reported.									
The waterspout-tornado was associated with widespread thunderstorm activity in the area which also produced locally heavy rain...as much as 4 inches in some areas...and street flooding. One flat roof collapsed from the rain.									
Dade County	2	5:00 to 7:00PM EST			0	0	0	0	Funnel clouds aloft
Funnel clouds aloft were reported 10 miles west-northwest of Tamiami Airport at 5:30 PM EST, and 4 miles west of Carol City at 6:15 PM EST.									
Dade/Broward Counties	3	12:35PM EST			0	0	0	0	Funnel cloud aloft
A funnel cloud aloft moving northeastward was reported by the police 2 miles southwest of County Line Road and University Drive.									
Duval County	5	3:00PM EST			0	0	0	0	Hail
Hail 3/4 inch in diameter was observed at the Mayport Naval Air Station. No damage was reported.									
Dade County	6	6:00AM EST			0	0	0	0	Funnel cloud aloft
A funnel cloud aloft was reported 2 miles east of Key Biscayne.									
<b>FLORIDA</b>									
Hillsborough County	6	6:04PM EST			0	0	3	0	Hail, wind, severe thunderstorms
Marble to golfball-sized hail was reported by the public in the Temple Terrace area as a severe thunderstorm moved through. Also 1/2 inch hail was observed in northeast Tampa. No damage was reported. Wind damage associated with a thunderstorm in southern Hillsborough County was reported during the evening at Wimauma where the roof was torn off a garage and several trees were blown down. No injuries were reported.									
Broward County	7	6:50AM EST			0	0	0	0	Funnel cloud aloft
A funnel cloud aloft was reported one mile south of Lighthouse Point between Pompano Beach and Boca Raton, moving northward.									
Lake County	8	3:00PM EST	1	50	0	0	5	0	Tornado (FPP 111)
A tornado moved across a lakefront mobile home park on the west side of Clermont during a severe thunderstorm causing extensive damage estimated near \$200,000. While only two mobile homes suffered substantial damage, the marina roof was torn off, and 8 boats were sunk. The tornado approached from the northwest where it crossed Highway 50 and dipped down into the lake before striking the park. Witnesses reported seeing a big, black, twisting cloud over the lake just before the damage occurred, and hearing a deafening sound like a train. It was surprising that no injuries were reported.									
Seminole County	8	3:33PM EST			0	0	3	0	Funnel cloud aloft, wind
A funnel cloud aloft and some wind damage was reported near the Casselberry Dog Track during a thunderstorm. No injuries were reported.									
Hillsborough County	8	4:10PM EST			0	0	0	0	Hail
Large hail was reported in the Brandon/Valrico area during a severe thunderstorm. No damage was reported.									
Suwannee County	8	4:21PM EST	2	50	0	0	4	0	(FPP 111) Tornado, hail, severe thunderstorm
A tornado touched down near O'Brien during a severe thunderstorm demolishing a hay barn and toppling trees and trailers, but causing no injuries. Witnesses reported that the severe thunderstorm approached from the north dropping a white wall of hail the size of golfballs. The 100-by-60-foot barn contained 2,500 bales of hay, a riding mower, a hay stacker, two pickup trucks and two tractors. The building was constructed of 2x12-foot timbers and covered with sheet metal. The barn owner said the structure was blown up into the air about 2,000 feet with the timbers scattered like toothpicks. Parts of the sheet metal were found as far as a mile away. The home about 50 yards away from the barn, was not damaged.									
Charlotte County	8	6:15PM EST			0	0	0	0	Funnel cloud aloft
A funnel cloud aloft associated with a severe thunderstorm was reported just east of Punta Gorda by the Sheriff's Office.									
Dade County	9	2:00PM EST	1/10	20	0	0	3	0	Tornado (F0)
A tornado touched down briefly during a thunderstorm about 5 miles west of Homestead blowing down several trees. One tree was blown onto a house causing some structural damage. No injuries were reported.									
Okaloosa County	9	2:00PM CST	1/2	20	0	0	4	0	(FPP 001) Waterspout-tornado, severe thunderstorm
A waterspout-tornado observed moving southwestward from Choctawhatchee Bay across Okaloosa Island caused some damage to boats, signs and buildings. Also, widespread thunderstorm activity in the area and associated gusty winds caused miscellaneous damage. Quite a few sailboats were blown over, and several large signs were blown down, including one sign supported by 18-inch steel beams which were bent over onto the ground. No injuries were reported.									
Escambia and Santa Rosa Counties	9	2:30PM CST			0	0	4	0	Wind, severe thunderstorms
Widespread severe thunderstorm activity and associated gusty winds caused considerable damage along the coastal sections of Escambia and Santa Rosa Counties. Wind gusts were estimated at 50 to 60 MPH overturning many sailboats and causing miscellaneous damage, including downed power lines and TV antennae. Large hail was reported by an Escambia County Sheriff's Deputy. No injuries were reported.									
Santa Rosa County	9	6:30PM CST	1/10	30	0	0	4	0	Tornado (F0)
A tornado dipped down near Jay destroying a barn, uprooting several trees, and severely damaging a drop-lusting plant. No injuries were reported. Damages were estimated near \$35,000.									
Franklin County	9	8:00PM- 9:00PM EST			0	0	0	0	Funnel clouds aloft, severe thunderstorms
Several funnel clouds aloft were reported around Carrabelle as severe thunderstorms moved southward through the area.									
Broward County	10	11:30AM 12:30PM EST			0	0	0	0	Funnel clouds aloft
Several funnel clouds aloft were reported over eastern sections of the county.									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

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					KILLED	INJURED	PROPERTY	CROPS		
<b>FLORIDA</b>										
Okeechobee County	12	4:00PM-5:00PM EST			0	0	3	0		Funnel clouds aloft, severe thunderstorms
Several funnel clouds aloft were reported in northwestern Okeechobee County as severe thunderstorms moved through the area. A number of grass and muck fires were started by numerous lightning strikes, and half of the roof of a barn was blown off. No injuries were reported.										
Monroe County	13	5:55PM EST			0	0	0	0		Waterspout
A waterspout was observed 5 miles northwest of Key West moving toward the southwest.										
Pinellas County	15	4:15AM EST	1/2	30	0	0	5	0		Waterspout-tornado (FPP 001)
The County Sheriff's Department reported that a waterspout-tornado, associated with a thunderstorm, moved inland over southern Pinellas County through the small town of South Pasadena damaging houses, boats and cars. A boat tied to a pier was damaged, and a Hobey Cat boat was picked up and thrown about 150 yards and destroyed. The tornado remained on the ground for approximately one block causing minor damage to residences, then apparently lifted for about two blocks when it touched down again causing damage to roofs and chimneys and damaging a 22-foot boat in a backyard. Residents reported being awakened by a loud roaring sound like a freight train when the tornado came through. Damage was estimated between \$50,000 and \$100,000. No injuries were reported. A 25-year-old man miraculously escaped injury when two large windows were blown in covering him and his bed with glass.										
Hillsborough County	15	12:20PM EST			0	0	0	0		Waterspout
A waterspout was reported by MacDill AFB over Hillsborough Bay in upper Tampa Bay near Davis Island. (FPP 101)										
Marion County	15	1:20PM EST	1/2	30	0	0	5	0		Tornado, severe thunderstorm
A tornado touched down in southwest Ocala during a severe thunderstorm causing quite a bit of damage. Damage included half of a portable classroom picked up by the wind and deposited onto a pickup truck. This was one of two portables damaged. The portable classrooms, scheduled for delivery to south Florida, each weighed between 8,000 and 10,000 pounds. An observer reported that the structure was picked up about 12 feet and appeared to be suspended for a few seconds before falling onto the pickup truck. A business across the street sustained roof damage and substantial water damage to materials inside. Damages to this building alone were estimated at around \$260,000. Other miscellaneous damage in the area included trees blown down, power lines down, and cars damaged by falling limbs. No serious injuries were reported.										
Broward County	15	4:40PM EST			0	0	0	0		Funnel cloud aloft
A funnel cloud aloft associated with a heavy thunderstorm was reported in the Pembroke Pines area of southeast Broward.										
Brevard County	16	1:45PM EST			0	1	0	0		Lightning
A 60-year-old woman was seriously injured when struck in the neck by a bolt of lightning while on the beach at Canaveral National Seashore. Lifeguards performed CPR on the victim, and she was flown to a Titusville hospital in a Kennedy Space Center helicopter.										
Dade County	16	2:18PM EST			0	0	0	0		Funnel cloud aloft
A funnel cloud aloft was reported by the public in Miami Lakes.										
Polk County	16	4 to 5PM EST			0	1	4	0		Wind, severe thunderstorms
Widespread severe thunderstorm activity and associated strong winds caused miscellaneous damage around the county including downed trees and power lines. In Lake Wales, a massive tree limb fell on a passing Volkswagen shortly before 5:00 PM seriously injuring the 40-year-old driver. The car's windshield was knocked out, and the woman was knocked out in addition to suffering neck injuries and slivers of glass in her eyes. Heavy rain was occurring at the time. In Lakeland, the roofs were blown off of at least two homes, and a tree was blown over onto an empty Toyota.										
Marion County	16	Afternoon			0	0	3	0		Funnel cloud aloft, severe thunderstorms
A Fairfield resident, in northwestern Marion County, reported seeing a funnel cloud aloft moving about 20 feet above the ground and breaking off the tops of a number of pine trees. Widespread severe thunderstorm activity occurred elsewhere around the county causing the usual downed trees and power lines and miscellaneous damage. Widespread street flooding was reported in Ocala and other areas due to the associated heavy rains.										
Orange County	17	1:30PM EST			1	15	5	0		Wind, severe thunderstorm
One person died, and 15 others were injured, 3 seriously, when high winds accompanying a severe thunderstorm ripped a 10,000-square-foot hole in a 90-foot-high pavilion at Sea World's Florida Festival, south of Orlando, spiking specialty shops and restaurants inside and panicking the crowd of nearly 500 tourists. The death was an 84-year-old man who was seriously injured during the storm and died later of a heart attack which he suffered at the time of the injury. The damaged 60,000-square-foot canopy, made of fiberglass and coated with teflon, was designed to withstand 120 mph winds. Across the street at the Sea World complex, trees were uprooted and signs blown down, but none of the animals featured in the shows were injured.										
<b>FLORIDA</b>										
Alachua County	17	1:50PM EST			1	0	4	0		Wind, severe thunderstorm
A 56-year-old man was killed in Gainesville during a thunderstorm when a large oak tree was blown down onto his Volkswagen Rabbit crushing him inside the car. The tree reportedly was at least 6 or 7 feet around and was rotten inside.										
Broward County	17	3:00PM EST			0	0	0	0		Funnel cloud aloft
A funnel cloud aloft was reported over Lauderdale Lakes.										
Monroe County	18	12:10PM EST			0	0	0	0		Waterspout
A waterspout was observed 2 miles north of Key West moving slowly toward the west.										
Volusia County	18	4:58PM EST			0	0	4	0		Funnel cloud aloft, severe thunderstorm
A funnel cloud aloft was reported near Deltona. Widespread severe thunderstorm activity occurred around the county during the afternoon and evening with the usual reports of downed trees and power lines, locally heavy rains and street flooding, and several brush fires started by lightning. Officials estimated that more than 40 fires had been started by lightning during the past 2 days. Visibilities were reduced in some areas to the point where sections of highways had to be closed.										
Monroe County	18	7:22PM EST			0	0	0	0		Funnel cloud aloft
A funnel cloud aloft was observed 5 miles north of Key West moving toward the northwest.										
Manatee County	20	Morning			0	1	0	0		Lightning
A 19-year-old laborer was critically injured when struck by a bolt of lightning at a construction site in south Bradenton. The victim who was on a wooden ladder on the roof of a building, suffered second and third degree burns. He was clinically dead when paramedics arrived, and they revived him. The bolt of lightning apparently struck the victim in the head and came out one of his arms. Two other workers standing nearby at the time were not hurt, but one was knocked to the ground.										
Palm Beach County	22	10:08AM EST			0	0	0	0		Waterspout
A waterspout was reported offshore by the lifeguard at Lake Worth Pier.										
Broward County	22	10:18AM EST			0	0	0	0		Waterspout
The Pompano Control Tower reported a waterspout offshore.										
Citrus County	23	2:30 to 3:00PM EST			0	0	5	0		Lightning, severe thunderstorms
Lightning strikes caused several fires in the Inverness/Hernando area as several thunderstorms moved through the county. Residents indicated that this was one of the worst electrical storms of the year. Two wooden frame homes and the roof and insides of a cement block utility shed were destroyed, and lightning strikes also caused lesser miscellaneous fires and damage. The only thing left standing in one of the homes was a brick fireplace and chimney. No injuries were reported.										
Pasco County	25	2:50PM EST			0	0	0	0		Funnel cloud aloft
A funnel cloud aloft was reported over Odeasa.										
Monroe County	26	1:00PM EST			0	0	0	0		Waterspouts
A waterspout was observed at the American Shoal Lighthouse, and numerous other waterspouts were reported from Big Pine Key to Sugar Loaf Key.										
Pinellas and Hillsborough Counties	27	5:21PM EST			0	0	0	0		Funnel clouds aloft
Funnel clouds aloft were reported by weather observers at the St. Petersburg/Clearwater Airport and by the County Sheriff's Office.										
Monroe County	28	2:14PM EST			0	0	0	0		Funnel cloud aloft
A funnel cloud aloft was observed 5 miles northwest of Key West moving toward the west.										
Manatee County	29	6:08PM EST	1/10	20	0	0	0	0		Tornado (F0)
The Palmetto Police Department reported that a tornado touched down in the town of Palmetto during a thunderstorm. No damage or injuries were reported.										
Hillsborough County	30	12:20PM EST	1/2	30	0	0	5	0		Tornado (FPP 101)
The County Sheriff's Office reported that a tornado touched down at a mobile home park in Riverview demolishing three mobile homes and tearing three others off their foundations. A total of 9 homes were damaged, and none of the homes were occupied at the time. No injuries were reported.										

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

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					KILLED	INJURED	PROPERTY	CROPS	
<b>FLORIDA</b>									
Volusia County	30	3:00PM EST			0	5	3	0	Wind, severe thunderstorms
<p>Strong winds associated with a severe thunderstorm wrenched tents from their moorings at the Indian Lake Road Correctional Facility southwest of Daytona Beach injuring about 5 prisoners. Some 21 prisoners were set up in tents in the exercise yard because of an overflow of inmates. Elsewhere in eastern Volusia, the Division of Forestry indicated that lightning kindled 7 fires as severe thunderstorms moved through the area burning 31 acres, and another 400 acres were burned at the Brevard County line. No additional injuries were reported.</p>									
Okaloosa County	30	11:45PM CST			0	0	5	0	Lightning, severe thunderstorm
<p>Lightning struck the Metric System Corporation complex in Ft. Walton Beach during a severe thunderstorm starting a fire which resulted in extensive damage. The fire was contained to the two-story storeroom at the southeast corner of the plant which housed row after row of electronic parts and supplies. Officials stated that loss of the many rows of electrical components in the fire would be more costly than the loss of the 4,000 square-foot building. Several other buildings in the same complex, where electronic, radar and aeromechanic equipment are manufactured, were not affected by the blaze. No injuries were reported.</p>									
<b>9 GEORGIA</b>									
Franklin County	11	5:34 PM All times EDT			0	0	3	3	Wind, Hail
<p>Thunderstorms dropped one-inch hail and caused minor damage as the winds gusts to about 50 mph.</p>									
Gwinnett County	11	6:45 PM			0	0	4	0	Wind, Hail
<p>Thunderstorms moved northeast across the county, causing scattered power outages, and dropping hail up to golfball-size near Norcross. The storms ripped sections of roofs from a few buildings in an office park near Norcross and tipped over a semi-trailer truck parked at a loading dock.</p>									
Bartow County	17	7:00 PM - 8:00 PM			0	3	4	0	Lightning
<p>Lightning struck three people near Cassville at 7:00 PM. A woman sustained a broken hip, broken arm, and knee injuries, a man was momentarily knocked unconscious, and a boy suffered no significant injuries. Lightning strikes caused power outages for several hundred homes and caused a fire which destroyed a barn.</p>									
Wilkinson County	17	9:34 PM			0	0	0	0	Hail
<p>Hail almost to golfball-size fell in Irwinton for about 15 minutes.</p>									
Dodge County	18	6:45 PM			0	0	4	0	Wind
<p>Thunderstorm winds blew the tops off a few mobile homes in Eastman. Several telephone and power poles and many trees were downed. Power outages affected about 2000 customers.</p>									
Telfair and Ben Hill Counties	18	8:00 PM			0	0	4	0	Wind
<p>Thunderstorm winds downed several trees and damaged several old barns and storage buildings. Most of the damage occurred near Jacksonville.</p>									
Toombs County	20	Late Afternoon			1	0	0	0	Lightning
<p>Lightning struck and killed a 29-year-old man. The man had left a swimming pool and was about to open the door of his pickup truck when the lightning struck him.</p>									
Glynn County	22	3:55 PM			0	0	0	0	Funnel Cloud
<p>A funnel cloud was sighted by several people at the Glynco Jetport for about four minutes.</p>									
Jefferson County	25	4:15 PM EDT	1/2	Narrow	0	0	5	0	Tornado (F1)
<p>A tornado touched down briefly just south of Wrens along US1. The tornado tore the roof off the showroom and office of a tractor-trailer company and knocked down two of its walls. Then the tornado overturned a nearby mobile home and blew down a few trees and power lines. A nearby home was also slightly damaged before the tornado lifted and moved south without touching down again.</p>									
<b>GEORGIA</b>									
Muscogee and Chattahoochee Counties	29	6:00 PM - 7:00 PM			0	0	4	0	Wind
<p>Strong thunderstorm winds did considerable damage in Fort Benning and Columbus, causing power outages and damage to homes, businesses, and various buildings as the trees and debris fell and blew about.</p>									
<b>10 IDAHO</b>									
Oakley, Burley, and Paul Areas of Cassia and Minidoka Counties	6	6:00 p - 8:00 p MDT			0	0	4	7	Hail
<p>A devastating thunderstorm with marble-size hail and strong winds severely damaged 4 1/2 miles of farmland in a narrow strip ranging from two to four miles wide. Some hail was 3/4 inch in diameter. Officials stated that damage to barley, wheat, beans, potatoes, sugar beets, and hay crops would exceed 6 million dollars.</p>									
Weiser Area, Washington County	6	4:00 p - 6:00 p MDT			0	0	5	4	Rain, Wind
<p>Weiser recorded 1.25 inch of rain in a little over one hour. Strong winds flipped a light airplane from three moorings and flipped it over for a total loss. Many trees and power lines were downed. There was some damage to the apple and prune crops in the area.</p>									
Ola, Sagehen Reservoir Areas, Gem and Valley Counties	6	Evening			0	0	0	5	Wind
<p>At least a half a million board feet of merchantable timber was toppled by strong winds accompanying a line of thundershowers.</p>									
Camas, Gooding, Lincoln, Jerome, Minidoka, and Power Counties	8	Before sunrise			0	0	0	5	Frost
<p>Extensive damage to grain crops was reported from an unseasonable frost. Temperatures dropped to as low as 22 degrees F at Fairfield in Camas County. Many vegetable gardens were also damaged.</p>									
Rockland, Power County	17	5:00 p - 8:00 p MDT	3/4	7	0	0	3	0	Tornado (FPP 100)
<p>Four massive trees were uprooted and two trees toppled. One large branch fell across the cab of a farm truck damaging the top and door of the vehicle.</p>									
<b>11 ILLINOIS</b>									
Hoopeston, Vermilion County	4	3:07pm	0.2	167	0	0	3	0	Tornado (FPP 002)
<p>A tornado touched down in the northwest section of Hoopeston damaging 3 mobile homes, a garage, and destroying 8 utility-storage sheds. One mobile home was lifted off its foundation blocks. Some trees were uprooted and power lines were knocked down.</p>									
Okawville, Washington County	8	afternoon			0	0	5	4	Lightning
<p>As thunderstorms moved across the southern portions of the state, lightning killed 3 heifers that were in a field near Okawville and started a fire in a nearby wheat stubble field.</p>									
Pearl City, Stephenson County and Shannon, Carroll County	13	7:30 to 8:30am			0	1	4	3	Wind
<p>Powerful winds accompanied by thunderstorms entered the northwest section of Illinois causing damage to trees and out-buildings. Pearl City was hard hit by the winds as trees, power lines, and roofs were damaged. A few windows were blown in injuring one person. Some crop damage occurred in the area. In Shannon a wooden roof of a water tower was blown off.</p>									
Wayne County	15	afternoon			0	0	4	4	Wind
<p>As thunderstorms moved across the county, high winds blew a 60 foot roof off a sawmill and landed 100 feet away. Windows were blown out of a mobile home in Boyleston and several corn fields were flattened north of Sims.</p>									
Central and southern sections	20	12:30pm to 6pm			0	16	6	4	Wind
<p>Very strong winds as high as 70 knots uprooted trees, caused building damage, and knocked down power lines over a wide-spread area as thunderstorms moved across the central and southern sections of the state. At 12:45pm strong gusty winds damaged small trees and crops in Cornell Livingston County.</p>									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>ILLINOIS</b>									
									<p>Two persons were injured in Edwardsville, Madison County, when the bubble of a gymnasium was torn down. Several mobile homes were also damaged and one was completely destroyed. In Carrier Mills, Saline County, many buildings were damaged and roofs were blown off injuring 11 persons. In Grayville, White County, 1 person was injured by a falling tree as she left her mobile home, another person was injured as she touched a fallen TV tower which had a live electrical wire on it, and 12 more persons were injured by flying glass when a window in a nursing home blew out. A nearby mobile home was crushed by a fallen tree. A drive-in movie screen blew down in Belletown, St. Clair County. A 65 foot radio tower was blown down in Dupo, also in St. Clair County.</p> <p>Many towns in the south reported uprooted trees, building and shed damage, blown in windows, overturned mobile homes, and power failures. Heavy rain and small size hail were common. Flooding occurred in low-lying areas.</p>
Princeville, Peoria County	28	8:40pm	2	21	0	0	5	4	Tornado (FPP 211)
									<p>A tornado touched down 2 miles south and 1 mile west of Princeville. As it traveled 2 miles on the ground, it damaged 4 farms and caused severe damage to the top half of a house. One barn and a storage shed was destroyed. Four horses were killed and 18 others were injured. Some crop damage was reported.</p>
Canton, Fulton County	25	8:50pm	?	?	0	0	0	?	Tornado (FO)
									<p>At 8:50pm a tornado briefly touched down 2.5 miles north of Canton causing some crop damage which could not be estimated at the time of publishing.</p>
Entire State					0	0	6	7	Flooding
									<p>Heavy rainfall amounts throughout the entire month caused flooding again of farm fields and towns in many parts of the state. As much as 1 1/2 inches of rain fell on localized areas (mainly in the southern portions). Several areas reported this July to be the wettest on record. Farm land near rivers and creeks received the major damage as river and creeks rose to near record stage heights. Roads were closed and some bridges were washed out. The heavy rainfall amounts also caused building damage.</p> <p>As much as 7 inches of rain fell on Hancock County from the 3rd through the 5th flooded roads and farm land along creeks and rivers. More than 15,000 acres of farm land was flooded and bridges were washed out. The estimated damage was \$4 million.</p> <p>On the 12th heavy rainfall occurred in the northwest section of the state. Skokie and Miles, Chok County, received as much as 4 inches of rain in a very short time causing streets to become flooded with 1 foot of standing water. Basements received damage.</p> <p>More than 6 inches fell on DeWitt County during the evening of the 18th. The deluge caused creeks and rivers to rise turning fields into lakes and flooding roads. In Oak Forest, Cook County, the heavy rain flooded streets and basements with up to 8 inches of water. In the Apple Creek bottom land near Belltown, Green County, the heavy rain made the creek rise above flood stage flooding 94,000 acres. Damage to the crops was estimated at \$2 million. As of August 1st this area still had some flooding.</p> <p>From the 19th through the 26th Pike County received about 13.50 inches of rain. As river and creeks rose to near record levels, flooding caused damage to bridges, roads, terrace systems, and erosion control structures. Grass waterways were also damaged. Sand and gravel deposits on crop fields were common. 94,000 acres were damaged, and the estimated damage was \$2 million.</p>
<b>12 INDIANA</b>									
Putnamville Putnam County	20	608P	--	--	0	0	0	0	Hail
									<p>All times EST 3/4 inch hail reported.</p>
Griffin on the Gibson/Posey County Line	20	610P	--	--	0	0	0	0	Wind
									<p>Trees and power lines down. Winds estimated in excess of 65 miles per hour.</p>
Vanderburgh, Posey, Warrick, Pike, Dubois, Spencer, Davies, Martin Counties	20	630-730P	0	0	0	0	0	0	Winds
									<p>Trees down, glass windows blown out, power lines down. Winds estimated in excess of 65 mph.</p>
Union Mills LaPorte County	25	812P	--	--	0	0	4	0	Tornado (FO)
									<p>Tornado at CR400W and Highway 5. Home damaged. Trees/power lines down, blocking highways.</p>
<b>INDIANA</b>									
Elkhart Elkhart County	26	230A	--	--	2	2	0	0	Flash flooding
									<p>Deaths were caused by failure of a wall in a retention basin at the Old Farm Apartments. A woman and fireman who tried to rescue her drowned in a strong current.</p>
St. Joseph County	26		--	--	0	0	7	7	Flooding
									<p>Three small bridges were washed away by flooding. Roadbeds were eroded. 418 homes and 13 businesses were damaged. Also, 7,000 acres of crops were damaged. Property damage totaled \$18,589,403 and approximately \$4,600,000 in crop damage.</p>
<b>13 IOWA</b>									
Warren, Clarke, Lucas, Monroe, Decatur, Wayne, Appanoose and Davis Central Iowa	3-4	Evening of 3rd into early morning of 4th	--	--	2	0	6	8	Flood/Heavy Rain
									<p>A prolonged period of heavy rain caused considerable flooding. 166,000 acres of corn and soybean crops were flooded, 28 bridges destroyed and at least 45 bridges and 29 culverts damaged. Rainfall of 5 to 12 inches fell over the area. The Town of Melrose in Monroe County had water 6 feet deep in its one block business district. Two deaths were attributed directly to the flooding as an automobile with two adults and two children was washed off a County road in Clarke County about 4 miles south of New Virginia at the Squaw Creek crossing. The accident resulted in the drownings, ages 5 and 7. 48 miles of Burlington Northern Railroad track was heavily damaged.</p>
Boone and Dallas Counties, Central Iowa	8	7P CST	--	--	--	--	--	--	Funnel Clouds
									<p>Several funnel clouds sighted near Boone and Perry by State Troopers. None observed to reach ground.</p>
Mills County	14	530 -6P	--	--	0	0	4	0	Damaging Winds
									<p>Winds gusting 50 to 60 MPH in thunderstorms blew a camping trailer pulled by a car off the road 2 miles west of Glenwood, causing heavy damage. One mile north and east of Glenwood, a roof was blown off a barn.</p>
Mills County	14	7P	--	--	0	0	4	2	Damaging Winds
									<p>Thunderstorm winds gusting to 50 to 60 MPH blew the trailer off a semi 3 miles west of Glenwood and destroyed a vacant mobile home just north of Glenwood. Some trees and power lines were also downed by the winds.</p>
10-15 miles South Southeast of Cedar Rapids, Linn County	14	740P	--	--	0	0	0	0	Funnel Cloud
									<p>Funnel cloud sighted by Pilot. Not observed to reach ground.</p>
East Central Iowa	15	230-330A	--	--	0	0	4	0	Severe Thunderstorm
									<p>Heavy rain, high winds and considerable lightning strikes struck the Cedar Rapids area and a housing complex at the University of Iowa. Several trees were downed. Widespread power outages were caused by lightning strikes.</p>
Osage, Mitchell County	17	420-520P	--	--	0	0	4	0	Severe Thunderstorm
									<p>Golf ball size hail damaged many windows and some business awnings. High winds demolished a barn 1 mile south of town. Heavy rain caused some street flooding.</p>
Sioux City Vicinity Woodbury County	17	830-10P	--	--	0	0	4	0	Severe Thunderstorm
									<p>Strong winds blew large limbs and the top out of a maple tree 8 miles north of Sioux City. Heavy rains fell in Sioux City, at the Airport and at the junction of I-29 and Industrial Highway. The Weather Service office received .82 inches of rain in 30 minutes, winds gusting to 58 MPH and pea size hail.</p>
Montgomery County	19	130P CST	--	--	--	--	--	--	Funnel Cloud
									<p>A funnel cloud was sighted 7 miles south of Villisca</p>
Vicinity Iowa Falls, Hardin County	19	825P	--	--	--	--	--	--	Funnel Cloud
									<p>Six funnel clouds were sighted. None observed to touch ground.</p>
Monona, Crawford, Shelby, Cass and Adams Counties, West and Southwest Iowa	20	2-330A	--	--	0	0	4	5	Severe Thunderstorm
									<p>An area of severe thunderstorms moved through Counties that downed trees, caused crop damage and spawned 5 funnel clouds (listed separately), strong winds blew a barn down at Mapleton (Monona). Fallen branches and trees damaged a car and camper at Manilla (Crawford). Corn was stripped to the stalks and beans to the stems by strong winds and hail in a two mile wide swath either side of Highway #141 from the eastern city limits of Charter Oak (Crawford) to a point 7 miles southeast. The long periods of windblown hail was described by several farmers as appearing "more like a snow blizzard than a July hailstorm".</p>
North of Denison (Crawford County)	20	215A	--	--	--	--	--	--	Funnel Cloud
									<p>Funnel Cloud sighted. No ground contact observed.</p>
North of Harlan Shelby County	20	235A	--	--	--	--	--	--	Funnel Cloud
									<p>Funnel Cloud sighted. No ground contact observed.</p>

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

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					KILLED	INJURED	PROPERTY	CROPS	
<b>IOWA</b>									
2 Miles West of Highway 148 between Massena and Corning, Adams County	20	325A	---	---	---	---	---	---	Funnel Clouds (3) touch ground.
West of Plainfield Bremer County	20	607P	---	---	---	---	---	---	Funnel Cloud
Buena Vista, Pocahontas, Calhoun, Carroll and Greene Counties in Northwest Iowa	21	950-1110P	---	---	---	---	7	---	Severe Thunderstorm produced high winds, damaging hail, heavy rain and spawned 3 funnel clouds (listed separately). Some corn was blown down by high winds at Fonda (Pocahontas). Hail damaged crops in a 5 mile wide path north-south the length of Calhoun County 3 to 5 miles west of Rockwell City. There was a complete loss of crops in the center of the hail path. Losses estimated at 67,000 crop acres, corn loss: 4,221,000 bushels and bean loss: 1,407,000 bushels. Another area of hail damage from south of Albert City (Buena Vista) to near Thurston (Greene).
North of Coon Rapids Carroll County	21	1025P CST	---	---	---	---	---	---	Funnel Cloud
North of Lohrville Calhoun County	21	1035P	---	---	---	---	---	---	Funnel Cloud
3 Miles Southeast of Scranton, Greene County	21	1110P	---	---	---	---	---	---	Funnel Cloud
Linn, Jones, Cedar, Clinton and Scott Counties in Eastern Iowa	25	430P-9P	---	---	0	0	4	0	Heavy Rain
Park View and Long Grove, North-Central Scott County	25	845P	---	---	---	---	4	0	Severe Thunderstorm
<b>14 KANSAS</b>									
Russell County	2	9:00p	---	---	0	0	0	0	Funnel
Cedar Bluff Reservoir, Trego County	2	9:40p	Short	Narrow	0	0	0	0	Tornado (F1)
Wilson, Ellsworth County	3	12:42p	Short	Narrow	0	0	0	0	Tornado (F1)
Dorrance, Russell County	3	3:50p	---	---	0	0	0	0	Funnel
Haskell and Gray Counties	8	4:30p	12	500	0	0	0	3	Hail
Stanton County	8	4:30p	---	---	0	0	4	0	Wind
Russell, Russell County	8	7:45p	---	---	0	0	0	0	Wind
Sherman County	14	3:10p	Short	Narrow	0	0	0	0	Tornado (F1)
Graham County	14	6:10p	---	---	0	0	5	4	Wind, Hail
Rice and McPherson Counties	15	2:30-4:00p	---	---	0	3	4	4	Wind
Osborne County	15	3:00p	---	---	0	0	4	0	Wind

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					KILLED	INJURED	PROPERTY	CROPS	
<b>KANSAS</b>									
Lyon and Coffey Counties	15	6:20-7:00p	30	800	0	1	4	4	Wind
Winfield, Cowley County	16	4:48p	---	---	0	0	5	0	Wind
Eastern Cowley and Western Elk Counties	16	5:35-5:43p	---	---	0	0	2	0	Wind
Crawford County	16	7:30-8:00p	---	---	0	0	2	0	Wind
Liberal, Seward County	17	5:45p	0.5	25	0	0	3	0	Tornado (F1)
Topeka, Shawnee County	17	6:30p	---	---	0	1	0	0	Lightning
Neosho and Crawford Counties	18	3:40-4:15p	---	---	0	0	4	0	Wind, Funnel
Topeka, Shawnee County	19	8:45a	0.25	150	0	9	5	0	Tornado (F2)
Ogallah, Trego County	19	4:11p	Short	Narrow	0	0	0	0	Tornado (F1)
Cheyenne, Thomas and Logan Counties	19	6:00-9:30p	---	---	0	0	6	5	Wind
Trego County	19	8:30-11:30p	---	---	0	0	5	5	Wind
Wakeeney, Trego County	19	9:00p	Short	Narrow	0	0	0	0	Tornado (F1)
Republic County	24	3:15a	---	---	0	0	3	0	Wind
Washington County	24	8:30a	---	---	0	0	4	0	Wind
Shawnee, Douglas, Southern Johnson, and Northern Miami Counties	24	7:30-10:00p	70	5 mi.	0	0	6	7	Wind, Hail

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

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					KILLED	INJURED	PROPERTY	CROPS		
<b>KANSAS</b>										
										Especially hard hit was an area from 4 miles south of Eudora to Spring Hill, including Edgerton and Gardner. Wind speeds greater than 60 mph were common with estimates of 100 mph in some parts. Hail the size of golfballs was common with some as large as baseballs. One home was demolished in Gardner and many others damaged. Outbuildings, power poles, and crops were destroyed along the storm's path. The roof was also torn off the Gardner Edgerton High School Gym.
Meade and Gray Counties	26	5:30-6:00p	25	4 mi.	0	0	5	6	Hail	
Ford County	26	5:30p		2 inch diameter hail fell from 6 miles south of Copeland to 6 south of Ingalls.	0	0	0	4	Hail	
Pottawatomie, Wabaunsee, Shawnee, Jackson, Jefferson, Douglas, Leavenworth, Wyandotte, and Johnson Counties	26-27	8:00p-1:00p	60	40 mi.	0	0	6	6	Rain	
									Hail one-half to an inch in diameter fell in a small area 12 miles west of Dodge City.	
									Four to seven inches of rain fell along the Kansas River Valley from St. Marys to near Kansas City. Roads and streets were flooded by the runoff and many small streams were bent out of banks. Damage was principally to roadways and small bridges. Stranger Creek rose to a level 5 feet above flood stage in Easton and 30 families were evacuated. A few families were also evacuated from their homes in Lawrence and Leavenworth. A great deal of farm land was flooded.	
Garnett, Anderson County	26	9:20p			0	0	3	0	Hail	
Andover, Sedgwick County	27	5:30p			0	0	0	0	Funnel	
El Dorado, Butler County	27	6:15p			0	0	0	0	Funnels	
Coldwater, Comanche County	30	2:40p	1	10	0	0	3	0	Tornado (F1)	
Aetna, Barber County	31	5:40p			0	0	3	0	Wind	
									Thunderstorm winds reached an estimated 60 mph near Aetna.	
<b>SPECIAL HAIL SUMMARY</b>										
Kansas-Oklahoma Hail Loss Service reports indicate hail was especially damaging to crops on the following dates in the listed counties.										
	8	Haskell, Seward, Stanton								
	15	Ford, Scott, Seward, Wichita								
	19	Rush, Thomas								
	21	Edwards								
	24	Douglas, Gray, Johnson								
	26	Ford, Gray, Meade								
<b>15 KENTUCKY</b>										
Taylor City	5	9PM CST	1	10	0	1	4	3	Tornado (F2)	
									A small tornado touched down briefly in Taylor County tearing roofs off a number of buildings and downing many trees. The most extensive damage occurred at Dobsins Camper Sales on Highway 68 where 15 campers were severely damaged. At the Batesville Casket Co substantial damage also was reported. In addition several homes were damaged when tree limbs blew into them.	
<b>KENTUCKY</b>										
Morgan, Bath, Magoffin, Menifee Counties	6	Early Morning			0	0	7	6	Severe Flash Flooding	
									Rainfall amounts up to 10 inches within 24 hours produced severe flash flooding along the Licking River and its tributaries. Hundreds of homes were destroyed. 175 homes were damaged in Morgan County alone, with a total in the county area of over 200 homes damaged. Reports of 125 to 150% of crops planted, mainly tobacco, were destroyed while widespread reports of roads washed out were received. Within 2 hours the river in Salyersville had risen from 1/2 basketfull to well over flood stage. Telephone and power line outages were extensive. A common sight was debris from houses moving down the river flooded roads. A leaking 500 gallon propane gas tank floated through Salt Lick River. In Salyersville the water rose to 2 feet deep downtown within one hour. There were no injuries or deaths, however damage will run into the tens of millions of dollars worth of damage.	
Garrod City	7				0	1	4	3	Severe Thunderstorm	
									Several barns were damaged by high winds associated with a severe thunderstorm. One person was injured by flying debris.	
Pike County Bear Creek	10	9PM EDT			0	1	4	3	Severe Thunderstorms	
									Damaging winds caused roof damage and blew trees down in Pike County. One woman fell and was injured while leaving mobile home.	
McCracken County	10	1:32PM EDT			0	0	1	3	Severe Thunderstorms	
									The Kentucky State Police reported damage to trees and power lines in Raducah. The Western Kentucky Legal Services lost a roof with other building damage reported.	
West half of State	20	Evening hours			3	10	6	5	Severe Thunderstorms	
									A line of severe thunderstorms swept through west and central Kentucky resulting in 2 deaths and over a dozen injuries as well as millions of dollars worth of damage. A Princeton resident was killed while watching a ball game when a utility pole blown down by high winds struck him in the head. An Evansville Ind couple drowned when their canoe capsized in high waves of Eddy Creek Bay on Kentucky Lake. Major damage was reported in over 30 counties with large trees downed, roofs blown off, utility poles split etc.	
Madisonville, Hopkins Co.	20	530-630PM							Damage to medical center, winds in excess of 65 MPH.	
Webster, Hopkins Co.	20	630-730PM							Trees down, power lines down winds in excess of 65 MPH	
S. Henderson, Henderson Co.	20	640 PM							Trees down, winds in excess of 60 MPH	
<b>16 LOUISIANA</b>										
Zachary East Baton Rouge Parish	2	11 AM			0	0	1	0	Heavy Rain/Tstm	
									Urban flooding in a short period of time caused with rising water entering homes and businesses.	
Vidrine Evangiline Parish	2	12 NOON			0	1	0	0	Lightning	
									A woman was hospitalized with third degree burns when lightning struck her home, travelled through the plumbing and struck her while she was leaning against the stainless steel kitchen sink.	

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					KILLED	INJURED	PROPERTY	CROPS	
<b>LOUISIANA</b>									
Baton Rouge East Baton Rouge Parish	5	11 AM			0	0	2	0	Lightning/Winds
Thunderstorm winds toppled a tree damaging the porch of a home. The tree had been split by lightning during a storm at 4 PM on July 4th.									
Baton Rouge East Baton Rouge Parish	10	3 45 PM			0	0	3	0	Tstm Winds/ Lgtn
A 100-foot long 20-foot high concrete block wall was blown down at a warehouse, electric power lines were downed and debris from trees and live wires littered city streets.									
Acadia and Jefferson Davis Parishes	10	4 PM			0	0	2	0	Heavy Rain
Urban flooding during heavy rains in thunder storms flooded businesses and homes in Jennings and Crowley.									
St. John, St. James and Vermilion Parish	10	4 PM			0	0	2	2	Severe Tstms
Widespread power outages in the three-parish area because transformers were hit by lightning. Sugar cane acreage beaten down by heavy rains in rural areas. Power lines were downed in high wind and thunderstorm winds caused scattered damage to trees and homes in Intercoastal City, Vermilion Parish.									
Livingston Parish	10	4 15 PM	1/2	400	0	0	0	3	Tornado/Hail (F)
A small tornado skipped along State Highway 190 between Walker and Livingston. Four main electric feeder poles were blown over, uprooted trees blocked the highway, a roof was peeled off a bank in Walker, and a storage shed damaged by falling trees. Marble-sized hail accompanied the storm.									
Terrebonne Parish 44 SSW New Orleans	10	4 45 PM			0	0	3	0	Tstm Winds
Damaging thunderstorm winds peeled the roof off of a mobile home and damaged a building roof in Dulac.									
Jefferson Davis Parish	10	5 PM			0	0	3	0	Tstm Winds
A huge oak was uprooted by severe thunderstorm winds. The tree caused extensive damage to a Jennings home upon which it fell.									
Southeast Louisiana	10	5 PM to 10 PM			0	0	3	0	Severe Tstms
A club house roof was damaged at Laplace in St John the Baptist Parish near 5 PM and severe thunderstorm winds scattered debris over the country club grounds. In Tangipahoa, Orleans, Jefferson, and Livingston parishes winds blew down utility poles and trees blocking roads and causing power outages. A small tree was toppled onto a pickup truck causing minor damage in Hammond. At 9 pm two large trees were uprooted in Pride (13 N Baton Rouge) one damaging a home, and several trees were destroyed near Zachary and French Settlement by severe thunderstorm wind.									
Arcadia, Bienville Parish	11	3 PM			0	0	2	0	Heavy Rain
Urban flooding in Arcadia caused by heavy thunderstorm rains created damage in businesses and homes.									
Assumption Parish 36 South Baton Rouge	23	5 PM	1/2	20	0	0	4	0	Tornado (F1)
A mobile home was damaged when knocked off its supports, several trees were uprooted, and the roof ripped from a small grocery store when a small tornado swept through the area near Lake Verret.									
St. Landry Parish Eunice, 28 NW of Lafayette	25	3 PM			0	2	0	0	Lightning
A father and son were hit by lightning and hospitalized when the bolt struck a mobile home and bounced into the yard where the men were working.									
St. Tammany Parish Covington	27	4 30 PM			1	0	0	0	Lightning
A nineteen-year-old was killed when lightning struck a utility pole dropping a live wire across the bumper of the truck he was driving.									
Jefferson Parish Lake Pontchartrain	29	8 PM			0	0	4	0	Lightning
Lightning struck the south toll plaza of the Lake Pontchartrain Causeway damaging the toll collection system and computer.									
Baton Rouge, East Baton Rouge Parish	29	9 PM			0	0	5	0	Lightning
A fire caused by a lightning strike heavily damaged an office building and warehouse.									
Orleans Parish New Orleans	30	8 PM			0	1	0	0	Lightning
A 16-year-old New Orleans youth was injured when lightning struck the car he was helping to push near Lake Pontchartrain.									

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					KILLED	INJURED	PROPERTY	CROPS	
<b>LOUISIANA</b>									
Baton Rouge and New Orleans	30	3PM - 9PM			0	0	2	0	Lightning/Wind
Several thousand customers were without electrical power in Baton Rouge and New Orleans metropolitan areas when transmission lines and transformers were damaged or downed by lightning and high wind.									
<b>17 MAINE</b>									
Bangor-Brewer, Penobscot County	8	8:45p- 9:30p EDT			0	0	5	C	Winds
A severe thunderstorm produced strong winds which did extensive damage to Marsh and Catell Streets in Bangor and South Main Street in Brewer. The two areas face each other across the Penobscot River. The Bangor International Airport recorded a wind gust to 60 knots (69 mph). Tree limbs and power lines were torn down. Carland store windows were shattered. Several uprooted trees fell on homes. At Bass Park in Bangor, four travel trailers were tipped on their sides and a 40-foot section of wooden fencing along the back stretch was flattened.									
Lewiston, Androscoggin County	13	8p EDT			0	0	3	0	Lightning
Lightning struck a home causing a small fire which burned part of a floor and wall.									
<b>18 MARYLAND and D.C.</b>									
North Central Maryland	20	Evening			0	0	4	0	Wind, Lightning
Squall line moved thru Hagerstown around 4PM, with gusts to around 70 mph...causing power outages for 80 percent of the homes...some for as long as 10 hours. Similarly, tree damage and lightning were responsible for loss of electrical service in Carroll and Montgomery Counties and in the Baltimore metropolitan area.									
Central Maryland and District of Columbia	28	5:00PM- 6:00PM EST			0	0	4	3	Wind, Rain, and Lightning
Fierce thunderstorms brought locally heavy rain and winds up to 50 mph or more. Power outages were widespread and several homes were hit by lightning...including five in Frederick...one of which had an attic fire along with smoke damage. In Taneytown, Carroll County, lightning set fire to material in a manufacturing plant, causing damage...mainly due to water. Damage: Wind: \$5,000; Rain: \$2,000; and Lightning: \$8,000.									
<b>19 MASSACHUSETTS</b> — NO REPORT RECEIVED									
<b>20 MICHIGAN</b>									
Royal Oak, Oakland County	9	All times EST Afternoon					2	4	Thunderstorm
Tree fell on moving automobile injuring driver and passenger. Minor wind damage and power outage in area. Two houses set afire by lightning, with little damage.									
Warren, Macomb County	9	Afternoon					1		Lightning
Man struck in parking lot.									
Bloomfield Township	9	2:00p					2		Lightning
Woman using telephone, man walking in parking lot injured.									
Dearborn, Wayne Co.	9	5:00p					7		Lightning
Softball players took refuge from rain shower under tree.									
Grand Haven, Ottawa County	13	1.18a					2		Lightning
Man and boy received cuts while sleeping when lightning strike caused glass lamp to explode.									
Western Upper Peninsula	17	Afternoon					3	C	Hail
Widespread reports of 1/4" to 5/8" hailstones. Locally heavy rain. Some minor wind damage. Cars and metal buildings dented. Six doves killed by lightning at Daggett.									
Larger hailstones - 1" 2.12p at Iron Mountain 2 1/4" 2.30p at Bark River 3/4" 2.40p at Kenton 1 1/2" 3.00p at Pentronville 3/4" 3.50p at Haman 3/4" 4.30p at L'Anse									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>— MICHIGAN —</b>									
2 miles S Kalkaska to 2 NW Sigma, Kalkaska County	17	Mid-afternoon	7	1500				c	Hail
Hailstones up to 1"									
2 miles N Millington, Tuscola County	17	6:30p			1	3			Wind
Man injured as roof blew off garage.									
4 miles S St. Helen, Roscommon	21	4:00p			1	2			Lightning
Man struck while riding motorcycle, lost control and crashed.									
<b>21 MINNESOTA</b>									
Grand Lake Township (St. Louis Co.)	8	1 p.m.	1	1500	0	0	3	0	Wind
All times CST "Tornado-like winds" ripped through the area toppling trees and knocking down power lines.									
Berner (Clearwater Co.)	10	12:28pm			0	0	0		Hail
One inch hail was reported in Berner by the State Patrol.									
Pennington (Beltrami Co.)	10	5:15 pm			0	0	0	0	Funnels
Omega (Becker Co.)	10	6:26 pm	short narrow		0	0	?	?	Tornado (F0)
A tornado touchdown was reported six miles west and two miles south of Omega.									
Waubun (Mahnomon Co.)	10	6:30pm	short narrow		0	0	?	?	Tornado (F0)
A Sheriff's deputy reported a tornado on the ground 2 1/2 miles south of Waubun moving south toward Omega.									
Callaway (Becker Co.)	10	7:00pm	short narrow		0	0	?	?	Tornado (F1)
A tornado touched down briefly northwest of Callaway as a thunderstorm moved through Becker county. Numerous trees were uprooted and a large barn was moved on it's foundation.									
Fillmore Co. Olmsted Co. Wabasha Co.	11	Midnight-6:00am			0	0	5		Heavy Rain
Heavy rains with accumulations of 5 to 6 inches over much of southeastern Minnesota flooded streams and rivers. Preston was the hardest hit city where a dozen houses were evacuated along the Root River. Numerous roads were closed due to high water and air traffic at the Rochester Airport was closed for one-half hour because of water on the runways.									
Albert Lea (Freeborn Co.)	11	6:10am			1	1	0	0	Wind, Rain
An eight year old boy was killed and his sister was injured when a gust of wind accompanied by heavy rain brought a large tree down on their tent in Helser Myre State Park.									
LeSueur (LeSueur Co.)	14	5:20pm			0	0	0	0	Hail
Golf ball size hail was reported in LeSueur by the public.									
Mapleton (Blue Earth Co.)	14	6:25pm			0	0	?	0	Hail
Golf ball size hail dented a Highway Patrol car.									
Pennington Co.	15	1:05pm			0	0	0	0	Funnel
A funnel was spotted by the public six miles south of Thief River Falls.									
Carlton Co.	16	5:30pm to 8:00pm			0	0	0	0	Hail, Rain
One inch hail and 1.85 inches of rain fell just west of Mahtowa.									
Koochiching Co.	16	6:30pm	5	10	0	0	0	0	Tornado
A tornado was reported five miles east of Little Fork doing minor tree damage.									
Lindstrom (Chisago Co.)	17	9:30am			0	0	?	5	Hail
Hail 2 to 3 inches in diameter covered the ground to a depth of 6 to 12 inches destroying over 150 acres of crops. Hail damaged another 15,000 acres of surrounding crops.									
<b>— MINNESOTA —</b>									
5 W Norseland (Nicollet Co.) to Rush River (Sibley Co.)	17	3:00pm			0	0	?	5	Hail, Wind
A thunderstorm dropped a one mile wide and 10 mile long swath of hail sometimes as big as baseballs in northeast Nicollet County and southeast Sibley County. Crops were severely damaged.									
Austin (Mower Co.)	19	4:15pm			0	0	0	0	Funnel
Amateur radio Skywarn Spotter spotted a funnel over Austin.									
Hollandale (Freeborn Co.)	19	4:55pm			0	0	0	0	Funnel
Hayfield (Dodge Co.)	19	5:19pm			0	0	0	0	Funnel
Koochiching Co.	19	7:06pm			0	0	0	0	Funnel
Two separate aircraft reported a funnel cloud 20 miles south of International Falls.									
Adams (Mower Co.)	19	8:28pm			0	0	0	0	Funnel
Oak Center (Wabasha Co.)	20	5:00pm	**50yds	20	0	0	0	0	Tornado (F0)
A tornado touched down briefly in a cornfield 2 1/2 miles east of Oak Center.									
Goodhue (Goodhue Co.)	20	3:00pm			0	0	0	0	Funnel
Breckenridge (Wilkin Co.)	21	2:00pm			0	0	0	0	Hail, Rain
Golf ball size hail and heavy rain was reported by a cooperative observer in Breckenridge.									
Graceville to Clinton (Big Stone Co.)	21	4:25pm			0	0	5	6	Hail, Wind
Golf ball to baseball size hail and strong wind combined to cause hundreds of thousands of dollars damage to buildings, automobiles and crops.									
Renville Co.	21	4:30-5:00pm			0	0	?	7	Hail, Wind
Hail and wind caused an estimated \$5 million in crop damage to 20,000 acres in a spotted pattern in Renville County. The hail was sharp-edged and measured up to 1 1/4" in size.									
Windom (Cottonwood Co.)	21	5:15pm							Hail, Winds
Golf ball size hail and 50 mph wind were reported in Windom.									
Cushing (Watonwan Co.)	22	2:30pm	-	-	0	0		0	Wind
Winds up to 50 mph reported. Farm building, fence trees and limbs blown down. Trailer blown over.									
Winthrop (Sibley Co.)	22	5:30pm	10	2000	0	0	0	5	Hail
Pea size hail pelted about 700 acres of crops causing extensive damage.									
Mapleton (Blue Earth Co.)	22	6:48pm	?	?	0	0	?	?	Hail
Golf ball size hail reported.									
Blue Earth Co.	22	7:00pm	-	-	0	0	0	0	Funnel
Funnel reported in extreme southeast portion of county.									
Clinton (Big Stone Co.)	23	3:36pm	-	-	0	0	0	0	Funnel
Funnel reported by sheriff's deputy 5 miles west of Clinton.									
Lac Qui Parle Co.	23	5:35pm	-	-	0	0	1	0	Wind
Tree branches knocked down.									
Canby, Porter (Yellow Medicine Co.)	23	6:30pm	-	-	0	0	0	6	Hail, Wind
Marble size hail was whipped by winds estimated at 70 mph. At least 700 acres of crops were severely damaged.									

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JULY 1981

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<b>MINNESOTA</b>									
Minneota (Lyon Co.)	23	6:33pm	-	-	0	0	0	0	Wind, Hail
			Pea size hail and estimated 70 mph winds reported.						
Forest Lake (Washington Co.)	23	7:15pm	-	-	-	-	-	-	Funnel
	23	9:10pm	-	-	0	0	0	2	Wind
			Trees down west of Forest Lake						
Roseville Como St. Paul (Ramsey Co.)	23	9:18pm	-	-	0	0	-	-	Hail
		9:30pm	-	-	0	0	-	-	Hail
		9:33pm	-	-	0	0	-	-	Hail
			Golf ball size hail reported.						
Washington Co.	23	9:30 pm	15	3 mi.	0	0	0	6	Hail
			Widespread hail severely damaged farm and orchard crops. Over 12,000 crop acres were affected.						
East Sherburne Co.	24	2:48pm	-	-	0	0	0	0	Hail
			Unconfirmed report of golf ball size hail, location unknown. Numerous reports of pea size hail.						
Fairmont (Martin Co.)	24	3:00pm	1	7	0	0	0	0	Tornado (F0)
	24	?	-	-	0	0	0	0	Hail
			Tornado reported to police. It was sighted 3 miles NW of Fairmont. Golf ball size hail reported near Fairmont.						
Blaine (Anoka Co.)	24	3:51pm	-	-	0	0	0	0	Hail
			Public report of golf ball size hail.						
Zimmerman (Sherburne Co.)	24	?	-	-	0	0	0	0	Hail
			Pea to golf ball size hail reported.						
Red Wing (Goodhue Co.)	24	5:15 pm	-	-	0	0	4	0	Wind
			Metal pole barn blown over damaging a house and grain bin.						
Kittson Co.	30	9:00am to 11:45am	-	-	0	0	0	5	Hail
			Hail size unknown, destroyed nearly 100% of the crops in seven sections of Caribou Township.						
Hoffman	31	4:35pm	?	?	0	0	0	0	Tornado (F0)
			Grant Co. Sheriff reported a tornado on the ground near Hoffman moving to the east at 25 mph.						
Elbow Lake (Grant Co.)	31	4:35pm	-	-	0	0	0	0	Funnel
Alexandria (Douglas Co.)	31	6:13pm	-	-	0	0	0	0	Hail
			Golf ball size hail reported in Alexandria by Douglas Co. Sheriff.						
<b>22 MISSISSIPPI</b>									
Columbia (Marion Co.)	5	2:30pm CST	-	-	0	0	3	0	Thunderstorm, High Winds
			A thunderstorm produced wind gusts of 63 mph at Civil Defense headquarters in downtown Columbia. At a nearby restaurant, several plate glass windows were blown in. Limbs and power lines were also blown down in several areas of town.						
5 E Leakesville (Greens Co.)	5	3:00pm CST	-	-	0	0	0	0	Funnel Cloud
			A funnel cloud was sighted by the public moving east northeast at 30 mph.						
Terry (Hinds Co.)	6	10:25am CST	-	-	0	0	0	0	Funnel Cloud
			A funnel cloud was sighted by the public near Terry, or about 13 miles SSW of downtown Jackson, and was moving east northeast at 30 mph.						

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<b>MISSISSIPPI</b>									
Lafayette, Yalobusha Counties	10	5-6pm CST	-	-	0	0	4	0	Thunderstorms, High Winds
			Heavy thunderstorms moved southward through these two counties in north central Mississippi, causing scattered wind damage in at least two towns. At Oxford in Lafayette County, a porch was destroyed and numerous trees and power lines were blown down. At Water Valley in northern Yalobusha County, winds estimated at 60 mph blew down some trees, limbs and power lines.						
East Central, South Central Mississippi	10	7-8pm CST	-	-	0	0	5	0	Thunderstorms, High Winds
			An area of very heavy thunderstorms roughly 40 miles wide, and extending from the Meridian area southwestward to near Tylertown, produced scattered wind damage in several counties. The most serious damage occurred around 8pm CST in Walthall County near Tylertown, where high winds caused extensive damage to the roof, some walls and some equipment at a dairy equipment plant. A nearby wood products plant sustained minor damage. Minor roof damage was reported in Mt. Olive in northern Covington County. Scattered damage to trees and power lines also occurred in other parts of Walthall and Covington Counties, and in Simpson, Smith and Lauderdale Counties.						
Marion (Lauderdale Co.)	10	8:00pm CST	-	-	0	1	2	0	Lightning
			A 60-year old woman was struck by lightning while talking on the telephone during a thunderstorm. She sustained burns on the neck, chest and leg and was hospitalized.						
Alcorn County	20	10:30pm CST	-	-	0	0	3	0	Thunderstorms, High Winds
			Heavy thunderstorms over northeast Mississippi produced wind damage a few miles north of Corinth. Several trees and power lines were downed.						
7 SW Corinth (Alcorn Co.)	23	2:30pm CST	-	-	0	0	4	0	Thunderstorm, High Winds, Lightning
			A heavy thunderstorm near the town of Kossuth resulted in wind damage to roofs and trees. Two porches were also heavily damaged. A lightning bolt from the storm also struck a large tree, killing 17 cows which had sought shelter under it.						
DeSoto County	25	5:00pm CST	-	-	0	0	3	0	Thunderstorm, High Winds
			Heavy thunderstorm activity over northwest Mississippi resulted in wind damage to at least one roof in the county, exact location unknown. Trees and power lines were also blown down.						
16 NE Kosciusko (Attala Co.)	25	5:00pm CST	-	-	0	0	3	0	Thunderstorm, High Winds
			High winds uprooted trees and caused minor roof damage in the Harmony community near McCool.						
<b>23 MISSOURI</b>									
..East..									
Dunklin	5	All times CDT 5 to 6 PM	-	-	0	0	0	0	Funnel Clouds
			Five funnel clouds were confirmed in and around Malden. One was spotted by Roscoe Thornton and another was spotted and photographed by a reporter.						
Franklin	20	3:10 PM	-	-	0	0	2	2	Damaging Wind
			Winds of 60 mph were reported at New Haven and there were reports of damage to trees and crops throughout the county.						
Warren	20	3:20 PM	-	-	0	0	4	2	Damaging Wind
			Damage was reported 4 miles west of Warrenton. Scattered moderate damage was reported over much of the county. Buildings, trees and corn were all reported damaged.						
Lincoln	20	3:20 PM	-	-	0	0	?	?	High Wind
			Winds were estimated 50 to 60 mph at Troy.						
St. Clair and Franklin Counties	20	3:30 PM	-	-	0	0	4	?	Damaging Wind
			Winds to 80 mph downed power lines and uprooted trees over the two counties.						
Franklin	20	3:30 PM	-	-	0	0	2	?	Damaging Wind
			A few sheds damaged or destroyed and trees uprooted between 3:10 and 3:30. This damage was in addition to above reported damage in other portions of the county.						

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

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<b>MISSOURI</b>									
St. Charles	20	3:35 PM			0	8	5	?	Damaging Wind
<p>A particularly violent storm hit Waldon Springs and did much damage to the T/K Mobile Home Park. Five mobile homes were completely destroyed and a number of other were damaged. Two of the injuries were serious. The storm also contributed to a private school bus accident. There were reports of damage to trees and power lines. A police officer reported he went to survey the damage and found out a tree had been dropped on his car. This line of thunderstorms produced scattered damage throughout the county until around 4 PM. A meteorologist saw tires on fire on a parked car while heading for work. A late report of golf ball size hail was also received. Reports of a possible tornado were never confirmed.</p>									
Jefferson	20	3:48 PM	1	50	0	0	3	0	Tornado (F0)
<p>A tornado dipped down briefly 5 miles north of Hillsboro. It damaged trees and produced minor structural damage to homes.</p>									
St. Louis	20	4:02 PM			0	0	3	0	Damaging Wind
<p>Minor damage was reported to have occurred to parked aircraft at the Spirit of St. Louis Airport located in the western part of the county.</p>									
St. Louis City and St. Louis County	20	4 to 4:30 PM			0	0	6	?	Damaging Wind
<p>A line of severe thunderstorms produced widespread scattered damage throughout the area. Trees were uprooted and power lines were downed. Some fences were blown over. The most significant damage was the serious damage to the radar antenna at Jefferson Barracks. Damage there was reported at \$300,000.00</p>									
Crawford	20	4 to 4:20 PM			0	0	?	?	Large Hail Strong Wind
<p>Large hail and wind to 55 mph at Bourbon. No size given on hail.</p>									
Bollinger and Cape Girardeau Counties	20	5:30 PM			0	0	3	0	Damaging Wind
<p>High winds downed trees in the area.</p>									
Cape Girardeau	24	11:35 PM			0	0	4	0	Damaging Wind
<p>Sheds damaged and trees down at Jackson.</p>									
<b>..Southwest..</b>									
Howell	1	3:45 PM			0	0	4	0	Damaging Wind
<p>Winds damaged two single engine planes and did some roof and door damage to a hangar at West Plains. Wind gusts reached a recorded 30 MPH.</p>									
Greene	19	4:37 PM			0	0	3	0	Damaging Wind
<p>Trees down in and around Fair Grove. Some trees fell on and damaged a house.</p>									
Howell	19	8:20 PM			0	0	0	0	High Wind
<p>Winds to 50 MPH caused no known damage at Willow Springs.</p>									
Dallas	22	8:0 AM			0	0	0	0	Large Hail
<p>Golf ball size hail reported in the vicinity of Buffalo.</p>									
<b>..West..</b>									
Gentry	23	2:08 AM			0	0	?	?	Large Hail
<p>Golf ball size hail reported at Atlantis Grove. Winds were estimated to 50 MPH.</p>									
Worth	23	7:20 AM			0	0	?	?	Large Hail
<p>Golf ball size hail reported by sheriff. The exact time of occurrence is unknown.</p>									
Daviess	23	9:33 AM			0	0	?	?	Large Hail
<p>Baseball size hail reported 10 miles north of Jamesport.</p>									
<b>MISSOURI</b>									
<b>..Central..</b>									
<p>.....A line of severe thunderstorms moved through central Missouri on the afternoon of July 20 between 1:55 and 4:30 PM. This is the same line of thunderstorms that did the damage to eastern Missouri earlier in the report. The number of storms and various delayed reports make it hard to ascertain the exact times of each damage occurrence. There were a number of reports of possible tornadoes but radar and storm surveys indicate that this was straight line wind damage. The exception seems to be High Hill in the eastern portion of Montgomery County. The below storm reports give the times of a number of occurrences. These are followed by a number of reports that came in after the initial reports and the times are not given but are assumed to have occurred about the time of the earlier reports.</p>									
Boone	20	1:55 PM			0	0	4	0	Damaging Wind
<p>Several small trees uprooted and numerous houses sustained minor roof damage. This about 5 miles north of Columbia.</p>									
Boone	20	1:57 PM			0	0	3	0	Damaging Wind
<p>Trees down on east side of Columbia.</p>									
Cooper	20	2 PM			0	0	4	0	Damaging Wind
<p>A radio tower was blown down and trees downed 6 miles north of Booneville.</p>									
Boone	20	2 PM			0	0	4	0	Damaging Wind
<p>A sundeck was ripped off a home a roof was torn off a home 4 miles northeast of Columbia.</p>									
Boone	20	2:15 PM			0	0	3	0	Damaging Wind
<p>Glass was strewn over a parking lot at a shopping center in Columbia. This was due to broken auto windows.</p>									
Montgomery	20	3:07 PM	1	50	0	0	4	0	Tornado (F2)
<p>A tornado touched down at High Hill in the eastern portion of the County. One home was demolished.</p>									
Boone	20	3:45 PM			0	0	3	0	Damaging Wind
<p>A late report of winds to 70 MPH and downed trees just north of Columbia.</p>									
	20	4:55 PM							Damaging Wind
<p>The following reports are all delayed and all occurred much before the 4:55 PM time.</p>									
Boone					0	35	6	?	
<p>Civil Defense reported winds to 77 MPH at Columbia. The county received winds generally in the 60 to 80 MPH range. Widespread structural damage was reported throughout the area to homes and businesses. The damage ranged from minor to heavy. There were also a number of reports of damage to sheds, trees, fences and cars. A number of trees and power lines were also downed. The injuries were minor except for one woman. She was hospitalized and was reported in fair condition.</p>									
Howard					0	0	4	0	
<p>A barn blown down and a tower blown over.</p>									
Callaway					0	0	4	0	
<p>Numerous trees down and many homes with roof damage.</p>									
Osage					0	0	4	0	
<p>Numerous trees reported down in northern portion of the county. Little other damage reported.</p>									
Montgomery					0	0	4	0	
<p>Several barns destroyed near Big Springs and a roof taken off in Montgomery City. A shed also destroyed in Montgomery City. (see also tornado at High Hill at 3:07 PM)</p>									
Gasconade					0	0	4	0	
<p>Downed trees blocking roads in the county. A new building blown in near Hermann.</p>									
<p>.....Very heavy storms moved through portions of Central Missouri again on July 23. Winds of 60 to 70 MPH were common. These storms occurred very early in the day and the damage was spread out over several hours. Just as significant as the wind damage was flash flooding. Streams were out of their banks, basements were flooded, roads were impassable and dam structures were near the breaking point. The following are some of the verified damage reports. The times may be later than the event in some cases.</p>									

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					KILLED	INJURED	PROPERTY	CROPS	
<b>MISSOURI</b>									
Linn	23	225 AM			0	0	0	0	Large Hail
Police report 3/4 inch diameter hail at Marceline.									
Boone	23	346 AM			0	0	?	?	High Wind
Winds reported to 60 MPH in Centralia by Columbia EOC and at 350 AM winds reported exceeding 60 MPH by Centralia PD.									
Audrain	23	415 AM			0	0	3	0	Damaging Wind
A 120 foot tower blown down just north of Mexico.									
Boone	23	438 AM			0	0	?	?	High Wind
Columbia EOC reports wind to 67 MPH.									
Boone	23	507 AM			0	0	2	0	Damaging Wind
Trees down at the Lake of the Woods Exit in Columbia.									
Boone	23	545 to 625 AM			0	0	5	?	Damaging Wind and Flooding
A roof was blown off a building and a number of trees downed by 67 MPH winds in Columbia. Streets were flooded and some motorists stranded. There was also flooding to business and to residential basements.									
Randolph	23	625 AM			0	0	?	?	High Wind
A delayed report of winds to 70 MPH at Moberly.									
Boone	23	8 AM			0	0	4	0	Damaging Wind
Major roof damage reported to the Hearnes Building in Columbia.									
Callaway	23	10 AM			0	0	4	0	Damaging Wind
Fullton PD reported Highway 94 closed due to power lines and trees down.									
Moniteau	25	1 AM			0	0	4	0	Damaging Wind
Winds reported to 60 MPH at Tipton. Also structural damage reported by ASCS. This along with a number of trees down around California after 1 AM.									
Boone	25	1 to 2 AM			0	0	?	?	High Wind
Winds to 70 MPH reported in the Columbia area.									
<b>24 MONTANA</b>									
Gallatin County	6	Early Afternoon			0	0	0	5	Hail
3/4 inch hail destroyed grain crops in Gallatin Valley									
Dawson County	10	Evening			0	0	5	5	Strong Winds/Hail
Very strong winds and hail caused considerable damage to outbuildings and from 40 to 90% crop loss in the Lindsay - Bloomfield-Glentive areas.									
Fallon County	11	Afternoon			0	0	5	5	Hail
Severe hailstorm 3 miles wide and 15 miles long caused 40 to 90% crop damage. Hail as large as grapefruit.									
Teton/Chouteau/Cascade Counties	13	2200 MDT			0	0	0	6	Hail/Winds
Hail and strong winds combined to destroy crops in an area 2 miles wide and 20 miles long. The storm also passed over the north end of Benton Lake National Wildlife refuge killing 8100 waterfowl.									
Ravalli County	24	Evening			0	0	0	5	Hail
3/4 inch hail in 15 minutes caused widespread damage to grains and potato crops.									
Fergus County	28	Afternoon			0	0	5	6	Hail/Lightning
Large hail caused crop losses of 50 to 70% over a wide area. Lightning struck and burned 2500 bales of hay.									
<b>25 NEBRASKA</b>									
Kimball County	1	1900CST - 2200CST			0	0	5	?	Flash Flood
The worst flood in 31 years struck the western portion of the county west of Bushnell as 4 1/2 inches of rain fell with as much as 9 inches just across the line in southeast Wyoming. The water knocked down trees, washed out bridges, flooded a home and washed two cars off a road. Most flooding was on Lodgepole Creek.									
<b>NEBRASKA</b>									
Lincoln County	2	1600CST			0	0	3	0	Flash Flood
Six inches of rain caused local flash flooding south of Brady.									
Phelps County	2	1800CST			0	0	4	3	Flash Flood
Heavy rain flooded the highway 1 mile west of Atlanta.									
Jefferson County	13	Afternoon			1	0	0	0	Heat
A man was found dead of heat stroke in a field near Daykin as temperatures reached 100 degrees.									
Seward County	14	11725CST	1/8	150	0	0	4	0	Tornado (F1)
Small tornado at Utika damaged 2 houses and small outbuildings along with trees and power lines.									
Seward and Lancaster Counties	14	1730CST - 1820CST			0	0	5	3	Damaging Winds
Thunderstorm winds gusting 55 to 65 m.p.h. damaged several outbuildings and some homes and downed trees and power lines from south of Seward to east of Lincoln. Winds gusting to 60 m.p.h. at the Lincoln Airport at 1814CST.									
Saunders County	14	1805CST - 1840CST			0	0	4	0	Damaging Winds
Fifty to sixty m.p.h. winds in a thunderstorm blew the roof off a barn 2 miles north of Ceresco. A few trees and power lines were also downed.									
Douglas County	14	1830CST - 1900CST			0	1	3	0	Damaging Winds
Thunderstorm winds downed scattered trees and power lines. A boy in north Omaha was injured as a tree limb fell on him.									
Cass County	14	1855CST - 1920CST			0	0	5	5	Damaging Winds and Hail
Winds gusting from 60 to around 100 m.p.h. in thunderstorms caused structural damage, downed trees and utility lines and flattened crops from 5 miles west of Plattsmouth through the city. A gust of 101 m.p.h. was measured at the airport at 1903CST. Much of the damage occurred as trees fell on buildings. One house in down had its roof blown off. A heavy rain with the storm caused a basement to collapse. Hail damaged drops north of Plattsmouth.									
Otoe County	14	1910CST			0	0	2	0	Damaging Winds
Thunderstorm winds damaged some signs in downtown Nebraska City.									
Keith, Lincoln and Logan Counties	15	1800CST - 1900CST			0	0	4	5	Hail
Half to one and a half inch hail fell from Keystone through northern Lincoln County to near Stapleton with some property and crop damage.									
Box Butte County	15	2000CST			0	0	4	?	Hail
One and a half inch hail around Alliance caused damage to homes and vehicles.									
Chase County	15	2100CST			0	0	3	6	Hail
Half to one and a half inch hail fell in areas of the county causing crop and scattered property damage.									
Cherry County	16	1500CST			0	0	0	4	Hail
One and a half inch hail damaged crops 21 miles south and 12 miles east of Gordon.									
Sheridan County	16	1700CST - 1900CST			0	0	?	?	Flash Flood
Up to 3 inches of rain in a short time washed out some gravel roads around Rushville.									
Hooker County	16	1700CST			0	0	0	3	Hail
One inch hail was reported near Mullen.									
Cherry County	16	1800CST			0	0	0	4	Hail
One and a half inch hail damaged crops 1 1/2 miles northeast of Irwin.									
Phelps County	16	1930CST			0	0	3	0	Damaging Winds
Strong winds blew down tree limbs in a thunderstorm at Holdrege.									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>NEBRASKA</b>									
Hitchcock and Red Willow Counties	17	0100CST -0500CST			0	0	4	3	Flash Flood
									Three inches of rain at Hugh Butler Reservoir with 6.16 inches at Swanson Reservoir caused lowland flooding.
Dawes County	17	1740CST -1900CST			0	0	?	4	Damaging Winds and Hail
									Winds gusted to 63 m.p.h. at Chadron with 1 1/2 inch hail east of town. Some property damage reported.
Dawes County	17	1800CST			0	0	0	0	Funnel Cloud
									A funnel cloud was reported east of Chadron.
Dawes County	17	1900CST -2100CST			0	0	?	?	Flash Flood
									Four inches of rain fell at Crawford with county road washouts and some lowland flooding.
Kimball County	17	1900CST -2000CST			0	0	?	?	Flash Flood
									Two and a half inches of rain caused a few road washouts around Kimball.
Dakota County	17	1930CST			0	0	2	0	Damaging Winds
									Winds gusted to 58 m.p.h. in a thunderstorm at South Sioux City with minor tree damage.
Harlan County	18	0400CST			0	0	3	0	Flash Flood
									Six inches of rain north of Oxford caused water to cover a number of bridges and flood lowlands including a golf course.
Grant County	18	1400CST	1/2	15	0	0	0	0	Tornado (F0)
									A small tornado touched down briefly 4 miles east of Ashby.
Knox County	19	1800CST -1900CST			0	0	3	3	Damaging Winds
									High thunderstorm winds downed a few trees and utility lines and damaged crops around Center and Bloomfield.
Keith County	19	1900CST			0	0	3	3	Damaging Winds
									Winds in thunderstorm gusted to 60 m.p.h. at Lake McConaughy with some property damage.
Pierce County	19	1900CST -2000CST			0	0	3	3	Damaging Winds
									Thunderstorm winds caused some crop and property damage in eastern area of the county.
Stanton County	19	2010CST -2025CST	5	50	0	0	5	3	Tornado (FPP 121)
									A tree top high tornado touched down 4 miles northwest of Stanton and moved southeast to 1 mile south uprooting many trees and damaging utility lines. The dining hall was damaged at the fairgrounds southwest of Stanton.
Stanton County	19	2010CST -2100CST			0	0	?	5	Hail
									Hail driven by high winds damaged crops in the central and east portions of the county.
Colfax and Cuming Counties	19	2030CST -2115CST			0	0	3	3	Damaging Winds
									Thunderstorm winds downed tree limbs and caused some crop damage around Howells and north of town in southwest Cuming County.
Lincoln County	19	2050CST			0	0	3	3	Damaging Winds
									Wind gusts to 67 m.p.h. at North Platte with some property and crop damage.
Dodge County	19	2050CST			0	0	5	5	Damaging Winds and Hail
									Winds gusting over 60 m.p.h. in thunderstorms downed trees and utility lines and caused property damage from Dodge to 10 miles southeast of Dodge. Cars in Dodge damaged by fallen trees. At Farms 5 miles southeast of Dodge, silos were damaged. Feed bunk driven by the wind killed 2 head of cattle and injured 6 along with downing fences. Hail with wind also damaged crops. Some tree damage also at North Bend.
<b>NEBRASKA</b>									
Dodge County	19	2128CST			0	0	0	0	Funnel Cloud
									A funnel cloud was reported 3 miles west of Fremont.
Dodge County	19	2255CST			0	0	0	0	Funnel Cloud
									A funnel cloud was reported 3 miles south of Snyder.
Custer County	21	0600CST -0700CST			0	0	5	5	Damaging Winds and Hail
									Sixty m.p.h. winds with 1 1/2 inch hail damaged structures and caused crop damage in southland east areas of the county especially around Westerville, where hail stripped trees, broke windows and caused heavy crop damage.
Sherman, Buffalo, Hall, Kearney and Adams Counties	21	0645CST -0900CST			0	0	6	7	Damaging Winds and Hail
									A thunderstorm with winds gusting over 60 m.p.h. with hail at times to 1 1/2 inches moved from the area around Amherst through Kearney and northeast Kearney and southwest Hall Counties before weakening in the Hastings area. Crop damage ranged from 20 to 100 percent along this path which was 5 to 10 miles wide. Most property damage occurred in northwest Kearney where roof damage was considerable to over a dozen homes. At the high school the field press box and concession stand was destroyed and the scoreboard blown over. Power lines, traffic signals, trees and fences were downed by the winds. A garage and car inside were damaged by the winds in town and a number of camps were blown over. Trees were also toppled at Amherst. One and a half inch hail also damaged crops around Hazard in Sherman County.
Buffalo County	21	0700CST	1/8	10	0	0	?	?	Tornado (F0)
									A tornado touched down briefly in an open field 5 miles northeast of Kearney with no apparent damage.
Adams County	21	0800CST			0	0	0	0	Funnel Clouds
									Two funnel clouds were reported north of Janita.
Loup County	21	0900CST			0	0	3	4	Hail
									One and a half inch hail fell north of Taylor damaging vehicles and crops.
Sheridan County	21	2045CST	1/2	20	0	0	4	?	Tornado (F1)
									A small tornado moving east damaged farm buildings and trees near Whiteclay.
Sheridan County	21	2100CST			0	0	0	3	Hail
									Two inch hail fell east of Rushville with some crop damage.
Sheridan County	22	0400CST			0	0	4	5	Damaging Winds and Hail
									High thunderstorm winds caused trees to fall at Gordon and blew down a shed. A trailer was damaged by a fallen tree. One and a half inch hail damaged crops.
Cherry County	22	0440CST			0	0	3	5	Hail
									Half to 1 1/2 inch hail driven by gusty thunderstorm winds damaged crops and gardens. Hail broke windows around Shell Lake. One and a half inch hail fell 20 miles southwest of Valentine and 1 inch hail 20 miles north of Ashby.
Cherry County	22	0500CST			0	0	?	?	Flash Flood
									Almost 6 inches of rain fell in a short time 10 miles south of Merriman with washouts. Soil erosion with river banks caving off were reported along the Niobrara River as water rose.
Scottsbluff and Morrill Counties	22	2000CST			0	0	4	5	Hail and Damaging Winds
									Three inch hail fell at Lake Minatare with damage to roofs and windows. Sixty m.p.h. winds and 2 inch hail fell north of Bayard with damage to crops.
Rock County	22	2300CST			0	0	3	3	Damaging Winds
									Thunderstorm winds downed tree limbs and power lines around Bassett.
Custer County	22	2315CST -2330CST			0	0	4	5	Damaging Winds and Hail
									Winds to 60 m.p.h. and 1 to 1 1/2 inch hail occurred around Arnold and Callaway causing crop and property damage.

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

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					KILLED	INJURED	PROPERTY	CROPS		
<b>NEBRASKA</b>										
Sherman County	23	0800CST -0030CST			0	0	3	5	0	Damaging Winds and Hail
					Hail storm cut path in crops 4 miles wide and 14 miles long near Hazard. Some tree damage from thunderstorm winds at Loup City.					
Dawson and Buffalo Counties	23	0035CST			0	0	0	4	0	Hail
					One and three-quarter inch hail damaged crops in scattered areas from Eddyville to 5 miles southeast of Kearney.					
Hooker County	23	0300CST			0	0	4	4	0	Hail and Flash Flooding
					One and a half inch hail damaged crops and some windows around Muller. Four inch rains caused local flooding.					
Cherry County	23	2200CST			0	0	3	0	0	Damaging Winds
					Thunderstorm winds damaged power poles from 8 miles north of Brownlee extending 4 miles to the northeast.					
Sherman County	24	0227CST			0	0	5	0	0	Hail and Lightning
					One and a half inch hail damaged many roofs and knocked out windows in Rockville. Fire started by lightning burned a church in Rockville to the ground.					
Hamilton County	24	0330CST			0	0	5	0	0	Damaging Winds
					Strong thunderstorm winds destroyed 4 grain bins south of Aurora. Tree limbs were downed in Aurora.					
Phelps County	24	0430CST			0	0	4	0	0	Lightning
					Lightning knocked out part of city power at Holdrege. Lightning also burned down main feeder at city land substation.					
Hall County	24	0405CST			0	0	3	0	0	Damaging Winds
					Thunderstorm winds blew a shed down 3 miles west of the Hall County Airport.					
Boone County	24	1625CST			0	0	0	0	0	Funnel Cloud
					A funnel cloud was reported near St. Edward.					
Morrill County	24	1700CST			0	0	?	?	?	Hail
					Three-quarter inch hail was reported north of Bridgeport.					
Scottsbluff County	25	1615CST			0	0	2	0	0	Damaging Winds
					Sixty m.p.h. winds occurred in thunderstorms west of Scottsbluff with some tree limbs down.					
Keith and Lincoln Counties	25	1900CST -2000CST			0	0	2	4	0	Flash Flood
					Heavy rains caused areas of urban and lowland flooding with some crop erosion.					
Chase County	25	2100CST			0	0	2	5	0	Hail
					One and a half inch hail swept through county north of Imperial damaging crops.					
Red Willow County	25	2300CST	1 1/8	20	0	0	0	0	0	Tornado (F0)
					Small tornado touched down 8 miles south of McCook in open country.					
Keith and Lincoln Counties	26	0000CST -0200CST			0	0	2	5	0	Flash Flood
					Three inch rains fell in Keith County. Heavy rains also in Lincoln County with up to 8 inches north of Wellfleet. Urban and lowland flooding resulted with crop erosion.					
Lincoln County	27	1900CST -2200CST			0	0	3	0	0	Flash Flood
					Heavy rains again caused urban and lowland flooding areas between Sutherland and North Platte.					
Knox County	31	0900CST			1	0	0	0	0	Lightning
					A boy was killed when struck by lightning on Lewis and Clark Lake.					
26 NEVADA	NONE REPORTED									

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					KILLED	INJURED	PROPERTY	CROPS		
<b>27 NEW HAMPSHIRE</b>										
Orford, Grafton County	9	4:30p- 6:30p EDT			0	0	5	0	0	Thunderstorms
					A line of heavy thunderstorms moved across the state. Lightning strikes caused a number of power outages, especially in the central lakes region. Lightning also hit an Orford home, starting a fire which totally destroyed the dwelling.					
Statewide	13	5p-9p EDT			0	21	5	C	0	Thunderstorms
					Violent thunderstorms moved across the state producing one-inch diameter hail in Danbury, one-half inch in Canterbury and pea size hail in Hooksett, Newport and Claremont. Gusty winds downed numerous tree limbs and trees up to 20 inches in diameter leaving over 600 homes in the Claremont-Sunapee area without power for up to 8 hours. Lightning struck a Londonderry home, blowing out a transformer. Another lightning bolt stunned 21 Boy Scouts who had sought shelter in a cabin at the Scout Camp in Manchester. Four were hospitalized with first and second degree burns confined to their ankles and legs. Windows, which shattered upon impact, caused minor cuts to several other Scouts. The bolt traveled 50 feet down a tree, furrowed 37 feet along the ground to the cabin.					
Statewide	18	4p-9p EDT			0	0	5	C	0	Thunderstorms
					Intense thunderstorms produced hail up to 3/4 inch diameter in Canaan and Westmoreland. Downpours produced local street and urban flooding and washouts when nearly two inches of rain fell in 20 minutes at Exeter; 1.48 inches at Otter Brook Dam between 7 and 9 pm and .35 inches in 15 minutes at Surry. Winds, recorded up to 30 mph at the Keene Airport, uprooted trees and downed lines, left 1500 customers in Keene without power for 24 hours and 100 to 200 homes in Westmoreland were powerless between 8 and 12 hours. In Canaan, winds blew trees down on two homes. Lightning hit two homes in Newmarket, doing minor damage. Another bolt knocked out the University of New Hampshire's main computer at Durham as well as underground wiring to other campus buildings. A 2.5 million gallon jet fuel storage tank was struck at Pease Air Force Base in Portsmouth doing minimal damage.					
<b>28 NEW JERSEY</b>										
Byram Township	20	9 pm EDT	4 mi	200- 300yds	0	0	0	?	?	TORNADO (FPP 223)
					This tornado touched down along route 180 which is 45 miles WNW of LGA. The coordinates were 40DEG55MIN N and 74DEG45MIN W and moved NE a half mile forming a tree damage path.					
<b>29 NEW MEXICO</b>										
Near Espanola, Rio Arriba County	1	All times MST Night			0	0	4	0	0	Windstorm
					Very high, gusty winds did extensive damage to mobile homes in a park near Espanola. One home was completely destroyed.					
Carlsbad, Eddy County	5	1:00a			0	0	5	0	0	Tornado (F1)
					A tornado touched down in Carlsbad damaging the high school, ballpark and other buildings.					
Near Lovington, Lea County	7	9:10p			0	0	0	0	0	Funnel Aloft
					A funnel cloud was reported by the Lovington Chief of Police.					
Lincoln County	19	2:00a			1	0	0	0	0	Lightning
					Lightning killed a backpacker near Sierra Blanca Peak.					
Espanola, Rio Arriba County	22	1:30p			0	0	4	0	0	Windstorm
					Strong, gusty winds did extensive damage to buildings, signs and houses in Espanola.					
Rio Arriba County	26	4:30p			2	0	0	0	0	Lightning
					Two Indian women dancers at Puye Cliffs near Santa Clara Pueblo were killed by lightning and one child was injured.					
30 NEW YORK, Coastal	NONE REPORTED									
30 NEW YORK, Central	NO REPORT RECEIVED									

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					KILLED	INJURED	PROPERTY	CROPS	
<b>30 NEW YORK, Western</b>									
Webster, Monroe County	2	1500 EDT			0	0	6	7	Wind
									A severe thunderstorm with damaging winds blew off roofs of 3 large buildings owned by Xerox Corporation. It also damaged several tractor trailers.
<b>31 NORTH CAROLINA</b> — NO REPORT RECEIVED									
<b>32 NORTH DAKOTA</b>									
Killdeer 10W (Dunn County)	1	3:53 p CST							Funnel
Ross (Mountrail County)	1	5:00 p CST	Short	Narrow	0	0	0	4	Tornado (FPP 000) Hail
									Tornado touched down briefly in a field. Hail up to 3/4 inch in diameter damaged crops.
Wobe (Ward County)	1	5:00 p CST			0	0	4	4	Thunderstorm Winds Hail
									Golfball size hail battered crops, damaged buildings, dented automobiles and dented campers. Thunderstorm winds damaged trees and a mobile camping home.
Blaisdell (Mountrail County)	1	5:00 p CST			0	0	4	0	Thunderstorm Winds
									Strong thunderstorm winds turned over a combine and school bus; destroyed a quonset hut; downed trees and power lines; and damaged buildings.
Bowbells (Burke County)	1	5:00 p CST			0	0	3	0	Thunderstorm Winds
									Strong thunderstorm winds knocked over large trees.
Mohall 20E & 1N (Bottineau County)	1	5:30 p CST	Short	Narrow	0	0	0	0	Tornado (FPP 000)
									Tornado touched down briefly. No damage reported.
Glen Ullin 4SW (Morton County)	7	6:20 p CST			0	0	4	0	Thunderstorm Winds
									Strong thunderstorm winds lifted the roof off a storage shed; broke windows; blew a roof off a barn; damaged a corral; and damaged trees and shrubs.
Portal (Burke County)	7	6:52 p CST			0	0	0	0	Hail
									Golfball size hail. No damage reported.
Elgin 14N (Grant County)	7	7:25 p CST			0	0	4	0	Thunderstorm Winds
									Strong thunderstorm winds demolished a chicken shed and a grain bin.
Moffit 15W (Burleigh County)	10	5:26 p CST			0	0	0	0	Hail
									Golf ball size hail. No damage reported.
Mapleton 1S (Cass County)	10	5:28 p CST	2.0	25	0	0	0	0	Tornado (FPP 011)
									Tornado touched down briefly. No damage reported.
Moffit (Burleigh County)	10	5:45 p CST			0	0	0	0	Hail
									Golfball size hail. No damage reported.
Hunter (Cass County)	10	5:45 p CST			0	0	0	0	Hail
									Hail 1-1/2 inches in diameter. No damage reported.
Casselton 3N (Cass County)	10	5:50 p CST			0	0	0	5	Hail
									Golfball size hail damaged area crops.
Fargo 5N (Cass County)	10	6:05 p CST							Funnel
Argusville (Cass County)	10	6:46 p CST			0	0	0	0	Funnel
Linton 8W (Emmons County)	10	7:00 p CST			0	0	3	4	Thunderstorm Winds Hail
									Strong thunderstorm winds knocked over cottonwood trees, and hail damaged crops.
Venturia (McIntosh County)	10	7:20 p CST			0	0	2	0	Thunderstorm Winds
									Strong thunderstorm winds blew down old buildings.
Wishek 15S (McIntosh County)	10	7:35 p CST							Funnel
Bowman (Bowman County)	11	10:00 p CST			0	0	4	0	Thunderstorm Winds
									Strong thunderstorm winds (measured at over 75 mph) damaged buildings and blew but windows.
<b>NORTH DAKOTA</b>									
Reeder 9S (Adams County)	11	10:10 p CST			0	0	5	0	Thunderstorm Winds
									Strong thunderstorm winds demolished two barns and a cattle shed; ripped out trees; tipped over radio and TV towers; and turned over a grain elevator.
Hettinger (Adams County)	11	10:50 p CST			0	0	5	5	Thunderstorm Winds
									Strong thunderstorm winds blew the roof off a grandstand; demolished a machine shed; ripped eaves and shingles on a barn; damaged several buildings; overturned a semi; uprooted trees; and damaged a power sub station. The damage was so severe that the National Guard was needed to help clean up debris. The strong winds severely damaged crops.
Shields (Grant County)	12	12:30 a CST			0	0	4	0	Thunderstorm Winds
									Strong thunderstorm winds damaged two mobile homes, a barn, and a garage; knocked out windows; and uprooted trees.
Selfridge/Fort Yates (Stout County)	12	12:55 a CST			0	0	6	5	Thunderstorm Winds
									Strong thunderstorm winds knocked over power lines; turned over trailer homes; damaged the high school roof; roofs on houses; and telephone lines; and blew over trees. The winds severely damaged small grains.
Linton/Hague/Strasburg (Emmons County)	12	1:30 a CST			0	0	6	0	Thunderstorm Winds Heavy Rain
									Strong thunderstorm winds uprooted power transmission poles and trees; blew over silos; blew large trees into houses; and blew down buildings. Heavy rains flooded store floors and washed out a culvert.
Zeeland (McIntosh County)	12	1:45 a CST			0	0	4	4	Thunderstorm Winds
									Strong thunderstorm winds knocked down power transmission poles; damaged crops and uprooted trees; and leveled a storage shed.
Wishek (McIntosh County)	12	1:47 a CST							Funnel
New England (Hettinger County)	12	2:07 a CST							Funnel
Gackle 14SW (Logan County)	13	9:00 p CST			0	0	3	4	Thunderstorm Winds
									Strong thunderstorm winds demolished a chicken coop; tore a door off a shop; scattered hay; killed chickens and geese; destroyed a barn wall and pole barn; and destroyed two grain bins.
Marion (LaMoure County)	13	Night			0	0	5	4	Lightning
									Lightning bolt caused a fire that burned down a barn, and destroyed crops in the barn.
Bowbells 3E (Burke County)	15	5:00 a CST			0	0	3	0	Lightning
									Lightning bolt blew a hole in a roof.
Devils Lake 14E (Ramsey County)	15	6:08 p CST							Funnel
Adams 10SW (Walsh County)	15	6:10 p CST							Funnel
Edmore 1W (Ramsey County)	15	6:15 p CST	1.5	25	0	0	2	0	Tornado (FPP 111)
									Tornado touched down and destroyed trees, totaled a pole barn, and damaged a house.
Lakota 7N (Nelson County)	15	6:37 p CST	Short	Narrow	0	0	0	0	Tornado (FPP 000)
									Tornado touched down briefly in a field without causing any damage.
Rogers (Barnes County)	15	6:45 p CST			0	0	0	5	Hail
									Golfball size hail severely damaged sunflowers and corn.
Cooperstown 15SE (Steele County)	15	7:25 p CST							Funnel
Northwood 7SW (Steele County)	15	8:21 p CST							Funnel
Dazey 3W (Barnes County)	15	8:53 p CST							Funnel
New Salem 10NE (Morton County)	18	2:30 p CST			0	0	4	0	Thunderstorm Winds Funnel
									Funnel sighted during storm. Strong thunderstorm winds knocked a silo into a barn severely damaging the silo and barn.
Mandan (Morton County)	18	3:40 p CST			0	0	2	0	Thunderstorm Winds
									Strong thunderstorm winds knocked down trees.
Bismarck (Burleigh County)	18	3:48 p CST			0	0	0	0	Thunderstorm Winds
									Strong thunderstorm winds of 60 mph were recorded by an off duty NWS employee. No damage reported from winds.

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JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	
					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS		
<b>NORTH DAKOTA</b>										<b>NORTH DAKOTA</b>										
Bismarck/Mandan (Burleigh/Morton Counties)	18	Afternoon & Evening			0	0	5	0	Heavy Rain	Grenora (Williams County)	30	1:00 p CST							Funnel	
		Heavy rains caused streets to buckle; flooding of streets and basements; caused some streets to buckle; and knocked out phone service.								Crosby 20SE (Divide County)	30	1:30 p CST			0	0	0	5	Hail	
Stanley (Mountrail County)	19	3:00 p CST							Funnel	Golfball size hail damaged crops.										
Minot (Ward County)	21	2:10 a CST			0	0	0	4	Hail	Bowbells (Renville County)	30	2:00 p CST			0	0	0	4	Hail	
		Hail 3/4 inch in diameter severely damaged gardens and area crops.								Golfball size hail damaged crops.										
Wahpeton 4N (Richland County)	21	1:28 p CST			0	0	4	5	Funnel, Hail	Mohall 8W (Renville County)	30	2:00 p CST			0	0	0	5	Hail	
		Funnel sighted. Ping pong ball size hail damaged several planes and crops.								One inch size hail demolished crops.										
Fairfield 8W (Billings County)	21	3:30 p CST			0	0	3	0	Lightning	Westhope (Bottineau County)	30	3:30 p CST			0	0	3	5	Hail	
		A bolt of lightning blew the lid off a salt water tank and caused a fire at an oil rig.								Golfball size hail destroyed crops; and broke screens and windows.										
Dickinson (Stark County)	21	4:25 p CST			0	0	2	5	Thunderstorm Winds Hail	Lake Metigoshe (Bottineau County)	30	3:30 p CST			0	0	4	0	Thunderstorm winds	
		Hail 3/4 inch in diameter severely damaged crops. Strong thunderstorm winds knocked doors off a quonset hut.								Strong thunderstorm winds toppled trees; battered boats; caved in the wall of a store; and tore loose a skylight.										
Ray (Williams County)	21	5:21 p CST			0	0	0	3	Hail	New Salem 10W (Morton County)	30	4:03 p CST	.5	90	0	0	0	3	Tornado (FPP 002)	
		Hail 3/4 inch in diameter damaged crops.								Tornado touched down briefly in a grain field and damaged crops.										
Mott (Hettinger County)	21	5:42 p CST			0	0	3	4	Thunderstorm Winds	Esmond (Benson County)	30	5:00 p CST			0	0	0	3	Hail	
		Strong thunderstorm winds blew over a grain bin.								Hail 3/4 inch in diameter damaged crops.										
Mercer 5N (McLean County)	21	6:37 p CST			0	0	0	4	Hail	Coleharbor 5W (McLean County)	30	5:00 p CST			0	0	4	4	Hail	
		Golfball size hail damaged crops.								Baseball size hail damaged vehicles and crops.										
Wilton 8NE (Burleigh County)	21	7:00 p CST			0	0	0	4	Hail	Mandan 10SW (Morton County)	30	5:00 p CST			0	0	0	4	Hail	
		Golfball size hail severely damaged crops.								Golfball size to tennis ball size hail damaged crops.										
Keene (McKenzie County)	21	7:07 p CST							2 Funnels	Underwood 5W (McLean County)	30	5:10 p CST							Funnel	
Mandaree 10N (Mountrail County)	21	7:40 p CST							Funnel	Underwood 20W (Mercer County)	30	5:16 p CST							Funnel	
Wilton 9N (McLean County)	21	7:40 p CST			0	0	0	0	Hail	Mandan 15SW (Morton County)	30	17:20 p CST	28.0	500	0	0	5	4	Tornado (FPP 333)	
		Hail one inch in diameter. No damage reported.								A tornado toppled numerous power transmission towers and poles; wiped out a county bridge; killed at least 20 head of cattle; flipped a trailer; damaged farm buildings; destroyed a quonset hut; blew away 1500 bales of hay; and damaged oat and corn fields. The tornado dissipated about 6 pm CST after crossing the Missouri River into Southern Burleigh County.										
Sanger (Oliver County)	21	8:36 p CST			0	0	0	0	Hail	Mandan (Morton County)	30	5:45 p CST			0	0	0	0	Hail	
		Walnut size hail. No damage reported.								Golfball size hail. No damage reported.										
Grenora (Williams County)	21	8:57 p CST			0	0	4	0	Thunderstorm Winds	Heimdal 3N (Wells County)	30	5:47 p CST	Short/Narrow	0	0	0	0	0	Tornado (FPP 000)	
		Strong thunderstorm winds downed power lines and knocked out power.								Tornado touched down briefly. No damage reported.										
Crosby (Divide County)	21	9:00 p CST			0	0	0	5	Hail	Bismarck (Burleigh County)	30	5:50 p CST			0	0	3	0	Hail	
		Hail up to one inch in diameter severely damaged crops.								Hail one inch to golfball size hail damaged a car windshield.										
Grassy Butte (McKenzie County)	22	3:00 p CST			0	0	0	4	Hail	Maddock (Benson County)	30	5:51 p CST			0	0	0	5	Hail	
		Golfball size hail damaged crops.								Golfball size hail damaged crops.										
Hettinger (Adams County)	22	4:40 p CST			0	0	0	5	Hail	Underwood (McLean County)	30	5:56 p CST			0	0	0	3	Hail	
		Hail up to one inch in diameter severely damaged crops.								Baseball size hail damaged crops.										
Ypsilanti (Stutsman County)	23	6:51 p CST			0	0	0	0	Hail	Devils Lake (Ramsey County)	30	6:08 p CST			0	0	2	0	Thunderstorm Winds	
		Golfball size hail. No damage reported.								Strong thunderstorm winds, measured at 69 mph, broke tree limbs.										
Ypsilanti 15E (Barnes County)	23	7:02 p CST			0	0	0	5	Hail	New Rockford (Eddy County)	30	6:46 p CST			0	0	4	0	Lightning	
		Hail 1-3/4 inches in diameter severely damaged crops.								Lightning drilled a hole in a roof and damaged two rooms; broke windows; and burned out television sets.										
Elgin 7N & 1E (Grant County)	24	2:15 p CST	Short/Narrow		0	0	0	0	Tornado (FPP 000)	Hatton (Traill County)	30	9:30 p CST			0	0	0	3	Thunderstorm Winds	
		Tornado touched down briefly in a field. No damage reported.								Strong thunderstorm winds blew over corn stalks; flattened grain fields; and broke tree limbs.										
Carson (Grand County)	24	3:45 p CST			0	0	0	4	Hail	Oriska (Barnes County)	30	10:22 p CST			0	0	0	5	Hail	
		Hail up to one inch in diameter damaged crops.								Ping pong ball size hail damaged crops.										
White Shield (McLean County)	25	4:40 p CST							Funnel											
Medora (Billings County)	28	11:59 p CST			0	0	4	0	Thunderstorm Winds											
		Strong thunderstorm winds damaged power lines causing power outages																		

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>33 OHIO</b>									
Montgomery County	13	4:11 PM EST	-	-	0	0	4	0	High Wind Lightning
A thunderstorm with strong winds and frequent lightning damaged buildings and downed several trees. Lightning strikes started several fires.									
Scioto County	13	6 PM	-	-	0	0	4	0	High Wind
A thunderstorm moved across the county uprooting trees and damaging several buildings.									
Newport, Washington County	28	6 PM	3	50	5	0	5	0	Tornado (F2) OH to WV
A small tornado touched down along Ohio Route 7 southwest of Newport and had a hit-and-run path across the Ohio River into West Virginia. The storm destroyed 5 trailers and one house and damaged several other structures. Five minor injuries occurred to people in Ohio.									
<b>34 OKLAHOMA</b>									
Beaver, Beaver County	1	1 afternoon			0	0	4	0	Lightning
Lightning set fire to a barn full of hay. Damages estimated at over \$15,000.									
Tishomingo, Johnston County	4	morning			0	0	?	?	Flooding
Heavy rain during the night and early morning caused extensive flooding. Officially the rainfall total at the Coop Observers gage was 4.90 inches with unofficial reports up to 11 inches. Businesses, houses, farm irrigation systems, and rural water lines were damaged, no dollar estimate was available.									
Waynoka, Woods County	8	4:15a	1/2	20	0	0	4	?	Tornado (F1)
The tornado touched down about 3 1/2 miles east of Waynoka. Ten utility poles and a rural house were damaged.									
Thomas, Custer County	8	night			0	0	3	?	Wind
Wind blew down a barn and caused other minor damages. Estimated damages total \$5,000.									
Tonkawa, Kay County	16	2:30p	20	10	0	0	?	?	Tornado (F1)
The tornado touched down 5 miles southwest of Tonkawa and traveled to near Pechham. The condensation funnel apparently never touched the ground, although there was a swirl of dust on the ground below the funnel. Marble size hail and rainfall of approximately one inch were reported. There were reports of damage to barns, trees, utility poles, etc along the path, but no dollar estimate was given.									
Pawnee, Pawnee County	20	afternoon			0	0	0	3	Wind
A gust front ahead of a thunderstorm blew away hay which had been cut and windrowed as a man was trying to bale it. Damage was estimated at \$4,000.									
Broken Arrow, Tulsa County	20	7:30p	1/2	narrow	0	5	5	0	(F1) Tornado, Wind, and Hail
A small tornado which touched down and slipped along, touching three times in all, along with 100 MPH wind, and golfball size hail damaged a mobile home park. Five people were injured, 12 trailer houses, and several cars were damaged. Estimates exceeded \$50,000.									
Pocola, LeFlore County	21	3:00p	1/2	30	0	0	4	0	Tornado (F2)
A tornado southwest of Pocola destroyed a trailer house and damaged a house and some out buildings. Damages were estimated to be near \$50,000.									
Fryor, Mayes County	21	6:30p	1/2	10	0	0	4	0	Tornado (F1)
A tornado damaged a small business, and a trailer house. Damages estimated at less than \$50,000.									
East	21	evening			0	0	6	0	Wind, Lightning, and Hail
Afternoon temperatures over 100 degrees set off violent thunderstorms over the eastern 1/2 of the state. Winds were estimated at near 100 MPH, hail to golfball size with a considerable amount of lightning. Extensive damages over the large area were estimated at over \$500,000.									
<b>OKLAHOMA</b>									
Oklahoma City, Oklahoma County	27	evening			0	0	5	0	Flooding
Nearly 6 inches of rain caused extensive damage in southwestern Oklahoma City. Approximately 20 people had to flee their homes. Houses and apartments near small creeks were flooded and one roof on an old landmark restaurant collapsed. Damages were estimated at near \$300,000.									
Lawton, Comanche County	29	3:45p			0	0	5	0	Lightning
Lightning started a fire in a duplex which caused \$85,000 in damages.									
Claremore, Rogers County	30	morning			0	0	?	?	Flooding
Nearly 4 inches of rain caused flooding in Claremore. Exact estimates not available.									
Tahlequah, Cherokee County	30	morning			0	0	?	?	Flooding
Nearly 6 inches of rain caused flooding in Tahlequah. Exact dollar estimates on damages not available.									
Prague, Lincoln County	30	afternoon			0	0	?	?	Flooding
Nearly 4 inches of rain flooded the area around Prague. A crossing over a creek was washed out. Exact dollar estimate on damages were not available.									
Statewide		entire month			1	?	5	?	Heat
On the 21st a 68 year old man died while chopping wood with the temperature near 107. Over 400 head of cattle died during several days of over 100 degree temperatures. There were also losses to swine, poultry, and to crops. Damages were in excess of \$250,000.									
<b>35 OREGON</b>									
NONE REPORTED									
<b>36 PENNSYLVANIA, Eastern</b>									
Pioga and Lackawanna Counties	13	1500 to 1600 EDT			0	1	6	0	Wind, Heavy Rain, Electrical
Thunderstorms over the northern portion of Eastern Pennsylvania concentrated most of their damage in Wellsboro, Pioga County, and the north and east portions of Lackawanna County. In Wellsboro many large trees were blown down with several of them striking houses and causing damage. In Lackawanna County many trees were blown down with some landing on buildings or automobiles. The strong winds destroyed a mobile home, severely damaged a large garage and blew large roofs off buildings under construction. Many other buildings sustained varying degrees of damage. Downed trees brought down utility lines and blocked some roads. Heavy rain caused some roadway and basement flooding in Lackawanna County and lightning caused damage and a minor fire in Wellsboro. There was one minor injury from flying glass.									
Eastern Pennsylvania	20	1600 to 2400 EDT			0	0	5	4	Heavy Rain, Wind, Electrical
Thunderstorms with heavy downpours moved across Eastern Pennsylvania except for northernmost sections. The heavy rains caused widespread drainage flooding resulting in some washouts and mudslides. Rainfall amounts of 1 to 3 inches were common with as much as 4.5 inches in Chester County. Wind gusts caused considerable tree damage with some trees and utility lines down. Some roof damage also occurred with the most wind damage in the southern portions of Franklin, Adams and York Counties. Wind gusts of 71 MPH were recorded in Hanover, York County. Lightning caused damage to a number of buildings including some fires, but most of the damage was minor.									
Mount Bethel, Northampton County	20	1:30 EDT	4.0	67	0	0	4	0	Tornado (F2)
A tornado moved from SSW to NNE skipping along for the first 2 3/4 to 3.0 miles then on the ground the last 3/4 to 1 miles. Many residents observed the tornado and all saw two distinct funnels side by side 50 feet apart. The tree fall was to the west on the west side of the path and to the north and northeast on the east side. There were at least 200 large trees down, ripped from the roots or snapped off at different levels. Since it is not a heavily populated area only minor damage occurred to houses, barns and outbuildings along the path.									
Ringtown Valley, Union Township, Schuylkill County	26	2:00 EDT	?	?	0	0	4	2	Tornado (F2)
A tornado observed by local residents destroyed a greenhouse, damaged a barn and uprooted many trees in an apple orchard carrying them 100 yards. A swath was also cut through a corn field.									

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JULY 1981

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					KILLED	INURED	PROPERTY	CROPS		
<b>PENNSYLVANIA, Eastern</b>										
Mahoning and Town- ensing Townships, Carbon County	26	2030 to 2230 EDT			0	0	4	2	Wind	Thunderstorm wind gusts damaged roofs, broke off large trees and overturned a mobile home in Townensing Township about 8:30 P.M. Later about 9:00 PM winds sheared off tree tops and damaged the roof of a barn and a house in Mahoning Township. In both locations, residents felt the damage was caused by a tornado, but this could not be confirmed. However, the damage reported in Town-ensing Township was somewhat more suspicious of tornado activity.
Berlinsville Daniels- ville, Lehigh Town- ship, Northampton County	26	2130 to 2140 EDT	4	50	0	2	5	0	Tornado (F3)	The tornado moved across the northwest part of Northampton County completely destroyed three houses, severely damaged two more and caused minor damage to one other. A barn was completely destroyed and the second floor was found 1000 feet to the east fully intact. Two garages were also completely destroyed. Many trees were up-rooted or broken off at varying heights. The two injuries were just minor and caused by flying debris. Wind damage was also reported to the east-northeast across northern Northampton County. Tree and roof damage were reported in Bushkill and Washington Town-ship and at Bangor two mobile homes were moved off their founda-tions.
<b>36 PENNSYLVANIA, Western</b>										
Westmoreland County	13	night			0	0	5	?	Heavy rain	Heavy rain caused flash flooding in the Baggaley and Whitney areas. Several homes were severely damaged. There also was a plane crash during the period of heavy rain.
Butler County	20	1400 EDT	shortnarrow	0	0	5	0		Tornado-F2	A tornado touched down 3 miles west of Butler on U.S. Route #22 where the roof was torn off the McKees Motel. At 1342 EDT, wind gust of 63 mph was recorded at the Greater Pittsburgh Airport.
Indiana County	26	1530 EDT	shortnarrow	0	0	5	?		Tornado-F2	A tornado touched down in the Edgewood area near Indiana. The roof was torn off the Indiana Sheraton-Evergreen Inn, and 2 houses and several trailers were badly damaged.
Cambria County	26	1600 EDT	shortnarrow	0	0	4	?		Tornado-F1	A tornado touched down near Lilly causing only minor damage.
Cambria County	26	1605 EDT	shortnarrow	0	0	4	?		Tornado-F1	A tornado touched down in Lower Yoder Township, Near Johnstown, causing only minor damage.
Crawford County	28	1400 EDT	2 narrow	0	4	5	?		Tornado-F2	A tornado moved from the Raundetown area to north of Hydetown Borough, near Titusville. Four people were injured; a home, 2 trailers, and other property badly damaged.
<b>37 RHODE ISLAND — NO REPORT RECEIVED</b>										
<b>38 SOUTH CAROLINA</b>										
Columbia, Richland County, Mayesville, Sumter County, Ruby, Chesterfield County	3	PM	-	-	0	0	4	3	Flash Flood	Heavy downpours of more than three inches in a brief time caused considerable damage to roads and crops in Richland, Sumter and Chesterfield Counties. A number of homes in low areas were flooded.
Lake Marion	3	8:43 PM EDT	1/2	30	0	0	0	0	Tornado (F0)	A small tornado over open lake 2 miles N of I-95 dissipated before reaching land.
Abbeville, Abbeville County, Columbia, Richland County	12	PM	-	-	-	-	4	0	Thunderstorms Lightning Heavy Rain	Lightning damaged or destroyed several homes; killed two cows in Abbeville County. Another thunderstorm caused considerable damage in Columbia, SC.
<b>— SOUTH CAROLINA</b>										
Greenwood, Newberry, Lexington, and Richland Counties	16	PM	-	-	0	2	5	0	Lightning Wind Rain	Heavy thunderstorm caused considerable damage. One person in Greenwood was injured by light-ning. An 8-year-old boy in the rural area near Greenwood was critically injured. A number of homes were damaged by lightning in Central South Carolina.
Beaufort	23	PM	-	-	0	1	4	0	Lightning	One person was injured by lightning; several homes were damaged.
Ritter, Colleton County	25	PM	-	-	1	0	0	0	Lightning	A 16-year-old youth, standing by a car during a thunderstorm, was struck by lightning.
Neeses Orangeburg County	26	7:00 PM EDT	1/4	30	0	0	4	2	Tornado (F1)	A small tornado picked up and demolished mobile home; also caused tree and utilities damage.
Reidville Spartanburg County	29	5:50 PM EDT	-	-	2	0	0	0	Lightning	Two farm workers under a pine tree were killed when lightning struck the tree.
<b>39 SOUTH DAKOTA</b>										
Faith, Meade County	11	7:05 PM All times CST			0	0	?	?	Hail	Severe thunderstorms developed over a large portion of west central South Dakota resulting in hail, golf ball to baseball size.
Harding, Perkins, Corson, Campbell, Walworth, Edmunds, Brown, Marshall, Day, Roberts, northern Ziebach & northern Dewey Counties	11- 12	9 PM to 5 AM			0	0	?	?		Severe thunderstorms moved eastward across the entire length of South Dakota along the northern portion of the state. Hail, chicken egg size up to nine inches in circumference, resulted in 100 % crop loss, damage to numerous buildings and loss of livestock and wild animals. Trees were stripped and large limbs broken. High winds accompanied these storms. Crop and property damage was so extensive total cost of damage was not estimated. Individual storms are listed below.
Lenmon, Perkins Co.	11	9 PM to Midnight			0	0	5	?	High Wind, Hail	Barns on two farms north of Lenmon were destroyed. Winds were estimated at approximately 75 MPH. Many farmers reported hail completely wiped out crops.
Thunderhawk, Corson County	11	9 PM to Midnight			0	0	5	?	High Wind, Hail	Winds estimated at 70-75 MPH destroyed a machine shop and seven metal grain storage bins. Large areas of crops were totally hailed out.
Pollock, Campbell Co.	11	11 PM to -12 2 AM			0	0	5	?	Wind, Hail	A silo was moved three feet off foundation. Power and Telephones were out. Rainfall measured 2.28 inches in two hours.
Eureka, McPherson Co.	12	Midnight to 3 AM			0	0	5	?	Wind, Hail	Winds estimated near 80 MPH 10-20 miles southeast of Eureka des-troyed a number of steel grain storage bins. Hail destroyed numer-ous fields of small grain.
Aberdeen, Brown Co.	12	3:15 AM			0	0	?	?	Wind	Wind was measured at 58 MPH at Aberdeen Weather Service Office. Many tree limbs were broken. Power and communications interrupted.
Grenville, Day Co.	12	4-5 AM			0	0	?	?	Wind, Hail	High winds and hail near one inch in diameter destroyed crops, dam-aged buildings and gas tanks.
Meckling, Clay Co.	14	4:20 PM			0	0	?	?	Hail, Wind	Hail, one inch in diameter, and wind near 50 MPH caused considerable crop loss.
Vermillion, Clay Co.	14	4:40 PM			0	0	?	?	Wind	Wind estimated near 60 MPH, small hail and heavy rain.

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					KILLED	INJURED	PROPERTY	CROPS		
<b>— SOUTH DAKOTA</b>										
Beresford, Lincoln and Union Counties	14	5:25-5:40 PM			0	0	?	?	Wind	
									Winds estimated at 50-55 MPH damaged an apartment building and other homes. Power and communication lines were coppled.	
Alcester, Union Co.	14	5:40 PM			0	0	?	?	Wind	
									Wind, estimated near 60 MPH caused some damage to a commercial grain elevator and other property.	
Martin, Bennett Co.	15	1230 PM			0	0	?	?	Wind, Hail	
									Hail ranging from marble size to one inch in diameter, destroyed crops five miles northeast of Martin. Hail piled three inches deep. 1.2 to 2 inches of rain fell in fifteen minutes.	
Philip, Haakon Co.	16	9-11 AM	13	*6	0	0	?	?	Hail	
									Hail, mostly golf ball size, caused 50-100% damage to crops. A 300 acre field of winter wheat "looked like a floor".	
Martin, Bennett Co.	16	9-11 AM			0	0	?	?	Hail	
									Hail, up to golf ball size, ruined 2,000 to 3,000 acres of wheat, soybeans, corn, etc., 10-20 miles east of Martin.	
Pierre, Hughes County	16	12 PM			0	0	?	?	Wind	
									High wind, recorded at 82 MPH, buffeted Pierre and other areas in Hughes County.	
Pine Ridge, Southern Shannon County	16	1:10 PM			0	0	?	?	Hail, Wind	
									Hail and high wind caused crop and personal property damage. A semi trailer truck was blown over.	
Rapid City, Pennington County	18	7 PM			0	1	?	?	Lightning	
									Lightning struck a nine year old boy in Rapid City. He was hospitalized for several days.	
Kimball, Brule County	19	3:30 PM			7	?	0	2	6	Wind, Hail
									Winds 60-80 MPH and zero visibility due to rain and hail caused trailer camper to go off interstate and overturn six and one-half miles west of Kimball. Two people were injured. High wind and hail, mostly marble size, resulted in heavy damage to a motel in Kimball.	
Armour, Douglas Co. Avon, Bon Homme Co. Wagner, Charles Mix Corsica, Douglas Co.	19	4:40 PM			0	0	6	?	Wind, Hail	
									Severe thunderstorms with widespread hail between marble size to one and one-quarter inches in diameter and winds up to 80 MPH caused extensive crop damage, blew over center pivot irrigation, destroyed grain bins, silos, and trailer homes.	
Wagner and Dante in Charles Mix Co., Avon, Bon Homme Co.	19	5:30 PM CST to 5:45 PM			0	2	?	?	Tornado (FO)	
									Severe thunderstorms spawned a tornado which touched down 8 miles southeast of Wagner and remained on ground to three miles south of Avon. Extensive damage was reported. Two people were slightly injured due to flying debris.	
Codington, Deuel, Hamlin, Kingsbury and Brookings Counties	19	6-10 PM			0	0	5	?	Hail, Wind	
									Severe thunderstorms moved eastward through area. Wind gusts to near 65 MPH, hail up to 1 1/4 inch in diameter caused widespread personal property and crop damage. Rainfall was reported up to five inches in one hour.	
155SW Sisseton, Roberts Castlewood, Hamlin Co. Estelline, Deuel Co. Strandburg & LaBolt in Grant County	21	3-6 PM			0	0	6	?	Hail, Wind	
									A line of severe thunderstorms moved through extreme northeast South Dakota during the afternoon. High winds near 55 MPH, hail, marble size to predominantly golf ball size and very heavy rain buffeted the area. Many fields were completely destroyed. Numerous homes, farm buildings, etc. were damaged by hail. Rainfall up to five inches in an hour gullied many fields. Estimated crop loss was not determined.	
Fairburn, Custer Co. Hermosa, Pennington Co. Custer, Custer County	22	3:25 AM			0	0	5	?	Hail	
									Golf ball size to baseball size hail caused considerable personal property damage to homes, cars, gardens, trees, power and communication lines.	
<b>— SOUTH DAKOTA</b>										
Oglala, Shannon Co.	22	5 AM			0	0	?	?	Tornado (FO)	
									No damage or injuries were reported.	
Mt. Vernon, Davison Co.	22	6 AM			0	0	5	?	Lightning	
									Lightning struck an unoccupied rural home and was destroyed by fire.	
Webster, Day County	22	2:10 PM			0	0	0	0	Funnel Cloud	
									A funnel cloud was reported ten miles west of Webster. No injuries or damage was reported.	
Day, Roberts, Codington, Grant, Hamlin & Deuel Counties	22	2-3 PM			0	0	?	?	Hail, Wind	
									A wide band of thunderstorms from 15 miles southwest of Sisseton to Estelline resulted in hail mostly golf ball size and caused widespread and considerable damage mostly to crops. There was minor damage to buildings. No crop damage was determined.	
7 S Watertown, Northern Hamlin County	22	2:30 PM			0	0	5	?	Tornado (FO)	
									Tornado destroyed several wooden grain storage bins, garage and other farm buildings. A pickup truck and driver was picked up off a road and set down in a field sixty feet away. No injuries were reported.	
BM Clear Lake, Deuel County	22	3 PM			0	0	0	0	Tornado (FO)	
									No damage or injuries reported.	
AN Estelline, Hamlin County	22	3:30 PM			0	0	0	0	Tornado (FO)	
									No damage or injuries reported.	
Brookings, Brookings County	22	2-3:30 PM			0	0	?	?	Hail, Heavy Rain	
									Wind near 60 MPH and hail, marble to golf ball size, caused considerable damage to northern Brookings County.	
Vale, Beadle County	22	3 PM			0	0	?	?	Hail	
									Golf ball size hail	
Huron, Beadle County	22	7:20 PM			0	0	?	?	Hail	
									Three quarter inch hail reported at the National Weather Service Office in Huron.	
Mission, Todd County	22	9:15 PM			0	0	0	0	Funnel Cloud	
									A funnel cloud was reported near Mission. No reported damage or injuries.	
									Numerous thunderstorms developed over most of South Dakota on July 22 giving much needed rainfall to drought stricken areas. However, some severe thunderstorms developed with a considerable amount of hail causing widespread crop damage. A few funnel clouds and tornadoes also developed. No injuries or deaths were reported. Estimate of crop loss will not be reported due to fear of inadequately establishing the correct amount for disaster loans.	
Groton, Brown County Pierpont, Day County	23	3:30-6 PM			0	0	?	?	High Wind, Hail	
Sisseton, Roberts Co.	23	3:30-6 PM			0	0	?	?	High Wind, Hail	
Wilmot, Summit, Coronado in Roberts County, MtBank, Grant Co.	23	3:30-6 PM			0	0	?	?	High Wind, Hail	
Willow Lake, Clark Co. Bancroft, Kingsbury Co.	23	3:30-6 PM			0	0	?	?	High Wind, Hail	
Wilmot, Roberts Co.	23	4:20 PM			0	0	?	?	Funnel Cloud	
									Numerous thunderstorms, some severe, pounded the northeastern portion of South Dakota. Many square miles of crops were destroyed by hail, marble to baseball size. Hail piled up to eight inches deep on the ground. A tornado was reported near Wilmot; however, later reports indicated the sighting was a funnel cloud. No touch down was reported. High wind, estimated near 70 MPH was common in many thunderstorms. Personal property, buildings, trees, power and communications lines suffered considerable damage; however, estimate of damage was sketchy.	
Meadow, Perkins Co.	23	4:00-4:45 PM			0	0	?	?	High Wind, Hail	
									Hail, marble to golf ball size, wiped out many acres of crops. Hail, piled ten inches high on the ground. Winds of 80 MPH were reported.	
Sturgis, Meade County	23	5:30 PM			0	0	?	?	Hail	
									Golf ball sized hail damaged power transformers and caused power outages for several hours.	

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

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PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>SOUTH DAKOTA</b>									
Black Hawk, Southern Meade County	23	6-6:30PM			0	0	?	?	Hail, Funnel Cloud
									Black Hawk, northwest of Rapid City, reported hail up to one and one-half inches in diameter. A funnel cloud was also reported. No estimate of hail damage or injuries.
Wall & Quinn in Eastern Pennington County	23	6:20-7PM			0	0	?	?	Tornado (F0) Tornado (F0)
									Two tornadoes were reported just north of Wall and near Quinn. No injuries or damage.
Rapid City, Pennington County	23	6:30-6:45PM			0	1	?	?	Hail, Heavy Rain
									Hail up to one inch in diameter was reported. Hail piled six inches deep. Heavy rain caused street flooding 2-3 feet deep. One youth suffered minor injuries when swept into a culvert by rushing water. No major damage other than power lines and tree limbs.
Parmalee, Todd Co.	23	8:40PM			0	0	0	0	Funnel Cloud
									No touchdown. No report of injuries.
Rosebud, Todd County	23	9:00 PM			0	0	?	?	Wind
									Winds in thunderstorms were reported at 66 MPH.
Spearfish & St. Onge in Lawrence County	23	9:00 PM			0	0	?	?	Hail
									Hail up to golf ball size was reported.
Philip, Haakon County	24	1:30-1:45AM			0	0	?	?	
									Wind was reported at 86 MPH. Severe thunderstorms were scattered throughout southwest South Dakota producing hail, heavy rain and high winds on the afternoon and evening of July 23, 1981. Two tornadoes were sighted in the Quinn area.
Yankton, Yankton Co.	31	9:27 AM			0	1	0	0	Lightning
									Lightning struck close to a fifteen year old boy causing minor injuries.
5 NW Whitewood, Lawrence County	31	7:15-7:30 PM			0	0	?	?	Hail
									Baseball sized hail was reported.
12 W Watertown, Codington County	31	7:50-8:05 PM	4	?	0	0	?	?	Hail
									Golf ball size hail was reported and wiped out crops about four miles long. No estimate of width or damage.
<b>40 TENNESSEE</b>									
Near Townsend, Blount County	11	1:00 p. EST				1			Lightning
									A 17 year old girl was struck by lightning as she swam to shore on the Little River. She was shaken but not seriously injured. Others in the group had left the water when thunder had begun.
Brush Creek, Smith County	16	2:30 p.					5	?	Flash Flooding
									Rainfall of 3 to 5 inches falling in 90 minutes caused the waters of Brush Creek to rise out of its banks swamping the town that bears its name. The flood described by some residents as the worst since the flood of 1928 damaged badly three houses and caused some damage to several others. At one point the water was 3 feet deep in one house. About 200 yards of L&N track one mile east of the town, was completely washed out. Highway 53 sustained some damage as did crops planted on land along the creek.
Erwin, Unicoi County	16	3:30 p. EST					5	?	Flash flooding
									Heavy rains starting at 2:30 p.m. swelled streams in Unicoi to bankful and beyond. U.S. Highway 23 was closed. The worst damage occurred in the Rock Creek area on the north side of Erwin and in the Limestone Cove area. The main bridge into Erwin on U.S. 23 over Rock Creek was covered by 6 feet of water. Several private bridges over Rock Creek were washed out. Nine people had to be rescued from homes with as much as 3 feet of water inside. Several stores were flooded and a section of the Clinchfield track was washed out north of Erwin. In the Limestone Cove area, Highway 107 was closed near Iron Mountain when a bridge was washed out. Flood waters were reported receding by late evening around 9 p.m.
<b>TENNESSEE</b>									
Nashville, Davidson County	17	12:30 p.					?		Lightning
									Lightning ignited a gasoline storage tank holding 1.3 million gallons of regular leaded gasoline. The fire was contained after 3 hours.
Memphis, Shelby County	19	Unknown			1	2			Heat
									A 37-year-old woman died and 2 others were in serious condition after being overcome by the heat. The high temperature hit 97 degrees. The woman who died was found in apartment without air conditioning.
Pleasant View, Robertson County	20	8:00 p.							Funnel cloud
									A funnel cloud was reported during a thunderstorm. Winds with the thunderstorm did some damage to crops and trees.
Centerville, Hickman County	20	Late p.					5		High wind
									High winds with a heavy thunderstorm did considerable damage to the roofs of several school buildings.
Jackson, Madison County	24	2:08 p.					?		High wind
									Winds gusted to 57 miles an hour at the Jackson Airport as a thunderstorm moved across the area. Trees were downed and small outbuildings were affected, but no serious damage was reported.
Lenoir City, Loudon County	24	Late p.					4		Lightning
									Strong winds toppled trees through the Lenoir City area. A home on Beals Chapel Road was completely destroyed by a fire caused by lightning.
Collierville, Shelby County	25	3:15 p.					?		Wind, funnel cloud
									Winds with a thunderstorm caused scattered tree damage in Collierville especially on the square. A funnel cloud was observed by a police officer as the thunderstorm moved southward through the town.
Kimball, Marion County	27	2:00 p.					5		High winds, hail
									Signs, buildings, and windows were destroyed or damaged by high winds. One large gas sign was blown across the street onto another building. The winds were powerful enough to turn over the trailer on an 18-wheel rig. Portions of a restaurant roof were destroyed with considerable water damage occurring inside. Large hail damaged some autos.
Centertown, Warren County	27	4:00 p.					5		Lightning
									Lightning hit a business in Centertown causing a fire which destroyed the building and its contents. Lightning also hit a resident knocking out a number of the outlets, but causing no fire.
Tazewell, Claiborne County	28	Late p.					4		Lightning
									Lightning struck the chimney of the Soldiers Memorial Middle School splitting a portion of it down the middle. Debris from the chimney knocked two holes in the school's roof.
<b>41 TEXAS, Northern</b>									
Tarrant County	3	All times CST 9:00 p-Midnt			0	0	?	?	Flash Flooding
									Heavy thunderstorm rains resulted in widespread minor flash flooding, mainly in the Fort Worth, Arlington, and Burleson areas. A number of cars were stalled and roads closed by high water. The weight of water collapsed the roof of an apartment complex in Arlington. Five inches of rain were reported in Crowley.
Johnson County	3	9:30 p-10:30 p			0	0	?	?	Flash Flood
									Minor flooding forced the closing of some streets in northern Johnson County, mainly in and near Joshua, Burleson, and Cleburne.
Tarrant and Dallas Counties	4	Midnt-6 a			0	0	?	?	Flash Flooding
									Heavy thunderstorm activity continued after midnight on an intermittent basis in Tarrant County with heavy rainfall also spreading into Dallas County. By the morning of July 4th, over 5.3 inches of rain had fallen in Garland, sending creeks out of their banks. Only minor damage occurred. Early Saturday morning, water flooded the basement of John Peter Smith Hospital in Fort Worth, resulting in a major power outage throughout the building.
Bowie County	4	6:00 a-			0	0	?	?	Flash Flood
									Almost 6 inches of rain fell in the DeKalb area of northwestern Bowie County between 6:00 AM and 12:30 PM. Several creeks went out of their banks, flooding several roads and Highway 82.

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					KILLED	INJURED	PROPERTY	CROPS	
<b>TEXAS, Northern</b>									
Sherman, Grayson County	4	5:10 p			0	0	?	?	Lightning
		Lightning set fire to and destroyed an oil storage tank in eastern Sherman.							
Kilgore, Gregg County	5	Aftn.			0	0	?	?	Flash Flood
		Over 5 inches of rain caused flash flooding on several creeks in the Kilgore area. Only minor road damage was reported.							
8 E Corsicana, Navarro County	5	6:15 p	Short	Narrow	0	0	2	0	Tornado (F0)
		A small tornado touched down briefly in the Powell community, throwing a shdb across Highway 31. No other damage occurred.							
2 N Tyler, Smith County	11	6:10 p			0	0	0	0	Funnel Cloud
		The funnel cloud dissipated without touching down. Marble size hail occurred in the same area.							
Nacogdoches, Nacogdoches County	11	6:30 p			0	0	?	?	Windstorm
		Minor tree and power line damage occurred as strong thunderstorm winds swept across Nacogdoches.							
5 NE Canton, Van Zandt County	11	8 p			0	0	4	0	Windstorm
		One home was partially unroofed and a number of outbuildings received damage from strong thunderstorm winds.							
Palestine, Anderson County	27	Aftn			0	0	3	0	Windstorm
		Thunderstorm winds heavily damaged the wooden frame of a church under construction in Palestine.							
Southwestern Dallas County	28	3:45 p			0	0	0	0	Funnel Cloud
		A funnel cloud was sighted in the vicinity of Red Bird Mall. The funnel cloud dissipated without touching down.							
<b>41 TEXAS, Southern</b>									
Newton Co.	2	1300 CST			0	0	4	?	Wind
Jasper Co.	2	1345 CST			0	0	4	?	Wind
Hardin Co.	2	1430 CST			0	0	5	?	Wind
Jefferson Co.	2	1530 CST			0	0	5	0	Lightning
Chambers Co.	2	1645 CST			0	0	5	?	Wind
Chambers Co.	2	1730 CST			0	0	0	0	Waterspouts
Galveston Co.	2	1745 CST			0	0	4	0	Wind
		Severe thunderstorm cells developed on the western end of an east-west line of storms which extended into Texas from Louisiana. The line moved southwestward during the afternoon from near Newton in Newton County, passing near Kirbyville in Jasper County, and near Koutz and Silsbee in Hardin County. Scattered wind damages occurred through rural and forest areas. As the storm cells passed through northwest Jefferson County, winds decreased but frequent lightning strokes hit ground to southeast of the storms. Widespread damages were reported to utility equipment in Beaumont and Port Arthur due to lightning. In the Port Neches-Groves area some 10 lightning related fires were reported, several said to have been appliances or televisions in homes. A storm cell regenerated upon approaching the coastline in northern Chambers County where it produced localized wind damages as it passed through the Hankamer-Anahuac areas. As the storm moved over northern Galveston Bay several waterspouts were formed. More wind damages were reported on the west side of Galveston Bay in Galveston County before the storm weakened.							
Galveston Co.	3	0830 CST			0	0	0	0	Waterspouts
		Two waterspouts formed offshore from Stewart Beach on the Gulf of Mexico side of Galveston Island. The spouts moved southwest parallel to shore with associated heavy thunderstorms and caused no damage.							
Victoria Co.	3	1425 CST							Funnel cloud
		A funnel cloud moved over the north side of the city of Victoria in association with moderate developing showers. The funnel remained aloft.							
Jackson Co.	4	1310 CST							Funnel clouds
		Heavy thunderstorms moving through Jackson County produced several small funnel clouds. Funnels were spotted over and around the city of Edna. None touched ground.							
<b>TEXAS, Southern</b>									
Harris Co.	5	1400 CST			0	0	?	?	Heavy rain
Harris Co.	5	1430 CST							Funnel cloud
Chambers Co.	5	1430 CST			0	0	?	?	Heavy rain
Galveston Co.	5	1445 CST			0	0	5	0	Heavy rain
		Heavy rains fell across these three counties the previous day (July 4) leaving the ground saturated. Afternoon thunderstorms on the 5th intensified inland from the coast and moved slowly southward dropping brief but intense rain onto the already wet ground. Urban flooding resulted as drainage facilities were overloaded. In the Houston area major routes were blocked due to rain of 2 inches downtown and 4.5 inches on the west near Katy. One funnel cloud was spotted by firemen over Voss Road in Houston but it remained aloft. The sudden rains caused a store roof to collapse; no injuries were reported. In Chambers Co. rains hit rural areas east of Galveston Bay; waters shorted electrical cable cutting power to Smith Point. In Galveston Co. the downpours inundated Texas City and the city of Galveston causing serious urban flooding. In Galveston 1.5 inches of rain fell in 15 minutes with 2.8 inches accumulated in the short storm. Major roads and streets were blocked with deep water; vehicles caught on streets were damaged; in a few low areas water threatened houses and stores before receding.							
Cameron Co.	6	1130 CST			0	0	5	?	Heavy rain
		A narrow band of thunderstorms moved northeastward in sequence over Brownsville during the morning dropping very heavy rain. Some parts of the west side received 8 inches of rain before noon. Urban flooding was widespread through the center of Brownsville with up to 3 feet of water in some streets. Water entered and flooded houses in low parts of the Tierra Del Sol neighborhood in addition to other isolated low places. Other parts of Cameron County received far less rain and no flooding.							
Nueces Co.	6	1400 CST			0	0	?	?	Heavy rain
		Early morning rains dropped about an inch of rainfall on Corpus Christi saturating the ground. Then between noon and 2 pm heavy thunderstorms dropped another 3.3 inches over the city causing rapid buildup of water in streets, ditches, and low areas. No great damages were reported during the urban flooding.							
Harris Co.	7	Morning			0	1	4	0	Lightning
		Lightning struck a large commercial sign in northwest Houston causing the supporting pole to weaken and collapse. The large structure fell onto passing traffic destroying a pickup truck and injuring its driver, and damaging two other cars.							
Polk Co.	8	1500 CST							Thunderstorm
		Around 3 pm CST or shortly afterward, a man was killed when his plane crashed as he flew in the area of a large thunderstorm. Site of the incident was in woodlands of southern Polk County southwest of the Segno community.							
Webb Co.	8	0945 CST			0	0	6	0	Heavy rain
		Heavy rainstorms created serious flash flooding in the city of Laredo. Early morning storms beginning around 7 am dropped 2-3 inches of rain on the city. Then during mid morning a second storm passed directly over the city and dropped even heavier rains on the already saturated ground. Total rainfall for the storms up to 10 am est was 6.65 inches at Central Power and Light station.							
		Although the intense rains were very localized, they fell directly over Laredo. Water swept down city streets during the second storm, washing out pavement, filling low areas, damaging some drainage facilities, and damaging numerous vehicles. Water entered some houses in scattered low areas throughout the city, but severest flooding was said to have been lowest lying portions of Santo Nino and Chacon Creek neighborhoods where several dozen families had to evacuate. No injuries were reported.							
Liberty Co.	8	1245 CST							Funnel cloud
Harris Co.	8	1330 CST							Funnel cloud
		Heavy thunderstorms moving northward 15 mph produced at least two funnel clouds which were spotted. In Liberty County the first funnel was observed by law officers as it passed near the Ames community. In Harris County another funnel was seen north of Houston. Apparently none touched ground.							
Maverick Co.	8	2345 CST			0	0	?	?	Wind
		A thunderstorm intensified as it moved northwestward through Maverick County toward the city of Eagle Pass. The storm began producing strong wind gusts and scattered property damages around 11:45 pm est as it passed near Eagle Pass and moved into Mexico. Total damages were not believed extensive.							

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					KILLED	INJURED	PROPERTY	CROPS	
<b>TEXAS, Southern</b>									
Newton Co.	9	1815 CST			0	0	0 <sup>4</sup>	C	Hail & Wind
Orange Co.	9	1830 CST			0	0	0 <sup>5</sup>	C	Hail & Wind
Jasper Co.	9	1830 CST			0	0	?	?	Hail & Wind
<p>A damaging severe thunderstorm that developed in extreme western Louisiana moved into southeast Texas. A hail swath of stones up to about 1 inch in diameter as well as strong wind gusts which began near Starks, LA, moved west-southwest, crossed into Texas at 6:15 pm est near Deweyville, and progressed toward Mauriceville in north Orange County and extreme south Jasper County before weakening.</p>									
Fort Bend Co.	10	1415 CST			0	0	?	?	Wind
<p>A band of thunderstorms developed 30 to 60 miles inland from the coast over upper Texas coastal plains. One storm cell near Rosenberg produced strong wind gusts and some scattered damages as it moved westward through central Fort Bend County. Extent of damage was probably not great in the short-lived storm.</p>									
Liberty Co.	10	1530 CST			0	0	4	0	Wind
Chambers Co.	10	1545 CST			0	0	0 <sup>5</sup>	0	Wind
Harris Co.	10	1600 CST			0	0	0 <sup>6</sup>	0	Wind
Harris Co.	10	1710 CST			0	0	4	0	Lightning
<p>A large severe thunderstorm complex developed just inland from upper Galveston Bay during late afternoon. The storm was part of a larger band of storms. The thunderstorm developed from south of Dayton in Liberty County to near Anahuac in Chambers County and began moving westward at 20 mph producing severe damaging wind gusts. Damages were reported around Mont Belvieu and Anahuac in Chambers County. In Liberty County largely marsh and woodlands were affected without much property damage.</p>									
<p>The extreme gusts entered eastern Harris County around 4:00 pm est. Widespread and heavy wind damages occurred at Baytown, Channelview, Morgans Point, and along the Houston Ship Channel. At Morgans Point a large building housing a lounge was totally destroyed by the gusts which removed the roof and collapsed the walls. None of the 12 customers inside were hurt as they took cover. At the nearby Houston Ship Channel at Barbours Cut Terminal, a large crane was pushed by wind and a freight ship was damaged. Other port buildings suffered roof damages. Scattered less intense wind damage progressed over the Houston area, especially North Houston, Memorial area, and Spring Branch.</p>									
<p>One house in the area was known to have been struck and burned by lightning.</p>									
Montgomery Co.	10	1630 CST							Funnel clouds
<p>The sheriff's office reported two funnel clouds over the county as severe thunderstorms were passing just to the south. The funnels apparently remained aloft.</p>									
Jefferson Co.	10	1630 CST			0	0	5	0	Wind
Jefferson Co.	10	1830 CST			0	0	?	0	Wind
Jefferson Co.	10	1800 CST			0	0	4	0	Lightning
Jefferson Co.	10	1830 CST							Funnel cloud
<p>Two thunderstorms moved westward over the eastern part of Jefferson County each producing damaging wind gusts. Damages were not separable in the two storms. One localized wind gust hit west Port Arthur and Griffing Park tearing shingles off roofs and snapping power poles. A spigot tug was blown aground in the Sabine-Neches Waterway. In downtown Port Arthur a large smokestack collapsed in the wind. Pba sized hail fell in Beaumont but no wind damages were reported there. Lightning damaged utility equipment throughout the area. One funnel cloud was spotted moving over north Beaumont but it remained aloft.</p>									
Polk Co.	10	1715 CST			0	0	4	0	Lightning
<p>Lightning struck the school in the Goodrich community igniting a fire which destroyed a portion of the gymnasium.</p>									
Victoria Co.	10	1715 CST							Funnel clouds
<p>Heavy thunderstorms moving through the county produced several funnel clouds, some of which passed over the city of Victoria. All remained aloft.</p>									
Nueces Co.	11	1430 CST			0	0	0 <sup>5</sup>	C	Wind
Jim Wells Co.	11	1430 CST			0	0	0 <sup>5</sup>	C	Wind
Victoria Co.	11	1530 CST			0	0	0 <sup>5</sup>	C	Wind
Goliad Co.	11	1610 CST			0	0	0 <sup>4</sup>	C	Wind
<p>A band of thunderstorms developed over central Texas coastal plains, and several individual storm cells became severe with damaging wind gusts as they moved westward.</p>									
<p>In Nueces and Jim Wells Counties damaging winds came from a storm which developed between Bishop and Alice. As the gust front passed the Alice Airport, gusts were measured at 59 mph. Crop lands in the area and buildings were affected. In Victoria and Goliad Counties a similar storm intensified near the city of Victoria and moved west toward Goliad. The airport at Victoria measured gusts on the outer edge of the storm at 56 mph.</p>									

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					KILLED	INJURED	PROPERTY	CROPS	
<b>TEXAS, Southern</b>									
Tyler Co.	11	1915 CST			0	0	?	?	Wind
Hardin Co.	11	1915 CST			0	0	?	?	Wind
Newton Co.	11	2015 CST			0	0	?	?	Wind
Jasper Co.	11	2040 CST			0	0	?	?	Wind
<p>Late afternoon and evening thunderstorms which had developed in a band parallel to and inland from the Texas coast became severe at a few locations in far southeast Texas. These storms were similar to ones earlier in the afternoon in the central coast. At 7:15 pm est one storm centered on the Tyler-Hardin County line between Kountze and Warren produced damaging wind gusts as it moved toward the west-southwest. Trees and outbuildings were damaged.</p>									
<p>A separate storm developed rapidly farther to the east about an hour later. This storm began near Deweyville and moved westward over extreme southern Newton and Jasper Counties. It also affected only rural and woodland areas, downing trees, outbuildings, and utility lines.</p>									
Jefferson Co.	12	1225 CST							Funnel cloud
<p>A moderate rapidly developing shower produced a funnel cloud which remained aloft. The funnel was tracked by Port Arthur police over Sabine Pass.</p>									
Galveston Co.	21	1200 CST							Funnel clouds
<p>Developing coastal showers generated several funnel clouds over the Galveston Island area. Funnels did not touch ground.</p>									
Hardin Co.	25	?			0	0	4	0	Lightning
<p>A thundershower passing over the city of Sibley produced a lightning bolt which struck a tall pine tree next to a house. An electrical charge traveled into the house, destroyed television sets and appliances, and shattered a concrete slab. The house was unoccupied at the time.</p>									
Orange Co.	28	1120 CST							Funnel cloud
<p>A short-lived funnel cloud developed just northeast of the city of Yidor, moved north, and dissipated without touching ground.</p>									
Nueces Co.	29	1030 CST			0	0	0	0	Waterspout
<p>A waterspout formed in the Laguna Madre near Flour Bluff and the Naval Air Station. It moved north through the Laguna toward Corpus Christi Bay without causing damage.</p>									
Chambers Co.	29	1230 CST							Funnel cloud
<p>Developing coastal showers produced a funnel cloud between High Island and Winnie. The funnel moved north and remained aloft.</p>									
Galveston Co.	31	0920 CST			0	0	0	0	Waterspout
Galveston Co.	31	0930 CST							Funnel clouds
<p>Coast Guard and Galveston city police monitored several funnel clouds and a waterspout which formed near the Causeway Bridge and moved slowly northwest over West Bay. Apparently no damage occurred.</p>									
<b>41 TEXAS, Western</b>									
San Angelo, Tom Green County	3	1830CST			0	0	1	0	Wind
<p>Several roofs destroyed in northern San Angelo as winds gusted to 56 mph at Mathis Field. Scattered reports of trees blown down.</p>									
San Angelo, Tom Green County	3	1900CST			0	0	1	0	Wind
<p>Severe thunderstorm produced winds gusting to over 55 mph. Destroyed garages, damaged trees, roofs and downed power lines. Five mesquite trees (one of which had a diameter of 5 inches) were snapped off near the base. Over 2 inches of rain fell in portions of the city.</p>									
Bailey County	4	1503CST	?	?	0	0	1	0	Tornado (F1)
<p>At 2:50 p.m. Muleshoe Police Department reported funnel clouds in a heavy thunderstorm 4 miles southwest of Enoch. At 3:03 p.m. the Police Department reported a tornado 1-3 miles west of Godland. Power lines and poles were damaged. One auto was also damaged.</p>									
Hale, Lubbock Counties	4	1600CST			0	0	5	0	Wind, Hail
<p>A heavy thunderstorm that developed in southwestern Swisher County near 3:30 p.m. moved into northwestern Hale County just before 4 p.m. As it approached Hale Center, it produced downburst winds gusting to an estimated 80 to 85 mph. Marble- to golfball-sized hail and 3 to 4 inches of rain accompanied the storm. Nearly 7,000 acres of cotton, corn and soybeans were badly damaged in an area from Mayfield to Hale Center to Cotton Center. Considerable damage to glass in buildings and autos was also reported.</p>									

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					KILLED	INJURED	PROPERTY	CROPS		
<b>TEXAS, Western</b>										
Spearman, Hansford County	4	1630CST	?	?	0	0	2	0	Tornado (F1)	
<p>After heavy thunderstorms produced strong wind, rain and hail, power was knocked out in several homes southwest of Spearman. Three homes were damaged with a barn and a windmill destroyed by what was believed to be a tornado. No eyewitness, but Hansford County Sheriff said debris was strewn over a 10-acre path and the type and extent of damage suggests a tornado. Also, a barn was blown down by tornado 7 miles southwest of Spearman.</p>										
Lubbock, Lubbock County	4	1738CST			0	0	5	0	Hail, Wind, Rain	
<p>A severe thunderstorm just north of Lubbock International Airport produced a strong burst of wind followed by heavy rain and large hail. Winds gusted as high as 45 mph and the airport received nearly 1 inch of rain in 10 minutes. Marble- to dime-sized hail also accompanied the storm. At 5:50 p.m. high winds and golfball-sized hail were reported on Highway 40; 5 miles east of Lubbock. The last severe weather report was received at 5:53 p.m. when high winds and golfball-sized hail were reported at Lake Ranson Canyon on the southeast side of Lubbock. Extensive crop damage was noted. Numerous roofs, and numerous building and bar windows were damaged from just north of the airport to 10 miles south of the airport and about 3 miles wide.</p>										
Ton Green County	4	1925 CST			0	0	0	0	Flood	
<p>Flash Flood Warning issued at 7:25 p.m. valid until 11 p.m. for heavy rain. Nearly 1.75 inches fell at Mathis Field.</p>										
Levelland, Hockley County	4	1940CST			0	0	0	0	Funnel	
<p>Public reported funnel cloud 10 miles west of Levelland with big storm. No further information available.</p>										
Midkiff, Upton County	4	2140CST	?	?	0	0	2	0	Tornado (F1)	
<p>Department of Public Safety reported tornado blew over 3 mobile homes in Midkiff. No other damage reports received.</p>										
Cochran, Bailey Counties	7	2040CST			0	0	0	0	Flood, Wind	
<p>Storms from New Mexico entered Bailey and Cochran Counties just after 8 p.m. At 8:40 p.m. the public, in Maple, reported winds estimated at 50 to 70 mph with very heavy rain. At 9:12 p.m. the Morton Civil Defense reported heavy rain and wind 60 to 70 mph with minor flooding of low-lying streets in Morton.</p>										
Deaf Smith County	7	2227CST	?	?	0	0	4	0	Tornado, Hail (F0)	
<p>Golfball-sized hail just northeast of Hereford reported by Police Department as storm moved east. It produced a short-lived tornado at Dawn (at 11:15 p.m.) resulting in minor damage to barns and outbuildings. It occurred with heavy rain. Pear- to marble-sized hail was piled 3 inches deep between Dawn and Hereford with considerable crop damage to grain and cotton crops in the area.</p>										
Reese AFB, Lubbock County	17	1703CST			0	0	0	0	Wind	
<p>Thunderstorm produced wind gusts to 59 mph. No reports of damage received.</p>										
Armstrong, Carson, Gray Counties	18	1730CST			0	0	0	0	Flood	
<p>Three inches of rain at Claude and surrounding areas prompted the issuance of Flash Flood Warnings. Several roads were closed due to high water.</p>										
Seminole, Gaines County	19	1700CST			0	0	4	0	Wind	
<p>Thunderstorm wind blew down high power lines and overturned 4 house trailers in Seminole. Two persons in the trailer suffered minor injuries. The wind took the roof off a commercial building on the northeast side of the city.</p>										
Hereford, Deaf Smith County	27	1600CST			0	0	0	0	Wind	
<p>Wind estimated near 70 mph near thunderstorms was reported at 4 p.m. 24 miles west and 10 miles north of Hereford. No damage reports received.</p>										
El Paso, El Paso County	27	1635CST			0	0	0	0	Wind	
<p>Thunderstorm wind gust to 64 mph hit the International Airport at El Paso. No damage reports received.</p>										
Randall County	27	1855CST			0	0	0	0	Flood	
<p>Four inches of rain in the Lake Tanglewood area with considerable flooding. Low water crossings rose to 3 feet by 8:35 p.m.</p>										
El Paso, El Paso County	29	Afternoon			0	0	3	0	Flood	
<p>Heavy rain out of thunderstorms caused heavy traffic jams; especially on the main east-to-west freeway and stalled dozens of automobiles. There were numerous cases of fender-benders but no injuries or casualties.</p>										
<b>42 UTAH</b>										
Salt Lake City (Salt Lake County)	9	7:30 PM MDT			0	2	0	0	Lightning	
<p>Lightning struck a ball field in Sherwood park injuring two women and knocking women softball players to the ground. The bolt of lightning struck one woman, blowing off her watch and necklace and burning her neck, then arced and hit another woman.</p>										
Washington County	15	3:45 PM MDT			0	0	6	0	Heavy Rain	
<p>Heavy rainfall caused flooding in the St. George, Hurricane, and Zion National Park areas. The ranger station at Zion National Park reported receiving 1.73 inches of rain in 80 minutes. Residential areas in Hurricane received 4 to 6 inches of water in many yards and a few flooded basements. Damage estimated at \$1 million.</p>										
Glen Canyon Recreational Area (Kane County)	21	Tuesday Evening			0	0	5	0	Thunderstorm Winds	
<p>A thunderstorm accompanied by estimated 70 mph winds damaged the Wahweap marina at Lake Powell. The marina was caused to drift and buckle while a concrete breakwater was also damaged, along with several boats. Estimated \$67,400 damage.</p>										
San Juan County	21	Tuesday Evening			0	1			Lightning	
<p>A 12 year old boy was struck by lightning while camping east of Monticello. The boy suffered severe burns and heart failure, but was given cardiopulmonary resuscitation and taken to a hospital.</p>										
Wayne County	24	3:12 PM MDT	short narrow		0	0	0	0	Tornado (F0)	
<p>A tornado was sighted 3 to 4 miles north of the Hanksville airport. It was observed by a pilot, a highway patrolman and the weather observer at the airport. No damage was reported as the storm moved through a desolate area.</p>										
Morgan (Morgan County)	24	Friday Afternoon			1	2	0	0	Lightning	
<p>A 13 year old boy was killed and his father and uncle injured when lightning struck a tree they were standing under in a picnic area at Round Valley Golf Course.</p>										
Entire State of Utah	1-31						6		Lightning	
<p>Lightning caused range fires caused much damage to a large portion of the land area and several homes during the month. A total of 31,615 acres of land were affected by 11 fires.</p>										
<b>43 VERMONT</b>										
NO REPORT RECEIVED										
<b>44 VIRGINIA</b>										
Tidewater	3-4	All times EST			0	0	5	0	Rain	
<p>Weak low center moved northeastward from South Carolina. Two to three inches of rain common from afternoon of the 3rd thru the evening of the 4th, with some sections reporting over four inches. Street flooding hit sections of Norfolk, Virginia, Beach and Portsmouth, with scores of motor vehicles reported to have been swamped in underpasses and low places.</p>										
Virginia Beach	4	7:00AM 1/20			2	0	0	4	0	Tornado (F1)
<p>Described as a "mini-sized" tornado with diameter of only six feet that formed within the circulation of a weak low pressure center. Funnel apparently moved from southwest to northeast over a very short and skipping path from the vicinity of Kempsville to the Kings Grant section of Virginia Beach. Over two dozen trees were uprooted. In addition, a small porch was blown off a house and branches caused some minor damage to other property. Damage estimated at around \$10,000.</p>										
Bristol, (Virginia side)	20	2:00PM			0	0	4	0	Wind	
<p>Localized thunderstorm brought winds gusting to over 40 mph and "wreaked havoc" on power lines and trees in the area. Damage to automobiles, houses, signs and utility lines expected to total in the neighborhood of \$30,000.</p>										

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED <sup>1</sup> DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>VIRGINIA</b>									
Southeastern	21	3:00PM			0	0	4	0	Wind, Lightning
	Squall line activity associated with cold front brought wind gusts to over 50 mph in several locations, with over 90 mph reported at the Chesapeake Bridge-Tunnel. Among damage occurrences... a large machinery shed was pried off its foundation in Heathsville... lightning set fire to the roof and attic of a home in Chesterfield County... wind took a portion of roof and side from a school in Virginia Beach. In addition scattered tree damage to houses and autos was reported. Total damage estimated at around \$40,000 to \$50,000; of which about \$10,000 was due to lightning.								
East Central and Northern	26	Night			0	0	5	0	Wind, Lightning
	Heavy thunderstorm activity hit many sections, with serious power outages affecting Fauquier and Prince William Counties, the Winchester area and in Richmond and surrounding counties. Most of the damage was concentrated near Hopewell, where winds and fallen trees caused an estimated \$50,000-\$70,000 damage to a country club.								
Statewide	28				0	2	5	3	Wind, Lightning, Hail, Rain
	Winds up to 50 mph or more reported over several locations, 75 mph gusts caused some damage at an airport near Staughton, and scattered wind damage was prevalent over the state, including the destruction of a \$3,000 sailboat in York County... power line breakage... and numerous home and auto damage from fallen trees. Lightning-caused fires damaged several buildings and barns. Hail caused some crop damage, while locally heavy rains brought flash flooding to parts of Tidewater. An unofficial total of over 5 inches of rain was reported in Lancaster County, where one road was washed out... two separate accidents at that spot later in the evening resulted in two injuries. Total damage: Wind: \$30,000; Hail: \$5,000; Rain: \$5,000; Lightning: \$40,000.								
Chantilly, Fairfax County	28	6:20 PM	0.1	25	0	0	4	0	Tornado (F2)
	Roof and upper rear side of home taken off and carried about one block, and piled against the brick wall of a church. Observer saw the roof "spinning like a top" over the power lines. Owners of the home were out of the state at the time. Estimates of damage: near \$40,000.								
<b>45 WASHINGTON</b>									
Whatcom County	10	7:00 pm PST							Funnel Cloud
	A funnel cloud was sighted northwest of Bellingham moving to the southeast.								
Clallam County	11	3:30 pm PST							Funnel Cloud
	A funnel cloud was sighted one mile north of Quillayute moving to the north.								
<b>46 WEST VIRGINIA</b>									
Preston county	26	All times EDT 5:20pm	?	?	0	0	0	0	Tornado (F0)
	A tornado was sighted on Kingwood Pike near Reedsville but caused no damage. Mud and debris were thrown onto a road.								
Kanawha county	28	2:45am			0	0	4	0	Thunderstorm Winds
	Gusty thunderstorms knocked down a billboard in Charleston. Branches were blown down and a tree fell on a car.								
Preston county	28	3:00pm			0	0	4	0	Lightning
	Lightning from afternoon thunderstorms killed seventeen Holstein dairy cattle belonging to the Davis Brother Inc. The cattle were gathered on a field in Masontown. Numerous reports of downed power lines and trees occurred from these thunderstorms.								
Pleasants County	28	7:00pm	4	40	0	3	5	2	Tornado (F2) OH to WV
	A tornado was spawned 23/4 miles west of Newport, Oh and uprooted trees, did considerable damage to a trailer in Ohio. The F-2 tornado had a path width of 30 to 50 yards. It touched down on Broadback Island, WV located on the Ohio River... uprooting more trees. The tornado proceeded to Belmont, WV where it did considerable damage to a home. The tornado went aloft and took down an electric utility pole.								
	Two to three miles further east another home was considerable damaged and a trailer was overturned. 3 people received minor injuries in the trailer. A cow was impaled by a 2x6.								
<b>47 WISCONSIN</b>									
Muscoda, Grant County	01	All times CST 0000-0300			0	0	3	0	Wind
	70 mph winds damaged houses and trees.								
Ladysmith, Rusk County	08				1	16	0	0	Lightning
	Lightning struck a group of 17 youths playing baseball at the Ladysmith Industrial Park softball diamond. One 18 year old was killed and 16 others sustained very minor injuries.								
Cochrane Area, Buffalo County	11	0100-0700			0	0	4	2	Flooding
	Six inches of rain caused localized flooding in Cochrane and the surrounding area. Mud one foot deep remained on downtown streets after flood waters subsided. Several culvert and railroad washouts also occurred in the area.								
Mount Zion, Crawford County	11	0800			0	0	5	0	Lightning
	A large barn and contents were destroyed by a lightning caused fire. Damage was estimated at \$168,000.								
La Crosse County, Vernon County	11	2200-0300			1	1	5	?	Flash Flood
	Localized rains up to 5 inches created flash flood conditions. Coon Creek overflowed into Chaseburg (Vernon Co.) around midnight, and several highway washouts occurred in the area. In Hamilton Township (La Crosse Co.) a 19 year old man was swept away from his car on Buell Road and drowned in a culvert. Another youth in a second car at the same location was swept through a culvert and hospitalized with cuts and bruises.								
Portage, Juneau, Adams, Waushara, Monroe, Sauk, Columbia Counties	12	1330-1500			0	0	5	4	Severe Thunderstorm
	High thunderstorm winds and heavy rains damaged hundreds of rural structures and downed about 200 power lines. The combination of wind and rain also flattened corn and oat crops.								
South & Dane County	12	1600-1700			0	0	4	?	Severe Thunderstorm
	50-70 mph winds downed trees and power lines. Several houses were damaged in the Madison area and Truax Field experienced 62 mph winds at 1616.								
Genesee Township, Waukesha County	12	1600			0	0	5	0	Lightning
	Lightning caused a fire that destroyed a large barn and farm equipment, resulting in \$60,000 damage.								
Dodge, Washington Counties	12	1630			0	0	5	5	Severe Thunderstorm, Flooding
	Strong winds combined with heavy rains flattened corn and oats in Dodge County. 4 1/2 inches of rain in Nest Bend (Washington Co.) flooded some downtown stores, and 60 mph winds in Cedarburg (Ozaukee Co.) damaged trees.								
Waukesha, Milwaukee, Walworth, Racine, Kenosha Counties	12	1630-1800			0	5	5	?	Severe Thunderstorm
	Severe thunderstorms swept across extreme southeast Wisconsin. 50 mph winds were common, and there was widespread tree and power line damage. 55 mph winds occurred at Mitchell Field in Milwaukee at 1655. 2,000 households in Milwaukee's northern suburbs experienced an 8 hour electricity outage, and outages up to 16 hours affected 1,000 customers in Racine County and 500 in Waukesha County. 5 minor injuries resulted when a 22-foot sailboat overturned in high winds on Lake Michigan off Milwaukee. Rains of one to locally 4 1/2 inches drenched the area, and floodwater ponding closed many roads in metropolitan Milwaukee for about two hours. 4 inches of rain in Kenosha (Kenosha Co.) caused natural gas mains to flood, resulting in a gas outage to a 126 square block residential area for 6 hours.								
7 Southeast of Bloomer, Chippewa County	14	1800	16	?	0	0	4	0	Tornado (F0)
	A tornado touched down briefly on a farm just off Highway 40 in Howard Township. Two structures were damaged and debris was carried one-half mile eastward. The tornado lifted and continued east as a funnel cloud, with numerous sightings across Tilden, Anson and Goetz Townships. The last funnel cloud observation was at the intersection of Highways XX and O in Goetz Township, 16 miles east of the initial tornado occurrence.								
Viroqua Area, Vernon County	14	2100-2400			0	0	5	0	Lightning
	Four lightning caused fires resulted in the destruction of a large dairy barn, and minor damage to three houses.								

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

JULY 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>WISCONSIN</b>									
11 Counties of West Central	17	0930-1530			0	0	6	7	Hail, Wind, Rain
<p>Hundreds of damaged buildings and thousands of acres of smashed fields lay in the wake of the most destructive hail storm to batter west-central Wisconsin in a quarter century. Four separate hail swaths occurred between 9:00 a.m. and 3:00 p.m. CST. Hail was mostly 1/2 to 2 inches in diameter, but there were occasional reports of 3/4 inch hail that left pock marks and small craters in fields. 70 mph winds and heavy rains that accompanied the hail at many locations contributed to building and automobile damage. There was considerable hail damage to forests; in addition, to prop destruction. Barron County: \$380,000 damage to 6,900 acres of crops at the southwest edge at 10:00 a.m.; Buffalo County: \$170,000 wind and rain damage to crops in Mondovi Township in the early afternoon; Chippewa County: \$1,400,000 hail damage to 16,000 acres of crops in a 1 to 3 mile wide swath from Cooks Valley Township southeast through Bloomer, Woodmorh, Tilden, Lafayette, Eagle Point and Sigel Townships, and \$274,000 damage to buildings between 11:30 a.m. and 1:30 p.m.; Clark County: 2-3/4 inch hail caused \$720,000 damage to crops (including complete destruction of a \$400,000 cranberry bog) in Hewet, Levis and Dewhurst Townships in the southeast corner of the county at about 2:30 p.m.; Dunn County: \$1,500,000 crop damage to 17,000 acres and \$210,000 building damage between 11:30 a.m. and 12:30 p.m. in a hail swath in the extreme north and another east and southeast of Monomonie; Eau Claire County: \$900,000 in crop damage to 11,000 acres; \$1,200,000 in building and equipment damage, and \$200,000 in personal property damage in the Townships of Ludington, Bridge Creek and Wilson at about 1:30-2:30 p.m.; Jackson County: \$295,000 crop damage to 3,000 acres about 3:40 p.m. in Komersky Township in the north, and in Irving Township in the south; Marathon County: \$50,000 crop damage from wind and rain in the vicinity of Fenwood, Stratford and Abbotsford; Monroe County: \$600,000 crop damage to 17,000 acres about 4:30-4:30 p.m. in Little Falls, Lafayette and Sparta Townships; Pepin County: \$300,000 crop damage to 2,000 acres in Lila and Durand Townships about 2:00 p.m.; Polk County: \$2,500,000 in crop damage between 9:30 and 11:30 a.m. in a 1 to 3 mile swath extending from St. Croix Falls to the southeast tip of the county, and \$175,000 in building damage. Total storm damage amounted to \$8,700,000 in crops and \$2,100,000 in property.</p>									
Milwaukee, Milwaukee County	17	1815			0	3	0	0	Lightning
<p>Three Republic Airline employees at Mitchell Field were injured when lightning struck the tail of a DC-9 jet they were servicing.</p>									
Dunn, Eau Claire and Southern Chippewa Counties	20	1045-1115			0	0	?	?	Hail
<p>Scattered 1/2 inch hail fell across southern Chippewa, Eau Claire and Dunn Counties.</p>									
Eau Claire, Chippewa Counties	20	1200-1230			0	0	?	3	Hail
<p>Scattered 1 inch hail fell across southern Chippewa and Eau Claire Counties.</p>									
4 West Oakfield	20	1205			0	0	4	0	Tornado (F1)
<p>A thin rope-like tornado touched down briefly and demolished a large barn, destroying and scattering its contents.</p>									
Southern Horicon Marsh, Dodge County	20	1220			0	0	0	0	Tornado (F0)
<p>A small tornado touched down briefly at the south end of the Horicon Marsh Wildlife area.</p>									
Marquette County	20	1230-1250			0	0	?	?	Wind
<p>45-55 mph winds occurred at scattered locations across the county caused many trees to fall.</p>									
Melrose, Jackson County	20	1345			0	0	?	?	Hail
<p>Golf ball sized hail occurred briefly.</p>									
<b>WISCONSIN</b>									
Oak Creek, South Milwaukee, Milwaukee County	20	1430	.9	20	0	0	4	0	Tornado (F1)
<p>A small tornado dipped down in the 6500 block of South Crane Drive in Oak Creek and damaged 15 homes. Most damage was minor. The tornado moved southeast into South Milwaukee damaging fences, trees, 3 houses, one garage and one warehouse in a five-block path from Nicholson and Hickory Avenues southeast to 9th Avenue. A wind gust of 59 mph was recorded at Mitchell Field at 2:44 p.m. 1/2 mile to the north.</p>									
Northeastern Pierce County	20	1540	?	?	0	0	?	?	Hail
<p>1/2 inch hail occurred at Spring Valley and Elmwood.</p>									
3/4 Northeast of Baldwin, St. Croix County	24	1735	.3	?	0	0	4	0	Tornado (F1)
<p>A weak tornado damaged the Baldwin Town Hall, then moved northeast a few hundred feet and demolished a barn before lifting.</p>									
Southwestern Sheboygan County	25	1405			0	0	0	0	Funnels Aloft
<p>Two funnel clouds occurred briefly over Scott and Sherman Townships.</p>									
<b>48 WYOMING</b>									
MOUNTAIN STANDARD TIME									
Niobrara County	17	afternoon	?	?	0	0	3	?	Hail
<p>A thunderstorm with hail moved through Lamb Creek damaging cars and roofs. Heavy rain from the storm caused high water which damaged some dikes on the creek.</p>									
Carbon County	18	afternoon	?	?	0	0	4	?	Wind
<p>A thunderstorm with wind gusts up to 50 mph caused extensive damage to the Medicine Bow Wind Energy Project. Earlier the storm had blown down trees and broken windows in rawlins.</p>									
Fremont County	18	afternoon	?	?	0	0	4	4	Hail
<p>A thunderstorm with hail did extensive to crops and property in the river town area.</p>									
Big Horn County	24	?	?	?	0	0	?	?	Tornado (F1)
<p>A tornado blew the roof off of a nearly completed home in Lovell.</p>									
Laramie County	24	both afternoons	?	?	0	0	4	5	Hail
<p>Thunderstorms with hail did severe crop and property damage to the eastern third of the county, including the towns of Pine Bluffs and Burns.</p>									
Carbon County	25	afternoon	?	?	0	0	4	0	Wind
<p>A thunderstorm with wind gusts to 90 mph damaged windows, cars, and house roofs as well as a small airplane.</p>									
<b>49 ALASKA</b>									
South Central	9-11				0	0	4	?	Heavy Rain
<p>Heavy rains of from 4 to 6 inches over the Matanuska and Susitna Valleys caused some stream flooding and mudslides. One bridge was swept away and several secondary roads were closed due to washouts.</p>									
<b>50 HAWAII</b> ————— NONE REPORTED									
<b>51 PUERTO RICO</b> ————— NONE REPORTED									
<b>52 VIRGIN ISLANDS</b> ————— NONE REPORTED									
<b>53 PACIFIC</b>									
Guam	20	1224LS1			0	0	0	0	Waterspout
<p>Waterspout reported for about 8 minutes to the east of Guam hanging from the base of a cumulonimbus cloud base at 1400 ft and extending to 1000 ft above water.</p>									

# STORM SUMMARY

JULY 1981

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				@HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				# ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE					
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS				
Alabama	1	1			3			3		4	5	2	2	8	5									4	?				
Alaska																													
Arizona								4	5					6	4								8	5					
Arkansas																							1	?					
California	/																												
Colorado	6	4						5	7	2	5		1	1	3								2	2					
Connecticut	#																												
Delaware																													
Florida	10	6			6					2	21			2	5									4					
Georgia	1	1			5			3	3		5		1	3	4														
Hawaii	/																												
Idaho	1	1			3			4	7		5	5												5					
Illinois	3	2			5					17	6	5				5	4						2	6					
Indiana	1				4																		2	2					
Iowa								6	7		5	6			4							2	2						
Kansas	8	6		9	5			5	7		4	7	7	1										6					
Kentucky	1	1		1	4					3	12	6	5											6					
Louisiana	2	2			*4							*4	C	1	4	5								2					
Maine												*5	C											3					
Maryland & DC												4			4									3					
Massachusetts	#																												
Michigan								*3	C		3	4		13	2														
Minnesota	7	5						7	8	1	1	7	7																
Mississippi																													
Missouri	2	1			4			?	?		43	6	3		1	2	?	?					6	6					
Montana								5	6			5	5		5														
Nebraska	6	5			5			6	8		1	6	6	1		5	?						1	4					
Nevada	/																							5					
New Hampshire	#																												
New Jersey	1	1			?																								
New Mexico	1	1			5							4		3	1														
New York	1	1								?																			
North Carolina	1	1			4						5	6	6	4	16														
North Dakota	9	5			5			5	6			6	6		5	4								5					
Ohio	1	1			5	5						5	5		4														
Oklahoma	5	4			5	5		?	?			5	?		5	?							1	?					
Oregon								?	?			?	?											5					
Pacific	/																												
Pennsylvania	8	3			6	6					1	6	4		4								1	5					
Puerto Rico	/																							?					
Rhode Island	#																												
South Carolina	2	2			4									3	3	5								4					
South Dakota	6	4			2	?		?	?		2	?	?		2	1							1	3					
Tennessee												5	?		5									5					
Texas	) (																							?					
Utah	1	1										5		1	5	6								6					
Vermont	#																												
Virginia	2	2			5				3			5			5								2	5					
Virgin Islands	/																							3					
Washington	/																												
West Virginia	2	2			3	5						4			4								1	5					
Wisconsin	5	3			5			6	7		5	5		1	19	5							1	5					
Wyoming	1	1			?			4	5			4	?																

# TROPICAL STORM ARLENE

6-9 May 1981

National Hurricane Center, NOAA  
Miami, Florida

Arlene was only the thirteenth tropical storm to form in May, according to records dating back to 1886. It could be traced to a weather disturbance which moved from the Pacific Ocean across Central American and into the northwest Caribbean Sea. Occasionally a Pacific storm forms from an Atlantic disturbance, but Arlene is a rare case of an Atlantic storm forming from a disturbance which originated over the Pacific.

On 6 May, a tropical depression formed, and on the following day the first tropical storm of 1981 was named Arlene. An Air Force reconnaissance flight found surface winds of 40 knots and a minimum pressure of 999 millibars during the afternoon of 7 May. At the time the center of the storm was passing the outer Cayman Islands and approaching eastern Cuba. Arlene crossed Cuba during the night of 7 May and weakened to a tropical depression.

During the morning of 8 May, as the depression emerged over water, it appeared as though the circulation was so disrupted by its passage over land that there was

little likelihood of it regaining its former strength. Nevertheless, a NOAA reconnaissance mission found that surface winds briefly increased to 50 knots in a large band of convective activity extending east of the center. However, the minimum pressure was up to 1004 millibars and, once the convection weakened, the rejuvenated storm rapidly died. The remnants of Arlene became absorbed by an elongated trough extending northward from the eastern Bahamas early on 9 May.

No reports of damage or casualties were received from Cuba or the Bahamas, and storm effects there were judged to have been minimal. The highest surface winds were 50 knots at 1815 GMT, 8 May as measured by NOAA reconnaissance, and the lowest pressure recorded during Arlene's existence was 999 millibars measured by Air Force reconnaissance at 2028 GMT, 7 May.

## PRELIMINARY BEST TRACK

DAY	HOUR	LATITUDE	LONGITUDE	MINIMUM PRESSURE	MAXIMUM WIND	CATEGORY
	(GMT)			(mbs)	(kts)	
06	18	18.4	83.6	1006	30	Tropical Depression
07	00	18.4	82.7	1006	30	Tropical Depression
	06	18.6	81.7	1005	30	Tropical Depression
	12	19.0	80.6	1003	35	Tropical Storm
	18	19.6	79.7	1000	40	Tropical Storm
08	00	20.3	78.7	999	45	Tropical Storm
	06	21.1	77.4	1003	30	Tropical Depression (over land)
	12	22.4	76.4	1006	30	Tropical Depression
	18	23.0	74.5	1004	50	Tropical Storm
09	00	23.4	72.8	1006	30	Tropical Depression
	06	24.0	71.0	1010	25	Tropical Depression

# TROPICAL STORM BRET

29 June - 01 July 1981

National Hurricane Center, NOAA  
Miami, Florida

A large band of frontal cloudiness had settled into a position over the western North Atlantic on 27 June. On the next day, a low pressure system began to form northwest of Bermuda. Satellite pictures show that the development occurred on the northwest edge of the frontal cloud band. This circumstance places the low's origin in the subtropical category.

By 1200 GMT on the 29th, the broad low pressure system was centered approximately 500 n.mi. east of Cape Hatteras, NC, and substantial convection had formed north and west of the low center. During the next 12 hours, convection spread over most of the region of the low center, which was moving westward at 15 knots. At 0600 GMT 30 June, a well-defined cloud circulation center became apparent on the night-time infrared satellite imagery. The 1200 GMT visible pictures confirmed the presence of this feature, showing tight, low-level cloud banding and a concentration of deep convection near the cloud-banding center. The system was now centered 150 n.mi. east of the North Carolina coast and starting to move toward the west northwest at 10 knots.

A reconnaissance aircraft measured a central pressure of 997 millibars at 2100 GMT 30 June and maximum winds of 55 knots at 1500 feet flight level. The maximum winds were only 9 n.mi. north of the storm center. The system was named Tropical Storm Bret at 2200 GMT and gale warnings were issued for the mid-Atlantic coast from Cape Hatteras to Ocean City, MD.

A ship, PPGH, reported 50-knot winds at 1800 GMT 30 July, while located a short distance from the storm center, and a U.S. Navy cruiser, the SPRUANCE, reported 45 knots at 2300 GMT while positioned less than 20 n.mi. northwest of the center. Several days later, a report was received by telephone from a passenger on a 42-foot sloop, the INVICTUS (Delaware registry). At 0300 GMT 30 June, just before satellite pictures revealed a well-defined cloud center, the INVICTUS' anemometer read 70 mph with gusts to 90 mph. This occurred at a location about 250 n.mi. east of the coast, also close to the storm center.

Based on the above information, the best track showed Bret first as a subtropical storm, starting at 1200 GMT 29 June, and then transforming to tropical storm status at 0600 GMT 30 June.

Bret's maximum winds were estimated to be 60 knots for a 12-hour period on the morning of the 30th, and the minimum pressure was 997 millibars.

The center crossed the coast at 0500 GMT 1 July, moving over extreme southern Maryland and southern Chesapeake Bay. Bret weakened rapidly just prior to landfall and there have been no reports of gale-force winds or higher from within the warning area. The storm remnant continued to weaken as it traveled inland. Rainfall amounts of 3 to 4 inches spread westward to the Ohio Valley/eastern Kentucky region. There have been no death or significant damage reports received that were directly attributable to this storm.

## PRELIMINARY BEST TRACK

Date	Time (GMT)	Position		Pressure (mb)	Wind (kt)	Stage
		Lat. (°N)	Long. (°W)			
6/29	1200	36.0	65.0	1012	35	subtropical storm
	1800	36.0	67.0	1010	45	" "
6/30	0000	36.0	69.0	1006	55	" "
	0600	36.0	71.0	1000	60	tropical storm
7/01	1200	36.0	72.5	998	60	" "
	1800	36.2	73.8	997	50	" "
	0000	36.6	74.7	1000	40	" "
	0600	37.4	76.0	1005	30	tropical depression
	1200	38.5	78.5	inland		

# TROPICAL STORM CINDY

2-5 August 1981

National Hurricane Center, NOAA  
Miami, Florida

Cindy joins a growing list of tropical cyclones that have developed in recent years north of the Atlantic subtropical ridge. As was the case with most tropical cyclones forming in the area, initial development began in a baroclinic zone followed by gradual transformation to a tropical system. Also typical was the small size of the cyclone throughout its lifetime. It is likely that in the pre-satellite era many such storms would have gone undetected, or not classified as tropical storms.

On July 30, a southeastward moving cold front moved off the North Carolina coast. By August 1, the front had become stationary along a line extending from the vicinity of Jacksonville, FL to about 200 miles north of Bermuda. At that time, satellite pictures began to show cyclonic banding about an area centered near 35N 72W, but surface synoptic charts suggested that the sea-level pressure could not have been below 1020 mb.

Gradual development ensued as the system tracked northeastward. On August 2, the cloud configuration

was classified as a subtropical depression. By the following day the cyclone had intensified as a central dense overcast typical of tropical cyclones developed, whereupon it was named Tropical Storm Cindy.

The storm accelerated northeastward on August 5, losing tropical structure and weakening as it passed well to the southeast of Cape Race, Newfoundland.

Highest winds associated with Cindy were estimated 50 knots on August 3 and 4, at which time the lowest pressure of 1002 mb also was reached.

In spite of the fact that Cindy became a named storm as far north as 38N, sea-surface temperatures in the area were about 27.5°C. As it weakened and became extratropical on August 5, it was moving over waters with sea-surface temperatures below 20°C.

There were no known damage or casualties associated with Tropical Storm Cindy.

## PRELIMINARY BEST TRACK

2 - 5 August 1981

DATE	TIME (GMT)	POSITION		PRESSURE (MB)	WIND (KT)	STAGE
		LATITUDE	LONGITUDE			
8/2	1800	36.1	67.8	1010	30	Subtropical depression.
8/3	0000	36.7	67.1	1008		
	0600	37.4	66.2			
	1200	38.3	65.7	1003		Tropical depression.
	1800	38.7	64.9		40	Tropical storm.
8/4	0000	39.0	63.8	1002	50	
	0600	39.4	62.2			
	1200	40.4	60.7			
	1800	41.3	58.4			
8/5	0000	42.2	55.7	1005	45	
	0600	43.3	52.7			
	1200	44.1	50.4	1008	30	Extratropical

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>THE FOLLOWING ARE LATE REPORTS, CORRECTIONS, AND DELETIONS:</b>									
<b>LATE REPORTS</b>					<b>LATE REPORTS</b>				
<b>SOUTH CAROLINA</b>					<b>WASHINGTON</b>				
Chester County Municipal Airport, Chester County, South Carolina	19	7:45 PM	2	35	0	0	6	0	Tornado
A small tornado touched down at the airport and destroyed or damaged about 12 sailplanes and some trailers. The tornado moved northeast, cut a path through woodlands, and demolished a turkey farm 1 1/2 miles ENE of the airport.									
<b>SOUTH DAKOTA</b>					<b>WASHINGTON</b>				
Four Corner Region of Jackson, Mellette, Todd and Bennett Counties	18	7:30 PM			0	0	4	0	Hail, Heavy Rain, Flash Flooding
A cluster of thunderstorms formed over the area dropping more than four and one-half inches of rain in an hour along with pea to marble sized hail. Flash flooding washed away fences, corrals, pig sheds and drowned 30 to 40 calves. Hail accumulated 10 to 12 foot deep in ravines.									
Plankinton & Stickney, Aurora County	26	11:55 PM			0	0	3	0	Wind
Strong winds estimated at 70 MPH associated with thunderstorms totalled a metal garage in Stickney and caused damage to another building. Trees down and power outage at Plankinton.									
<b>SOUTH DAKOTA</b>					<b>WASHINGTON</b>				
Belle Fourche, Butte County	2	4:55 PM			0	0	0	0	Hail
Sturgis, Meade County	2	5:32 PM			0	0	0	0	Winds
Rapid City Airport, Pennington County	2	6:12 PM			0	0	0	0	Winds
Heavy thunderstorms moved eastward into western South Dakota. Wind gusts were reported to 65-70 MPH. Scattered thunderstorms continued eastward across all of South Dakota with no additional significant reports. No damage was reported with these storms.									
3 E. Moonsocket, Sanborn County	22	6:25 PM			0	0	0	0	Hail
Clark, Clark County	22	7:50 PM			0	0	0	0	Hail
De Smet, Kingsbury County	22	10:00 PM			0	0	0	0	Hail
Castlewood, Hamlin County	22	11:09			0	0	0	0	Hail
A line of heavy thunderstorms extended from 25 miles west of Watertown to near Huron to Avon. The thunderstorms were moving north at 30 MPH while the line was drifting eastward. Three-quarters inch hail was reported at the above locations with smaller hail falling at several other locations.									
Parmelee, Todd County	27	1:55 PM			0	0	0	0	Funnel Cloud
Rosebud, Todd County	27	2:05 PM			0	0	0	0	Heavy Rain
Thunderstorms, some heavy, were scattered over southwest South Dakota and south central South Dakota. Storms were moving east at 30 MPH. Other thunderstorms occurred over widely scattered portions of the eastern half of South Dakota.									
<b>TEXAS</b>					<b>WASHINGTON</b>				
5 WSW Athens, Henderson County	19	1:10 p	Short	Narrow	0	0	0	0	Tornado
Several truckers reported that a tornado touched down briefly in a heavily wooded area southwest of Athens. A possible tornado was indicated by radar in this general area at the same time.									
Bowie County	23	11:10 p - 11:30 p			0	0	?	?	Windstorm
Thunderstorm winds downed trees and power lines in the DeKalb area at 11:10 PM CST and in the Texarkana area at 11:30 PM CST.									
2 E Atlanta, Cass County	23	11:20 p			0	0	?	?	Windstorm
Strong thunderstorm winds uprooted trees several miles east of Atlanta.									
<b>COLORADO</b>					<b>WASHINGTON</b>				
Chaffee County	25	evening			0	5	4	0	Heavy rain, Flash Flood
An estimated 2 inches of rain fell in 25 minutes, in Chalk Creek Canyon above Gathrop. A flash flood of water, mud, and rocks hit a youth camp. Several girls were washed out of a cabin, which filled with three feet of mud. 5 minor injuries to teenagers were reported in the camp. Several cabins were partially filled with mud and rocks. Water and gas lines were torn loose, along with some equipment and supplies at the camp. One cabin was severely damaged, with a dollar loss of \$12,000.									
<b>WASHINGTON</b>					<b>WASHINGTON</b>				
Spokane County	22	8:15 pm	?	?	0	0	2	0	Tornado
A tornado touched down one mile east of Deer Park and moved northeast. The only damage reported was a destroyed metal shed.									
Spokane County	22	8:25 pm							Funnel Cloud
A funnel cloud was sighted four miles south of Deer Park moving to the northeast.									
<b>WISCONSIN</b>					<b>WASHINGTON</b>				
Adell, Sheboygan County	08	0030			0	0	4		Lightning
Lightning started fires which destroyed two barns									
Sheboygan, Sheboygan County	08	0100			0	3	5		Lightning
Lightning started a fire which destroyed a flour manufacturing firm and injured three persons.									
St. Anna, Calumet County	08	0100			0	0	4		Lightning
Lightning struck and killed four cattle									
<b>WISCONSIN</b>					<b>WASHINGTON</b>				
Northeastern Wisconsin	13-14				0	0	6	6	Heavy Rain, Flooding, Flash Flooding
Several waves of heavy thunderstorms swept across the area during the two day period, resulting in rainfall totals of 3 to 9 inches in Burnett, Polk, Washburn, Dunn, Price, Forest, Lincoln, Oneida, Sawyer and Vilas Counties. In addition to several occurrences of severe weather (see following reports), flash flooding affected many locations in these counties, causing extensive damage to rural and county roads, and damaging crops and farmlands. Flash flooding was especially severe in Hays Creek (Dunn County) on the evening of the 14th. Flash flooding also occurred in Price County on Horton Creek, Spring Creek, Little Willow Creek, and the Elk River. Communities suffering extensive flooding included Rhinelander (Oneida Co.), Eagle River (Vilas Co.) and Phillips (Price Co.). Road closures due to high water were common. Northern Polk and southern Burnett Counties suffered especially severe road washouts, topsoil erosion and crop losses. Two day rainfall amounts included 9" at the Rainbow Florage (Vilas Co.), 7 1/2" at Hayward (Sawyer Co.), 7.96" at Gordon (Washburn Co.) and 5" at Tomahawk (Lincoln Co.). The Totogatic River (northwestern Wisconsin) rose above flood stage of the 14 and 15th. Flash flooding on Elm Creek (Price Co.) nearly caused the Musser Dam to fail, but emergency water release on the 14th saved the structure. In Burnett County, 21,800 acres planted in corn, oats and soybeans were damaged for a loss of \$872,000 and another \$100,000 in land damage.									
Elm Grove, Milwaukee County	13	0045			0	0	4	0	Lightning
A lightning-caused fire damaged a house.									
Crystal Lake, Columbia County	13	0050			0	0	5	0	Lightning
A lightning-caused fire destroyed the Birchwood Inn.									
Rice Lake, Barron County	13	1000			0	1	3	0	Wind
High winds toppled a large oak tree, smashing a house and briefly trapping a woman who suffered minor injuries.									
Western Polk County	13	1030			0	0	5	5	Severe Thunderstorm
A severe thunderstorm with damaging winds and intense rain produced widespread destruction in the area from Cushing to St. Croix Falls to Balsam Lake. Hay fields were flattened at many locations with losses estimated at \$150,000. Hail damaged a greenhouse in Balsam Lake and about 175 farm buildings sustained damage.									
Glidden, Ashland County	13	1800			0	0	4	?	Hail
Golf-ball sized hail combined with strong winds broke many windows and damaged several automobiles.									
1 North Hazelhurst, Oneida County	13	2040	?	?	0	0	?	?	Tornadoes
A small tornado touched down briefly at the Timber Ridge Country Club on Route 511 one mile North of Hazelhurst, damaging or destroying about 1,000 trees. A second touchdown also occurred at the same location.									

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
<b>LATE REPORTS</b>											
JUNE 1981											
<b>WISCONSIN</b> Just East of Sayner, Vilas County	13	2045	3	50	0	0	4	0			Tornado
A tornado touched down at County Highway N, 1/2 mile north of Sayner, then moved east through dense woods for three miles, crossed the intersection of Highways N and G, then dissipated. Main damage was to electric cables, telephone poles and trees.											
Three Lakes, Oneida County	13	2100	3	?	0	0	5	0			Tornado
A weak tornado touched down at the intersection of Highway 45 and Crystal Lake Road, then moved three miles southeastward before disappearing. From Route 45, the tornado crossed Crystal Lake, cut through an area of tourist cottages, moved southeast across Big Lake and then cut through another tourist area. 1,000 to 1,500 trees were downed and extensive damage occurred to tourist facilities including: approximately 12 summer cottages (one totally destroyed), two power boats, numerous piers and several automobiles. Most damage occurred on the north and east shores of Big Lake.											
Woodruff, Oneida County	13	2200			0	1	0	0			Wind
High winds toppled a tree, injuring one person slightly.											
Plum Lake Campground, Sayner, Vilas Co.	13	2200			0	1	0	0			Wind
High winds toppled a maple tree, injuring one person slightly.											
Adams, Juneau Counties	13	2200-2350			0	0	5	0			Lightning
Lightning caused four house fires in Adams (Adams Co.), near Wnawoc, New Lisbon and Camp Douglas, located in Juneau County.											
Polk, St. Croix, Pierce, Dunn Co.	14	0500-0630			0	1	6	?			Severe Thunderstorm
A severe thunderstorm caused widespread wind damage to trees, power facilities and transmission lines, rural structures, houses and commercial buildings. 60 to 80 mph winds occurred at many locations. St. Croix Falls (Polk County), Hammond, New Richmond and Hudson (all in St. Croix County), and Colfax and Menomonie (Dunn County) each reported "hundreds" of trees downed with resulting damage to houses and cars. A 200 foot transmission tower collapsed at Hammond. 50 barns in rural Pierce County were damaged. A tornado (see separate report) occurred at Spring Valley (Pierce County) at 0555. At 0630, two University of Wisconsin students, speaking to each other on the telephone from separate apartments, suffered electric shocks when lightning struck the line. One student was treated for burns.											
Spring Valley, Pierce County	14	0555	0.5	?	0	0	5	?			Tornado
A tornado struck the Olaf Nyeggen farm, which overlooks Spring Valley, and destroyed a large barn, one silo and several smaller structures. One house, a garage, farm machinery, other barns and silos were damaged. Two dairy cattle in the barn were killed. The tornado then moved southeast and damaged a large building at Crystal Cave, which is adjacent to and downhill from the Nyeggen farm.											
Eau Claire County	14	0700			0	0	4	0			Severe Thunderstorm
Winds estimated at 70 mph damaged three barns at three separate locations in central Eau Claire County.											
Oneida, Vilas Counties	14	0800-0850			0	0	4	0			Severe Thunderstorm
A severe thunderstorm with winds estimated at 70 mph caused widespread tree and power line damage. The areas around Minocqua, Rhinelander and Eagle River were especially affected. 25,000 people were without power for up to 8 hours in the area especially around Minocqua.											
Polk, Barron, St. Croix, Burnett, Washburn Counties	14	1600-1800			0	0	5	?			Severe Thunderstorm
A severe thunderstorm produced winds, estimated at 50 to 70 mph, causing widespread damage to trees and power lines. Six barns were destroyed in northern St. Croix and southern Polk Counties and numerous other rural structures sustained minor damage. At 1705, Cumber and Barron Co. received 2-3" hail that broke windows, damaged roofs and dented cars. The hail lasted about two minutes.											
<b>LATE REPORTS</b>											
JUNE 1981											
<b>WISCONSIN</b> St. Croix River, Eureka Township, Polk County	14	1930	?	?	0	0	0	0			Waterspout
A waterspout formed over the St. Croix River, moved toward the south, and dissipated before touching land.											
Mondovi Area, Buffalo County	14	2200			0	0	5	?			Severe Thunderstorm
Northern portions of the county, especially around Mondovi, suffered widespread damage to rural structures from 80 mph winds and heavy rain. A turkey farm was destroyed near Mondovi.											
Dane, Green, Rock, Dodge, Jefferson, Washington, Waukesha Counties	15	1000-1350			0	3	6	6			Severe Thunderstorm, Flash Flooding, Lightning
Two clusters of severe thunderstorms swept across the area causing damaging winds, flash floods and intense lightning. Three tornadoes (see the following separate reports) also occurred in association with these thunderstorms, one in Cottage Grove (Dane Co.), another in Decatur Township (Green Co.), and a third from Waukesha into Jefferson County. Two to five inches of rain occurred in a two-hour period across Dane and Dodge Counties, followed by severe flooding. In Sun Prairie (Dane Co.), an 8 year old boy was swept by flood waters 220 feet through a culvert. He was hospitalized unconscious and in critical condition. In Madison (Dane Co.), 2.39 inches of rain in one hour forced city officials to divert raw sewage into 3 area waterways. Water damage in Madison was extensive to many houses and businesses, and amounted to about \$400,000. Intense lightning started 18 minor house fires in Dane and Rock Counties. At Evansville (Rock Co.), two cemetery workers were struck by lightning while seeking shelter during the onset of the storm at 10:0 a.m. CST. They were hospitalized in good condition. 40 to 80 mph winds occurred at many locations in Washington, Jefferson, Waukesha, Dodge and Dane Counties. Many houses and rural structures were damaged, mainly from falling trees. By county, damages included: Washington County - \$42,000 to 6 houses, 3 barns; Jefferson County - \$200,000 to 12 farm buildings, \$15,000 to 2 houses; Waukesha County - \$45,000 to 3 farms; Dodge County - \$72,000 to 4 barns, plus machinery; Dane County - \$1,350,000 including \$400,000 to flooded houses and businesses, \$600,000 to corn crops and \$350,000 to farm erosion.											
Jefferson, Waukesha Counties	15	1302-1338	31	?	0	3	5	?			Tornado
A funnel developed at 104 p.m. EST over Lake Koshong in extreme southeast Jefferson County and moved northeast at 80 mph. The first touchdown occurred at Blackhawk Island, where trees and power lines were damaged. The next touchdown occurred at the Joseph Hecht farm, just northeast of Jefferson. The funnel continued northeast and touched down again at 2:15 p.m. EDT about 2 miles southeast of Johnson Creek where it destroyed the Leo Koebler trailer home. Three occupants were hospitalized with cuts. The next touchdown occurred three miles to the northeast on Hwy. XX in Farmington where the Leonard Wolf farm was damaged. The next touchdown occurred at 2:30 p.m. EDT in Ixonia, extreme northeast Jefferson County. A large dairy barn was destroyed. A final touchdown occurred about 1:35 p.m. CST at the Petersen farm, two miles to the northeast in northwest Waukesha County.											
1 West of Cottage Grove, Dane Co.	15	1010	1	?	0	0	5	0			Tornado
A tornado associated with a rapidly moving thunderstorm developed at the intersection of Vilas Road and County BB, moved northeast across the Mondak housing development where it damaged 8 houses and demolished 2 others, then continued northeast damaging the Jensen farm, and finally dissipated one mile west of County Hwy. N. Most damage was in Mondak development at Lane Street and Mondak Circle, where winds attained an estimated speed of 125 mph.											
Decatur Township, Southeast Green Co.	15	1025	?	?	0	0	3	0			Tornado
A brief tornado touchdown was observed by three people. Minor damage was sustained to one farm.											
Dodge, Fond du Lac Counties	15	1115-1215			0	0	5	0			Severe Thunderstorm
A severe thunderstorm moved from central Dodge County northeast into central and southeast Fond du Lac County. The storm produced 40-80 mph winds, pulling down many trees and electrical wires. One house was unroofed and several others sustained minor damage in Eder (Fond du Lac Co.). A tornado also occurred 4 miles south of Waupun (see separate entry) with this thunderstorm.											

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
<b>LATE REPORTS</b>									
JUNE 1981									
<b>WISCONSIN</b>									
4 South of Waupun, Dodge County	15	1130	.1	?	0	0	4	?	Tornado
A tornado touched down briefly at the Elroy Harder farm, 4 miles south of Waupun on Hwy. 26. A large machinery shed was destroyed and roof damage occurred to nearby buildings.									
Manitowoc County	15	1150-1230			0	0	5	?	Severe Thunderstorm, Flooding
High thunderstorm winds produced damage at scattered locations in the county. Barns and electric utility poles were damaged in rural areas around Kiel, St. Nazianz and Manitowoc. Up to three inches of rain fell in Manitowoc, resulting in \$25,000 flood damage to a downtown business.									
Plymouth, Sheboygan County	15	1345-1430			0	0	4	?	Funnel Cloud, Severe Thunderstorm
A severe thunderstorm produced 60 mph winds and 1/2 inch hail at Plymouth. Damaging winds also occurred at Crystal Lake, Glenbeulah and Sheboygan. Power outages were also reported in those communities. A funnel cloud developed over Plymouth at 1:50 p.m. CST, but dissipated without ever touching down.									
Soldiers Grove, Crawford County	20	Morning			0	0	4	?	Lightning
Lightning struck a tree and then spread through a herd of 37 Holstein cattle, killing 19 of them. The animals are valued at \$2500 each.									
Trempealeau, La Crosse, Monroe Counties	23	1830-2200			0	0	5	0	Severe Thunderstorm
A large thunderstorm moved through the area causing widespread wind damage. Hundreds of large trees fell, damaging houses and cars. Power was off to 6,000 people for four hours in rural areas. Communities especially hard hit were Galesville (Trempealeau Co.); West Salem, Bangor, Onalaska and LaCrosse (LaCrosse Co.); and Sparta and Tomah (Monroe County). A wind gust of 68 mph was measured at the LaCrosse Airport at 8:30 p.m. CST. One tornado associated with this thunderstorm occurred at West Salem (see following report).									
West Salem, La Crosse County	23	1930	2	?	0	0	5	0	Tornado
Eyewitnesses saw a tornado develop over Neshonoe Lake, then move southeast across the lake, sucking up water as it went. The tornado hit the Lakeview farm and moved southeast to County Hwy. B.									
Iowa, Sauk, Columbia, Dane Counties	23-24	2230-0030			0	0	4	?	Severe Thunderstorm
Heavy thunderstorm rains caused localized flooding and winds of 40 to 65 mph did widespread tree damage. Madison (Dane Co.) experienced winds measured at 53 mph, and Marshall (Dane Co.) experienced winds at 60 mph.									
Northern Grant County	23-24	2300-0045			0	0	4	?	Severe Thunderstorm
A severe storm produced high winds of unusually long duration. Tree and minor roof damage was reported in Boscobel and Blue River. Wind gusts to 70 mph at Boscobel, and sustained winds above 40 mph persisted from 2:31 to 10:30 at that spot.									
Jefferson County	24	0045-0120			0	0	5	?	Severe Thunderstorm
High thunderstorm winds inflicted \$250,000 in damage across the county. Winds of 40-80 mph were estimated at Lake Mills and Jefferson where most of the damage occurred. Hundreds of large trees fell in those communities, damaging utility wires, houses and parked cars.									
Racine County, Western Portion	24	0215			0	0	4	?	Severe Thunderstorm
Winds uprooted large trees in scattered locations of extreme western Racine County.									
Neillsville, Clark County	28	1900-2100			0	0	4	0	Flooding
Three to four inches of rain swamped the area in two hours resulting in widespread street flooding. Several culvert washouts and road collapses occurred in Neillsville.									
<b>CORRECTIONS</b>									
JUNE 1981									
<b>ILLINOIS</b>									
Chatton, Adams County	21	9pm	1	50	0	0	0	0	Tornado
A tornado touched down briefly just north of Chatton causing no damage.									
<b>DELETE</b>									
<b>MISSOURI</b>									
Adams	21	9 PM	1	50	0	0	0	0	Tornado
A brief touchdown just north of Chatton with no injuries or damage.									



# STORM SUMMARY

FEBRUARY 1981

STATE	TORNADOES					HAILSTORMS			WINDSTORMS				LIGHTNING				@HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				♠ ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	† DAMAGE	DEATHS	INJURIES	† DAMAGE		DEATHS	INJURIES	† DAMAGE		DEATHS	INJURIES	† DAMAGE		DEATHS	INJURIES	† DAMAGE		DEATHS	INJURIES	† DAMAGE				
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			
Alabama	2	1		67	6					3	5														6			
Alaska	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Arizona	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Arkansas	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
California	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Colorado																												
Connecticut	/	/	/	/	/	/	/	/	/	1	4														1			
Delaware	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Florida	5	4			5									4														
Georgia										11	6	?																
Hawaii	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Idaho	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Illinois	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Indiana	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Iowa	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	2		5									
Kansas	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Kentucky	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Louisiana	/	/	/	/	/	/	/	/	/	/	4			4														
Maine	/	/	/	/	/	/	/	/	/	/	5			/														
Maryland & DC	/	/	/	/	/	/	/	/	/	/	5			/														
Massachusetts	/	/	/	/	/	/	/	/	/	6	5			5														
Michigan	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Minnesota	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Mississippi	1	1		2	5					/	4																	
Missouri	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Montana	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Nebraska	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Nevada	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
New Hampshire	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	5						1		6			
New Jersey	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
New Mexico	/	/	/	/	/	/	/	/	/	/	4			/														
New York	/	/	/	/	/	/	/	/	/	/	5			/														
North Carolina	5	1	1	2	6					3	5																	
North Dakota	/	/	/	/	/	/	/	/	/	/	4			1		4												
Ohio	/	/	/	/	/	/	/	/	/	/	4			/											3			
Oklahoma	/	/	/	/	/	/	/	/	/	?	?	?	?						?	?	?	?	?	?	?			
Oregon	/	/	/	/	/	/	/	/	/	?	?	?	?															
Pacific	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Pennsylvania	/	/	/	/	/	/	/	/	/	/	5			/											7			
Puerto Rico	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Rhode Island	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
South Carolina	4	2			4					2	10	4	3															
South Dakota	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Tennessee	/	/	/	/	/	/	/	/	/	?	?																	
Texas	7	2	1	11	6					5	?			1		5												
Utah	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Vermont	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Virginia	1	1			5					/	5																	
Virgin Islands	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Washington	/	/	/	/	/	/	/	/	/	1	5			5														
West Virginia	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Wisconsin	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
Wyoming	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			

# STORM SUMMARY

MARCH 1981

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING			HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ALL OTHER					
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS	
Alabama	8	4			5		5	4		5	6			1	3														5	
Alaska	/																													
Arizona	/																													
Arkansas																														
California	1	1			3													4	15	?					8	13	?			
Colorado											2	3						1												
Connecticut	/																													
Delaware	/																													
Florida	4	2		13	6						1	4																		
Georgia	4	1		1	5			2	3		3	5	3																	
Hawaii	/																													
Idaho											2	6																		
Illinois	1	1			6						1	4																		
Indiana	1	1			4																									
Iowa																														
Kansas	2	1										4																		
Kentucky	‡																													
Louisiana								?	?			4	?																	
Maine																														
Maryland & DC										1		4																		
Massachusetts	/																													
Michigan	‡																													
Minnesota	1	1			4																									
Mississippi	2	1		2	6						2	4																		
Missouri	/																													
Montana	‡																													
Nebraska																														
Nevada	/																													
New Hampshire	/																													
New Jersey	/																													
New Mexico	/																													
New York	/										1	5	?																	
North Carolina	1	1	1	1	5																									
North Dakota	/																													
Ohio	/																													
Oklahoma	1	1						?	?			?	?																	
Oregon	/																													
Pacific	/											6																		
Pennsylvania	/											4																		
Puerto Rico	/																													
Rhode Island	/																													
South Carolina	/										7	6	2																	
South Dakota	/																													
Tennessee	/											?																		
Texas	7	5		2	5			6	?		5	7	6		1	4												?	5	?
Utah	/																													
Vermont	/																													
Virginia	1	1		2	5							4																		
Virgin Islands	/																													
Washington	/																													
West Virginia	/																													
Wisconsin	/											5																		
Wyoming	/																													

# STORM SUMMARY

APRIL 1981

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				@HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				φ ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE					
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS								
Alabama	1	1	2	23	7					1	4				5														
Alaska	/	/	/	/	/																								
Arizona																													
Arkansas	1	1			5						6																		
California											?			3															
Colorado											4														4				
Connecticut															3											2			
Delaware																													
Florida	2	2		2	5					3	4																		
Georgia	1	1			5					3	5		1	2	3														
Hawaii	/	/	/	/	/																								
Idaho	1	1			3																				5	4			
Illinois	9	4		36	7		4	3		7	7	3	1		5														
Indiana	2	2			4						?																		
Iowa	10	5		11	6		6		1		6	4		2															
Kansas	3	2			5		4	4		1	5		1		?										5				
Kentucky											3	5			?														
Louisiana	1	1			4		2	?			4	?		2		?													
Maine											4																		
Maryland & DC									2		4				4														
Massachusetts																													
Michigan	1	1			3				3	1	5		1		3	5													
Minnesota	4	1		2	6						2				5														
Mississippi	/	/	/	/	/																								
Missouri	11	2	2	32	7		4	3		1	7	3			4														
Montana	/	/	/	/	/																								
Nebraska	3	1			5		6	6			6	4																	
Nevada	/	/	/	/	/																								
New Hampshire	/	/	/	/	/																								
New Jersey	/	/	/	/	/																								
New Mexico	/	/	/	/	/																								
New York	/	/	/	/	/																								
North Carolina											?	?																	
North Dakota	1	1		2																									
Ohio	3	2			5		5			5	6		2	5											5				
Oklahoma	11	6	6	61	8		?	?			?	?		?	?														
Oregon									1	1	4	?													4	?			
Pacific	/	/	/	/	/																								
Pennsylvania	1	1			4		?	?			?	?			3										4				
Puerto Rico	/	/	/	/	/																								
Rhode Island															4														
South Carolina	3	2		3							5	3																	
South Dakota											3																		
Tennessee	1	1			?		?	?			5	?																	
Texas	9	5		3	5		6	6		42	7	6	1	1	5	?						1	1	4	6	4			
Utah	/	/	/	/	/																								
Vermont	/	/	/	/	/																								
Virginia	/	/	/	/	/																								
Virgin Islands	/	/	/	/	/																								
Washington	/	/	/	/	/																								
West Virginia										10	5														5	2			
Wisconsin	3	2	3	59	7		4		?	?	6	?			5										2				
Wyoming	1	1			?																								

# STORM SUMMARY

MAY 1981

STATE	TORNADOES					HAILSTORMS			WINDSTORMS				LIGHTNING				@HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				◇ ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE				
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			
Alabama	/	1	1		4							5			4										7			
Alaska																									5			
Arizona								4	3			6													?			
Arkansas	8	4		10	6		7	?			6			1	5									1		?		
California																										?		
Colorado	5	4			3		3	4			4		1	11	4													
Connecticut	#																											
Delaware											3				3													
Florida	10	7			5						4																	
Georgia	1	1			5						5			1														
Hawaii																									6	5		
Idaho	/																								4	6		
Illinois	1	1									4				4									6	6	6		
Indiana	1	1									4			2											6	4		
Iowa	10	1			5				4		5															8		
Kansas	14	6			6						6		5	1	2	4	2								5	5		
Kentucky	1	1			2			3	3		3		6	5	?										6	?		
Louisiana	5	3			5			3	C		5		6	?											?	?		
Maine	/																									?		
Maryland & DC	1	1		2	6			3					4		1	1	4									4		
Massachusetts	#																									?		
Michigan																									2	?		
Minnesota	1	1						3			4			1	3										7	C		
Mississippi	1	1		1	5			2	?		?		?												?	?		
Missouri	4	3		1	6			5	5		5		2	2	1	5	2							1		?		
Montana	1	1																								7		
Nebraska									4				5			3										7		
Nevada	/																											
New Hampshire	/																											
New Jersey	/																											
New Mexico	1	1														5												
New York																												
North Carolina									6		1		4															
North Dakota											1		5		3											8		
Ohio								5			1		5													8		
Oklahoma	44	5		26	7			7	C	1	25		?	?	?	?								1	5			
Oregon																												
Pacific	/																											
Pennsylvania	1	1			4						1		5	?		4									3	C		
Puerto Rico																								1	6			
Rhode Island	#																											
South Carolina	1	1		6	4								3		4													
South Dakota								?	?																			
Tennessee	3	3			4			?	?		1		?	?	1													
Texas	)																											
Utah	1	1			1																					5		
Vermont	/																											
Virginia	1	1			4								4		1	4										3		
Virgin Islands																										4		
Washington	/																											
West Virginia								?	?				5	2												4		
Wisconsin													5	?												2		
Wyoming	/																											

# STORM SUMMARY

JUNE 1981

STATE	TORNADOES					HAILSTORMS			WINDSTORMS				LIGHTNING				@HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				# ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	↑DAMAGE	DEATHS	INJURIES	↑DAMAGE		DEATHS	INJURIES	↑DAMAGE		DEATHS	INJURIES	↑DAMAGE		DEATHS	INJURIES	↑DAMAGE		DEATHS	INJURIES	↑DAMAGE				
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			
Alabama								6		1	°5	C			5	?								°5	C			
Alaska															?	5	?											
Arizona																												
Arkansas																												
California																												
Colorado	10	3		44	7			5	5															5				
Connecticut	†																											
Delaware								3																				
Florida	17	11		1	5					4	8				12	4												
Georgia								4		2					1	6												
Hawaii	/																											
Idaho										4	5	3																
Illinois	8	4	1	12	6			6	6													1		7	6			
Indiana	4	3			6			3														1		5	8			
Iowa	8	5		1	6			7	8																			
Kansas	11	8	1	33	7			6	6						3	5							3	7	7			
Kentucky	1	1		7	6			7	6						4	2						4	7	7				
Louisiana	10	5		10	6			°3	C						5	4							2	6	4			
Maine	1	1			4																							
Maryland & DC								5	4						2	4							1	6	3			
Massachusetts	†																											
Michigan	3	3			5																							
Minnesota	12	2	1	91	7		9	6	7																			
Mississippi	2	1			5										1													
Missouri	15	7	1	7	6			3	?						?	?												
Montana								1	1															1	5			
Nebraska	5	3			6			6	8															5	5			
Nevada	/																											
New Hampshire	1	1			?										5	?												
New Jersey	1	1			?					1					?	?												
New Mexico	4	4			4										1									4	3			
New York																								4				
North Carolina	3	1		1	5										2								1	3				
North Dakota	4	3						4	5						2	2								3	8			
Ohio	21	5	4	76	8			3	4						2	2	6						2	8	8			
Oklahoma	7	7		6	6			7	6						1	6	?						1	2	?			
Oregon																												
Pacific	/																											
Pennsylvania	4	2			4																		3	8	?			
Puerto Rico	/																											
Rhode Island	†																											
South Carolina	†																						3					
South Dakota	†																											
Tennessee	3	1			5																		3	1	?			
Texas	)														21	5								6	?			
Utah	/																											
Vermont	/																											
Virginia										4	1													6	3			
Virgin Islands	/																											
Washington	1	1			2																				6			
West Virginia	1	1			5			2	2						5	2								6	5			
Wisconsin	10	4		3	6			4	5						6	5							1	6	6			
Wyoming								5	5															6	?			

REFERENCE NOTES

- \* Miles instead of yards.
- \*\* Yards instead of miles
- O Includes crop damage.
- C Crop damage.
- / No occurrence of storms or unusual weather phenomena reported.
- @ Includes heavy sleet storm.
- # Freezing drizzle and freezing rain, commonly known as glaze.
- Ø All other.
- ± No report received for this state.
- )( Report Incomplete.
- † Storm damages are placed in categories varying from 1 to 9 as follows:
  - 1 Less than \$50
  - 2 \$50 to \$500
  - 3 \$500 to \$5,000
  - 4 \$5,000 to \$50,000
  - 5 \$50,000 to \$500,000
  - 6 \$500,000 to \$5 Million
  - 7 \$5 Million to \$50 Million
  - 8 \$50 Million to \$500 Million
  - 9 \$500 Million to \$5 Billion

USCOMM-NOAA-ASHEVILLE, N.C. 1981-1900

U.S. DEPARTMENT OF COMMERCE  
NATIONAL CLIMATIC CENTER  
FEDERAL BUILDING  
ASHEVILLE, N.C. 28801

POSTAGE AND FEES PAID  
U. S. DEPARTMENT OF COMMERCE  
COM 210



THIRD CLASS  
BULK RATE