

JULY 1991
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NUMBER 7

STORM DATA

AND UNUSUAL WEATHER PHENOMENA
WITH LATE REPORTS AND CORRECTIONS



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

COVER: Traffic was a mass of confusion as motorists and pedestrians waded on Long Beach Boulevard, New Jersey, on July 13th and 14th. (Photo courtesy: *The Sandpaper*, photographers: Bill Cammann, Tim Moersh, Ray Fisk, Surf City, New Jersey.)

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STORM DATA

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National Climatic Data Center

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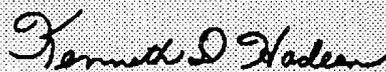
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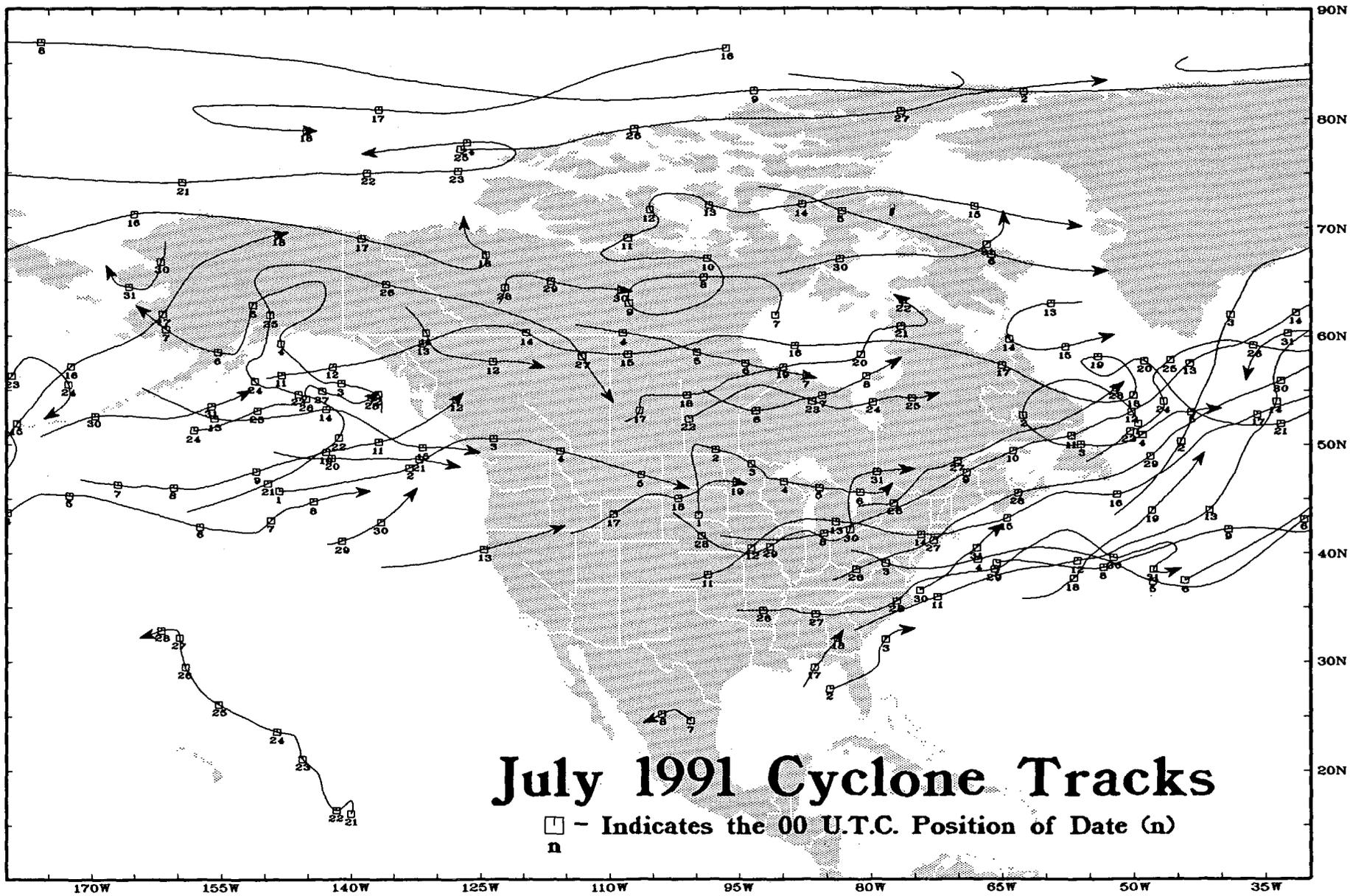
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Director
National Climatic Data Center



CLIMATIC DATA FOR THE MONTH

PRECIPITATION AND TEMPERATURE ANOMALIES - JULY 1991

Table I shows the temperature and precipitation rankings for July 1991 for the nine climatically homogeneous regions outlined in Fig. 1.

Temperatures averaged near-to-above normal across the country as hot spells were replaced by periods of cool weather. Monthly mean temperature departures greater than +2°F existed in parts of the Great Basin, central Plains, eastern Corn Belt, and the mid-Atlantic region. Temperature departures of -2°F to -4°F were observed in the southern and central Rockies, southern High Plains, and southern California. Below-normal temperature departures in the southern High Plains were due to cloud cover from an active summer monsoon. Nationally, temperatures averaged above the long-term mean. July ranked as the 37th warmest July on record since 1895. (See Figs. 2 and 3 on page 5.)

With a steady flow of tropical moisture, the Southeast, southern Plains, and the southern Rockies received two to five times their normal July rainfall. Above normal precipitation also occurred in the usually dry Far West. Below normal monthly precipitation was experienced from the Central Region into the Northeast and West North Central Regions. Nationally, July 1991 ranked as the 29th driest July on record. (See Figs. 4 and 5 on page 6.)

TABLE 1. TEMPERATURE AND PRECIPITATION RANKINGS FOR JULY 1991, BASED ON THE PERIOD 1895-1991. 1 = DRIEST/COLDEST, 97 = WETTEST/HOTTEST.

<u>REGION</u>	<u>PRECIPITATION</u>	<u>TEMPERATURE</u>
Northeast	15	75
East North Central	54	43
Central	10	73
Southeast	85	83
West North Central	16	51
South	45	53
Southwest	55	35
Northwest	41	47
West	89	70
National	29	61

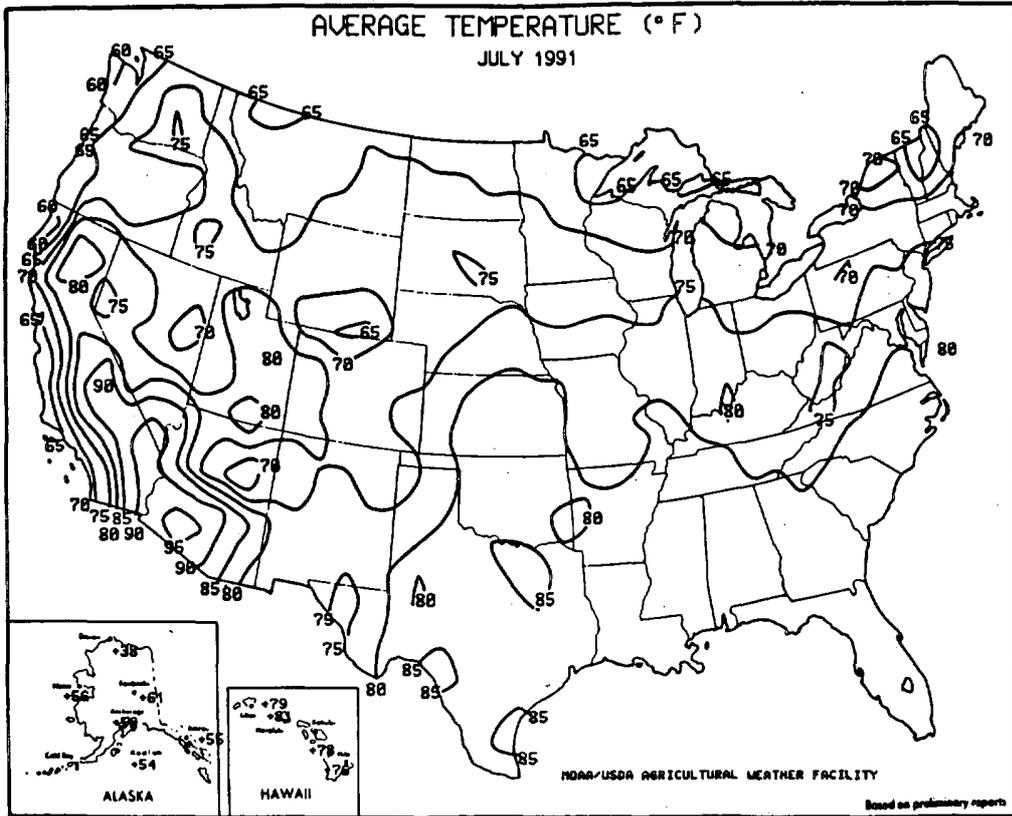
From National Climatic Data Center

Fig. 1



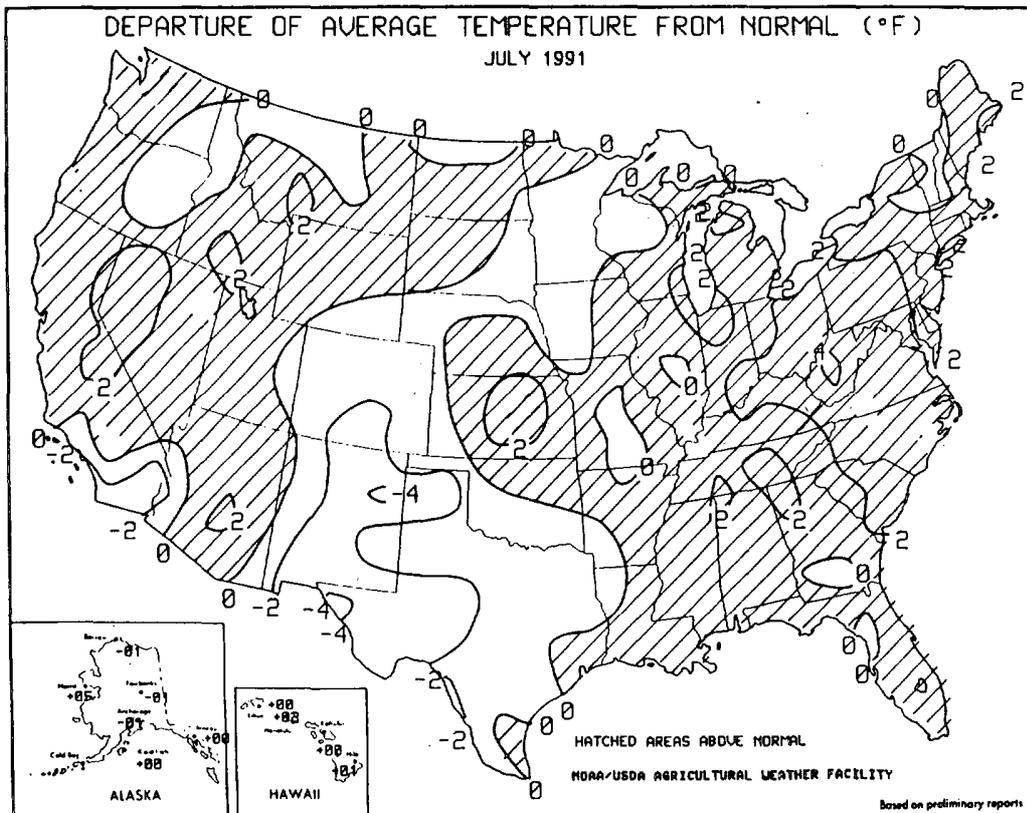
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Fig. 2



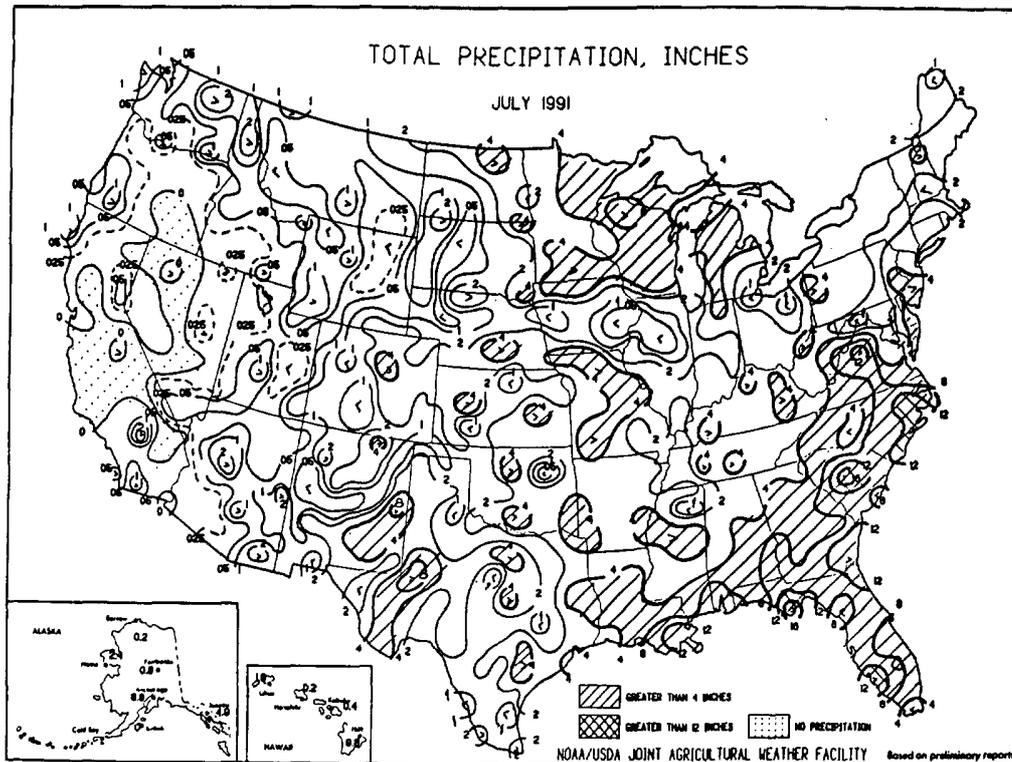
Reprinted from *Weekly Weather and Crop Bulletin* - August 6, 1991

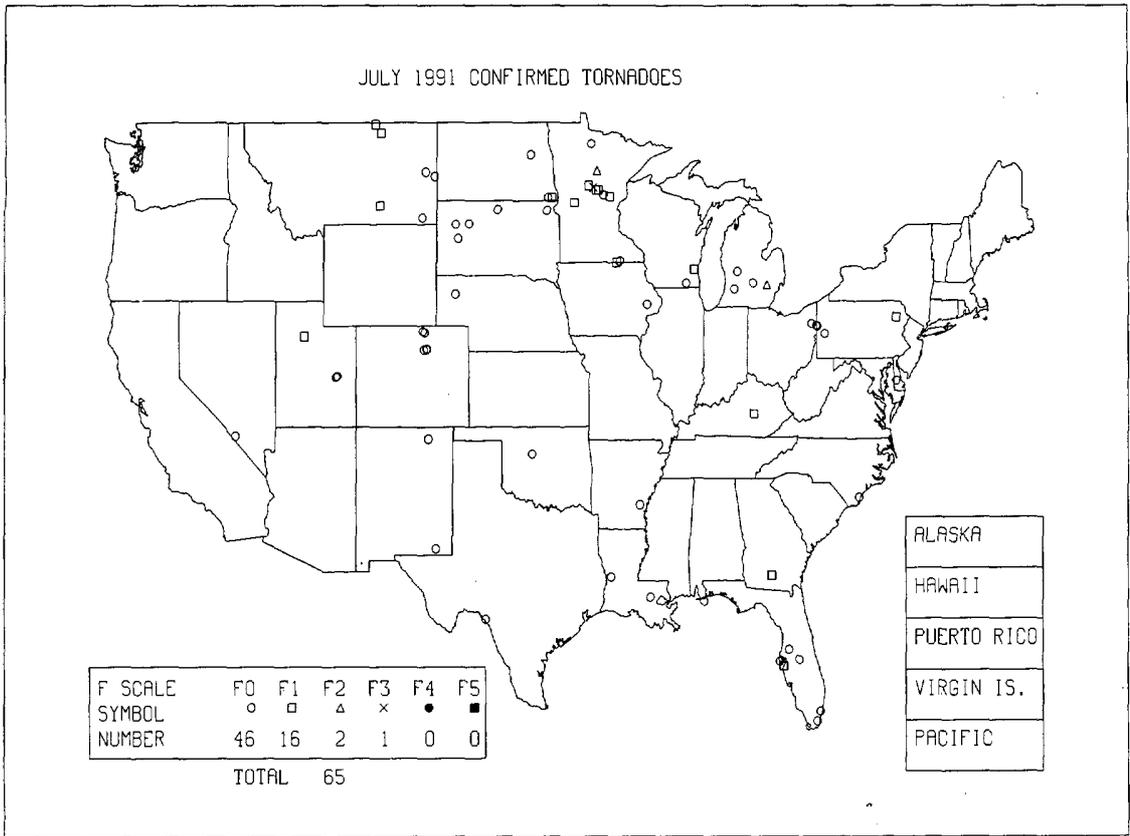
Fig. 3



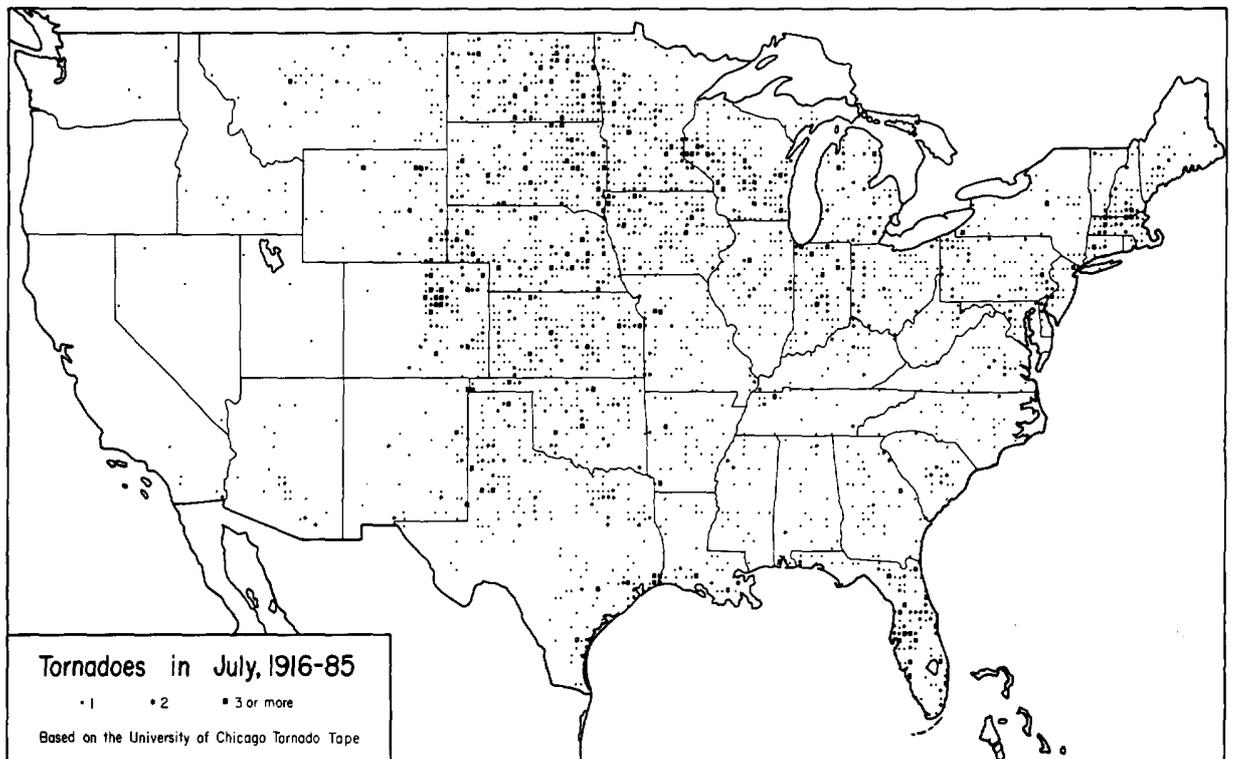
Reprinted from *Weekly Weather and Crop Bulletin* - August 6, 1991

Fig. 4





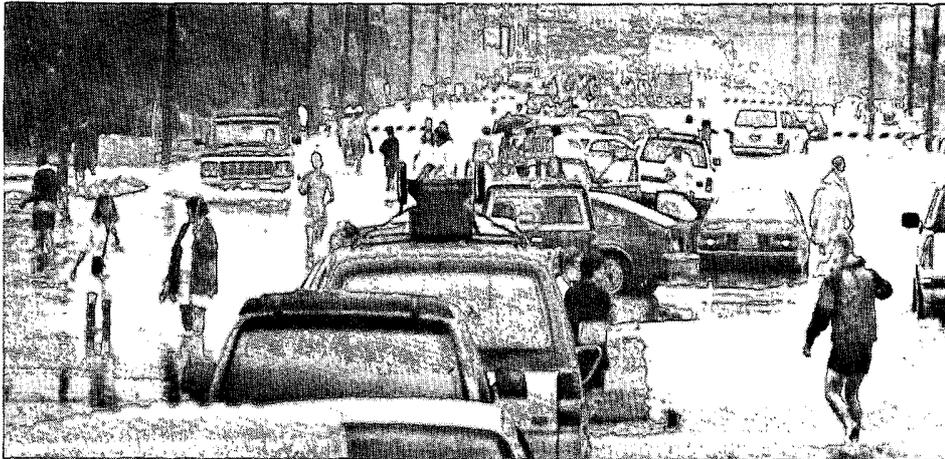
July 1991 saw a total of 65 tornadoes strike the United States. The strongest tornado went through Cass County, Minnesota, on July 5th causing an estimated \$2 million in property damage. The Fujita Scale rating of this tornado was F3. (See map above.) One death and four injuries occurred in the month of July 1991.



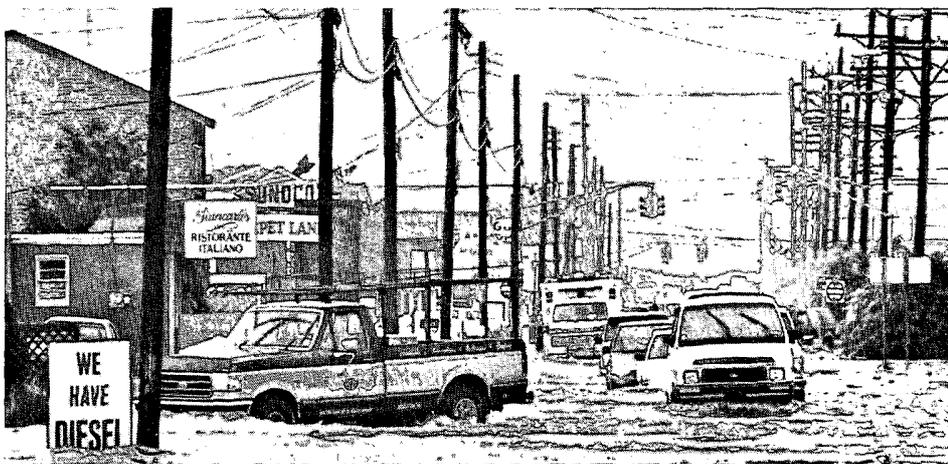
OUTSTANDING STORMS OF THE MONTH

1. FLOODING HITS NEW JERSEY

Heavy downpours from very slow moving thunderstorms dumped up to 12.55 inches of rain in Burlington and Ocean Counties on July 13th and 14th. Extensive flooding occurred on Long Beach Island and in adjacent areas of the mainland. Damage was quite extensive, ranging from washed out bridges to damaged homes too unsafe to be reoccupied.



Left: Traffic in Surf City was a mass of confusion as motorists and pedestrians wade on Long Beach Boulevard. *Bottom:* Traffic going through high water. (Photo courtesy: Bill Cammann, Tim Moersh, and Ray Fisk, Surf City, New Jersey.)



2. HIGH WIND DAMAGE AND HAIL DAMAGE

A thunderstorm with winds gusting to 60 mph struck Renville County, Minnesota, on July 17th. The wind damaged a barn, trees, and power lines. On July 21st, a violent wind and hailstorm struck southern Dickey County, North Dakota. The wind downed 0.50 mile of power poles and damaged homes and farm buildings. Hail caused extensive damage to the crops. On the following page are pictures of the above-mentioned storm damage.



Above: This 30- by 80-foot barn was a victim of the wind on July 17, 1991. Much of the hay was salvageable, but damage did occur to miscellaneous items in the barn. **Above (right):** This bent but not broken tree was partially uprooted at Edmen Christian Reformed Church in Renville, Minnesota. Later, the tree was righted and tethered. (Photo courtesy: *Star Farmer News, Renville, MN.*)



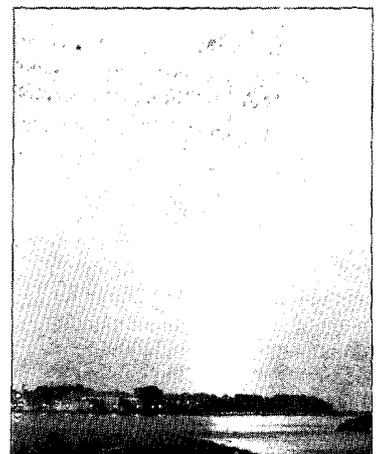
Above: About 0.50 mile of Montana Dakota Utilities power lines were blown down due to the wind. The lines were downed along Highway 281. **Above (right):** Crop damage was quite extensive as hail up to 1.75 inch in diameter fell. **Right:** A machine shed damaged by the wind. (Photo courtesy: *Dickey County, Livy Hird, Reporter.*)

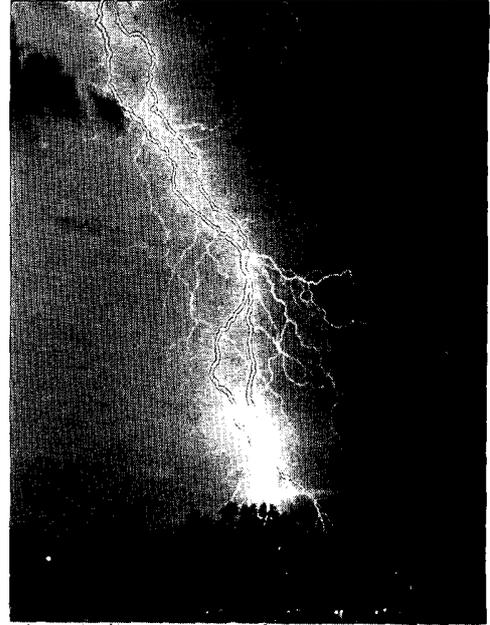
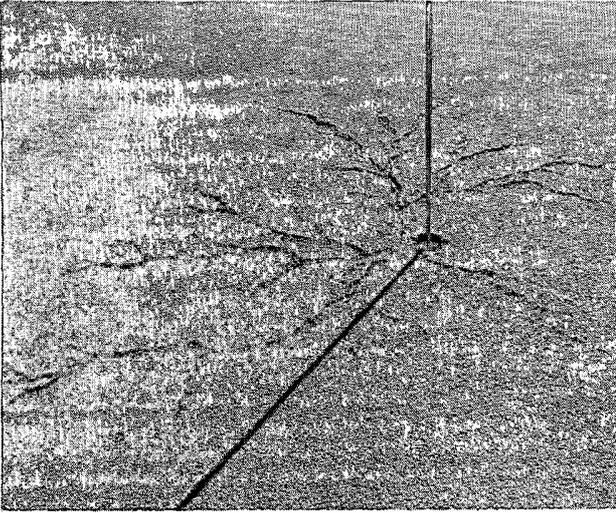


3. LIGHTNING STRIKES PARTS OF U.S.

Lightning struck several places in the United States during the month of July. Lightning struck Rye Playland in Rye, New York, on July 19th. A multiple cloud-to-ground lightning discharge hit Lakeland, Florida, on July 30th. On the last day of the month, lightning struck a golf course in Kansas.

A cloud-to-ground lightning discharge at Rye Playland, Rye, New York. Approximate time of photo is 8:10 p.m. EDT. (Photo courtesy and ©: Jack "Thunderhead" Corso, Harrison, New York.)





Right: Multiple cloud-to-ground discharge over Lakeland, Florida, from an isolated thunderstorm during early morning of July 30th. (Photo courtesy and ©: Jack "Thunderhead" Corso, Harrison, New York.) **Above:** Lightning struck the flag stick at Hole 6 on the St. Mary's golf course. It blew the flag apart, melted the plastic, then traveled down the pole into the ground. This is the lowest point on the golf course! (Photo courtesy: The St. Mary's Star; photographer, Carla Opliger, St. Marys, KS.)

4. ROCK AND MUD SLIDE HITS NEW MEXICO

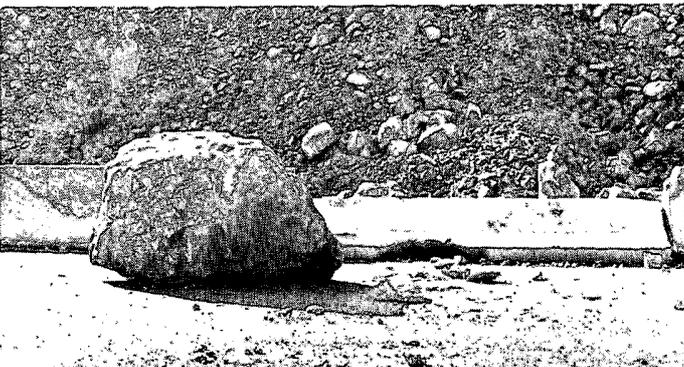
Rains brought flash floods, rock and mud slides to Taos and Santa Fe Counties on July 25th. The slides covered New Mexico Highway 68 south of Pilar, trapping motorists. Damage was estimated at over \$50,000. In Santa Fe County, flood waters washed out roads and damaged homes. Estimated damage was over \$200,000.



BEFORE



AFTER



Above (both): Front-end loaders helped clear the road and rescue trapped motorists. **Left:** Boulders tore down guardrails and cement barriers. (Photo courtesy: The Taos (NM) News; chief photographer, John Hanron, Taos, New Mexico.)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		
ALABAMA								
Mobile County	02	1525CST- 1600CST			0	0	? ?	Hail (0.75) Thunderstorm Winds (G54)
			At 1525 CST, a wind gust to 62 mph was recorded at the National Weather Service office at the airport in Mobile. At 1600 CST, dime-size hail fell about 8 miles southeast of the airport in Mobile.					
Limestone County	02	1715CST			0	0	? ?	Thunderstorm Winds
			Numerous large trees were blown down in the Ripley vicinity.					
Morgan County	09	0041CST			0	0	? ?	Thunderstorm Winds
			Trees were blown down in northwestern Decatur.					
Geneva County	09	1810CST			0	0	? ?	Thunderstorm Winds Hail (0.75)
			Trees were blown down 10 miles north of the Geneva Community. At about the same time, dime-size hail fell at Bellwood.					
Bullock County	13	1950CST			0	0	? ?	Thunderstorm Winds
			Fallen trees were blocking roads at scattered locations throughout the county.					
Covington County	14	1637CST			0	0	? ?	Thunderstorm Winds
			Strong thunderstorm winds blew power lines down in Andalusia.					
Baldwin County	14	1755CST			0	0	? ?	Thunderstorm Winds
			Strong thunderstorm winds blew down trees and power lines at Foley.					
Houston County	14	1800CST			0	0	? ?	Thunderstorm Winds
			Trees were blown across roads about 3 miles south of Madrid near the Florida border.					
Baldwin County	15	1255CST			0	0	? ?	Thunderstorm Winds
			A tin roof was blown off a building and a transformer and power pole were blown down in Robertsedale. Trees were blown down in the same vicinity.					
Russell County	15	1800CST			1	17	? 0	Lightning
			One soldier was killed and 17 others were injured when lightning struck a tree near their tent. Six of the injured required hospitalization. The other 11 were treated and released. (M220)					
Choctaw County	22	1200CST			0	0	? ?	Thunderstorm Winds
			Strong thunderstorm winds overturned an aircraft and damaged an airport building at Butler.					
Dallas County	22	1325CST			0	0	5 0	Thunderstorm Winds
			Thunderstorm winds estimated at 60 to 65 mph, downed 15 to 20 trees in Selma. Several trees fell on homes and vehicles. Damage was estimated at approximately \$250,000.					
Covington County	23	1822CST			0	0	? ?	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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ALABAMA Cont'd

Trees and power lines were blown down in the Gantt vicinity.

Clay County	24	1620CST			0 0	? ?	Thunderstorm Winds
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Strong thunderstorm winds blew the roof off a house about 4 miles south of Ashland.

Henry County	24	1645CST			0 0	? ?	Thunderstorm Winds
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Power lines were blown down in the Headland area.

Covington County	24	1745CST			0 0	? ?	Thunderstorm Winds
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Trees and power lines were blown down in Florida.

Escambia County	24	1840CST			0 0 0	0 0	Hail (0.75)
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Dime-size hail fell at Atmore.

Elmore County	25	1317CST			1 0	0 0	Lightning
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A 64-year-old man was killed by lightning while cutting grass in Tallahassee. The lightning struck a nearby pine, left the trees 25 feet above the ground, then struck the victim. (M640)

ARIZONA

Pima County Tucson	04	1730MST			2 0	0 0	Lightning
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Thunderstorms developed over many areas of the state and moved to the southwest. A woman carrying her young daughter was struck and killed by lightning at the Sabino Canyon Visitors' Center. Several small brush fires were reported in the Tucson area, and winds reached 46 mph at the airport. (F270)(F010)

Greenlee County Duncan	24	1600MST			0 0	0 2	Thunderstorm Winds
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High winds tore off half of the roof and an evaporative cooler from one home.

York	25	1445MST			1 1	0 0	Hail (?)
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Cotton fields sustained damage when a swath of hail 3 miles long and 4 miles wide moved through.

Coconino County 20 N Flagstaff	26	1220MST			1 1	0 0	Lightning
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While hiking near the top of Mt. Humphreys, almost 13,000 feet elevation, two men were struck by lightning. One was killed instantly, and the other made his way down the mountain to seek help. (M240)

Apache County Fort Defiance	26	1230MST			1 0	0 0	Lightning
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While herding sheep in a nearby corral on the hillside, a Navajo man was struck (M700)

Cochise County Douglas	27	1343MST			0 0	3 0	Thunderstorm Winds (G53)
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Winds gusted to 61 mph at the airport in Douglas.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ARIZONA Cont'd									
Maricopa County Phoenix	28	1645MST			0	0	5	0	Thunderstorm Winds (G52)
									Thunderstorms formed along the Mogollon Rim and drifted to the southwest. They gained strength, and as the outflow winds hit the desert cities, a large dust storm developed. Falcon Field sustained gusts up to 60 mph. A travel trailer was damaged when a transformer exploded, and 25 power poles were downed in parts of Mesa. Arcing power lines sent sparks flying into bushes and eventually set fire to the roof of a home in Phoenix.
La Paz County Quartzsite	29	Afternoon			0	0	3	0	Thunderstorm Winds
									Arizona Public Service reported about five poles down due to the high winds. Blowing dust near Wenden cut the visibility to a mere 100 feet at times.
Yavapai County Prescott Valley	29	1600MST			0	0	2	0	Thunderstorm Winds
									Power lines were downed due to high winds.
Maricopa County Phoenix	29	1630MST			0	0	4	0	Thunderstorm Winds
									High winds downed power lines near 30th Street and Southern triggering a fire to about 300 palm trees at a nursery. A roof was blown off a mobile home in Glendale. About 5,000 customers were without power in Mesa. A series of accidents occurred on Interstate 10 in western Phoenix during a dust storm.
ARKANSAS									
Lonoke County England	02	1245CST			0	0	3	0	Thunderstorm Winds
									Thunderstorm winds downed power lines and a few trees causing minor damage to a few roofs.
Pulaski County Little Rock	02	1245CST			0	0	4	0	Lightning
									Lightning strikes started a house fire and damaged 3 transformers.
Marion County Bull Shoals	03	1050CST			0	0	3	0	Thunderstorm Winds (G56)
									Winds estimated at 65 mph downed trees and power lines and damaged a few boats and boat docks along Bull Shoals Lake.
Montgomery County Caddo Gap	03	1100CST			0	0	2	0	Thunderstorm Winds
									Thunderstorm winds downed a couple of trees near Caddo Gap.
Pike County 9 E Kirby	03	1125CST			0	0	2	0	Thunderstorm Winds
									Wind gusts blew down several trees.
Clark County Amity	03	1130CST			0	0	4	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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ARKANSAS Cont'd

A lightning strike killed 12 cows at a farm near Amity.

Arkadelphia	03	1220CST			0 0	3 0	Thunderstorm Winds (G56)
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Thunderstorm winds estimated at 65 mph downed some large trees and power lines.

Independence County Cushman	03	1320CST			0 0	3 0	Thunderstorm Winds
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Thunderstorm winds broke some large tree limbs resulting in downed power lines.

Woodruff County Augusta	03	1530CST			0 1	0 0	Lightning
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A technician in a lift-bucket working on a cable television line was struck by lightning and hospitalized for 4 days.

Jefferson County Pine Bluff	09	1030CST			1 0	0 0	Heat
--------------------------------	----	---------	--	--	-----	-----	------

A 79-year-old man died of heat stroke while mowing his lawn. (M790)

Mississippi County Blytheville	12	1817CST			0 0	4 0	Thunderstorm Winds (G53)
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Wind gusts around 60 mph downed trees and power lines, and caused some minor roof damage.

Pulaski County Little Rock	13	1440CST			0 0	3 0	Thunderstorm Winds
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Thunderstorm winds downed trees and power lines across southwest Little Rock.

Conway County Blackwell	13	1530CST			0 0	0 0	Hail (0.75)
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Grant County Prattsville	13	1530CST			0 0	0 0	Hail (0.75)
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Clark County Amity	13	1540CST			0 2	0 0	Thunderstorm Winds
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Thunderstorm winds downed trees in Amity.

Jefferson County Wabaseka	13	1548CST			0 0	3 0	Thunderstorm Winds
Altheimer	13	1555CST			0 0	2 0	Thunderstorm Winds

A wooden "H" structure supporting a 115-kw power line was downed near Wabaseka. Trees were downed near Altheimer.

Pike County 5 E Kirby	13	1555CST			0 0	2 0	Thunderstorm Winds
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Thunderstorm winds blew down numerous trees, blocking Highway 84.

Jefferson County 6 NW Pine Bluff	13	1555CST			0 0	3 0	Thunderstorm Winds
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Wind gusts downed power lines at the Pine Bluff Arsenal.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
		Local/ Standard			Killed	Injured		
ARKANSAS Cont'd								
Hot Spring County Antioch	13	1555CST			0	0	3 0	Thunderstorm Winds
								Thunderstorm winds downed trees and power lines. One house was damaged by a downed tree.
Arkansas County Lodge Corner	13	1601CST			0	0	5 0	Thunderstorm Winds
								Thunderstorm winds downed four steel, electric transmission towers near Lodge Corner.
Clark County Caddo Valley	13	1615CST			0	0	4 0	Thunderstorm Winds (G52)
								Thunderstorm winds gusting to 60 mph took the canopy off a truck stop and dropped it on a truck and car.
Jefferson County Pine Bluff	13	1620CST			0	0	2 0	Thunderstorm Winds
								Thunderstorm winds downed a few trees in Pine Bluff.
Clark County 3 NE Okolona	13	1630CST			0	0	2 0	Thunderstorm Winds
								Wind gusts downed trees between Arkadelphia and Okolona.
Arkansas County Gillett	13	1650CST			0	0	3 0	Thunderstorm Winds
								Thunderstorm winds downed power lines in Gillett.
Desha County 4 N Dumas	13	1650CST	0.1	25	0	0	0 0	Tornado (F0)
								A SKYWARN spotter reported a small tornado touched down briefly in a field, and kicked up a considerable amount of dust.
Dallas County 7 W Princeton	13	1705CST			0	0	2 0	Thunderstorm Winds
								Thunderstorm winds downed trees west of Princeton.
Ashley County Montrose	13	1852CST			0	0	3 0	Thunderstorm Winds
								Two wooden "H" structures on a 115-kw transmission line were downed. The damage affected electric service to four neighboring communities.
Union County El Dorado	17	1330CST			0	0	3 0	Lightning
								Lightning strikes knocked out power to parts of El Dorado. A poultry processing plant was damaged and had to shut down for an hour.
Drew County Monticello	18	1230CST			0	0	0 0	Hail (1.00)
Quachita County Eagle Mills	18	1545CST			0	0	0 0	Hail (0.75)
Hot Spring County								

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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ARKANSAS Cont'd

Malvern	19	1624CST			0	0	0	0	Hail (0.75)
Malvern	19	1635CST			0	0	2	0	Thunderstorm Winds

Thunderstorm winds downed trees along Highway 67.

Montgomery County 5 W Hopper	19	1650CST			0	0	3	0	Hail (1.75)
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Golf ball-size hail dented a sheriff's office patrol car west of Hopper.

Crittenden County West Memphis	23	1800CST			0	0	4	0	Lightning
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Lightning strikes caused widespread power outages.

Pulaski County Little Rock	24	1230CST			0	0	0	0	Hail (1.00)
Jefferson County Pine Bluff	24	1430CST			0	0	3	0	Thunderstorm Winds (G43)
Pine Bluff	24	1430CST			0	0	3	0	Lightning

Thunderstorm winds, estimated by SKYWARN spotters at 50 mph, caused minor damage to a roof and a few outbuildings. Lightning strikes knocked out power to about 6000 people.

Jefferson County Pine Bluff	29	1335CST			0	0	3	0	Lightning
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Lightning strikes caused scattered power outages.

Prairie County 5 SW Des Arc	29	1405CST			0	0	0	0	Hail (0.75)
Ashley County Portland	29	2300CST			0	0	3	0	Thunderstorm Winds (G52)

Wind gusts estimated at 60 mph broke large tree limbs onto power lines resulting in power outages.

CALIFORNIA, Northern

None reported.

CALIFORNIA, Southern

San Bernardino County Northeastern Portion	05	1650PST			0	0	?	0	Thunderstorm Winds
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A strong thunderstorm in the Mountain Pass area, along Interstate 15, produced strong gusty winds to 50 mph, with some locally heavy rain and frequent lightning.

Imperial County El Centro	07	1500PST			0	0	?	0	Thunderstorm Winds
San Bernardino County Daggett									

A thunderstorm in the El Centro area produced winds to 35 mph. Winds to 38 mph were reported at Daggett, during a thunderstorm. Brief heavy rain accompanied these storms.

Daggett	07	2000PST			0	0	?	0	Thunderstorm Winds
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Wind gusts to 47 mph hit Daggett during a strong thunderstorm, along with brief heavy rain.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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CALIFORNIA, Southern Cont'd

CAZALL	08	All Day			0	0	?	?	Flash Flood
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A rare July rainstorm hit most areas of southern California, as a moist unstable air mass moved in from Mexico. The Los Angeles Civic Center recorded 0.13 inch of rain. This was the first time it has ever rained at the Civic Center, on July 8th. Mt. Wilson had 0.27 inch of rain, Gib Bean received 0.24 inch, and Pasadena received 0.21 inch of rain. Some areas in Hesperia, in San Bernardino County, had local flooding from strong thunderstorms.

CAZ013-014-019	31	0700PST			0	0	?	0	Flash Flood Thunderstorm Winds
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An area of strong thunderstorms hit the northern desert, mountains, and Owens Valley areas of southern California. Some minor flash flooding occurred along State Routes 127 and 190, in the Death Valley area of Inyo County.

CAZ013-014-018-019	31	1010PST			0	0	?	0	Flash Flood Thunderstorm Winds
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An area of strong thunderstorms hit all mountains, deserts, and Owens Valley areas of southern California. Daggett in San Bernardino County, reported 1.56 inches of rain in a 6-hour period that ended at 1000 PST. Heavy rainfall from a thunderstorm caused flash flooding and mudslides, around 1430 PST, in southwestern Imperial County. Interstate 8, between El Centro and Ocotillo near Dunaway Road, and State Route 98 near Drew Road were closed briefly due to flash flooding.

COLORADO

Bent County Las Animas	01	2320MST			0	0	?	?	Hail (1.00)
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The Bent County Sheriff's Office reported 1.00-inch hail at Las Animas.

Baca County Springfield	02	0216MST			0	0	3	?	Hail (1.00)
Springfield	02	0216MST			0	0	3	?	Thunderstorm Winds (G87)
Walsh	02	0330MST			0	0	3	?	Thunderstorm Winds (G69)

The Baca County Sheriff's Office reported 1.00 inch hail. Thunderstorm wind gusts of up to 100 mph shattered windows in Springfield, and wind gusts to 80 mph were reported in Walsh.

Teller County Woodland Park	02	1520MST			0	0	?	?	Hail (0.75)
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Public reported dime-size hail at Woodland Park.

El Paso County Colorado Springs	02	1615MST			0	0	?	?	Hail (0.75)
Monument	02	1620MST			0	0	?	?	Hail (0.75)
Elbert County Elbert	02	1625MST			0	0	?	?	Hail (0.75)

Public reported dime size hail at Palmer Park in Colorado Springs and at Monument. Thunderstorms also dropped dime-size hail at Elbert, and caused some local street flooding.

Lincoln County 2 S Limon	02	1718MST			0	0	?	?	Hail (0.75)
Hugo	02	1720MST			0	0	?	?	Hail (0.75)

Dime-size hail fell just south of Limon, and at Hugo.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm	
					Killed	Injured	Property Crops		
COLORADO Cont'd									
Elbert County 5 S Kiowa	02	1735MST			0	0	?	?	Hail (0.75)
	Public reported dime-size hail 5 miles south of Kiowa.								
El Paso County 5 NE Calhan	02	1800MST			0	0	?	?	Hail (0.75)
	Public reported dime-size hail 5 miles northeast of Calhan.								
Weld County Frederick	02	1833MST			0	0	3	?	Thunderstorm Winds
	Microburst wind caused damage to a car and broke large tree branches in Frederick.								
El Paso County 1 S Falcon	08	1450MST			0	0	?	?	Thunderstorm Winds (G58)
Colorado Springs	08	1515MST			0	0	?	?	Hail (0.75)
Elbert County Kiowa	08	1517MST			0	0	?	?	Thunderstorm Winds (G50)
	Thunderstorms produced wind gusts of 67 mph 1 mile south of Falcon and 58 mph at Kiowa. Dime-size hail was reported at Colorado Springs.								
Douglas County Castle Rock	08	1400MST			0	0	3	?	Lightning
Castle Rock	08	1510MST			0	0	4	?	Lightning
Castle Rock	08	1550MST			0	0	3	?	Lightning
	Lightning started three house fires in Castle Rock. Damages totaled \$13000; no injuries were reported.								
Moffat County Craig	09	1340MST			1	0	?	?	Lightning
	Lightning struck and killed a man in Craig. (M370)								
Larimer County 1 S Wellington	12	1310MST			0	0	?	?	Hail (1.75)
3 S Wellington	12	1358MST			0	0	3	?	Thunderstorm Winds
	Golf ball-size hail fell 1 mile south of Wellington. Thunderstorm wind gusts threw large tree branches into power lines 3 miles south of Wellington.								
Adams County Thornton	12	1425MST			0	0	?	?	Hail (0.75)
Brighton	12	1435MST			0	0	?	?	Hail (1.75)
Thornton	12	1514MST			0	0	?	?	Hail (2.00)
Denver County 4 NW Denver	12	1459MST			0	0	?	?	Hail (0.75)
	Hail up to two inches in diameter fell in Thornton. Golf ball-size hail fell in Brighton. Dime-size hail fell in 4 miles northwest of Denver, breaking a few tree branches.								
Jefferson County 14 SSW Denver	12	1522MST			0	0	?	?	Flash Flooding
Golden	12	1555MST			0	0	?	?	Flash Flooding
Golden	12	1612MST			0	0	?	?	Flash Flooding

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
COLORADO Cont'd									
12 W Denver	12	1625MST			0	0	3	?	Flash Flooding
Golden	12	1630MST			0	0	4	?	Flash Flooding
Golden	12	1646MST			0	0	?	?	Flash Flooding
Denver County									
3 N Denver	12	1527MST			0	0	?	?	Flash Flooding
3 NNE Denver	12	1540MST			0	0	?	?	Flash Flooding
Arapahoe County									
10 ESE Denver	12	1533MST			0	0	?	?	Flash Flooding
<p>Very heavy rains caused flooding across the Denver metro area in a short period of time. Parts of Golden had up to 2 feet of water with a mobile home park in Golden reporting 1 foot of water in the lot. Flood waters washed away part of a parking lot at the Colorado School of Mines in Golden. Heavy rain caused a rock slide and flooding along Interstate 70. Flood waters were a foot deep on Interstate 70 at Interstate 25.</p>									
Weld County									
Keenesburg	12	1535MST			0	0	?	?	Thunderstorm Winds (G53)
<p>Thunderstorm gust to 61 mph recorded at the National Weather Service Mesonet Station, located at Keenesburg.</p>									
Adams County									
16 NE Denver	12	1830MST			0	0	?	?	Funnel Cloud
<p>Personnel at the Mile High Radar sighted a funnel cloud 2 miles northeast of the radar sight.</p>									
El Paso County									
Colorado Springs	20	1639MST-							
		1745MST			0	0	?	?	Flash Flooding
Colorado Springs	20	1730MST			0	0	3	?	Lightning
<p>Heavy rain in Colorado Springs caused extensive flooding, taking out a section of road. Two boys were swept away by an overflowing storm drain channel, but were rescued before being carried into a closed portion of the channel. Neither boy was injured. Lightning started a house fire which caused about \$3000 in damage. No injuries were reported.</p>									
Jefferson County									
Arvada	22	1412MST			0	0	?	?	Flash Flooding
Arvada	22	1604MST			0	0	?	?	Flash Flooding
Denver County									
3 N Denver	22	1416MST			0	0	?	?	Flash Flooding
3 N Denver	22	1437MST			0	0	?	?	Flash Flooding
Larimer County									
10 WNW Fort Collins	22	1500MST			0	0	?	?	Flash Flooding
Weld County									
30 NE Denver	22	1900MST			0	0	?	?	Flash Flooding
<p>Heavy rains caused extensive flooding across northern Denver, northwestern Jefferson and southern Weld Counties. Ralston Creek went out of its banks. Interstate 70 had 1 foot of water over a large area north of downtown Denver. At the junction of Interstate 70 and 25, 8 feet of water covered the highway. Up to 4 inches of rain in a short time caused the creek running through Rist Canyon to rise out of its banks.</p>									
Adams County									
South Platte River	22-23	2100MST-0700MST			0	0	?	?	Flooding

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
COLORADO Cont'd									
Weld County South Platte River	22- 23	2100MST- 0700MST			0	0	?	?	Flooding
Heavy rains during the 22nd, across the Palmer Divide and the Front Range, caused flooding along the South Platte River from near Henderson to Fort Lupton. The river was out of its banks at several locations with water covering roads through the night. The flood wave decreased by morning and only minor damage was reported.									
Kit Carson County 10 N Seibert	23	0035MST			0	0	?	?	Flash Flooding
Weld County Prospect Valley	23	0230MST			0	0	?	?	Flash Flooding
The sheriff's office reported 1.5 feet of water across Colorado Highway 59 10 miles north of Seibert. Three feet of water covered roads along Sand Creek at Prospect Valley.									
Weld County 2 N Hudson	25	1422MST	Short	Narrow	0	0	?	?	Tornado (F0)
The tornado touched down briefly 2 miles north of Hudson.									
6 E Fort Lupton	25	1443MST	Short	Narrow	0	0	?	?	Tornado (F0)
The tornado was on the ground briefly 6 miles east of Fort Lupton.									
2 SW Fort Lupton	25	1502MST	Short	Narrow	0	0	?	?	Tornado (F0)
The tornado touched down briefly 2 miles southwest of Fort Lupton.									
1.5 N Nunn	25	1535MST	Short	Narrow	0	0	?	?	Tornado (F0)
7 NW Nunn	25	1537MST	Short	Narrow	0	0	?	?	Tornado (F0)
A tornado was sighted 1.5 mile north of Nunn. A police officer reported that the tornado was on the ground briefly 7 miles northwest of Nunn.									
El Paso County 15 NE Colorado Springs	26	1245MST			0	0	?	?	Hail (1.00)
A spotter reported 1.00-inch hail 15 miles northeast of Colorado Springs.									
15 S Falcon	26	1306MST			0	0	?	?	Hail (0.75) Thunderstorm Winds (G52)
Falcon	26	1313MST			0	0	?	?	Hail (1.00)
Falcon	26	1400MST			0	0	?	?	Hail (0.75)
Large hail fell in and around Falcon. Three-quarter-inch hail fell 15 miles south of Falcon and wind gusts in excess of 60 mph were reported. Hail, up to 1 inch in diameter, fell at Falcon.									
Weld County Carr	26	1313MST			0	0	0	0	Funnel Cloud
Air Force helicopter pilots spotted a funnel cloud near Carr.									
Jefferson County Westminster	26	1400MST			0	0	?	?	Flash Flooding
Adams County 12 N Denver	26	1427MST			0	0	?	?	Flash Flooding

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	
COLORADO Cont'd								
A National Weather Service employee reported 0.5 inches of rain in 10 minutes that caused flooding in Westminster and in Northglenn.								
Denver County 3 N Denver	26	1410MST			0	0	4 ?	Flash Flooding
Heavy rain caused local flooding that washed away a section of a railroad track.								
Morgan County 3 NNW Wiggins	26	1442MST			0	0	0 0	Funnel Cloud
A spotter reported a funnel cloud 3 miles north-northwest of Wiggins.								
CONNECTICUT								
Hartford County Enfield Suffield Windsor Locks	21	1550EST- 1605EST			0	0	5 0	Thunderstorm Winds (G65)
Numerous trees were blown down in Suffield and Enfield, some up to 2-feet diameter in Enfield. A "downburst" wind swept along a path 200 yards wide snapping off many trees 15 to 20 feet off the ground.								
Enfield	21	1600EST			0	0	4 0	Lightning
A lightning strike killed 32 cows that were valued at \$30,000.								
Litchfield County New Hartford Barkhamsted	21	1620EST- 1630EST			0	0	? 0	Thunderstorm Winds
Numerous trees were blown down in New Hartford and Barkhamstead.								
Hartford County Simsbury West Hartford	21	1650EST- 1700EST			0	0	? 0	Thunderstorm Winds
Numerous trees were blown down.								
Tolland County Ellington	21	1650EST			0	0	? 0	Thunderstorm Winds
The state police reported large branches downed by thunderstorm winds.								
Fairfield County Ridgefield Wilton	23	1405EST			0	0	5 0	Thunderstorm Winds
Numerous trees were blown down and many power outages were reported. A falling tree crushed the cab of a moving van causing \$75,000 damage.								
Stratford	23	1425EST- 1430EST			0	0	? 0	Thunderstorm Winds
A plane was ripped from its tiedown at the airport by thunderstorm winds.								
Hartford County Enfield Windsor Locks	23	1518EST- 1535EST			0	0	4 0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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CONNECTICUT Cont'd

Avon

Numerous large trees were blown down at scattered locations.

Hartford
West Hartford
East Hartford
South Windsor

23	1540EST- 1555EST				0	0	5	0	Thunderstorm Winds (G63)
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A 72-mph wind gust was recorded in Hartford at WTIC. Trees and power lines were blown down at scattered locations. Trees fell on two unoccupied mobile homes in South Windsor resulting in total losses. Several homes were damaged by falling trees.

Fairfield County
Fairfield
Stratford
Norwalk
New Canaan

23	1545EST- 1600EST				0	0	5	0	Thunderstorm Winds (G51)
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Many trees were blown down in Fairfield and a wind gust to 59 mph was recorded by the National Weather Service in Bridgeport. The towns of Wilton, Weston, Easton, and Trumbull sustained severe damage when many trees and power lines were downed. Up to 132,000 electric customers lost power statewide, and 51,000 of those were in Fairfield County. A New Canaan police officer, investigating falling trees and wires at an intersection in town, was severely burned by falling electric wires. He died the next day.

Hartford County
Manchester

23	1608EST				0	0	?	0	Thunderstorm Winds
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Numerous trees and power lines were downed resulting in many roads being closed.

Tolland County
Bolton
Andover
Hebron

23	1610EST				0	0	?	0	Thunderstorm Winds
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Several large trees were blown down in each town, and Route 85 was closed because of falling trees.

CTZ004
Bethel
Danbury

26	1330EST- 1500EST				0	0	?	0	Heavy Rain
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Up to 3.50 inches of rain fell in 1 hour in Bethel, and nearly as much in Danbury causing considerable street flooding. Some automobiles stalled out in water several feet deep. Low-lying sections also flooded.

DELAWARE

Sussex County
3 NNW Henlopen
Acres

02	2130EST				0	1	0	0	Lightning
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A man was hospitalized and released after being struck by lightning at Cape Henlopen State Park (3 miles north-northwest of Henlopen Acres).

5 N Bethany Beach

07	1315EST				0	2	5	0	Thunderstorm Winds (G115)
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Unusually strong thunderstorm winds gusted to at least 100 knots (115 mph) as recorded at the automated Coast Guard observation site at Indian River Inlet (5 miles north of Bethany Beach). The recorded gust went to the end of the instrument scale. The state police reported 15 mobile homes damaged or demolished at a mobile home park on the southern shore of Indian River Inlet; an adjacent state campground was almost untouched. A person was injured in one mobile home when another mobile home was blown into it. A woman was seriously injured at the mobile home park by flying debris. Several cars were heavily damaged, and three Coast Guard boats were capsized. The Coast Guard reported damage to the roof, fencing, and satellite dish of its station at Indian River Inlet. Reports of a tornado were not confirmed. The damage was caused by a very strong downburst.

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July 1991

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		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage		
DELAWARE Cont'd									
Kent County 3 S Harrington	08	1415EST	0.3	10	0	0	5	0	Tornado (F0)
A local resident reported that a small tornado touched down in southwestern Kent County about 3 miles south of Harrington. State police surveyed the area by helicopter and confirmed a small narrow damage swath. The tornado demolished an unoccupied mobile home and blew over a parked tractor-semitrailer. Utility poles on one side of nearby railroad tracks were sheared off while poles on the other side were left intact.									
Farmington	08	1415EST			0	0	4	0	Thunderstorm Winds
The same thunderstorm that caused the tornado 3 miles south of Harrington brought damaging winds to Farmington that downed trees and power lines.									
FLORIDA									
Dade County 5 N Homestead	01	1427EST			0	2	2	0	Lightning
Lightning struck a car on an expressway. It exited through the car's tires causing three of them to blow out. The two occupants were treated at a local hospital and later released.									
Palm Beach County 12 N West Palm Beach	03	1555EST			0	0	0	0	Funnel Cloud
A funnel cloud was reported by motorists in northern Palm Beach County. It dissipated without touching down.									
Monroe County 10 E Key West	04	1027EST	?	?	0	0	0	0	Waterspout
A waterspout was observed 10 miles east of Key West by control tower personnel at the Boca Chica Naval Air Stations.									
Indian River County Vero Beach	04	1635EST			0	0	0	0	Funnel Cloud
A funnel cloud was sighted briefly near Vero Beach.									
Brevard County Kennedy Space Center	04	1708EST			0	0	0	0	Funnel Cloud
A funnel cloud was sighted briefly by Kennedy Space Center security personnel.									
Cape Canaveral	04	1730EST	?	?	0	0	0	0	Waterspout
A waterspout was observed in the Banana River near Cape Canaveral, but dissipated before reaching the adjacent shoreline.									
Lake County 24 W Orlando	04	1240EST- 1430EST			0	0	4	0	Lightning
Lightning struck the roof of a house in Groveland starting a fire and burning the house to the ground.									
Volusia County Daytona Beach	04	1310EST			0	0	3	0	Lightning

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Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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FLORIDA Cont'd

Lightning started a house fire that destroyed a bedroom in the home and killed a small dog.

Orange County 15 WNW Orlando	07	1750EST			0 0	0 0	Funnel Cloud
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A pilot reported a funnel cloud over Lake Apopka in western Orange County.

Monroe County 10 N Key West	08	1410EST	?	?	0 0	0 0	Waterspout
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A waterspout was reported 10 miles north of the Key West Airport.

Lee County Fort Myers	08	1440EST			0 0	0 0	Hail (0.75)
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Three-quarter-inch hail fell briefly in Fort Myers.

Hardee County 28 ENE Sarasota	08	1710EST			0 0	0 0	Hail (0.75)
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Three-quarter-inch hail fell briefly over western Hardee County.

Marion County Ocala	09	1310EST			0 1	0 0	Lightning
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Lightning struck an emergency vehicle that responded to an automobile accident and injured a paramedic. He was taken to the hospital, but released later in the day.

Lee County Fort Myers	09	1440EST			0 0	1 0	Hail (1.50)
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Large hail fell briefly at Fort Myers.

Polk County Bartow	09	1254EST			0 0	1 0	Hail (0.88)
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Nickel-size hail and wind gusts to 50 mph were reported in Bartow.

Franklin County Apalachicola	09	1445EST- 1520EST			0 0	2 0	Hail (0.75) Thunderstorm Winds
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A National Weather Service employee reported 0.75-inch hail fell briefly between Apalachicola and Port St. Joe. Large tree limbs were also reported downed in Apalachicola.

Escambia County 2 W Pensacola	09	1520EST- 1530EST			0 0	1 0	Thunderstorm Winds
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Several trees were uprooted and tree limbs and power lines downed in Brent.

Monroe County Key Largo	10	0926EST	?	?	0 0	0 0	Waterspout
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A waterspout was sighted on the ocean side of Key Largo off Mile Marker 98 along U.S. Highway 1.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage		
FLORIDA Cont'd									
Lake County 20 W Orlando	10	1210EST			0	2	0	0	Lightning
									Lightning struck near two landscape workers in Clermont as they sought cover from a thunderstorm. They were transported to the hospital, but neither injury was considered by medical personnel to be life-threatening.
Brevard County Melbourne	10	1330EST			0	0	2	2	Thunderstorm Winds
									Strong thunderstorm winds blew down trees and power lines along U.S. Highway 192.
Escambia County Pensacola	10	1330EST			0	1	0	0	Lightning
									Lightning struck a mobile medical trailer as a repairman inside talked on the telephone. He was knocked unconscious.
Palm Beach County 12 N West Palm Beach	10	1330EST			0	0	0	0	Funnel Cloud
									A funnel cloud was sighted by a pilot in northern Palm Beach County.
St. Lucie County	10	1450EST	?	?	0	0	0	0	Waterspout
									A waterspout was sighted 1 mile east of Frederick Douglas Park.
Leon County Tallahassee	10	1615EST- 1650EST			0	0	2	0	Thunderstorm Winds Lightning
									Numerous tree limbs and power lines were downed mainly north through east of Tallahassee.
Broward County Fort Lauderdale	10	1315EST			1	0	0	0	Lightning
									Lightning struck and killed a man as he took shelter under a tree from a thunderstorm. (M290)
Pasco County 25 NNE Tampa	11	1115EST	Short	?	0	0	4	0	Tornado (F0)
									A small tornado touched down briefly on a farm outside Dade City, damaging the roofs of two buildings.
Gulf County St. Joe Bay	11	1305EST	?	?	0	0	0	0	Waterspout
									A waterspout was sighted by the public in St. Joe Bay along the western Gulf County coast. It dissipated after several minutes.
Franklin County St. George Sound	11	1330EST- 1340EST			0	0	2	0	Thunderstorm Winds
									A 32-foot boat was overturned by thunderstorm winds in St. George Sound.

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Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
FLORIDA Cont'd									
Taylor County Perry	11	1415EST			0	0	1	0	Thunderstorm Winds
Thunderstorm winds blew trees down across highways just north of Perry.									
Palm Beach County Belle Glade	11	1615EST			0	0	1	0	Thunderstorm Winds
Strong thunderstorm winds blew down several trees in western Palm Beach County.									
5 SE West Palm Beach	11	1620EST			0	0	1	0	Thunderstorm Winds
Strong thunderstorm winds blew several trees down in Lake Worth about 5 miles southeast of the Palm Beach International Airport.									
Broward County 8 S Fort Lauderdale	11	1650EST			0	1	0	0	Lightning
Lightning struck a house where a man was taking a shower. He was knocked out of the shower and onto the floor. He was taken to the hospital, but his injuries were not life-threatening.									
Dade County Homestead	12	1320EST- 1325EST	0.3	10	0	0	5	0	Tornado (F0)
A small tornado moved across the southeastern corner of Homestead Air Force Base. It touched down in a parking area for F16s and moved between two rows of the aircraft. It lifted aloft moving over an automobile parking lot before touching down again at an aircraft maintenance building, tearing off 1,000 feet of metal roof. It picked up two small trailers behind the maintenance building and threw them about 20 feet into several parked cars. The tornado then dissipated. The total damage estimate was \$115,000.									
Palm Beach County Southeastern Portion	12	1645EST- 1653EST			0	0	2	0	Thunderstorm Winds (G51)
Thunderstorm winds and lightning played havoc with trees, power lines, and transformers. Winds gusted to 59 mph at the Palm Beach International Airport at 1653 EST.									
Nassau County 15 N Jacksonville	12	1900EST			0	0	5	0	Thunderstorm Winds
In Yulee, strong downburst winds tore off part of the roof of a church, bent metal doors and a flagpole, tore off the tops of several tall trees, and blew a billboard into a car dealership building causing damage to several cars. A car and a pickup truck were blown into a retention pond behind the dealership.									
Manatee County Port Manatee	13	0442EST- 0500EST	0.8	30	0	0	5	1	Tornado (F1)
A tornado moved northeast to southwest across Port Manatee. It touched down ripping off part of the roofs of three buildings, flipping a construction trailer and carrying it 100 yards before dumping it on its side, and then flipped a flatbed truck. A 23-foot barge was thrown into the air, blown over several cars, and then deposited onto a truck, which bounced several other trucks. It ripped off the metal doors of the maintenance warehouse before lifting back into the parent cloud as it moved southwest. The estimated damage was \$80,000.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		
FLORIDA Cont'd									
Hillsborough County 4 N Ruskin	13	0520EST- 0600EST			0	0	3	0	Thunderstorm Winds
Strong thunderstorm winds downed several large trees and about seven power poles.									
Volusia County Daytona Beach Shores	13	0552EST			0	0	5	0	Thunderstorm Winds
Strong downburst winds shattered windows of businesses, blew down billboards and signs, and blew out plate glass windows and glass doors at several business buildings. Trees and power lines were also downed.									
Monroe County Big Pine Key	13	0700EST	?	?	0	0	0	0	Waterspout
A pilot reported a waterspout over the Florida Straits 4 miles south of Big Pine Key.									
Hillsborough County 12 ESE Tampa	13	0830EST			0	0	1	0	Thunderstorm Winds
Strong thunderstorm winds knocked down a large tree at Valrico.									
Dade County Homestead	13	1330EST			0	1	1	0	Lightning Thunderstorm Winds
A seventh-grade girl was shocked when lightning struck her house at the moment she reached for a radio dial to change the station. She was knocked to the floor. She was treated at home by medical personnel, but was not hospitalized. Lightning and thunderstorm winds damaged trees and power lines.									
Volusia County Ormond Beach	14	1430EST			0	0	3	0	Lightning
Lightning struck a tree and sent the trunk crashing into an adjacent house.									
Monroe County 5 NE Key West	14	1517EST	?	?	0	0	0	0	Waterspout
A waterspout was observed 5 miles northeast of the Key West Airport.									
Palm Beach County West Palm Beach	15	0650EST			0	0	0	0	Funnel Cloud
Two funnel clouds were observed briefly offshore of West Palm Beach.									
Brevard County	15	1230EST			0	0	0	0	Thunderstorm Winds (G58)
Thunderstorm wind gusts to 67 mph was recorded in northern Brevard County.									
Orange County Orlando Winter Park	15	1430EST			0	0	4	0	Thunderstorm Winds
Severe thunderstorm winds blew down several large trees in the Orlando area. Two houses were damaged by falling trees in Winter Park.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
FLORIDA Cont'd									
Escambia County Pensacola	15	1505EST			0	0	0	0	Hail (0.75)
	Three-quarter-inch hail fell briefly in southwestern Escambia County.								
Duval and Nassau Counties	15	1730EST- 1810EST			0	0	4	0	Thunderstorm Winds
	Strong thunderstorm winds blew down numerous trees and power lines, and lightning struck power lines and transformers resulting in scattered power outages.								
Osceola County Northeastern Portion	16	1425EST			0	0	0	0	Thunderstorm Winds (G50)
	A 58-mph thunderstorm wind gust was recorded in northeastern Osceola County.								
Putnam County 38 E Gainesville	16	1710EST			0	1	0	0	Lightning
	A Palatka man was knocked to the floor when lightning struck his mobile home as he talked on the telephone. He was taken to the hospital, but his injuries were not serious.								
Palatka Interlachen	16	1715EST- 1815EST			0	0	2	0	Thunderstorm Winds
	Strong thunderstorm winds uprooted trees and blew down power lines. There was some damage to automobiles hit by falling trees.								
Clay County Green Cove Springs	16	1740EST- 1800EST			0	0	2	0	Thunderstorm Winds
	Strong thunderstorm winds downed trees and power lines.								
Duval County 10 SSW Jacksonville	16	1800EST- 1825EST			0	0	2	0	Thunderstorm Winds
	Strong downburst winds damaged a barn roof and blew down trees.								
Monroe County 8 N Key West	17	1544EST	?	?	0	0	0	0	Waterspout
	A waterspout was observed 8 miles north of Key West.								
Marion County 17 WSW Ocala	17	1530EST			0	0	2	0	Thunderstorm Winds (G68)
	Thunderstorm gusts to 78 mph downed trees in Dunnellon.								
Hillsborough County Plant City Valrico	17	1700EST- 1730CST			0	0	2	0	Thunderstorm Winds
	Strong thunderstorm winds uprooted trees and downed power lines.								
Polk County Lakeland	17	1756EST			0	0	0	0	Funnel Cloud

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
FLORIDA Cont'd									
			Three funnel clouds were reported near Lakeland.						
10 E Lakeland	17	1820EST			0	0	0	0	Hail (0.88)
			Nickel-size hail fell briefly in Auburbdale.						
Lake Wales	17	1825EST	Short	?	0	0	0	0	Tornado (F0)
			A funnel cloud touched down briefly in an open field.						
Pasco County 25 NNE Tampa	17	1905EST			0	0	2	0	Thunderstorm Winds
			Thunderstorm winds downed trees and power lines in Dade City.						
Hernando County 36 N Tampa	18	1430EST			0	0	4	0	Lightning
			Lightning struck a mobile home in Brooksville starting a fire which destroyed the structure.						
Pinellas County Palm Harbor	19	1436EST			0	1	0	0	Lightning
			Lightning struck a man while he was waiting for his car to be repaired at a Western Auto store. He was hospitalized in stable condition.						
Lee County Cape Coral	19	1443EST- 1450EST			0	0	2	0	Thunderstorm Winds Hail (1.00)
			Downburst winds damaged a roof and screen enclosure in Cape Coral. Large hail was reported in Cape Coral and in St. James City.						
St. James City	19	1500EST			0	0	0	0	Hail (0.75)
			Dime-size hail fell briefly on Pine Island.						
Sarasota County 24 SSE Sarasota	19	1530EST			0	0	1	0	Hail (0.75) Thunderstorm Winds
			Three-quarter-inch hail fell briefly in northern Englewood. Thunderstorm winds uprooted a large tree.						
Alachua County Gainesville	19	1545EST			0	3	0	0	Lightning
			Lightning struck three people as they ran from the Veterans Administration Medical Center to their cars. Two of the injured required extensive hospitalization. One was critically injured, but the third was released later that day.						
Pasco County Hudson Land O'Lakes	19	1915EST- 1920EST			0	0	1	0	Thunderstorm Winds
			Thunderstorm winds blew down trees and power lines. One home in Hudson suffered roof damage. A tree was blown onto a house in Land O'Lakes.						

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
FLORIDA Cont'd									
Manatee County Bradenton	20	1330EST			0	0	4	0	Thunderstorm Winds
									Strong thunderstorm winds lifted the roof off a mobile home and knocked a large tree onto a building.
Monroe County	20	1355EST	?	?	0	0	0	0	Waterspout
									A waterspout was observed 5 miles north of the Key West Airport.
Manatee County 18 E Sarasota	20	1435EST			0	0	4	0	Thunderstorm Winds
									Thunderstorm winds blew down an aluminum carport and some metal storage sheds.
Pineallas County Seminole	20	1445EST	Short	?	0	0	0	0	Waterspout Tornado (F0)
									A waterspout moved onto the beach and then dissipated.
Indian Shores	20	1445EST	?	?	0	0	0	0	Waterspout
									Two waterspouts were sighted near Indian Shores and Seminole.
Pasco County Holiday	20	1457EST			0	0	4	0	Thunderstorm Winds
									Thunderstorm winds damaged the roof of a business building.
DeSoto County Brownsville	20	1943EST			0	0	0	0	Thunderstorm Winds
									Downburst winds flattened a barn on a cattle ranch.
Monroe County 5 N Key West	20	1752EST	?	?	0	0	0	0	Waterspout
									A waterspout was observed 5 miles north of Key West.
Escambia County Perdido Bay	21	1120EST	Short	?	0	0	0	0	Waterspout Tornado (F0)
									A waterspout developed over Perdido Bay then moved ashore at Innerarity Point before dissipating with no damage reported.
Monroe County 7 N Key West	21	1120EST	?	?	0	0	0	0	Waterspout
									A waterspout was observed 7 miles north of Key West.
Dade County Hialeah	21	1405EST- 1415EST	Short	?	0	0	0	0	Tornado (F0)
									A small tornado formed over a sparsely populated area northwest of Miami International Airport. It was visible for about 10 minutes as it moved very slowly west away from the metropolitan area. No damage was reported.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		
FLORIDA Cont'd									
Monroe County 3 W Key West	22	1042EST			0	0	0	0	Funnel Cloud
									A funnel cloud was observed 3 miles north of Key West.
Lee County Bonita Springs	22	1443EST			0	0	2	0	Thunderstorm Winds
									Thunderstorm winds did minor damage to several mobile homes.
Volusia County Deland	23	1715EST- 1725EST			0	0	2	0	Thunderstorm Winds Lightning
									Lightning started a fire when it struck a house, but the blaze was extinguished before it could spread throughout the entire house. Strong thunderstorm winds uprooted several trees.
Manatee County Myakka City	23	1830EST- 1840EST			0	0	3	0	Thunderstorm Winds
									Thunderstorm winds blew trees down into power lines.
Levy County Williston	24	1120EST			0	0	4	0	Thunderstorm Winds
									Thunderstorm winds damaged the roof of a business building as well as a mobile home. Several trees were uprooted.
Hillsborough County	24	1340EST			0	0	1	0	Hail (1.00)
									One-inch-diameter hail fell for 10 minutes in Sun City Center.
Polk County Frostproof	24	1515EST- 1545EST			0	0	0	0	Hail (1.00) Thunderstorm Winds
									One-inch hail was reported at Frostproof and large hail fell elsewhere in eastern Polk County. Thunderstorm winds downed trees and power lines.
Orange County Orlando	24	1630EST- 1705EST			0	0	2	0	Hail (1.25) Thunderstorm Winds (G50)
									Golf ball-size hail fell over much of the metropolitan Orlando area. Thunderstorm winds gusted to 58 mph at the Orlando International Airport at 1645 EST.
Santa Rosa County Jay	24	2045EST			0	0	2	0	Thunderstorm Winds
									Thunderstorm winds downed trees and power lines.
Monroe County	25	0630EST- 1000EST	?	?	0	0	0	0	Waterspout

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
FLORIDA Cont'd									
Several waterspouts formed and dissipated along the entire length of the Florida Keys off both coasts.									
Marion County	25	1530EST- 1600EST			0	0	2	0	Thunderstorm Winds
Thunderstorm winds uprooted trees and blew down power lines in southern Marion County.									
Pasco County 25 NE Tampa	25	1600EST			0	1	0	0	Lightning
Lightning struck a 35-year-old Dade City man near his head and exited his foot. Paramedics arrived within a few minutes and restarted his heart on the way to the hospital. He is expected to survive.									
Highlands County 17 SE Avon Park	25	1600EST			0	0	5	0	Lightning
Lightning struck a barn filled with hay and lawn maintenance equipment near Lorida and destroyed it.									
Seminole County 20 NE Orlando	25	1612EST			0	0	0	0	Thunderstorm Winds (G50)
A wind gust to 58 mph was recorded east of Geneva.									
Volusia County Deltona	25	1642EST			0	0	3	0	Lightning
Lightning struck a garage starting a fire. Fire fighters quickly extinguished the blaze.									
Santa Rosa County Milton	25	1700EST			0	2	0	0	Lightning
Lightning struck a couple on a porch swing at their home. The wife required hospitalization, but the husband was treated at home.									
Hendry County 19 NE Fort Myers	25	1915EST			0	0	1	0	Hail (1.50)
Large hail fell briefly in LaBelle.									
Dade County 8 SW Miami	26	1358EST			0	0	1	0	Hail (1.00)
Large hail fell briefly in suburban Miami.									
Collier County Everglades City	27	1300EST			0	4	4	0	Thunderstorm Winds
Strong thunderstorm winds blew over a bamboo hut with six people inside waiting for an airboat ride. Two escaped but the other four suffered mainly cuts and bruises and were treated at a local hospital and released later.									
Broward County 8 NW Fort Lauderdale	26	1440EST			0	0	4	0	Thunderstorm Winds
Strong thunderstorm winds uprooted at least 50 trees at a golf course in Plantation. Trees and power lines were also downed nearby and one tree fell across a car.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
FLORIDA Cont'd								
Lake County 22 NW Orlando	26	1435EST			0	1	0 0	Lightning
	A man was injured when lightning struck near him in Tavares. He was not seriously injured.							
Lee County Cape Coral	26	1445EST			0	0	4 0	Thunderstorm Winds
	Strong thunderstorm winds blew a portion of the roof off a home and deposited it in a heap next to the home.							
Brevard County Kennedy Space Center	26	1450EST			0	0	0 0	Thunderstorm Winds (G50)
	A thunderstorm gust to 58 mph was recorded at the shuttle landing site.							
Hendry County 23 ENE Fort Myers	26	1518EST			0	0	4 0	Thunderstorm Winds
	Strong thunderstorm winds ripped the roof off a mobile home near Ft. Denald.							
Duval County Jacksonville Beach	26	1545EST			0	3	0 0	Lightning
	Two police officers and a city councilman were knocked to the ground when lightning struck as they were getting into their cars. They were treated at the scene, but were not hospitalized.							
Indian River County Vero Beach	26	1800EST			0	0	5 0	Thunderstorm Winds
	Strong thunderstorm winds struck the Vero Beach Airport, damaging three parked airplanes and two hangars. One of the planes was flipped over.							
Dade County Miami	26	2000EST- 2100EST			0	0	2 0	Thunderstorm Winds
	Strong thunderstorm winds blew down trees and power lines near downtown Miami.							
Monroe County 5 S Key West	27	0829EST	?	?	0	0	0 0	Waterspout
	A waterspout was observed 5 miles south of Key West.							
Gulf County 15 W Apalachicola	27	1130EST			1	1	0 0	Lightning
	Lightning struck a small boat in St. Joe Bay. A man was killed and his wife was seriously injured. (M670)							
Polk County Lake Eva	28	1815EST	?	?	1	0	0 0	Lightning
	Lightning struck and killed a lone fisherman in a boat on Lake Eva. (M580)							
Sarasota County 10 SSW Sarasota	29	1800EST			0	0	0 0	Waterspout
	A waterspout was briefly observed over Siesta Key.							

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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FLORIDA Cont'd

Collier County 31 S Fort Myers	30	1115EST			0 0	4 0	Thunderstorm Winds
Strong downburst winds blew down screen enclosures, peeled off sections of roofs of mobile homes, and knocked down trees and power lines in East Naples.							

Lake County 20 NW Orlando	30	1458EST			0 0	5 0	Lightning
Lightning hit a chimney and started a fire that burned a house down in Astatula.							

Marion County 5 N Dunnellon	31	1330EST			0 0	2 0	Hail (1.50)
Silver dollar-size hail fell briefly over northern Marion County.							

Martin County Stuart	31	1625EST			0 0	4 0	Thunderstorm Winds
Strong thunderstorm winds blew the roof off a pool enclosure and downed a few power lines.							

Brevard County Kennedy Space Center	31	1655EST			0 0	2 0	Thunderstorm Winds (G61)
Thunderstorm winds gusted to 70 mph at the Kennedy Space Center. Blowing gravel broke several car windows.							

Pineallas County Tarpon Springs	31	1710EST- 1710EST			0 0	2 0	Thunderstorm Winds
Strong thunderstorm winds downed a few trees and power lines.							

GEORGIA

Gwinnett County Lilburn	02	1530CST			0 0	4 ?	Lightning
Lightning struck a residence and caused moderate damage in the attic.							

De Kalb County Lithonia	02	1850EST			0 0	0 ?	Small Hail
Rockdale County Conyers	02	1813EST			0 0	4 ?	Flash Flood

Flash floods developed during heavy rainfall around Conyers. A few yards were heavily damaged and several apartment complexes were flooded.

Conyers	02	1930EST			0 0	4 ?	Thunderstorm Winds
Conyers	02	1950EST			0 0	3 ?	Lightning
Henry County	02	1950EST			0 0	3 ?	Lightning
Newton County Covington	02	1950EST			0 0	3 ?	Lightning

Scattered trees were uprooted around Conyers near Georgia Highway 138. In the same area, a shopping center, several homes in a subdivision, and a few vehicles were damaged by the winds and uprooted trees. The air-conditioning unit on one building was blown off and destroyed. Two satellite dishes were also damaged. Utility outages developed for over 4,000 customers over the

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		
GEORGIA Cont'd								
three-county area after frequent lightning strikes damaged the equipment. In Rockdale County, lines were torn down by limbs.								
De Kalb County Lithonia	02	2000EST			0	0	4 ?	Thunderstorm Winds
In Lithonia, uprooted trees struck a house. Isolated power outages developed over Lithonia when winds and tree limbs tore down lines.								
Gordon County Calhoun	02	2030EST			0	0	4 ?	Thunderstorm Winds
A strong wind gust pushed a carport several feet from a house and destroyed it. Two vehicles were damaged and a few trees were uprooted in the area.								
Bibb County Northern Portion	02	2117EST			0	0	3 ?	Thunderstorm Winds
Numerous trees were blown down over northern Bibb County, especially around Wesleyan College. Utility lines were torn down; scattered outages resulted.								
Cherokee County 1 E Ball Ground	02	2220EST			0	0	3 ?	Thunderstorm Winds
A few trees were uprooted and power lines were torn down around Ball Ground.								
De Kalb County Stone Mountain Lithonia	02	2120EST			0	0	4 ?	Thunderstorm Winds
Several trees were uprooted by winds in Stone Mountain and Lithonia. Several homes in Stone Mountain were damaged.								
Appling County 9 SW Baxley	02	Night			0	0	5 ?	Lightning
A home located around U.S. Highway 1 near the Bacon County line was completely destroyed when lightning set it afire.								
Barrow County Winder	04	1210EST			0	0	? ?	Small Hail
Winder	04	1215EST			0	0	6 ?	Thunderstorm Winds
Statham								
Countywide								
Winder	04	1215EST			0	0	3 ?	Flash Flood
Auburn	04	1215EST			0	0	4 ?	Lightning
Winder	04	1220EST			0	0	4 ?	Lightning
Strong winds damaged structures, vehicles, power lines, and trees over Barrow County. Numerous power outages developed, mainly in Winder and Statham. In Winder, three aircraft were destroyed when the winds broke their moorings and flipped them. Two more airplanes, hangar doors, and a nearby building were damaged. A woman was rescued from a flooded car by boat in Winder. At Auburn, lightning started a fire that destroyed a home. In Winder, lightning blasted a large hole in the wall of a business and caused scattered, minor damaged over town.								
Oconee County Bogart	04	1300EST			0	0	5 ?	Lightning
Lightning completely destroyed a house near U.S. Highway 78.								

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
GEORGIA Cont'd									
Cherokee County Canton Woodstock	04	1300EST			0	0	4	?	Thunderstorm Winds
	Strong winds over Canton and Woodstock pushed trees onto several homes and vehicles, causing extensive damages. Utility lines were torn down over the area.								
Barrow County Statham	04	1330EST			0	0	4	?	Lightning
	In Statham, lightning caused minor fire damage to a mobile home.								
Cherokee County Oak Grove	04	1400EST			0	0	4	?	Lightning
	A major house fire developed in Oak Grove after lightning struck the roof. A lightning strike damaged another home's gas meter.								
Fulton County Atlanta	04	1400EST- 1425EST			0	0	4	?	Thunderstorm Winds
	Scattered trees and branches were downed in the Buckhead area of Atlanta. At least 10 homes and several vehicles were damaged. About 6,000 homes in northeastern Atlanta were without electricity.								
De Kalb County N Atlanta	04	1500EST			0	0	3	?	Thunderstorm Winds
	A few trees were downed across two streets.								
Rockdale County Conyers Conyers	04	1700EST			0	0	3	?	Thunderstorm Winds
	04	1700EST			0	0	3	?	Lightning
	Strong winds and lightning caused scattered damages around Conyers to a few trees and utility equipment. Over 1,000 customers experienced brief power outages.								
Bibb County 2 E Walden Lizella	05	1530EST			0	0	2	?	Thunderstorm Winds
	05	1530EST			0	0	3	?	Thunderstorm Winds
	One tree was blown down in southern Bibb County along Georgia Highway 247 near Walden. Large tree limbs were broken and the winds damaged an outbuilding near Lizella.								
Crisp County Cordele Cordele	06	Afternoon			0	0	5	?	Heavy Rainfall
	06	1900EST			0	0	5	?	Flash Flood
	Heavy rainfall over Crisp County caused extensive flooding at Cordele. Three families were evacuated as waters rose to about 3 feet and flooded their properties. Several vehicles were damaged during the flooding. One tree fell after the ground became totally saturated. The roof of a warehouse building collapsed from the heavy rainfall. Damages were estimated at about \$50,000 for the building and over \$100,000 for the inventory.								
Muscogee County Columbus	09	1415EST			0	0	3	?	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		
GEORGIA Cont'd									
Thunderstorm winds uprooted a few trees. The trees fell onto power lines and caused an isolated power outage.									
Monroe County									
2 S Forsyth	10	1530EST			0	0	3	?	Thunderstorm Winds
Smarr	10	Afternoon			0	0	4	?	Lightning
Widespread power outages developed after strong winds and uprooted trees tore down utility lines, mainly over southern Monroe County. Lightning struck a large tree and caused considerable damage to a house.									
Jones County									
Countywide	10	1600EST			0	0	4	?	Thunderstorm Winds
5 NE Macon	10	1605EST			0	2	4	?	Thunderstorm Winds
Scattered trees and power lines were downed over Jones County. A few homes and vehicles were damaged by falling trees. Just northeast of Macon, an automobile was damaged and two passengers were injured when a large tree fell across the road.									
Bibb County									
4 NE Macon	10	1635EST			0	0	5	?	Thunderstorm Winds
Macon									
Several trees, limbs, and utility lines were downed in a mobile home park east of Macon causing power outages through the park. Two mobile homes and several vehicles were damaged by the trees. Many trees were damaged by winds and lightning at a golf course in Macon.									
Houston County									
Perry	10	1655EST			0	0	3	?	Thunderstorm Winds
3 ESE Perry									
Several trees were uprooted in Perry and along U.S. Highway 341 south of Perry. Power lines were torn down and outages developed.									
Berrien County									
Nashville	10	1730EST			0	0	5	4	Thunderstorm Winds
Countywide	10	1730EST			0	0	3	?	Thunderstorm Winds
Nashville	10	1730EST			0	0	4	?	Lightning
Nashville	10	1730EST			0	0	?	4	Hail (0.75)
Strong winds uprooted many trees over Nashville and surrounding areas. Utility lines were torn down and outages developed. In Nashville, a mobile home, farm buildings, and a vehicle were severely damaged by falling trees. In a pecan orchard, 13 mature trees were destroyed. Lightning destroyed one barn and its contents that were estimated to be worth about \$14,000. Hail damaged several fields of tobacco.									
Crisp County									
Cordele	10	1730EST			0	0	3	?	Thunderstorm Winds
Arabi	10	1740EST			0	0	3	?	Thunderstorm Winds
Southern Portion									
Strong winds uprooted a few trees, mainly over the southern portion of Crisp County, in Cordele and Arabi. About 2,000 customers lost utility services.									
Lee County									
	10	1750EST			0	0	3	?	Thunderstorm Winds
Scattered trees were blown down in several areas of Lee County.									
Turner County									
4 E Ashburn	10	1800EST			0	0	3	?	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

GEORGIA Cont'd

Scattered trees were uprooted near Ashburn. The uprooted trees and winds tore down utility lines and outages developed.

Tift County 4 NW Omega Omega Ty Ty	10	1835EST			0	0	3	?	Thunderstorm Winds
Worth County 5 W Sylvester	10	1835EST			0	0	3	?	Thunderstorm Winds
Sylvester	10	1837EST			0	0	3	?	Lightning
Sylvester	10	1839EST			0	0	3	?	Lightning

Scattered trees and large limbs were blown down over several roads in Tift and Worth Counties, including U.S. Highway 82. Many lines were torn down and outages resulted. In Sylvester, lightning started minor fires at a house and a business.

Colquitt County 8 S Norman Park	10	1915EST			0	0	5	?	Lightning
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A home near Norman Park was almost completely destroyed after it was struck by lightning.

Dougherty County 5 W Albany Countywide	10	1915EST			0	0	3	?	Thunderstorm Winds
Albany Countywide	10	Evening			0	0	4	?	Lightning
Worth County Sylvester Southern Portion	10	1958EST			0	0	3	?	Thunderstorm Winds

Scattered trees and limbs were downed at Sylvester and over southern Worth County and at Albany and the remainder of Dougherty County. Many roads were blocked, including U.S. Highway 82. Minor damages occurred. Strong winds, falling trees, and lightning caused outages for over 4,000 customers. Scattered outages occurred over all of Dougherty County and mainly southern Worth County. In Albany, lightning caused about \$11,000 in fire damages to a business.

Cherokee County	10	2000EST			0	0	3	?	Thunderstorm Winds
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Numerous large limbs and power lines were torn down by strong winds over Cherokee County. Utility outages developed.

Fulton County W Atlanta	10	2120EST			0	0	?	?	Thunderstorm Winds Small Hail
Atlanta	10	2125EST			0	0	4	?	Thunderstorm Winds
Alpharetta Hapeville Sandy Springs Roswell	10	Evening			0	0	4	?	Thunderstorm Winds

Strong winds downed trees and power lines over Fulton County especially in southern Atlanta and Hapeville. In southern Atlanta, several parked vehicles and houses were damaged. Approximately 23,500 customers were briefly without service, mainly in southern Atlanta and Hapeville.

De Kalb County Atlanta	10	2130EST			0	0	3	?	Thunderstorm Winds
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Trees and power lines were downed in the Emory area of Atlanta.

Fayette County Fayetteville	10	Evening			0	0	3	?	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated	Character of Storm	
		Local/Standard			Killed	Injured	Damage Property Crops		
GEORGIA Cont'd									
A few trees and large limbs were blown into power lines around Fayetteville that resulted in outages.									
Peach County									
Fort Valley	10	Evening			0	0	?	5	Thunderstorm Winds
Fort Valley	10	Evening			0	0	?	4	Hail (0.75)
Strong winds uprooted or damaged about 100 mature pecan trees in an orchard. Hail damaged several fields of cotton.									
Pickens County									
Marblehill	11	1730EST			0	0	4	2	Flash Flood
By 1730 EST, heavy rainfall produced flash floods that washed away two culverts and several gardens in Marblehill. A house was flooded after the waters rose to about a foot deep.									
Emanuel County									
Stillmore	13	Afternoon			0	0	3	?	Thunderstorm Winds
Twin City									
1 E Swainsboro									
Strong winds uprooted a few trees over Emanuel County.									
3 E Adrian	14	1600EST			0	0	2	?	Thunderstorm Winds
Two large trees and many limbs were downed near Adrian.									
Dooly County									
Drayton	14	1600EST			0	0	3	?	Thunderstorm Winds
Lilly									
Byromville	14	1630EST			0	0	4	?	Lightning
Scattered trees were uprooted around Drayton and Lilly. Lightning struck a utility house outside Byromville.									
Telfair County									
Jacksonville	14	1830EST			0	0	3	?	Thunderstorm Winds
Several trees were uprooted and power lines were torn down by strong winds. Utility services were interrupted.									
Worth County									
5 SW Sylvester	14	1830EST			0	0	3	?	Thunderstorm Winds
1 N Sylvester									
Western Portion									
Many large trees and utility lines were damaged by strong winds and lightning around Sylvester. Scattered damages occurred between Sylvester and Bridgeboro along Georgia Highway 112 and U.S. Highway 82, and over western Worth County along Georgia Highway 300. Power outages also developed.									
Baldwin County									
Milledgeville	15	1430EST			0	0	4	?	Lightning
Lightning struck a house and caused considerable damage.									
Greene County									
Union Point	15	1500EST-1700EST			0	0	3	?	Flash Flood
Heavy rainfall over Union Point produced flash flooding. Several streets were inundated. A few homes sustained water damage.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
GEORGIA Cont'd							
Candler County Metter	15	1545EST			0 0	4 ?	Flash Flood
							Heavy rainfall produced flash flooding over low-lying areas of Metter. Several streets were inundated. Flood waters caused minor damage to a few businesses, several municipal and county buildings, and two residences.
Pierce County Blackshear	15	1830EST			0 0	? ?	Funnel Cloud
Blackshear	15	1900EST			0 3	5 ?	Thunderstorm Winds
Countywide	15	1900EST			0 0	3 ?	Thunderstorm Winds
							Strong winds pushed trees onto several homes and ripped off porches and carports around Blackshear. Numerous trees were uprooted or damaged over the remainder of the county. Utility service interruptions developed after lines were torn down. Three people in Blackshear suffered minor injuries when a mobile home was blown over and landed on two vehicles that were also damaged.
Ware County Waycross Countywide	15	1900EST			0 0	3 ?	Thunderstorm Winds
Brantley County Nahunta Hoboken Countywide	15	1900EST			0 0	3 ?	Thunderstorm Winds
							Scattered trees and limbs were downed over both counties, mainly in Nahunta and Hoboken in Brantley County and around Waycross in Ware County. Scattered power outages developed.
Elbert County Elberton	16 17	1500EST- 0000EST			0 0	5 ?	Flash Flood
							Rainfall started over Elbert County at 0600 EST. By 1100 EST, 4.00 inches of rain had fallen. Flash flooding developed by 1500 EST and several streets were impassable. By 1600 EST, over 7.50 inches of rain had accumulated; by 0700 EST on the 17th, some areas had received about 11.00 inches of rainfall. Seven families were evacuated as water rose into their homes. About 25 roads and bridges were washed out or damaged over the county. Damage cost for the roadways were estimated at about \$300,000. Some areas remained flooded on the 17th.
Seminole County Iron City	16 17	1500EST- 0400EST			0 0	4 ?	Flash Flood
							Rainfall produced isolated flash floods around Iron City as about 6.10 inches of rain fell on the 16th. Early on the 17th, another 0.30 inch of rain fell. Ten streets and roads, including U.S. Highway 84, were impassable. Water also flooded several homes.
Grady County Cairo	16	1530EST			0 0	5 ?	Lightning
							Lightning damaged three pumps at the city waste water treatment plant. Approximately 500,000 gallons of sewage spilled into Parker's Mill Creek.
Pierce County Blackshear	16	1610EST			0 0	4 ?	Thunderstorm Winds
							A few trees were uprooted by strong winds over western Pierce County around Blackshear. One large tree fell on a house in Blackshear.
Johnson County 7 WNW Wrightsville	16	2155EST			0 0	0 ?	Flash Flood

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	
<p>Heavy rainfall produced flash flooding with about 3 feet of water over the roads near Georgia Highway 57.</p>								
Richmond County								
Augusta	17	0545EST			0	0	?	Flash Flood
Augusta	17	0545EST			0	0	4	Heavy Rainfall
<p>Heavy rainfall produced flash flooding over Augusta. Water pooled in the streets and reached into yards over western and southern Augusta. Heavy rainfall caused a portion of a store's roof to collapse at a mall in west Augusta.</p>								
Forsyth County								
Cumming	18	1710EST			0	0	2	Thunderstorm Winds Lightning
<p>Two trees were downed during the storm.</p>								
Camden County								
Kingsland	18	Afternoon			0	0	?	Flash Flood
<p>Almost 4.00 inches of rainfall at the high tide produced extensive flooding around Kingsland. Several roadways, including Georgia Highway 40 and U.S. Highway 17, were inundated. Water rose in several residential areas.</p>								
Pulaski County								
2 SW Hawkinsville	19	1740EST			0	0	3	Thunderstorm Winds
<p>Several trees, some very large, were uprooted near Hawkinsville. Utility lines were torn down and outages resulted.</p>								
Toombs County								
Vidalia	20	1815EST			0	0	3	Thunderstorm Winds
<p>Three trees and several utility lines were blown down by strong winds around Vidalia. One tree fell on a house.</p>								
Thomas County								
Northeastern Portion	20	1900EST			0	0	3	Thunderstorm Winds
<p>Numerous power outages developed over northern Thomas County after scattered trees and large limbs were blown down.</p>								
Spalding County								
Griffin	21	1815EST			0	0	?	Hail (0.50)
Lamar County								
Northern Portion	21	1852EST			0	0	3	Thunderstorm Winds
1 N Barnesville	21	1925EST			0	0	3	Thunderstorm Winds
<p>Strong winds uprooted trees and tore down power lines over northern Lamar County and 1 mile north of Barnesville. Power outages developed in Pike and Lamar Counties as a result. In Spalding County, a lightning strike caused an outage to 3,000 customers.</p>								
Terrell County								
Dawson	22	1920EST			0	0	5	Thunderstorm Winds
Dawson	22	1920EST			0	0	4	Flash Flood
Dawson	22	2005EST			0	0	4	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property Crops	Character of Storm
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GEORGIA Cont'd

Numerous trees, large limbs, and power lines were blown down by strong thunderstorm winds. Power outages developed. Several vehicles, homes, businesses, and other properties were severely damaged by the winds, uprooted trees, and wind-blown debris. The roofs of two warehouse buildings were ripped off. Damage occurred to the inventory at one business. Flash flooding developed in downtown Dawson. At least one office had water damage. Five homes had minor water damage.

**Habersham County
Clarkesville**

24	0026EST				0	0	5	?	Lightning
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Lightning completely destroyed a chicken house near Clarkesville with approximately 20,000 birds inside.

**Walker County
Southern Portion**

24	Afternoon				0	1	?	?	Lightning
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A child sustained minor injuries after being struck by lightning.

**Chattooga County
3 W Summerville**

24	1440EST				0	0	3	?	Thunderstorm Winds
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Scattered trees were uprooted just west of Summerville.

**Hall County
Gainesville**

24	Afternoon				0	2	?	?	Lightning
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Lightning struck a bridge on Georgia Highway 60 and injured two men working on it. Both men were also injured by flying debris.

**Fulton County
Atlanta**

24	Afternoon				0	0	3	?	Thunderstorm Winds Lightning
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About 55,000 customers, mainly in southwestern Atlanta, were without utility services due to lightning and strong winds. Large branches and power lines were torn down.

**Rockdale County
2 NE Conyers**

24	Afternoon				0	0	4	?	Thunderstorm Winds
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Conyers

24	1440EST				0	0	?	?	Hail (0.50)
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Newton County

3 NW Covington

24	1440EST				0	0	?	?	Hail (0.50)
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Scattered trees were snapped or uprooted in Conyers around Georgia Highway 20. Several homes sustained damages.

**Clayton County
Morrow**

24	Afternoon				0	0	3	?	Flash Flood
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Flash floods caused minor damages to properties in Morrow.

**Gwinnett County
3 SSW Duluth**

24	1600EST				0	0	3	?	Thunderstorm Winds
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Hail (0.50)

Norcross

24	1600EST				0	0	4	?	Thunderstorm Winds
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Large tree limbs were blown down south of Duluth. Around Norcross, 3-inch-wide steel support braces were snapped by the winds at a building under construction.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
GEORGIA Cont'd									
Habersham County									
Hollywood	24	1730EST			0	0	4	?	Lightning
4 NE Cornelia	24	1735EST			0	0	4	?	Lightning
An unoccupied home was severely damaged after lightning set it afire in Deep Creek. Near Cornelia on Georgia Highway 197, a barn burned down after being struck by lightning.									
Elbert County									
Elberton	24	1750EST			0	0	4	?	Thunderstorm Winds (G60) Small Hail
Considerable wind damage occurred around Elberton, mainly to trees and a few structures.									
Crisp County									
Dougherty County	24	2000EST			0	0	3	?	Thunderstorm Winds
Albany	24	2000EST			0	0	3	?	Thunderstorm Winds
Albany	24	2000EST			0	0	3	?	Lightning
Lee County	24	2000EST			0	0	3	?	Thunderstorm Winds Lightning
Scattered trees were uprooted over the three-county area and several roads were blocked. Winds tore down power lines and lightning caused malfunctions that resulted in outages to about 650 customers over all three counties. Lightning damaged a satellite dish in Albany.									
Jackson County									
Mayesville	24	Night			0	0	3	?	Thunderstorm Winds
5 NNW Jefferson	24	Night			0	0	4	?	Thunderstorm Winds
Thunderstorm winds uprooted trees around the Pleasant Acres community, north-northwest of Jefferson, and at Mayesville. Around Pleasant Acres, an uprooted tree caused minor damages to a mobile home. Isolated power outages developed across the county.									
Berrien County									
Cottle	25	1300EST	0.7	25	0	0	4	?	Tornado (F1)
A small tornado touched down briefly over a rural area. The tornado twisted the tops out of trees and tore the roof off a storage building. One mobile home sustained minor damages after being struck by a nearby tree.									
Appling County									
Surrency	25	1620EST			0	0	3	?	Thunderstorm Winds
Surrency	25	1620EST			0	0	?	?	Hail (0.75)
A few large trees and branches were blown down and blocked traffic in Surrency.									
Thomas County									
Thomasville	25	Evening			0	0	3	?	Thunderstorm Winds
Countywide	25	Evening			0	0	4	?	Lightning
A few trees and limbs were pushed into utility lines over Thomas County. Lightning struck an office, damaged computers and communication systems, and caused a few outages.									
GAZ014									
Southeastern Georgia Coast	30	Morning	?	?	0	0	?	?	Waterspouts
The United States Coast Guard reported more than six waterspouts over the coastal waters of Liberty, Bryan, and Chatham Counties.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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GEORGIA Cont'd

Laurens County
Cadwell
Cadwell

30	1710EST				0	0	3	?	Thunderstorm Winds
30	1710EST				0	0	4	?	Lightning

Wind damages developed during a thunderstorm near Cadwell. At least one structure fire was ignited by lightning.

Cherokee County
Woodstock
Woodstock

30	2358EST				0	0	4	?	Thunderstorm Winds
30	2358EST-				0	0	5	?	Flash Flood
31	0130EST				0	0	5	?	Flash Flood

By 2358 EST on July 30th, the Little River had flooded a section of Georgia Highway 92. Strong straight-line winds uprooted trees in Woodstock and downed utility lines. Several homes and a transformer were damaged by fallen trees. Power outages developed. By 0010 EST on July 31st, Noonday Creek had flooded at Interstate 575 and Georgia Highway 92. Flood waters caused damage to homes in a subdivision near Highway 92, several vehicles, and an office park.

IDAHO

Southern Idaho

01-					0	0	0	6	Drought
31									

Drought loving agricultural pests such as lygus bugs and two-spotted spider mites multiplied and sucked plants dry; crop dusters and ground rigs worked every sprayable hour. Idaho Power Company was forced to shift from hydroelectric plants to the more expensive coal-fired plants. The Bureau of Land Management officials said that food and water for 200 wild horses in the Owyhee mountains were scarce due to a 5-year drought.

Idaho County

05	1400MST				0	0	0	?	Lightning
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Lightning set the Kwiskwis fire 50 miles northwest of Challis in the Frank Church River of No Return Wilderness. The fire reached 658 acres by the 14th.

Custer County

09	1800MST				0	0	0	?	Lightning
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Lightning set the Porphyry Meadow fire in the Frank Church River of No Return Wilderness. The fire was attacked when it spread to 8 acres on the 11th.

Bonner County
Priest River

13	0230PST				1	0	4	0	Lightning
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Lightning struck a television antenna setting fire to a mobile home. Three children, ages 4, 6, and 12, escaped, but their mother collapsed in the home's doorway and died. (F30M)

Cassia County
Burley

13	1545MST				0	0	4	0	Lightning
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Lightning struck a carry-all land moving machine setting it on fire.

**Central and
Southern Idaho**

13-					0	0	4	4	Lightning
14									

Lightning ignited more than 80 range and forest fires. The largest was 6,000 acres at Three Mile Well about 40 miles southwest of Buhl.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
IDAHO Cont'd									
Adams County New Meadows	14	1300MST			0	0	0	?	Hail
Lemhi County Salmon	14	1305MST			0	0	0	0	Hail (1.50)
Washington County Cambridge	14	1315MST			0	0	0	?	Hail
Idaho County Elk City	14	1400MST			0	0	0	0	Hail
Oneida County	15	1230MST			0	0	0	4	Lightning
Lightning started a range fire on top of Hansel Mountain. Strong winds spread the fire downhill to the flatlands burning 7,000 acres.									
Owyhee County Murphy Hot Springs	19	1420MST			0	0	0	0	Hail (0.75)
Twin Falls County Castleford	19	1530MST			0	0	4	0	Lightning
Lightning struck a tree, entering a house through a line from a telephone box, breaking water pipes which flooded the basement. Communications equipment in the area was also damaged.									
Lemhi County	22- 23	1245MST- 0830MST			0	0	0	4	Heat Drought
A light plane crashed 14 miles south of Salmon killing the four persons aboard and igniting a forest fire that was spread by the wind to 40 acres.									
West Central Idaho	23	Unknown			0	0	0	?	Lightning
Lightning set 30 fires in the Boise National Forest. The largest of the fires was 10 acres.									
Boise County Garden City	23	1500MST			0	0	?	?	Small Stream Flooding
Almost 1.20 inches of rain fell in 45 minutes.									
Lemhi County 12 N Salmon	25	1230MST			0	0	4	0	Small Stream Flooding
Kriley Creek road was washed out by heavy rains from a thunderstorm. Several residents were stranded. The resultant mudslide onto U.S. Highway 93 stopped traffic for 2 hours.									
Idaho County Elk City	25- 26				0	0	4	0	Small Stream Flooding
Some 500,000 young salmon were killed when thunderstorm runoff debris restricted the water inlet to the Crooked River salmon rearing facility at the headwaters of the South Fork Clearwater River resulting in low water with fatally low oxygen content.									
Clark County Dubois	29	1500MST			0	0	4	0	Lightning
Lightning struck the county courthouse damaging emergency communications systems.									
Madison County	31	1600MST- 1645MST			0	0	3	3	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
IDAHO Cont'd									
Strong winds broke tree limbs throughout the county with some landing on power lines and resulting in 1,000 families being without power. Some hail was mixed with heavy rain.									
ILLINOIS									
Logan County Atlanta	01	1610CST			0	0	4	0	Thunderstorm Winds
A tractor-semitrailer was blown off Interstate 55. Many tree limbs were blown down. Tree limbs damaged a porch and a garage roof.									
Menard County 4 S Greenview	01	1625CST			0	0	?	0	Thunderstorm Winds
Four power poles were blown down along Route 29.									
DeWitt County Clinton Hallsville	01	1642CST			0	0	?	0	Thunderstorm Winds
Several trees and power lines were blown down.									
Macon County Decatur	01	1700CST			0	0	?	0	Thunderstorm Winds (G58)
Decatur	01	1720CST			0	0	?	0	Thunderstorm Winds
Oakley	01	1734CST			0	0	?	0	Thunderstorm Winds
Elwin	01	1800CST			0	0	?	0	Thunderstorm Winds
A wind gust to 67 mph was recorded at the Decatur Airport. A tree was blown down across a road in Decatur and in Oakley. On the southern edge of Elwin, several power lines were blown down.									
Montgomery County Nokomis Hillsboro Litchfield	01	1815CST			0	0	4	0	Thunderstorm Winds
Several trees, limbs, and power lines were blown down. A portion of a building's roof was torn off in Litchfield.									
Macon County Elwin	01	1859CST			0	0	?	0	Thunderstorm Winds
Several power lines were blown down south of Elwin.									
Hamilton County McLeansboro McLeansboro	02	1100CST			0	0	4	0	Thunderstorm Winds
	02	1101CST			0	1	0	0	Lightning
Thunderstorm winds downed trees and limbs, mainly on the northern side of McLeansboro. A parked tractor-semitrailer was blown over and destroyed a car. A large tree limb fell on the bed of pickup truck and winds damaged mobile home skirting. Lightning struck the main feeder cable at the McLeansboro power plant, injuring a plant supervisor.									
Perry County Old DuQuoin	02	1118CST			0	0	2	0	Thunderstorm Winds
A thunderstorm produced wind gusts that blew over large trees near Old DuQuoin, about 0.5 mile north of Route 14.									
Johnson County vienna	02	1120CST			0	0	?	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		
ILLINOIS Cont'd								
Trees and power lines were downed at the northern end of Vienna.								
Franklin County Logan	02	1130CST			0	0	3 ?	Thunderstorm Winds
There was major tree damage throughout Logan. Whole trees and many tree limbs were blown down. One truck was destroyed when a limb fell on it. Cornfields in the area were flattened.								
Williamson County Johnson City	02	1130CST			0	1	2 0	Lightning
A tree, struck by lightning, hit the back porch of a house and knocked the door out of its frame. A woman standing nearby was injured.								
White County Enfield	02	1130CST			0	0	? 5	Hail (1.75)
A 1-mile-wide by 2- to 3-mile-long swath of golf ball-size hail heavily damaged corn and soybean crops to the west of Enfield.								
Henry County Hooppole	02	1730CST			0	0	? 0	Thunderstorm Winds
Large tree limbs were blown down and two cherry trees were uprooted. A park was littered with tree limbs.								
Kane County Geneva	03	1510CST			0	0	? 0	Thunderstorm Winds
A large tree and several limbs were blown down.								
DuPage County Naperville	03	1519CST			0	0	? 0	Hail (0.75)
Dime-size hail fell along Interstate 88 north of Naperville.								
Alexander County Cairo	03	1745CST			0	0	? 0	Thunderstorm Winds
Trees and power lines were blown down.								
Menard County Tallula to Pleasant Plains	04	1300CST			0	0	0 0	Funnel Cloud
Randolph County Chester	05	1435CST			0	0	0 0	Thunderstorm Winds Hail (0.75)
Thunderstorms produced wind gusts to 60 mph and dime-size hail.								
Perry County 1 E Pickneyville	05	1513CST			0	0	4 0	Thunderstorm Winds
A large tree was blown down on Route 154, just east of Pickneyville. A car was crushed by limbs. A sign was blown down and a flagpole was bent at a school. Tree limbs came into a house from a falling tree.								

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
ILLINOIS Cont'd									
Macon County Casner	05	1756CST			0	0	0	0	Funnel Cloud
A funnel cloud was spotted by Illinois State Police.									
McHenry County Woodstock	07	1505CST			0	0	0	0	Thunderstorm Winds
A few trees and large limbs were blown down.									
Grundy County 1 N Morris	07	1555CST			0	0	?	?	Hail (1.75)
Will County Wilton Center	07	1615CST			0	0	?	?	Hail (2.75)
Manhattan	07	1619CST			0	0	?	?	Hail (1.75)
Grundy County Mazon	07	1655CST			0	0	?	?	Hail (0.75)
Livingston County 1 S Dwight	07	1810CST			0	0	?	?	Hail (1.00)
Kankakee County 10 W Kankakee	07	1819CST			0	0	?	?	Hail (1.00)
Herscher	07	1835CST			0	0	?	?	Hail (1.00)
Manteno	07	2025CST			0	0	?	?	Hail (1.75)
Cook County 13 S Chicago	07	2137CST			0	0	?	0	Hail (0.75)
13 S Chicago	07	2140CST			0	0	?	0	Hail (1.50)
Numerous thunderstorms produced locally heavy rain and large hail, but little wind in northeastern Illinois. Baseball-size hail fell at Wilton Center, south of Manhattan. Large hail was reported at 115th and Pulaski Avenue and at 117th and Western Avenue on the far southern side of Chicago.									
Macoupin County Wilsonville	09	0830CST			0	3	0	0	Lightning
Lightning struck a tree in Wilsonville and slightly injured two boys who were under the tree. A girl was seriously injured and went into a coma. The children were working for a county summer project when the lightning struck.									
Saint Clair County Belleville	09	2015CST			0	0	?	0	Thunderstorm Winds
Winds knocked down dozens of trees, some of them causing power lines to be pulled down.									
Macon County Decatur	10	1520CST			0	0	0	0	Funnel Cloud
Casner Mt. Zion	10	1540CST			0	0	0	0	Funnel Cloud
Menard County Greenview	10	1740CST			0	0	0	0	Funnel Cloud
Macon County Decatur	10	1845CST			0	0	0	0	Funnel Cloud
Ninantic Warrensburg									
An observer at Decatur Airport reported a funnel cloud to the southeast in a special observation. At the same time, a Macon County Sheriff's Deputy spotted funnels near Casner and Mt. Zion. Twenty minutes later, a funnel cloud was reported near Route 36 and Route 21, just north of Decatur. Later funnel clouds were seen near Greenview, Decatur, Ninantic, and Warrensburg.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
ILLINOIS Cont'd								
Madison County Edwardsville Glen Carbon Alton Wood River	11	0100CST- 0600CST			0	0	? ?	Flash Flood
As much as 4.00 to 5.00 inches of rain fell in the early morning hours causing flooding of roads and basements. Several state roads were flooded near Edwardsville. There was 4 feet of water in a viaduct on Route 143, 3 miles northwest of Edwardsville. A truck went off Interstate 55 near 143 due to high water. Cars stalled in 3 feet of water in Wood River.								
Sangamon County Chatham	11	1120CST			0	0	0 0	Funnel Cloud
A funnel cloud was sighted in Chatham. It was seen by National Weather Service personnel at Weather Service Office Springfield, looking south southwest.								
Cook County Morton Grove Skokie Evanston	18	1548CST- 1615CST			0	0	5 0	Thunderstorm Winds
An isolated severe thunderstorm produced damaging microbursts from the northeastern part of Morton Grove through parts of Skokie and in Evanston. In Morton Grove, numerous trees and limbs were blown down; one tree crushed a car. Gutters, awnings, and roofs were also damaged. In Skokie, 25 power poles were damaged. Numerous trees and limbs were downed in Evanston.								
Winnetka	18	1813CST			1	1	0 0	Lightning
A 17-year-old baseball player was struck and killed by lightning. He was on the field playing second base. Another nearby 17-year-old was injured. Witnesses said it was not raining at the time and there were blue skies above. According to radar data, a severe thunderstorm was about 5 miles south. (See previous entry for information on thunderstorm wind.) (M170)								
Des Plaines	22	1832CST			0	0	? 0	Thunderstorm Winds
Over 40 trees were damaged in a block-wide, mile-long path. The windstorm was preceded by 0.75 inch of rain and marble-size hail. The windstorm may have been a small tornado, a "gustnado" or a microburst. Witnesses observed columns of swirling debris to heights of 40 feet at one point when the storm was at its peak, but a tornado was not confirmed.								
INDIANA								
Wabash County Richvalley	01	1915EST			0	0	4 0	Thunderstorm Winds
Several trees were downed and one tree fell through the roof of a house.								
St. Joseph County Mishawaka	01	1925EST			0	15	3 0	Thunderstorm Winds
Several windows in a McDonalds restaurant on Grape Road were blown out. Fifteen people were treated for minor injuries caused by flying glass.								
1 E Granger	01	1925EST			0	0	3 0	Thunderstorm Winds
Strong winds blew down tree branches, broke off a railroad crossing arm, and bent flagpoles.								
Howard County Kokomo	01	2115EST			0	0	4 0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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INDIANA Cont'd

The roof was ripped off a one-story business building, and there was minor wind damage to a private residence. Several 18- to 20-inch-diameter trees were also downed.

Jasper County Remington	02	1244EST			0	0	0	0	Funnel Cloud
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The state police reported a funnel cloud.

Miami County	02	1435EST			0	0	0	0	Thunderstorm Winds
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Numerous trees were downed by thunderstorm winds.

Huntington County 10 W Huntington Andrews	02	1445EST			0	0	3	0	Thunderstorm Winds
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Trees were downed in Huntington County.

Wells County Bluffton 2 NW Bluffton	02	1450EST			0	0	3	0	Thunderstorm Winds
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Trees were downed by thunderstorm winds in Wells County.

Bartholomew County	02	1450EST			0	0	3	0	Thunderstorm Winds
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Thunderstorm winds downed utility poles.

Jennings County	02	1500EST			0	0	0	0	Thunderstorm Winds
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In Jennings County, trees were downed by thunderstorm winds.

Adams County	02	1505EST			0	0	4	3	Thunderstorm Winds
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Two cars were blown off the road, trees were downed, and there was minor crop damage just north of Berne.

Berne	02	1510EST			0	0	4	0	Thunderstorm Winds
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Trees and power lines were downed in Berne.

Perry County Tell City	02	1522EST			0	0	2	0	Thunderstorm Winds
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Several trees were downed by thunderstorm winds.

Wayne County Fountain City	02	1635EST			0	0	3	0	Thunderstorm Winds
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An 18-inch-diameter tree limb was blown down on a car, temporarily trapping three people inside.

Switzerland County Vevay	02	1756EST			0	1	0	0	Lightning
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A 4-year-old boy was running for the cover of a house, when he was struck by lightning, and seriously injured.

Posey County	03	2018EST			0	0	3	0	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
INDIANA Cont'd									
Between 2018 EST and 2030 EST, thunderstorms downed trees and limbs at Farmersville, east and south of New Harmony, and in Mt. Vernon.									
Decatur County	06	0320EST			0	2	?	0	Thunderstorm Winds
A 2.5-foot-diameter tree fell into a tent, and injured two campers.									
LaPorte County 1 W Union Mills	07	0840EST			0	0	0	0	Thunderstorm Winds
Several large trees were blown down.									
Lake County Lake Station	07	1742EST			0	0	0	0	Hail (1.00)
St. Joseph County South Bend	07	1830EST			0	0	0	0	Thunderstorm Winds (G52)
St. Joseph and Elkhart Counties	07	1835EST			0	1	4	0	Thunderstorm Winds
Several trees were uprooted or broken off resulting in widespread power outages. At the height of the storm, nearly 30,000 customers in St. Joseph County were without electricity. A few trees fell on buildings and cars. A child was injured when a tree fell on one car. Up to marble-size hail fell across scattered areas of the two counties.									
Elkhart County Middlebury	07	1847EST			0	0	5	?	Thunderstorm Winds
Numerous large trees were blown down and an unoccupied mobile home was overturned. A few trees fell on houses and cars. A storefront roof was blown off, and a horse-drawn buggy was blown into a tree. The walls were blown in on a 40- by 250-foot chicken house, and several chickens were killed.									
Elkhart	07	1850EST			0	0	5	0	Thunderstorm Winds (G52)
Part of the roof was blown off the Odessa Industries building.									
3 E Elkhart	07	1853EST			0	0	0	0	Thunderstorm Winds (G52)
1 E Goshen	07	1901EST			0	0	0	0	Thunderstorm Winds (G52)
Lagrange County	07	1923EST			0	1	4	0	Thunderstorm Winds
Numerous trees and lines were downed across the county. One person was injured in Shipshewana when a tree fell on a house. A store in Lagrange lost a portion of its roof.									
Steuben County	07	1947EST			0	0	4	0	Thunderstorm Winds
Numerous trees and lines were blown down in the northern part of the county. An automobile was damaged by a falling tree at Lake James.									
Jasper County 5 SW Demotte	07	2000EST			0	0	0	?	Thunderstorm Winds (G65) Hail (1.75)
The state police reported 1.75-inch-diameter hail, and estimated winds of 75 mph at the intersection of Interstate 65 and State Road 10.									
Newton County Roselawn	07	2000EST			0	0	0	?	Hail (1.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
INDIANA Cont'd									
Pulaski County Medaryville	07	2030EST			0	0	?	?	Thunderstorm Winds (G65) Hail (1.75)
LaPorte County 6 N Union Mills	07	2223EST			0	0	0	0	Thunderstorm Winds Large trees were blown down along Highway 6.
1 E Wanatah	07	2300EST			0	0	0	0	Thunderstorm Winds Large trees were blown down north of Highway 30.
Marshall County Plymouth	07	2346EST			0	0	5	0	Lightning A barn was struck by lightning, then caught fire and burned down.
Argos	07	2350EST			0	0	0	0	Thunderstorm Winds Trees were blown down in Argos.
Wabash County N Manchester	08	0010EST			0	0	4	0	Thunderstorm Winds Numerous trees and lines were downed.
Kosciusko County Pierceton	08	0010EST			0	0	0	?	Hail (1.75)
Stark County Knox	08	0020EST			0	0	0	?	Hail (1.75)
Huntington County Andrews Huntington	08	0025EST			0	0	5	0	Thunderstorm Winds Numerous trees and power lines were downed. A number of homes and automobiles were damaged by falling trees. Two radio towers were downed, and a 100-foot-long conveyor was bent, and twisted to the ground.
Huntington	08	0041EST			0	0	3	0	Thunderstorm Winds A large antenna was downed by thunderstorm winds.
Stark County Bass Lake	08	0050EST			0	0	0	?	Hail (1.00)
Pulaski County Lawton	08	0100EST			0	0	0	?	Hail (1.75)
Ripley Fulton County	08	0100EST			0	0	0	0	Thunderstorm Winds (G56) Sixty-five-mph winds occurred in the northern part of Fulton County.
Wells County	08	0109EST			0	0	4	0	Thunderstorm Winds Numerous trees and power lines were blown down across the northern part of Wells County.
Fulton County	08	0115EST			0	0	3	0	Thunderstorm Winds Trees limbs and power lines were downed in an area extending from Kewanna to Rochester to Akron.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
6 NNW Rochester	08	0115EST			0	0	5	0	Lightning
									A 50- by 100-foot barn was struck by lightning, caught fire, and burned to the ground. Damage was estimated at \$50,000 to the barn, and \$7,400 to the contents.
Adams County	08	0120EST			0	0	4	0	Thunderstorm Winds
									Numerous trees and power lines were blown down in the west-central part of the county.
Cass County Clymers	08	0140EST			0	0	0	0	Thunderstorm Winds
									In Clymers, trees were downed by thunderstorm winds.
Wayne County Cambridge City	08	0430EST			0	0	0	0	Thunderstorm Winds (G53)
Union County Liberty	08	0810EST			0	0	0	0	Hail (0.75)
Dearborn County Lawrenceburg	08	1037EST			0	2	0	0	Lightning
									Two brothers, ages 16 and 17, were struck by lightning after they took cover under a combine.
Decatur County Greensburg	08	1425EST			0	0	4	0	Thunderstorm Winds
									Thunderstorm winds caused minor damage to eight homes.
Switzerland County Patriot	08	1517EST			0	0	0	0	Flash Flood
									In Patriot, 1.75 inches of rain fell in a 30-minute time period. Water flowing down hillsides covered State Route 156 in Patriot.
Jennings County 3 E Uniontown	08	1536EST			0	1	0	0	Lightning
									An 11-year-old boy was injured when he was struck by lightning.
Perry County Bristow	08	1626EST			0	0	0	?	Hail (1.75)
Bandon	08	1655EST			0	0	0	?	Hail (0.88)
Spencer County Lamar	08	1800EST			0	0	0	0	Hail (0.75)
Noble County 2 S Albion	29	1606EST			0	0	4	0	Thunderstorm Winds
									Power lines were blown down 2 miles south of Albion.
De Kalb County Auburn	29	1610EST			0	0	0	0	Hail (0.75)
Countywide	29	1620EST			0	0	3	0	Thunderstorm Winds
					0	0	0	5	Hail (1.00)
									Power lines were blown down on the eastern side of Auburn. Just north of St. Joe, 200 acres of corn and soybeans were destroyed by hail.
Delaware County Eaton	29	1705EST			0	0	0	0	Hail (1.00)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
IOWA									
Grundy County Beaman	06	0350EST			0	0	4	0	Lightning
Winneshaw County 9 W Forest City	06	0040EST			0	0	3	2	Thunderstorm Winds (G50+)
Tama County Gladbrook	06	0400CST			0	0	4	3	Thunderstorm Winds (G50+)
Poweshiek County 6.5 NE Montezuma	06	0425CST			0	0	4	2	Thunderstorm Winds (G50+)
Montezuma	06	0430CST			0	0	4	3	Thunderstorm Winds (G50+)
Marshall County 4 N Green Mountain	06	0446CST			0	0	3	2	Thunderstorm Winds (G50+)
Keokuk County Keota	06	0510CST			0	0	4	2	Thunderstorm Winds (G50+)

Thunderstorms moved across northwestern into central Iowa during the night. There were numerous reports of 40- to 50-mph winds. Wind damage was reported in Poweshiek, Marshall, and Keokuk Counties. Trees and power lines were downed in Marshall and Keokuk Counties. The winds caved in the side of a grain bin in Poweshiek County, a barn was also taken down near Montezuma. Damage also occurred in Winneshaw and Tama Counties, where trees and part of a barn were taken down. Lightning struck a barn in Grundy County near Beaman and caused the fire that destroyed it.

Clayton and Delaware
Counties
Edgewood
Delaware County
Colesburg

Edgewood	07	0210CST			0	0	4	4	Hail (1.75)
Colesburg	07	0220CST			0	0	4	4	Hail (1.75)

An area of thunderstorms moved across northeastern Iowa. Golf ball-size hail fell along the Clayton/Delaware County line from one of the storms.

Sioux County Hawarden	07	0820CST			0	0	4	4	Thunderstorm Winds (G65)
Lyon County Doon	07	0820CST			0	0	5	4	Thunderstorm Winds (G75)
Plymouth County Struble	07	0825CST			0	0	4	3	Thunderstorm Winds (G50+)
Burnsville	07	0825CST			0	0	4	3	Thunderstorm Winds (G50+)
LeMars	07	0830CST			0	0	4	2	Thunderstorm Winds (G52)
Sioux County Hull	07	0827CST			0	0	4	4	Thunderstorm Winds (G69)
Ireton	07	0830CST			0	0	5	4	Thunderstorm Winds (G69)
Sioux Center	07	0830CST-							
		0835CST			0	0	5	5	Thunderstorm Winds (G90)
Orange City	07	0835CST			0	0	5	4	Thunderstorm Winds (G73)
Plymouth County Remsen	07	0840CST			0	0	3	5	Hail (0.75)
Sioux County Hospers	07	0843CST			0	0	4	4	Thunderstorm Winds (G65)
Alton	07	0845CST			0	0	4	3	Thunderstorm Winds (G50+)
O'Brien County Sheldon	07	0850CST			0	0	4	3	Thunderstorm Winds (G61)
1.5 NW Archer	07	0855CST			0	0	4	3	Thunderstorm Winds (G50+)
Countywide	07	0850CST-							
		0915CST			0	0	5	4	Thunderstorm Winds (G50+)
Cherokee County Marcus	07	0850CST			0	0	4	3	Thunderstorm Winds (G50+)
Clay County Peterson	07	0858CST			0	0	4	3	Thunderstorm Winds (G50+)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
IOWA Cont'd									
O'Brien County									
Paullina	07	0910CST			0	0	5	4	Thunderstorm Winds (G74)
Primghar	07	0910CST			0	0	4	4	Thunderstorm Winds (G61)
Cherokee County									
Cherokee	07	0915CST			0	0	4	3	Thunderstorm Winds (G60)
Clay County	07	0920CST			0	0	5	4	Thunderstorm Winds (G73)
Pocahontas County									
Laurens	07	0930CST			0	0	4	3	Thunderstorm Winds (G61)
Pocahontas	07	0930CST			0	0	4	3	Thunderstorm Winds (G50+)
1 NE Palmer	07	0930CST			0	0	4	3	Thunderstorm Winds (G50+)
Palo Alto County									
Ruthven	07	0930CST			0	0	4	4	Thunderstorm Winds (G65)
Humbolds County									
Ottosen	07	0935CST			0	0	5	4	Thunderstorm Winds (G67)
Emmetsburg	07	0940CST			0	0	4	3	Thunderstorm Winds (G50+)
Graettinger	07	0945CST			0	0	4	4	Thunderstorm Winds (G65)
West Bend	07	0950CST			0	0	4	3	Thunderstorm Winds (G61)
Kossuth County									
Algona	07	0955CST			0	0	4	2	Thunderstorm Winds (G52)
2 E Algona	07	1000CST			0	0	4	3	Thunderstorm Winds (G50+)
Winnebago County									
Forest City	07	1011CST			0	0	3	2	Thunderstorm Winds (G50)
Hancock County									
Britt	07	1020CST			0	0	4	2	Thunderstorm Winds (G50+)
2 S Garner	07	1030CST			0	0	3	2	Thunderstorm Winds (G50+)
Cerro Gordo County									
Thornton	07	1030CST			0	0	4	3	Thunderstorm Winds (G56)
Ventura	07	1038CST			1	0	4	3	Thunderstorm Winds (G50+)
Hancock County									
Garner	07	1040CST			0	0	4	2	Thunderstorm Winds (G50+)
Franklin County									
Hampton	07	1043CST			0	0	4	3	Thunderstorm Winds (G50+)
Cerro Gordo County									
Clear Lake	07	1045CST			0	0	4	4	Thunderstorm Winds (G62)
Worth County									
Northwood	07	1051CST			0	0	4	3	Thunderstorm Winds (G50+)
Manly	07	1051CST			0	0	4	3	Thunderstorm Winds (G50+)
Kensett	07	1051CST			0	0	4	3	Thunderstorm Winds (G50+)
Grafton	07	1054CST			0	0	0	0	Funnel Cloud
Mitchell County									
Osage	07	1058CST			0	0	4	3	Thunderstorm Winds (G61)
Cerro Gordo County									
Mason City	07	1059CST			0	0	5	4	Thunderstorm Winds (G62)
Mitchell County									
Stacyville	07	1100CST			0	0	4	3	Thunderstorm Winds (G50+)
Franklin County									
Hampton	07	1100CST			0	0	4	3	Thunderstorm Winds (G50+)
Floyd County									
Rudd	07	1100CST			0	0	4	3	Thunderstorm Winds (G50+)
Butler County									
2 N Allison	07	1108CST			0	0	4	3	Thunderstorm Winds (G50+)
2 E Clarksville	07	1130CST			0	0	4	3	Thunderstorm Winds (G50+)
Bremer County									
Sumner	07	1130CST			0	0	4	3	Thunderstorm Winds (G50+)
Floyd County									
Charles City	07	1130CST			0	0	5	3	Thunderstorm Winds (G50+)
Howard County									
Cresco	07	1131CST			0	0	4	3	Thunderstorm Winds (G50+)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
IOWA Cont'd									
Wineshiek County Decorah	07	1138CST			0	0	4	3	Thunderstorm Winds (G50+)
Fayette County Fayette	07	1208CST			0	0	3	2	Thunderstorm Winds (G50+)
Clayton County McGregor	07	1220CST			0	0	4	2	Thunderstorm Winds (G50+)
Allamakee County Waukon	07	1245CST			0	0	4	2	Thunderstorm Winds (G50+)
IAZ001-002-003- SDZ018-Northern Iowa	07	0800CST- 1300CST			0	0	0	8	Thunderstorm Winds (G50+)

The first Derecho, or big wind storm event in nearly 2 years entered Iowa during the morning hours of the 7th. Reports of tree and power line damage were very widespread, and too numerous to mention. Some of the more significant events include 75-mph winds recorded at Sioux Center. Winds of 80 to 90 mph tore part of the roof off a school in Orange City. Several greenhouses were blown down in Alton. Nearly every city in O'Brien County reported wind damage. At Spencer, 75-mph winds were recorded and 70-mph winds at West Bend. Many places along the northern three tiers of Iowa counties had 60- to 85-mph winds. The highest recorded wind was at Sioux Center, with a gust to 103 mph. Damage was extensive in the Mason City area. One woman was killed at McIntosh State Park in Ventura, when high winds downed a tree on the van where she was seeking shelter from the storm. An unoccupied van was flattened by a 3-foot-diameter tree that had fallen in Charles City. Eight children narrowly escaped injury as part of a church collapsed around them near Palmer in Pocahontas County. The high winds caused considerable crop damage in the area as well. Many corn and bean fields were flattened by the high winds. Some of them were shredded by fairly small hail that accompanied the winds at times. A funnel cloud was observed over Grafton. This was located just above the crest of one of the several bow echo patterns that formed. Crop damage was extensive with the high winds. Anywhere from 10 to as much as 30 percent of the crop was destroyed in many areas of northern Iowa. A rough dollar estimate placed crop damage around \$60 million. Cooperative observer reports indicated wind damage from all reporting stations across the northern two to three tiers of Iowa's counties. An example of the damage caused was in Ottosen, where high winds caused about \$40,000 damage when a 89,000-bushel corn bin was destroyed. (F32V)

Howard County 5 S Chester	17	2040CST			0	0	0	0	Funnel Cloud
0.5 NE Chester	17	2100CST			0	0	0	0	Funnel Cloud

Thunderstorms formed over northeastern Iowa along an outflow boundary set up from the previous nights convection. Although no severe weather occurred, there were two reports of funnel clouds in Howard County, in the Chester vicinity.

O'Brien County 5 E Paullina	18	2345CST			0	0	4	3	Thunderstorm Winds (G50+)
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A small area of thunderstorms moved across northwestern Iowa. One of the storms became severe and downed several trees and a barn east of Paullina.

Clay County Peterson	19	2355CST			0	0	4	3	Thunderstorm Winds (G50+)
O'Brien County 3 S Primghar	20	0014CST			0	0	5	4	Thunderstorm Winds (G50+)

A cluster of thunderstorms developed over northwestern Iowa. High winds caused damage in O'Brien and Clay Counties. Three barns were downed south of Primghar. This damage was caused by easterly outflow winds from the passing thunderstorms as they collapsed.

Clay County Spencer	21	2240CST			0	0	4	3	Thunderstorm Winds G50)
O'Brien County Sanborn	21	2245CST			0	0	4	3	Thunderstorm Winds (G50+)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm
					Killed	Injured	Property Crops	

KANSAS Cont'd

Wind gusts to near 50 mph knocked down power lines from Tonganoxie to Basehor.

Reno County 2.5 SW Pretty Prairie	03	1210CST			0	0	0	0	Hail (1.75)
Butler County Andover	03	1410CST			0	0	0	0	Hail (0.75)
Cowley County Udall	03	1511CST			0	0	0	0	Thunderstorm Winds (G60)
Lyon County 2 W Olpe	03	1900CST			0	0	0	0	Lightning

Lightning started three grass fires west of Olpe.

Smith County 2 N Cedar	08	0235CST			0	0	3	3	Thunderstorm Winds (G56)
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Thunderstorm winds downed several power poles.

Lyon County 8 E Olpe	08	1810CST			0	0	0	0	Thunderstorm Winds (G60)
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Trees were blown down along a county road east of Olpe near Eagle Creek.

Coffey County Burlington	08	1825CST			0	0	4	0	Thunderstorm Winds (G60)
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Large trees were blown down and blocked several roads in Burlington. Street signs were twisted and bent.

Lyon County Emporia Emporia	08	2100CST			0	0	0	0	Hail (0.75)
	08	2105CST			0	0	3	0	Thunderstorm Winds (G60)

Strong winds caused minor wind damage to some homes on the southern side of Emporia. A few trees were blown down.

Shawnee County 5 SW Topeka	09	1410CST			0	0	4	0	Thunderstorm Winds (G60)
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Several homes on the southwestern side of Topeka were damaged by straight-line winds produced by a downburst from strong thunderstorms. Most of the damage was along Wanamaker Road between 21st and 29th Streets. Fences were blown down, trees knocked over, and one house lost a sun porch.

Greenwood County 8 W Madison	09	1845CST			0	0	0	0	Hail (0.75)
Hamilton	09	1905CST			0	0	3	0	Thunderstorm Winds (G56)

Thunderstorm winds blew the roof off an outbuilding.

Dickinson County 5 E Abilene	10	1730CST			0	0	4	4	Hail (1.75)
Wabaunsee County Keene	10	1750CST			0	0	0	0	Hail (0.75)
Shawnee County Dover	10	1800CST			0	0	0	0	Hail (0.75)
Reno County 1 N Haven	10	1835CST			0	0	0	0	Thunderstorm Winds (G56)

Trees and power lines were damaged.

Sedgewick County 4 NE Colwich	10	1913CST			0	0	0	0	Thunderstorm Winds (G56)
Butler County 6 SE Potwin	10	1926CST			0	0	0	0	Thunderstorm Winds (G55)
Stafford County 15 NE St. John	12	0430CST			0	0	4	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<p>Two oil tank batteries were ignited by lightning. A loud explosion was heard and the blaze lasted for over an hour.</p>									
Cowley County 1 W Udall	12	1452CST			0	0	0	0	Hail (0.75)
Elk County Moline	12	1600CST			0	0	0	0	Thunderstorm Winds (G55)
<p>Trees and power lines were blown down in Moline.</p>									
2 N Howard	12	1624CST			0	0	0	0	Thunderstorm Winds (G61)
<p>Winds in excess of 70 mph damaged trees and power lines.</p>									
Marion County 2.75 S Lincolnville	17	1800CST			0	0	4	0	Lightning
<p>Lightning struck an oil battery and caused it to explode.</p>									
Mitchell County Beloit	18	1645CST			0	0	4	3	Thunderstorm Winds (G56)
<p>Strong winds damaged trees and homes on the eastern side of Beloit.</p>									
Jewell County 3 S Jewell	19	1650CST			0	0	4	3	Thunderstorm Winds (G52)
<p>Several large trees were uprooted, farm buildings and homes were damaged across parts of southern Jewell County.</p>									
Marion County Peabody	19	1706CST			0	0	0	0	Thunderstorm Winds (G56)
Sedgwick County 5 SSE Wichita	19	1825CST			0	0	4	0	Thunderstorm Winds (G61)
<p>Thunderstorm winds caused roof and tree damage at 31st Street and Meridan.</p>									
Butler County Augusta	19	1835CST			0	0	0	0	Thunderstorm Winds (G56)
Douglass	19	1910CST			0	0	0	0	Thunderstorm Winds (G56)
<p>Thunderstorm winds broke 6-inch-diameter tree limbs.</p>									
Cowley County 8 NE Winfield	19	1920CST			0	0	0	0	Thunderstorm Winds (G61)
<p>Thunderstorm winds gusted to 70 mph at Winfield Lake.</p>									
Riley County 2 W Manhattan	21	0200CST			0	0	0	0	Lightning
<p>Lightning started a fire that burned 40 acres of grazing land west of Manhattan.</p>									
Smith County 3 N Lebanon	22	1430CST			0	0	4	4	Thunderstorm Winds (G60)
<p>A mobile home was damaged 3 miles north of Lebanon.</p>									
Jewell County Montrose	22	1445CST			0	0	4	3	Hail (1.00)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property Crops	Character of Storm	
KANSAS Cont'd									
Atchison County Atchison	22	1900CST			0	0	3	0	Thunderstorm Winds (G56)
	Thunderstorm winds knocked down power lines and trees.								
Nemaha County Seneca	22	2130CST			0	0	0	0	Thunderstorm Winds (G56)
	Trees were blown down in Seneca and surrounding areas.								
Ford County Dodge City	23	1510CST- 1530CST			0	0	4	0	Thunderstorm Winds (G55)
	A horse shed was removed from its foundation. A camper trailer was blown over a lawn mover and into a two-story playhouse.								
Edwards County 10 ESE Kinsley	23	1550CST			0	0	3	3	Thunderstorm Winds (G48)
	Thunderstorm wind gusts of 55 mph were reported east and southeast of Kinsley. Minor crop and property damage was reported.								
Butler County 6 W Leon	23	1614CST			0	0	0	0	Hail (0.75)
6 W Leon	23	1614CST			0	0	0	0	Thunderstorm Winds (G55)
5 S Augusta	23	1625CST			0	0	0	0	Thunderstorm Winds (G55)
3 NW Leon	23	1628CST			0	0	0	0	Hail (0.75)
Sedgwick County 10 SE Wichita	23	1645CST			0	0	0	0	Hail (1.75)
Butler County El Dorado	23	1655CST			0	0	0	0	Thunderstorm Winds (G56)
Sedgwick County 5 NE Wichita	23	1720CST			0	0	0	0	Hail (0.75)
Greenwood County Eureka	23	1815CST			0	0	4	0	Thunderstorm Winds (G60)
	Thunderstorm winds blew down a large tree that fell into two homes. Roof damage occurred on several metal buildings at the airport.								
Pratt County 15 SW Pratt	24	0230CST			0	0	4	0	Lightning
	Two oil field batteries were burned when one was struck by lightning.								
KENTUCKY									
Graves County	02	1315CST			0	0	3	3	Thunderstorm Winds Hail (1.50)
	Strong thunderstorm winds damaged several barns near Dublin, also trees and power lines were blown down. Large hail damaged tobacco and corn crops.								
Union and Henderson Counties	02	1400CST			0	0	3	0	Thunderstorm Winds
	Thunderstorm winds downed trees and limbs across a widespread area of Union and Henderson Counties.								

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
Hancock County	02	1415CST			0	0	3	0	Thunderstorm Winds
									Several large trees were blown down around Hawesville.
Grayson County	02	1430CST			0	0	3	0	Thunderstorm Winds
									Thunderstorm winds downed trees 10 miles west of Leitchfield.
Christian County	02	1450CST			0	0	4	0	Thunderstorm Winds
									Trees and power lines were blown down in Hopkinsville.
Hardin County	02	1610EST			0	0	3	0	Thunderstorm Winds
									Large trees and power lines were blown down in Elizabethtown.
Adair County	02	1630EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down across the county.
Owen County	02	1721EST			0	0	2	0	Thunderstorm Winds
									Several trees were blown down by thunderstorm winds.
Bullitt County	02	1730EST			0	0	3	0	Thunderstorm Winds
									Strong thunderstorm winds destroyed a tool shed and downed several large trees, midway between Shepherdsville and Mt. Washington.
Grant County	02	1735EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down.
Gallatin County	02	1845EST			0	0	2	0	Thunderstorm Winds
									Trees were blown down on Eagle Hill Road.
Knox County	02	1921EST			0	0	3	0	Thunderstorm Winds
									Trees and power lines were blown down in the small community of Rocky Branch, 15 miles northwest of Barbourville.
Jackson County	02	2015EST			0	0	3	0	Thunderstorm Winds
									Several trees and power lines were blown down just north of McKee.
Whitley County	02	2130EST			0	0	5	0	Flash Flood
									Heavy rain, that fell in a short period of time, destroyed cars, homes and other buildings in low-lying areas in the northern and eastern portion of Corbin.
Fulton County	03	1550CST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down near Fulton in the eastern part of the county.
Henderson County Smith Mills Geneva	03	1955CST			0	0	2	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
Trees and limbs were downed by thunderstorm winds.									
Clark County	08	1310EST			0	1	6	2	Thunderstorm Winds
A number of mobile homes and barns were damaged or destroyed, large trees snapped in two or uprooted, and power lines downed when strong storms moved through the region. A 25-year-old man was injured when a mobile home was blown from its foundation.									
Lewis County	08	1500EST			0	0	3	0	Flash Flood
Heavy rains caused flooding in low-lying areas of the county.									
Meade County	08	1517EST			0	0	0	3	Hail (1.00)
Flaherty	08	1630EST			0	0	4	3	Thunderstorm Winds
Woodford County	Strong thunderstorm winds damaged several barns and destroyed some tobacco crops in the northern portion of the county, near Midway.								
Henry County	08	1630EST			0	0	4	0	Flash Flood
Heavy rain, that fell in a short period of time, forced creeks and streams out of their banks. Several streets and a high school in Eminence were flooded.									
Franklin County	08	1634EST			0	0	5	3	Flash Flood Thunderstorm Winds
Strong thunderstorms downed trees and power lines throughout the county. In addition, over 4.00 inches of rain in 6 hours forced many creeks and streams to flood. Several roads as well as low-lying areas were covered with water.									
Anderson County	08	1645EST			0	0	5	4	Flash Flood
Flash flooding washed out several bridges and roadways, causing an estimated \$40,000 in damages. Also, high winds toppled trees. Many corn and tobacco crops were also destroyed.									
Fayette County	08	1645EST			0	0	3	0	Flash Flood Thunderstorm Winds
Numerous trees and power lines were blown down throughout the county. Also heavy rain flooded streets and low-lying areas around Lexington.									
Scott County	08	1646EST			0	0	6	6	Flash Flood
Strong thunderstorms and heavy rain roared through the county, causing damage estimated to be in the millions of dollars. Total rainfall was estimated between 4.00 and 6.00 inches in 2 hours. The water treatment plant, which was the hardest hit, sustained an estimated \$0.5 million in damages. Tobacco, corn, and hay crops were destroyed by flooding as well.									
Jessamine County	08	1655EST			0	0	5	4	Thunderstorm Winds Flash Flood
Strong winds downed trees and power lines throughout the county. Several house fires were started when trees fell on power lines near homes. Considerable flooding occurred in Nicholasville.									
Boyle County	08	1700EST			0	0	4	3	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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KENTUCKY Cont'd

Strong thunderstorm winds downed trees and power lines throughout the county. In addition, some tobacco and corn crops were destroyed.

Mercer County	08	1715EST			0 0	5 2	Thunderstorm Winds
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Strong winds tore a marina away from its moorings and blew it down Harrington Lake.

Lincoln County	08	1755EST			0 0	3 0	Thunderstorm Winds
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Several trees and power lines were blown down in and around Stanford.

Bourbon County	08	1805EST			0 1	5 4	Flash Flood Lightning Thunderstorm Winds
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One man was injured after being struck by lightning west of Paris. The storm dumped over 5.00 inches of rain in less than 2 hours on Paris. Over 50 houses were flooded and caused many evacuations. Trees and power lines were blown down throughout the county.

Garrard County	08	1838EST	2.0	250	0 0	5 4	Tornado (F1) Flash Flood
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A tornado touched down in Cartersville leaving a path of destruction. Barns and block buildings were destroyed, several houses were damaged, and several large trees were also uprooted. In Paint Lick, 5.00 inches of rain fell in less than 1 hour. Several people had to be evacuated when the water rose over a foot deep in several downtown buildings.

Hancock County Lewisport	08	1739CST			0 0	4 0	Thunderstorm Winds
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Several large trees were blown down in Lewisport.

Rockcastle County	08	1845EST			0 0	4 3	Thunderstorm Winds
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Thunderstorm winds destroyed or damaged several large barns and downed many trees across the county. Winds were estimated between 60 and 65 mph. Crops, especially tobacco, were also flattened by wind.

Grayson County	08	1800CST			0 0	3 2	Thunderstorm Winds
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Several large trees were blown down northwest of Leitchfield.

Ohio County	08	1820CST			0 0	0 2	Hail (1.00)
Edmonson County	08	1828CST			0 0	3 0	Thunderstorm Winds

Several trees were blown down south of Brownsville.

Hart County	08	1830CST			0 0	3 0	Thunderstorm Winds
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Thunderstorm winds uprooted trees throughout southern Hart County.

Barren County	08	1840CST			0 0	3 0	Thunderstorm Winds
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Several trees were blown down near Cave City.

Jackson County	08	1900EST			0 0	3 0	Thunderstorm Winds
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Thunderstorm winds downed trees and power lines across the western half of the county.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
KENTUCKY Cont'd							
Butler County	08	1900CST			0 0	3 0	Thunderstorm Winds
Thunderstorm winds uprooted trees in the Dexterville and Oakridge areas. Trees were also downed at scattered locations throughout the county.							
Barren County Glasgow	08	1905CST			0 1	4 0	Thunderstorm Winds
Thunderstorm winds uprooted several trees, damaged a mobile home, and overturned a grain bin. One injury occurred as a tree fell on a car.							
Hopkins County Dawson Springs	08	1910CST			0 0	3 0	Thunderstorm Winds
Trees, power lines and a billboard were blown down by thunderstorm winds.							
Muhlenburg County Central City Greenville	08	1910CST- 1925CST			0 0	3 0	Thunderstorm Winds
Thunderstorm winds uprooted several trees in Central City, and also damaged a roof and downed trees in Greenville.							
Laurel County	08	1915EST			0 1	5 3	Thunderstorm Winds Lightning
A 37-year-old man was injured when the truck he was driving was struck by lightning. A barn was destroyed by lightning. Many large trees and power lines were blown down 10 miles west of London.							
Whitley County	08	1930EST			0 0	3 0	Thunderstorm Winds
Trees and power lines were blown down in Williamsburg.							
Powell County	08	1935EST			0 0	3 2	Flash Flood Thunderstorm Winds
Heavy thunderstorms dumped almost 4.00 inches of rain in less than 1 hour. Many creeks and streams in the county rose out of their banks, flooding roads and low-lying areas. High winds also damaged a mobile home and downed several trees.							
Warren County	08	1930CST- 2000CST			0 0	4 0	Thunderstorm Winds
Strong winds downed trees and power lines in Bowling Green.							
Christian County Northern Portion	08	2050CST			0 0	1 0	Thunderstorm Winds
Trees were blown down across the northern portion of the county.							
Hopkinsville	08	2110CST			0 0	4 4	Thunderstorm Winds Hail (0.75)
Thunderstorm winds damaged several roofs and downed trees in and around Hopkinsville. Along with the wind, penny-size hail heavily damaged tobacco and corn crops in the area.							

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
KENTUCKY Cont'd									
Warren County	10	1030CST- 1040CST			0	0	3	0	Thunderstorm Winds
									Several trees and power lines were blown down across the county.
Edmonson County	10	1040CST			0	0	3	0	Thunderstorm Winds
									Several large trees were blown down near Segal.
Barren County	10	1100CST- 1115CST			0	0	4	0	Thunderstorm Winds
									Strong winds downed numerous trees in the western portion of the county.
Allen County	10	1110CST			0	0	3	0	Thunderstorm Winds
									Several trees and power lines were blown down across the county.
Pulaski County	10	1332EST			0	0	3	0	Thunderstorm Winds
									Strong winds downed trees in Somerset and just outside Burnside.
Taylor County	12	1530EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down in Campbellsville.
Lawrence County	12	1535EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down.
Magoffin County	12	1600EST			0	0	4	0	Thunderstorm Winds
									In Cole Branch, a mobile home was damaged when a tree fell on it. Trees were also blown down around Salyersville.
Morgan County	12	1630EST			0	0	3	0	Thunderstorm Winds
									Trees and power lines were blown down across the southern part of the county.
Wolfe County	12	1615EST- 1630EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down along the Mountain Parkway near Campton.
Pulaski County	12	1645EST			0	0	2	0	Thunderstorm Winds
									Trees and power lines were blown down in and around Somerset.
Laurel County	12	1710EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down in the southern part of the county.
Knox County	12	1730EST			0	0	3	0	Thunderstorm Winds
									Barbourville police reported trees and power lines down across most of the county.
Clay County	12	1730EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down in the Manchester area.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
KENTUCKY Cont'd									
Bell County	12	1715EST- 1730EST			0	0	0	3	Thunderstorm Winds
									Middlesboro police reported damage to corn fields around the area. Several large trees were also blown down.
Wolfe County	12	1830EST			0	0	4	3	Flash Flood
									The Kentucky State Police reported flooding in Campton. Many streets were covered with water and several homes were flooded. Tobacco and corn crops in the area were also destroyed.
Floyd County	23	1857EST			0	0	2	0	Thunderstorm Winds
									Several large trees were blown down in Prestonburg.
Pike County	23	1920EST			0	0	3	0	Thunderstorm Winds
									The Kentucky State Police reported trees and power lines down in the small community of Virgie.
LOUISIANA									
Avoyelles Parish Hickory	01	1230CST			0	1	3	2	Thunderstorm Winds
									A severe thunderstorm uprooted several large trees near Hickory. A large tree fell on top of a house causing damage to the roof.
St. Landry Parish 4 NW Opelousas Opelousas	01 01	1625CST 1625CST			0 0	0 0	4 3	3 3	Thunderstorm Winds Thunderstorm Winds
									Thunderstorm winds tore the roof off a mobile home 4 miles northwest of Opelousas. In Opelousas, straight-line winds blew down numerous trees; several trees fell on top of cars that were parked at an auto repair shop.
Calcasieu Parish Mossville	01	1815CST			0	0	0	2	Thunderstorm Winds
									A severe thunderstorm blew down several trees in Mossville.
Jefferson Parish Gretna	02	1306CST			0	0	0	0	Hail (0.90)
									A thunderstorm produced nickle-size hail in Gretna.
St. Bernard Parish Meraux	02	1430CST			0	0	?	0	Lightning
									The St. Bernard Office of Emergency Preparedness reported that lightning struck a catalytic converter at the Murphy Oil Company refinery in Meraux forcing it to go into an emergency shutdown and releasing the catalyst into the atmosphere. No damage estimates were available.
Washington Parish Pine	02	1930CST			0	0	3	3	Thunderstorm Winds
									A thunderstorm damaged the roof of a business and a nearby home in Pine.
Calcasieu Parish Grand Lake	04	0945CST			1	1	0	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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LOUISIANA Cont'd

A 14-year-old boy was killed and his 14-year-old companion was hospitalized with injuries after lightning struck their fishing boat in Grand Lake. (M140)

**Vernon Parish
Leesville**

04	1500CST	0.5	18	0	0	3	2	Tornado (F0)
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A small tornado destroyed a business sign, blew out some windows from a store, knocked down a gas station's awning, and tore some shingles off of some roofs in Leesville.

**Calcasieu Parish
Lake Charles**

04	2000CST			0	0	?	0	Lightning
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A lightning strike at the Vista Chemical Company in Lake Charles shut down a compressor. This caused an excessively high flare of ethylene to be released into the atmosphere. No damage estimate was available.

**St. Charles Parish
Norco**

07	1240CST- 1440CST			0	0	?	0	Flash Flood
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A 5.00-inch downpour flooded eight homes in Norco. No damage estimate was available.

**Ouachita Parish
3 Sw Calhoun**

14	1540CST			0	0	0	0	Hail (0.75)
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A thunderstorm produced 0.75-inch hail 3 miles southwest of Calhoun.

**Caddo Parish
Shreveport
Shreveport
Desoto Parish
14 SSW Shreveport**

14	1803CST			0	0	0	0	Thunderstorm Winds (G50)
14	1815CST			0	0	3	0	Hail (1.75)
14	1830CST			0	0	0	0	Hail (0.75)

A severe thunderstorm produced a 50-knot gust at the Shreveport Weather Service Office and some golf ball-size hail in the southern part of Shreveport. The extreme northern part of Desoto Parish reported 0.75-inch hail at 1830 CST.

**St. Bernard Parish
Chalmette**

15	0030CST			0	0	3	2	Thunderstorm Winds
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A severe thunderstorm blew down several large trees and some utility poles in Chalmette. In addition, a roof was blown off a used car dealership and a utility shed. Between 0000 CST and 0200 CST, 2.65 inches of rain fell in Chalmette. Between 3.00 and 4.00 inches of rain fell in Violet and Meraux during the same period.

**Terrebonne Parish
Houma
Chauvin**

15	1330CST			0	0	3	2	Thunderstorm Winds
15	1330CST			0	0	4	2	Thunderstorm Winds

A severe thunderstorm moving towards the southwest, downed a large tree on top of a business in Houma. Another southwest-moving thunderstorm blew down a large pecan tree on top of a mobile home destroying it and two cars parked nearby.

**Livingston Parish
Port Vincent**

15	1430CST	0.5	18	0	0	3	2	Tornado (F0)
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The police chief said a small tornado damaged the roof of a home in Port Vincent.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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LOUISIANA Cont'd

St. Mary Parish Patterson	15	1525CST			0	0	4	2	Thunderstorm Winds
A southwest-moving thunderstorm blew down a large tree which destroyed a mobile home in Patterson.									
Lincoln Parish Ruston	17	1333CST			0	0	3	0	Lightning
Lightning caused a \$500 fire at a Ruston home.									
Webster Parish Minden	17	1445CST			0	0	2	2	Thunderstorm Winds
A thunderstorm blew down trees and power lines in Minden.									
Ouachita Parish Swartz	18	1600CST			0	0	4	0	Lightning
Lightning caused a \$20,000 fire at a home in Swartz.									
Caddo Parish Hosston	19	1725CST			0	0	3	3	Hail (1.75)
A Weather Service cooperative observer reported golf ball-size hail and 3.75 inches of rainfall in 1 hour in Hosston.									
Caldwell Parish 1 S Columbia	20	1655CST			0	0	2	2	Lightning
Lightning strikes caused two trees to fall on top of power lines 1 mile south of Columbia according to the sherriff's office.									
Franklin Parish Fort Necessity	20	1815CST			0	0	3	0	Thunderstorm Winds
A thunderstorm tore some shingles from a home in Fort Necessity.									
St. Tammany Parish Slidell	21	1337CST			0	0	5	0	Lightning
A lightning strike caused a \$70,000 fire to a Slidell home.									
Claiborne Parish Homer	26	1314CST			0	0	4	0	Lightning
Lightning caused moderate damage to a Homer residence.									
Jefferson Davis Parish Jennings	26	1430CST			0	0	2	2	Thunderstorm Winds (G54)
A National Weather Service cooperative observer reported a 54-knot gust and some pea-size hail in Jennings.									
Tangipahoa Parish Pontchatoula	28	1715CST			0	0	0	2	Thunderstorm Winds
A thunderstorm blew down some trees in Pontchatoula.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
LOUISIANA Cont'd							
East Baton Rouge Parish Baton Rouge	29	1030CST			0 1	0 0	Lightning
	A man was hospitalized after being struck by lightning.						
Terrabonne Parish Gray	29	1230CST			0 0	4 0	Lightning
	Lightning caused some damage to the attic, ceiling, electrical and air conditioning system of a church in Gray.						
MAINE							
Lincoln County 0.5 N Wiscasset	21	1406EST			0 0	? 0	Thunderstorm Winds
	Strong thunderstorm winds overturned a construction trailer and downed numerous trees. Small hail was also reported.						
MARYLAND and D.C.							
MDZ001-002-003	01 04	0000EST- 2400EST			0 0	5 0	Heat
	Eastern Shore poultry farmers reported that 300,000 fowl were lost during an intense heat wave.						
Montgomery County Poolesville Glenmont	02 02	1555EST 1950EST			0 0 0 0	0 0 4 0	Hail (1.75) Lightning
	Lightning struck a garage and the ensuing fire caused \$30,000 damage.						
Kent County Berterton	07	1030EST			0 0	5 0	Thunderstorm Winds
	A ham radio operator reported strong winds that overturned mobile homes and knocked down trees and power lines. Reports of a tornado were not confirmed.						
Frederick County	07	1230EST- 1330EST			0 0	4 0	Thunderstorm Winds
	State Police received numerous reports of trees and power lines downed. A man was electrocuted when he stepped on a downed power line.						
Carroll County Hampstead	07	1230EST			0 0	0 0	Thunderstorm Winds
	Trees, some large, were downed in the Hampstead area.						
Baltimore County 2 SSW Long Green Timonium Parkton	07	1230EST- 1300EST			0 0	4 0	Thunderstorm Winds (G55)
	Numerous trees were downed in the vicinity of the Loch Raven Dam (2 miles south-southwest of Long Green). At Timonium, a stage at the fair grounds was ruined, electronic equipment damaged, and a hot-air balloon destroyed by sudden high winds. At Parkton, a severe weather spotter recorded winds of 63 mph (55 knots).						

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property Crops	Character of Storm
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MARYLAND and D.C. Cont'd

Anne Arundel County

Arnold	07	1300EST			0	0	0	Hail (1.50)
City of Baltimore								
Mount Washington	07	1300EST			0	0	3	Thunderstorm Winds

Numerous trees, some measuring 80 feet tall, were uprooted in Mount Washington. Power poles were snapped by winds in other parts of the city.

Harford County

Bel Air	07	1300EST			0	0	0	Hail (1.75), Thunderstorm Winds
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Golf ball-size hail was reported in parts of Bel Air. County highway officials reported about 30 trees were knocked down in various portions of the county.

Montgomery County

1 SW Damascus	07	1322EST			0	0	0	Hail (1.25)
Gaithersburg	07	1330EST			0	0	0	Hail (0.75)

Baltimore County

3 ESE Bowleys Quarters	07	1330EST			2	1	0	Lightning
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Two boaters were killed by lightning as they took shelter in a cove near Carroll Island (3 miles east-southeast of Bowleys Quarters) during an intense thunderstorm. A woman nearby was slightly injured. (M540) (F510)

Kent County

2 NW Melitota	07	1330EST			0	2	0	Thunderstorm Winds (G58)
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Two people were slightly injured on Worton Creek (2 miles northwest of Melitota) as their 36-foot trawler was capsized by winds estimated at 67 mph (58 knots).

Prince Georges County	07	1345EST			0	0	4	Thunderstorm Winds
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Numerous reports of downed power lines.

Montgomery County

Rockville	07	1345EST			0	0	0	Thunderstorm Winds
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Spotters reported trees downed.

Worcester County

Berlin	07	1400EST			0	0	4	Lightning
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A church was partially destroyed by a fire caused by lightning striking the steeple.

Montgomery County

Bethesda	07	1400EST			0	0	0	Hail (0.75)
Kensington	07	1400EST			0	0	0	Hail (0.75)
Countywide	07	1400EST- 1430EST			0	0	5	Thunderstorm Winds

Power company officials reported many power lines downed by strong thunderstorm winds. About 8,000 customers were affected.

3 E Rockville	07	1410EST			0	0	0	Hail (0.75)
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Rockville	07	1830EST			0	0	0	Hail (0.75)
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Prince Georges County	07	1830EST			0	0	0	Hail (0.75)
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Character of Storm
					Killed	Injured	Property Crops

MARYLAND and D.C. Cont'd

The state police reported winds estimated at more than 50 knots (58 mph).

Montgomery County

Wheaton	07	1841EST			0	0	0	0	Hail (1.00)
Rockville	07	1845EST			0	0	0	0	Hail (1.00) Thunderstorm Winds (G50)

Spotters reported nickel- to quarter-size hail. Another spotter reported winds estimated at 58 mph (50 knots). Power outages affected 5,300 customers.

Anne Arundel County

Annapolis	08	1330EST-			0	8	5	0	Thunderstorm Winds (G63)
Crownsville		1430EST							
Parole									

A strong line of thunderstorms caused widespread damage to trees, blew out windows in a shopping center, and caused power outages to some 16,000 customers in the county. At Annapolis, four people were injured by flying glass from a supermarket window being blown in. Steel framework of a store under construction was blown down. Many trees were downed along a 2-mile-wide path through the county; some fell onto homes. Several boats suffered damage on the South River in Annapolis. At Parole, two workers at a construction site inside a trailer suffered minor injuries when winds flipped the trailer over and destroyed it. Two other minor injuries were reported by county medical officials. Winds at the Port Annapolis Marina were recorded at up to 72 mph (63 knots).

Dorchester County

Hurlock	08	1400EST			0	0	0	0	Thunderstorm Winds
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Numerous trees were reported downed in the Hurlock area.

District of Columbia

Washington National Airport	08	1406EST			0	0	0	0	Thunderstorm Winds (G55)
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Winds gusted to 63 mph (55 knots) at Washington National Airport (DCA).

Anacostia	08	1410EST			0	0	3	0	Thunderstorm Winds
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Telephone lines were downed at the Washington Navy Yard (Anacostia).

Montgomery County

Darnestown	08	1415EST			0	0	0	0	Thunderstorm Winds (G51)
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A severe weather spotter recorded 51-knot wind gusts.

Charles County

Morgantown	08	1530EST			0	0	0	0	Thunderstorm Winds (G52)
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A spotter estimated winds to 60 mph (52 knots).

St. Mary's County

Mechanicsville	08	1600EST			0	0	0	0	Thunderstorm Winds
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Trees were reported blown down in Mechanicsville.

Wicomico County

Parsonsbury Pittsville	08	1700EST			0	0	4	0	Thunderstorm Winds
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Trees and power lines were downed in both places. At Pittsville, a garage apartment sustained roof damage when a tree fell on it.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

MARYLAND and D.C. Cont'd

Worcester County Berlin	08	1700EST			0	0	4	0	Thunderstorm Winds
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Tree limbs were blown onto power lines, downing them and causing outages.

MDZ001-002-003	17 24	0000EST- 2400EST			0	0	5	0	Heat
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Poultry farmers on the Maryland Eastern shore lost some 220,000 birds because of a week-long heat wave. Monetary losses were estimated at \$400,000.

District of Columbia 3 NNW Washington National Airport	23	1800EST- 1900EST			0	0	0	0	Thunderstorm Winds
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National Park Service officials reported at least 21 trees destroyed along the Mall, with extensive damage to others. Heavy tree loss was also reported along the George Washington Parkway on Theodore Roosevelt Island, and on the Ellipse.

District of Columbia	25	0200EST- 0500EST			0	0	5	0	Thunderstorm Winds Flood Lightning
2 ENE Dalecarlia Reservoir	25	0213EST			0	0	0	0	Thunderstorm Winds (G70)
2 ENE Dalecarlia Reservoir	25	0350EST			0	0	0	0	Thunderstorm Winds (G50)

A series of thunderstorms brought strong winds and very heavy rain to the northwestern portion of DC. Large trees were downed across major traffic arteries. Several large trees fell onto houses. Winds gusting to 80 mph (70 knots) were recorded at a television studio 2 miles east-northeast of Dalecarlia Reservoir at 0213 EST; the same studio recorded 57 mph (50 knot) winds at 0350 EST. Many trees were downed near American University. Local officials reported 155 trees downed in the northwestern portion of DC. Up to 6.00 inches of rain fell, causing mostly minor flooding but washing out portions of paved roadways. The DC Fire Department reported numerous lightning fires and wires downed by lightning. Most damage was due to the trees falling onto houses.

Anne Arundel County Severn Glen Burnie	25	0330EST			0	0	5	0	Lightning
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Two homes were heavily damaged by lightning-caused fires. One in Severn sustained \$70,000 damage. In Glen Burnie, a home sustained \$30,000 damage. About 10,000 customers lost power due to lightning-caused power failures.

Montgomery County Silver Spring Bethesda	25 25	0335EST- 0430EST			0	0	3	0	Thunderstorm Winds
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The Montgomery County Sheriff's Office reported many trees and wires down at Silver Spring, Bethesda, and Chevy Chase.

Prince Georges County Fort Washington	25	0700EST			0	0	4	0	Thunderstorm Winds
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Several traffic accidents were caused by downed lines.

Calvert County Chesapeake Beach	25	1100EST			0	0	5	0	Lightning
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A barn and two homes were damaged by fires that were set by lightning.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
MARYLAND and D.C. Cont'd							
Wicomico County Salisbury	25	1315EST			0 0	0 0	Thunderstorm Winds
	Trees were downed at several places; one tree fell onto a church.						
St. Mary's County Patuxent River Naval Air Station	25	1610EST			0 0	5 0	Thunderstorm Winds (G58)
	Mid-runway sensor at Patuxent River Naval Air Station recorded gusts to 67 mph (58 knots). Officials at the naval base estimated at least \$50,000 damage to cars from trees falling on them and from downed trees and wires.						
Patuxent River Naval Air Station Lexington Park	26	1640EST- 1700EST			0 0	0 0	Thunderstorm Winds (G59)
	Spotters reported trees and numerous large tree limbs downed at both places. Sensors at the Patuxent River Naval Air Station recorded winds to 68 mph (59 knots).						
Caroline County Denton	26	1720EST			0 0	4 0	Thunderstorm Winds
	Large trees and power lines were downed around Denton, which caused five traffic accidents.						
Anne Arundel, Prince Georges, Howard, Carroll, Frederick, and Allegany Counties	May-June				0 0	0 8	Drought
	Maryland state agriculture officials determined that Federal disaster standards for drought loss were exceeded by the end of July, with losses estimated at \$57.5 million in the six counties, and that Federal disaster relief funds should be applied for.						
MASSACHUSETTS							
Middlesex County Dunstable Perrereil	21	1430EST			0 0	0 0	Thunderstorm Winds
	A few trees were blown down just north of the towns near the border of New Hampshire.						
Berkshire County Otis	21	1530EST			0 0	0 0	Thunderstorm Winds
	A few trees were blown down in Otis by thunderstorm winds.						
Hampden County Westfield Southwick	21	1535EST- 1550EST			0 0	4 0	Thunderstorm Winds (G60)
	Trees and power lines were blown down. Over 200 trees were blown down on a golf course in Westfield.						
Worcester County Dudley Webster	21	1542EST- 1603EST			0 0	? 0	Thunderstorm Winds
	Wind gusts to near 70 mph blew down numerous trees around New Boston Road in Dudley, and near School Street and Route 12 in the town of Webster. Sailboats were tipped over on a nearby lake and power outages occurred. Trees fell on several cars causing unknown dollar damage as reported in two local newspapers.						

Hampden County

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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MASSACHUSETTS Cont'd

Agawam	21	1555EST			0	0	?	0	Thunderstorm Winds
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Trees were blown down and small hail occurred.

Berkshire County New Marlboro Otis Sandisfield	23	1500EST- 1510EST			0	0	3	0	Thunderstorm Winds
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Trees and power lines were blown down.

MAZ002	26	1500EST- 2100EST			0	0	?	0	Heavy Rain
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Thunderstorms produced 1.60 inches of rain in 20 minutes at Taunton between 1940 EST and 2000 EST, and 2.00 inches in 50 minutes at Bridgewater between 1925 EST and 2015 EST. Several roads were inundated with 4 feet of water and some cars had to be towed. Several motorists were stranded on Route 140 near the southern part of Taunton.

Norfolk County Milton	26	1605EST			0	0	5	0	Lightning
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A lightning strike caused \$300,000 in damage to the upper floors of a mansion.

Bristol County Taunton	26	1930EST			0	0	?	0	Lightning
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Lightning caused at least one house fire during the evening with the approximate time of the lightning strike listed as 1930 EST. Small hail was also reported in Taunton.

MICHIGAN

Cass County Dowagiac	01	1610EST			0	1	0	0	Lightning
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Richard Rouse, a teenager, was on Dowagiac Elks Golf Course when he was hit by lightning 50 yards from the nearest tree. He did not lose consciousness, but reported a tingling coming up through his feet.

St. Joseph County 1 W Constitine	01	1703EST			0	0	0	0	Hail (0.50)
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Ottawa County Olive Center	01	1830EST			0	0	2	0	Thunderstorm Winds
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Strong thunderstorm winds blew a storage shed across a field at 5903 120th Avenue.

Cass County	01	1830EST- 2030EST			0	0	4	0	Flash Flood
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Two thunderstorms, the first of which lasted 45 minutes, passed over the county around 1600 EST. The second storm, which caused the flash flooding, moved across the county around 1830 EST. Total rainfall from 1.5 hours of rain was between 2.00 and 4.00 inches. The waters were almost gone by 2030 EST. However, during the storm, one resident in Dowagiac said water raced across her yard like a flash flood. The water crested at 3 feet in some locations. Some cars were stranded in intersections. The Indian Lake Golf Course suffered a sod wash out, this caused erosion damage to the new nine hole golf course. There was heavy damage to the seventh fairway. Some basements had 1.00 to 2.00 inches of water in them.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
MICHIGAN Cont'D							
Kalamazoo County Galesburg	01	1900EST			0 1	0 0	Lightning
A 55-year-old Galesburg women was outside trying to cover a go-cart when lightning struck her, throwing her against her porch. She suffered chest and arm injuries.							
Berrien County Benton Harbor	01	1930EST			0 0	3 0	Thunderstorm Winds
Numerous trees were blown down in Pipestone, Sodus, and Benton Townships.							
Cass County	01	1945EST			0 0	3 0	Thunderstorm Winds
Numerous large trees and power lines were downed by strong thunderstorm winds. While most of the county had some damage, the western half had the most damage.							
St. Joseph County	01	2025EST			0 0	3 0	Thunderstorm Winds
Trees and power lines were downed by strong thunderstorm winds throughout most of the county. White Pigeon, Sturgis, and Tree Rivers all lost power due to the storm. The Michigan Power Company reported 2,600 people lost power due to the storm.							
St. Joseph County	01	2124EST- 2300EST			0 0	4 0	Flash Flood
Heavy rains, which fell in less than 3 hours, amounted to 2.50 to over 4.00 inches across the county. Nottawa measured 4.03 inches. This rainfall caused several county roads to wash out and stranded cars in several intersections in many locations. The Carnegie Center in Three Rivers suffered several thousand dollars worth of damage when water seeped through the ceiling and floor. Some art work was damaged.							
Wexford County Cadillac Manton	03	1220EST			0 0	2 0	Thunderstorm Winds
The county sheriff reported many small branches and other debris littering the area. Hail, up to 0.25 inch in diameter, was also reported.							
Shiawassee County Juddville	03	1330EST			0 0	3 3	Hail (175) Thunderstorm Winds
Golf ball-size hail damaged two sheds and crops. The hail stripped the crops of stalks and trees of leaves. During this same storm, very strong thunderstorm winds downed power lines and trees.							
Ogemaw County Central Portion	03	1340EST			0 0	3 0	Thunderstorm Winds
Strong thunderstorm winds caused extensive tree damage around West Branch. One home caught fire when a falling wire hit the home and started a fire.							
Ingham County North-Central Portion	03	1414EST			0 0	3 0	Thunderstorm Winds
Strong thunderstorm winds knocked down trees and power lines in the towns of Okemos and Haslett. The traffic signals at three intersections were also knocked out by strong winds. Some of the trees blocked traffic on a few residential streets in Haslett.							

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
MICHIGAN Cont'D									
Huron County Port Austin	03	1425EST			0	0	0	0	Hail (0.75)
Lenawee County Near Morenic	03	1430EST			0	0	0	0	Hail (0.88)
Genesee County New Lothrop	03	1446EST			0	0	3	0	Thunderstorm Winds
Very strong thunderstorm winds damaged a barn and blew down several trees.									
Shiawassee County Lothrop	03	1450EST			0	0	4	0	Thunderstorm Winds (G61)
Very strong thunderstorm winds damaged several barns and blew down many trees.									
Lenawee County Adrian	03	1450EST- 1500EST			0	0	0	0	Hail (1.00)
Hail, up to 1.00 inch in diameter, covered the ground.									
Adrian	03	1450EST- 1500EST			0	1	5	0	Thunderstorm Winds (G61)
Very strong thunderstorm winds uprooted several 30- to 40-foot trees. Some trees were snapped off at their base. Two schools received roof damage, large areas of the roof were removed. Damage to the Adrian High School and Drager Middle School was estimated around \$100,000. Many power lines were blown down. This caused traffic problems and power outages that lasted hours. An elderly female sustained a broken rib and fractured her collar bone when a large tree crushed her car while she was driving. Winds gusted to 70 mph during the storm.									
Ogemaw County West Branch	03	1500EST			0	0	3	0	Thunderstorm Winds
Very strong thunderstorm winds blew down many branches and power lines. In one case, a power line fell on a home and caused the home to catch on fire.									
Genesee County Flushing	03	1504EST			0	0	3	0	Hail (1.75) Thunderstorm Winds
Golf ball-size hail fell near Flushing. During the same storm, 6-inch tree limbs were blown down causing damage to cars and some windows were broken. Strong thunderstorm winds downed power lines during this same storm.									
Lenawee County Tecumseh	03	1512EST			0	0	0	0	Hail (1.00)
Hail, up to 1.00 inch in diameter, was reported by the police.									
Tecumseh	03	1512EST					0	0	40Thunderstorm Winds (G61)
Hail, up to 1.00 inch in diameter was reported by the police. Very strong thunderstorm winds ripped large areas of roofing from a grade school in Tecumseh. Several large trees, up to 40 feet, were uprooted. Several power lines were blown down causing a power outage that lasted several hours.									
Tecumseh	03	1520EST			0	0	0	0	Hail (1.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
Golf ball-size hail was reported by SKYWARN spotters.							
Washtenaw County South of Saline	03	1530EST			0 0	0 0	Hail (0.88)
Nickel-size hail was reported by SKYWARN spotters. Wind gusts to 55 mph (48 knots) was also reported with this thunderstorm.							
Tuscola County Fostoria	03	1630EST			0 0	2 0	Thunderstorm Winds
Strong thunderstorm winds blew down several trees.							
Caro	03	1640EST			0 0	3 0	Thunderstorm Winds
Strong thunderstorm winds blew down several trees and some power lines.							
Muskegon County Muskegon	03	1730EST			0 0	3 0	Thunderstorm Winds
Strong thunderstorm winds blew down trees and power lines.							
Jackson County 2 S Ludington	03	1730EST			0 0	3 0	Thunderstorm Winds Hail (1.00)
Strong thunderstorm winds blew down trees and power lines.							
Ocean County	03	1730EST			0 0	3 0	Thunderstorm Winds
In Ocean County, strong thunderstorm winds blew down trees and power lines.							
Genesee County 5 N Flushing	03	1800EST			0 0	0 0	Hail (1.75)
Golf ball-size hail fell 5 miles north of Flushing.							
Tuscola County Vasser	03	1807EST			0 0	3 0	Thunderstorm Winds
Very strong thunderstorm winds uprooted several large trees.							
Alpena County North-Central Portion	06	1540EST			0 0	0 0	Hail (1.00)
Presque Isle County Long Lake	06	1600EST			0 0	0 0	Hail (1.75)
A storm spotter reported golf ball-size hail at Long Lake.							
Alpena County North-Central Portion	06	1630EST			0 0	0 0	Hail (1.50)
Presque Isle County Long Lake	06	1700EST			0 0	0 0	Hail (1.00)
A storm spotter reported 1.00 inch hail at Long Lake.							
Alpena County North-Central Portion	06	1735EST- 1745EST			0 0	6 ?	Hail (1.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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MICHIGAN Cont'D

Hail, from 1.00 inch to golf ball-size, fell over Alpena. This hail caused \$4 million damage to many homes and cars. Several automobile dealerships reported damage to cars to be near \$1.5 million (included in the \$4 million). Damage was mostly to glass in homes and businesses, dented cars, and broken windshields. Detroit Edison said it cost \$10 million to restore power to nearly 300,000 customers. This brings the total damage to \$14 million.

Ottawa County Holland State Park	06	2045EST			0 0	0 0	Hail (1.75)
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Hail measuring up to 1.75 inches in diameter fell at Holland State Park, in the southeastern corner of Ottawa County. No damage was reported.

Ionia County Near Saranac	06	2130EST			0 0	0 0	Hail (1.75)
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Montcalm County Carson City	06	2145EST			0 0	0 0	Thunderstorm Winds
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Strong thunderstorm winds blew down large limbs and some trees.

Clinton County St. Johns	06	2200EST			0 0	1 0	Thunderstorm Winds
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Strong thunderstorm winds blew down tree limbs. Lightning strikes caused several power outages.

Saginaw County Chesaning	06	2227EST			0 0	0 0	Hail (1.50)
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Walnut-size hail fell in the city of Chesaning.

Genesee County Montrose	06	2245EST			0 0	4 0	Thunderstorm Winds
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Strong thunderstorm winds blew down trees and power lines. Several cars were damaged by falling trees and tree limbs.

Tuscola County Near Millington	06	2310EST			0 0	3 0	Thunderstorm Winds
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Numerous trees and wires were blown down by very strong thunderstorm winds.

Lapeer County Branch	06	2321EST			0 0	0 0	Thunderstorm Winds
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Very strong and gusty thunderstorm winds caused considerable damage. A mobile home was tipped over, windows were blown out of several homes, and numerous trees and power lines were blown down.

Shiawassee County Near Durand	06	2335EST			0 0	0 0	Thunderstorm Winds (G61)
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Strong thunderstorm winds gusted to 70 mph. This caused some trees and many tree limbs to be blown down.

Sanilac County Near Marlette	06	2340EST			0 0	0 0	Hail (1.75) Thunderstorm Winds
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Golf ball-size hail fell while strong and gusty thunderstorm winds blew down power lines and trees.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
MICHIGAN Cont'D									
Genesee County Flint Bishop Airport	07	0004EST			0	0	0	0	Thunderstorm Winds (G60)
Winds gusted to 69 mph at Flint's Bishop Airport as the thunderstorms moved overhead. Tree limbs were blown down in Lennon, 10 miles west of the city of Flint.									
Muskegon County Muskegon	07	1702EST			0	0	0	0	Thunderstorm Winds
Strong thunderstorm winds blew down trees and power lines.									
Mason County 2 S Ludington	07	1720EST			0	0	0	0	Hail (1.00) Thunderstorm Winds (G61)
Seventy-mph wind gusts and 1.00-inch hail fell 2 miles south of Ludington as the thunderstorms passed over eastern Mason County.									
Ottawa County Holland	07	1720EST			0	0	0	0	Hail (1.00)
Grand Haven	07	1720EST			0	0	0	0	Hail (1.00)
Countywide	07	1740EST- 1800EST			0	0	4	0	Thunderstorm Winds (G57)
Strong thunderstorm winds blew down many trees and power lines across the county. Winds gusted to 66 mph. Power was lost over large parts of the county.									
Marne	07	1740EST			0	0	0	0	Thunderstorm Winds (G52)
Jenison	07	1741EST			0	0	0	0	Thunderstorm Winds (G57)
Strong thunderstorm winds blew siding off a home. Many trees and power lines were blown down.									
Holland	07	1745EST			0	0	4	0	Lightning
Lightning struck a home in Holland. The fire was limited to the upstairs kitchen. This limited the damage to \$6,000.									
Kent County	07	1751EST- 1805EST			0	0	4	0	Thunderstorm Winds (G73)
Strong thunderstorm winds blew down many trees and power lines across the county. Winds gusted to 85 mph. Power was lost over large parts of the county.									
Grand Rapids	07	1751EST			0	0	3	0	Thunderstorm Winds
Strong thunderstorm winds blew down trees and power lines in the south central part of the city at Burton Street and Eastern Avenue.									
Standale	07	1753EST			0	0	3	0	Thunderstorm Winds
Strong thunderstorm winds blew down a large oak tree.									
Grand Rapids	07	1753EST			0	0	3	0	Thunderstorm Winds (G73)
A wind gust to 84 mph was measured at 4 mile Road and East Beltline.									
2 W Alpine	07	1754EST			0	0	3	0	Thunderstorm Winds (G61)
Kentwood	07	1755EST			0	0	3	0	Thunderstorm Winds (G70)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
MICHIGAN Cont'D									
Rockford Ottawa County 1 S Robinson	07	1758EST			0	0	3	0	Thunderstorm Winds (G55)
	07	1759EST			0	0	3	0	Thunderstorm Winds
Strong thunderstorm winds blew the roof off a home near M45 and 120th Avenue.									
Berrien County Coloma	07	1803EST			0	0	?	?	Thunderstorm Winds
Strong thunderstorm winds downed several trees.									
Coloma	07	1810EST			0	0	?	?	Thunderstorm Winds (G61)
Wind gusts to 69 mph were recorded in Coloma. Many trees and power lines were blown down.									
Paw Lake	07	1810EST			0	0	?	?	Thunderstorm Winds
Large trees were blown down; one landed on a house.									
Montcalm County	07	1815EST			0	0	5	0	Thunderstorm Winds
Very strong thunderstorm winds blew down trees as large as 8 inches in diameter. In some places, limbs were blown down and one mobile home was blown over. Power was out in many areas from downed power lines. Roof damage was also reported in several areas.									
Ionia County Northwestern Portion	07	1815EST			0	0	6	6	Thunderstorm Winds (G74)
Straight-line winds damaged 250 homes, two of those were destroyed. Many barns, mobile homes, garages, and five cars were lost or damaged. A total of 17 barns were destroyed, 38 were damaged. Some flag poles were at a 45 degree angle. Wind gusts to 85 mph were recorded at Belding. Some cattle were reported injured or killed. Damage to the peach and apple trees was estimated just below \$1 million. Many fruit growers lost more than half of their orchards. The wind damaged 160 of the 288 basket supports at the Gus Macker Enterprises factory. The Ionia County Road Commissioner estimated it would take \$492,000 just to clean up all the debris. Ionia County has requested to be declared a disaster area due to all of the damage. Property damage across the area was estimated at \$1 million.									
Calhoun County Battle Creek	07	1820EST			0	0	3	0	Thunderstorm Winds (G52)
Thunderstorm winds to 60 mph blew down many trees around the city and 0.50-inch hail fell over northwestern Battle Creek.									
Isabella County Mt. Pleasant	07	1830EST			0	0	3	0	Thunderstorm Winds
Strong and gusty thunderstorm winds did considerable damage by blowing over trees and knocking down power lines.									
Gratiot County Ithaca	08	1830EST			0	0	3	0	Thunderstorm Winds
Strong thunderstorm winds blew down trees and power lines. A barn was also blown down in the storm.									
Allegan County Plainwell	07	1830EST- 1831EST	0.2	10	0	0	0	0	Tornado (F0)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage		
MICHIGAN Cont'D									
A tornado was sighted by the Barry County Sheriff's Office. The tornado briefly touched down in a field nearly 3 miles northeast of Plainwell, between the Gun River and Marsh Road. No damage was reported.									
Berrien County Niles	07	1835EST			0	0	3	0	Thunderstorm Winds
Strong winds downed a large tree and some power lines, which resulted in power outages that affected several thousand people.									
Ottawa County Hudsonville	07	1837EST			0	0	0	0	Thunderstorm Winds
Strong thunderstorm winds blew a tree 2.5 inches in diameter down in a rest area on Interstate 96.									
Clinton County Capital City Airport	07	1840EST			0	0	0	0	Thunderstorm Winds (G52)
Kent County Grand Rapids	07	1840EST			0	0	0	0	Thunderstorm Winds
Strong thunderstorm winds blew down about 30 trees near Leonard and Alpine (northern part of Grand Rapids).									
Eaton County Charlotte	07	1840EST			0	0	3	0	Thunderstorm Winds (G62)
Thunderstorm wind gusts to 70 mph blew down trees and power lines.									
Kent County 16 NE Grand Rapids	07	1845EST- 1846EST	0.5	50	0	0	3	0	Tornado (F0)
The tornado touched down 1 mile southeast of Courtland Center, moved east about 1 mile and dissipated. The tornado ripped a deck off a home, just missing the house itself.									
Calhoun County Tekonsha	07	1850EST			0	0	5	0	Thunderstorm Winds (G52)
Thunderstorm winds blew down many large trees. Some of the trees fell on cars, blocked roads, and knocked down power lines. Considerable damage was done. Several homes and businesses were also damaged by falling trees or tree limbs.									
Clinton County St. Johns	07	1850EST			0	0	4	0	Thunderstorm Winds (G62)
Large trees and power lines were blown down by wind gust to near 70 mph.									
Cass County Union	07	1853EST			0	0	?	?	Thunderstorm Winds (G53)
Eaton County Eaton Rapids	07	1855EST			0	0	4	0	Thunderstorm Winds (G62)
Thunderstorm wind gusts to 70 mph blew down large trees and power lines.									
Shiawassee County Owosso	07	1855EST			0	0	4	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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MICHIGAN Cont'D

Strong thunderstorm winds blew down several trees and tree limbs. Some falling trees and tree limbs caused tens of thousands of dollars worth of damage to quite a few homes, cars, and mobile homes.

New Lothrop	07	1900EST			0 0	4 0	Thunderstorm Winds
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Strong thunderstorm winds blew 10 mobile homes over; one was blown into a nearby lake. Boats and other equipment was scattered around the camp. Several homes and vehicles near the park also sustained significant damage.

Ingham County Lansing	07	1900EST			0 0	5 0	Lightning
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Lightning struck a bridal shop and destroyed several other businesses.

Cass County Marcellus	07	1900EST			0 0	3 0	Thunderstorm Winds (G53)
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Tree limbs measuring 6 to 8 inches in diameter, were torn off by very strong thunderstorm winds.

Calhoun County Marshall	07	1900EST			0 0	3 0	Thunderstorm Winds
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Trees and power lines were blown down by thunderstorm winds.

Genesee County Flint	07	1904EST			0 0	0 0	Thunderstorm Winds (G55)
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Winds gusts to 69 mph were recorded at Flint's Bishop Airport.

Ingham County Holt	07	1905EST			0 0	2 0	Thunderstorm Winds
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Thunderstorm winds blew down trees and power lines. Wind gusts were reported to 60 mph.

East Lansing	07	1905EST- 1906EST	0.2	10	0 0	3 0	Tornado (F0)
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A tornado briefly touched down on the corner of Abbot and Lake Lansing Road. The tornado blew windows out of a home and downed several trees before lifting.

Jackson County Spring Arbor	07	1905EST			0 0	0 0	Thunderstorm Winds (G62)
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Winds gusts were recorded at 70 mph by a television meteorologist.

Midland County	07	1905EST			0 0	0 0	Thunderstorm Winds (G52)
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Strong thunderstorm winds blew down trees in many areas of the county. Wind gusts to 60 mph were observed.

Shiawassee County Durand	07	1905EST			0 0	4 0	Thunderstorm Winds
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Strong thunderstorm winds blew over numerous camper trailers. One trailer blew into a lake injuring the camper. Part of a metal roof was lifted off a home. A large piece of sheet metal was blown off a pole barn. In some areas, utility poles were broken off at the base. Many large trees were blown down.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
Saginaw County Chesaning	07	1905EST			0 0	0 0	Thunderstorm Winds Strong thunderstorm winds blew trees down in Chesaning.
St. Joseph County Three Rivers	07	1907EST			0 0	? ?	Thunderstorm Winds Tree limbs measuring 12 to 14 inches in diameter were blown off by very strong thunderstorm winds.
Livingston County	07	1908EST- 2015EST			0 0	0 0	Thunderstorm Winds (G61) Strong thunderstorm winds blew down trees and power lines. Numerous power outages resulted.
Genesee County Swartz Creek	07	1910EST			0 0	3 0	Thunderstorm Winds Strong thunderstorm winds blew the roof off an elementary school.
Midland County Midland	07	1910EST			0 0	0 0	Thunderstorm Winds Strong thunderstorm winds blew trees down in Midland.
Livingston County Fowlerville	07	1911EST			0 0	0 0	Thunderstorm Winds (G61) Strong winds blew over several trees as winds gusted to near 70 mph.
Calhoun County Interstate 69 North Marshall	07	1915EST			0 0	3 0	Thunderstorm Winds A tractor-semitrailer was overturned by strong thunderstorm winds.
Branch County Union City	07	1915EST			0 0	3 0	Thunderstorm Winds (G52) Thunderstorm wind gusts to 60 mph blew down trees and power lines.
Jackson County Jackson	07	1915EST			0 0	4 0	Thunderstorm Winds (G61) Strong thunderstorm winds with gusts to 70 mph, blew down trees and power lines. It took 18 hours to restore the power to the 14,000 customers affected by the storm.
Saginaw County Freeland	07	1915EST			0 0	0 0	Thunderstorm Winds In Freeland, strong thunderstorm winds downed tree limbs, up to 6 inches in diameter.
Genesee County Grand Blanc	07	1920EST			0 0	4 0	Thunderstorm Winds Strong thunderstorm winds blew the roof off of two apartment buildings near Interstate 75 on the western side of Flint. A construction trailer was tossed around by the wind near Grand Blanc.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
MICHIGAN Cont'D								
Livingston County Howell	07	1920EST			0	0	0	Thunderstorm Winds (G52)
Jackson County Central and Southeastern Portion	07	1920EST			0	0	4	Thunderstorm Winds
Strong thunderstorm winds blew down trees and power lines. The cities of Napoleon and Brooklyn were especially hard hit.								
Oakland County Western Portion	07	1923EST			0	0	0	Thunderstorm Winds (G52)
The county sheriff reported winds to 60 mph across the western half of the county. There were numerous reports of downed trees and power lines.								
Bay County Bay City	07	1925EST			0	0	3	Thunderstorm Winds
Strong thunderstorm winds blew down tree limbs and power lines. Some of the power lines fell because of large tree limbs falling on the power lines, which caused them to snap.								
Oakland County Pontiac	07	1925EST			0	0	0	Thunderstorm Winds (G65)
Pontiac's Oakland County Airport reported wind gusts to 75 mph.								
Washtenaw County Chelsea	07	1925EST			0	0	0	Thunderstorm Winds (G52)
Wind gusts up to 60 mph were recorded in Chelsea.								
Oakland County Clarkston	07	1930EST			0	0	3	Thunderstorm Winds
Strong thunderstorm winds blew down many trees, tree limbs, and power lines. No damage was reported to cars or homes.								
Livingston County Brighton	07	1930EST			0	0	0	Thunderstorm Winds (G52)
Hillsdale County Northern Portion	07	1935EST			0	0	3	Thunderstorm Winds (G52)
Winds gusted to 60 mph over the northern half of the county. This caused considerable damage to trees and power lines.								
Washtenaw County Ypsilanti	07	1939EST			0	0	0	Thunderstorm Winds (G72)
Willow Run Airport reported wind gusts to 83 mph.								
Oakland County Troy	07	1940EST			0	0	0	Thunderstorm Winds (G52)
The city of Troy reported wind gusts to 60 mph.								
Lapeer County	07	1945EST			0	1	3	Thunderstorm Winds
Strong thunderstorm winds downed trees and power lines in many areas of the county. A motorist drove into a downed tree but was not seriously injured.								

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
		Local/Standard			Killed	Injured		
MICHIGAN Cont'D								
Oakland County Rochester Troy	07	1945EST			0	0	5 0	Thunderstorm Winds (G74)
The city of Rochester reported wind gusts to 85 mph. That caused considerable damage to several homes and cars. Several homes reported damage in the \$30,000 range. There were 700 power lines down in just this area.								
Wayne County	07	1945EST- 2030EST			0	0	4 0	Thunderstorm Winds (G61)
Strong thunderstorm winds blew down many trees and power lines in many parts of the county. Numerous reports of winds between 60 and 70 mph were received. Numerous power outages occurred. It took almost a week to restore electric service in some places.								
NW Detroit	07	1945EST- 1950EST			0	0	4 0	Thunderstorm Winds (G61)
Winds gusting to 60 mph, uprooted several trees and snapped others in half. Power lines were blown down and chimneys were damaged.								
Oakland County Ferndale	07	1945EST			0	0	3 0	Thunderstorm Winds
Strong thunderstorm winds blew down trees, tree limbs, and power lines. A few homes reported some structural damage caused by flying debris.								
Livingston County Brighton	07	1950EST			1	0	0 0	Lightning
Nancy Thorn, who was 48-years-old, was running toward her home when lightning struck a tree and caused a limb to fall on her. She died instantly. (F480)								
Wayne County Livonia	07	1950EST			0	0	4 0	Thunderstorm Winds (G61)
Seventy-mph wind gust downed several large trees and power lines, in addition to tearing shingles from 15 roofs.								
Tuscola County Caro	07	1950EST			0	0	3 0	Lightning
Lightning caused power lines and some trees to come down.								
Washtenaw County Saline	07	1952EST			0	0	0 0	Thunderstorm Winds (G52)
Very strong thunderstorm winds blew down big trees, some were snapped off at the base. Power outages occurred when power lines were either blown down or came down when trees or limbs fell on them.								
Monroe County Monroe	07	1952EST			0	0	0 0	Thunderstorm Winds (G52)
Lenawee County Adrian	07	1955EST			0	0	3 0	Thunderstorm Winds (G52)
Strong thunderstorm winds blew down trees, tree limbs, and power lines.								
Washtenaw County Ann Arbor	07	1955EST			0	0	0 0	Thunderstorm Winds (G52)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
MICHIGAN Cont'D									
Strong thunderstorm winds blew down large tree limbs, 10 large trees, and many power lines resulting in power outages in Roseville.									
Wayne County Grosse Point	07	2005EST- 2035EST			0	0	3	0	Thunderstorm Winds (G52)
Strong thunderstorm winds, with gusts to 60 mph blew down several large trees. Several power lines were also blown down and power outages occurred.									
Macomb County Sterling Heights	07	2005EST			0	0	0	0	Thunderstorm Winds (G52)
Strong thunderstorm winds blew down three to five large trees and many power lines.									
St. Clair County Countywide	07	2008EST- 2015EST			0	0	0	0	Thunderstorm Winds (G52)
Strong thunderstorm winds blew down large branches and some power lines.									
Emmet Memphis	07	2008EST			0	0	0	0	Thunderstorm Winds (G52)
Strong thunderstorm winds blew down large branches and some power lines. Power remained out for thousands of customers for almost 24 hours.									
Marine City	07	2015EST			0	0	0	0	Thunderstorm Winds (G52)
Strong thunderstorm winds blew down large branches and some power lines.									
Oakland County Western Portion	07	2015EST			0	0	0	0	Thunderstorm Winds (G52)
The county sheriff reported winds to 60 mph across the western half of the county.									
Macomb County Mount Clemens	07	2015EST			0	0	0	0	Thunderstorm Winds (G63)
Selfridge Air National Guard Base recorded wind gusts to 70 mph.									
Washtenaw County	07	2015EST			0	0	0	0	Thunderstorm Winds (G52)
Lenawee County Blissfield	07	2020EST			0	0	0	0	Thunderstorm Winds (G52)
Trees and power lines were blown down by very strong thunderstorm winds. One tree fell on the roof of a mobile home and destroyed the bathroom and kitchen.									
Sanilac County Marlette	07	2020EST			0	0	0	0	Thunderstorm Winds
Strong thunderstorm winds and frequent lightning caused many power lines and some trees to fall down or be blown down.									
Monroe County Dundee	07	2030EST			0	0	0	0	Thunderstorm Winds (G52)
Wayne County Flat Rock	07	2030EST			0	0	0	0	Thunderstorm Winds (G52)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MINNESOTA									
Dakota County Lakeville	01	0025CST			0	0	?	?	Thunderstorm Winds
									Strong thunderstorm winds destroyed a garage and a greenhouse.
Koochiching County Gemmel	05	1655CST			0	0	0	0	Funnel Cloud
2 NE Mispah	05	1705CST			0	0	0	0	Funnel Cloud
1 E Gemmel	05	1712CST			0	0	0	0	Funnel Cloud
Cass County Leech Lake	05	1725CST	2.5	12	0	0	?	?	Waterspout Tornado (F2)
									A tornado developed over Leech Lake forming a waterspout, which eventually moved onto shore, causing extensive damage to trees and boats.
Lincoln County 2 S Ivanhoe	05	1735CST			0	0	?	?	Hail (1.75)
									Large hail caused extensive damage to crops as the storm traveled across southern portions of the county.
Chippewa County 1 E Montevideo	05	1750CST			0	0	?	?	Hail (1.75)
									Golf ball-size hail pelted a rural area east of Montevideo, shredding crops and causing extensive property damage.
Itasca County Nashwauk	05	1804CST			0	0	?	?	Hail (1.75)
Crow Wing County 15 N Brainerd	05	1832CST			0	0	?	?	Hail (0.75)
Cass County Leader	05	1835CST	0.3	10	1	0	?	?	Tornado (F1)
									A tornado swept through a campground 25 miles northwest of Brainerd, leveling many trees. A nine-year-old boy was killed when a tree fell on the tent where he and his family were camping. (M090)
Koochiching County Pelland	05	1838CST			0	0	0	0	Funnel Cloud
Cass and Crow Wing Counties 10 NW to 4 NW Brainerd	05	1839CST	6.0	45	0	3	6	?	Tornado (F3)
									A "super cell" thunderstorm spawned a tornado 10 miles northwest of Brainerd just west of Gull Lake, where it demolished a home and several other buildings. It traveled across the lake as a waterspout, and came ashore leveling a marina and destroying several boats. The tornado traveled southeast and struck the Brainerd International Raceway, where a classic car show was in progress with hundreds in attendance. Several camper-trailers were flipped and damaged, along with a number of antique automobiles. Three minor injuries were attributed to the tornado, and property damage was estimated close to \$2 million.
Crow Wing County SSE Brainerd	05	1859CST	5.0	20	0	0	?	?	Tornado (F1)
									The same "super cell" thunderstorm produced another tornado near Brainerd, causing extensive property damage and leveling many trees. The tornado skipped along to the southeast, and leveled a barn about 5 miles southeast of Brainerd before dissipating near Long Lake.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
MINNESOTA Cont'd									
Koochiching County 2 SE International Falls (Lake Kabatogama)	05	1905CST			0	0	0	0	Funnel Cloud
Crow Wing County 6 E Brainerd	05	1908CST	Short	Narrow	0	0	?	?	Tornado (F1)
A small tornado touched down briefly and leveled a tree plantation.									
9 S Brainerd	05	1908CST			0	0	?	0	Lightning
Lightning struck and burned a barn to the ground.									
Itasca County 15 SW Hibbing	05	1917CST			0	0	?	?	Hail (1.75)
St. Louis County Hibbing	05	1930CST			0	0	?	?	Hail (0.75)
Mille Lacs County Vineland	05	1937CST	2.9	10	0	0	?	?	Tornado(F0) Waterspout
A tornado touched down near Vineland, downing several trees and power lines. The tornado drifted across the lake and lifted before coming ashore near Waukon.									
Wahkon	05	1955CST			0	0	?	?	Thunderstorm Winds
Several trees were uprooted and power lines were downed.									
Kanabec County Malmo	05	2000CST			0	0	?	0	Lightning
Lightning struck a 54-stall milking barn and burned it to the ground.									
Mora	05	2005CST			0	0	?	?	Thunderstorm Winds
A roof was blown from a home and a garage was destroyed. Strong thunderstorm winds also leveled a number of trees.									
3 W Woodland	05	2020CST	0.5	10	0	0	?	?	Tornado (F1)
A tornado downed several large trees west of Woodland.									
Pine County Sandstone	05	2046CST			0	0	?	?	Hail (0.75)
Beroun	05	2100CST			0	0	?	?	Hail (0.75)
Redwood County Lamberton	06	1740CST			0	4	0	0	Lightning
A bolt of lightning struck a farmer on a tractor while spraying a field. The lightning bolt passed through his arm and to his foot, blowing off a part of his boot. The farmer, along with three other persons who were with him at the time, received minor burns.									
Mower County 2 NE Lyle	07	1110CST	0.2	10	0	0	?	?	Tornado (F1)
Adams	07	1120CST	Short	Narrow	0	0	?	?	Tornado (F0)
Fillmore County Ostrander	07	1145CST			0	0	?	?	Thunderstorm Winds (G61)
A fast-moving thunderstorm complex, with forward speeds in excess of 50 mph, traveled across extreme southern Minnesota during the midday hours. A tornado touched down near Lyle sheared									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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MINNESOTA Cont'd

the top of a large evergreen tree, flattened field crops, damaged five large grain bins, and snapped many power poles, causing a power outage in Lyle for 5 hours. Another tornado touched down briefly in an athletic field in Adams, cutting power but doing little damage. Thunderstorm wind gusts were clocked to 70 mph near Ostrander.

Beltrami County
Waskish

07 1223CST Short Narrow 0 0 0 ? Tornado (F0)

A tornado touched down briefly near Waskish and downed several large trees.

St. Louis County
60 NW Duluth
Lake Vermillion
Steele County

11 1338CST 0 0 ? ? Hail (1.75)

11 1200CST 0 0 ? ? Flash Flood

Thunderstorms producing torrential rain, moved across southern Minnesota during the afternoon and evening. In and around Owatonna, 3.00 to 6.00 inches of rain fell in a short period of time. Many streets were flooded with a foot of water in some places, several cars were afloat at intersections. A number of county roads and highways were flooded when the Straight River overflowed its banks.

Faribault County
Blue Earth

11 1725CST 0 0 4 0 Lightning

Lightning struck a transformer causing extensive power outages and an estimated \$14,000 in damage.

Hennepin County
Minnetonka

17 1055CST 0 0 4 0 Lightning

Lightning struck a home causing \$5,000 damage.

Anoka County
2 W Bethel

17 1305CST 0 0 ? ? Thunderstorm Winds

Strong thunderstorm winds downed several large trees and power lines.

Ham Lake

17 1320CST 0 0 ? ? Thunderstorm Winds

Several large trees were blown down.

Otter Tail County
Fergus Falls
Grant County
Ashby

17 1630CST 0 0 ? ? Hail (1.75)

17 1730CST 0 0 ? ? Thunderstorm Winds

Thunderstorm winds overturned and destroyed a 26-foot-long camper-trailer. Many homes sustained damage, many trees and power lines were downed. A tractor-semitrailer was blown onto its side along Interstate 90 in the vicinity of Ashby.

Douglas County
Evansville

17 1740CST 0 0 ? ? Hail (2.50)
Thunderstorm Winds (G61)

1 S Brandon

17 1745CST 0 0 ? ? Thunderstorm Winds

2 N Holmes City

17 1755CST 0.5 6.0 0 0 ? ? Tornado (F1)

A complex of thunderstorms roared across Douglas County causing power outages across the county. Six power poles along a 115,000-volt transmission line were blown down. A barn was destroyed and a silo was moved 6 inches off its foundation by thunderstorm winds gusting to 70

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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MINNESOTA Cont'd

mph at Evansville. Strong winds also blew down a barn near Brandon. A tornado touched down briefly in the Lobster and Mill Lake areas, destroying two barns, a garage, toppling a windmill, and damaging a home.

Pope County Glenwood	17	1820CST			0	0	? ?	Thunderstorm Winds
Several large trees were blown down by thunderstorm winds.								
Chippewa County Montevideo	17	1915CST			0	0	? ?	Thunderstorm Winds (G52) Hail (0.75)
Lac Qui Parle County 6 W Montevideo	17	1930CST			0	0	? ?	Thunderstorm Winds
Strong thunderstorm winds destroyed two barns, damaged a home, and downed 10 trees.								
Chippewa County Montevideo	17	1933CST			0	0	? ?	Thunderstorm Winds
A tree fell onto a home causing extensive damage to the roof.								
1 N Granite Falls	17	1935CST			0	0	? ?	Thunderstorm Winds
Several farmsteads sustained property damage and numerous power lines were downed because of strong thunderstorm winds.								
Renville County Sacred Heart	17	1940CST			0	0	? ?	Thunderstorm Winds
A tree fell onto a mobile home and caused severe structural damage.								
Renville	17	1955CST			0	0	? ?	Thunderstorm Winds (G52)
Strong thunderstorm winds gusting to 60 mph blew a barn, several trees, and power lines down.								
Olivia	17	2000CST			0	0	? ?	Thunderstorm Winds
Strong thunderstorm downburst winds blew two mobile homes onto their side, and downed several power lines.								
Bird Island	17	2012CST			0	0	? ?	Thunderstorm Winds
Several trees were blown down in Bird Island.								
Sibley County Gibbon	17	2120CST			0	0	? ?	Thunderstorm Winds (G52)
Cass County Walker	18	1510CST			0	0	? ?	Thunderstorm Winds
A fast-moving thunderstorm uprooted a dozen large trees.								
Itasca County Grand Rapids	18	1555CST			0	0	? ?	Thunderstorm Winds
A large tree was blown onto power lines and toppled three power poles.								

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
Stevens County Morris	18	1610CST			0 0	? ?	Thunderstorm Winds Thunderstorm winds gusts of 80 mph flipped a camper-trailer and downed several large trees.
St. Louis County Hibbing	18	1637CST			0 0	? ?	Thunderstorm Winds Several large trees were blown down.
Pope County Glenwood	18	1645CST			0 0	? ?	Thunderstorm Winds Numerous trees and power lines were downed strong winds.
St. Louis County 5 S Aurora	18	1700CST			0 0	? ?	Thunderstorm Winds Several large trees were blown down.
Todd County Long Prairie	18	1708CST			0 0	? ?	Thunderstorm Winds Two hangars were destroyed, and three planes were severely damaged by strong thunderstorm winds.
Morrison County Little Falls	18	1745CST			0 0	? ?	Thunderstorm Winds (G56) Thunderstorm winds gusting to 64 mph flipped a plane and uprooted several trees at a local airstrip.
Lake County Two Harbors	18	1810CST			0 0	? ?	Thunderstorm Winds Several large trees and power lines were downed.
Carlton County Carlton	18	1830CST			0 0	0 0	Funnel Cloud
Anoka County Lino Lakes	18	2230CST			0 0	4 0	Lightning Lightning struck a shed and caused \$5,000 damage.
Nobles County Worthington	20	2105CST			0 0	6 ?	Hail (3.00) A severe hailstorm rolled through the Worthington area causing an estimated \$1 million in property damage.
Winona and Steele Counties	21 22	1100CST- 1100CST			0 0	6 5	Flash Flood

Rain began falling across southern Minnesota before noon on the 21st, and intensified during the late afternoon and evening as slow-moving thunderstorms developed. Reports of 6.00 inches of rain in less than 2 hours were received in the Stockton area, where the severe flooding began about 2000 CST. Warren Township, which is located south of Stockton, received 6.95 inches of rain. The Garvin Brook and South Valley Creek converge on Stockton, and the heavy rains which ensued, made them raging rivers of water and mud. One home was lifted from its foundation and floated

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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MINNESOTA Cont'd

downstream several hundred feet before it came to rest after colliding with another home. About 200 of the 500 Stockton residents were evacuated to the nearby town of Lewiston at 2100 CST. Nearly every home in Stockton received major damage, with total damage estimated at \$1 million. Several town roads and highways were washed out, and mud slides occurred along Highway 14 near Stockton. Water was reported to have been 6 feet deep on some roads in Stockton, and water rose 1 foot a minute at the height of the flood. Damage to area crops was estimated at \$280,000. The Straight River in Medford (Steele County) overflowed its banks and caused major street flooding. Many basements were flooded in Owatonna (Steele County) and in Winona (Winona County).

Lewiston	21	1740CST			0 0	? ?	Hail (1.75) Thunderstorm Winds
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Strong thunderstorm winds leveled six farm buildings, and area crops were severely damaged by the combination of wind and hail.

Wabasha County Minneiska	21	1810CST			0 0	? ?	Thunderstorm Winds (G52)
Lac Qui Parle County Marietta	21	1840CST			0 0	? ?	Thunderstorm Winds (G78)

A thunderstorm complex moved into west-central Minnesota from South Dakota during the evening hours. Wind gusts to 90 mph occurred in the Marietta vicinity, causing extensive property damage to several rural farm sites. Many large trees were uprooted, and several power lines were blown down.

Hennepin County Bloomington	21	1925CST			0 0	? ?	Thunderstorm Winds (G52)
Renville County Danube	21	2030CST			0 0	? ?	Thunderstorm Winds (G52)

Thunderstorm winds of 60 mph roared through the area downing trees and power lines.

Olivia	21	2050CST			0 0	? ?	Thunderstorm Winds
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Several large trees and power lines were blown down by strong winds.

Martin County Fairmont	21	2334CST			0 0	? ?	Thunderstorm Winds (G56)
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A wind gust to 64 mph was clocked at the airport.

Fairmont	21	2340CST			0 0	? ?	Thunderstorm Winds (G70)
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Thunderstorm wind gusts to 80 mph tore the roof from a home, and numerous trees were downed or uprooted.

Granada	21	2345CST			0 0	? ?	Thunderstorm Winds
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Strong winds blew a large tree onto a mobile home, causing extensive property damage.

Lake of the Woods County 20 W Baudette	30	1800CST			0 0	? ?	Thunderstorm Winds
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Extensive tree damage was reported in the Northwest Angle State Forest.

Red Lake County Red Lake Falls	30	1853CST			0 0	? ?	Hail (1.75)
Oklee	30	1900CST			0 0	? ?	Hail (1.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MINNESOTA Cont'd									
Lake of the Woods County Baudette	30	1930CST			0	0	?	?	Hail (1.75)
MISSISSIPPI									
Jackson County Ocean Springs	01	1215CST			0	2	4	0	Lightning
					Lightning struck an office building and damaged several computers inside the building. Two females were injured while talking on the telephone when several of the telephone lines were burned out.				
Alcorn County Corinth	02	1530CST			0	0	2	0	Thunderstorm Winds
					Several trees and power lines were blown down.				
Jasper County 11 SE Bay Springs	02	1535CST			0	0	2	0	Thunderstorm Winds
					A porch was blown off a house and a trampoline was blown across a yard.				
Dekota County Olive Branch	02	1700CST			0	0	5	0	Thunderstorm Winds
					Strong winds blew down about 100 trees on a golf course. The roof of the club house collapsed on about 40 golf carts. Damage was estimated at \$250,000.				
Monroe County Amory	02	1800CST			0	0	2	0	Thunderstorm Winds Hail (0.75)
					Several trees and power lines were blown down.				
Chickasaw County 2 W Houston	02	1930CST			0	0	2	0	Thunderstorm Winds
					Several trees were blown down by thunderstorm winds.				
Newton County Decatur	02	1945CST			0	0	2	0	Thunderstorm Winds
					Numerous trees and power lines were blown down in the city.				
Monroe County Amory	02	2015CST			0	0	3	0	Thunderstorm Winds
					Thunderstorm winds caused extensive damage to a carport and an automobile when several trees were blown down.				
Lawrence County Sontag	03	1215CST			0	0	2	0	Thunderstorm Winds
					Several trees were blown down in Sontag.				
Hinds County Clinton	04	1430CST			0	0	4	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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MISSISSIPPI Cont'd

A garage apartment was struck by lightning and set on fire.

Warren County Oak Ridge	04	1500CST			0 0	2 0	Thunderstorm Winds
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Several trees were blown down in Oak Ridge by thunderstorm winds.

Madison County Ridgeland	04	1600CST			0 0	5 0	Lightning
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A large office building was set on fire after being struck by lightning, and was almost totally gutted.

Jasper County Moss	14	1650CST			0 1	4 0	Thunderstorm Winds
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One woman was injured after becoming trapped when a tree fell on her mobile home and caused the structure to collapse.

Stringer Jones County	14	1650CST			0 0	0 0	Hail (0.88)
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2 N Laurel	14	1725CST			0 0	2 0	Thunderstorm Winds
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Numerous trees were blown down by thunderstorm winds.

3 E Sandersville Clarke County	14	1735CST			0 0	0 0	Hail (0.88)
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Shubuta	14	1830CST			0 0	2 0	Thunderstorm Winds
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Several trees were blown down on power lines in Shubuta.

Lauderdale County Marion	23	1245CST			0 0	2 0	Thunderstorm Winds
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Numerous trees were blown down by thunderstorm winds.

Clarke County Stonewall	23	1330CST			0 0	2 0	Thunderstorm Winds
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Numerous trees were blown down in Stonewall.

Neshoba County 2 SE Philadelphia	24	1145CST			0 0	1 0	Thunderstorm Winds
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A couple of trees were blown across Highway 19.

OkTibbeha County Starkville	24	1230CST			0 0	5 0	Thunderstorm Winds (G80)
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Several buildings were heavily damaged. One automobile building was completely destroyed and many of the cars inside were damaged. Part of the roof of a hangar at a flight lab was blown off, the tower windows were blown out, and a glider was flipped over and destroyed. At Bryan Field Airport, high winds tore airplanes from their moorings, turned one over, and destroyed a trailer. Numerous trees and power lines were blown down, and numerous cars were damaged.

Jasper County	24	1300CST			0 0	2 0	Thunderstorm Winds
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Several trees were blown down in the county.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		
MISSOURI								
Audrain County Mexico	02	0400CST- 0500CST			0	0	6 5	Thunderstorm Winds
A line of thunderstorms produced a large area of damaging winds (possibly a microburst) across the city of Mexico. There were two paths of damage, each about 300 to 400 yards wide. Numerous trees were downed and roofs damaged. A roof was completely blown off a large Wick Homes factory west of Mexico on Highway 22. Two mobile homes also lost their roofs and a convenience store sustained major damage. Damaged occurred between 0400 CST and 0500 CST.								
Boone County Columbia	02	0620CST			0	0	0 0	Hail (0.75)
Hail measuring 0.75 inch in diameter was reported on the west side of Columbia.								
St. Louis County	02	0830CST			0	0	4 0	Thunderstorm Winds
Many trees and power lines were knocked down over southern and southwestern St. Louis County cutting off electricity to 30,000 people. There were also numerous reports of fire and damage from lightning strikes.								
St. Louis County	02	0830CST			0	0	3 3	Hail (1.00)
Quarter-size hail was reported in Kirkwood.								
Jasper County Webb City	02	2100CST			0	0	4 0	Thunderstorm Winds
Large trees and power lines were knocked down across the city which damaged some houses and vehicles.								
Pettis County 3 E Sedalia Smithton	03	1140CST			0	0	3 4	Thunderstorm Winds
	03	1147CST			0	0	0 0	Hail (1.00)
Moniteau County California 3 N California	03	1210CST			0	0	0 0	Thunderstorm Winds (G52)
	03	1225CST			0	0	3 0	Thunderstorm Winds (G69)
A radio station in California reported a wind gust to 60 mph at 1210 CST. Thunderstorms also uprooted and broke 8-inch-diameter trees 3 miles north of California with estimated wind gusts of 80 mph.								
Cooper County Southern Portion	03	1230CST			0	0	3 0	Thunderstorm Winds
Wind gusts from thunderstorms knocked several large trees down in the southern part of Cooper County.								
Warren County Marthasville	03	1445CST			0	0	3 0	Thunderstorm Winds
Several large trees and power lines were blown down.								
Howard County 12 NW Columbia	09	1530CST			0	0	3 0	Hail (0.75)
Hail measuring 0.75 inch in diameter was reported by the highway patrol. No damage was reported.								

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property Crops	Character of Storm
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MISSOURI Cont'd

Ralls County 2 SW London	09	1535CST			0	0	0	Thunderstorm Winds (G52)
New London	09	1550CST			0	0	3	Thunderstorm Winds

The Ralls County Sheriff's Office reported wind gusts to 60 mph, 2 miles southwest of New London at 1535 CST. At 1550 CST, the county sheriff's office reported 2-foot-diameter trees downed, and water a foot deep in some places around New London.

Pike County Countywide	09	1620CST			0	0	4	3	Thunderstorm Winds
Western Portion	09	1630CST			0	0	4	3	Thunderstorm Winds
Bowling County Western Portion	09	1700CST			0	0	4	2	Thunderstorm Winds

The Pike County Sheriff's Office reported trees and power lines downed in the county at 1620 CST. State Police Troop C reported wind damage near Highway 54 in western Pike County with power lines downed at 1630 CST. At 1700 CST, the county sheriff's office reported significant wind damage with some mobile homes overturned and windows blown out.

Cooper County Boonville	09	1715CST			0	0	3	0	Thunderstorm Winds
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Power lines were downed and tree limbs broken off from thunderstorm wind gusts.

Howard County New Franklin	09	1715CST			0	0	0	0	Thunderstorm Winds
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Large trees were blown down from a thunderstorm wind gust.

Warren County Warrenton	09	1800CST			0	0	0	0	Hail (1.00)
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The ASCS reported hail 0.75 to 1.00 inch in diameter. No damage was reported.

St. Louis County Western Portion	09	1945CST			0	0	5	3	Thunderstorm Winds
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Thunderstorm wind gusts knocked down several large trees and power lines across western St. Louis County between 1945 CST and 2010 CST. An off-duty National Weather Service meteorologist reported several large trees downed and a sign was damaged in Chesterfield.

Western Portion	09	2000CST			0	0	0	0	Flash Flood
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Ham radio operators reported some street and flash flooding of small creeks in Manchester at 2000 CST.

Lincoln, Pike, and St. Louis Counties St. Louis	10	0130CST- 0900CST			0	0	4	3	Flash Flood
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Very heavy rains fell over parts of east Missouri with totals of 2.00 to 7.00 inches. Numerous reports of flash flooding and street flooding across St. Louis County and city, including flooding in the communities of Chesterfield, Ladue, Brentwood, Maplewood, and Creve Coeur. Sections of area streets and highways were closed because of high water. In Lincoln County, a car floated away at 0750 CST in a creek just west of Troy.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
MISSOURI Cont'd							
Macon County	11	0010CST- 0800CST			0 0	0 0	Flood
Thunderstorms produced heavy rains which flooded roadways in various parts of the county. At 0230 CST, the Highway Patrol reported several areas of U.S. Highway 63 were blocked by high water. The flooding continued until 0800 CST.							
Grundy County 8 N Trenton	11	0030CST			0 0	2 3	Flash Flood
Water was reported to be over Highway 65.							
Audrain County 5 N Mexico	11	0300CST			0 0	0 0	Flash Flood
Parts of Missouri Highway 15 and County J were underwater and impassable.							
Benton County 15 SSW Sedalia	11	1545CST			0 0	3 0	Thunderstorm Winds
Thunderstorm wind gusts blew in the steel doors on a barn near Ionia which damaged a camper and automobile inside.							
Morgan County 6 E Versailles	11	1635CST			0 0	0 0	Thunderstorm Winds (G61)
Numerous reports of wind gusts to 60 mph with one gust to 70 mph. No damage was reported.							
Pettis County 5 E Sedalia	11	1645CST			0 0	3 0	Thunderstorm Winds
A concession stand was damaged by thunderstorm wind gusts and trees and power lines were downed.							
Moniteau County 5 E Fortuna	11	1645CST			0 0	2 0	Thunderstorm Winds
Large trees were blown down and a barn roof was torn off by thunderstorm wind gusts.							
Knox County Knox City	11	1725CST			0 0	3 0	Thunderstorm Winds
The Knox County Sheriff's Office reported several large trees uprooted by thunderstorm wind gusts.							
Scotland County Southern Portion	11	1735CST			0 0	3 0	Thunderstorm Winds
The Scotland County Sheriff's Office reported power lines downed in the southern part of the county.							
Randolph County Thomas Hill Lake	11	1750CST			0 0	3 0	Thunderstorm Winds
Thunderstorm wind gusts blew a boat dock loose and 0.75-inch hail was also observed.							
Dade County Stockton Lake Greenfield	12	1545CST			0 0	3 0	Thunderstorm Winds
	12	1545CST			0 0	3 3	Hail (2.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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MISSOURI Cont'd

Boat docks were torn loose by thunderstorm wind gusts at Stockton Lake. Baseball-size hail was reported at Greenfield.

Dunklin County Campbell	23	1430CST			0	0	3	0	Thunderstorm Winds
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Power lines were knocked down and several trees uprooted.

MONTANA

Phillips and Valley Counties	01 06	0000MST- 2000MST			0	0	3	5	Flood
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Heavy rains fell in northern Phillips County on June 30th. The resulting runoff caused minor flooding along the Milk River for the next week. Hay fields were also under water.

Valley County 12 SW Glasgow Hinsdale	04 04	1700MST 2025MST			0	0	3	4	Hail (0.75)
					0	0	4	5	Hail (1.75)

Windows were blown out with damage to cars and buildings.

Lustre Phillips County	04	2040MST			0	0	3	4	Thunderstorm Winds
Whitewater	04	1700MST			0	0	3	5	Thunderstorm Winds Hail (2.75)

Widespread crop damage was reported in Whitewater.

20 NE Malta	04	1800MST	?	?	0	0	4	4	Tornado (F1)
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Three mobile homes were damaged by a tornado.

35 N Malta	04	1830MST	?	?	0	0	4	4	Tornado (F1)
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A farm and some grain bins were destroyed.

20 N Saco	04	1854MST			0	0	4	5	Hail (2.75) Thunderstorm Winds
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Window and crop damage and power poles were downed.

McCone County Circle	04	2150CST			0	0	4	5	Hail (2.50)
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Widespread damage was reported in Circle.

Roosevelt County Wolf Point	04	2200MST			0	0	4	5	Thunderstorm Winds
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Richland County Fairview	05	0100MST			0	0	4	5	Thunderstorm Winds
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Wibaux County Wibaux	07	0100MST			0	0	0	3	Hail (1.00)
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Bighorn County Hardin	09	1830MST	?	?	0	0	4	5	Tornado (F1) Thunderstorm Winds
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Local flooding and widespread wind damage occurred north of Hardin.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
MONTANA Cont'd									
Musselshell County 30 N Billings	09	1927MST			0	0	4	5	Hail (1.25) Thunderstorm Winds
Hill County Havre	10	1100MST			0	0	3	0	Urban Flood
Widespread street flooding, 0.52 inch rain fell in 20 minutes.									
Wilboux County 6 S Wilboux	10	1645MST	?	?	0	0	3	3	Tornado (F0)
Carter County 3 N Hammond	10	1827MST	?	?	0	0	0	0	Tornado (F0)
Powell County Ovando	13	0555MST			0	0	0	0	Hail (0.75)
Pondera County Ledger	13	1700MST			0	0	3	3	Thunderstorm Winds
Hill County Havre	13	1910MST			0	0	0	0	Thunderstorm Winds (G59)
Fergus County Lewistown	13	2200MST			0	0	3	0	Thunderstorm Winds
Yellowstone County Billings	14	1530MST			0	0	5	5	Thunderstorm Winds Hail (0.75)
Heavy rains caused some street flooding. Strong winds blew an airplane over at Logan Field. There was widespread wind damage mostly to power poles.									
Judith Basin County Moccasin	14	1730MST			0	0	5	5	Hail (1.75) Thunderstorm Winds
Widespread hail damage reported between Utica to northeast of Moccasin. Bumper crops were leveled.									
Treasure County Hysham	14	2000MST		0	0	3	0		Thunderstorm Winds
A mobile home was destroyed by thunderstorm winds in Hysham.									
Cascade County 5 S Neihart	14	2030MST			0	0	3	0	Hail (1.75)
Custer County Miles City	14	2035MST			0	0	3	0	Thunderstorm Winds (G51)
Dawson County Glendive	14	2100MST			0	0	5	5	Thunderstorm Winds
3 S Glendive	14	2115MST	?	?	0	0	3	0	Tornado (F0)
Trees, power poles, and roofs were damaged.									
Richland County Sidney	14	2115MST			0	0	5	5	Thunderstorm Winds (G57)
Valley County 10 N Glasgow	16	0400MST			0	0	0	0	Thunderstorm Winds (G50)
Lincoln County Libby	17	0115MST			0	0	4	0	Thunderstorm Winds

Power poles were blown down by thunderstorm winds.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

MONTANA Cont'd

Fergus County

Heath	17	1845MST			0	0	0	3	Hail (1.00)
Grassrange	17	1845MST			0	0	0	3	Hail (1.00)
Valley County									
Nashua	17	2030MST			0	0	5	5	Hail (1.75)

Widespread hail damage between Fort Peck and Nashua.

Roosevelt County

Wolf Point	17	2100MST			0	0	5	5	Hail (2.75) Thunderstorm Winds
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Widespread hail damage from Oswego to Sunnyside to north of Wolf Point. Crops and buildings were damaged.

Garfield County

Brussett	17	2200MST			0	0	5	5	Hail (1.75) Thunderstorm Winds
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Widespread hail damage from Brussett to Sand Springs to Hell Creek.

Yellowstone County

Billings	20	1648MST			0	0	0	0	Hail (0.75)
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Deer Lodge County 6 SW Anaconda	23	1700MST			0	0	4	0	Flash Flood
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Several homes reported water in their basements when nearly 1.00 inch of rain fell in a short time.

NEBRASKA

Sherman County

Ashton	05	1830CST			0	0	3	0	Thunderstorm Winds (G52)
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Thunderstorm winds gusting to 60 mph knocked down power lines, large tree branches, and twisted television antennas.

Chase County

Wauneta	06	1900CST			0	0	4	0	Thunderstorm Winds (G61)
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Wind gusts to 70 mph blew down trees and limbs, which caused damage to cars, a garage, and electrical lines.

Hitchcock County

Trenton	06	2145CST			0	0	0	0	Thunderstorm Winds (G65)
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A thunderstorm moving through Trenton produced a brief wind gust to 65 mph; no damage was reported.

Red Willow County

McCook to 3 NE Indianola	06	2245CST- 2305CST			0	0	2	2	Lightning
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Lightning struck a woodpile on a farm just southeast of McCook and burned 10 acres of wheat stubble near Indianola.

Hall County

Cairo to Grand Island	08 09	2200CST- 0200CST			0	0	4	4	Flash Flood
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Time Local/ Date Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
				Killed	Injured	Property	Crops	
NEBRASKA Cont'd								
	Thunderstorms dumped 3 to 6 inches of rain in Hall County. Cairo in northwestern Hall County received 3.90 inches of rain and the Central Nebraska Regional Airport near Grand Island reported 5.34 inches. The rains caused Dry Creek west of Cairo to overflow. Many county roads and fields were flooded between Cairo and Grand Island. In Grand Island, two underpasses, and many city streets were flooded. The Civil Defense office in the basement of City Hall sustained water damage.							
York County York	08 2204CST			0	0	3	0	Lightning
	Lightning struck a home in York and damaged the automatic alarm system.							
Merrick County Worms to 3 SE Worms	08 2215CST- 09 0215CST			0	0	4	5	Flash Flood
	Five to seven inches of rain caused Prairie Creek to overflow its banks. Corn, soybeans, and milo fields were flooded and looked like lakes. Many county roads were also flooded.							
Hamilton County Chapman to 5 E Chapman	08 2220CST- 09 0220CST			0	0	4	4	Flash Flood
	Over 8 inches of torrential rains caused extensive flooding to county roads and crops. One location near Chapman had 8.25 inches of rain which caused flooding of basements.							
York County York	08 2223CST			0	0	4	0	Lightning
	Lightning struck a home and caused significant property damage.							
Box Butte County 10 N Alliance	09 1152CST	Short	10	0	0	0	0	Tornado (F0)
	A tornado briefly touched down, but caused no damage.							
Antelope County Neligh	21 1610CST			0	0	U	0	Hail (1.00)
	A thunderstorm produced large hail and heavy rain that caused some street flooding, and wind gusts that downed numerous tree limbs and several power lines.							
Saline County Swanton 2 E Western 7 S Crete	22 1530CST- 1545CST			0	0	5	0	Thunderstorm Winds
	Thunderstorms winds destroyed a mobile home on the northern edge of Swanton. On a farm east of Western, a roof was blown off a building. South of Crete, winds picked up a grain auger and laid it 50 feet away on a lambing house and dropped a grain bin. Several trees were also blown down.							
Nemaha County Auburn	22 1645CST			0	0	3	1	Thunderstorm Winds
	Several tree limbs and window were broken by strong winds.							

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
NEVADA									
NVZ009 Extreme Southern Nevada	07	1500PST	?	?	0	0	0	0	Tornado (F0)
A tornado was spotted in Amargosa Valley in southern Nye County. No damage was reported.									
NVZ009 Extreme Southern Nevada	08	1140PST- 1400PST			0	0	0	0	Flash Flood
Strong thunderstorms developed in southern Nevada, causing areas of heavy rain and street flooding. The western side of Las Vegas received 1.30 inches in 1 hour. Red Rock State Park, 18 miles west of Las Vegas, recorded 0.87 inch of rain in 45 minutes.									
NVZ001 Truckee Tahoe	18	1630PST- 1745PST			0	0	0	0	Hail (0.75)
A severe thunderstorm moved through the Lake Tahoe area. The South Lake Tahoe Airport reported 0.75-inch hail.									
NVZ003 Extreme Western Nevada	18	1752PST			0	0	0	0	Thunderstorm Winds (G51)
Thunderstorm winds gusting to 59 mph were reported in Sparks.									
NVZ003 Extreme Western Nevada	19	1300PST			0	0	0	0	Funnel Cloud
A funnel cloud was filmed by a Reno television station just southwest of Minden.									
NEW HAMPSHIRE									
Hillsborough County Peterborough	08	0830EST			0	0	?	0	Hail (1.00)
One-inch hail fell in and around Peterborough at 0830 EST.									
Rockingham County Atkinson	08	0900EST			0	0	?	0	Lightning
Lightning struck a chimney, sending a large portion of it crashing onto the porch; damage was still being assessed.									
Cheshire County Keene	19	1205EST			0	1	?	0	Lightning
A roofer was struck by lightning while working on top of a building. The man was standing between two air conditioning units when lightning struck one of the units and jumped to the other. The lightning ignited a solvent which he had been working with, causing first degree burns to his face.									
Merrimack County Concord East Concord Penacook	19	1832EST			0	0	?	0	Thunderstorm Winds
A thunderstorm blew through Concord, Penacook (5 miles north of Concord), and East Concord (2.3 miles northeast of Concord) from 1832 EST to 1850 EST. Areas in and around East Concord were hit the hardest. A large pine tree crashed through a mobile home destroying the bedroom, guestroom, and bathroom. One tree punched holes in the roof of a mobile home and crushed a nearby shed and swing set. Another tree fell onto a car and truck, totaling both vehicles. Fifty homes and mobile homes sustained damage and 2,500 homes were without power. Many trees and power lines were downed by the strong thunderstorm winds in all three locations.									
Cheshire County Jaffrey	21	1410EST			0	0	?	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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NEW HAMPSHIRE Cont'd

Strong thunderstorm winds downed trees in and around Jaffrey at 1410 EST. Some cars were damaged by falling trees, and one barn sustained structural damage from a tree falling on it.

Hillsborough County Brookline

21	1425EST				0	4	4	0	Thunderstorm Winds
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Damage to homes and cars was experienced in and around Brookline as strong thunderstorm winds knocked down hundreds of trees in the area. Two large pine trees were blown down onto the roof of a cabin. The damage was severe enough that the building could not be saved. Four trees struck the roof of a house with one of the trees breaking through a door. Four cars were damaged when trees fell on top of them; one car was carrying two adults and two children. The four people escaped with only minor injuries. Approximately 1,200 homes were left without power.

NEW JERSEY, Northern

Bergen County Upper Saddle River Woodcliff Lake Westwood

06	1910EST				0	0	?	0	Thunderstorm Winds
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Isolated thunderstorms downed trees and power lines across Bergen County. A number of cars were damaged in Woodcliff Lake by falling trees. In Westwood, a house was damaged by a downed tree.

Warren County Stewartsville Washington Township

07	1015EST				0	0	?	0	Thunderstorm Winds
07	1030EST				0	0	?	0	Thunderstorm Winds

Hunterdon County

Lebanon Tewksbury Whitehouse Station

07	1030EST				0	0	?	0	Thunderstorm Winds
07	1030EST				0	0	?	0	Thunderstorm Winds
07	1045EST				0	0	0	0	Hail (0.75)

Somerset County

Montgomery Hillsborough Franklin

07	1100EST				0	0	?	0	Thunderstorm Winds
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Middlesex County

New Brunswick Old Bridge Milltown East Brunswick

07	1136EST-				0	0	?	0	Thunderstorm Winds
	1140EST				0	0	0	0	Hail (1.00)
	1145EST				0	0	0	0	Hail (1.00)

A line of strong storms moving eastward at 35 mph across northern New Jersey and downed numerous trees and power lines. The storms also produced hail ranging from 0.75 to 1.00 inch in diameter.

Sussex County

Newton Sparta

19	1709EST				0	0	?	0	Thunderstorm Winds
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Morris County

Near Lake Hopatcong

19	1816EST				0	0	?	0	Hail (1.75)
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Sussex County

19	1817EST				0	0	?	0	Thunderstorm Winds
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A hot and unstable air mass over northern New Jersey generated damaging thunderstorms. Near Lake Hopatcong, one thunderstorm produced golf ball-size hail.

Andover Byram

21	1610EST				0	0	?	0	Thunderstorm Winds
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Bergen County Fairlawn

21	1640EST-								
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
NEW JERSEY, Northern Cont'd									
Hackensack		1650EST			0	0	?	0	Thunderstorm Winds
Morris County									
Morristown	21	1642EST			0	0	?	0	Thunderstorm Winds
Essex County									
West Orange	21	1645EST			0	0	?	0	Thunderstorm Winds
Union County									
Cranford	21	1650EST			0	0	?	0	Thunderstorm Winds
Somerset County									
Northern Portion	21	1655EST			0	0	?	0	Thunderstorm Winds
Union County									
Westfield	21	1707EST			0	0	?	0	Thunderstorm Winds
Middlesex County									
South Plainfield	21	1715EST			0	0	?	0	Thunderstorm Winds
Edison									
Woodbridge									
Dunellen									
East Brunswick	21	1730EST			0	0	?	0	Thunderstorm Winds
<p>A line of thunderstorms downed numerous trees and power lines across sections of northern New Jersey. An oak tree crashed into the back of a house in Edison and another tree fell on a car in Dunellen.</p>									
Sussex County									
Sparta	23	1530EST			0	0	?	0	Thunderstorm Winds
Warren County									
Stewardsville	23	1545EST			0	0	?	0	Thunderstorm Winds
Belvidere									
Hackettstown									
Washington									
Morris County									
Mendham	23	1555EST-							
Boonton		1611EST			0	0	?	0	Thunderstorm Winds
Montville Township									
Somerset County									
Bernardsville	23	1555EST			0	0	?	0	Thunderstorm Winds
Bergen County									
Fairlawn	23	1557EST			0	0	?	0	Thunderstorm Winds
Elmwood									
Morris County									
Randolph Township	23	1607EST			0	0	0	0	Hail (1.75)
Hunterton County									
Whitehouse Station	23	1610EST			0	0	?	0	Thunderstorm Winds
Bergen County									
Teaneck	23	1615EST			0	0	?	0	Thunderstorm Winds
Passaic County									
Clifton	23	1618EST			0	0	?	0	Thunderstorm Winds
Paterson									
Essex County									
Montclair	23	1630EST			0	0	?	0	Thunderstorm Winds
West Orange									
Newark									
Union County	23	1630EST			0	0	?	0	Thunderstorm Winds
Middlesex County									
East Brunswick	23	1630EST			0	0	?	0	Thunderstorm Winds
Edison									
Bergen County									
Lyndhurst	23	1635EST			0	0	?	0	Thunderstorm Winds
Rutherford									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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NEW JERSEY, Northern Cont'd

Somerset County Sommerville Bridgewater	23	1640EST			0 0	? 0	Thunderstorm Winds
Hudson County Jersey City	23	1640EST			0 0	? 0	Thunderstorm Winds
Monmouth County Countywide	23	1705EST			0 0	? 0	Thunderstorm Winds
Middletown	23	1750EST-					
Neptune		1800EST			0 0	? 0	Thunderstorm Winds
Freehold							
Sea Bright	23	1750EST-					
Freehold		1900EST			0 0	? 0	Flash Flood

A squall line moving across northern New Jersey, caused widespread damage throughout the area. Hundreds of trees and power lines were downed during the late afternoon hours. One thunderstorm produced golf ball-size hail at Randolph Township. Very heavy rain accompanied the storms, causing considerable urban flooding across Monmouth County.

NEW JERSEY, Southern

Camden County Cherry Hill	07	1115EST			0 0	3 0	Thunderstorm Winds (G55)
Haddon Hills	07	1125EST			0 0	3 0	Hail (0.75)
Cherry Hill	07	1145EST			0 0	3 0	Thunderstorm Winds
Blackwood	07	1150EST			0 0	3 0	Thunderstorm Winds

Thunderstorm wind gusts downed trees, large limbs, and utility lines in Cherry Hill and Blackwood. Dime size-hail was reported in Haddon Hills.

Salem County Carneys Point	07	1105EST			0 0	4 0	Thunderstorm Winds
2 N Woodstown	07	1118EST			0 0	? 0	Thunderstorm Winds (G52)
2 NE Pointers	07	1135EST			0 0	3 0	Thunderstorm Winds (G51)

Thunderstorm wind gusts downed trees in Mannington Township north of Pointers. The winds were estimated at 60 mph north of Woodstown, and over 58 mph near Pointers. There also was some pea-size hail in Mannington Township. Wind gusts uprooted trees in Carneys Point, with one falling on a mobile home and causing considerable roof damage.

Burlington County Riverton	07	1118EST			0 0	? 0	Thunderstorm Winds (G52)
Tabernacle	07	1143EST			0 0	3 0	Thunderstorm Winds (G52)
Moorestown	07	1145EST			0 0	4 0	Thunderstorm Winds
Maple Shade	07	1145EST			0 0	3 0	Thunderstorm Winds
Maple Shade	07	1307EST			0 0	3 0	Thunderstorm Winds

Thunderstorm wind gusts were estimated at 60 mph and over in Riverton and in Tabernacle. Large tree limbs were downed in Tabernacle and a carport roof was blown off in Maple Shade. Trees and utility lines were downed in Westampton near Mt. Holly. Many trees were downed in Moorestown, some fell on houses and at least one fell on an automobile.

Mercer County Ewing Township	07	1120EST			0 0	3 0	Thunderstorm Winds
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Thunderstorm wind gusts brought a large tree down on a house.

Gloucester County 3 E Pitman	07	1150EST			0 0	3 0	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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NEW JERSEY, Southern Cont'd

Thunderstorm winds downed trees and utility lines.

Cumberland County Laural Lake	07	1210EST			0 0	3 0	Thunderstorm Winds
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Thunderstorm wind gusts downed trees in Laurel Lake.

Cape May County Stone Harbor	07	1335EST			0 0	? 0	Thunderstorm Winds (G51)
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Thunderstorm wind gusts of over 58 mph were reported at Stone Harbor. Some power lines were downed in Wildwood Crest.

NJ005-029 Burlington and Ocean Counties	13 14	0900EST- 0100EST			0 0	7 0	Flash Flood
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Heavy downpours from very slow moving thunderstorms dumped 3.00 to 5.00 inches of rain on Burlington County, and 2.50 to 12.50 inches of rain on Ocean County. The extreme amounts occurred on Long Beach Island, with 12.48 inches at Harvey Cedars and 12.55 inches at LoveLadies. Extensive flooding occurred on Long Beach Island and in adjacent areas of the Mainland. Many roads were closed by flooding and least two bridges were washed out. Houses and other buildings were flooded. Bulkheads along some waterways were washed out or damaged. In Burlington County, there was widespread roadway flooding. Some very small streams were deluged by drainage water and flooded houses. In Pine Grove, 20 homes were flooded by Chandler's Run, with three homes having severe foundation damage. These three houses were considered too unsafe to be reoccupied. In Mount Laurel, portions of the roof and a sidewall of a warehouse collapsed from the weight of water on the roof.

Burlington County Tabernacle	13	1945EST			0 0	? 0	Thunderstorm Winds (G52)
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Thunderstorm wind gusts were estimated at 50 to 60 mph.

Gloucester County Deptford	13	2000EST			0 0	3 0	Thunderstorm Winds
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Thunderstorm wind gusts downed trees in Deptford.

Ocean County Parkertown	13	2030EST			0 0	? 0	Thunderstorm Winds (G56)
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Thunderstorm wind gusts were estimated at 60 to 65 mph.

Burlington County Moorestown	23	1708EST			0 0	3 0	Thunderstorm Winds (G53)
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Thunderstorm wind gusts were reported at 61 mph in Moorestown and at least three large trees were downed.

Cape May County Cape May Court House	25	1020EST			0 1	? 0	Lightning
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Lightning struck a hospital and injured a maintenance man who was working on electrical equipment.

Cumberland County Greenwich	25	1330EST			0 0	5 0	Lightning
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
NEW JERSEY, Southern Cont'd									
Lightning caused a fire in a barn that resulted in a total loss including 7,000 bales of hay.									
NJZ005 Southern New Jersey	16 23	0900EST- 1700EST			0	2	0	0	Heat Wave
Hot, humid weather prevailed with afternoon temperatures reaching 90° or higher on 8 consecutive days. The temperature reached 100° on the 23rd at the Atlantic City Airport. At least two people suffered a heat stroke.									
NEW MEXICO									
Dona Ana County Las Cruces	01	1455MST			0	0	4	0	Thunderstorm Winds
Severe thunderstorms caused scattered damage in Las Cruces. Large tree branches broke, some of which damaged telephone lines. A 40-foot, 35-year-old tree was uprooted and snapped. At about 1630 MST, a large canopy and its support poles were blown into a tractor-semitrailer on Interstate 25, damaging the truck. Several buildings had their windows blown out and winds scattered roofing material from a lumber yard over a large vacant next door lot. One inch of rain and marble-size hail were also reported.									
Luna County 1 E Columbus	01	1700MST			0	0	0	0	Thunderstorm Winds (G52)
A cooperative observer's anemometer measured wind at 60 mph.									
Colfax County Springer Raton	02 02	1430MST 1600MST			0 0	0 0	0 0	0 0	Hail (0.75) Hail (0.25)
A cooperative observer reported dime-size hail at Springer. Pea-size hail accumulated 3 to 4 inches deep at Raton.									
1 N Maxwell	03	1335MST	Short	10	0	0	0	0	Tornado (F0)
Radio station KTRN reported a funnel cloud briefly touched ground, but did not cause damage.									
Santa Fe County 25 NW Clines Corner	06	1530MST			?	?	?	?	Funnel Cloud
A National Weather Service employee spotted a funnel cloud near Highway 285 that was visible for 15 minutes.									
Eddy County Near Otis	11	Afternoon			0	0	4	0	Lightning
Lightning struck an oil storage tank, starting a fire and blowing off the tank's top.									
Colfax County Springer Raton	11	1500MST- 1600MST			0	0	3	0	Flash Flood
Heavy thunderstorm rains flooded all lanes of Interstate 25, 12 miles north of Springer and knocked down fences on both sides of the road. Pea-size hail accumulated 6.00 inches deep on the Interstate between Maxwell and Raton.									
Lea County Hobbs	11	1558MST- 1625MST			0	0	0	0	Hail (0.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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NEW MEXICO Cont'd

The civil defense director reported dime-size hail in northern Hobbs at 1558 MST. The public reported dime-size hail in northern Hobbs at 1625 MST to the Hobbs Police Department.

Chaves County	13	0630MST- 0950MST			0 0	4 0	Flash Flood
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The Roswell Public Safety Director reported that morning rains in excess of 2.00 inches, flooded many streets and intersections in Roswell, and stranded 30 to 40 cars. The Roswell Flight Service Station reported runway lights under water at the airport in Roswell. Most roads were reopened around 0950 MST.

Chaves County	13	1800MST- 2200MST			0 0	4 0	Flash Flood
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Heavy rains resumed near Roswell in the late afternoon and into the evening, causing a wall of water to rush through Berrendo Creek in northern Roswell. Two bridges in northeastern Roswell were destroyed. A man was rescued 10 miles west of Roswell on U.S. Highway 70 after he tried to cross a bridge while water was flowing across it. The guardrail prevented the car from being washed away. The driver was reported as being visibly shaken, but uninjured. One business in addition to six homes were flooded 7 miles southeast of Roswell in the Midway area.

Eddy County 1 N Malaga	13	1835MST Short	10		0 0	0 0	Tornado (F0)
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Loving Volunteer Fire Department reported a small tornado on the ground for less than 2 minutes.

Chaves County 25 NE Roswell	14	0950MST			0 0	0 0	Funnel Cloud
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A National Weather Service employee and several other people reported a funnel cloud.

Valencia County Belen	15	1730MST			0 0	4 0	Thunderstorm Winds
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Thunderstorm winds downed three telephone poles in Belen and caused roof damage to three homes. The roof on a large shed at a lumber yard was blown off. Eight other telephone poles were downed 4 miles southeast of Belen.

Lincoln County	15	1800MST- 2000MST			0 0	3 0	Flash Flood
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State Police reported 3 feet of water flowing across Highway 368 near Hondo in southeastern Lincoln County.

Dona Ana County	15	Evening			0 0	3 0	Flash Flood
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Radio station KGRT reported three dirt roads were washed out. Two were located 1 mile west of Las Cruces and the other was 1 mile east.

Chaves County	15 17	1000MST- 0900MST			0 0	4 0	Flood
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Rains averaging 8.00 inches over the previous 2 to 3 days, caused the Pecos River to flood. The river was 0.75 of a mile out of its bank east of Roswell at 1550 MST on the 15th. It was also out of its bank at Dexter and Hagerman, in the southern part of the country.

Socorro County	16	1500MST- 1600MST			0 0	0 4	Flash Flood
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
<p>Civil Emergency Coordinator estimated 6 to 8 feet of water rushed through arroyos in Veguita (11 miles southeast of Belen). Flood waters damaged 1 home, destroyed 52 cement culverts, and washed out several dirt roads and several 8-foot-tall poplar trees.</p>									
Sandoval County	17	1800MST- 2000MST			0	0	3	0	Flash Flood
<p>Heavy rain 2 miles northwest of Rio Rancho caused an arroyo to flood, washing out Northern Boulevard. One garage sustained water damage.</p>									
Sandoval County	21	1714MST- 1800MST			0	0	3	0	Flash Flood
<p>Police in Cuba reported water flowing over several roads, one of which was washed out.</p>									
Bernalillo County 15 NE Albuquerque	21	1908MST			0	0	0	0	Hail (0.25)
<p>The public reported pea-size hail accumulated 6 inches deep at Sandia Crest (top of Sandia Mountain; 10,678 foot elevations).</p>									
Countywide	21	1957MST- 2130MST			0	0	5	0	Flash Flood
<p>Flooding occurred on many streets in Albuquerque, including the Tramway Boulevard area. Between 2030 MST and 2045 MST, the fire department rescued four passengers from a car that tried to cross El Camino Arroyo near Louisiana Street. The car was swept 200 feet downstream, but there were no injuries. San Pedro Drive was closed after mud and debris from the flooded Domingo Baca Arroyo washed onto the street.</p>									
Bernalillo County	22	2100MST- 2200MST			0	0	5	0	Flash Flood
<p>A 14-year-old male was swept down an arroyo and drowned between 2100 MST and 2115 MST. The flood occurred in a tributary to Tijeras Arroyo in southeastern Albuquerque near Four Hills. A teenage companion was uninjured.</p>									
Bernalillo County	24	1500MST- 2200MST			0	0	4	0	Flash Flood
<p>Three thunderstorms in this period flooded and damaged several roads near Sandia Knolls (20 miles northeast of Albuquerque). Heavy rains also flooded numerous intersections in downtown Albuquerque and nearby South Valley, sending about 2 feet of water into several homes and one apartment complex.</p>									
Torrance County	24	1640MST- 1715MST			0	0	0	0	Flash Flood
<p>The sheriff's office reported water swept rocks across Highway 60, 10 miles southwest of Mountainair.</p>									
Sandoval County	24	1830MST- 1930MST			0	0	3	0	Flash Flood
<p>Rio Rancho Department of Public Safety reported several flooded roads, including Golfcourse Road and Southern Boulevard.</p>									
Bernalillo County Albuquerque	24	1855MST			0	0	0	0	Funnel Cloud

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NEW MEXICO Cont'd

The state police reported a funnel cloud at Paseo del Norte and Interstate 25.

Socorro County	24	1915MST- 2100MST			0	0	0	0	Flash Flood
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The state police reported flooding along the Rio Puerco from just south of the Socorro County line, near Interstate 25.

Valencia County	24	2000MST- 2100MST			0	0	0	0	Flash Flood
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Water flowing off the West Mesa damaged West Aragon Street in Belen. Flooding was also reported on Impala Street, where water damaged several homes.

Chaves County	25	0010MST- 0200MST			0	0	2	0	Flash Flood
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State Police reported Highway 285 blocked by water and debris at the town of Mesa.

Taos and Santa Fe Counties	25	1730MST- 2100MST			0	0	5	0	Flash Flood
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In Taos County, flash floods closed New Mexico Highway 68 from just south of Pilar, southward almost to the county line at 1730 MST. Mud, rock, debris, and several large boulders were dumped across the highway from cliffs on the eastern side of the road trapping 20 vehicles. Three front-end loaders cleared a path and rescued the motorists. The boulders pulverized guardrails and cement barriers, and left deep gouges in the highway. Damage was estimated at over \$50,000. In Santa Fe County, flood waters washed out at least seven county roads and damaged six homes. County officials estimated damages at over \$200,000.

San Jaun County Bloomfield	29	1605MST			0	0	3	0	Thunderstorm Winds
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Winds collapsed a large storage shed at a supply company. A roof from a police chief's shed was reported blown 175 feet. A small shed at a nearby restaurant was also blown down.

NEW YORK, Central

Sullivan County Wurtsboro	06	1655EST			0	0	4	0	Lightning
Orange County Goshen	06	1810EST			0	0	3	0	Thunderstorm Winds
Chester	06	1810EST			0	0	3	0	Thunderstorm Winds

Thunderstorm winds downed trees in Goshen and Chester in Orange County. Lightning set a house on fire causing extensive damage in Wurtsboro in Sullivan County.

Madison County Munnsville	07	0525EST			0	0	0	0	Hail (0.75)
Delaware County Roxbury	07	0800EST			0	0	0	0	Lightning
Delhi	07	0802EST			0	0	2	0	Thunderstorm Winds
Delhi	07	0802EST			0	0	3	0	Urban Flood
Hobart	07	0830EST			0	0	4	0	Lightning
Stamford	07	0830EST			0	0	3	0	Lightning
Ostago County Cooperstown	07	0830EST			0	0	3	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
NEW YORK, Central Cont'd									
Schoharie County Gilboa	07	0900EST			0	0	2	0	Thunderstorm Winds
Greene County Catskill	07	0915EST			0	0	3	0	Thunderstorm Winds
Columbia County Greenport	07	0930EST			0	0	2	0	Thunderstorm Winds
Hudson	07	0940EST			0	0	3	0	Lightning
Thunderstorm winds downed trees in Delhi, Gilboa, and Greenport with power lines downed in Catskill. Lightning started a fire that destroyed a garage in Hobart, and damaged a church steeple in Stamford.									
Madison County Chittenango	08	0230EST			0	0	4	0	Thunderstorm Winds
Herkimer County Little Falls	08	0420EST			0	0	3	0	Thunderstorm Winds
Thunderstorm winds sent a large tree crashing through the ceiling of a mobile home in Chittenango and downed power lines in Little Falls.									
Saratoga County Jonesville	13	1400EST			0	0	4	0	Lightning
Lightning shattered a 80-foot-tall tree on a 60-foot radius damaging a house in Jonesville.									
Burnt Hills	19	1346EST			0	0	3	0	Thunderstorm Winds
Ballston	19	1353EST			0	0	3	0	Thunderstorm Winds
Madison County Cazenovia	19	1410EST			0	0	3	0	Thunderstorm Winds
Broome County Lisle	19	1430EST			0	0	3	0	Thunderstorm Winds
Whitney Point	19	1430EST			0	0	3	0	Thunderstorm Winds
Triangle	19	1430EST			0	0	3	0	Thunderstorm Winds
Chenango County New Berlin	19	1520EST			0	0	3	0	Thunderstorm Winds
Otsego County Wells Bridge	19	1530EST			0	0	3	0	Thunderstorm Winds
Mount Vision	19	1530EST			0	0	4	0	Thunderstorm Winds
Middlefield	19	1530EST			0	0	3	0	Thunderstorm Winds
Saratoga County Ballston	19	1535EST			0	0	3	0	Thunderstorm Winds
Ulster County New Paltz	19	1704EST			0	0	4	0	Lightning
of Ulster	19	1740EST			0	0	4	0	Thunderstorm Winds
Orange County Circleville	19	1730EST			0	0	3	0	Lightning
Montgomery	19	1740EST			0	0	3	0	Lightning
Thunderstorm winds downed trees and power lines in parts of eastern New York. Lightning resulted in several downed trees in Orange County, and sparked a fire which destroyed a lumber storage building in New Paltz.									
Hamilton County Piseco Lake	21	1200EST			0	0	4	0	Lightning
Chenango County Afton	21	1410EST			0	0	3	0	Thunderstorm Winds
Otsego County Unadilla	21	1452EST			0	0	3	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
NEW YORK, Central Cont'd									
Orange County Greenwood Lake	21	1600EST			0	0	4	0	Lightning
									Thunderstorm winds downed trees and power lines in Afton and Unadilla. Lightning struck and downed a large tree, damaging several homes in Greenwood Lake.
Chenango County Greene	22	2120EST			0	0	2	0	Thunderstorm Winds
Coventry	22	2120EST			0	0	2	0	Thunderstorm Winds
Delaware County East Sidney	22	2215EST			0	0	3	0	Thunderstorm Winds
									Thunderstorm winds downed large tree branches in Greene and Coventry and trees in East Sidney.
Montgomery County Fort Plain	23	0200EST			0	0	3	0	Thunderstorm Winds
Amsterdam	23	0200EST			0	0	4	0	Lightning
Amsterdam	23	0300EST			0	0	3	0	Urban Flood
									Thunderstorm winds downed power lines in the Fort Plain area leaving 500 people without power. In Amsterdam, torrential rains from thunderstorms left some streets under 3 feet of standing water. Lightning damaged a pastor's home and car as it struck the home's chimney, sending bricks in all directions and an electrical surge through the house.
Madison County Cazenovia	23	1148EST			0	0	4	0	Thunderstorm Winds
Nelson	23	1220EST			0	0	3	0	Thunderstorm Winds
Erieville	23	1224EST			0	0	3	0	Thunderstorm Winds
Poolville	23	1224EST			0	0	3	0	Thunderstorm Winds
Montgomery County Canajoharie	23	1300EST			0	0	3	0	Thunderstorm Winds
Randall	23	1300EST			0	0	3	0	Thunderstorm Winds
Sprakers	23	1300EST			0	0	3	0	Thunderstorm Winds
Otsego County Hartwick	23	1320EST			0	0	3	0	Thunderstorm Winds
Sullivan County Narrowsburg	23	1325EST			0	0	3	0	Thunderstorm Winds
Yulan	23	1325EST			0	0	3	0	Thunderstorm Winds
Putnam County Mohopac	23	1327EST			0	0	3	0	Thunderstorm Winds
Schoharie County Sharon Springs	23	1330EST			0	0	4	0	Thunderstorm Winds
Blenheim	23	1330EST			0	0	3	0	Thunderstorm Winds
Gilboa	23	1330EST			0	0	3	0	Thunderstorm Winds
Putnam County	23	1350EST			0	0	4	0	Thunderstorm Winds
Orange County Mount Hope	23	1410EST			0	0	3	0	Thunderstorm Winds
Middletown	23	1410EST			0	0	3	0	Thunderstorm Winds
Wawayanda	23	1410EST			0	0	3	0	Thunderstorm Winds
Putnam County 2 N Somers	23	1414EST			0	0	3	0	Thunderstorm Winds
Sullivan County Thompson	23	1421EST			0	0	3	0	Thunderstorm Winds
Orange County New Windsor	23	1425EST			0	0	3	0	Hail (1.00)
Newburgh	23	1427EST			0	0	3	0	Thunderstorm Winds
3 W SWF	23	1427EST			0	0	0	0	Hail (0.75)
Cornwell	23	1428EST			0	0	3	0	Thunderstorm Winds
Campbell Hall	23	1430EST			0	0	3	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm	
					Killed	Injured	Property Crops		
NEW YORK, Central Cont'd									
Sullivan County									
Rock Hill	23	1440EST			0	0	4	0	Thunderstorm Winds
Wanaksink Lake	23	1440EST			0	0	4	0	Thunderstorm Winds
Yankee Lake	23	1440EST			0	0	4	0	Thunderstorm Winds
Masten Lake	23	1440EST			0	0	4	0	Thunderstorm Winds
Orange County									
New Windsor	23	1442EST			0	0	3	0	Thunderstorm Winds
New Windsor of Blooming Grove	23	1511EST			0	0	4	0	Thunderstorm Winds
Cornwall	23	1511EST			0	0	4	0	Thunderstorm Winds
Putnam County									
Putnam Valley	23	1530EST			0	0	3	0	Thunderstorm Winds
Dutchess County									
Millerton	23	1700EST			2	2	4	0	Heavy Rain

A series of fast moving squall lines caused extensive damage across parts of eastern New York during the late morning and afternoon of July 23rd. Among the areas hardest hit were the Rock Hill, Wanaksink Lake, and Yankee Lake areas of southeastern Sullivan County, and the townships of New Windsor, Blooming Grove, and Cornwall in eastern Orange County. More than 8,000 people were left without power in Sullivan County, with hundreds of trees blown down along with several road signs along Route 17 in the Rock Hill and Wanaksink Lake areas. On Yankee Lake, an unattended sea plane was blown out of the water onto a lakeside lot. In eastern Orange County, 15,000 people were left without power as numerous trees and power lines were downed by thunderstorm winds leaving some roads closed. Heavy rain from thunderstorms resulted in a fatal car crash in Millerton in Dutchess County. (M18V)(M16V)

Area Wide	16- 23	0	1	?	?	Heat
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A Bermuda high pumped hot air into eastern New York for 8 days, starting on July 16th and ending on July 23rd. During the 8-day period, Albany hit 90° or above seven times. Poughkeepsie hit 100° or greater three times, and at Bard College in Annandale-on-Hudson, high temperatures ranged from 95° to 104° during the 8 days. Record highs were broken in Binghamton on the 19th and 20th, in Poughkeepsie on the 19th, and record highs were tied in Albany on 20th and in Binghamton on the 17th. The excessive heat was also accompanied by oppressive humidity and high levels of ozone. Numerous records for power consumption were also broken during the period.

NEW YORK, Coastal

Rockland County Chestnut Ridge Monsey	06	1800EST- 1900EST	0	0	?	0	Thunderstorm Winds
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Isolated thunderstorms downed trees and power lines across Rockland County.

Richmond County Tottenville	21	1720EST	0	0	?	0	Thunderstorm Winds
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A strong thunderstorm moving across Staten Island, downed a few trees around the Tottenville area. These thunderstorms were also accompanied by heavy rain.

Westchester County North Salem	23	1300EST	0	0	?	0	Thunderstorm Winds	
Cronton Falls	23	1425EST	0	0	?	0	Thunderstorm Winds	
Cortlandt								
Cross River	23	1515EST	0	0	?	0	Thunderstorm Winds	
Rockland County	23	1530EST	0	0	?	0	Thunderstorm Winds	

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
NEW YORK, Coastal Cont'd									
Suffolk County									
Wading River	23	1535EST			0	0	?	0	Thunderstorm Winds
Wading River	23	1535CST			0	0	?	0	Hail (1.00)
Rockland and Westchester Counties	23	1600EST- 1800EST			0	0	?	0	Flash Flood
Westchester County									
Mt. Vernon	23	1604EST			0	0	?	0	Thunderstorm Winds
New Salem	23	1615EST			0	0	?	0	Lightning
Dobbs Ferry	23	1620EST			0	0	?	0	Thunderstorm Winds
Nassau County Eastern Portion	23	1625EST			0	0	0	0	Hail (1.00)
Suffolk County Brookhaven	23	1630EST			0	0	0	0	Hail (1.75)
Westchester County Pound Ridge	23	1630EST			0	0	?	0	Thunderstorm Winds
Port Chester	23	1630EST			0	0	0	0	Hail (0.75)
Nassau County Williston Park	23	1650EST			0	0	0	0	Thunderstorm Winds
Woodberry	23	1700EST			0	1	?	0	Heavy Rain
Suffolk County Sayville	23	1700EST			0	1	0	0	Lightning

A couple of squall lines moving across extreme southeastern New York caused extensive damage throughout the area. Hundreds of trees and power lines were downed during the storm. The storms also produced large hail ranging in size from 0.75 to 1.75 inches. Brief, but very heavy, rain across Rockland and Westchester Counties lead to significant flooding of urban areas. In Woodbury on Long Island, the heavy rains caused a roof to collapse injuring one person. In North Salem, a barn was completely destroyed by fire started by lightning. In Sayville, a woman was struck by lightning while working near a window in her home.

NEW YORK, Western

Cayuga County Levanna	05	1600EST			0	0	4	0	Thunderstorm Winds
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Afternoon thunderstorms developed in warm, humid air. Large trees were downed onto electric and telephone lines by the strong, thunderstorm produced winds.

Cattaraugus County Perrysburg	07	0345EST			0	0	4	0	Thunderstorm Winds
Erie County Angola	07	0400EST			0	0	4	0	Thunderstorm Winds
Chautauqua County Jamestown	07	0510EST			0	0	4	0	Thunderstorm Winds
Cattaraugus County Delevan	07	0530EST			0	0	4	0	Thunderstorm Winds
Chautauqua County Findley	07	2255EST			0	0	4	0	Thunderstorm Winds
Jamestown	07	2320EST			0	0	4	0	Thunderstorm Winds
Cattaraugus County Salamanca	07	2350EST			0	0	4	0	Thunderstorm Winds
Erie County Springville	07	2355EST			0	0	4	0	Thunderstorm Winds
Wyoming County Warsaw	08	0030EST			0	0	4	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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NEW YORK, Western Cont'd

Nocturnal thunderstorm on 2 consecutive nights produced damaging winds. The strong winds downed trees and power lines, causing scattered power outages. Some homes and property were damaged by downed tree limbs. Unusually vivid and continuous lightning with the storms reportedly sparked six house fires. The thunderstorms dropped from 1.75 to 2.75 inches of rain, resulting in some reports of localized flooding.

Ontario County Geneva	19	1250EST			0 0	4 0	Thunderstorm Winds
Seneca County Waterloo							
Seneca Falls	19	1255EST			0 0	4 0	Thunderstorm Winds
Wayne County Newark	19	1255EST			0 0	4 0	Thunderstorm Winds
Cayuga County Cato	19	1308EST			0 0	4 0	Thunderstorm Winds
Allegany County Cuba	19	1310EST			0 0	4 0	Thunderstorm Winds
Cayuga County Fleming	19	1316EST			0 0	4 0	Thunderstorm Winds
Throop	19	1320EST			0 0	4 0	Thunderstorm Winds
Onondaga County Plainville	19	1325EST			0 0	4 0	Thunderstorm Winds
Baldwinsville	19	1330EST			0 0	4 0	Thunderstorm Winds
Tomkins County Lansingville	19	1330EST			0 0	4 0	Thunderstorm Winds
Onondaga County Lyncourt	19	1357EST			0 0	4 0	Thunderstorm Winds
Syracuse	19	1400EST			0 0	4 0	Thunderstorm Winds
Southwood	19	1408EST			0 0	4 0	Thunderstorm Winds

Afternoon thunderstorms developed in a southwestern flow of very warm, humid air. The storm winds toppled large trees and utility poles, and pulled electric lines from houses. Scattered power outages were reported. In Cuba, an uprooted tree flattened a camper trailer and aluminum boat.

Tomkins County Cayuga Heights	21	1605EST			0 0	4 0	Thunderstorm Winds
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Afternoon thunderstorms developed in moist, unstable air. Downed trees and power lines were reportedly caused by the strong thunderstorm winds.

Chautauqua County Fredonia	23	0057EST			0 0	4 0	Thunderstorm Winds
Cattaraugus County Perrysburg	23	0148EST			0 0	4 0	Thunderstorm Winds
Allegany County Angelica	23	0150EST			0 0	4 0	Thunderstorm Winds
Cattaraugus County Randolph	23	0408EST			0 0	4 0	Thunderstorm Winds
Onondaga County Jamesville	23	1130EST			0 0	4 0	Thunderstorm Winds
Delphi Falls	23	1146EST			0 0	4 0	Thunderstorm Winds
Pompey Hill	23	1208EST			0 0	4 0	Thunderstorm Winds

A cold front triggered thunderstorms during the morning as it crossed western New York. The winds produced by the thunderstorms downed trees and power lines that resulted in scattered outages.

Genesee County Pembroke	30	0920EST			0 0	4 0	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm
					Killed	Injured	Property	Crops

NEW YORK, Western Cont'd

Thunderstorms developed ahead of a cold front which crossed western New York. The thunderstorms produced strong winds in northern Genesee County which snapped trees and utility poles. Power outages were also reported.

NORTH CAROLINA

Hyde County Swanquarter	01	1615EST			0	0	?	0	Thunderstorm Winds
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Wind estimated at 60 knots caused structural damage to the courthouse and a ferry station.

Transylvania County Blantyre	02	1430EST			0	0	0	0	Hail (1.00)
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Moore County Southern Pines	02	1630EST			0	0	5	0	Lightning
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One home and mobile home destroyed by lightning fires.

Cabarrus County N Kannapolis	02	1900EST			0	0	?	0	Lightning
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Davidson County Thomasville	02	1900EST			0	0	4	0	Thunderstorm Winds
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A 30- by 70-foot section of roof was torn off of a school; damage was estimated at \$20,000. Trees were also blown down.

Franklin County Northern Portion	02	1900EST			0	0	4	0	Thunderstorm Winds Lightning
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Several trees were blown down in scattered locations, one mobile home overturned at Kearney, a roof was blown off a barn 10 miles north of Louisburg, and lightning fires severely damaged a home at Mitchner's Crossroads.

Person County Timberlake	02	1945EST			0	0	0	0	Thunderstorm Winds
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Two trees were blown down in Timberlake.

Cabarrus County W Concord	02	1955EST			0	0	?	?	Thunderstorm Winds Urban Flooding
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Trees were blown down; one landed on a mobile home. Over 3 inches of rain in the ensuing hour caused extensive street flooding and some crops were damaged.

Nash County 5 SW Spring Hope	02	2000EST			0	0	5	0	Lightning
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Lightning fire completely destroyed a \$70,000 home.

Stokes County Walnut Cove	03	1500EST			0	0	0	0	Thunderstorm Winds (G52)
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Guilford County WSO Greensboro	03	1535EST			0	0	0	0	Thunderstorm Winds (G50)
Greensboro	03	1600EST			0	0	0	0	Thunderstorm Winds

Thunderstorm winds downed trees.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
		Local/Standard			Killed	Injured			
NORTH CAROLINA Cont'd									
Lincoln County 2 SW Lincolnton	05	1430EST			1	0	0	0	Lightning
									A man was struck and killed by lightning while standing under a large tree. (M260)
Cabarrus County Kannapolis	05	1740EST			0	0	4	0	Lightning
									Lightning started several fires that caused extensive damage to two homes.
Nash County Red Oak	05	1800EST			0	0	?	0	Thunderstorm Winds
									Thunderstorm winds downed trees and damaged one home.
Catawba County Hickory	08	1745EST- 1800EST			0	0	?	0	Hail (1.00) Lightning
									Lightning fires damaged several homes and buildings.
Gaston County Gastonia	08	1800EST			0	0	4	0	Lightning
									Lightning fire destroyed one home.
Guilford County High Point	08	1900EST			0	1	0	0	Lightning
									Man struck and injured by lightning while playing golf.
Cabarrus County Concord	14	1835EST- 1850EST			0	0	4	0	Lightning
									Lightning fires damaged one home and one business.
New Hanover County 3 E Wilmington	16	1127EST- 1142EST	?	?	0	0	0	0	Tornado (F0)
									Several spotters reported a "small twister."
Wayne County Dudley	18	1430EST			1	0	0	0	Lightning
									A 16-year-old female was struck and killed by lightning while doing yard work near pine tree. (F160)
Brunswick County Ocean Isle Beach	20	1130EST			1	0	0	0	Lightning
									A man was struck and killed by lightning while on a golf course. (M190)
Warren County Wise	20	1615EST			0	0	?	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
NORTH CAROLINA Cont'd									
Several trees were blown down or uprooted with some landing on homes and other buildings.									
Halifax County Hollister	20	Unknown			0	0	6	0	Lightning
Lightning struck a factory's electrical system resulting in a fire that caused \$2 million worth of damage.									
Scotland County Wagram	21	1500EST			0	0	4	0	Lightning
A lightning fire destroyed a storage building worth over \$5,000.									
Cleveland County Shelby	22	0810EST			1	0	0	0	Excessive Heat
A man collapsed while doing yard work and later died. (M740)									
Pender County Burgaw	23	1800EST			0	0	0	0	Thunderstorm Winds
Several large tree limbs blown down.									
Swain County	24	1600EST- 1700EST			0	0	0	?	Hail (0.50)
Hailstorm caused extensive damage to tobacco crops.									
Mitchell County Bakersville	24	1700EST- 2200EST			0	0	5	0	Flash Flood
Over 5 inches of rain in about an hour damaged roads and property, including \$70,000 damage at a funeral home, \$50,000 to another building, and \$10,000 to the Department of Social Services.									
Rutherford County Forest City	24	1745EST- 1800EST			0	0	?	0	Thunderstorm Winds
Several large trees were blown down and caused damage to some homes.									
Buncombe County 8 NW Asheville	24	1810EST			0	0	?	0	Thunderstorm Winds Hail (0.75)
Several large trees were blown down.									
Anson County Ansonville	24	2315EST			0	0	0	0	Hail (1.75)
Randolph County Randleman	25	0120EST			0	0	5	0	Lightning
Lightning fire destroyed a large residence.									
Davidson County Western Portion	25	1900EST- 2000EST			0	1	5	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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NORTH CAROLINA Cont'd

Twelve building fires resulted from lightning, one firefighter was struck and injured while fighting fire.

Randolph County
Archdale
Trinity

26 1500EST 0 0 5 0 **Lightning**

Lightning fires damaged two homes.

Warren County
Warrenton

26 1515EST 0 0 5 0 **Lightning**

Lightning destroyed one home, and nine cattle worth \$12,500 were struck and killed.

Mecklenburg County
Lake Wylie

26 1700EST 0 0 ? 0 **Thunderstorm Winds**

Several boats were damaged or sunk, and a marina roof and dock were damaged.

Pineville

26 1800EST-
2130EST 0 0 ? 0 **Urban Flooding**

In Pineville, 4.5 inches of rain fell during 3.5 hours.

Orange County
5 S Hillsborough

26 1705EST 0 0 0 0 **Thunderstorm Winds**

Several trees were blown down.

Cabarrus County
Concord
Guilford County
High Point

26 **Unknown** 0 1 0 0 **Lightning**

26 **Unknown** 0 0 5 0 **Lightning**

A lightning strike destroyed a large chimney at a church sending bricks through church windows, and debris destroyed an air conditioning unit.

Brunswick County
4 S Shallotte

27 0940EST 0 0 0 0 **Waterspouts**

Two waterspouts were observed by police officers.

Pasquotank County
Morgans Corner
Wayne County
Goldsboro

27 1230EST 0 0 0 0 **Funnel Cloud**

27 1600EST-
1900EST 0 0 0 0 **Urban and Small Stream
Flooding**

27 1800EST 0 0 4 0 **Lightning**

2 W Mt. Olive

Extensive street and highway flooding resulted from 4.5 inches of rain in 3 hours. One home was damaged by a lightning fire.

Moore County
Eastern Portion

27 1800EST-
2100EST 0 0 ? ? **Flash Flood**

In Carthage and east of Carthage, 4 inches of rain in 1 hour resulted in several washouts on secondary roads.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage Property Crops	Character of Storm
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NORTH CAROLINA Cont'd

Wilson County
Wilson

29	1400EST- 1900EST								Urban Flooding
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About 3.5 inches of rain caused extensive street flooding.

Johnston and Western
Wilson Counties

29	1400EST- 2000EST								Flash Flood
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Six to seven inches of rain fell from slow-moving thunderstorms causing 32 secondary roads to be inundated or washed out, and flash flooding of the Little River in Johnston County. A small dam break occurred 13 miles southwest of Smithfield. Some damage to tobacco and potato crops also occurred.

Haywood County
Central Portion

29	2100EST- 30 0100EST								Flash Flood
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One home's foundation was undermined and bridges were overwashed.

Jackson County
Sylva

30	2152EST								Thunderstorm Winds
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A tree was blown down, and buildings sustained \$40,000 damage.

Sampson and Duplin
Counties

30	1900EST- 31 0800EST								Flash Flood
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Nearly 4.5 inches of rain following widespread heavy rainfall earlier in the week inundated or washed out 21 secondary roads and forced the closing of a 10-mile stretch of Interstate 40 for 13 hours. Four homes were flooded and eight were evacuated near Clinton after a small dam failed.

Wayne County

31	All Day								Flood
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Between 13 and 15 inches of rain occurred in July with most of it in the last five days. Throughout the county, many rivers and streams were cresting above flood stage on the 31st. The Neuse River crested nearly 2 feet above flood stage at Goldsboro. Several roads had been closed because of swollen creeks and rivers.

NORTH DAKOTA

Pierce County

04	1745CST								Hail (1.75)
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McHenry County

04	1800CST								Hail (2.75)
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13 S Towner

04	1835CST								Hail (1.75)
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8 NE Drake

04	1840CST								Thunderstorm Winds (G52)
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5 NW Anamoose

Divide County

05	0120CST								Hail (0.75)
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Crosby

McKenzie County

05	0317CST								Hail (1.75)
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2 E Fairview MT

05	0342CST								Thunderstorm Winds (G52)
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5 W Alexander

A wind and hail storm caused widespread crop destruction over northwestern McKenzie County. The swath of damage was 6 miles wide and extended from the Montana and North Dakota border 30 miles eastward to Arnegard. Over 50,000 acres of cropland was damaged or destroyed.

Mountrail County

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
NORTH DAKOTA Cont'd									
Stanley Dunn County	05	0320CST			0	0	3	3	Hail (1.00)
2 N Halliday Mercer County	06	1530CST			0	0	4	4	Hail (1.75)
11 N Zap Oliver County	06	1605CST			0	0	4	4	Hail (1.00)
Center Hannover	06	1640CST			0	0	4	4	Hail (1.75)
	06	1720CST			0	0	3	3	Hail (1.00)
Burleigh County									
Baldwin	06	1720CST			0	0	0	0	Hail (0.75)
Sterling	06	1742CST			0	0	4	4	Hail (0.75)
5 NW McKenzie Mercer County	06	1750CST			0	0	4	4	Hail (0.75)
4 NNW Stanton Burke County	06	1720CST			0	0	4	4	Hail (1.75)
6 SE Portal	06	1730CST			0	0	4	4	Hail (1.75)
Flaxton	06	1738CST			0	0	4	4	Thunderstorm Winds
5 SE Bowbells	06	1808CST			0	0	5	5	Thunderstorm Winds
Thunderstorm winds broke windows and 18-inch-diameter trees, while hail caused a path of crop destruction from Portal to Flaxton.									
McLean County									
Washburn	06	1750CST			0	0	4	4	Hail (0.75)
Kidder County									
12 S Steele	06	1830CST			0	0	5	5	Thunderstorm Winds (G65)
Bottineau County									
2 NW Westhope	06	1900CST			0	0	5	5	Thunderstorm Winds (G52)
Westhope	06	1900CST			0	0	4	4	Hail (0.75)
Landa	06	1910CST			0	0	5	5	Hail (1.75)
Thunderstorm winds and hail cut a 3-mile swath of crop damage over northwestern and northern-central Bottineau County; from Antler to Westhope to Landa.									
Logan County									
3 NW Lehr	06	1900CST			0	0	4	4	Hail (0.75)
Storms destroyed crops along a 70-mile path over Burleigh, Kidder, and Logan Counties, the evening of the 6th. The path extended from Moffit, in Burleigh County, then across southern Kidder County, then to Fredonia, in Logan County. High winds snapped 10-inch tree branches along this path.									
Ward County									
Minot	06	1924CST			0	0	4	4	Thunderstorm Winds (G50)
Surrey	06	1935CST			?	?	?	?	Funnel Cloud
Minot	06	1940CST			0	0	4	4	Thunderstorm Winds
Thunderstorm winds uprooted trees and blew down power lines in Minot.									
McHenry County									
1 N Norwich	06	1945CST			?	?	?	?	Funnel Cloud
Velva	06	2010CST			0	0	4	4	Thunderstorm Winds
Thunderstorm winds uprooted an 18-inch-diameter tree in Velva.									
McIntosh County									
11 NE Ashley	06	1945CST			0	0	3	3	Hail (0.75)
Dickey County									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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NORTH DAKOTA Cont'd

Ellendale	06	2020CST			0 0	4 4	Thunderstorm Winds (G56)
Renville County							
8 W Mohall	11	1145CST			? ?	? ?	Funnel Cloud
1 SE Sherwood	11	1150CST			? ?	? ?	Funnel Cloud
Loraine	11	1155CST			? ?	? ?	Funnel Cloud
Rolette County							
Dunseith	11	1420CST			? ?	? ?	Funnel Cloud
Towner County							
1 NW Cando	11	1600CST			? ?	? ?	Funnel Cloud
Nelson County							
5 SE Pekin	11	1805CST	**50	8	0 0	3 3	Tornado (F0)
4 SE Pekin	11	1805CST			? ?	? ?	Funnel Cloud

A tornado broke off some trees in Nelson County.

Richland County							
1 SW Lidgerwood	11	2020CST	**55	8	0 0	0 0	Tornado (F0)
1 W to 2 SE Hankinson	11	2055CST- 2102CST	2.9	50	0 0	0 0	Tornado (F1)

County emergency officials observed a tornado that began 1 mile west of Hankinson and moved southeasterly at 25 mph. It was then observed just southeast of Hankinson before it dissipated. No damage was reported.

Williams County							
Williston	14	2353CST			0 0	4 4	Thunderstorm Winds (G60)

A wind gust to 69 mph was recorded at Weather Service Office Williston. The thunderstorm winds downed trees.

Burke County							
Columbus	18	0050CST			0 0	4 4	Hail (1.75)
Stark County							
Belfield	18	0130CST			0 0	0 0	Thunderstorm Winds (G52)
Dickinson	18	0200CST			0 0	4 4	Thunderstorm Winds (G59)
Mountrail County							
Parshall	18	0320CST			0 0	4 4	Thunderstorm Winds (G61)
Parshall	18	0345CST			0 0	0 0	Hail (0.75)
Ward County							
1 N Minot	18	0400CST			0 0	4 4	Thunderstorm Winds (G50)
1 S Minot	18	0430CST			0 0	4 4	Thunderstorm Winds (G55)

Thunderstorm winds blew down trees and power lines in the city of Minot.

McHenry County							
Drake	18	0420CST			0 0	0 0	Thunderstorm Winds (G52)

A northerly-to-southerly line of weak thundershowers occurred along and behind a strong cold front that moved rapidly eastward across western and north-central North Dakota, in the early morning of the 18th. This combination produced wind gusts to 70 mph.

Cavalier County							
1 NW Langdon	18	0605CST			0 0	0 0	Thunderstorm Winds (G52)
Pembina County							
5 W Cavalier	18	0620CST			0 0	0 0	Hail (0.75)
Towner County							
6 NE Cando	18	0650CST			0 0	3 3	Hail (0.75) Thunderstorm Winds (G52)

Dunn County

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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NORTH DAKOTA Cont'd

18 SE Manning	19	1945CST			0 0	5 5	Hail (1.75)
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Hail caused crop damage in a 5-mile-long and 30-mile-wide area in southern Dunn County.

Morton County

1 NW Hebron	19	2015CST			0 0	4 4	Thunderstorm Winds (G57)
16 ESE Hebron	19	2030CST			0 0	4 4	Thunderstorm Winds (G57)
2 E New Salem	19	2105CST			0 2	3 0	Lightning

Lightning struck and damaged a moving pickup truck. The two occupants inside were shaken by the loud noise of the lightning, but were not seriously injured. Strong winds in western Morton County demolished a barn and blew large hay bales onto Interstate 94.

Williams County

2 N Alamo	21	1345CST			0 0	4 4	Hail (0.75)
Dickey County							
3 SW Ellendale	21	1403CST			0 0	5 5	Thunderstorm Winds
7 W Ellendale	21	1420CST			0 0	5 5	Hail (1.75)
1 S Ellendale	21	1450CST			0 0	5 5	Thunderstorm Winds (G65)

A violent wind and hail storm cut a 5-mile-wide swath of damage in southwestern and south-central Dickey County, parallel to the South Dakota border. The wind damaged homes and farm buildings 3 miles southwest of Ellendale, and blew down a mile of powerlines just south of Ellendale. Meanwhile, the hail caused considerable crop damage.

Burke County

1 W Battleview	21	1500CST			0 0	6 6	Hail (1.75)
3 S Columbus	21	1500CST			0 0	4 4	Hail (0.75)
Portal	21	1510CST			0 0	4 4	Thunderstorm Winds (G52)
Bowbells	21	1510CST			0 0	4 4	Thunderstorm Winds (G52)

Hail caused extensive crop damage over extreme southern Burke County. The damage path extended from Battleview to Powers Lake. Crop damage was estimated at \$1 million.

Williams County

15 NE Williston	21	1502CST			0 0	0 0	Hail (0.88) Thunderstorm Winds (G50)
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Dunn County

5 N Killdeer	21	1510CST			0 0	4 4	Hail (2.75)
5 N Killdeer	21	1528CST			0 0	4 4	Hail (2.00)

Mountrail County

Palermo	21	1620CST			0 0	4 4	Hail (1.00)
Stanley	21	1715CST			0 0	3 3	Thunderstorm Winds
Stanley	21	1715CST			0 0	0 0	Hail (0.75)

Ward County

Kenmare	21	1630CST			0 0	4 4	Thunderstorm Winds (G52)
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Benson County

Esmond	21	2015CST			0 0	4 4	Hail (1.75)
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Ramsey County

Devils Lake	21	2025CST			0 0	3 3	Hail (0.75)
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OHIO

Coshocton County

Plainfield	01	2107EST			0 0	4 0	Thunderstorm Winds
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An isolated thunderstorm blew down trees near the intersection of Routes 93 and 541.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
OHIO Cont'd									
Williams County Bryan	01	2130EST			0	0	4	0	Thunderstorm Winds
An isolated thunderstorm downed trees and power lines in and around Bryan.									
Mercer County Celina Rockford	02	1600EST			0	0	4	0	Thunderstorm Winds
Auglaize County Wapakoneta	02	1630EST			0	0	3	0	Hail (0.75)
Champaign County 3 W Urbana	02	1720EST			0	0	4	4	Hail (1.00)
Logan County Zanesfield	02	1735EST			0	0	4	0	Thunderstorm Winds
Champaign County 1 E Urbana	02	1745EST			0	0	4	0	Thunderstorm Winds
Clermont County Goshen	02	1757EST			0	0	4	0	Thunderstorm Winds
Union County Richwood	02	1800EST			0	0	4	0	Thunderstorm Winds
Warren County County Wide	02	1815EST			0	0	4	0	Thunderstorm Winds
Madison County London	02	1825EST			0	0	4	0	Thunderstorm Winds
Clinton County Waynesville	02	1845EST			0	0	4	0	Thunderstorm Winds
Thunderstorms moved through southwest Ohio blowing down trees and power lines in many locations, and producing some large hail. A 4-mile-long by 1-mile-wide swath of 1.00-inch hail destroyed crops and damaged property west of Urbana. Trees fell onto a house just east of Urbana and on a mobile home in Goshen.									
Defiance County 2 SE Defiance	03	1345EST			0	0	4	0	Thunderstorm Winds
Mercer County 10 SW Celina	03	1437EST			0	0	4	0	Thunderstorm Winds
Fulton County Elmira	03	1650EST			0	0	3	0	Hail (0.75)
Thunderstorms blew down trees and produced large hail in parts of northwest Ohio.									
Hamilton County Addyston	06	0600EST			0	0	4	0	Thunderstorm Winds
An isolated thunderstorm blew down trees in Addyston.									
Mahoning County Boardman Canfield	06	1430EST			0	0	5	0	Thunderstorm Winds
An isolated thunderstorm blew trees onto cars and homes.									
Belmont County Martins Ferry	07	1600EST			0	0	4	0	Thunderstorm Winds
Perry County Western Portion	07	1600EST			0	0	4	0	Thunderstorm Winds
	07	1600EST			0	0	4	0	Hail (1.00)
Coming	07	1630EST- 1730EST			0	0	5	0	Flash Flood

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
OHIO Cont'd									
Athens County Glooster	07	1700EST			0	0	4	0	Thunderstorm Winds
Tuscarawas County Dover	07	1700EST			0	0	5	0	Thunderstorm Winds
Sugar Creek Jefferson County Steubenville	07	1800EST			0	0	4	0	Thunderstorm Winds
<p>Thunderstorms moved through eastern and southeastern Ohio downing trees and power lines, and producing some large hail. A home was damaged when trees fell onto it in Sugar Creek. Tents were blown over at the Jefferson County fair in Steubenville. Rainfall of around 3 inches in about 30 minutes fell on Corning, in extreme southeast Perry County. This caused the Sunday Creek to flood the city with 2 to 6 feet of water. Numerous homes, buildings, and vehicles were damaged from the water. A family of twelve was trapped and later rescued from their mobile home when the water started to move the mobile home downstream.</p>									
Williams County Countywide	07	2014EST			0	0	4	0	Thunderstorm Winds
Fulton County Archbold	07	2022EST			0	0	4	0	Hail (1.00)
Lucas County Waterville	07	2047EST			0	0	4	0	Thunderstorm Winds (G52)
Wood County Bowling Green	07	2105EST			0	0	4	0	Thunderstorm Winds
Luckey	07	2115EST			0	0	4	0	Thunderstorm Winds (G61)
Summit County Akron	07	2115EST			0	1	0	0	Lightning
Medina County Hinckley	07	2130EST			0	0	4	0	Thunderstorm Winds
Ottawa County Catawba Island	07	2130EST			0	0	4	0	Thunderstorm Winds
Lake County Madison	07	2135EST			0	0	4	0	Thunderstorm Winds
Lorain County Countywide	07	2135EST			0	0	4	0	Thunderstorm Winds
Trumbull County Warren	07	2140EST			0	0	4	0	Thunderstorm Winds
Ashtabula County Ashtabula	07	2145EST			0	0	5	0	Thunderstorm Winds (G61)
Geauga County Parkman	07	2145EST			0	0	4	0	Thunderstorm Winds
Knox County Southeast Portion	07	2145EST			0	0	3	0	Hail (0.75)
Mahoning County Poland	07	2200EST			0	0	4	0	Thunderstorm Winds
Boardman Summit County 2 W Akron	07	2200EST			0	0	4	0	Thunderstorm Winds
Trumbull County Girard	07	2200EST			0	0	3	0	Hail (0.75)
Columbiana County Salem	07	2215EST			0	0	4	0	Thunderstorm Winds
Cuyahoga County Lakewood	07	2215EST			0	0	5	0	Thunderstorm Winds
Westlake Bay Village Portage County Suffield	07	2225EST			0	0	4	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
OHIO Cont'd							
Columbiana County 2 S Rogers	07	2235EST			0 0	4 0	Thunderstorm Winds
Medina County 2 NE Medina	07	2240EST			0 0	4 0	Thunderstorm Winds
Stark county Alliance	07	2240EST			0 0	5 0	Thunderstorm Winds
Summit County Mogadore	07	2240EST			0 0	5 0	Thunderstorm Winds
Geauga County 2 S Chardon	07	2350EST			0 0	3 0	Hail (0.75)
Ashtabula County Countywide	08	0020EST			0 0	5 0	Thunderstorm Winds

Thunderstorms developed over Michigan and moved southeast across northern Ohio blowing down trees and power lines, and dropping large hail. Homes were damaged in many areas from falling trees with severe damage occurring in Ashtabula, Cuyahoga, Stark, and Summit Counties. A barn was destroyed near Suffield. A man was paralyzed after being struck by lightning on his front porch.

Mercer County Celina	08	0132EST			0 0	4 0	Thunderstorm Winds
Allen County 5 S Lima	08	0211EST			0 0	4 0	Thunderstorm Winds
Darke County 5 SE Greenville	08	0230EST			0 0	4 0	Thunderstorm Winds
Miami County Pleasant Hill	08	0252EST			0 0	4 0	Hail (1.25)
Huber Heights	08	0318EST			0 0	4 0	Thunderstorm Winds
Hamilton County Cincinnati	08	0500EST- 0800EST			0 0	4 0	Urban Flooding
Clermont County 2 Amelia	08	0530EST- 0830EST			0 0	4 0	Urban Flooding
Butler County Trenton	08	0530EST			0 0	4 0	Thunderstorm Winds
Montgomery County Liberty	08	0825EST			0 0	3 0	Hail (0.75)
Darke County Arcanum	08	0830EST			0 0	4 0	Thunderstorm Winds
Hamilton County Sharonville	08	0845EST			0 0	4 0	Hail (1.00)
Clermont County Anderson Township	08	0850EST			0 0	3 0	Hail (0.75)
Hamilton County Cheviot Harrison	08	0900EST			0 0	4 0	Thunderstorm Winds

Thunderstorms developed over Indiana and moved into southwest Ohio blowing down trees and power lines, and dropping some large hail. A camper was flipped over in Arcanum. Rainfall of 2 to 4 inches over the southwest corner of the state caused urban flooding in the Cincinnati area and around Amelia.

Adams County Central Portion	08	1430EST- 1600EST			0 0	4 0	Small Stream Flooding
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Heavy rain caused small stream flooding between West Union and Peebles, and around Adams Lake State Park.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
OHIO Cont'd									
Gallia County									
Central Portion	12	1425EST			0	0	4	0	Hail (1.25)
Gallipolis	12	1435EST			0	0	5	0	Thunderstorm Winds
An isolated thunderstorm blew down trees and power lines, blew a roof off of a home, and dropped large hail.									
Geauga County									
Newbury	22	1615EST			0	0	4	0	Thunderstorm Winds
An isolated thunderstorm blew down trees in Newbury.									
Crawford County									
3 E Lemert	23	1045EST			0	0	4	0	Thunderstorm Winds
3 NE Tiro	23	1105EST			0	0	4	0	Thunderstorm Winds
Richland County									
Mansfield	23	1110EST			0	0	4	0	Thunderstorm Winds
Medina County									
Medina	23	1115EST			0	0	4	0	Thunderstorm Winds
Trumbull County									
Champion	23	1130EST			0	0	4	0	Thunderstorm Winds
Summit County									
Akron	23	1140EST			0	0	5	0	Thunderstorm Winds
Barberton									
1 SE Greensburg	23	1144EST			0	0	5	0	Thunderstorm Winds (G59)
Stark County									
N Canton	23	1150EST			0	0	4	0	Thunderstorm Winds
Holmes County									
1 S Killbuck	23	1155EST			0	0	4	0	Thunderstorm Winds
Portage County									
Garrettsville	23	1200EST			0	0	5	0	Thunderstorm Winds
Windham									
Tuscarawas County									
Dover	23	1220EST			0	0	4	0	Thunderstorm Winds
Carroll County									
Malvern	23	1230EST			0	0	4	0	Thunderstorm Winds
Augusta									
Leesville	23	1250EST			0	0	4	0	Thunderstorm Winds
Hamilton County									
Anderson Township	23	1500EST			0	0	4	0	Thunderstorm Winds
Hyde Park									
Meigs County									
1 W Rutland	23	1550EST			0	0	4	0	Thunderstorm Winds
Gallia County									
Rio Grande	23	1700EST			0	0	4	0	Thunderstorm Winds
Lawrence County									
Coal Grove	23	1740EST			0	0	5	0	Thunderstorm Winds
South Point	23	1805EST			0	0	4	0	Thunderstorm Winds

Thunderstorms developed over north-central Ohio and blew down trees and power lines over parts of north-central and eastern Ohio. The thunderstorms later developed over southern Ohio bringing down trees and power lines in many areas. Television and amateur radio antennas were blown down northeast of Tiro. Homes were damaged from falling trees in Garrettsville, Anderson Township, and Coal Grove. A storage building was overturned in South Point.

Mahoning County									
3 WNW Austintown	23	1140EST	0.5	30	0	0	0	0	Tornado (F0)

A weak tornado touched down briefly near Austintown on Meander Creek Reservoir.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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OHIO Cont'd

Lowellville	23	1155EST	2.0	50	0 0	4 0	Tornado (F0)
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A tornado touched down in Lowellville damaging and blowing down trees and power lines. The tornado crossed into Lawrence County, in Pennsylvania at 1200 EST.

Defiance County Hicksville	29	1645EST			0 0	4 0	Thunderstorm Winds
Henry County 5 S Napoleon	29	1800EST			0 0	4 0	Thunderstorm Winds
Putnam County Ottawa	29	1830EST			0 0	4 0	Thunderstorm Winds
Hancock County 2 N Findlay	29	1840EST			0 0	4 0	Thunderstorm Winds

Thunderstorms developed over the northwest corner of Ohio and downed trees and power lines in many areas.

Statewide	Entire Month				0 0	0 ?	Drought
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Below normal rainfall pushed much of Ohio into the severe and extreme Palmer Drought categories. Rainfall continued below normal for the third month in a row. Only 60% of the normal rain fell during May, June, and July. Areas hardest hit were the northeast and northeast hills areas of Ohio. Crops were failing in many areas of Ohio, especially the northeast quarter of the state.

OKLAHOMA

Oklahoma County Wiley Post Airport	03	0126CST			0 0	? ?	Thunderstorm Winds (G50)
Midwest City	03	0200CST			0 0	4 ?	Thunderstorm Winds
SE Oklahoma City	03	0205CST			0 0	3 ?	Thunderstorm Winds
Pottawatomie County McLoud	03	0215CST			0 0	? ?	Thunderstorm Winds

Severe thunderstorms moved across central Oklahoma during the early morning hours with many reports of 50- to 60-mph winds, and some damage. In Midwest City, severe thunderstorm winds tore the roof off a business and broke the front window of an auto parts store. In southeastern Oklahoma City, strong winds knocked down the support poles for a carport, destroying the carport and damaging the car parked underneath it. In McLoud, high winds caused damage to trees and power poles.

Noble County 4 NE Red Rock	04	1830CST			0 0	? ?	Hail (0.75)
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An isolated severe thunderstorm produced dime-size hail in Noble County, northeast of Red Rock.

Washington County Dewey	04	1930CST			0 0	4 ?	Lightning
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Lightning struck a house in Dewey, and the resulting fire caused an estimated \$35,000 damage to the structure.

Kay County Braman	10	1500CST			0 0	? ?	Thunderstorm Winds
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A severe thunderstorm caused tree and power pole damage at Braman.

Garfield County Woodring Airport	11	1512CST			0 0	4 ?	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

OKLAHOMA Cont'd

Woodward County 8 SW Woodward	11	1515CST			0	0	3	?	Thunderstorm Winds Hail (1.00)
Ellis County 4 SE Gage	11	1515CST			0	0	?	?	Thunderstorm Winds (G70)
4 SE Gage	11	1545CST			0	0	?	?	Hail (0.88)
Osage County Hulah	11	1720CST			0	0	?	?	Thunderstorm Winds
Washington County Bartlesville	11	1730CST			0	0	4	?	Thunderstorm Winds
Garfield County Barr	11	1741CST			0	0	?	?	Thunderstorm Winds (G61)

Severe thunderstorms produced hail and damaging winds across portions of northern Oklahoma. In Enid, strong winds blew down tents that were set up at Woodring Airport for the city's summerfest. A 100- by 300-foot concession tent and a 60- by 80-foot arts and crafts tent were destroyed. Some minor flooding was caused by the torrential rainfall of 2.50 inches in 1 hour that accompanied the storm. In Enid, severe thunderstorm winds ripped part of the roof off an automobile repair shop. In Woodward, tree and power line damage caused by the strong winds was reported. In Hulah and Bartlesville, tree and power-line damage was reported. On the northern side of Bartlesville, the roof was taken off a doctor's office by winds from a severe thunderstorm.

Blaine County 1 E Hitchcock	12	1745CST			0	0	?	?	Thunderstorm Winds
Mayes County 2 WNW Adair	12	1900CST			0	0	?	?	Thunderstorm Winds
Kingfisher County Loyal	12	1902CST	0.5	100	0	0	0	0	Tornado (F0)

Severe thunderstorms downed trees near Hitchcock in Blaine County. In Mayes County, a severe thunderstorm blew a mobile home off its foundation and out of its tie-downs. A large sheet metal barn was destroyed when it was blown 350 feet into trees. Total damage to the mobile home and barn was \$42,000. In Kingfisher, a weak tornado (F0) touched down briefly near Loyal, but did not cause damage. Radar indicated no circulation with the parent thunderstorm, and analysis of the videotapes of the storm indicate it was a landspout-type tornado.

Le Flore County Wister	13	1435CST			0	0	?	?	Thunderstorm Winds
Caddo County 8 S Anadarko	13	1440CST			0	0	?	?	Hail (1.00)
Kiowa County 7 S Mountain View	13	1535CST			0	0	?	?	Thunderstorm Winds (G54)
Comanche County 5 NE Faxon	13	1600CST			0	0	?	?	Thunderstorm Winds (G65) Hail (0.75)
2 S Lawton	13	1620CST			0	0	3	?	Thunderstorm Winds
Kiowa County 3 NE Hobart	13	1630CST			0	0	?	?	Hail (1.00)
Washita County 1 NW Cowden	13	1630CST			0	0	?	?	Hail (0.88)
Comanche County 4 E Sterling	13	1700CST			0	0	?	?	Hail (0.88)
Lawton	13	1700CST			0	0	4	?	Lightning
Grady County 5 WSW Rush	13	1730CST			0	0	?	?	Hail (1.25)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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OKLAHOMA Cont'd

Springs Canadian County 5 E Niles	13	1730CST			0	0	?	?	Thunderstorm Winds (G52)
Jefferson and Stephens Counties 2 SSE Loco	13	1740CST			0	0	?	?	Thunderstorm Winds (G52)
Garvin County Maysville	13	1745CST			0	0	?	?	Hail (1.75)
Grady County 3 S Rush Springs	13	1800CST			0	0	?	?	Hail (1.75)
Garvin County 3 W Maysville	13	1810CST			0	0	?	?	Thunderstorm Winds
Pushmataha County 2 S Honobia	13	1810CST			0	0	?	?	Hail (0.75)
Pontotoc County 3.5 S Jesse	13	1830CST			0	0	?	?	Thunderstorm Winds
Murray County Sulphur	13	1930CST			0	0	?	?	Hail (1.00)

Severe thunderstorms produced numerous reports of large hail and wind damage across the southwestern portion of the state, and one report of damaging winds across the southeastern portion of Oklahoma. Trees were downed by the strong winds west of Maysville, southeast of Loco, south of Jesse, and at Wister. South of Lawton, thunderstorm winds caused damage to a carport and to a wellhouse. In Lawton, lightning struck two homes, causing an estimated \$7,000 damage to wiring and appliances within the homes.

Jefferson and Stephens Counties 2 SSW Loco	13	1935CST			0	0	?	?	Thunderstorm Winds (G52)
Sequoyah County Sallisaw	14	2000CST			1	0	?	?	Excessive Heat

A 31-year-old man was found dead of heat stroke in a hayfield where he was working. (M310)

Major County 4 S Ringwood	19	1557CST			0	0	?	?	Thunderstorm Winds (G50)
Grant County 5 N Nash	19	1603CST			0	0	?	?	Thunderstorm Winds (G52)
Haskell County 2 E McCurtain	19	1625CST			0	0	?	?	Thunderstorm Winds (G52)
Grant County 8 N Nash	19	1630CST			0	0	?	?	Thunderstorm Winds
Latimer County 3 NE Bengal	19	1700CST			0	0	?	?	Thunderstorm Winds (G56)

Isolated severe thunderstorms developed across northwestern and southeastern Oklahoma during the afternoon hours. Tree damage was reported north of Nash and northeast of Bengal.

Caddo County 1 N Carnegie	21	1607CST			0	0	?	?	Thunderstorm Winds (G52)
Washita County Corn	21	1620CST			0	0	?	?	Thunderstorm Winds (G61)

Isolated, severe afternoon thunderstorms developed across western Oklahoma, with two reports of strong winds.

Kay County 3 NNE Ponca City	23	1840CST			0	0	?	?	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		
OKLAHOMA Cont'd								
Early evening thunderstorms across north-central Oklahoma produced wind damage to power poles near Ponca City.								
Tonkawa	24	0822CST			0	0	3 ?	Lightning
Lightning struck a home in Tonkawa causing minor damage.								
Sequoyah County 2 NE Sallisaw	24	1520CST			0	0	5 ?	Thunderstorm Winds
Severe thunderstorm winds destroyed six barns and damaged several homes near Sallisaw.								
Comanche County Lawton	27	0500CST			0	0	? ?	Flash Flood
Stephens County Comanche	27	0800CST			0	0	? ?	Flash Flood
OREGON								
Malheur County Nyssa	13	Night			0	0	5 0	Thunderstorm Winds
A 16,000 square foot onion storage shed that was under construction was blown over and flattened by the wind.								
Josephine County Grants Pass	22	1940PDT			0	0	5 ?	Thunderstorm Winds
Grants Pass	22	2040PDT			0	0	5 0	Thunderstorm Winds
Sixty-mph wind gusts blew trees onto automobiles and homes. Power lines fell on an auto parts manufacturing warehouse and caused a fire that resulted in a total loss of the building.								
Jackson County Countywide	22	1800PDT- 2330PDT			0	0	4 ?	Thunderstorm Winds
There was widespread structural damages from falling trees. Wind gusts to 49 mph were reported at Sexton Summit, and gusts to 46 mph at Medford.								
Clatsop County Knappa	24	1100PDT			0	0	3 0	Lightning
Lightning strikes caused damage to homes.								
Deschutes County 4 SW Sunriver	24	1500PDT			0	0	4 0	Hail (0.75)
Lapine	24	1600PDT			0	0	4 ?	Hail (1.50)
Lake County 6 NE Silvere Lake	24	Afternoon			0	0	4 ?	Flash Flood
Hail broke windows, windshields, and damaged vehicles, roofs, and satellite dishes; and was reported to be 6 to 8 inches deep on Century Drive and 4 to 6 inches deep on Highway 97. Snow plows were used to clear the roads. In Lapine, 4.8 inches of rain fell in 1 hour. Part of Arrow Gap Highway in Lake County, was washed out by mudslides that deposited mud and boulders in adjoining alfalfa fields. Bales from a hay lot were washed 0.25 mile away.								
Columbia County Scappoose	31	1838PDT			0	0	? 0	Hail (1.00)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm
					Killed	Injured	Property Crops	

OREGON Cont'd

Washington County Banks	31	1840PDT			0	0	?	0	Hail (1.00)
Multnomah County Countywide	31	2015PDT			0	0	?	0	Hail (1.50)

Several thunderstorm cells around the Portland metro area prompted public reports of large hail, but no details of damages. A National Weather Service employee reported 0.33 inch of rain in Vancouver, WA, (Clark County) in 5 minutes.

PENNSYLVANIA, Eastern

Huntingdon County Alexandria	05	1620EST			0	0	4	0	Thunderstorm Winds Hail (1.75)
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Thunderstorm wind gusts downed trees and caused some structural damage to buildings. Hail from pea- to golf ball-size was reported and some street flooding occurred.

Franklin County Upper Strasburg	05	2200EST			0	0	?	?	Hail (1.00)
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One-inch hail was reported in Upper Strasburg.

Lebanon County Millardsville	06	1815EST			0	0	4	0	Thunderstorm Winds
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Thunderstorm wind gusts tore the steeple off a church, the roofs off nearby mobile homes, and limbs off a nearby tree. Flying debris caused minor damage to automobiles parked near the church.

Schuylkill County McAdoo	07	0900EST			0	3	0	0	Lightning
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Three people were slightly injured at an automobile show when lightning struck nearby.

Lehigh County Allentown	07	0953EST			0	0	3	0	Thunderstorm Winds Lightning
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Thunderstorm wind gusts downed several large trees that caused minor damage to houses and automobiles. Lightning struck the corner of a commercial building and knocked bricks off.

Chester County St. Peters	07	1015EST			0	0	4	0	Thunderstorm Winds
Phoenixville	07	1030EST			0	0	5	0	Thunderstorm Winds
Kimberton	07	1030EST			0	0	4	0	Thunderstorm Winds
2 SE Phoenixville	07	1045EST			0	0	4	0	Thunderstorm Winds
2 SE Phoenixville	07	1045EST			0	0	0	3	Hail (?)
Charlestown	07	1045EST			0	0	3	0	Lightning

Thunderstorm wind gusts downed many trees in Phoenixville, and took the roof off a house and the junior high school. At the Kimberton Fairgrounds, a portion of a large building was blown down. In St. Peters, a dozen trees were downed, one heavily damaging a house and one damaging an automobile. The trees were uprooted, broken off, or splintered. South of Phoenixville, many trees were downed on a farm with one falling on the house. Hail of undetermined size destroyed half the corn crop. In the same area, a tree came down on a camper trailer causing extensive damage. A lightning strike at a farm near Charlestown killed a bull and five cows.

1 N West Chester	07	1045EST			0	0	?	0	Thunderstorm Winds (G56)
2 E Exton	07	1045EST			0	0	3	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

PENNSYLVANIA, Eastern Cont'd

New London	07	1048EST			0	0	7	0	Thunderstorm Winds (G52)
Berwyn	07	1050EST			0	0	4	0	Thunderstorm Winds
Strafford	07	1054EST			0	0	3	0	Thunderstorm Winds (G69)
Devon	07	1054EST			0	0	3	0	Thunderstorm Winds

In North Hills, just north of West Chester, wind gusts estimated at 65 mph moved a small automobile. Small hail also fell. Small trees were uprooted in Glen Loch just east of Exton. Wind gusts were estimated at 60 mph at New London. Southeast of Strafford near Wayne in Delaware County, 0.25-inch hail fell and trees were downed by wind gusts estimated at 75 to 80 mph. In Berwyn wind gusts lifted up the edge of a house roof. Wind gusts downed trees in Devon and utility lines were downed.

Montgomery County

East Greenville	07	1000EST			0	0	3	0	Thunderstorm Winds
Pennsburg	07	1000EST			0	0	3	0	Thunderstorm Winds
Royersford	07	1010EST			0	0	?	?	Hail (0.75)
Norristown	07	1045EST			0	0	3	0	Thunderstorm Winds
Audubon	07	1045EST			0	0	3	0	Thunderstorm Winds
4 NE Norristown	07	1045EST			0	0	4	0	Lightning
4 SE Norristown	07	1050EST			0	0	3	0	Thunderstorm Winds
Bridgeport	07	1050EST			0	0	3	0	Thunderstorm Winds
Conshohocken	07	1050EST			0	0	5	0	Thunderstorm Winds
King of Prussia	07	1057EST			0	0	?	0	Thunderstorm Winds (G52) Hail (0.75)
Ardmore	07	1100EST			0	0	3	0	Thunderstorm Winds
Spring Hill	07	1050EST			0	0	4	0	Thunderstorm Winds

Thunderstorm wind gusts downed trees and utility lines across the county. Near East Greenville, siding was blown off a house. In Whitmarsh Township, southeast of Norristown, a tree fell on two automobiles. In Conshohocken, a portion of the roof was blown off a house. A lightning-caused house fire resulted in extensive damage in Whitpain Township, northeast of Norristown. Three-quarter-inch hail was reported at Royersford. In King of Prussia, wind gusts were estimated at 60 mph and 0.50- to 0.75-inch hail fell. Power outages were so widespread that dry ice was distributed to help preserve frozen food. A large tree came down on a house in Spring Mill and caused damage. Many trees were downed in Ardmore and locations with some trees falling on automobiles and houses.

Delaware County

Villanova	07	1050EST			0	0	?	0	Thunderstorm Winds (G53)
Wayne	07	1050EST			0	0	3	0	Thunderstorm Winds
Radnor	07	1104EST			0	0	3	0	Thunderstorm Winds (G52)
1.5 N Newton Square	07	1115EST			0	0	3	0	Thunderstorm Winds
Newtown Square	07	1118EST			0	0	4	0	Thunderstorm Winds
Upper Darby	07	1118EST			0	0	3	0	Thunderstorm Winds
Wallingford	07	1125EST			0	0	3	0	Thunderstorm Winds
Ridley Park	07	1128EST			0	0	3	0	Thunderstorm Winds

Thunderstorm wind gusts downed many trees and utility lines throughout the county. In Newton Square and other locations, trees fell on houses and automobiles. Wind gusts were estimated at 60 mph in Villanova. Windows were blown out of a house in Upper Darby. Tens of thousands of customers lost electrical power, and the widespread problem was so long in correcting that the utility company distributed dry ice to customers.

Philadelphia County

1 NW Chestnut Hill	07	1050EST			0	0	4	0	Thunderstorm Winds
Bustleton	07	1106EST			0	0	?	0	Thunderstorm Winds (G53)
Roxborough	07	1105EST			0	0	3	0	Thunderstorm Winds
Germantown	07	1110EST			0	0	4	0	Thunderstorm Winds
2 E Germantown	07	1110EST			0	0	3	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

PENNSYLVANIA, Eastern Cont'd

4 W Bridesburg	07	1110EST			0	12	4	0	Thunderstorm Winds
2 S Lawndale	07	1115EST			0	0	3	0	Thunderstorm Winds
1 E Overbrook	07	1115EST			0	0	4	0	Thunderstorm Winds

Thunderstorm wind gusts downed trees and utility lines. One tree fell on a house near Germantown. A falling tree destroyed two buildings at the Morris Arboretum, northwest of Chestnut Hill in northeastern Philadelphia. The wind gusts were estimated in excess of 60 mph. In the Fairmount Park, east of Overbrook, a huge 200-year-old oak tree was brought down. The tree was one of several across the country designated as a "Constitution Tree," meaning that it had been alive when the Constitution was signed in 1787. In north Philadelphia, west of Bridesburg, the winds blew down a large tent at a religious meeting injuring 12 people.

Huntingdon County

Cassville	07	1205EST			0	0	3	0	Thunderstorm Winds
Orbisonia	07	1205EST			0	0	3	0	Thunderstorm Winds
Cassville	07	1207EST			0	0	?	?	Hail (1.00)

Thunderstorm wind gusts downed several trees and utility lines. Nickel-size hail fell at Cassville.

York County

Heidlersburg	07	1210EST			0	0	?	?	Hail (1.00)
Hanover	07	1220EST			0	0	0	0	Funnel Cloud
2 E Shrewsbury	07	1250EST			0	0	?	?	Thunderstorm Winds (G65)

Thunderstorm wind gusts downed trees and utility lines and were reported at 75 mph in the southwestern part of the county near Hanover. One-inch hail fell in Heidlersburg.

Franklin County

Chambersburg	07	1145EST			0	0	5	0	Thunderstorm Winds (G61)
Mont Alto	07	1200EST			0	0	5	0	Thunderstorm Winds
Waynesboro	07	1210EST			0	0	3	0	Thunderstorm Winds

Thunderstorm wind gusts downed many trees and utility lines in Chambersburg. The entire roof was blown off a commercial building, and a 60-foot conveyor belt was moved 15 to 20 feet. Trees were downed in Greene, Guilford, and Hamilton Townships surrounding Chambersburg. Trees and utility lines were downed in Mont Alto and Waynesboro. One string of five utility poles in a row was downed near Mont Alto.

Adams County

Abbottstown	07	1210EST			0	0	3	0	Thunderstorm Winds
Gettysburg	07	1215EST			0	0	?	0	Thunderstorm Winds (G50)

Thunderstorm wind gusts blew over scaffolding in Abbottstown and were reported at 58 mph in Gettysburg. Hail measuring 0.50 inch in diameter was reported.

Chester, Delaware, Montgomery and Philadelphia Counties

13		0430EST- 0800EST			0	0	5	0	Flash Flood
13		1830EST			0	0	4	0	Flash Flood

Heavy rainfall of 3.00 to 5.00 inches caused widespread drainage flooding of roadways, homes, other buildings, yards, and fields. Many small streams overflowed. Many basements were flooded because of 4.00 inches or more of rain that fell in a 2-hour period during the morning. Another 2.00 inches of rain fell during the evening. At Royersford in Montgomery County, the weight of rain caused part of a warehouse roof to collapse along with one wall.

Chester County

6 N West Chester	13	1830EST			0	0	3	0	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		
PENNSYLVANIA, Eastern Cont'd									
Thunderstorm wind gusts downed trees and utility lines.									
Philadelphia County 1 N Philadelphia International Airport	13	1905EST			0	0	?	0	Hail (0.75)
Dime-size hail fell in southern Philadelphia.									
Montgomery County La Mott Jenkintown	13	1950EST			0	0	3	0	Thunderstorm Winds
	13	1950EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts downed trees.									
Northampton County 1.5 SE Treichlers	22	1520EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts blew an empty mobile home over, southeast of Treichlers, near Laury's Station. There also were many broken tree branches in Northampton.									
Chester County Phoenixville	22	1520EST			0	0	4	0	Thunderstorm Winds
Thunderstorm wind gusts downed trees in and around Phoenixville. One tree brought down a chimney as it fell. One large tree limb came down on an automobile.									
Tioga County Wellsboro Wellsboro	23	1212EST			0	0	3	0	Thunderstorm Winds
	23	1244EST			0	0	4	0	Thunderstorm Winds
Thunderstorm wind gusts downed trees and utility lines. One tree fell on a house, and large tree limbs were downed across one highway. The wind gusts also damaged one roof.									
Bradford County Canton 1 N Laceyville	23	1237EST			0	0	3	0	Thunderstorm Winds
	23	1326EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts brought down trees and utility lines at Canton. Trees were downed across a road north of Laceyville. The town of Laceyville is just across the county line in Wyoming County.									
Centre County State College State College	23	1304EST			0	0	?	0	Thunderstorm Winds (G83)
	23	1415EST			0	0	3	0	Thunderstorm Winds
Ninety-five-mph wind gusts downed large trees and utility lines.									
Lycoming County S Williamsport 1.5 W Duboistown Duboistown Nisbet Pennsdale Montgomery Muncy Muncy	23	1320EST			0	0	3	0	Thunderstorm Winds
	23	1324EST			0	0	3	0	Thunderstorm Winds (G52)
	23	1329EST			0	0	3	0	Thunderstorm Winds
	23	1331EST			0	0	3	0	Thunderstorm Winds
	23	1400EST			0	0	3	0	Thunderstorm Winds
	23	1400EST			0	0	3	0	Thunderstorm Winds
	23	1431EST			0	0	4	0	Thunderstorm Winds
	23	1450EST			0	0	3	0	Thunderstorm Winds

Thunderstorm wind gusts downed many trees with many of them falling on utility lines. At least one tree was uprooted in Montgomery. The wind gusts were estimated at 60 mph, just west of

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
PENNSYLVANIA, Eastern Cont'd									
Duboistown. In Muncy, thunderstorm winds downed trees with one falling on a house.									
Union County Hartleton	23	1330EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts downed trees and utility lines.									
Mifflin County 4 W McVeytown	23	1330EST			0	0	3	0	Thunderstorm Winds
0.5 E Lewistown	23	1450EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts downed large trees and utility lines.									
Wayne County 2 SW Uswick	23	1330EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts downed trees and utility lines.									
Huntingdon County Huntingdon	23	1335EST			0	0	3	0	Thunderstorm Winds
Huntingdon	23	1400EST			0	0	3	0	Thunderstorm Winds
McAlevys Fort	23	1500EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts downed trees and utility lines.									
Northumberland County Herndon	23	1345EST			0	0	?	0	Hail (0.75)
Milton	23	1347EST			0	0	?	0	Hail (0.75)
Herndon	23	1500EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts downed large trees. Milton and Herndon reported 0.75-inch hail and wind gusts to 56 mph.									
Columbia County Millville	23	1400EST			0	0	?	0	Hail (1.00)
Benton	23	1430EST			0	0	?	0	Thunderstorm Winds
Thunderstorm wind gusts downed trees in and around Benton. One-inch hail was reported at Millville.									
Lackawanna County 1.5 W Elmhurst	23	1430EST	0.3	50	0	0	3	0	Tornado (F1)
A brief tornado touchdown uprooted or damaged eight trees and caused minor structural damage to a garage and some roofing.									
Carbon County 5 NE Lehighton	23	1445EST			0	0	3	0	Thunderstorm Winds
Jim Thorpe	23	1445EST			0	0	3	0	Thunderstorm Winds
Thunderstorm wind gusts downed over a dozen trees in the Forest Inn subdivision northeast of Lehighton and also some trees in Jim Thorpe. Seven stands that were erected for a festival, were destroyed by thunderstorm winds northeast of Lehighton.									
Berks County 1 SW Shoemakersville	23	1520EST			0	0	5	0	Thunderstorm Winds
Shoemakersville	23	1530EST			0	0	?	?	Hail (1.75)
2 SE Topton	23	1620EST			0	0	4	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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PENNSYLVANIA, Eastern Cont'd

Thunderstorm wind gusts downed trees and damaged a barn and six houses near Shoemakersville. The barn had much of the roof and a wall damaged. All the homes in one development sustained roof damage. Several were severely damaged with much of the roof blown off and walls down. Swimming pools, swing sets, satellite dishes, storage sheds, and other property were damaged or destroyed. Golf ball-size hail was reported. To the east, trees were downed in spots in Perry, Maiden Creek, Richmond, Rockland, and Longswamp Townships. A barn collapsed in Maiden Creek Township, and a tree fell on a house in Longswamp Township.

Lebanon County
1 N Palmyra
1 W Lebanon
Fredericksburg

23	1525EST				0 0	4 0	Thunderstorm Winds
23	1530EST				0 3	4 0	Thunderstorm Winds
23	1535EST				0 0	3 0	Thunderstorm Winds

Thunderstorm wind gusts tore part of the roof off a barn north of Palmyra. The winds brought down and damaged a large circus-style tent in the parking lot of a department store. Three store employees in the tent received minor injuries. Trees were downed on a road near Fredericksburg and in other locations throughout the county.

Delaware County
Wayne

23	1630EST				0 0	3 0	Thunderstorm Winds
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Thunderstorm wind gusts downed trees. One tree brought down a utility pole and a basketball hoop and came down on two automobiles.

Montgomery County
Villanova

23	1642EST				0 0	? 0	Thunderstorm Winds (G53)
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Thunderstorm winds estimated at 50 to 60 mph with higher gusts, were reported.

Philadelphia County
2.5 NE Bustleton

23	1655EST				0 0	3 0	Thunderstorm Winds (G51)
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Thunderstorm wind gusts brought down large tree limbs and television antennas and were estimated at greater than 58 mph.

PAZ00E
Eastern
Pennsylvania

15	0900EST-						
25	1700EST				25 ?	? ?	Heat Wave

Hot humid weather prevailed over eastern Pennsylvania during the 11-day period. The temperature reached 90° or higher on 11 consecutive days at Harrisburg, on 9 days at Philadelphia, on 8 days at Williamsport and in the Wilkes-Barre Scranton area, and on 7 days at Allentown. It was 100° or more on 2 days at Williamsport and on 4 days at Harrisburg. This was during a month when Harrisburg hit 90° or more on 15 days, Philadelphia on 13 days, and Williamsport on 10 days. The hot weather took its toll in Philadelphia where 25 deaths were attributed to the heat. The deaths were mostly of older people (13 men, 12 women) with ages ranging from 54 to 92.

PAZ00E
Eastern Pennsylvania,
Except Five
Southeastern Counties

All	Month				0 0	? 8	Drought
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Hot dry weather in July followed a dry June that resulted in drought conditions over much of Pennsylvania. Only the five southeastern counties of Bucks, Montgomery, Chester, Delaware, and Philadelphia received enough rain to keep out of drought conditions. By the end of July, the rainfall deficiency ranged from 5.00 to nearly 10.00 inches below normal over eastern Pennsylvania, except in the southeastern counties. York County was the driest at 9.90 inches below normal. The hot dry conditions resulted in considerable crop damage or crop loss. The dollar loss was as much as \$21 million in one county alone. The lack of rainfall resulted in drought emergency declarations and restrictions placed on water use. The low level of streams and other water bodies caused damage to aquatic life.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
PENNSYLVANIA, Western									
Indiana County Indiana	04	1530EST			0	0	5	0	Heavy Rain
In Indiana, approximately 2.00 inches of rain fell. Under weight of water, a 50- by 100-foot flat gravel roof collapsed. The cost of structural and equipment damage due to water was placed at \$100,000.									
Butler County Butler	05	1310EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Butler by thunderstorm winds.									
Cambria County 15 NE Ebensburg	05	1530EST			0	0	0	0	Thunderstorm Winds
Large branches were downed in Prince Gallitzan State Park.									
Venango County Franklin	05	1530EST			0	0	2	0	Thunderstorm Winds
Roads were blocked and trees were downed on cars resulting in minor damage in Franklin.									
Clarion County 4 NW Clarion	05	1630EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Shippenville and Marianne.									
Northern Portion	05	2050EST			0	0	0	0	Funnel Cloud
A funnel cloud was sighted at Deer Meadows in north Clarion County.									
13 S Clarion	06	1240EST			0	0	0	0	Thunderstorm Winds
Trees and power lines were downed in New Bethlehem.									
Venango County 12 SE Franklin	06	1500EST			0	0	0	0	Thunderstorm Winds
Trees were downed in southern Venango County near Nickleville.									
Westmoreland County 21 NW Greensburg	06	1520EST			0	0	4	0	Thunderstorm Winds
A tree fell on a camper trailer in lower Burrell trapping people inside. The camper was a total loss.									
Indiana County 6 S Indiana	06	1600EST			0	0	0	0	Thunderstorm Winds
Trees were downed on Route 3014 in Homer City.									
Westmoreland County 5 S Greensburg	06	1600EST			0	0	2	0	Thunderstorm Winds
An aluminum shed in Youngwood was blown apart and trees were downed.									
Allegheny County Pittsburgh Airport	06	1621EST			0	0	0	0	Hail (0.75)
A ground observer reported 0.75-inch hail at the Pittsburgh Airport.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
PENNSYLVANIA, Western Cont'd									
Butler County 9 SW Butler	06	1629EST			0	0	0	0	Thunderstorm Winds Hail (0.75)
Trees were downed in Middlesex, and 0.75-inch hail fell at Mars.									
Allegheny County Pittsburgh Airport	06	1642EST			0	0	0	0	Thunderstorm Winds
Thunderstorm wind gusts to 61 mph were reported at greater Pittsburgh Airport.									
Butler County 12 S Butler	06	1648EST			0	0	0	0	Thunderstorm Winds
Trees were downed 7 miles east of Mars.									
Westmoreland County 24 N Greensburg 4 SW Greensburg 7 S Greensburg	06	1658EST			0	0	3	0	Thunderstorm Winds
Trees and power lines were downed in Allegheny and Hempfield Townships. A tree fell on a camper in lower Burrell. Five telephone poles were downed in Norvelt, and large trees and power lines were downed from New Kensington to Greensburg.									
Fayette County 15 N Uniontown	06	1820EST			0	0	0	0	Hail (0.75)
Penny-size hail fell at Everson.									
Venango County Franklin	06	2004EST			0	0	0	0	Thunderstorm Winds
The Oil City Police Department reported trees and power lines downed in Franklin.									
Erie County Erie	07	0300EST			0	0	0	0	Thunderstorm Winds
Large trees and power lines were downed in Erie.									
15 SW Erie	07	0315EST			0	0	0	0	Thunderstorm Winds
Power lines and large trees were downed in Lake City.									
Warren County 6 W Warren	07	0400EST			0	0	0	0	Thunderstorm Winds
Large trees were downed near Youngsville.									
Erie County Erie	07	0415EST			0	0	4	0	Thunderstorm Winds
Fifty-eight-mph wind gusts blew a 34-foot sailboat fell off its cradle onto a sports car in Marina, near Erie.									
10 SE Erie	07	0445EST			0	0	0	0	Thunderstorm Winds
Wind gusts of 75 mph were reported 5 miles north of Waterford.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
PENNSYLVANIA, Western Cont'd									
McKean County Bradford	07	0500EST			0	0	0	0	Thunderstorm Winds
									Large trees and power lines were downed near Bradford.
Crawford County 6 N Meadville	07	0505EST			0	0	0	0	Thunderstorm Winds
									Power lines and trees were downed in Saegertown.
Erie County 8 SW Erie	07	0515EST			0	0	0	0	Thunderstorm Winds
									Power lines and trees were downed at Girard and Fairview.
Crawford County Meadville	07	0630EST			0	0	0	0	Thunderstorm Winds
									Large trees were downed at Meadville.
22 E Meadville	07	0700EST			0	0	0	0	Thunderstorm Winds
									Power lines were downed at Meadville, and telephone poles were downed at Titusville.
Erie County 12 SW Erie	07	0700EST			0	0	0	0	Thunderstorm Winds
									Large trees were downed on Route 20 in Fairview.
Indiana County 21 NE Indiana	07	1016EST			0	0	0	0	Thunderstorm Winds
									Trees were downed in Cherry Tree by thunderstorm winds.
Clearfield County 20 SW Clearfield	07	1038EST			0	0	0	0	Thunderstorm Winds
									Trees and wires were downed at Burnside.
Blair County 3 SE Altoona	07	1043EST			0	0	0	0	Thunderstorm Winds
									Trees were downed in Frankstown.
Cambria County 12 NW Ebensburg	07	1100EST			0	0	0	0	Hail (0.75)
									Spangler reported 0.75-inch hail.
Blair County 6 N Altoona	07	1105EST			0	0	0	0	Thunderstorm Winds
									Trees were downed 6 miles north of Altoona.
Cambria County 13 NW Ebensburg	07	1112EST			0	0	0	0	Thunderstorm Winds
									Trees were downed in Barnesboro.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
PENNSYLVANIA, Western Cont'd									
Ebensburg	07	1119EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Ebensburg by thunderstorm winds.									
Mercer County Sharon	07	1330EST			0	0	0	0	Thunderstorm Winds
Trees were downed near Sharon, at Route 62.									
Beaver County Industry	07	1820EST			0	0	0	0	Funnel Cloud
A funnel cloud was sighted over Industry.									
Fayette County 12 E Uniontown 11 SE Uniontown	07	1830EST			0	0	0	0	Thunderstorm Winds
Trees and power lines were downed in Ohiopyle, Farmington, and Markleysburg.									
Somerset County 6 NW Somerset	07	1830EST			0	0	4	0	Lightning
Between Edie and Roytown, 16 cows (valued at \$19,000) were struck and killed by lightning.									
Venango County 8 SE Franklin	07	2015EST			0	0	0	0	Thunderstorm Winds
Trees were downed near Cranberry by thunderstorm winds.									
Erie County Erie 17 SW Erie	07	2212EST			0	0	2	0	Thunderstorm Winds
Thunderstorm wind gusts to 69 mph were reported at Erie International Airport. A tree was downed in Harbor Creek. Windows were blown out in Franklin when winds gusted to 67 mph.									
Mercer County 14 NW Mercer	07	2215EST			0	0	3	0	Thunderstorm Winds
A tree was blown into a house in Greenville resulting in damage to the roof, gutters, windows, and overhangs.									
Erie County Erie	07	2215EST			0	0	3	0	Thunderstorm Winds
A swimming pool was destroyed when a tree fell in it.									
Crawford County 7 NW Meadville	07	2220EST			0	0	0	0	Thunderstorm Winds
Large trees were downed along Route 98 and 198 northwest of Meadville.									
Erie County Erie	07	2225EST			0	0	3	0	Thunderstorm Winds
Trees and power lines were downed in Erie, and approach towers were bent at the airport.									
20 SW Erie	07	2225EST			0	0	4	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
PENNSYLVANIA, Western Cont'd									
In Cranesville, a garage roof was blown onto two cars, and the thunderstorm winds took the side of a house off.									
Crawford County 9 W Meadville	07	2230EST			0	0	0	0	Thunderstorm Winds
Large trees were downed, and power outages occurred at Conneaut.									
Warren County 8 NW Warren	07	2240EST			0	0	0	0	Thunderstorm Winds
Numerous large trees were downed northeast of Youngsville.									
Crawford County 15 E Meadville	07	2250EST			0	0	3	0	Thunderstorm Winds
Trees were downed on homes in Townville.									
Butler County 12 NW Butler	07	2250EST			0	0	3	0	Thunderstorm Winds
A barn roof was blown off in Portersville, near Route 19.									
Washington County 11 SW Washington 16 NW Washington Washington 16 W Washington 10 NE Washington	07	2300EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Claysville, Taylorston, Avella, Paris, Independence, Washington, Eighty Four, Burgettstown, and McMurray.									
Crawford County 20 E Meadville	07	2301EST			0	0	0	0	Thunderstorm Winds
Trees were downed near Titusville.									
Erie County Erie	07	2305EST			0	0	0	0	Thunderstorm Winds
Thunderstorm winds downed trees and power lines in Presque Isle.									
Beaver County 7 S Beaver	07	2307EST			0	0	0	0	Hail (0.75)
Hail measuring 0.75 inch was reported at Aliquippa.									
Venango County 7 NE Franklin	07	2310EST			0	0	0	0	Thunderstorm Winds Hail (0.75)
Large trees and power lines were downed and 0.75-inch hail was reported in Oil City.									
Butler County 9 S Butler	07	2315EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Glade Mills.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
PENNSYLVANIA, Western Cont'd									
Warren County Warren	07	2320EST			0	0	?	0	Thunderstorm Winds Lightning
Large trees were downed and lightning strikes to homes were reported in Warren.									
Forest County 17 E Tionesta	07	2330EST			0	0	0	0	Thunderstorm Winds
Trees were downed near Marienville.									
Elk County Ridgway	07	2330EST			0	0	0	0	Thunderstorm Winds
Power lines and trees were downed in Ridgway.									
Allegheny County 3 N Pittsburgh	07	2335EST			0	0	?	0	Thunderstorm Winds Lightning
Trees were downed on the northern side of Pittsburgh, and a transformer was struck by lightning.									
Washington County Washington 14 SE Washington	07	2337EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Washington and Bentleyville.									
Armstrong County Kittanning	07	2338EST			0	0	2	0	Lightning
A chimney was hit by lightning in Troy Hill.									
McKean County 21 SW Smethport	07	2340EST			0	0	0	0	Thunderstorm Winds
Trees were downed west of Kane.									
Beaver County	07	2345EST			0	0	0	0	Thunderstorm Winds
Trees were downed all over the county.									
Clarion County 15 SE Clarion 6 W Clarion	07	2345EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Hawthorn and between Knox and Shippenville.									
Westmoreland County 21 NW Greensburg 7 W Greensburg 17 SW Greensburg	07	2345EST			0	0	0	0	Thunderstorm Winds
Trees were downed and power outages were reported in Murrysville, New Kensington, Export, Sutersville, Circleville, Carbon, and Grapeville.									
Allegheny County 12 NE Pittsburgh Airport 16 E Pittsburgh	07	2356EST			0	0	1	0	Thunderstorm Winds Lightning
Trees were downed in Curtisville and Tarentum. Lightning struck a house in Plum causing minor damage.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property Crops	Character of Storm
PENNSYLVANIA, Western Cont'd								
Clarion County 9 NW Clarion	08	0000EST			0	0	0	Thunderstorm Winds Trees and power lines were downed in Knox.
Fayette County 18 NW Uniontown	08	0000EST			0	0	0	Thunderstorm Winds Trees and power lines were downed in Belle Vernon and Fairhope.
Lawrence County Northwestern and Southwestern Portions	08	0000EST			0	0	0	Thunderstorm Winds Large branches and power lines were downed in southwestern and northwestern portions of the county.
Armstrong County Kittanning 14 SW Kittanning	08	0010EST			0	0	0	Thunderstorm Winds Trees and power lines were downed in east Franklin, Kittanning, and Leechburg.
Westmoreland County 22 NW Greensburg 21 NE Greensburg	08	0010EST			0	0	0	Thunderstorm Winds Trees were downed on Route 366 in New Kensington and Bolivar.
Somerset County 17 NE Somerset 19 SE Somerset	08	0015EST			0	0	0	Thunderstorm Winds Trees were downed in Paint and Fairhope.
Cambria County 3 SW Johnstown	08	0015EST			0	0	0	Thunderstorm Winds Wires and large branches were downed in Southmont.
5 W Johnstown	08	0030EST			0	0	0	Thunderstorm Winds Power lines and trees were downed in upper and lower Yoder.
Blair County 12 SE Altoona Altoona	08	0039EST			0	0	0	Thunderstorm Winds Trees and power lines were downed in Hollidaysburg, Williamsburg, Martinsburg, and Altoona.
Indiana County 14 NW Indiana 15 SW Indiana	08	0045EST			0	0	0	Thunderstorm Winds Trees were downed in Blairsville, Nowrytown, Glen Campbell, and Iselin.
Bedford County	08	0047EST			0	0	0	Thunderstorm Winds Trees and power lines were downed in Bedford County.
Cambria County	08	0050EST			0	0	4	Thunderstorm Winds A roof was blown off a house by thunderstorm winds, in the Westmont area.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		
PENNSYLVANIA, Western Cont'd									
Crawford County 18 SW Meadville	08	0055EST			0	0	0	0	Hail (1.00)
									One-inch hail fell near Jamestown.
Clearfield County Clearfield	08	0100EST			0	0	0	0	Thunderstorm Winds
									Trees and power lines were downed in Clearfield.
Mercer County Countywide	08	0100EST			0	0	0	0	Thunderstorm Winds
									Trees and power lines were downed throughout the county.
Cambria County 9 NW Ebensburg	08	0645EST			0	0	3	0	Lightning
									Lightning started a garage fire in Nicktown, causing \$4,000 in damage.
Allegheny County 3 SW Pittsburgh	13	1730EST			0	0	0	0	Thunderstorm Winds
									In Perrysville, trees were uprooted and some had their tops sheared off.
Crawford County 20 E Meadville	22	1625EST			0	0	0	0	Hail (0.75)
									Hydetown reported 0.75-inch hail.
McKean County Bradford	23	1100EST			0	0	0	0	Thunderstorm Winds
									Power lines and large tree limbs were downed in Bradford.
14 E Bradford	23	1115EST			0	0	0	0	Thunderstorm Winds
									Power lines and trees were downed in Eldred.
Mercer County 9 SW Mercer	23	1145EST			0	0	0	0	Thunderstorm Winds
									Trees were uprooted in Wilmington Township.
Lawrence County Countywide	23	1208EST- 1211EST	2.0	16	0	0	5	0	Tornado (F0)
									Large trees were broken off or uprooted and power lines were downed. At Jackson Knolls Gardens in North Beaver Township, tree limbs were driven through a roof all the way to the basement of a split-level home. In the Mount Jackson area, 2 miles to the east, trees were uprooted.
Cameron County 8 NW Emporium	23	1220EST			0	0	0	0	Funnel Cloud
									A funnel cloud was spotted 8 miles northwest of Emporium.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
PENNSYLVANIA, Western Cont'd									
Butler County 9 SE Butler	23	1230EST			0	0	0	0	Thunderstorm Winds
Trees were downed in Summit Township at Route 422 and Bonnie Brook Road, Jefferson Township at Dinner Bell Road, and Buffalo Township. Power lines were downed in Saxonburg and Wadsworth.									
12 SW Butler	23	1230EST- 1231EST	0.1	14	0	0	2	0	Tornado (F0)
The brief touchdown of an F0 tornado in Mars caused damage to a house. Oak trees were downed along 3 Degree Road.									
Elk County Ridgway 9 E Ridgway	23	1300EST			0	0	0	0	Thunderstorm Winds
Trees and power lines were downed at Ridgway and St. Marys.									
Allegheny County Pittsburgh	23	1315EST			0	0	3	0	Thunderstorm Winds
Trees and power lines were downed in Pittsburgh by thunderstorm winds. A tree was downed on Oakwood Bridge on Crafton Boulevard. Power lines were downed on a house on Dorseyville Road. Trees were downed on a house on Ennis Street, and on Robinson Run Road.									
Beaver County	23	1340EST			0	0	0	0	Thunderstorm Winds
Lines were downed in Beaver County by thunderstorm winds.									
Cameron County 3 NW Emporium	23	1340EST			0	0	0	0	Thunderstorm Winds
Large trees and power lines were downed along North Creek near Lockwood.									
Fayette County 22 NW Uniontown	23	1400EST			0	0	0	0	Thunderstorm Winds
Roads were blocked by downed trees in Belle Vernon and Braunstown, in Washington Township.									
Westmoreland County Latrobe	23	1415EST			0	0	0	0	Thunderstorm Winds
Trees and power lines were downed in Latrobe and along Route 30.									
18 NW Greensburg	30	1655EST			0	0	4	0	Thunderstorm Winds
Trees and power lines were downed in Allegheny and Washington Townships. A house under construction was blown down in Washington Township.									
Indiana County 18 SW Indiana	30	1710EST			0	0	0	0	Thunderstorm Winds
Large trees and power lines were downed in Saltsburg and Tunnelton, in Conemaugh Township.									
13 SE Indiana	30	1735EST			0	0	0	0	Thunderstorm Winds
Power lines and large trees were downed in Clyde and Armaugh, in Wheatfield Township by thunderstorm winds.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
RHODE ISLAND									
RIZ001	26	1500EST- 2100EST			0	0	?	0	Heavy Rain
Thunderstorms produced very heavy rain during short periods of time causing unusual flooding of isolated low-lying, poor-drainage locations.									
SOUTH CAROLINA									
Lexington County Columbia Metropolitan Airport	01- 31				0	0	0	0	Record Precipitation
The Columbia Metropolitan Airport set the all-time monthly precipitation record for that location with a total of 17.46 inches of precipitation. There were 18 days of 0.01 inch or more of precipitation; 8 days of 1.00 inch or more of precipitation; 3 days of 2.00 inches or more of precipitation, including one day of more than 4.00 inches of precipitation.									
Richland County 9 N Columbia	02	1630EST			0	0	?	?	Thunderstorm Winds
The roof was blown off the Linrick Golf Course clubhouse and several trees were downed by thunderstorm winds.									
Chesterfield County Pageland	03	Early Morning			0	0	4	0	Lightning
Lightning struck a tree and traveled to the ground killing two cattle that were huddled under it.									
Florence County Florence	03	0205EST			0	0	4	0	Lightning
Lightning struck the roof of a home, making a hole about 9 inches in diameter in a bedroom ceiling. There were no injuries.									
Calhoun County St. Matthews	03	1815EST			0	0	?	?	Thunderstorm Winds
A tree was blown down along U.S. Highway 601.									
Clarendon County 5 S Manning	03	1845EST			0	0	?	?	Thunderstorm Winds
Several power lines were blown down.									
Horry County 2 N Aynor	03	2100EST			0	0	?	?	Thunderstorm Winds
The Highway Patrol reported that large trees were blown down.									
Orangeburg County Orangeburg	03	2214EST			0	0	?	0	Urban Flooding
Several streets were flooded in Orangeburg.									
Lexington County West Columbia	03 04	2300EST- 0200EST			0	0	?	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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SOUTH CAROLINA Cont'd

Approximately 2.55 inches of precipitation fell in 2 hours at the Columbia Metropolitan Airport. Lightning caused power outages to 19,000 electric customers.

**Orangeburg County
North**

03	2355EST				0	0	3	0	Lightning
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Lightning struck a television antenna on a house, sparking a fire which caused \$2,000 in damages.

**Richland County
Columbia**

04	1605EST				0	0	5	0	Lightning
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Lightning struck the Coronet Hotel, sparking a fire that caused approximately \$350,000 in damage.

**Lexington County
South Congaree**

04	1730EST				0	0	?	0	Lightning
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Lightning struck several homes on East Hill Drive and on Longview Drive where a fire was sparked by the lightning.

**York County
York**

08	1700EST				0	1	0	0	Lightning
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A man was stunned, but not seriously injured, when lightning struck near him.

**Abbeville County
Abbeville**

09	Late PM				0	0	3	0	Thunderstorm Winds
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Three trees were blown down, causing \$1400 in damage to a house.

**Cherokee County
5 NW Gaffney**

10	1620EST				0	0	4	?	Thunderstorm Winds
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**Anderson County
Airport**

10	1627EST				0	0	3	0	Thunderstorm Winds (G50)
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**Spartanburg County
Spartanburg**

10	1635EST				0	0	4	0	Thunderstorm Winds (G80) Hail (1.00)
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**Union County
Union**

10	PM				0	0	3	0	Thunderstorm Winds
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A number of thunderstorms developed over the Upstate and several became severe for a short period of time. Microbursts caused substantial damage northwest of Gaffney, and on the west side of Spartanburg. A number of trees were uprooted, outbuildings were destroyed, and some vehicles were also damaged. Damage in Spartanburg County was \$46,000, and was estimated at \$25,000 in Cherokee County. Large hail fell in the Spartanburg storm. Residents were convinced they spotted a funnel cloud, but all described a clear lack of rotation indicating they probably saw clouds associated with the microburst. A storm survey found the point of impact in Spartanburg County with a clear diverging wind pattern. At the Anderson Airport, gusts to 50 knots peeled the tin roof back on a hangar. In Union, thunderstorm winds broke off the top half of a tree located at 118 Douglas Heights.

**Beaufort County
Beaufort and
Vicinity**

16	1000EST- 1345EST				0	0	?	0	Thunderstorm Winds (G50) Urban Flooding Lightning
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Thunderstorm winds and lightning caused power outages to parts of Beaufort for nearly 4 hours. Wind gusts to 56 mph were recorded at the Beaufort Marine Corps Air Station at 1304 EST and

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
		Local/ Standard			Killed	Injured			
SOUTH CAROLINA Cont'd									
Orangeburg County Neeses	21	1940EST			0	0	?	0	Urban Flooding
									Several roads were flooded.
Lee County Bishopville	24	1630EST			0	0	3	0	Thunderstorm Winds
									Thunderstorm winds destroyed a shed, and blew the roof off a garage near the new Central Correctional Institution on U.S. Highway 421.
Laurens County Cross Hill	24	1915EST			0	0	?	0	Thunderstorm Winds
Spartanburg County Spartanburg	24	2010EST			0	0	3	0	Thunderstorm Winds
Cherokee County Near Corinth	24	2020EST			0	0	?	0	Thunderstorm Winds
Gaffney	24	2040EST			0	0	?	0	Thunderstorm Winds
									A short line of thunderstorms formed in the western Upstate and moved east. A gust front just ahead of the line produced some damaging winds in a few spots, probably in the 60 to 65 mph range. Most reports of gusty winds were just below severe intensity (40 to 50 mph). One storm in the line became stronger than the others and produced some hail along with wind in the northern part of Spartanburg and Cherokee Counties. The size of the hail was not reported.
Spartanburg County Duncan	24	2345EST			1	0	0	0	Heat
									A 44-year-old man died of heat stroke 8 hours after heat related symptoms began. He complained of heat symptoms at his place of employment, left work early, and died at home. He worked in a non-air conditioned warehouse sorting merchandise, and died in a non-air conditioned attic in his home that had been converted into a bedroom. (M44P)
Lexington County Red Bank	25	0030EST			0	0	?	0	Lightning
									A house was struck by lightning and burned.
Irmo	25	0100EST			0	0	?	0	Thunderstorm Winds
									Several trees were uprooted, or blown down, in the Coldstream subdivision.
Richland County Columbia	27	1800EST- 2100EST			0	0	?	0	Flash Flood
									Heavy rains flooded streets in downtown and uptown Columbia. Some cars were swept away and asphalt destroyed.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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SOUTH CAROLINA Cont'd

Greenville County Greenville	27	1850EST			0	0	?	0	Flash Flood
Cherokee County 4 NE Cowpens	27	1910EST			0	0	4	5	Thunderstorm Winds (G60)
4 NE Cowpens	27	1910EST			0	0	5	?	Flash Flood
Spartanburg County Near Cowpens	27	1930EST			0	0	?	0	Thunderstorm Winds (G50)
Greenville County Mauldin	27	2045EST			0	0	?	0	Flash Flood
Laurens County Hickory Tavern	27	2050EST			0	0	?	0	Thunderstorm Winds

A complex, weak-flow pattern in a tropical air mass produced slow moving, merging thunderstorms which dumped huge amounts of rain quickly and became marginally severe in a few areas. A relatively minor flash flood event occurred in the city of Greenville when the Reedy River flooded, and some fairly severe urban flooding was reported. A cloudburst northeast of Cowpens caused substantial problems in Cherokee County. One rain gage measured 4.50 inches of precipitation in less than 2 hours. Maximum rainfall was estimated at 5 to 6 inches in the center of the damage area. Water was a couple of feet deep along Interstate Highway 85. Some creeks rose 10 to 12 feet very quickly closing roads and washing out a few bridges. Wind and water caused serious damage to the peach crops in a small area. A couple of houses received minor wind damage and a number of trees were uprooted. Some flooding was reported in Mauldin and a merging thunderstorm complex caused some wind damage in western Laurens County.

Newberry County Newberry	29	1900EST- 2030EST			0	0	?	0	Flash Flood
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Scott's Creek, in downtown Newberry, overflowed from flash flooding. Seven homes were damaged and all seven families were evacuated. The basement of the Bethlehem Baptist Church flooded with 6 feet of water. In Newberry, 25 roads were blocked. A sinkhole 9 feet deep and 6 feet in diameter developed in a residential yard; no injuries were reported.

Richland County Columbia	29	1600EST- 1730EST			0	0	?	0	Urban Flooding
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Heavy rains from thunderstorms caused flooding along Pendleton Street between Pickens and Henderson Streets, and also at the Booker T. Washington High School, on the University of South Carolina campus.

Sumter County Sumter	29	1720EST			0	0	4	0	Lightning
Sumter	29	1746EST			0	0	3	0	Lightning

Lightning started three fires in Sumter; one house had about \$14,000 in damage; another about \$4,000 in damage; and the third had negligible damage.

Hampton County Furman	29	PM			0	0	?	0	Urban Flooding
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In parts of Furman, 3.13 inches of rain in a few hours caused urban flooding.

Greenville County Greenville	30	0100EST			0	0	5	0	Flash Flood
Pickens County Southern Portion	30	0100EST			0	0	?	?	Flash Flood
Spartanburg County Campobello	30	0100EST			0	0	4	0	Flash Flood

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops	

SOUTH CAROLINA Cont'd

Slow moving, merging thunderstorms caused the most severe flash flood event so far this season in the city of Greenville. The Reedy River rose to about 12 to 14 feet very quickly. Severe urban flooding in the central and eastern sections of Greenville caused cars to be caught in flood waters and a couple of apartment complexes flooded. This was judged to be the worst flood event in the city since the early 1980's by some people, although much of the town was not affected. There would have been a great potential for injury had the event occurred earlier in the evening. The same event closed roads in southern Pickens County because of flooded creeks. At Campobello, a ball field suffered about \$5,000 in damage from a flash flood on the Pacolet River.

Beaufort County Pritchardville

30	1600EST							Lightning
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Lightning struck a pine tree, and continued on to strike a mobile home, melting a copper gas line on the mobile home. The ensuing fire caused about \$500 in damage to the mobile home's electrical system. The occupant of the mobile home was uninjured.

SOUTH DAKOTA

Hutchinson County 10 S Menno

05	1900CST							Thunderstorms Winds (G55)
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A roof was blown off a 15- x 45-foot shed. The strong wind damaged two cattle feeders and two power poles. A hog was electrocuted when it came in contact with the downed power lines.

Lincoln County Hudson

05	1930CST							Thunderstorms Winds (G50)
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Winds from thunderstorms knocked branches from trees that caused minor roof damage as they fell.

Turner County Davis Hurley

05	1940CST							Thunderstorm Winds (G50)
05	1950CST							Thunderstorm Winds (G75)

A downburst wind ripped the roof from a barn, overturned some hog barns, and tore the chimney from a house. Large hay bales and trees up to 2 feet in diameter were blown over.

Meade County Faith

06	0400CST							Lightning
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A huge hole was left in the roof of a house that was struck by lightning. The bolt of lightning started a small fire in the attic and blew out all of the light bulbs. It also blew the electric meter off the house, burned holes in copper water pipes, and destroyed most of the electrical outlets in the house. Due to the surge of high voltage in the wiring system, most of the appliances were destroyed. A man in the house at the time of the lightning strike suffered minor injuries.

McCook County

Spencer Minnehaha County

07	0500CST							Hail (1.50)
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Lyons Baltic Garretson

07	0550CST							Hail (3.50)
07	0555CST							Hail (0.75)
07	0615CST							Hail (1.00)

Hutchinson County

Freeman Yankton County

07	0725CST							Thunderstorm Winds (G52)
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Lesterville

07	0730CST							Hail (0.75)
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Turner County

Viborg

07	0745CST							Hail (1.50) Thunderstorm Winds (G61)
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

SOUTH DAKOTA Cont'd

Lincoln County

Lennox	07	0750CST			0	0	4	0	Thunderstorm Winds (G70)
Canton	07	0800CST			0	0	3	0	Thunderstorm Winds (G52)

As strong winds moved through Lennox and Canton, many trees were blown down and windows were blown from houses. The trees damaged cars and buildings as they fell. Damage was estimated at several thousand dollars.

Custer County

State Park	10	1810CST			0	0	2	3	Hail (2.75)
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Pennington County

Rapid City	11	1754CST			0	2	5	0	Thunderstorm Winds (G61)
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Strong winds damaged aircraft, automobiles, and hangars. Two people received minor injuries when they were struck by debris.

Johnson Siding

Hisega	16	1615CST			0	0	3	2	Hail (1.75)
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Marshall County

4 SE Veblen	16	1705CST			0	0	1	1	Hail (1.00)
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4 SE Veblen	17	1543CST			0	0	2	1	Hail (1.25)
	17	1600CST			0	0	2	1	Thunderstorm Winds (G52)

Thunderstorm winds broke off trees that were 4 to 5 inches in diameter.

Roberts County

13 SE Sisseton	17	1625CST	0.1	10	0	0	0	0	Tornado (F0)
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2 W Sisseton	17	1629CST			0	0	1	1	Hail (1.00)
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7 SW Sisseton	17	1636CST			0	0	1	1	Hail (0.75)
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A tornado touched down briefly, but no damage was reported.

Dewey County

Eagle Butte	17	1700CST			0	0	4	2	Thunderstorm Winds (G60)
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Thunderstorm winds overturned three large grain bins.

McCook County

Salem	18	1540CST			0	0	2	1	Hail (1.50)
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Brookings County

Brookings	18	1602CST			0	0	3	0	Thunderstorm Winds (G52)
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White	18	1630CST			0	0	4	0	Thunderstorm Winds (G52)
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Thunderstorm winds uprooted trees with one of them falling on a house in Brookings. At White, a large shed was destroyed and power lines were snapped.

Minnehaha County

Sioux Falls	18	1715CST			0	0	3	0	Thunderstorm Winds (G57)
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Turner County

Hurley	18	1730CST			0	0	3	1	Thunderstorm Winds (G57)
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Thunderstorm winds smashed a tool shed, downed numerous tree limbs, and blew the roof off a patio. Winds blew five, 1,500-pound hay bales into an adjacent field.

Minnehaha County

5 S Sioux Falls	18	1735CST			0	0	3	0	Thunderstorm Winds (G58)
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Sioux Falls	18	1740CST			0	0	3	0	Thunderstorm Winds (G52)
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

SOUTH DAKOTA Cont'd

Thunderstorm winds damaged a number of street and business signs, and blew over a portion of a wooden fence.

Lincoln County									
6 N Lennox	18	1743CST			0	0	3	3	Thunderstorm Winds (G58)
3 NW Canton	18	1745CST			0	0	3	2	Thunderstorm Winds (G60)

Downburst winds tore roofs from buildings, snapped off trees, up to 2 feet in diameter, and knocked over a windmill.

Yankton County									
	18	1745CST			0	0	5	3	Thunderstorm Winds (G75)

Extremely strong thunderstorm winds produced widespread damage across Yankton County. Mobile homes were moved from their foundations; one was flipped onto a van. Roofs were blown from garages, hangars, and houses. Numerous street signs, television antennas, and flag poles were either damaged or destroyed. Several hog houses were demolished and tree damage was extensive.

Meade County									
25 SW Faith	19	1830CST			0	0	1	4	Thunderstorm Winds (G61)
	19	1910CST	0.1	10	0	0	0	3	Tornado (F0)

Thunderstorm winds plus marble-size hail produced extensive crop damage. A weak tornado caused some crop damage.

Perkins County									
Prairie City	19	1935CST			0	0	0	4	Hail (1.00)
Bison	19	1942CST			0	0	4	2	Thunderstorm Winds

A 2-mile-wide swath of hail destroyed many crops. Strong winds destroyed two calf shelters and damaged many trees.

Stanley County									
14 SW Mission Ridge	19	2230CST			0	0	3	4	Thunderstorm Winds (G52)
Edmunds County									
Bowdle	19	2330CST			0	0	1	1	Thunderstorm Winds (G50)
Sully County									
2 E Sully Buttes	20	0045CST			0	0	0	4	Hail (0.75)
7 NE Sully Buttes	20	0130CST			0	0	0	4	Hail (0.75)

Significant crop damage occurred across northern Sully County because of the hail.

Brown County									
Aberdeen	20	0200CST			0	0	4	0	Lightning

Lightning struck a house and started a fire in the attic.

McCook County									
Spencer	20	1655CST			0	0	1	1	Hail (1.00)
4 NE Spencer	20	1720CST			0	0	1	4	Hail (4.50)
Bon Homme County									
Tyndall	20	1725CST			0	0	4	0	Lightning

Fire resulted when lightning struck a house.

Charles Mix County									
Wagner	20	1850CST			0	0	2	4	Hail (1.75)

Hail destroyed crops over a 30-mile area. A shed was blown over by thunderstorm winds.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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SOUTH DAKOTA Cont'd

South Dakota Entire Area	21	1500CST- 2100CST			? ?	? ?	Thunderstorm
An upper level trough moving across South Dakota combined with a moist and unstable air mass to produce widespread severe thunderstorms.							
Meade County 30 NE Rapid City	21	1505CST	0.1	50	0 0	2 1	Tornado (F0)
A tornado touched the ground briefly, downing some trees and scattering hay bales.							
Brown County 7 NE Frederick 2 S Hecla	21	1505CST			0 0	4 4	Hail (1.25)
	21	1515CST			0 0	2 4	Thunderstorm Winds (G56)
Hail produced major crop damage. Winds broke large tree limbs and snapped highline power poles.							
Meade County 1 E Mud Butte	21	1540CST	0.1	25	0 0	2 1	Tornado (F0)
A tornado briefly touched ground causing minor damage.							
Harding County 25 E Redig	21	1550CST			0 0	2 3	Hail (1.75)
Perkins County 30 E Redig	21	1552CST			0 0	2 3	Hail (1.75)
Marshall County 6 W Britton	21	1600CST			0 0	4 5	Thunderstorm Winds (G60)
10 S Britton	21	1610CST			0 0	4 5	Thunderstorm Winds (G60)
Langford	21	1620CST			0 0	4 4	Thunderstorm Winds (G58)
Thunderstorm winds destroyed a barn, uprooted large trees, and flattened a hog house. About 2,000 acres of crops were destroyed by hail that cut an 8-mile swath. A steel grain bin was pushed off its pad.							
Brown County 7 W Hecla	21	1615CST			0 0	4 2	Thunderstorm Winds (G65)
Thunderstorm winds moved a garage from its foundation and blew over large trees.							
Corson County Watauga	21	1620CST			0 0	0 0	Hail (0.75)
Day County Pickrel Lake	21	1635CST			0 0	0 0	Hail (0.75)
Brown County 3 S Warner	21	1640CST			0 0	0 0	Hail (0.75)
Roberts County 8 W Sisseton	21	1645CST			0 0	0 0	Hail (1.00)
Dewey County Eagle Butte	21	1655CST			0 0	3 2	Thunderstorm Winds
Thunderstorm winds destroyed a roof on a modular home, overturned a feed wagon, and scattered bales of hay.							
Marshall County 5 E Eden	21	1700CST			0 0	0 0	Hail (0.75)
Roberts County 7 W Sisseton	21	1701CST			0 0	1 2	Hail (1.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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SOUTH DAKOTA Cont'd

Day County 9 N Waubay	21	1703CST			0	0	2 3	Hail (1.00)
Corson County Watauga	21	1720CST			0	0	0 0	Hail (0.75)
Roberts County Wilmot	21	1735CST			0	0	5 5	Thunderstorm Winds (G65)
Corona	21	1737CST			0	0	5 3	Thunderstorm Winds (G62)
Summit	21	1740CST			0	0	4 5	Hail (1.00)
Ortley	21	1745CST			0	0	5 5	Thunderstorm Winds (G65)

Thunderstorm winds produced major damage including blowing two large grain bins onto railroad tracks, toppling a telephone pole, and blowing over several trees. A number of barns, sheds, and silos were completely destroyed. Estimates of 100 percent crop damage were reported in most places hit by the storm.

Day County Waubay	21	1752CST			0	0	5 0	Thunderstorm Winds (G70)
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Thunderstorm winds overturned a mobile home.

Clark County Bradley	21	1745CST			0	0	4 4	Hail (2.75)
Crocker	21	1755CST			0	0	4 4	Hail (1.75)

Numerous cars were dented and many windows were broken by hail. In fact, every house in Bradley reported broken windows caused by hail. Some windshields were broken and crop damage was extensive.

Roberts County Wilmot	21	1800CST			0	0	3 0	Thunderstorm Winds (G62)
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Roads were blocked by trees that were toppled by thunderstorm winds.

Grant County Milbank	21	1830CST			0	0	5 5	Thunderstorm Winds (G70)
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As the result of a thunderstorm that produced between 4.00 and 6.00 inches of rain, numerous large trees were downed, and several fires were started by lightning. Roofs on several sheds and silos were damaged. Several barns were flattened and a restaurant sustained roof damage. A 150-foot communications tower was blown to the ground. A number of farm wagons were overturned a tree fell through the roof of a house.

Roberts County Wilmot	21	1900CST			0	0	3 0	Thunderstorm Winds (G62)
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Roads were blocked by trees that were toppled by thunderstorm winds.

Jones County 15 NW Murdo	21	1900CST			0	0	0 0	Hail (0.75)
Walworth County 7 NE Mobridge	21	1907CST	3.0	23	0	0	2 2	Tornado (F0)

A tornado touched down in an open prairie, but caused minimal damage.

Campbell County Mound City	21	2000CST			0	0	3 0	Thunderstorm Winds
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Large limbs were downed by thunderstorm winds.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm
					Killed	Injured	Property Crops	

SOUTH DAKOTA Cont'd

Clay County Vermillion	21	2035CST			0	0	1	1	Hail (1.00)
Beadle County Huron	25	2200CST			0	0	2	0	Thunderstorm Winds

Construction scaffolding was blown to the ground by thunderstorm winds.

Bennett County Martin	26	1815CST			0	0	2	0	Thunderstorm Winds (G51)
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Strong winds, gusting to 51 mph, broke a flagpole.

Charles Mix County Wagner	27	1700CST			0	0	4	0	Lightning
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Lightning destroyed the ceiling and a wall of a building. Numerous electrical appliances in homes were also destroyed when they were struck by lightning.

Bon Home County 2 SW Springfield	27	1730CST			0	2	3	0	Lightning
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A father and son were struck by lightning while standing on the steps of their home. The father sustained minor burns and a few electrical appliances were damaged or destroyed.

Hutchinson County 3 NW Olivet	27	1900CST			0	0	4	4	Thunderstorm Winds (G60)
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Thunderstorm winds overturned a farm vehicle, damaged a roof, and blew several small animal feeders to the ground. A cornfield was completely stripped by the strong winds and hail.

Aurora county Storla	30	1738CST			0	0	1	2	Hail (1.75)
Charles Mix County Platte	30	1905CST			0	0	0	0	Thunderstorm Winds (G52)
Beadle County Cavour	30	2030CST			0	0	2	0	Thunderstorm Winds (G62)

A 300-pound swing set was toppled by thunderstorm winds. Large tree limbs and a few large trees were blown over.

Pennington County Rapid City	31	1730CST			0	0	4	0	Lightning
Rapid City	31	1805CST			0	0	4	0	Thunderstorm Winds (G50)

Lightning struck a number of buildings and damaged many electrical items, including the local weather office's generator and radar. Lightning also started a number of grass fires. Thunderstorm winds uprooted a large tree that destroyed a garage and damaged four vehicles.

TENNESSEE

White County Sparta	02	1400CST			0	1	0	0	Lightning
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A woman was injured as she was moving a metal glider onto her porch.

Wilson County Lebanon	02	1600CST			0	2	4	0	Lightning
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm	
TENNESSEE Cont'd									
Two people were injured as they were working on communication equipment at the civil defense office. Two homes were set on fire by lightning strikes as well.									
Davidson County Nashville	02	1610CST			0	0	3	0	Lightning
									Lightning struck a tree that fell on a roof leaving a 6-foot hole in the roof.
Donelson	02	1610CST			0	0	2	0	Thunderstorm Winds
									Several trees were knocked down by thunderstorm winds.
Rutherford County Murfreesboro	02	1620CST			0	0	2	0	Thunderstorm Winds
									Several trees were knocked down.
Macon County Lafayette	02	1656CST			0	0	3	0	Lightning
									One house was damaged by a fire that was caused by lightning.
Knox County S Knox County	02	1830CST			0	0	2	0	Thunderstorm Winds
									Several trees limbs were knocked down.
Knoxville	02	2000CST			0	0	3	0	Lightning
									Lightning struck a home and produced some damage.
Sevier County Sevierville	02	2100CST			0	0	0	4	Hail
									Two acres of tobacco were destroyed by hail.
Kodak	02	2100CST			0	0	3	0	Thunderstorm Winds
									One room of a house was damaged by thunderstorm winds. Power outages were reported as well.
Shelby County Memphis	03	1545CST			0	0	2	0	Thunderstorm Winds
									Several trees were blown down on East Parkway.
Carroll County Huntingdon	04	0355CST			0	0	4	0	Lightning
									One home was damaged by a fire that was started by lightning.
Macon County Lafayette	04	0930CST			0	0	4	0	Lightning
									One home was struck by lightning in Lafayette.
Scott County Oneida	08	1925CST			0	0	2	0	Thunderstorm Winds
									Several trees and power lines were knocked down.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TENNESSEE Cont'd									
Overton County Livingston	08	1930CST			0	0	4	0	Thunderstorm Winds
Numerous trees were knocked down and several roofs were damaged.									
Robertson County	08	2030CST			0	0	2	0	Thunderstorm Winds
Several trees were knocked down by thunderstorm winds.									
Putnam County Cookeville	08	2045CST			0	0	2	0	Thunderstorm Winds
Several trees were knocked down in Cookeville.									
Jackson County	08	2050CST			0	0	2	0	Thunderstorm Winds
Several trees were knocked down.									
Davidson County Nashville	08	2100CST			0	1	3	0	Thunderstorm Winds
One man was injured when the truck he was sitting in was struck by a falling tree. Other trees were knocked down. Damage was also reported at a substation.									
White County Northeastern Portion	08	2100CST			0	0	2	0	Thunderstorm Winds
Several trees were knocked down in the northeastern portion of White County.									
Montgomery County Clarksville	08	2206CST			0	0	4	0	Lightning
One house was struck by lightning and caught fire. Numerous trees and power lines were knocked down.									
Coffee County Tullahoma	08	2230CST			0	0	3	0	Thunderstorm Winds
A large sign at the Tullahoma Plaza was damaged.									
Sumner County Portland	08	2245CST			0	0	2	0	Lightning
One home was struck by lightning in Portland.									
Giles County Pulaski	08	2300CST			0	0	3	0	Thunderstorm Winds
Several trees and power lines were knocked down.									
Gibson County Edison	09	0100CST			0	0	5	0	Lightning
A church was destroyed by a fire that was caused by lightning.									
Sumner County Portland	09	2000CST			0	0	3	0	Lightning

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
TENNESSEE Cont'd								
								A bedroom in one house caught fire because of a lightning strike.
Portland	10	1100CST			0	0	3 0	Lightning
								One tree was split by lightning and damaged a roof. Several televisions and an air conditioner compressor were also damaged.
Davidson County Nashville	10	1300CST			0	0	4 0	Lightning
								Lightning started a fire at a church.
Wilson County 4 NW Mt. Juliet Needmore	10	1300CST			0	0	3 0	Thunderstorm Winds
								Several boats were knocked over and several roofs were damaged by thunderstorm winds. Some trees were knocked down as well.
Needmore	10	1300CST			0	0	3 0	Lightning
								Two buildings caught fire because of lightning strikes.
Sullivan County Blountville	10	1400CST			0	0	2 0	Thunderstorm Winds
								Several trees were knocked down by thunderstorm winds.
Hickman County Centerville	10	1430CST			0	0	2 0	Thunderstorm Winds
								Several trees were knocked down in Centerville.
Wilson County Old Hickory Lake	10	1510CST			0	0	4 0	Thunderstorm Winds
								Numerous trees were knocked down and caused damage to a few houses and automobiles.
Davidson County East Nashville	10	1545CST			0	0	4 0	Thunderstorm Winds
								Part of a tin roof came off a garage and damaged several automobile windows.
Blount County Maryville	10	1550CST			0	0	2 0	Thunderstorm Winds
								Several trees were knocked down by thunderstorm winds.
Hamblen County Western Portion	12	1800CST			0	0	2 0	Lightning
								Several trees were knocked onto power lines.
Washington County Johnson City	12	1800CST			0	0	3 0	Thunderstorm Winds
								Several trees and utility poles were knocked down. Several minor traffic accidents occurred because of the weather.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		
TENNESSEE Cont'd								
Dyer County N Oyersburg	23	1755CST			0	0	3 0	Thunderstorm Winds
								Several trees were uprooted and one truck was overturned.
Cocke County Newport	23	2200CST			0	0	3 0	Thunderstorm Winds
								A falling tree caused damage to a satellite dish.
Sevier County Sevierville	23	2230CST			0	0	2 0	Lightning
								Lightning struck a barn in Sevierville.
Wilson County Lebanon	24	1130CST			0	0	3 0	Lightning
								Several homes were damaged by lightning strikes.
Lebanon	24	1145CST			0	0	2 0	Thunderstorm Winds
								Several trees were knocked down in Lebanon.
Davidson County Madison	24	1200CST			0	0	5 0	Lightning
								Two apartments were destroyed and two others were damaged by a fire that was started by lightning.
Hamilton County Chattanooga	24	1230CST			0	1	4 0	Lightning
								Four homes were damaged by lightning. Several utility poles were knocked down. One tree fell on a road which caused an auto accident. One person was injured in the accident.
Smith County Carthage	24	1230CST			0	0	3 0	Thunderstorm Winds
								Several trees and power lines were knocked down.
New Middleton	24	1300CST			0	0	0 4	Hail
								A tobacco crop was damaged by hail.
Williamson County Thompsons Station	24	1530CST			0	0	4 0	Thunderstorm Winds
								A roof was blown off a convenience store and several trees were knocked down.
Franklin	24	1530CST			0	0	3 0	Lightning
								A few homes were damaged by lightning strikes.
Marion County Jasper	24	1300CST			0	0	3 0	Lightning
								A natural gas tank was damaged by a fire that was started by lightning.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
TEXAS, Northern Cont'd									
Shelby County Center	04	1430CST			0	0	4	?	Lightning
									Lightning ignited a fire at a hospital and two residences.
Wood County Hawkins	15	1330CST			0	0	3	?	Thunderstorm Winds
									A downburst uprooted several trees in Hawkins.
Upshur County Big Sandy	15	1445CST			0	0	3	?	Thunderstorm Winds (G52)
									Strong winds, estimated at 60 mph, blew down large tree limbs.
Hunt County Cambell 1 SE Greenville	15	1530CST			0	0	?	?	Hail (0.88)
	15	1535CST			0	0	3	?	Thunderstorm Winds
									A downburst blew windows out of several residences.
Collin County 5 W McKinney	15	1655CST			0	0	?	?	Thunderstorm Winds (G65)
Hill County 2 N Whitney	24	1230CST			0	0	3	?	Thunderstorm Winds
									Several winds blew down power lines.
Ellis County Waxahachie	24	1300CST			0	0	4	?	Thunderstorm Winds
									Several winds damaged the roof of a business.
Lamar County 13 W Paris	24	1630CST			?	?	?	?	Funnel Cloud
Smith County 9 S Tyler	24	1850CST			?	?	?	?	Funnel Cloud
McLennan County Waco	25	1700CST			0	0	4	?	Thunderstorm Winds
									Strong winds damaged two mobile homes and downed power lines and trees.
Palo Pinto County Mineral Wells	26	0830CST- 1000CST			0	0	4	?	Flash Flood
									Heavy rains of 2.25 inches in a 1-hour period, caused flash flooding of several roadways and automobiles. High water up to 4 feet in depth was observed at one residence.
Taylor County Hamby	26	1800CST			0	0	4	?	Thunderstorm Winds
									A downburst lifted the roof off a mobile home, damaged several outbuildings, and blew down trees and power lines.
Wichita County Southern Portion	27	1900CST-			0	0	?	?	Flash Flood
	28	0000CST							

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm
		Local/Standard			Killed	Injured		
TEXAS, Northern Cont'd								
								High water was observed at several low-water crossings along Beaver Creek in southern Wichita County.
TEXAS, Southern								
Jefferson County Beaumont	01	1623CST			0	0	3 ?	Thunderstorm Winds (G60)
								Wind gusts to 69 mph were recorded at the National Weather Service Office at the Jefferson County Airport. One large sign was blown down at the airport.
Jasper County Jasper Kirbyville	01 01	1815CST 1830CST			0 0	0 0	4 ? 3 ?	Thunderstorm Winds Thunderstorm Winds
								The sheriff's office reported trees uprooted and power lines down in the town of Jasper. A sign was blown over in the town of Kirbyville.
Tyler County 2 N Woodville	01	1845CST			0	0	3 ?	Thunderstorm Winds
								The county sheriff's office reported trees down near the Holly Fork Moss Hill community.
Gonzales County 5 NW Gonzales	04	1036CST- 1300CST			0	0	? ?	Flash Flood
								Over 3.00 inches of rain fell between 0800 CST and 1030 CST in Gonzales County. The sheriff's office reported water over parts of Farm-to-Market Road 2091 and U.S. Highway 183. The water subsided by 1400 CST.
Webb County E Laredo	15	1605CST			0	0	3 ?	Thunderstorm Winds
								Roof damage was reported to a motel on the eastern side of Laredo by the Department of Public Safety.
Real County Countywide	21	0200CST			0	0	? ?	Flash Flood
								The sheriff's office reported water over several roads throughout the county. Farm-to-Market Road 1120 was closed from Rio Frio to Leakey and Farm-to-Market Road 335 was closed near Vance.
Jackson County 8 SE Edna	21	1600CST			1	0	? ?	Lightning
								A man waterskiing off the Stavinoha boat ramp on Lake Texana, died after being struck by lightning. (M250)
Val Verde County 8 NW Del Rio	21	1800CST	0.05	10	0	0	4 ?	Tornado (F0)
								A tornado touched down northwest of Del Rio damaging a workshop. The roof was completely lifted off the building and thrown into a mobile home.
Jefferson County Beaumont	24	1415CST			0	0	4 ?	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property Crops	Character of Storm
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TEXAS, Southern Cont'd

The Beaumont Police reported tree limbs and power lines down in the western part of the city. A roof was blown off a storage building.

Bexar County									
SE San Antonio	26	1455CST			0	0	3	?	Thunderstorm Winds
San Antonio	26	1530CST			0	0	3	?	Thunderstorm Winds

Several large trees were uprooted in the southeastern part of the city just before 1600 CST. A portion of the outfield fence was blown over at the V. J. Keefe Field on Saint Mary's University.

Guadalupe County									
New Braunfels	29	1445CST			0	0	4	?	Thunderstorm Winds (G52)
Airport	29	1455CST			0	0	4	?	Thunderstorm Winds
Seguin									

Thunderstorm winds caused an airplane to break its tiedown and flip over at the New Braunfels Airport. The storms moved into Seguin where several trees were uprooted and one building was damaged.

TEXAS, Western

Winkler County									
Wink	10	1749CST			0	0	4	1	Thunderstorm Winds (G52)

A cooperative weather observer reported wind gusts to 60 mph in Wink. The wind unroofed a mobile home and a city building, and damaged several carports.

Ector County									
Odessa	12	0620CST			0	0	3	1	Flash Flood

Thunderstorms over Ector County produced up to 3.00 inches of rain in Odessa during the early morning hours. The resulting floodwaters caused minor damage to buildings in northern Odessa.

Yoakum County									
Denver City	12	1830CST			0	0	3	0	Flash Flood

Slow-moving thunderstorms over southern Yoakum County dropped 6.00 inches of rain on Denver City during the evening hours. The resulting flood damaged the carpet and furniture of six houses in Denver City.

Lamb County									
2 E Sudan	18	1915CST			0	0	3	0	Thunderstorm Winds

Downburst winds damaged the roof and smokestack of a cotton gin near Sudan.

Gaines County									
5 S Denver City	21	1845CST			0	0	2	4	Hail Wind

Pea-size hail, driven by wind gusts of 40 to 50 mph, damaged cotton fields and irrigation equipment in northern Gaines County.

Culberson County									
Guadalupe	24	1730CST-			0	0	2	1	Flash Flood
National Park	25	0700CST							

After several days of spotty rain which saturated the ground, thunderstorms over the Guadalupe Mountains produced nearly 1.50 inches of rain in less than an hour. The heavy runoff from this rain produced minor flooding of washes and gullies in the park.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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TEXAS, Western Cont'd

Midland and Ector Counties	24 27	1800CST- 2100CST			0 0	2 0	Urban Flood
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Record-breaking rainfall occurred in the Midland/Odessa area during July. The monthly rainfall total was 8.50 inches, which broke the old record of 7.75 inches set in 1975. Most of the rain fell from the 24th to the 27th causing extensive street flooding. Many major roads in the area were closed as up to 8 feet of water collected beneath overpasses. Fortunately, the floodwaters were kept out of buildings and only minor damage resulted.

Midland County Midland	27	1530CST			0 0	3 0	Lightning
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During the heavy rain event, a lightning strike damaged the roof of a house in central Midland. Although the house was occupied, no injuries resulted.

Fisher County 4 SW Roby	27	1632CST			0 0	0 0	Thunderstorm Winds (G56)
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The Fisher County Sheriff's Office reported downburst winds 65 mph southwest of Roby. No damage was observed.

UTAH

Kane County Pink Dunes Recreation Area	06	2055MST			0 0	0 0	Flash Flood
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The first significant surge of tropical moisture brought heavy rain to the southwestern portion of the state. Strong thunderstorms moved slowly into the area during the late afternoon and early evening, and remained nearly stationary from about 06:30 MST until the early morning hours. Flooding was indicated by the Utah Highway Patrol north of Kanab near Pink Dunes which is also in the vicinity of Long Valley Junction on U.S. Highway 89.

San Juan County Canyonlands National Park	08	2200MST			0 0	0 0	Flash Flood
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Moisture continued to move into the state, and combined with the afternoon heating caused widespread thunderstorm activity statewide. Brief heavy rainfall was reported in many areas of the state, but was the heaviest and most extensive in the central portion of the state. Localized and minor flash flooding occurred in west-central Utah especially in the Richfield area. However, it was more extensive in the east-central portion. On a roadway west of Newspaper Rock in Canyonlands, water 1 foot deep flowed across the roadway. Because of the time of night this occurred, this flash flooding was not brought to the attention of the forecast office until after the threat had diminished.

Utah County Provo	17	1830MST			0 0	0 0	Thunderstorm Winds (G69)
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Widely scattered thunderstorms developed over the northern portion of the state. With the lower levels of the atmosphere still dry, microbursts were the dominant feature of these storms. The thunderstorm that produced the 69 mph wind weakened shortly after this occurrence.

Tooele County Erda	25	1800MST- 1815MST	10	100	0 0	3 0	Tornado (F1)
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A line of thunderstorms formed along the Utah-Nevada border that afternoon, and moved into the area by early evening. This line of thunderstorms spawned a tornado in the Erda area just north of Tooele. The tornado moved from southeast to northwest. It uprooted a 60-foot-tall dead tree,

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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UTAH Cont'd

and damaged and split a 200 foot Cottonwood tree on a farm lot. The Cottonwood tree fell, and narrowly missed a house on the farm. Freshly cut alfalfa was displaced in half a nearby field while hay on the other half of the field remained in neat, untouched rows. A field sprinkling system received minor damage. The tornado also tore a door off a mobile home that was on the farm lot, and did minor damage to several other trees. The tornado did retreat partially off the ground, went over the house without doing any damage to the residence, and then completely retreated into the cloud after going into an adjacent field.

Salt Lake County
Salt Lake City

25	1950MST				0 0	5 0	Thunderstorm Winds (G59)
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The same line of thunderstorms that spawned the previously mentioned tornado began to move into the Wasatch Front. Along the Wasatch Front these thunderstorms produced heavy rains, some hail, and very strong winds. Visibility at the Salt Lake International Airport was reduced due to heavy rain to 1 mile to the northwest. Marble-size hail was reported just east of the airport. In the Rose Park area of Salt Lake City, just to the east of the airport, a Cottonwood tree was uprooted and then fell on a house. The southern half of the house was destroyed. The high winds also blew tree limbs on power lines causing widespread power outages along the Wasatch Front. Power outages affected two-thirds of Salt Lake County.

Emery County
3 NW and 6 W
Green River

26	1610MST- 1615MST	Short	10		0 0	0 0	Tornado (F0)
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Strong thunderstorms developed over the east-central portion of the state. These storms produced two tornadoes that briefly touched down then retreated into the clouds. The tornadoes were observed by an Emery County Deputy Sheriff who also said the time the tornadoes were on the ground was hard to determine because of the considerable blowing dust in the area. The tornadoes caused no damage. These thunderstorms also produced considerable lightning and brief heavy rain. The heavy rain caused minor street flooding, some water to go into basements of a couple of houses, and left 1 to 2 feet of standing water in fields adjacent to the town. All the elements involved disrupted traffic on nearby Interstate 70 for a short period of time.

VERMONT

Rutland County
Castleton

11	1320EST				0 0	3 0	Lightning
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A lightning strike damaged the engine of a Vermont State Trooper's car along Route 4 in Castleton.

Chittenden County
BTV
South Burlington
Williston
Windham County
Brattleboro

19	1450EST				0 0	0 0	Thunderstorm Winds (G52)
19	1506EST				0 0	2 0	Thunderstorm Winds
19	1520EST				0 0	3 0	Thunderstorm Winds
19	1645EST				0 0	3 0	Thunderstorm Winds

Thunderstorm winds downed numerous large trees and limbs in Williston, Brattleboro, and South Burlington.

Orleans County
Irasburg

20	1550EST				0 0	0 0	Hail (0.75)
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Dime-size hail fell during thunderstorms that moved through the Irasburg area.

Rutland County
Danby

21	1221EST				0 0	3 0	Thunderstorm Winds
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Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
VERMONT Cont'd									
			Thunderstorm winds downed trees in the Danby area blocking a road.						
Statewide	16- 20				0	0	?	?	Heat
			A Bermuda high pumped hot air into Vermont for 5 days starting on July 16th and ending on July 20th. During the 5-day period, Burlington hit 90 or above four times and established a new record-high minimum temperature on the 20th. The excessive heat was also accompanied by oppressive humidity.						
VIRGINIA									
Rockingham County Harrisonburg	02	1400EST			0	0	4	0	Thunderstorm Winds (G53)
			A radio station in Harrisonburg recorded winds gusting to 61 mph (53 knots). A few trees and power lines were downed in the vicinity.						
Brunswick County 5 SW Lawrenceville	02	1650EST			0	0	0	0	Thunderstorm Winds
			Trees were reported downed 5 miles southwest of Lawrenceville.						
Richmond County 5 NW Warsaw	02	1740EST			0	0	0	0	Hail (1.00)
Sussex County	02	1805EST			0	0	4	0	Lightning
			Several locations in the county reported lightning strikes that caused fires.						
Southampton County Berlin Sebrell	02	1810EST- 1836EST			0	0	0	0	Thunderstorm Winds
			The county sheriff's office reported trees downed in Berlin and Sebrell.						
Loudoun County 3 S Lovettsville	07	1740EST			0	0	0	0	Thunderstorm Winds (G50)
			A spotter reported winds estimated at over 50 knots (58 mph) along with trees downed.						
Leesburg	07	1800EST			0	0	0	0	Hail (1.00)
			Spotters reported 1.00-inch hail covering the ground.						
3 N Dulles International Airport	07	1815EST			0	0	0	0	Thunderstorm Winds (G50)
			Winds gusting to 50 knots (58 mph) were observed at the National Weather Service Forecast Office (WBC).						
Prince William County Gainesville Haymarket	07	1900EST- 2000EST			0	0	0	0	Thunderstorm Winds
			The state highway department reported trees downed by strong winds in Gainesville and Haymarket.						
King George County	07	2045EST			0	0	0	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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VIRGINIA Cont'd

The state highway department reported trees downed across roads.

Loudoun County Leesburg	08	1325EST			0 0	3 0	Thunderstorm Winds
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A county fire department reported scattered areas of trees and power lines downed in Leesburg and other places in northeastern Loudoun County.

Fairfax County Reston	08	1345EST			0 0	0 0	Hail (1.75)
Herndon	08	1345EST			0 0	0 0	Hail (1.75)
Fairfax Station	08	1415EST			0 0	0 0	Hail (0.75)
City of Fairfax	08	1415EST			0 0	0 0	Hail (0.75)
Centreville	08	1415EST			0 0	0 0	Hail (1.00)
Great Falls	08	1416EST			0 1	0 0	Lightning

A man was struck by lightning at a gasoline tank farm.

Burke	08	1430EST			0 0	0 0	Hail (1.00)
Scott, Washington, and Lee Counties	10	1430EST- 1600EST			0 0	4 0	Thunderstorm Winds

Several locations in sparsely populated areas of Scott, Lee, and Washington Counties suffered power outages and damage from falling trees. Two houses in Washington County had large trees fall onto them.

Scott County Rye Cove	10	1600EST			0 0	4 0	Lightning
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A fire that was ignited by a lightning strike burned a barn to the ground.

Surry County 2 E Surry Bacon's Castle	19	1925EST- 1935EST			0 0	0 0	Thunderstorm Winds
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Trees were downed at both locations by thunderstorm winds.

Fairfax County Springfield	22	1300EST			0 1	0 0	Lightning
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A man was hospitalized in critical condition after being struck by lightning. He was found in a parking lot, with his clothes smoldering.

Prince William County Haymarket	22	1700EST			0 0	5 0	Lightning
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Lightning caused a fire that caused about \$200,000 damage to buildings and supplies in a lumber yard.

Frederick County Winchester	22	1650EST- 1710EST			0 0	4 0	Thunderstorm Winds (G68)
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Spotters reported winds gusting to 78 mph (68 knots) which downed trees and power lines at many places in the Winchester area. A 3-foot-diameter tree fell onto a car, and a baseball-diamond backstop was blown over.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
VIRGINIA Cont'd									
Fauquier County The Plains	22	1805EST			0	0	0	0	Thunderstorm Winds
									Trees were downed by thunderstorm winds.
Prince William County City of Manassas Park	22	1850EST			0	0	4	0	Thunderstorm Winds
									Trees and power lines were reported down at all places.
Fairfax County 1 S Lorton	23	1030EST			0	0	4	0	Heat
									A truck traveling on a major interstate highway and containing toxic materials caught fire, causing widespread traffic jams for many hours while the fire was extinguished. Fire investigators said the fire started by spontaneous combustion of powdered aluminum waste from a tear-gas factory due because of very high temperatures, which exceeded 100° on that day.
Burke Springfield	23	2050EST			0	2	3	0	Thunderstorm Winds
									Several large trees were downed at Burke. In Springfield, winds caused the partial collapse of a house under construction, slightly injuring two workers.
Amelia County Amelia	24	2300EST			0	0	5	0	Lightning
									Lightning struck a historic 161-year-old house, and causing a fire that resulted in heavy damage.
James City County 2 E Five Forks	26	1330EST			0	0	4	0	Thunderstorm Winds
									County police reported several areas in the southeastern part of the county where trees and power lines were blown down.
Stafford County Aquia	26	1825EST			0	0	4	0	Flood
									Several basements were flooded by heavy thunderstorm rains.
James City County	29	0200EST- 0700EST			0	0	4	0	Flood
									A 1-mile stretch of the Colonial Parkway was closed after flooding had washed out a culvert beneath the parkway, along with resulting considerable erosion of the roadway. Three inches of rain fell during. The area had received heavy rains the previous 10 days as well that contributed to the damage.
VAZ004-005-006- 010-011-017	June-July				0	0	0	7	Drought
									Officials in at least 10 counties in northwestern and southeastern Virginia have asked for Federal disaster relief as a result of severe drought during the spring and early summer. Crop losses are estimated at \$34 million.
WASHINGTON									
Walla Walla County	12	2200PDT			0	0	?	?	Heavy Rain
									Although no damage was reported, 0.85 inch of rain fell at the Walla Walla airport in 10 minutes.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		
WASHINGTON Cont'd								
Eastern Washington	24	1500PDT- 1900PDT						
								A warm, tropical air aloft from the south combined with a push of marine air near the surface to create very unstable conditions over eastern Washington during the afternoon and early evening hours of the 24th.
Kittitas County		1500PDT- 1600PDT			0	0	5	? Heavy Rain
								Rain in the amount of 0.77 inch in a 45 minute period flooded local businesses in the downtown area and caused at least \$10,000 damage to Morgan Middle School.
Douglas County		1614PDT			0	0	? ?	Hail (1.00)
								Heavy rain and 1.00-inch hail was reported near Waterville.
Chelan County		1700PDT			0	0	0	0 Flash Flood
								A mudslide was reported at Tumwater Canyon on Highway 2.
Spokane County		1730PDT- 1900PDT			0	0	5	? Hail (0.875)
								Three miles south of Spokane, 0.68 inch of rain fell in 15 minutes along with 0.875-inch hail, and wind gusts to 45 mph. Interstate 90 - Business was closed for a time. An estimated 2 inches of rain in the Sunset Hill area caused a minor mudslide. High winds near Mead damaged two homes.
Stevens County	25	1200PDT- 1300PDT			0	0	5	? Thunderstorm Winds
								Numerous trees were blown down around Colville as a thunderstorm moved through the area. The Colville Elks Golf Course was heavily hit by a combination of heavy rain and winds, causing trees to fall. Rainfall of 1.20 inches was recorded in less than an hour.
WEST VIRGINIA								
Summers County Clayton	02	1515EST			2	2	0	0 Lightning
								Farm workers were electrocuted while sitting under a tree. Two men were killed and two others injured. Three dogs and a cat were also killed.
Jefferson County Ranson	06	1300EST- 1500EST			0	150	0	0 Heat
								Approximately 150 people were treated for heat exhaustion by paramedics at an outdoor music concert. Ten were taken to the local hospital. Temperatures were in the mid-90s.
Marshall County 7 N Moundsville	07	1608EST			0	0	0	0 Funnel Cloud
								A funnel cloud was sighted near the Marshall and Ohio County line.
Ohio County Wheeling	07	1615EST			0	0	3	0 Thunderstorm Winds
Countywide	07	1642EST			0	0	0	0 Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm
					Killed	Injured		

WEST VIRGINIA Cont'd

Several large trees fell in Wheeling and throughout the county.

Monongalia County

Blackville	07	1750EST			0	0	0	0	Thunderstorm Winds
Morgantown	07	1755EST			0	0	3	0	Thunderstorm Winds
Westover	07	1805EST			0	0	0	0	Thunderstorm Winds
Brooke County									
Weirton	07	1805EST			0	12	3	0	Thunderstorm Winds

Winds ripped through an outdoor festival, partially destroying a stage, damaging sound and lighting equipment, and downing tents and booths. Eleven people were treated for minor injuries and released. One person was admitted to the local hospital.

Preston County

	07	1810EST- 1820EST			0	0	3	0	Thunderstorm Winds
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Several large trees and power lines were blown down.

Marion County

Hoodsville	07	1810EST			0	0	?	0	Thunderstorm Winds
2 NE Fairmont	07	1815EST			0	0	?	0	Thunderstorm Winds

Trees and power lines were knocked down along Route 25 and near Pricketts Fort.

Grant County

Doras	07	1900EST			0	0	?	0	Thunderstorm Winds
3 N Maysville	07	1910EST			0	0	?	0	Thunderstorm Winds

Trees and large limbs fell across County Route 9 near Doras and near County Route 3 north of Maysville.

Preston County

Fellowsville	07	1910EST			0	0	0	0	Thunderstorm Winds
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Rowlesbrug

Taylor County

Wendel	07	1915EST			0	0	0	0	Thunderstorm Winds
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Trees were blown down over southern Preston County and across County Route 11 in Taylor County.

Tucker County

Parsons	07	1920EST			0	0	0	0	Thunderstorm Winds
Thomas	07	1930EST			0	0	0	0	Thunderstorm Winds
Pierce	07	1930EST			0	0	0	0	Hail (0.88)

Several large trees fell and nickel-size hail was reported.

Mason County

Santown	12	1450EST			0	0	0	0	Hail (1.00)
Rayburn	12	1455EST			0	0	?	0	Thunderstorm Winds
Sassafras									

Quarter-size hail was observed and numerous trees and power lines were downed across roads.

Roane County

Spencer	12	1455EST			0	0	3	0	Thunderstorm Winds
Looneyville	12	1510EST			0	0	0	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
WEST VIRGINIA Cont'd									
Large tree branches were snapped off in Spencer. Large trees fell across power lines along Route 36 near Looneyville.									
Lewis County Weston	12	1509EST			0	0	3	0	Thunderstorm Winds
Several trees and power lines were downed. One tree fell onto an apartment building.									
Calhoun County Nicut	12	1515EST			0	0	0	0	Thunderstorm Winds
Large tree limbs were snapped off.									
Upshur County Adrian	12	1522EST			0	0	3	0	Hail (1.75)
Adrian	12	1513EST			0	0	0	0	Thunderstorm Winds
Golf ball-size hail fell and damaged a home. Trees and power lines were blown down a few minutes later.									
Putnam County Scott Depot	12	1530EST			0	0	0	0	Thunderstorm Winds
Large tree limbs were broken by thunderstorm winds.									
Braxton County Rosedale	12	1538EST			0	0	0	0	Hail (0.75)
Randolph County 2 N Elkins	12	1600EST			0	0	0	0	Thunderstorm Winds
Several trees were uprooted along Stalnaker Run.									
Cabell County Malcom Springs Heights	13	1800EST			0	0	3	0	Thunderstorm Winds
Numerous trees were blown down and several roofs were ripped off outbuildings.									
Randolph County Elkins	19	1100EST- 1300EST			0	0	3	0	Urban Flood
An estimated 2.00 to 3.00 inches of rain fell over the city in an hour. Storm sewers could not handle the deluge and streets and basements were flooded.									
Pocahontas County Marlinton	19	1940EST- 2100EST			0	0	3	0	Urban Flood
A nearly stationary thunderstorm dumped over 2.00 inches of rain on the community. Street and basement flooding occurred. Rock and mud slides temporarily blocked Routes 28, 92, and 219 in the vicinity.									
Mineral County 1 N Ft. Ashby	20	1600EST			0	0	0	0	Thunderstorm Winds
Many trees and limbs were blown down and blocked the roads.									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
WEST VIRGINIA Cont'd									
Marion County Worthington	22	1450EST			0	0	0	0	Thunderstorm Winds
Monongalia County Morgantown	22	1450EST			0	0	0	0	Thunderstorm Winds
Large tree limbs were snapped off in both communities. Power lines were downed.									
Mineral County Ft. Ashby	22	1505EST			0	0	0	0	Thunderstorm Winds
Several trees were uprooted by thunderstorm winds.									
Preston County Tunnelton	22	1515EST			0	0	3	0	Lightning
A chimney on an elementary school was damaged. Bricks were hurled as far as 200 feet away. Holes were knocked in the roof, causing water damage to ceiling and walls.									
Mason County Clifton	23	1600EST			0	0	0	0	Thunderstorm Winds
Cabell County Barboursville	23	1605EST			0	0	0	0	Thunderstorm Winds
Milton	23	1615EST			0	0	0	0	Thunderstorm Winds
Wood County Parkersburg	23	1610EST			0	0	0	0	Thunderstorm Winds
Lincoln County West Hamlin	23	1640EST			0	0	0	0	Thunderstorm Winds
Tucker County Parsons-St. George	23	1644EST			0	0	0	0	Thunderstorm Winds
5 SE Hendricks	23	1650EST			0	0	0	0	Thunderstorm Winds
Putnam County Buffalo	23	1655EST			0	0	0	0	Thunderstorm Winds
Wayne County Ceredo	23	1810EST			0	0	0	0	Thunderstorm Winds
Westmoreland	23	1815EST			0	0	0	0	Thunderstorm Winds
Cabell County Huntington	23	1820EST			0	0	3	0	Thunderstorm Winds
4 SW Salt Rock (Bowen Creek)	23	1835EST			0	0	0	0	Thunderstorm Winds
Thunderstorms brought brief downpours of needed rain. Some areas had trees uprooted, large branches snapped off, and power outages.									
WVZALL Statewide	17- 24				0	6	0	0	Heat Wave
About a week of excessive heat and humidity peaked on the 23rd. Charles Town reached 103 and Martinsburg 101 degrees. Mid and upper 90s were common in the western lowlands with 80s in the mountains. It was the hottest in many counties since the summer of 1988. Some utility companies reported a record 1 hour usage of electricity for the summer season on the 23rd. Six people at a summerfest in Huntington were treated for heat exhaustion on the 20th and 21st.									
WVZ010-011 Eastern Panhandle	01- 31				0	0	0	?	Drought
The drought of 1991 worsen in the Potomac River basin. The monthly rainfall was less than 1.00 inch at Martinsburg and Kearneysville. Rainfall of 2.00 to 3.00 inches fell around Keyser, Romney, and Moorefield. Moisture from the infrequent showers was quickly evaporated from the top soil by the excessive heat. In the mountains and northern lowlands, July rainfall was heavier and sufficient to lessen the effects of the drought. By the end of the month, state and federal									

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Character of Storm
					Killed	Injured	Property Crops

WEST VIRGINIA Cont'd

agricultural agencies estimated the state corn yield would be 35 bushels per acre lower than last year's production. Alfalfa yield was estimated to be 0.7 tons per acre lower than 1990. Pastures continued to be dry, with some producers already feeding hay to their livestock. Water continued to be hauled to livestock. Federal assistance was given to help buy feed to those who qualified. Other livestock producers sold some of their steers.

WISCONSIN

Barron County									
Cumberland	01	0215CDT			0	0	5	0	Lightning
5 N Chetek	01	0230CDT			0	0	5	0	Lightning
Dane County									
5 NW Madison	01	1330CDT			0	0	?	0	Thunderstorm Winds
Columbia County									
2 W Columbus	01	1400CDT			0	0	5	4	Lightning
Jefferson County									
5 SE Watertown	01	1445CDT			0	0	5	0	Thunderstorm Winds
Washington County									
Germantown	01	1515CDT	4.0	25	0	1	5	?	Tornado (F1)
Jackson	01	1515CST			0	0	?	?	Lightning
Waukesha County									
North Lake	01	1525CST			0	0	?	?	Thunderstorm Winds
Ozaukee County									
Cedarburg	01	1530CDT			0	0	?	?	Hail (1.75)
Port Washington	01	1555CDT			0	0	?	?	Thunderstorm Winds (G62)
Milwaukee County									
3 E Milwaukee	01	1530CDT			0	0	0	0	Funnel Cloud

A tornado skipped along a 4-mile path on the western side of Germantown (Washington County) damaging four buildings in a lumberyard and two homes. A man working in the lumberyard was injured by flying debris. Scattered severe thunderstorms in southeastern Wisconsin dropped hail up to golf ball-size and generated winds to 70 mph which knocked down a barn, several trees, and power lines. Lightning struck two barns, a house, and a village hall causing fires and damage.

Burnett County									
2 S Hertel	05	2245CDT			0	0	4	0	Lightning
Washburn County									
Spooner	05	2303CDT			0	0	?	?	Hail (0.75)
Edgewater	05	2339CDT			0	0	?	?	Thunderstorm Winds
Sawyer County									
Birchwood	05	2339CDT			0	0	?	?	Thunderstorm Winds
Rusk County									
Ladysmith	06	0000CDT			0	0	?	?	Hail (0.75)
Hawkins	06	0015CDT			0	0	?	?	Hail (0.75)
Oneida County									
Lake Tomahawk	06	0320CDT			0	0	?	?	Hail (1.00)

Widely scattered severe thunderstorms deposited hail up to 1.00 inch in diameter and generated strong winds which knocked down trees across northern sections of Wisconsin. Lightning killed 21 heifers who were standing under an oak tree when lightning struck the tree.

LaCrosse County									
LaCrosse	07	1335CDT			0	0	?	?	Thunderstorm Winds
Onalaska	07	1337CDT			0	0	?	?	Thunderstorm Winds
Vernon County									
5 W Viroqua	07	1350CDT			0	0	?	?	Thunderstorm Winds
Iowa County									
Montfort	07	1415CDT			0	0	4	4	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm
					Killed	Injured	Property Crops	
WISCONSIN Cont'd								
Edmund	07	1425CDT			0	0	5 5	Thunderstorm Winds
Clyde	07	1426CDT			0	0	? ?	Thunderstorm Winds
Dodgeville	07	1430CDT			0	0	5 ?	Thunderstorm Winds
Sauk County								
Sauk City	07	1441CDT			0	0	? ?	Thunderstorm Winds
Dane County								
Black Earth	07	1445CDT			0	0	? 4	Thunderstorm Winds
Mount Horeb	07	1445CDT			0	1	? 4	Thunderstorm Winds
Middleton	07	1450CDT			0	0	5 5	Thunderstorm Winds
Springfield Corners	07	1450CDT			0	0	5 5	Thunderstorm Winds
Waunakee	07	1455CDT			0	0	5 5	Thunderstorm Winds
1 E Waunakee	07	1456CDT			0	0	? 4	Hail (0.75)
Maple Bluff	07	1458CDT			0	0	5 4	Thunderstorm Winds
Madison	07	1504CDT			0	0	6 4	Thunderstorm Winds (G72)
Deforest	07	1504CDT			0	0	? 4	Thunderstorm Winds
Belleville	07	1505CDT			0	0	4 ?	Thunderstorm Winds
Fitchburg	07	1505CDT			0	0	4 ?	Thunderstorm Winds (G59)
McFarland	07	1507CDT			0	0	4 ?	Thunderstorm Winds
2 E Madison	07	1508CDT			0	0	? 4	Hail (1.00)
Sun Prairie	07	1510CDT			0	0	5 5	Thunderstorm Winds
Cottage Grove	07	1511CDT			0	0	4 5	Thunderstorm Winds
Marshall	07	1512CDT			0	0	4 5	Thunderstorm Winds (G69)
Deerfield	07	1513CDT			0	0	5 5	Thunderstorm Winds
Stoughton	07	1513CDT			0	0	4 4	Thunderstorm Winds
Columbia County								
Columbus	07	1515CDT			0	0	? ?	Thunderstorm Winds
Dodge County								
Astico	07	1517CDT			0	0	? ?	Thunderstorm Winds
Rubicon	07	1535CDT			0	0	? ?	Thunderstorm Winds
Jefferson County								
Lake Mills	07	1520CDT			0	0	5 5	Thunderstorm Winds (G56)
Milford	07	1522CDT			0	0	6 5	Thunderstorm Winds
Watertown	07	1525CDT			0	0	6 5	Thunderstorm Winds
Johnson Creek	07	1525CDT			0	0	4 5	Thunderstorm Winds
Jefferson	07	1525CDT			0	0	5 5	Thunderstorm Winds
Farmington	07	1527CDT			0	0	5 5	Thunderstorm Winds
Ixonia	07	1530CDT			0	0	6 5	Thunderstorm Winds
Concord	07	1530CDT			0	0	4 4	Thunderstorm Winds
Rome	07	1530CDT			0	0	4 4	Thunderstorm Winds
3 SE Sullivan	07	1535CDT			0	0	? ?	Thunderstorm Winds (G70)
Fort Atkinson	07	1535CDT			0	0	4 4	Thunderstorm Winds
Rock County								
Evansville	07	1520CDT			0	0	? ?	Thunderstorm Winds
Edgerton	07	1530CDT			0	0	? ?	Thunderstorm Winds
Milton	07	1533CDT			0	2	5 ?	Thunderstorm Winds
Walworth County								
Whitewater	07	1527CDT			0	0	0 0	Funnel Cloud
Whitewater	07	1530CDT			0	0	4 ?	Thunderstorm Winds
3 S Millard	07	1524CDT	0.1	25	0	0	0 0	Tornado (F0)
East Troy	07	1550CDT			0	1	5 ?	Thunderstorm Winds
Lake Geneva	07	1601CDT			0	0	4 ?	Thunderstorm Winds
A weak tornado touched down 3 miles south of Midland, but did not cause damage.								
Waukesha County								
Oconomowoc	07	1535CDT			0	0	5 5	Thunderstorm Winds (G52)
North Lake	07	1537CDT			0	0	5 5	Thunderstorm Winds
Delafield	07	1537CDT			0	0	5 4	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of		Estimated Damage Property Crops	Character of Storm	
					Killed	Injured			
WISCONSIN Cont'd									
Eagle	07	1537CDT			0	0	4	4	Thunderstorm Winds
Genesee	07	1538CDT			0	0	4	4	Thunderstorm Winds
Hartland	07	1540CDT			0	0	5	5	Thunderstorm Winds
Pewaukee	07	1542CDT			0	0	5	5	Thunderstorm Winds
Waukesha	07	1544CDT			0	0	5	4	Thunderstorm Winds (G70)
Mukwonago	07	1545CDT			0	0	4	4	Thunderstorm Winds (G59)
Menomonee Falls	07	1550CDT			0	0	5	4	Thunderstorm Winds
Brookfield	07	1552CDT			0	0	5	4	Thunderstorm Winds
Elm Grove	07	1553CDT			0	0	4	?	Thunderstorm Winds
Muskego	07	1555CDT			0	0	4	4	Thunderstorm Winds
Washington County									
Hartford	07	1540CDT			0	0	4	4	Thunderstorm Winds (G52)
Plat	07	1545CDT			0	0	4	4	Thunderstorm Winds
Ackerville	07	1547CDT			0	0	5	5	Thunderstorm Winds
Hubertus	07	1548CDT			0	0	5	5	Thunderstorm Winds
Richfield	07	1550CDT			0	0	5	5	Thunderstorm Winds
Colgate	07	1550CDT			0	0	5	5	Thunderstorm Winds
Germantown	07	1600CDT			0	0	5	4	Thunderstorm Winds
Jackson	07	1600CDT			0	0	5	5	Thunderstorm Winds
Milwaukee County									
Wauwatosa	07	1557CDT			0	0	4	?	Thunderstorm Winds
West Allis	07	1558CDT			0	0	4	?	Thunderstorm Winds (G57)
Milwaukee	07	1608CDT			0	0	5	?	Thunderstorm Winds (G63)
Cudahy	07	1615CDT			0	0	4	?	Thunderstorm Winds
Racine County									
Raymond	07	1605CDT			0	0	?	?	Hail (1.00)
5 W Racine	07	1605CDT			0	0	4	?	Thunderstorm Winds
Racine	07	1610CDT			0	0	4	?	Thunderstorm Winds
Ozaukee County									
Mequon	07	1602CDT			0	0	5	5	Thunderstorm Winds
Cedarburg	07	1605CDT			0	0	5	5	Thunderstorm Winds (G69)
Grafton	07	1607CDT			0	0	5	5	Thunderstorm Winds
Ashland County									
Mellen	07	1730CDT			0	0	4	?	Thunderstorm Winds

A swift-moving cluster of severe thunderstorms packing downburst winds up to 83 mph carved out a widespread and extensive damage path across portions of south-central and southeastern Wisconsin. The major damage path ran through the counties of central Iowa, northern Dane, northern Jefferson, northern Waukesha, and southern Ozaukee with path widths several miles wide at many areas. Scattered damage also occurred to the north and south of the main damage swath. Damage estimates exceeded \$20 million including Dane County (\$7 million), Jefferson County (\$5 million), Washington County (\$1.8 million), and Ozaukee County (\$1 million). Thousands of trees and miles of power lines were toppled by the violent straight-line winds. The Dane County Regional Airport received \$4 million in damage to several planes and 30 buildings. Farm damages included: \$3.1 million in Dane County to farm structures and 16,000 areas of crops; \$1.6 million in Jefferson County to 162 farm buildings; \$700,000 to 61 farm buildings in Washington County; \$400,000 across Iowa County; and \$300,000 to 49 Waukesha County farm buildings. Individual towns hard hit in Jefferson County included Ixonia (\$2 million damage), Watertown (\$1.5 million), and Milford (\$750,000). In Ozaukee County, Cedarburg received \$461,000 in damage. A weak tornado briefly touched down 3 miles south of Millard in Walworth County and caused no damage. A woman in Dane County was injured when a tree branch fell on her car as she was driving. Two men were injured when they were blown off a platform while working on a house roof in Rock County. Another man was injured when he was hit by a large piece of ductwork that blew off a roof of a high school in Walworth County.

Lincoln County									
Merrill	17	0400CDT			0	0	?	?	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
WISCONSIN Cont'd									
Marathon County Wausau	17	0435CDT			0	0	?	?	Thunderstorm Winds
A severe thunderstorm with intense winds, toppled a few trees in Merrill and Wausau.									
Dunn County Menomonie	19	0345CDT			0	0	?	?	Thunderstorm Winds
Power lines were knocked down by severe thunderstorm winds in Menomonie.									
Columbia County Columbus	20	2200CDT			0	1	0	0	Lightning
A woman was injured when lightning caused a power surge in the telephone she was using.									
Dodge County 4 SW Waupun	21	0230CDT			0	5	5	0	Lightning
Five fire fighters were slightly injured by a nearby lightning strike while battling a lightning-caused barn fire near Waupun.									
Buffalo County Alma	21	1700CDT			0	0	5	?	Flash Flood
Thunderstorms dumped over 4.00 inches of rain in 45 minutes that toppled a 500 gallon propane tank, flooded a feed mill and several homes, washed out parts of a highway, and knocked a house off its foundation. Damaged exceeded \$180,000.									
Dane County 1 E Morrisonville	22	0700CDT			0	0	5	?	Lightning
Milwaukee County Brown Deer	22	1720CDT			0	0	?	?	Thunderstorm Winds (G50)
Fox Point	22	1725CDT			0	0	?	?	Thunderstorm Winds
Manitowoc County Manitowoc	22	1810CDT			0	0	?	?	Thunderstorm Winds
Lightning struck a barn near Morrisonville in Dane County and started a fire that caused \$100,000 damage. Isolated severe thunderstorms with winds up to 58 mph downed power lines and a few trees in southeastern Wisconsin.									
Door County Near Rock Island	28	1015CDT	?	?	0	0	0	0	Waterspout
Near Washington Island	28	1015CDT	?	?	0	0	0	0	Waterspout
Manitowoc County 1 E Manitowoc	28	1300CDT	?	?	0	0	0	0	Waterspout
Several waterspouts were sighted just offshore Lake Michigan over portions of northeastern and east-central Wisconsin.									
WYOMING									
Albany County 12 E Laramie	06	1340MST			0	0	0	0	Thunderstorm Winds
An early afternoon thunderstorm brought wind gusts to 54 mph on Interstate 80 east of Laramie.									
Laramie County 1 N Cheyenne	12	1615MST			0	0	0	0	Hail (0.75)

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property Crops	Character of Storm	
<p>Hail up to 0.75 inch in diameter was reported 1 mile north of the Cheyenne Airport at 1615 MST.</p>									
Near Cheyenne	12	1600MST- 1700MST			0	0	0	0	Flash Flood
<p>Heavy rains with thunderstorms brought 1.70 inches of rain 4 miles west of Cheyenne and 1.95 inches of rain 3 miles north of the airport. Street and some basement flooding was reported in Cheyenne.</p>									
Sheridan County Clearmont	15	1650MST- 1740MST			0	0	0	0	Heavy Rain
<p>Two inches of rain in less than 1 hour brought minor flooding to Clearmont.</p>									
Big Horn County Worland	16	1415MST			0	0	0	0	Thunderstorm Winds
<p>Winds gusts to 56 mph were reported from the Worland Airport. Some trees and power lines were downed.</p>									
Laramie County 3 W Cheyenne	22	1750MST			0	0	0	0	Heavy Rain
<p>A thunderstorm brought 0.56 inch of rain in 45 minutes with some street and basement flooding.</p>									
Carbon County Medicine	22	1615MST- 1715MST			0	0	?	0	Heavy Rain
<p>Two inches of rain fell in the town of Medicine Bow in 1 hour with some minor flooding.</p>									
Park County Near Powell	24	1500MST			0	0	?	0	Flash Flood
<p>A thunderstorm washed out part of a county road near Powell.</p>									
Big Horn County Greybull	24	1730MST			0	0	5	0	Thunderstorm Winds
<p>Strong wind gusts at Greybull took the roof off a hanger at the airport and damaged an airplane. Trees were uprooted and homes and motor homes were damaged by thunderstorm winds.</p>									
Sweetwater County Rock Springs	24	1700MST- 2000MST			0	0	0	0	Heavy Rains
<p>Nearly 1.50 inches of rain brought some minor flooding to Rock Springs during the evening.</p>									
Albany County Centennial	25	1215MST			0	0	0	0	Flash Flood
<p>Centennial received 0.75 inch of rain in a short period of time that caused minor flooding with little, if any damage.</p>									
Teton County Jackson Lake	29	1820MST			0	0	5	0	Thunderstorm Winds

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage Crops	

WYOMING Cont'd

Strong winds with gusts to 60 mph downed trees and power lines near Jackson Lake. Six boats broke away from their moorings.

Big Horn County Shell

31	1530MST- 1615MST								Heavy Rain
----	---------------------	--	--	--	--	--	--	--	------------

Heavy rain from a thunderstorm caused road damage near Shell.

ALASKA, Southeastern

None reported.

ALASKA, Southern

Anchorage	04 0100AST								Record Rainfall
-----------	------------	--	--	--	--	--	--	--	-----------------

Anchorage recorded 0.60 inch of rain in 1 hour and 45 minutes setting a new 2-hour rainfall record. This appeared to be an isolated occurrence at the airport. Other amounts around the city were generally less than 0.30 inch.

St. Paul Island	04 1700AST								Record High Temperature
-----------------	------------	--	--	--	--	--	--	--	-------------------------

St. Paul Island set a new record high for the date of 60°. The old record of 57° was set in 1953.

King Salmon	04 1700AST								Record High Temperature
-------------	------------	--	--	--	--	--	--	--	-------------------------

King Salmon Island set a new record high for the date of 74°. The old record of 73° was set in 1983.

Anchorage	11 2345AST- 12 0100AST								Flash Flood
-----------	---------------------------	--	--	--	--	--	--	--	-------------

A strong upper low dropped south across Alaska from the Arctic during the day on the 11th. As this low moved south of the Alaska Range, thunderstorms with heavy rains hit the Anchorage area causing a rare flash flood. As much as 0.85 inch of rain fell in just over an hour causing several roadways to collapse when old drain systems gave out. Several apartment buildings in low-lying areas suffered damage.

Cold Bay	16 0900AST- 1200AST								High Winds
----------	------------------------	--	--	--	--	--	--	--	------------

Low pressure centered near St. Paul Island brought winds gusts to 50 mph to Cold Bay.

St. Paul Island	22 0000AST								Record Rainfall
-----------------	------------	--	--	--	--	--	--	--	-----------------

St. Paul Island recorded 1.25 inch of rain setting a new daily rainfall record. Old record of 0.64 inch was set in 1971.

St. Paul Island	24 0000AST								Record Low Temperature
-----------------	------------	--	--	--	--	--	--	--	------------------------

St. Paul Island set a record low for the date of 32 degrees. Old record of 39 degrees was set in 1971.

HAWAII

None reported.

Storm Data and Unusual Weather Phenomena

July 1991

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

PACIFIC

None reported.

PUERTO RICO

San Sebastian	02	1530AST			1	0	0	0	Lightning
---------------	----	---------	--	--	---	---	---	---	-----------

A lightning strike killed a man that was in a metal shed on the parking lot of Rios Funeral Home. (M600)

PRZ002-005	15	2000AST-			0	0	4	0	Flash Flood
	16	1300AST							

A moderate tropical wave moved over Puerto Rico in the early morning hours of the 16th. However, a moist and unstable air mass ahead of the wave moved over the local area on the 15th. Thunderstorms with locally heavy showers occurred both days throughout the island. The highest rainfall amounts were indicated over the eastern interior portion where nearly 5.00 inches fell in the municipalities of Caguas, Cidra, and Naranjitos overnight. On the 15th, LaFina Creek in Trujillo Alto rose rapidly affecting 26 residences. On the 16th, there were many reports of several flooded roads and mud slides throughout the eastern half of the island. A bridge in Humacao near Barrio Chypacayo collapsed. LaPlata dam overflowed and Carraizo Dam opened some of its gates as a measure to prevent flooding. Another report indicated that Cibuco River overflowed and flooded the Health Center of Vega Baja.

U.S. VIRGIN ISLANDS

None reported.

STORM DAMAGE CATAGORIES

REFERENCE NOTES

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

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

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

Definition of Fujita Tornado Scale (F scale)

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

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

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

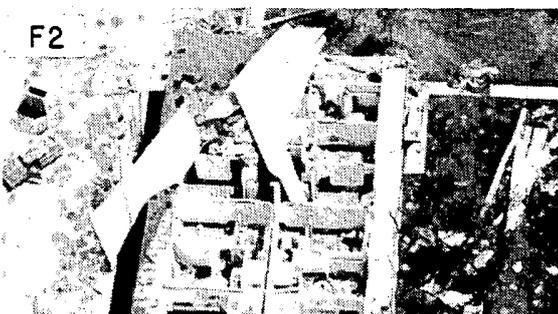
(F3) Severe tornado (158-206 mph): Severe damage
Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

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

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

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

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

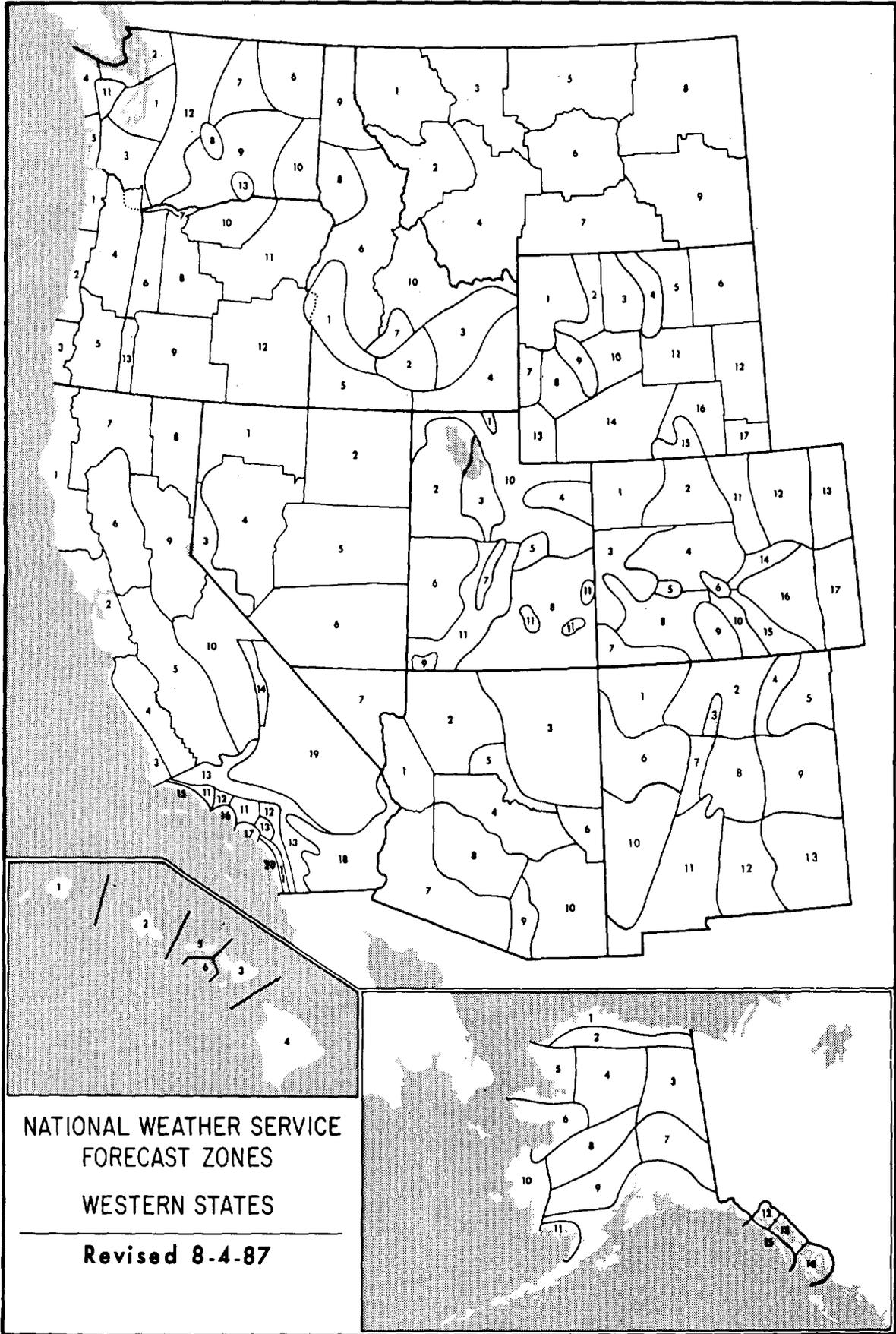


From J. Atmos. Sci., August 1981, p. 1517-1519

STORM SUMMARY

JULY 1991

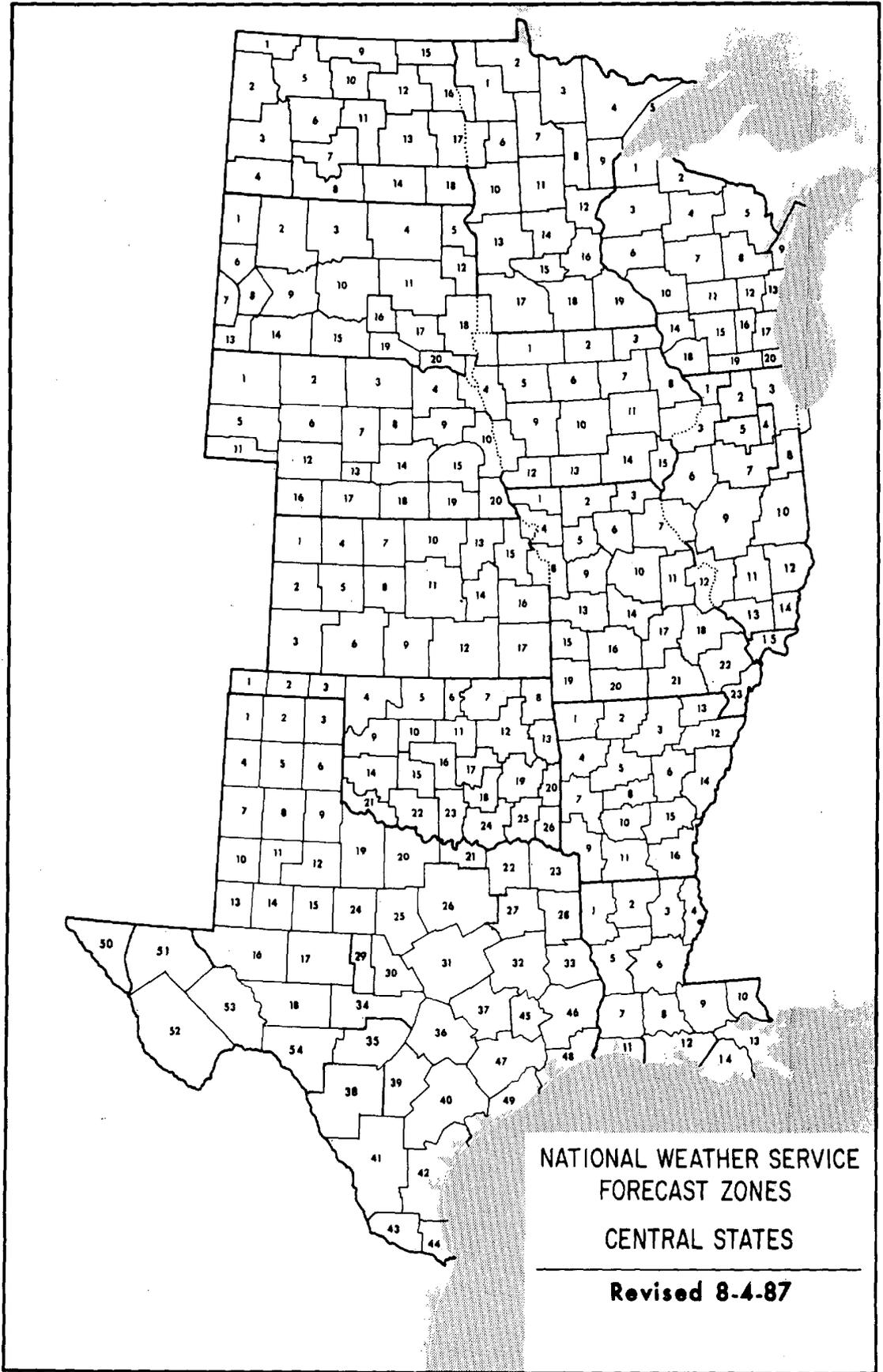
TYPE	ALABAMA	ARIZONA	ARKANSAS	CALIFORNIA	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA	IDAHO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND & D.C.	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI	MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE
TORNADOES																											
Number			1		5		1	7	1				1		1	2				4	11			6	1	1	
Days																											
Deaths																											
Injuries																											
Property Damage			0		0		0	0	0				0		0	0				0	0			0	0	0	
Crop Damage			0		0		0	1	0				0		0	0				0	0			0	0	0	
HAIL																											
Deaths																											
Injuries																											
Property Damage			0		0			0	0				0		0	0				0	0			0	0	0	
Crop Damage			0		0			0	0				0		0	0				0	0			0	0	0	
THUNDERSTORM WINDS																											
Deaths	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Injuries																											
Property Damage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Crop Damage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HIGH WINDS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
LIGHTNING																											
Deaths	2	4	0		1	0	0	2	0	0	1	0	0	0	0	1		2	0	0	0	0			0	0	
Injuries	17	10	5		4			3	0	0	0	0	0	0	0	0		5	0	0	0	0			0	0	
Property Damage	0	0	0		0			0	0	0	0	0	0	0	0	0		0	0	0	0	0			0	0	
Crop Damage	0	0	0		0			0	0	0	0	0	0	0	0	0		0	0	0	0	0			0	0	
FLASH FLOODS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
FLOODS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HEAVY SNOWSTORMS AND BLIZZARDS a																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ICE STORMS #																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HURRICANES AND TROPICAL STORMS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ALL OTHERS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											

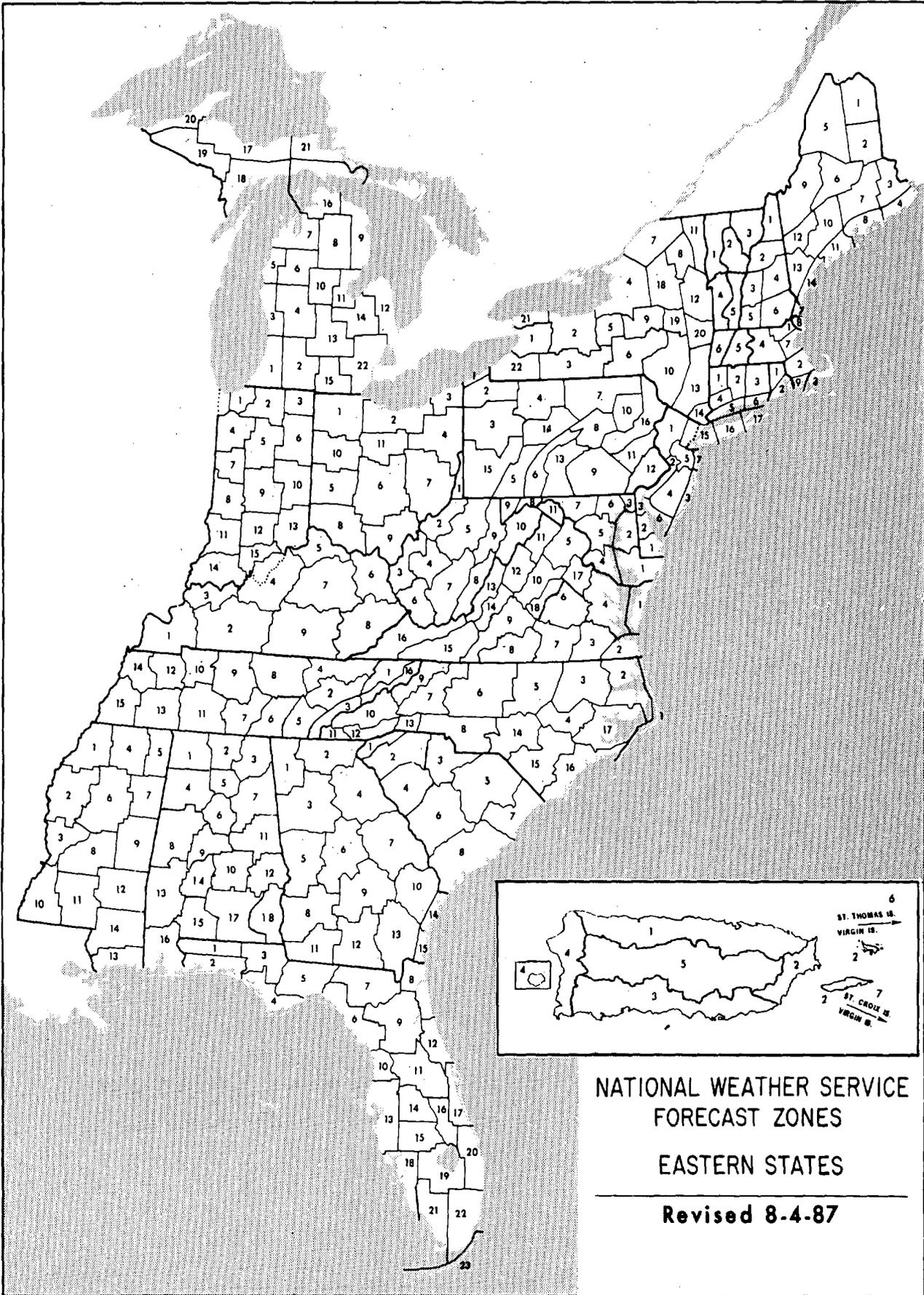


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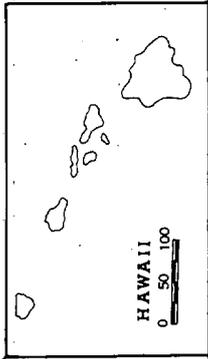
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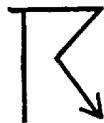
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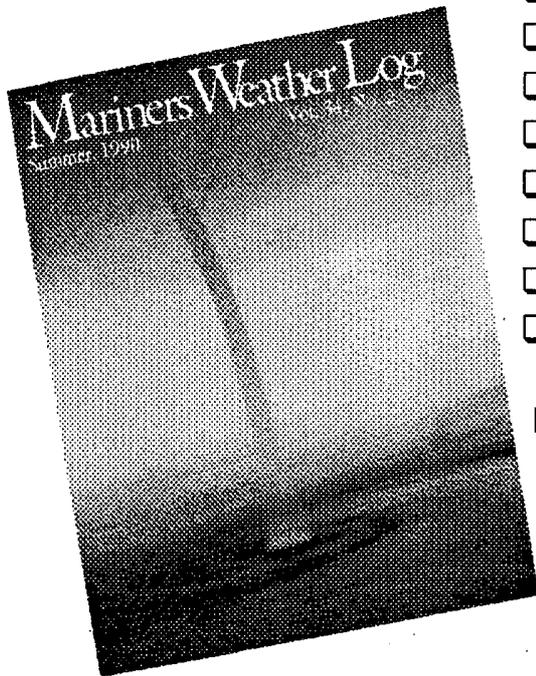
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