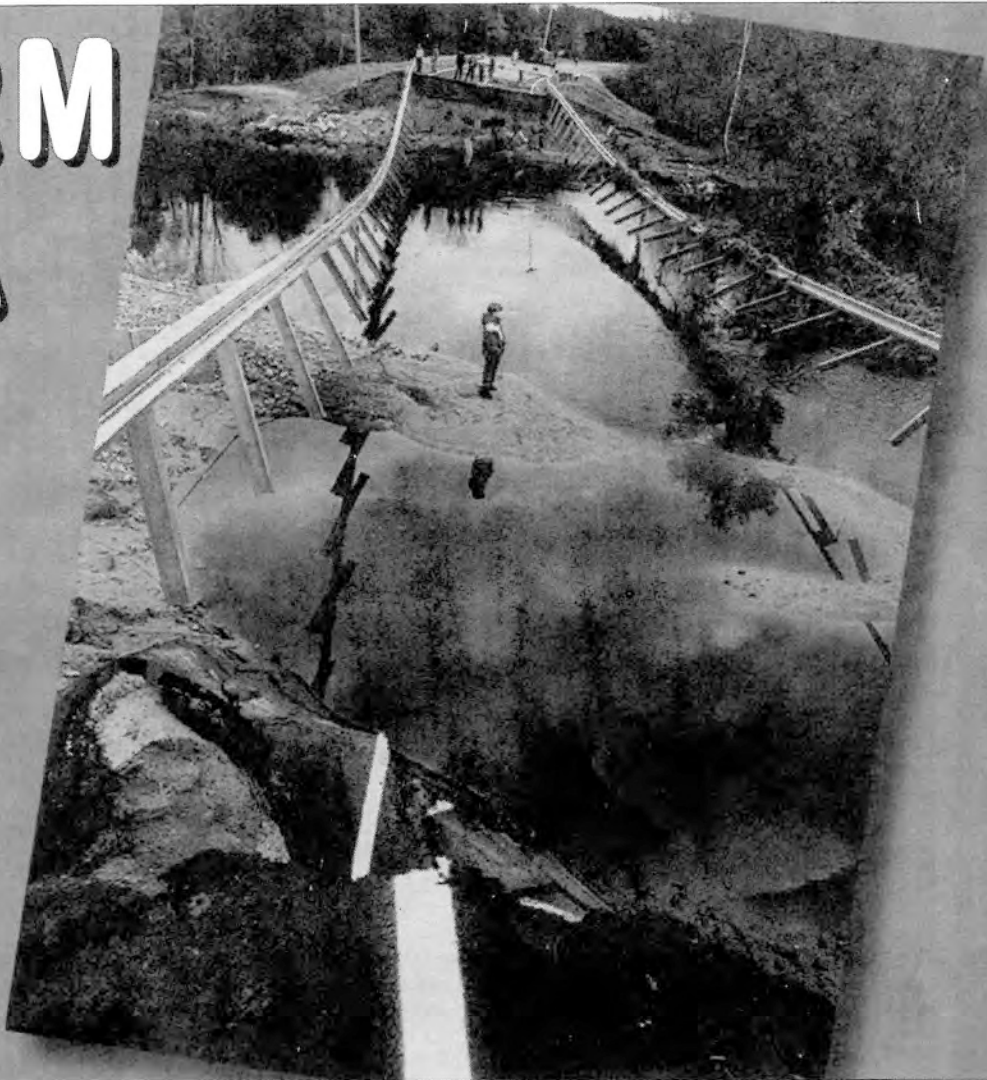


OCTOBER 1996
VOLUME 38
NUMBER 10

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: The bridge on Old Blue Point Road used to cross Stuart Brook in Scarborough, ME prior to the floods that followed the heavy rainfall of October 20-21. It was completely destroyed by the runoff from the record 13+ inch 24-hour rain. The National Weather Service reported a 24-hour rainfall of 13.32 inches at the Portland Jetport. This was almost double the 103 year station 24 hour record of 7.83 inches. The police erected temporary barriers but motorists had moved them earlier in the day. One fatality occurred when a driver attempted to cross the now non-existent bridge. Note that the guard rails remained intact despite the absence of the bridge. (Photo courtesy of Jack Milton, *The Portland Newspapers, Portland, ME*)

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STORM DATA

(ISSN 0039-1972)

National Climatic Data Center

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STORM DATA contains all confirmed information on storms available to our staff at the time of publication. However, due to difficulties inherent in the collection of this type of data, it is not all-inclusive. Late reports and corrections are printed in each edition.

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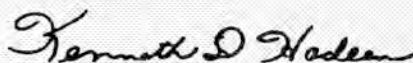
National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801-5001
(704) 271-4800 or (704) CLIMATE

The editor of **STORM DATA** solicits your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or unusual weather events (past or present). These could be for use in the "Outstanding Storms of the Month" or "Et Cetera" sections of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

Grant W. Goodge
National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801-5001

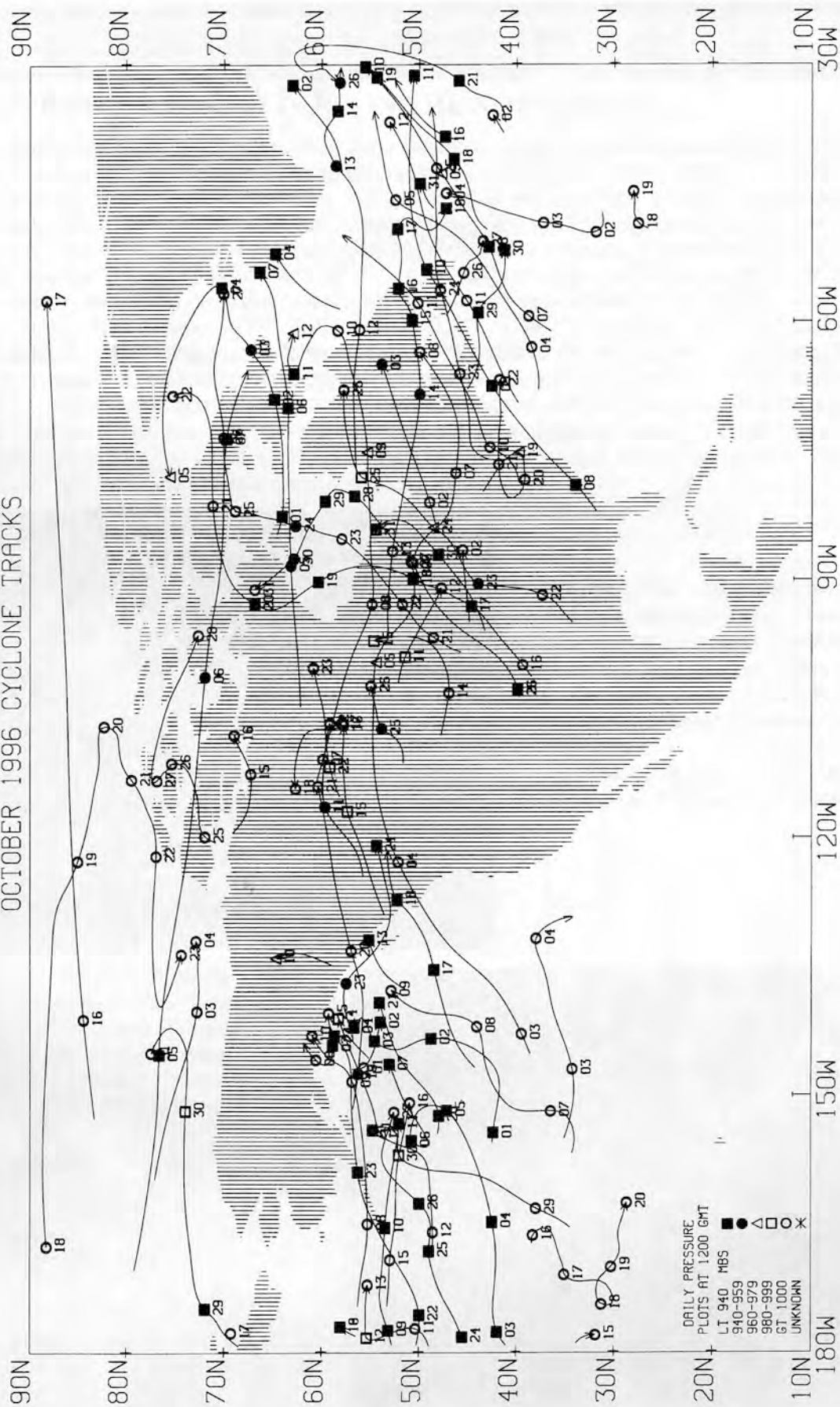
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"I certify that this is an official publication of the National Oceanic and Atmospheric Administration and is compiled from information received at the National Climatic Data Center, Asheville, North Carolina 28801-2733."

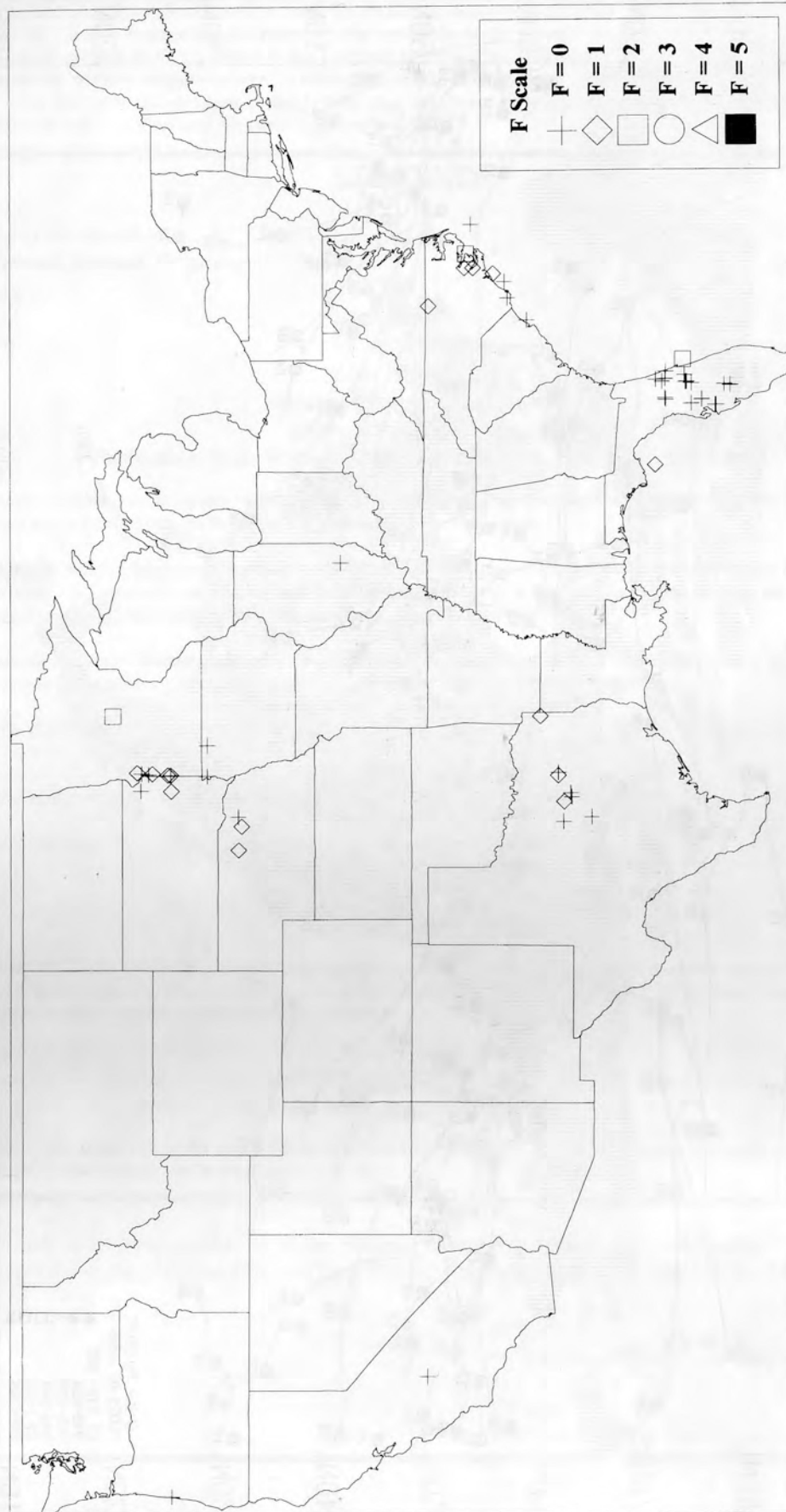


Director,
National Climatic Data Center

OCTOBER 1996 CYCLONE TRACKS



OCTOBER 1996 CONFIRMED TORNAADOES



F SCALE	F0	F1	F2	F3	F4	F5	TOTAL
NUMBER	41	15	3	0	0	0	59

OUTSTANDING STORMS OF THE MONTH

1. HEAVY RAINS CAUSE FLOODS IN THE NORTHEAST

A slow moving storm formed off the coast of New Jersey on the 19th and became wedged between two high pressure systems. The storm's minimum central pressure dropped to 997.4 mb (29.45 inches) as its position remained stationary, blocked by a 1024 mb (30.24 inches) high pressure system located in eastern Canada. The storm was also situated directly beneath a strong upper-level cut-off low, causing the storm to remain in one location for two days while pumping copious amounts of rainfall into the New England area. Storm rainfall totals of 2 - 14 inches were reported from central New Jersey to southern Maine. Some of the three day storm total rainfall amounts include: Newark, NJ 4.06", Central Park, NYC 4.50", JFK Airport, NYC 2.93", Hartford, CT 2.44", Providence, RI 3.06", Boston, MA 7.89", Portland, ME 14.64". Strong winds were also reported due to the strong pressure gradient between the pressure systems. A maximum wind gust of 62 mph was reported at the Blue Hill Observatory, in Milton, MA. Many rivers and tributaries exceeded their banks and flooded thousands of homes and businesses. The three day storm event caused over \$50 million in property damage. There was one death as a motorist attempted to cross a flooded roadway. He drowned when his vehicle was swept downstream. A few other individuals sustained minor injuries.



Left: The force of the rapidly moving waters caused the culvert under this bridge to be washed away. Only after the flood waters receded, was the extent of the damage visible.

(Photos courtesy of Doug James, The Portland Newspapers, Portland, ME)

Right: This vehicle in Gorham, ME. decided to ignore the barrier put up by the police. The earth beneath the road had already washed away, causing hazardous driving conditions.

Note: All photographs from the Portland Newspapers are Copyright 1996, The Portland Newspapers, Portland, ME. Used with Permission.

Special Thanks to John Jensenius, WCM, National Weather Service, Portland, ME who supplied the photographs.





Above: As a result of the heavy rainfall, the streams, rivers and low lying areas were inundated with rising flood waters. The nearly submerged vehicle above was indicative of the depth of the flood waters in the Portland area. The high water levels almost reached the top of the doorway of this Dunkin' Donuts franchise.

Below: A resident of Ocean Park walks down West Grand Avenue after being requested to evacuate the area. This photograph won first place honors for spot news in New England in the National Press Photographers Association monthly contest.

(Photos courtesy of Davis A. Rogers, The Portland Newspapers, Portland, Me.)



Storm Data and Unusual Weather Phenomena

October 1996

									October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		
					Killed	Injured	Property	Crops	Character of Storm

ALABAMA, North Central

Lauderdale County 4 N Cloverdale	17	2328CST			0	0	5K	2K	Hail (0.75)
Dime-sized hail was reported north of Cloverdale in the northwest part of the county.									
Lauderdale County Florence	17	2334CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported by several police officers just northwest of Florence.									
Franklin County Phil Campbell	18	0010CST			0	0	10K	2K	Hail (1.00)
One inch hail was reported in Phil Campbell in the southeast part of the county.									
Lawrence County Courtland	18	0022CST			0	0	5K	1K	Hail (0.75)
Dime size hail was reported near Courtland in the northern part of Lawrence County.									
Marion County Hamilton	18	0028CST			0	0	7K	2K	Hail (0.88)
Nickel size hail was reported by the Sheriff's Department in Hamilton in the west central part of the county.									
Lawrence County Moulton	18	0030CST			0	0	7K	1K	Thunderstorm Wind (G50)
Trees were reported blown down along Highway 33 and County Road 34 in the south central part of the county.									
Limestone County 12 NW Athens	18	0032CST			0	0	4K	0	Thunderstorm Wind (G50)
Trees were downed along Sugar Way Road in the northwest part of the county.									
Marion County Guin	18	0038CST			0	0	5K	1K	Hail (0.75)
Dime size hail was reported by the Sheriff's Department in Guin which is in the southern part of the county.									
Lamar County Sulligent	18	0055CST			0	0	7K	1K	Hail (0.50)
Trees were blown down along two different roads in Sulligent in the north central part of the county.									
Walker County Carbon Hill	18	0135CST			0	0	10K	0	Thunderstorm Wind (G50)
Power was knocked out due to trees and limbs falling on the lines in the Carbon Hill area of western Walker County.									
Walker County Jasper	18	0141CST			0	0	3K	0	Thunderstorm Wind
Several large limbs were blown down in a thunderstorm that affected Jasper in the central portion of Walker County.									
ALZ044	Montgomery	19	0300CST		0	0	0	0	Extreme Cold
The record low of 37 degrees was tied at Dannelly Field airport.									
ALZ006	Madison	29	1200CST		0	0	0	0	Excessive Heat
A new record high of 81 degrees was set at the Huntsville International Airport.									

ALABAMA, Southeast

NONE REPORTED.

ALABAMA, Southwest

Baldwin County Orange Beach	12	1030CST 1130CST			1	0			Rip Currents
Several people were swimming in rough surf in the Gulf of Mexico near the Alabama 161 overlook. One of the swimmers was pulled under by the rough surf and drowned. It took almost an hour to recover the 19 year old male. M19IW									
Choctaw County Paragon to Gilbertown	26	0520CST 0525CST			0	0	2K		Thunderstorm Wind (G50)
Trees were blown down along county road 16 between Paragon and Gilbertown. One of the trees fell onto a house. No injuries were reported.									

ALASKA, Northern

AKZ003-007	Upper Yukon Valley - Tanana Valley	11	1800AST		0	0			Heavy Snow
		14	1200AST						
With Arctic airmass covering the Interior, an upper level Low dropped southeast from the Chukchi Sea into the Gulf of Alaska, providing moist southwest flow to the central Interior over the cold airmass. The upper low deepened a surface Low moving north in the Gulf of Alaska, and this low's moisture overran the arctic airmass producing more snow over the central Interior. Snowfall ranged from 6.5 to 10.5 inches from Friday Evening into Monday over the greater Fairbanks area; the WSO at Fairbanks International Airport received 7.5". Delta Junction received 2", while Trimms Camp in Isabel Pass had 7", and Healey on the Parks highway reported 5.5 to 8". Central on the Steese Highway logged 9 inches, Coldfoot D.O.T. 8" and Livengood D.O.T. 18-20".									

Storm Data and Unusual Weather Phenomena

October 1996

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

ALASKA, Northern

AKZ005>006-024

Lower Kobuk Valley-Northern Seward Peninsula - Southern Seward Peninsula-Eastern Norton Sound - St. Lawrence Island-Bering Strait Coast

26 2235AST
28 1900AST

0 0

High Wind (G70)

Cold air over Far East Russia met the remains of typhoon Carlo, deepening the storm as it moved north over the extreme western Bering Sea, then over Far East Russia to the Russian Arctic Coast. The Warm front moved over the west coast of Alaska Sunday 27th, followed by a cold front Tuesday 29th. Maximum winds:

Zone 24: Gambell 44g55 kts, Savoonga 50g61 kts, Tin City 46g51 kts, Cape Prince of Wales 39g58 kts, Diomed unofficial gusts 70 kts. Zone 6: National Park Service Remoted Automated Weather Station at Hoodoo Hill 40g62 kts. No other reporting sites in the zone had qualifying values, though certain areas could have received strong winds.

Zone 5: Point Hope 52g62 kts, Shishmaref 39g47 kts, Noatak 36g47 kts, Kotzebue 38g44 kts.

AKZ001

Arctic Slope Coastal

27 1800AST
28 1242AST

1 0

Blizzard

The remains of typhoon Carlo moved north over the western Bering Sea and Far East Russia, deepening as cold air over Far East Russia moved into the low. The associated strong Warm front moved over the west coast of Alaska Sunday 27th, and across the North Slope and Interior Monday 28th. The cold front moved over the west coast of Alaska Tuesday. Blizzard conditions occurred over zone 5, mainly at Kotzebue, possibly at Point Hope (visibility sensor inop), and in Zone 1, primarily at Barrow. It is likely that at least near-blizzard conditions were occurring Sunday when a 34 YOM travelling by snowmachine from Barrow to Wainwright became disoriented, and eventually lost - body never recovered. M340U

**St.Lwrnce Is. Brng Strt
(C)**

Gambell

28 0000AST
1500AST

0 0

1M

Storm Surge

The remains of typhoon Carlo deepened in its trek north over the Bering Sea and Far East Russia. The Warm front moved across the west coast of Alaska Sunday 27th, and the Cold front moved over the area Tuesday. Between the two a long fetch of 50 to 60 kt spouthwest winds covered the Bering Sea. Hardest hit was the village of Diomed, on Little Diomed island: many lost/damaged items including two large container vans used for storage by the city and Native Store swept out to sea in the 40 ft waves, and communications were severed for a period of time. At Gambell, the south end of the runway was damages, along with the runway lights.

**S.Seward Pen E.Norton
Snd/Una**

**Wales to
Unalakleet**

28 0000AST
1500AST

0 0

10K

Storm Surge

The remains of typhoon Carlo deepened as it moved north over the western Bering Sea and Far East Russia. The warm front moved over the west coast of Alaska Sunday 27th, and the cold front and Tuesday 29th. Between the two a long fetch of 50-60 kt winds covered the Bering Sea. Damage: Teller: some damage to an old seawall. Shaltoolik: one boat washed away. Unalakleet: some erosion of the beach threatening one home. No damage at Nome, Golovin, Elim, Koyuk, St. Michaels, or Stebbins.

**Kotzebue/L.Kobuk
Vly/N.Seward
Shishmaref to
Pt Hope**

28 0000AST
1800AST

0 0

2K

Storm Surge

The remains of typhoon Carlo deepened as it moved north over the western Bering Sea and Far East Russia. The Warm Front moved across Zone 5 Sunday 27th and the cold front moved across the west coast Tuesday 29th. Between the two fronts a long fetch of 50 to 60 kt winds covered the Bering Sea. Damage: Shishmaref: 5-6 fish drying racks and 4 dogs lost; 4 homes now at risk from any subsequent storm surges. No damage at: Kotzebue, Kivalina, Point Hope.

AKZ004

Upper Kobuk-Koyukuk Valley

28 0300AST
29 0700AST

0 0

Heavy Snow

Ex-typhoon Carlo moved north over the western Bering Sea and Russia Far East from October 25 through October 29. The associated warm front moved northeast over the Interior of Alaska Oct 28. Snowfall totals reported: Coldfoot DOT Camp 6 inches.

AKZ007

Tanana Valley

30 0500AST
31 2359AST

0 0

Heavy Snow

Low Pressure in the Gulf of Alaska with several occluded fronts moving northeast over the southern Interior produced heavy snowfall on the north side of the Alaska Range and from Tok east. Totals for Oct 30 and 31, respectively: Denali National Park: 6.2' and 5.0", Healy D.O.T. 6" and 12", Cantwell D.O.T. 5-8" and 6-8", Trimmis D.O.T. 26" and 6", Tok D.O.T. 2.6" and 6.4", Northway 9" and 1".

ALASKA, Southeast

NONE REPORTED.

ALASKA, Southern

AKZ018-020

Cook Inlet-Susitna Valley - Kodiak Island-Eastern Alaska Peninsula

02 0000AST
03 2359AST

0 0

30K

High Wind (G65)

A strong 958mb low moved northward to 400 miles south of Cordova late Wednesday. The low then began to weaken and turn northeast Thursday morning. Northeast wind gusts reached 75 mph at Wasilla and 55 mph at the Palmer airport. 7,000 homes

Storm Data and Unusual Weather Phenomena

October 1996

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

ALASKA, Southern

were without power for up to 12 hours. Cars were dented and several trees were downed. The same storm brought northwest wind gusts of 56 mph to Kodiak.

AKZ018 **Cook Inlet-Susitna Valley**
04 **0000AST** **0** **0** **10K** **Ice Storm**
2359AST

A weakening front moved into the Anchorage area from the east and southeast. Cold air at lower levels led to several areas of freezing rain.

AKZ018 **Cook Inlet-Susitna Valley**
12 **0000AST** **1** **0** **50K** **Heavy Snow**
14 **2359AST**

The arctic front extended from the southern Copper River Basin into the extreme eastern Kenai Peninsula. A 984mb low just west of Middleton Island drifted counterclockwise through Prince William Sound, producing a Winter Storm across almost the entire Cook Inlet/Susitna Valley area. Snow was combined with freezing rain from the Palmer/Wasilla area southward. Snow totals of over 17 inches were recorded at the Anchorage International airport. Most areas affected by the storm received in excess of 8 inches of new snow. There were over 200 power outages, knocking out the public radio station KDLL in Kenai for nearly 24 hours. 90 "fenderbenders" were reported around Anchorage. F61OU

AKZ020 **Kodiak Island-Eastern Alaska Peninsula**
12 **0000AST** **0** **0** **High Wind (G40)**
15 **2359AST**

Brisk northwest winds were reported at Kodiak on the back side of a slowly weakening low near Middleton Island. Gusts reached 46 mph at the Kodiak airport at 2:42 pm Monday...however gusts reached in excess of 40 mph for the entire 4 day period.

AKZ021>022 **Western Alaska Peninsula - Eastern Aleutians**
17 **0000AST** **0** **0** **High Wind (G39)**
18 **2359AST**

A moderate weather front, moving east through the Aleutians and Alaska Peninsula brought wind gusts greater than 40 mph to the eastern Aleutians and Alaska Peninsula. Cold Bay reported gusts to 45 mph.

AKZ021 **Western Alaska Peninsula**
22 **0000AST** **0** **0** **High Wind (G39)**
23 **2359AST**

Northwest wind gusts reached 45 mph at Cold Bay on the back side of a moderate 982mb low that moved east through the area.

AKZ010>011-021>023 **Yukon-Kuskokwim Delta - Bristol Bay Coastal - Western Alaska Peninsula - Eastern Aleutians - St. Paul Island**
26 **0000AST** **0** **0** **High Wind (G56)**
28 **2359AST**

A low...spawned by the remains of ex-typhoon Carlo...moved northeastward along the Bering Sea Coast near Russia. It deepened to an intense 958mb center. Wind gusts were in excess of 40 mph at many areas of southwest Alaska and across the Aleutians and Alaska Peninsula. Akutan...in the eastern Aleutians...reported gusts in excess of 65 mph on Saturday. On Sunday, gusts reached 47 mph at Saint George (part of the Pribilof Island chain). Monday winds gusted to 53 mph at Cold Bay, 47 mph at Bethel and 48 mph at Cape Newenham.

AKZ018>019 **Cook Inlet-Susitna Valley - Central Gulf Coast**
29 **0000AST** **0** **0** **25K** **Heavy Snow**
31 **2359AST**

The arctic front remained near the Kenai Peninsula and inland areas of Prince William Sound. Heavy snow, rain and freezing rain caused widespread problems for motorists. Several homes reported water damage. Power lines were downed in several locations. Individuals involved in outdoor activities also were affected. The storm dumped 19 inches of snow onto Thompson Pass. 9.8 inches of snow fell around Anchorage from Tuesday to late Wednesday. Sutton recorded 14 to 18 inches of new snow before the snow changed to rain. A whopping 27.5 inches of new snow was reported along the Petersville Road (in the western Susitna Valley). 16 to 18 inches of new snow fell at Talkeetna.

AKZ011-021>022 **Bristol Bay Coastal - Western Alaska Peninsula - Eastern Aleutians**
30 **0000AST** **0** **0** **High Wind (G74)**
31 **2359AST**

Brisk northwest winds on the back side of a moderate 987mb low just south southwest of Kodiak were reported across many areas of the eastern Aleutians and Alaska Peninsula. Wind gusts reached 54 mph at Cold Bay, 58 mph at Dutch Harbor, 55 mph at Dillingham and close to 85 mph at Akutan.

AKZ018 **Cook Inlet-Susitna Valley**
31 **1400AST** **0** **0** **1K** **Ice Jam Flood (Minor)**
03 **1100AST**

An ice jam formed Thursday on the Anchor River, 1/4 mile downstream of the old Sterling Highway Bridge, caused the river to flow into the old channel. Affected areas included the Coho campground, the Beach access road and the area near Silver King Bait shop where "minor" flooding was reported.

ARIZONA, Central and Northeast

AZZ012 **Mogollon Rim/Plateau**
19 **1150MST** **0** **0** **High Wind (G52)**
1230MST

Gradient wind gusts exceeding 60 mph/ 52 kts reported by a weather spotter. Gusts estimated over 65 mph, but wind equipment could only measure 60 mph wind speeds.

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
<u>ARIZONA, Central and Northeast</u>										
AZZ011	Little Colorado River Valley									
	25	1300MST			0	0			High Wind (G65)	
		1310MST								
	Gradient wind gusts exceeding 60 mph. Max gusts recorded at the St. John's airport: 65 kts/75 mph.									
AZZ012-014	Mogollon Rim/Plateau - White Mountains									
	26	1000MST			0	0			Heavy Snow	
	27	1800MST								
	A strong snow storm produced heavy snow in the higher elevations of central Arizona. In the White Mountains the town of Greer received 12 inches of snow while Pinetop received 7 inches. Along the Mogollon Rim in Flagstaff 8 inches of snow accumulated with 9 inches accumulating at Walnut Canyon National Monument 10 miles east of Flagstaff.									
<u>ARIZONA, Northwest</u>										
NONE REPORTED.										
<u>ARIZONA, South</u>										
AZZ023>024	Tucson Metro/Santa Cruz Valley - Upper Gila River Valley									
	25	1200MST			0	0			High Wind (G68)	
		1700MST								
	A strong winter storm produced wind gusts to 58 kt near Safford and 68 kt on Mt Lemmon near Tucson. Widespread blowing dust reduced visibilities over much of the area.									
AZZ023-025	Tucson Metro/Santa Cruz Valley - Northern Greenlee County									
	26	0200MST			0	0			Heavy Snow	
		1400MST								
	A strong winter storm produced 20 inches of snow on Mt Lemmon in Pima county. 13 inches of snow fell at Hannagan Meadow and 14 inches fell at Blue, both in northern Greenlee county.									
Pima County										
Tucson	26	1030MST			0	0			Urban/Sml Stream Fld	
		1330MST								
	Heavy rain caused road closures in the Tucson Metro area.									
AZZ025	Northern Greenlee County									
	27	0800MST			0	0			Winter Storm	
		1400MST								
	A strong winter storm produced 11 inches of snow at Hannagan Meadows in Greenlee county.									
<u>ARIZONA, Southwest</u>										
AZZ019	Phoenix Metro/Central Deserts									
	25	1300MST			0	11			Dust Storm	
		1430MST								
	High winds and visibilities to near zero at times from blowing dust triggered a two-accident, nine car pileup at Interstate 10 and Chandler Boulevard. Eleven people suffered minor injuries. An unseasonably strong storm system and associated cold front was responsible for the high winds.									
<u>ARKANSAS, Central and North Central</u>										
Newton County										
Fallsville	17	1440CST			0	0			Thunderstorm Wind (G50)	
	Thunderstorm winds downed some large tree limbs and power lines.									
Johnson County										
Ozone	17	1455CST			0	0			Thunderstorm Wind (G50)	
	Thunderstorm winds blew down some large tree limbs and power lines.									
Montgomery County										
5 N Story	17	1607CST			0	0			Hail (1.75)	
Van Buren County										
Alread	17	1625CST			0	0			Hail (1.75)	
Fulton County										
Salem	17	1635CST			0	0			Hail (0.75)	
Stone County										
Rushing	17	1645CST			0	0			Thunderstorm Wind (G50)	
	Thunderstorm winds blew down a few trees.									
Stone County										
Mountain View	17	1650CST			0	0			Thunderstorm Wind (G52)	
	Thunderstorm winds gusted to 60 mph at Mountain View.									
Stone County										
Hanover	17	1650CST			0	0			Funnel Cloud	
	A funnel cloud was observed by the public and local law enforcement officials.									
Grant County										
Sheridan	17	1738CST			0	0			Hail (0.75)	
Grant County										
Sheridan	17	1738CST			0	0			Hail (1.00)	
Garland County										
15 E Hot Spgs	17	1744CST			0	0			Hail (0.75)	

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
ARKANSAS, Central and North Central									
Saline County 4 W Benton	17	1802CST			0	0			Hail (1.00)
Jefferson County 1 W Pine Bluff	17	1848CST			0	0			Hail (0.75)
Jefferson County 1 W Pine Bluff	17	1848CST			0	0			Funnel Cloud
A funnel cloud was observed by the public just west of Pine Bluff.									
Grant County Sheridan	17	1850CST			0	0			Hail (0.75)
Jefferson County Pine Bluff	17	1920CST			0	0			Thunderstorm Wind (G52)
Thunderstorm winds gusted to 60 mph in Pine Bluff.									
Jefferson County Pine Bluff	17	1920CST			0	0			Hail (0.75)
Grant County 5 E Sheridan	17	1930CST			0	0			Thunderstorm Wind (G50)
Some trees and power lines were blown down.									
Jefferson County Hooker	17	1945CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds downed several trees and power lines.									
Lincoln County 12 N Star City	17	1955CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds blew down some trees and power lines.									
Cleveland County 6 S Rison	17	2005CST			0	0			Hail (0.75)
Lincoln County Gould	17	2015CST			0	0			Thunderstorm Wind (G61)
Thunderstorm winds gusted up to 70 mph at Gould.									
Drew County Monticello	17	2045CST			0	0			Hail (0.75)
Bradley County 5 SE Warren	17	2110CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds downed a few trees.									
Desha County 6 N Arkansas City	17	2120CST			0	0			Thunderstorm Wind (G87)
Thunderstorm winds gusted to 100 mph at a paper mill 6 miles north of Arkansas City. The winds were measured by wind equipment located at the mill.									
Polk County Rich Mtn	20	2255CST			0	0			Hail (0.75)
Scott County 8 W Y City	20	2300CST			0	0			Hail (0.75)
Scott County Parks	20	2340CST			0	0			Hail (1.75)
Yell County Danville	21	0030CST			0	0			Hail (0.75)
Yell County Ola	21	0046CST			0	0			Hail (0.75)
Garland County 1 E Hot Spgs	21	1356CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds downed some trees and power lines.									
Saline County Bryant	21	1430CST			0	0			Hail (0.75)
Pulaski County Alexander	21	1445CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds downed a large tree.									
Ouachita County 2 NW Chidester	21	1540CST			0	0			Hail (0.75)
Ouachita County Chidester	21	1615CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down some large tree limbs and tore the tops out of some trees.									
Ouachita County 2 E Amy	21	1615CST			0	0			Hail (0.75)
Ouachita County Louann	21	1800CST			0	0			Hail (0.75)
Calhoun County 2 N Hampton	21	1830CST			0	0			Thunderstorm Wind (G50)

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>ARKANSAS, Central and North Central</u>									
Thunderstorm winds downed some trees.									
Jefferson County Pine Bluff	21	2003CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds blew down some trees and road signs.									
Pulaski County Little Rock	27	1935CST 2030CST			0	0			Urban/Sml Stream Fld
Heavy rains resulted in some minor street flooding in parts of Little Rock.									
<u>ARKANSAS, East</u>									
Clay County Corning	17	1845CST 1850CST			0	0	0.50K		Thunderstorm Wind
Several large tree limbs were knocked down.									
Poinsett County Harrisburg	17	1935CST 1940CST			0	0			Thunderstorm Wind (G63)
Poinsett County Marked Tree	17	1938CST 1943CST			0	0	0.10K		Hail (1.00)
Poinsett County Payneway to Tyronza	17	1945CST 1955CST			0	0	25K		Thunderstorm Wind
A gustnado along the leading edge of a bow echo, moved along Highway 14 through the town. Damage was spotty and mostly to weak structures, trees and power lines. Mobile homes were blown off their foundations and several homes sustained roof damage, ranging from a few shingles being removed to entire sections of the roof being removed. Several homes also sustained siding and antenna damage. Numerous sheds and outbuildings were damage and destroyed. One small shed was picked up and carried for over 100 yards over a row of trees into a nearby yard. A seed cleaning company was also destroyed, as half of the metal and tin building was blown and twisted by the wind. a church also sustained roof damage. Many large trees were blown down, snapped off or uprooted, and street and yards were littered with large limbs, tin and other debris from the storm. There were no injuries. The entire town of Payneway was without power the next day. The storm continued east, damaging trees and weak structures at Tyronza and Marked Tree.									
Poinsett County Payneway	17	1950CST 1955CST			0	0	0.75K		Hail (1.75)
Mississippi County Wilson	17	2000CST 2005CST			0	0	1K		Thunderstorm Wind
Several trees were blown down on top of power lines.									
Lee County New Salem	17	2005CST 2010CST			0	0	2K		Thunderstorm Wind
Some windows were blown out of a house.									
St. Francis County Shell Lake	17	2012CST 2017CST			0	0			Thunderstorm Wind (G63)
Craighead County Jonesboro	21	0535CST 0540CST			0	0	0.10K		Hail (0.88)
<u>ARKANSAS, Northwest</u>									
NONE REPORTED.									
<u>ARKANSAS, Southeast</u>									
NONE REPORTED.									
<u>ARKANSAS, Southwest</u>									
Little River County Wilton	17	1600CST			0	0			Hail (0.75)
Hempstead County Fulton	17	1628CST			0	0			Hail (0.75)
Howard County Dierks	17	1700CST			0	0			Hail (1.00)
Miller County Texarkana	17	1800CST			0	0			Hail (1.75)
Miller County 1 W Texarkana	21	1338CST			0	0			Hail (0.75)
Hempstead County Fulton	21	1420CST			0	0			Thunderstorm Wind (G60)

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
Killed	Injured	Property							
ARKANSAS, Southwest									
Trees blown across power lines caused numerous power outages.									
Hempstead County									
Hope	21	1432CST			0	0			Thunderstorm Wind (G60)
Trees blown down across power lines causing numerous power outages.									
Nevada County									
Rosston	21	1504CST			0	0			Hail (0.75)
Lafayette County									
Bradley	21	1628CST			0	0			Hail (1.00)
Lafayette County									
2 NW Canfield	21	1652CST			0	0			Thunderstorm Wind (G60)
Columbia County									
Magnolia	21	1655CST			0	0			Hail (1.00)
CALIFORNIA, Extreme Southeast									
NONE REPORTED.									
CALIFORNIA, North Central									
Yolo County									
Woodland	30	1205PST 1215PST			0	0			Funnel Cloud
In the unstable air behind a cold front, a spotter witnessed a funnel cloud over the town of Woodland.									
CALIFORNIA, Northeast									
NONE REPORTED.									
CALIFORNIA, Northwest									
CAZ001	Northwest California								
	06	1900PST			0	0			Fog
	07	0130PST							
Visibilities of 1/8 mile or less from the Oregon border to Cape Mendocino along the coast.									
Humboldt County									
2 S Fieldbrook	25	1100PST			0	0			Wind Damage
Two trees were downed, several artichoke plants were ripped out of the ground and a willow tree was damaged by a convective wind gust. Unconfirmed report of a funnel cloud, possible cold air funnel.									
CALIFORNIA, South Central									
CAZ010	Southern Sierra Nevada-West Slopes								
	26	2300PST			0	0	50K	0	High Wind (G85)
	27	0340PST							
Strong northeast wind known as Mono Winds ripped through the middle Southern Sierra Nevada Mountains late Saturday October 26 and early Sunday October 27. Known damage limited to large trees down within Yosemite National Park. Observed winds from USFS RAWs stations ... Oak Opening 020 degs at 57Kts Sunday Oct 27 at 0600 PST; peak wind of 85Kts overnight at Oak Opening at 3200 feet in Tulare County.									
Fresno County									
Fresno	29	0700PST 1900PST			0	0			Heavy Rain
The first storm of the 1996-97 water year brought record amounts of rain to the San Joaquin Valley and adjacent Southern Sierra Nevada Mountains. Rain on the 29th in Fresno was 1.5 inches topping the old mark of 0.87 inches for the date. Over the 29th and 30th almost 2 inches of rain fell. 27 inches of snow fell at Edison Lake with 15 inches at Shaver Lake, both in the Fresno County Southern Sierra Nevada.									
CAZ010	Southern Sierra Nevada-West Slopes								
	29	1730PST			0	0			Winter Storm
	30	1200PST							
Along with heavy rain on the San Joaquin Valley floor substantial snow accumulations were recorded in the adjacent Southern Sierra Nevada Mountains. These amounts were particularly large considering the time of year. In Fresno County 27 inches of snow was noted at Edison Lake from the event...15 inches at Shaver Lake. Similar amounts at Wishon Dam...Kaiser Pass...and Huntington Lake.									
Fresno County									
1 SW Fresno to .7 SW Fresno	30	1250PST 1255PST	0.2	10	0	0	0	1K	Tornado (F0)
Following a significant rain over Central California the post-frontal airmass became unstable. Convective activity resulted in funnel clouds and at least one small tornado.									
Fresno County									
Fresno	30	1325PST 1530PST			0	0			Hail (0.50)
Hail not quite reaching severe limits occurred most likely with the tornadic thunderstorm that occurred in near southwest Fresno.									
Madera County									
2 NE Chowchilla	30	1410PST 1415PST			0	0			Funnel Cloud
Large, wide funnel cloud observed by several skywarn spotters but no apparent touchdown.									

Storm Data and Unusual Weather Phenomena

October 1996

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

CALIFORNIA, South Central

Fresno County

7 S Fresno

30 1456PST
1501PST

0 0

Hail (0.50)

Skywarn spotter indicated that 1/2 inch hail occurred in the vicinity of Easton just before 3 PM PST.

Kern County

7 NNW Bakersfield to
7 N Bakersfield

30 1500PST
1510PST

0 0

Hail (0.50)

Thunderstorms provided for gusty wind and small hail in Central California including this event through northern Kern County where hail was reported at 1/2 inch in diameter and covering a major roadway at a point between Bakersfield and Porterville.

Fresno County

10 SW Kerman

30 1610PST
1615PST

0 0

5K

0

Thunderstorm Wind

Thunderstorm downburst wind resulted in small structure roof damage in west Fresno County. Some confusion whether it was a small tornado but interviews lack any indication of observed rotation.

CALIFORNIA, Southeast

NONE REPORTED.

CALIFORNIA, Southwest

San Diego County

Harmony Grove to
Otay

21 1400PST
25 1800PST

0 6

37.4M

Wild/Forest Fire

Santa Ana winds averaging 30 mph, with gusts to 45, fanned the flames of three wildfires across San Diego County. The first fire started in Harmony Grove, and quickly spread westward to eastern sections of Carlsbad and Encinitas, burning some 8,600 acres, destroying 125 homes, damaging 122 others, and seriously burning one man. Another fire broke out at 6:55 pm on the Rincon Indian Reservation, and spread to Valley Center, consuming 1,800 acres, and destroying six structures. The largest fire began around 2:00 am on the 22nd, on desolate Otay Mountain, and spread to the Tijuana River in Mexico, burning over 14,000 acres, three radio towers, and six cows, before it was under control on the 25th. In all, six people were injured, one critically by fire, 24,435 acres burned, and preliminary damages totaled 37.4 million dollars.

CALIFORNIA, Upper

NONE REPORTED.

CALIFORNIA, West South Central

CAZ011>013

Southern California Coastal Valleys - Southern California Intermediate Valleys - Southern California Mountain Areas

21 0500PST
22 0600PST

0 0

High Wind (G61)

Surface high pressure across the Great Basin produced strong Santa Ana winds across the mountains and valleys of Southern California. Sustained wind speeds of 35 to 50 mph with gusts up to 70 mph were common.

Los Angeles County

Malibu

21 0800PST
27 1800PST

0 16

1.5M

Wild/Forest Fire

A wildfire...sparked by arcing power lines...burned over 13,000 acres of land between Calabasas and Malibu. Two separate Santa Ana wind events...with wind gusts up to 70 mph...helped spread the flames toward the ocean through the week. Six homes...four mobile homes and three vehicles were destroyed. Sixteen emergency personnel were injured...including fourteen firefighters.

Orange County

Lemon Heights

21 0900PST
2000PST

0 0

3M

Wild/Forest Fire

Strong Santa Ana winds...gusting up to 71 mph...knocked down a power transformer in the Lemon Heights area. As a result...a fire began in the community. By the time the fire was extinguished...twenty-nine homes were destroyed.

CALIFORNIA, Western

Monterey County

45 N Cambria to
30 S Carmel

07 0000PST
15 1200PST

0 3

4.5M

1M

Wild/Forest Fire

The fire known as Wild Cattle Canyon Fire burned over 20,000 acres mostly in the Las Padres National Forest and Big Sur area. This fire lasted 7 days and was supported by an IMET from San Juaoquin Valley NWFO. 15 Federal, State, and local agencies provided as many as 2200 firefighters were on the fire.

Three Firefighter were injured from falling in the steep terrain. The cost in the firefight alone was \$4.5 Million. 5 homes were destroyed. two vehicles,two travel trailers and nine outbuildings were destroyed. High temperatures proceeded the fires with a high of 102 in Monterey. Heavy fog caused problems because aircraft and helicopters could not operate over the very rugged terrain. A light drizzle finally came and aided the demise of the fire but also made the terrain very slippery and dangerous for firefighters.

Storm Data and Unusual Weather Phenomena

October 1996

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

CALIFORNIA, Western

Monterey County

2 S Big Sur to 10 S Big Sur 18 0700PST 0 0 12.3M 0 Wild/Forest Fire
10 0800PST

This fire known as the Big Sur fire began Oct 18 near Ventana Camp Park. Much of the fire occurred in the Ventana wilderness area. 2500 Fire fighter participated. 4400 acres were burned. light rain helped control fire. The cost of fighting the fire is estimated 12.3 million. 180 fire engines were used. 13 helicopters and 3 air tankers were used.

CAZ002 San Francisco Bay Region

25 0000PST 0 0 0 0 High Wind
2355PST

CAZ002 San Francisco Bay Region

26 0000PST 0 0 High Wind
2359PST

This storm continued for three days on the 25,26,27. winds in the 40 kt range were widespread over the San Francisco Bay Area. There were some gusts in the 50 kt range over higher terrain. The major result was 42,000 power outages spread over the period. Most of this was caused by trees or limbs falling across power lines. In many instances the lines simply were blown to close to each and they arced. A couple of small fires resulted from down power lines.

COLORADO, Central and Northeast

COZ033>034 Rabbit Ears & Medicine Bow Ranges/Rocky Mountain National Park - Summit County/Mosquito Range/Indian Peaks

16 1500MST 0 0 0 0 Heavy Snow
17 1300MST

A fast moving storm system brought heavy snow to portions of the Colorado High Country. At Breckenridge and the Eisenhower Tunnel 8-10 inches of snow fell while Winter Park picked up 6 inches.

Larimer County

Fort Collins

16 1500MST 0 3 0 Lightning

A thunderstorm quickly developed at Fort Collins as a cold front moved through the area. A lightning bolt struck an aluminum goalpost at the CSU football field during practice. Three players standing nearby were knocked off their feet but received only minor injuries.

COZ033>034 Rabbit Ears & Medicine Bow Ranges/Rocky Mountain National Park - Summit County/Mosquito Range/Indian Peaks

19 1800MST 0 0 0 0 Heavy Snow
20 1500MST

Another storm system moved across the North Central Mountains and Front Range Foothills. Snowfall amounts from around the area generally ranged from 4 to 7 inches.

COZ033>036-041 Rabbit Ears & Medicine Bow Ranges/Rocky Mountain National Park - Summit County/Mosquito Range/Indian Peaks - Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Eastern Douglas And Western Elbert Counties/Castle Rock And Vicinity

25 0000MST 0 0 0 0 Heavy Snow
1200MST

Another 4 to 6 inches of snow fell in the North Central Mountains and Front Range Foothills. In addition the snowpacked and slick road conditions, along I-25 near Larkspur in Douglas County, resulted in a 50-60 car pileup. Most of the people received minor injuries.

COZ035>036-038>040-044-046-048>050 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Eastern Larimer And Northwestern Weld Counties - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area - Morgan County/Fort Morgan And Vicinity - Eastern Elbert And Northern Lincoln Counties/Limon And Vicinity - Logan County/Sterling And Vicinity - Washington County/Akron And Vicinity - Sedgwick And Phillips Counties

29 0430MST 1 5 5.2M 0 High Wind (G88)
1600MST

High winds gusting from 70 to around 100 mph blasted across much of Northeast Colorado. The high winds were the result of a strong upper level jet ejecting out of the desert southwest and the development of a vigorous surface low in the Northeast Plains.

One man was killed when a strong wind gust overturned a popup camper on him as he tried to secure it. In addition, five people at the Rocky Flats Environmental Test Facility received minor injuries when several windshields were blown out, spraying glass onto them.

Several trees and power lines were also downed. A condominium in Fort Collins was damaged by a falling tree and two 75-ft pine trees were uprooted at the Mount Olivet Cemetery in Arvada, northwest of Denver. Total damage estimates to property around Northeast Colorado was approximately \$5.2 million.

A few of the stronger gusts included: 101 mph (88 kts) at Jefferson County Airport, 100 mph (87 kts) 1 mile east of Buckhorn Mountain and Golden Gate Canyon, 96 mph (83 kts) at Coal Creek Canyon, 95 mph (83 kts) at Carter Lake, 87 mph (76 kts) at Upper Table Mesa in Boulder, 86 mph (76 kts) at Crook, 76 mph (66 kts) at Akron, 75 mph (65 kts) at Fort Morgan and Sedgwick and 70 mph (61 kts) 4 miles east of Haxtun. M48OT

COLORADO, East Central

COZ090>092 Yuma County - Kit Carson County - Cheyenne County

16 1700MST 0 0 High Wind (G68)
2100MST

COZ090>092 Yuma County - Kit Carson County - Cheyenne County

29 1000MST 0 0 High Wind (G61)
1900MST

A powerful storm system moving through Nebraska brought damaging winds to Eastern Colorado.

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
October 1996									
COLORADO, South Central and Southeast									
COZ065>068-070>075	Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Teller County/Rampart Range/Pikes Peak - Western Fremont And Northern Custer Counties - Wet Mountains - Southern El Paso County/Colorado Springs And Vicinity - Northern El Paso County/Monument Ridge - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity - Upper Purgatoire River Basin/Trinidad And Vicinity								
	20	1930MST			0	0			Heavy Snow
	21	1100MST							
	A large upper level trough with accompanying upslope flow moved across the area. From the evening of the 20th until midmorning of the 21st, snowfall ranged from El Paso county to Huerfano county, with totals ranging from 3 to 7 inches. Nearly 10 inches fell in extreme eastern Custer county across the Wet Mountains. Two to 6 inches of snow fell across El Paso county, and caused numerous traffic problems in Colorado Springs.								
COZ072	Northern El Paso County/Monument Ridge								
	26	0200MST			0	0			Heavy Snow
		1100MST							
	A band of heavy snow fell in northern El Paso county, bringing 6 to 8 inches of snow and icy roads to the Monument, Black Forest, and Eastonville areas. In addition, gusty northwest winds of 20 to 40 mph produced blowing and drifting snow and reduced visibilities, especially along I-25 south of Monument Hill.								
COZ060>075	La Garita Mountains - Eastern San Juan Mountains - Northern San Luis Valley/Del Norte And Vicinity - Alamosa County/Alamosa And Vicinity - Southern San Luis Valley - Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Teller County/Rampart Range/Pikes Peak - Western Fremont And Northern Custer Counties - Upper Arkansas River Valley/Salida And Vicinity - Wet Mountains - Southern El Paso County/Colorado Springs And Vicinity - Northern El Paso County/Monument Ridge - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity - Upper Purgatoire River Basin/Trinidad And Vicinity								
	26	2230MST			0	0			Winter Storm
	29	0030MST							
	A potent winter storm brought heavy snowfall to south central and southeast Colorado beginning late night on the 26th and lasting into the afternoon of the 27th. However, snow continued to fall and accumulate across the south central and southwest mountains until early morning of the 29th. Snowfall totals ranged from 3 to 6 inches for the Pueblo area, 6 to 11 inches for the southern foothills and the San Luis Valley, and 10 to 17 inches for the mountains. Summitville, in the San Juan Mountains received a storm total of 23 inches.								
COZ066>067-071-073	Southern Sangre De Cristo Mountains - Teller County/Rampart Range/Pikes Peak - Southern El Paso County/Colorado Springs And Vicinity - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity								
	29	0430MST			0	0	250K		High Wind (G80)
		1630MST							
	A strong low pressure system moved quickly to the northeast across Colorado, producing sustained high winds and damaging gusts over an area that stretched from the Sangre De Cristo Mountains east to the Colorado/Kansas border. Numerous trees were uprooted, and fences, signs, and power lines were taken down in the Colorado Springs and Pueblo areas. Peak gusts reported were 80 knots in Colorado Springs, 70 knots across the Rampart Range west of Colorado Springs, and 61 knots in Pueblo and across Cucharas Pass, in extreme southern Colorado.								
COLORADO, West									
COZ009>010-012-015	Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Leadville And Vicinity								
	16	1100MST			0	0			Heavy Snow
	17	0700MST							
	An early autumn storm brought 6 to 8 inches of new snow above the 7000 foot level in the central mountains of western Colorado. Slick and snowpacked roads resulted in many traffic accidents.								
Gunnison County									
23 SSW Sapinero	16	1245MST			1	0			Thunderstorm Wind (G60)
		1300MST							
	A combination of thunderstorm outflow winds and gradient winds associated with a cold front in the area blew over a large Aspen tree crushing a 12 year old boy on a hunting trip just above Silver Jack Reservoir. Emergency personnel in the area reported "gale force winds", causing them difficulty in keeping their vehicle on the road. M12UT								
COZ004>005-009>010-012-015-018>019	Elkhead And Park Mountains/Flat Tops/White River Plateau - Upper Yampa River Basin/Steamboat Springs And Vicinity - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Leadville And Vicinity - Northwestern San Juan Mountains - Southwestern San Juan Mountains								
	19	1700MST			0	0			Heavy Snow
	20	1200MST							
	The first widespread autumn snowstorm to hit the mountains of western Colorado resulted in numerous traffic accidents. Reported snowfall totals ranged from 4 to 8 inches.								
COZ006	Grand Valley/Grand Junction And Vicinity								
	19	2114MST			0	0	8K		High Wind (G50)
		2130MST							
	High winds associated with an approaching cold front broke off numerous tree branches which knocked down many power lines in Grand Junction. A peak gust of 58 MPH occurred at Walker Field Airport.								

Storm Data and Unusual Weather Phenomena

October 1996

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

COLORADO, West

COZ004>005-009>010-012-015-018>019 Elkhead And Park Mountains/Flat Tops/White River Plateau - Upper Yampa River Basin/Steamboat Springs And Vicinity - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Leadville And Vicinity - Northwestern San Juan Mountains - Southwestern San Juan Mountains

25 1700MST 0 0 Winter Storm
26 0900MST

A winterlike storm dumped widespread snow in the mountains of western Colorado. Areas of heavy snow and reduced visibilities in blowing snow contributing to numerous vehicle accidents. Reported snowfall totals above the 6000 foot level generally ranged from 4 to 8 inches.

COZ002>005-009>010-012-015-017>019 Central Yampa River Basin/Craig-Hayden And Vicinity - Roan And Tavaputs Plateaus - Elkhead And Park Mountains/Flat Tops/White River Plateau - Upper Yampa River Basin/Steamboat Springs And Vicinity - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Leadville And Vicinity - Uncompahgre Plateau - Northwestern San Juan Mountains - Southwestern San Juan Mountains

28 1200MST 0 0 Winter Storm
29 0800MST

Another storm brought heavy snow to the mountains and some lower elevation areas of western Colorado, resulting in traffic accidents and road closures. Nearly 2 feet of new snow was reported over Red Mountain Pass and Molas Pass in the San Juan Mountains. Other snowfall totals included at least 10 inches on Vail Pass and 10 inches at Steamboat Springs. Craig and Durango both received 5 inches of new snow. Gusty winds in some areas complicated driving conditions due to blowing snow and reduced visibilities.

CONNECTICUT, Northeast

CTZ002 Hartford
20 0900EST 0 0 Flood
21 0600EST

CTZ002 Hartford
21 0300EST 0 0 Flood
22 0700EST

An extensive, slow moving surface low pressure system became positioned along the mid-Atlantic coast during the evening of October 19th and meandered there for 48 hours before finally heading northeast across southeast New England.

In Hartford County, the North Branch of the Park River reached flood stage of 8 feet at 10 AM on October 20th, crested at 9.8 feet at 7 PM, and then fell below flood stage at 7 AM on the 21st. The Farmington River reached flood stage of 12 feet at Simsbury at 4 AM on October 21st, crested at 12.53 feet at 3 PM the same day, then dropped below flood stage at 8 AM on October 22nd.

CONNECTICUT, Northwest

CTZ001 Litchfield
20 0100EST 0 0 10K Strong Wind
1800EST

A nearly stationary low pressure system over southern New Jersey and southeast Pennsylvania produced heavy rains and strong gusty winds across Litchfield County, Connecticut on Sunday October 20. The storm dumped several inches of rain across the higher terrain of Litchfield County. Due to the combination of saturated soil and water laden trees, strong gusty winds downed trees and power lines in several locations throughout the county. Damage was most widespread in the Kent area.

Litchfield County
Woodbury/Litchfield 20 0500EST 0 0 7K Flash Flood
1800EST

Litchfield County
Washington 20 1800EST 0 0 5K Flash Flood
2300EST

CTZ001 Litchfield
20 2300EST 0 0 3K Flood
21 1100EST

On October 19 and 20 a nearly stationary low pressure system over southern New Jersey and southeast Pennsylvania produced heavy rains across much of eastern New York and western New England. Rainfall totals in Litchfield County Connecticut averaged several inches, with 5.65 inches at Woodbury. The heavy rain produced road flooding across much of Litchfield County on Sunday October 20. The worst flooding occurred in Woodbury, Washington and Litchfield. Minor flooding also occurred along the Housatonic and Aspetuck Rivers. In New Milford, a house was flooded by the Aspetuck River, where the Aspetuck flows into the Housatonic. By Monday morning October 21, the Housatonic River fell below flood stage in Litchfield County.

CONNECTICUT, Southern

Fairfield County
Countywide 08 1300EST 0 0 Heavy Rain
09 0200EST

New Haven County
Countywide 08 1300EST 0 0 Heavy Rain
09 0200EST

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CONNECTICUT, Southern

Middlesex County

Countywide

08 1400EST **0** **0** **Heavy Rain**
09 0300EST

New London County

Countywide

08 1500EST **0** **0** **Heavy Rain**
09 0400EST

The remnants of Tropical Storm Josephine moved rapidly northeast off the Atlantic Coast during Tuesday, October 8th. It passed east of Long Island just after midnight on October 9th.

This low produced from around 3/4 inch to 2.50 inches across the area along with strong gusty winds. Heavy rain caused localized flooding of streets and poor drainage areas.

Here are selected rainfall amounts for:

Fairfield County: from 1.34 inches at Stamford to 2.46 inches at Weston. Bridgeport Airport measured 1.91 inches and Danbury Airport measured 1.85 inches.

New Haven County: from 1.57 inches at Hamden to 2.56 inches at West Haven.

Middlesex County: 1.38 inches at Old Saybrook.

New London County: from 0.75 inches at Lebanon to 1.90 inches at Noank.

Most wind gusts were measured from 40 to 50 mph. Bridgeport Airport measured a wind gust of 50 mph.

Middlesex County

Countywide

19 0600EST **0** **0** **Heavy Rain**
20 0200EST

New London County

Countywide

19 0600EST **0** **0** **Heavy Rain**
20 0300EST

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low intensified as it moved slowly off the Southern New Jersey Coast on the 19th.

As the difference in pressures increased, strong and gusty east winds developed by Saturday morning. They transported abundant moisture from the Atlantic Ocean and caused heavy rain and minor coastal flooding.

Rainfall amounts from above 3 to around 5 1/2 inches caused scattered flooding of streets and poor drainage areas.

Here are selected rainfall amounts for:

Middlesex County : from 3.91 inches at Middletown to 5.15 inches at Old Saybrook.

New London County: from 3.27 inches at Mystic to 5.62 inches at Old Lyme.

CTZ009>010

Southern Fairfield - Southern New Haven

19 1000EST **1** **2** **2M** **High Wind (G50)**
2100EST

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low intensified and moved slowly off the Southern New Jersey Coast on Saturday, the 19th.

As the difference in pressures increased, strong and gusty east winds developed across the region during Saturday morning. Strong gusty winds and torrential rain combined to down trees and power lines.

In New Canaan (Southern Fairfield County), a 40 year old man died when a tree fell on the pick-up truck he was driving on Route 23. His 13 year old daughter was treated for injury at Norwalk Hospital. High winds downed numerous trees and power lines from Greenwich east to Norwalk, including New Canaan. At Bridgeport Airport, the peak wind gust was 56 mph. High winds combined with high tides wrecked at least \$1 million worth of sail and power boats torn from the moorings off Wilson Cove. More than a dozen luxury yachts and assorted smaller boats were smashed against private sea walls and the Bell Island Bridge in Bell Island.

Storm Data and Unusual Weather Phenomena

October 1996

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

CONNECTICUT, Southern

In Southern New Haven County, the peak wind gust measured at Outer Island was 58 mph. In New Haven, a woman was taken to St. Raphael's hospital with minor injuries after being struck by a falling tree limb.

M40VE

CTZ005>008-011>012

Northern Fairfield - Northern New Haven - Northern Middlesex - Northern New London - Southern Middlesex - Southern New London

19	1000EST	0	0	Wind
	2300EST			

A Nor'easter produced strong gusty east winds and heavy rain. Peak wind gusts from around 40 to 50 mph combined with heavy rain to down numerous trees and power lines across the region.

Here are selected peak wind gusts for:

Northern Fairfield County: 44 mph at Danbury.

Northern New Haven County: from 37 mph at Meriden to 50 mph at Oxford.

Middlesex County: 41 mph at Middletown.

New London County: from 38 mph at Mystic to 50 mph at Old Saybrook.

**Fairfield County
Countywide**

19	1230EST	0	0	Flood
	2000EST			

**New Haven County
Countywide**

19	1330EST	0	0	Flood
	2000EST			

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low intensified as it moved slowly off the Southern New Jersey Coast on the 19th.

As the difference in pressures increased, strong and gusty east winds developed by Saturday morning. They transported abundant moisture from the Atlantic Ocean and caused heavy flood-producing rains and minor to major coastal flooding.

Rainfall amounts from around 4 to 7 inches caused widespread serious street and poor drainage flooding. Many roads were forced to close including the Merritt Parkway near Norwalk. Heavy rain also caused the Wepawaug River in Milford to rise above its' flood stage.

Here are selected rainfall amounts for:

Fairfield County : from 3.76 inches at Ridgefield to 7.16 inches at Trumbull. Bridgeport Airport measured 4.12 inches and Danbury Airport measured 4.71 inches.

New Haven County: from 3.28 inches at Branford to 7.10 inches at Oxford.

CTZ009>010

Southern Fairfield - Southern New Haven

19	1300EST	0	0	Coastal Flood
	1700EST			

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low intensified and moved slowly off the Southern New Jersey Coast on Saturday, the 19th.

East winds developed across the region on the 18th. As the difference in pressure between the two systems increased, east winds also increased. East winds became gale force (34 knots) across Long Island Sound Friday night and continued through Saturday. Blowing over a long distance, persistent strong and gusty east winds caused tides to average 3 to 5 feet above normal. At Bridgeport, tides were 3.91 feet above normal at 5 pm on the 19th. Widespread minor to major coastal flooding and beach erosion resulted along the Connecticut shores of Western Long Island Sound.

More than 100 people from East Haven, Milford, Norwalk, and Westport voluntarily evacuated their homes.

Storm Data and Unusual Weather Phenomena

October 1996

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

CONNECTICUT, Southern

Up to 20 homes were damaged from Milford to East Haven (Southern New Haven County), where people were forced to evacuate. In East Haven, basements and first floors of 10 houses along Cosey Beach Ave., Palmetto Trail, Russo Ave., and Stevens Street were flooded. Additional homes were similarly flooded in Milford. Moderate to major coastal flooding occurred at Bayshore and Silver Sands Beaches.

In Southern Fairfield County, up to 3 feet of water covered streets and flooded homes, stranding many people in Stratford. Sheffield Island suffered severe beach erosion. Its lighthouse was left only a few feet from the water. The Fairfield Beach Road Area also experienced extensive flooding and erosion as sand was carried off the beach and deposited in basements and first floors of homes.

DELAWARE

DEZ001>002

New Castle - Kent

08 0600EST
2000EST

0 0

Heavy Rain And Wind

Heavy rain associated with the remnants of Tropical Storm Josephine affected Delaware primarily during the daylight hours on the 8th. Peak wind gusts reached around 35 mph in New Castle County and around 45 mph in Kent County. Some tree limbs were pulled down. The heavy rain did cause the Christina River to flood in New Castle County, but no other flooding was reported. Storm totals included 2.37 inches in Dover, 1.9 inches in Newark and 1.8 inches in Pennyhill. Peak wind gusts included 47 mph at the Dover A.F.B. and 37 mph at the New Castle County Airport.

DEZ003>004

Inland Sussex - Delaware Beaches

08 1530EST
1830EST

0 0

High Wind (G50)

High winds associated with the remnants of Tropical Storm Josephine caused wind damage in Sussex County, mainly near and along the coast. Downed trees and power lines were reported. A wind gust to 58 mph was reported in Dewey Beach. Additionally, in Dewey Beach, one home lost a 20 foot by 20 foot section of its roof. In Bethany Beach, a restaurant lost shingles from their roof. About 4,000 homes lost power, mainly for less than 2 hours. The hardest hit communities included Dagsboro, Fenwick Island, Frankford and West Bethany.

DEZ004

Delaware Beaches

08 1530EST
1930EST

0 0

Coastal Flooding

The strong onshore winds which coincided with the late afternoon and early evening high tide caused minor to locally moderate tidal flooding. The high tide at Lewes reached 7.6 feet above mean low water, a departure of 3.1 feet above normal. Two breaches occurred along the shore: at Beach Avenue in the Indian Beach section of Dewey Beach and on Haven Road just north of the Indian River Inlet. In Dewey Beach, the ocean did surround the pilings of some oceanfront homes. Sea water spilled over on parts of Delaware State Route 1. Some beach fencing was damaged. In Lewes, marsh flooding closed parts of Savannah Road. In Bethany Beach about a third of the town was flooded. Atlantic Avenue was still closed the next day. No serious injuries were reported.

New Castle County Northern

08 1730EST
2230EST

0 0

Flash Flood

Heavy rains associated with the remnants of Tropical Storm Josephine caused flash flooding along the Christina River. At Cooch's Bridge, the river reached its 9 foot flood stage at 630 p.m. EDT, crested at 10.6 feet at 945 p.m. EDT and was back within bankfull by 11 p.m. EDT. No serious injuries or damage were reported, but there were several water rescues of individuals trapped in cars. Storm totals included 1.9 inches in Newark, 1.8 inches in Pennyhill, 1.5 inches in Odessa, 1.44 inches in Wilmington and 1.40 inches in Prices Corner.

Sussex County Countywide

18 2100EST
19 0900EST

0 0

Heavy Rain

Rain, heavy at times, fell across Delaware from the evening of the 18th through the morning of the 19th. The heaviest rain fell between midnight and 6 a.m. EDT on the 19th. Storm totals averaged one to two inches across much of the area. Heavier rain and flooding occurred in New Castle County. But farther south, some urban and poor drainage flooding occurred, but no serious flooding or damage was reported. A low pressure system developed near Norfolk during the late evening of the 18th. At 8 a.m. EDT on Saturday, it was located near Atlantic City. Tropical moisture associated with Hurricane Lili (Which was farther east in the Atlantic Ocean.) was ingested into this low and literally wrung out over Delaware. Representative storm totals included 3.40 inches in Newark, 1.89 inches in Lewes, 1.56 inches in Georgetown, 1.48 inches in Dover, 1.32 inches in Camden and 1.17 inches in Bridgeville.

Kent County Countywide

18 2100EST
19 0900EST

0 0

Heavy Rain

New Castle County Northern

19 0130EST
1415EST

0 0

Flash Flood

Rain, heavy at times, fell across northern Delaware during the first half of the day on the 19th. The heavy rain caused the flash flooding of several streams in the northern half of the county. The Christina River at Cooch's Bridge reached its 9 foot flood stage at 230 a.m. EDT, crested at 11.7 feet at 915 a.m. EDT and was back within bankfull at 315 p.m. EDT. The White Clay Creek near Newark reached its 13 foot flood stage at 530 a.m. EDT, crested at 14.9 feet at 9 a.m. EDT and was back within bankfull during the early afternoon of the 19th. The Red Clay Creek at Wooddale reached its 5.5 foot flood stage at 630 a.m. EDT on the 19th,

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

DELAWARE

crested at 7.0 feet at 11 a.m. EDT and was below flood stage again at 3 p.m. EDT. No serious damage or injuries were reported.

A low pressure system developed near Norfolk during the late evening of the 18th. At 8 a.m. EDT on the 19th, it was located east of Atlantic City. The low became captured by another low at higher levels of the atmosphere and consequently moved little the ensuing 24 hours. It was near Manasquan, NJ at 2 p.m. EDT on the 19th, Allentown, PA at 8 p.m. EDT on the 19th, near Harrisburg, PA at 2 a.m. EDT on the 20th and Hagerstown, MD at 8 a.m. EDT on the 20th. Tropical moisture associated with Hurricane Lili (Which was farther east in the Atlantic.) was ingested into this low and literally was wrung out over Delaware. The slowing of the low pressure system's forward speed prolonged the heavy rain in northern Delaware. But, the rain was even heavier farther north.

Representative storm totals included 3.4 inches in Newark, 3.05 inches in Odessa, 2.06 inches in Wilmington and 2.0 inches in Prices Corner.

DEZ001

New Castle

19 1415EST
20 0115EST

0 0

Flood

Heavy rain earlier on the 19th and its subsequent runoff caused flooding along the Brandywine Creek from the late afternoon on the 19th through the early morning on the 20th. At Wilmington, the Brandywine reached its flood of 11 feet at 745 p.m. EDT, crested at 12.0 feet at 1045 p.m. EDT and was back within bankfull at 215 a.m. EDT on the 20th.

DISTRICT OF COLUMBIA

NONE REPORTED.

FLORIDA, East Central

Brevard County

2 E Melbourne Beach to
Melbourne Beach

03 1300EST

0 0

Waterspout

A waterspout was sighted over the Atlantic about 2 miles east of Melbourne Beach.

Volusia County

Deltona

07 0755EST

0.1

30

0 0

Tornado (F0)

A small F0 tornado touched down briefly in the town of Deltona damaging awnings and carports on two mobile homes.

Volusia County

Daytona Beach Shrs

07 0845EST

0.1

30

0 0

5K

Tornado (F0)

A small F0 tornado touched down in the town of Daytona Beach Shores blowing down a few trees and blowing 12 windows out of a highrise building.

Lake County

Clermont

07 1504EST

0.1

20

0 0

Tornado (F0)

Witnesses watched as an F0 tornado touched down briefly along highway 50 near Clermont damaging a highway advertising sign.

Lake County

1 W Mt Dora

07 1545EST

0.1

30

0 0

Tornado (F0)

A small F0 tornado touched down briefly just west of Mt. Dora blowing down trees and power lines and producing minor damage to a house.

Lake County

Eustis

07 1552EST

0.1

20

0 0

Tornado (F0)

An F0 tornado touched down in Eustis blowing down a few trees.

Volusia County

Lake Harney

07 1605EST
1610EST

0 0

Waterspout

A large waterspout was sighted over Lake Harney moving northeast toward a remote area of Volusia County.

Volusia County

2 SE Edgewater to
New Smyrna Beach

07 1620EST
1630EST

6

400

0 0

2.4M

Tornado (F2)

A 400 yard wide F2 tornado-waterspout initially touched down west of Interstate 95, about 1.5 mile south of Florida Highway 442. The tornado moved northeast at 40 mph, crossing the town of Edgewater. It remained in contact with the surface as it moved over the Indian River Lagoon and crossed the barrier island in the southern part of New Smyrna Beach. There were no fatalities or serious injuries reported. One commercial structure and 30 homes were severely damaged. Over 200 homes received minor damage. At least 1 mobile home was destroyed. Damage estimates were near \$2.4 million.

Volusia County

Pierson

07 1620EST

0.1

20

0 0

Tornado (F0)

A small F0 tornado touched down near Pierson damaging one mobile home.

FLORIDA, Northeastern

Columbia County

Lake City

02 0300EST
0900EST

0 0

0.90K

Flash Flood

Heavy rains... 3-4 inches caused flooding in Lake City. Several secondary road were closed.

Storm Data and Unusual Weather Phenomena

October 1996

									October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property Damage	Crops	Character of Storm
FLORIDA, Northeastern									
Suwannee County									
Live Oak	02	0430EST 0900EST			0	0	11K		Flash Flood
Heavy rains from 3-4 inches caused flooding in the Live Oak area. A gas station and two homes on Church Street were flooded.									
FLZ033	St. Johns								
	04	1600EST			0	0	2K		High Wind (G60)
Power lines were blown down in and around St. Augustine.									
FLZ025	Duval								
	04	1700EST			0	0	13K		High Wind (G60)
Mobile Home which was being pulled by a tractor trailer overturned on the Dames Point Bridge.									
FLZ025	Duval								
	04	2359EST			0	0	0.50K		High Wind (G60)
Large trees were blown down across A1A near little Talbot Island.									
Duval County									
Jacksonville	06 08	2000EST 0400EST			0	0	470K		Flash Flood
A Nor'easter and Tropical Storm Josephine produced more than 6 inches of rain. This caused more than 110 streets and roads to flood through-out the downtown area. More than 12,000 JEA customers were without power overnight on the 7th. Flooding also closed all county schools on the 10/7/96.									
Nassau County									
Fernandina Beach to Callahan	06 08	2000EST 0400EST			0	0	250K		Flash Flood
A strong Nor'easter and Tropical Storm Josephine produced as much as 7 inches of rainfall in 72 hours. Numerous road were closed county-wide. Thomas Creek Road had more than 300 feet of payment washed away. The heavy rains prompted school officials to close all of the Counties schools on Wednesday, 10/9/96.									
St. Johns County									
Ponte Vedra to St Augustine	07 08	0230EST 1000EST			0	0	20K		Flash Flood
More than 3-6 inches of rain from a Nor'easter and Tropical Storm Josephine caused flooding across the entire county. More than 16,000 students enjoyed a rare weather-related day off from classes on Tuesday, 10/8/96. Two road in the county's north sections were close: Palm Valley Road between Roscoe Boulevard and Mickler's Cutoff Road, and Racetrack Road from the dog track to Bishop Estates Road. Other roads had flooding problems were Ponte Vedra Boulevard, South Roscoe Boulevard, LeMaster Drive and Corona Road. In St. Augustine, King Street was closed by city police when cars drowned out.									
Baker County									
Maccleenny to Baxter	07 08	0600EST 0200EST			0	0	600K		Flash Flood
Eight to ten inches of rainfall from a strong Nor'easter and Tropical Storm Josephine caused flooding across the entire county. Dozens of roads were covered by water and bridges were washed out between Turkey Creek One and Three; both bridges at the ends of Crews Road; the paved road was undermined on 23A North near the golf course, and the road was out on both ends of Southern States Nursery Road. A handful of people chose to remain in residents cut off by high water; many used boats to reach vehicles at locations like the Boy Scout Camp along the St. Mary's River and the Westside Loop.									
Clay County									
Middleburg	07 08	0630EST 1030EST			0	0	50K		Flash Flood
A steady rain producing 6-8 inches of rainfall from a Nor'easter and Tropical Storm Josephine caused flooding mainly over central Clay County in the Middleburg area. The rain brought both the North and South prongs of Black Creek several feet above its banks. The water flooded Main Street, Scenic Drive, Cornell Road and Lazy Acre Road. About a dozen families left their homes to seek shelter with friends, relatives or hotels. A few roads did wash out. A creek near Bluejay drive, off County Road 218, overflowed and washed the road out.									
Marion County									
1 E Marion Oaks to 1.2 NE Marion Oaks	07	1415EST 1420EST	0.2	20	0	0	55K		Tornado (F0)
Tornado destroyed two small aircraft, plus parts of three hanger roofs and one home, approximately one mile east of Marion Oaks.									
Marion County									
1 E Ocala to Citra	07	1550EST 1615EST	15	30	0	0	4.5K		Tornado (F0)
Tornado was up and down. Damage was mainly to trees and power lines.									
Putnam County									
Georgetown to Pomona Park	07	1614EST 1655EST	8	45	0	0	65K		Tornado (F0)
The tornado was up and down along it's path. One home destroyed, one business with major damage, three homes with major damage, 39 with minor damage, and 20 other buildings had minor damage.									
St. Johns County									
1 E Hastings to 1.1 NE Hastings	07	1710EST 1715EST	0.1	10	0	0	2K		Tornado (F0)
Large trees and power lines were blown down.									

Storm Data and Unusual Weather Phenomena

October 1996

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, Northeastern

Flagler County Bunnell	07	1730EST			0 0	2.5K	Thunderstorm Wind (G60)
	Numerous reports of large trees and power lines blown down.						
Duval County Jacksonville	07	1745EST 1812EST			0 0	3.5K	Thunderstorm Wind (G60)
	Several reports of large trees and power lines blown down.						
St. Johns County St Augustine	07	1800EST 1825EST			0 0	2.5K	Thunderstorm Wind (G60)
	Several reports of trees and power lines blown down.						
Duval County Ft Caroline Shrs	07	2230EST			0 0	0.50K	Thunderstorm Wind (G55)
	Public reported wind gusts to 55 knots. Large tree limbs where blown down.						
Nassau County Callahan to Fernandina Beach	07	2240EST 2310EST			0 0	3.5K	Thunderstorm Wind (G60)
	Numerous reports of large trees and power lines blown down.						
Marion County Ocala	07	2310EST 2355EST			0 0	1.5K	Thunderstorm Wind (G60)
	Large trees and power lines were blown down.						
Putnam County Interlachen	07	2318EST			0 0	1.2K	Thunderstorm Wind (G60)
	Several reports of large trees and power lines blown down.						
St. Johns County Fruit Cove	07	2340EST			0 0	1.5K	Thunderstorm Wind (G60)
	Several reports of large tree and power lines blown down.						

FLORIDA, Northwest

Franklin County Apalachicola	01	1355EST	0.1	30	0 1	10K 0	Tornado (F1)
	A waterspout came ashore and caused roof damage to a grocery store. One store employee slightly injured her back while pulling a customer to the floor.						
FLZ011>019-026>029-034	Jackson - Bay - Calhoun - Gulf - Franklin - Gadsden - Leon - Jefferson - Madison - Liberty - Wakulla - Taylor - Lafayette - Dixie						
	07 08	1200EST 0600EST			0 0		Tropical Storm
	The center of TS Josephine came ashore along the Florida Big Bend coast. Winds over 45 mph were reported along the coast at Horseshoe Beach with similar wind speeds observed inland. Some sporadic wind damage was reported across the Big Bend and into South Georgia.						
	Storm tides over 9 feet were recorded at Suwannee, over 6 ft at Steinhatchee and around 6 ft at Dekle Beach. Significant damage, mainly from inundation of water, occurred along this area of coast.						
	Heavy rains caused widespread low land flooding across the Florida Big Bend from Tallahassee eastward.						

FLORIDA, Southern

FLZ078	Monroe/Lower Keys						
	08	0000EST 1500EST			0 0	500K	Tropical Storm
	TROPICAL STORM JOSEPHINE TRACKED NORTH OVER EAST GULF OF MEXICO. WIND GUSTS TO 43 KNOTS. HEAVY RAINFALL AND STREET FLOODING REPORTED. HIGH TIDES						

FLORIDA, West Central

FLZ039-042>043-048>052-055>057-060>062-065	Levy - Citrus - Sumter - Hernando - Pasco - Pinellas - Hillsborough - Polk - Manatee - Hardee - Highlands - Sarasota - De Soto - Charlotte - Lee						
	07 08	0800EST 1200EST			0 1	44.6M	Tropical Storm
	Tropical Storm Josephine moved northeast across the Gulf of Mexico and brought low to moderate range tropical storm force winds to mainly coastal areas of West Central and Southwest Florida. Maximum sustained winds of 45 mph with gusts as high as 71 mph were observed at the Sunshine Skyway Bridge at the mouth of Tampa Bay.						
	Tropical Storm Josephine moved onshore in the Big Bend area of Florida and caused storm surges of 8 to 9 feet at Cedar Key in Levy county shortly after midnight on the 8th. Storm surges of 4 to 6 feet were common from Citrus county south to the Tampa Bay metro area. Storm surges of 2 to 4 feet were common from Anna Maria Island in Manatee county south to Ft. Myers in Lee county.						

Storm Data and Unusual Weather Phenomena

October 1996

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

FLORIDA, West Central

Minor to moderate beach erosion occurred along the Sarasota, Manatee, Pinellas and Hillsborough county beaches. Total beach erosion costs were estimated at two million dollars.

Rain bands associated with Tropical Storm Josephine produced 4 to 6 inches of rain in less than eight hours over parts of Southwest Florida. Flooding of homes and streets were observed from Bradenton south to Port Charlotte.

Flooding from storm surges occurred along the entire West Florida coastline but was most pronounced in Pinellas county where nearly 1,400 dwellings were affected by floodwaters. Estimated damage from Tropical Storm Josephine in Pinellas county alone was over 25 million. Overall, nearly 3,600 homes from Levy county south along the West Florida coastline to Lee county were affected by floodwaters from Tropical Storm Josephine, mainly west of the U.S. 19 corridor.

One injury was reported when a male youth broke a leg attempting to surf the storm surge along a Pinellas county beach.

De Soto County 1 W Arcadia to 9 NW Arcadia	07	1030EST 1045EST	9	5	0	0	1K	Tornado (F0)
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Hardee County 9 NW Arcadia to 7 N Wauchula	07	1045EST 1132EST	21	5	0	0	1K	Tornado (F0)
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Polk County 7 N Wauchula to 5 NW Lake Wales	07	1132EST 1205EST	22	5	0	0	1K	Tornado (F0)
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A fast moving mini-tornado, associated with Tropical Storm Josephine, touched down sporadically along a narrow 52 mile long path in rural DeSoto, Hardee and southern Polk counties. The tornado caused minor damage, mainly a few snapped trees, before it receded northwest of Lake Wales.

Hillsborough County 7 WNW Tampa to 17 NW Tampa	07	1158EST 1215EST	14	5	0	0	5K	Tornado (F0)
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Pasco County 17 NW Tampa to 6 E New Port Richey	07	1215EST 1220EST	6	5	0	0	3K	Tornado (F0)
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A fast moving mini-tornado, associated with Tropical Storm Josephine, touched down sporadically along a narrow 20 mile long path in western Hillsborough and rural southwest Pasco counties. The tornado caused minor damage, mainly a few snapped or uprooted trees and broken tree limbs, along it's path before it receded in southwest Pasco county.

Hernando County 7 W Brooksville	07	1300EST 1301EST	0.3	5	0	0	2K	Tornado (F0)
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A brief mini-tornado, associated with Tropical Storm Josephine, touched down in the Brookridge area near the intersection of State Road 50 and County Road 585. The mini-tornado snapped a few large trees and downed limbs before it dissipated in the Brookridge area.

Hillsborough County 2 S Plant City to 9 NNE Plant City	07	1345EST 1400EST	11	5	0	0	Tornado (F0)
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A fast moving mini-tornado, associated with Tropical Storm Josephine, touched down sporadically along a narrow 11 mile wide path in northeast Hillsborough county. Residents south of Plant City observed a brief touchdown in a semi-wooded area with no apparent damage. The last observed touchdown occurred south of the rural Hillsborough/Polk county border near the town of Kathleen.

Hillsborough County 11 NE Tampa	07	1400EST 1401EST	0.3	5	0	0	1K	Tornado (F0)
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A brief, fast moving mini-tornado, associated with Tropical Storm Josephine, touched down near the intersection of Interstate 75 and U.S. Highway 301. the tornado touched down and snapped a few large trees on Morris Bridge Road before it quickly receded and dissipated.

Hillsborough County 10 NNE Plant City to 11 NNE Plant City	07	1404EST 1406EST	1	5	0	0	1K	Tornado (F0)
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Polk County 11 NNE Plant City to 14 NNW Lakeland	07	1406EST 1420EST	5	5	0	0	1K	Tornado (F0)
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A fast moving mini-tornado, associated with Tropical Storm Josephine, touched down sporadically along a narrow 6 mile long path in extreme northeast Hillsborough and extreme northwest Polk counties. A few downed trees and snapped branches were the only apparent damages from the tornado before it lifted and dissipated west of U.S. Highway 98 in extreme northwest rural Polk county.

Hillsborough County 16 S Tampa	07	2135EST 2136EST	0.3	5	0	0	10K	Tornado (F0)
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A brief, fast moving mini-tornado, associated with Tropical Storm Josephine, touched down near the intersection of U.S. Highway 41 and Shell Point Road in the city of Ruskin.

The tornado blew off the roofs of two mobile homes and downed a few trees and power lines in Ruskin before it receded and

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm	
					Killed	Injured	Property	Crops		

FLORIDA, West Central

dissipated.

FLZ055-060>062-065

Manatee - Sarasota - De Soto - Charlotte - Lee

08

**0200EST
0700EST**

0

0

150K

Flood

Heavy rainfall of four to six inches associated with rain bands from Tropical Storm Josephine caused flooding of several homes and streets in the cities of Port Charlotte and Bradenton.

Lee County

1 E Cape Coral

08

0545EST

0

0

44K

Thunderstorm Wind

Thunderstorm downburst winds caused minor damage to nine dwellings in East Cape Coral. Most of the damage was concentrated to roofs, screen porches and pool cage enclosures.

FLORIDA, West Panhandle

NONE REPORTED.

GEORGIA, East Central

NONE REPORTED.

GEORGIA, Lower

Camden County

**St Marys to
Waverly**

**07
08**

**0630EST
1000EST**

0

0

15K

Flash Flood

Rainfall amounts of 4-8 inches from a Nor'easter and Tropical Storm Josephine caused flooding across most of the county. All public schools were let out early on Monday, 10/07/96 and were closed on Tuesday, 10/08/96, due to many secondary roads being closed.

Charlton County

**Folkston to
St George**

**07
08**

**1230EST
1500EST**

0

0

160K

Flash Flood

Heavy rains... more than 7 inches from a Nor'easter and Tropical Storm Josephine caused flooding across the entire county. The flooding closed Highway 40 between Folkston and Kingsland and destroyed six homes near the St. Marys River.

Glynn County

Brunswick

07

**1230EST
2100EST**

0

0

12K

Flash Flood

Heavy rain... 5-7 inches from a Nor'easter and Tropical Storm Josephine closed many secondary roads across the entire county.

Camden County

**Kingsland to
St Marys**

07

**2241EST
2316EST**

0

0

2K

Thunderstorm Wind (G60)

Numerous reports of tress and power lines blown down across entire county.

Glynn County

Brunswick

07

**2258EST
2330EST**

0

0

1.5K

Thunderstorm Wind (G60)

Several reports of large trees and power lines blown down county wide.

GEORGIA, North and Central

NONE REPORTED.

GEORGIA, Northeast

Stephens County

Toccoa

03

**1640EST
1655EST**

0

0

Hail (0.75)

A local radio station reported "pencil eraser" size hail.

GEORGIA, Southeast

Bryan County

2 SW Richmond Hill

07

**2300EST
2310EST**

0

0

Thunderstorm Wind (G54)

Trees down.

GEORGIA, Southwest

NONE REPORTED.

GEORGIA, West Central

GAZ089

Muscogee

28

**1200EST
1800EST**

0

0

0

0

Excessive Heat

A new record high temperature of 88 was set at Columbus.

GAZ089

Muscogee

29

**1200EST
1800EST**

0

0

0

0

Excessive Heat

A new record high temperature of 84 degrees was set at Columbus.

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<u>HAWAII</u>									
HIZ003>004	Maui - Island Of Hawaii								
	01	0000HST			0	0			Drought
	31	0000HST							
	A drought emergency was declared for Upcountry Maui, and the North Kohala, South Kohala, and Hamakua Districts of Hawaii, where an order for a mandatory 25% reduction in water use was in effect by the end of the month. For Upcountry Maui, the order was the most stringent since 1984, and more than 8,000 residents, businesses and farmers in the areas of Haiku, Makawao, Haliimaile, Olinda, Pukalani, Omaopio-Pulehu, Kula, Keokea, Ulupalakua, and Kanaio were affected. Stabilizing high pressure over the area diminished the usual moisture laden trade wind pattern. Only a trace of rain fell in Kahului which usually receives 1.23 inches. 0.42 inches fell in Waimea where the normal for the month is 3.3 inches. Total rainfall since July was about one-third of normal. Sugar, onion, and pineapple crops were reduced on Maui, while lettuce and cabbage suffered on Hawaii. On Hawaii ranchlands, a 10% decrease in cow births was attributed to the drought.								
HIZ001>006	Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai								
	26	2300HST			1	0			High Surf
	29	0800HST							
	Ocean swell generated by a storm low far to the north of the Hawaiian Islands produced surf of 10 to 15 feet along the north and west facing shores. A man was swept into the ocean and drowned by the high surf while meditating on a ledge just north of Haiku, Maui near Pauwela Point Lighthouse at approximately 0715 HST on the 29th. M31IW								
<u>IDAHO, Extreme Southeast</u>									
	NONE REPORTED.								
<u>IDAHO, North</u>									
	NONE REPORTED.								
<u>IDAHO, Northwest</u>									
	NONE REPORTED.								
<u>IDAHO, Southeast</u>									
	NONE REPORTED.								
<u>IDAHO, Southwest</u>									
IDZ009	Panhandle								
	18	0400MST			0	0			Heavy Snow
		2300MST							
	A winter storm hit the Northern Panhandle of Idaho. Reports of two feet of snow fell in the St. Joe Forest with seven foot drifts. The snows trapped hunters for 5 days north of Avery in Shoshone county.								
IDZ003-012	Upper Snake River Valley - Upper Snake Highlands								
	25	0400MST			0	0			Winter Storm
		2300MST							
	Several inches of snow fell in Southeastern Idaho. In Bannock county 3 to 4" of snow fell, 2 to 4" in Bingham county, 2" in Power and Caribou counties while in Fremont and Clark counties 12 to 14" fell.								
<u>ILLINOIS, Central</u>									
Morgan County									
1 W Jacksonville	17	1345CST			0	0	0	0	Thunderstorm Wind
	Thunderstorm winds blew down a large tree just west of Jacksonville on Route 104. No damage or injuries were reported.								
Shelby County									
3 SW Findlay	17	1725CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several trees 3 miles southwest of Findlay. No damage was reported.								
Effingham County									
Effingham	17	1729CST			0	0			Thunderstorm Wind
	Thunderstorm winds uprooted and blew over a large tree in Effingham. No injuries or damage were reported.								
Cumberland County									
1 NNE Neoga to	17	1740CST	2.5	50	0	1		0	Tornado (F0)
3 ENE Neoga		1745CST							
	A tornado touched down 1 mile north northeast of Neoga, just east of Rt. 45. At this point the tornado blew over a 35 foot travel trailer slightly injuring one person. It then continued to the east crossing over Interstate 57 causing damage to a used car lot and a truck stop. It then moved east of town causing minor damage to 5 homes (mainly roof damage), as well as, blowing over numerous TV antennas, power poles, tool sheds, and trees in the area. Also, a grain bin was blown over. The tornado lifted and dissipated 3 miles east northeast of Neoga. Only one minor injury was reported and no damage estimate was available.								
Coles County									
Charleston	17	1753CST			0	0		0	Thunderstorm Wind
	Thunderstorm winds blew down 2 large trees in Charleston, as well as, numerous tree limbs. No injuries or damage were reported.								
Clark County									
Casey	17	1815CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down a large tree in Casey, as well as, numerous tree limbs. No injuries or damage were reported.								
Edgar County									
Paris	17	1830CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several trees and numerous tree limbs in Paris. One tree fell onto a car, however, no injuries were								

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
October 1996									
ILLINOIS, Central									
	reported. The winds also broke several windows on businesses in downtown Paris. No damage estimate was available.								
Crawford County Robinson	17	1845CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several trees, as well as, tree limbs and power lines in Oblong and Robinson. One tree fell onto a pickup truck in Oblong, causing major damage to the cab. The driver was uninjured. No damage estimate was available.								
Fulton County Astoria	29	1606CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several trees and tree limbs in Astoria. No injuries or damage were reported.								
Stark County La Fayette	29	1606CST			0	0			Thunderstorm Wind (G56)
Mason County 1 N Havana	29	1611CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several power lines a mile north of Havana. No damage estimate was available.								
Peoria County Brimfield	29	1615CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down numerous tree limbs and power lines in Brimfield. No injuries or damage were reported.								
Tazewell County Armington	29	1640CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down numerous tree limbs and power lines in Pekin. Also, a carport was blown off of a house in Armington. No injuries were reported and no damage estimate was available.								
Peoria County Peoria Hgts	29	1642CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down a large tree causing minor damage to one home in Peoria Heights. No injuries were reported and no damage estimate was available.								
Woodford County Metamora	29	1659CST			0	0			Thunderstorm Wind
	Thunderstorm winds uprooted a large tree, destroyed several business signs, and blew down numerous tree limbs in Metamora. No injuries were reported and no damage estimate was available.								
Logan County Lincoln	29	1710CST			0	0			Thunderstorm Wind (G52)
	Thunderstorm winds were estimated around 60 mph in San Jose and blew down several trees on the west side of Lincoln. Also, thunderstorm winds caused siding damage to the ambulance service garage at Abraham Lincoln Memorial Hospital in Lincoln. No injuries were reported and no damage estimate was available.								
Mclean County Bloomington	29	1727CST			0	0			Thunderstorm Wind (G52)
	A 60 mph wind gust was recorded in Bloomington. Also, the thunderstorm winds caused minor roof damage to one home in Gridley. No injuries were reported and no damage estimate was available.								
Christian County Taylorville	29	1730CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several trees and power lines in Taylorville. No injuries or damage were reported.								
Macon County Blue Mound	29	1735CST			0	0	0		Thunderstorm Wind
	Thunderstorm winds blew down a radio tower in Blue Mound. No injuries were reported and no damage estimate was available.								
De Witt County Clinton	29	1740CST			0	0			Thunderstorm Wind (G52)
	Thunderstorm winds, gusting to 60 mph, blew down several power poles in Clinton. No injuries were reported and no damage estimate was available.								
Macon County Decatur	29	1758CST			0	0			Thunderstorm Wind (G50)
	Thunderstorm winds blew down numerous trees, tree limbs, and power lines in Maroa and Decatur. One tree fell onto a garage and several others fell onto cars in Decatur. No injuries were reported. Also, one window was blown out on a business in Decatur. No damage estimate was available.								
Piatt County Monticello	29	1805CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several trees and power lines in Monticello. No injuries or damage were reported.								
Champaign County Champaign	29	1827CST			0	0			Thunderstorm Wind
	Thunderstorm winds blew down several trees in Champaign, some of which blocked roads. Also, numerous power lines were blown down. No injuries were reported and no damage estimates were available.								
Vermilion County Potomac	29	1858CST			0	0			Thunderstorm Wind (G52)
ILZ027>031-036>038-040>051-053	Knox - Stark - Peoria - Marshall - Woodford - Fulton - Tazewell - Mclean - Schuyler - Mason - Logan - De Witt - Piatt - Champaign - Vermillion - Cass - Menard - Scott - Morgan - Sangamon - Macon								
	30	0100CST 0400CST			0	0			High Wind (G56)
	High winds associated with a strong area of low pressure caused damage in numerous counties throughout Central Illinois.								

Storm Data and Unusual Weather Phenomena

October 1996

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

ILLINOIS, Central

Sustained winds averaged 30 to 40 mph with gusts to near 65 mph in some areas. Most of the damage was to trees, tree limbs, and power lines. However, in Galesburg (Knox County) an addition to a church that was under construction was blown down. In Peoria (Peoria County), 3 busstop benches were blown over. One tree in Peoria Heights fell onto an unoccupied car causing major damage. Meanwhile, in Fulton County near Avon the high winds blew over a grain auger which in turn knocked down a light pole. In Pekin (Tazewell County), one tree fell onto a house causing damage to one bedroom. No injuries were reported. In Roanoke (Woodford County), the roof of a large storage building was blown off which damaged a small storage shed and a few trees when the roof landed on them. In Danville (Vermilion County), the high winds blew down the walls of a building under construction. No injuries were reported and no damage estimate was available from any of the counties who sustained damage.

ILLINOIS, Northeast

Ogle County Countywide	29	1625CST 1705CST			0	0	0		Thunderstorm Wind
Lee County Countywide	29	1630CST 1705CST			0	0	0		Thunderstorm Wind
Winnebago County Countywide	29	1645CST 1705CST			0	0			Thunderstorm Wind
La Salle County Countywide	29	1655CST 1730CST			0	0			Thunderstorm Wind (G50)
Boone County Countywide	29	1705CST 1725CST			0	0			Thunderstorm Wind
De Kalb County Countywide	29	1705CST 1730CST			0	0			Thunderstorm Wind
Livingston County Countywide	29	1720CST 1800CST			0	0			Thunderstorm Wind
Mchenry County Countywide	29	1725CST 1800CST			0	0			Thunderstorm Wind (G69)
Kane County Countywide	29	1730CST 1755CST			0	0			Thunderstorm Wind (G69)
Kendall County Countywide	29	1730CST 1800CST			0	0			Thunderstorm Wind (G57)
Grundy County Countywide	29	1730CST 1800CST			0	0	100K	5K	Thunderstorm Wind (G62)
Ford County Countywide	29	1755CST 1830CST			0	0			Thunderstorm Wind (G53)
Du Page County Countywide	29	1755CST 1815CST			0	0			Thunderstorm Wind (G50)
Cook County Countywide	29	1755CST 1840CST			0	0			Thunderstorm Wind (G69)
Lake County Countywide	29	1800CST 1820CST			0	0			Thunderstorm Wind
Will County Countywide	29	1800CST 1840CST			0	0			Thunderstorm Wind (G56)
Kankakee County Countywide	29	1805CST 1845CST			0	0			Thunderstorm Wind
Iroquois County Countywide	29	1810CST 1855CST			0	1			Thunderstorm Wind (G53)

A fast moving squall line produced wind gusts of 50 to 80 mph across north central and northeast Illinois. The storm downed numerous trees, limbs and power lines. As many as 90,000 customers were without power. Five hundred repair crews were sent out. Electricity was out for as long as 30 hours in some locations. In some areas it was estimated that farmers could see losses of 10 bushels of corn per acre do to wind damage but no specific dollar amounts were available.

Here are some specific damage reports from each county. Four trees were blown down in Polo at around 440 pm in Ogle County. In Lee County tree limbs were down throughout the county. A truck was overturned on I-88 in the northeast part of the county at

Storm Data and Unusual Weather Phenomena

October 1996

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

ILLINOIS, Northeast

about 500 pm. In Winnebago County a 300 foot tall radio tower was toppled near Rockford. Numerous branches were downed. At Rockton 2 trees were blown down. A 58 mph wind gust was recorded at the Peru Airport in La Salle County at 500 pm. Tree limbs and power lines were downed throughout Boone and DeKalb Counties. Tree limbs and power lines were blown down in Livingston County. A machine shed was destroyed at Saunemin and a grain truck was overturned at 600 pm in the northeast part of the county. Emergency management in McHenry recorded a wind gust to 80 mph before 600 pm and a Bass Pro Shop sustained roof damage. In Kane County a wind gust to 79 mph was reported by a spotter in Carpentersville at 555 pm. In Geneva a shed was destroyed and a car crashed into a downed tree on the road. A large tree fell on the roof of a house in Batavia. In Kendall County a 65 mph wind gust occurred in Plano at 545 pm and a 60 mph gust hit Yorkville at 555 pm. A barn was damaged near Yorkville. In Grundy County emergency management recorded a gust to 71 mph at the EOC at 545 pm. Winds tore off part of the roof and siding of a store in Mazon around 600 pm. The debris damaged vehicles. Trees were blown down in Deerfield in Lake County. At a marina at Wonder Lake, 2 speed boats, a pontoon boat and a small utility boat sank. Trees fell on 2 cars at Wonder Lake. In Cook County wind gust reports of 68 mph on the west side of Chicago, 60 mph at Orland Park and 80 mph at Chicago Heights were reported by spotters between 620 and 640 pm. There was roof damage to an apartment and business in Calumet Park. In Du Page County, a 58 mph wind gust was recorded at the airport in West Chicago near 600 pm. A 12 foot square section of roof was removed from a house in Lombard. Trees and wires were down throughout the county. In Will County a semi truck was blown off I-80 east of Minooka at 600 pm. A spotter in Joliet reported a wind gust to 64 mph at 611 pm. Two houses were damaged by falling trees in Kankakee and another tree fell on a house in Aroma Park in Kankakee County. The emergency management coordinator for Ford County had a wind gust to 61 mph at Stelle around 615 pm. In Iroquois County the emergency management coordinator reported a wind gust to 63 mph at the sheriff's office in Watseka at about 645 pm. A truck was blown over on I-57 near Danforth, injuring the driver. Road signs and tree limbs were blown over. Trees were blown down at Buckley.

ILLINOIS, Northwest

Henry County Osco	29	1545CST			0	0					Thunderstorm Wind (G60)
	Thunderstorm winds snapped lines and power poles.										
Henry County Alpha	29	1548CST			0	0					Thunderstorm Wind (G60)
	Thunderstorm winds downed trees.										
Henry County Atkinson	29	1548CST			0	0					Thunderstorm Wind (G60)
	Thunderstorm winds downed trees.										
Whiteside County Erie	29	1600CST 1630CST			0	0					Thunderstorm Wind (G60)
	Thunderstorm winds caused tree damage and power outages.										
Whiteside County Erie	29	1604CST			0	0					Thunderstorm Wind (G60)
	Thunderstorm winds downed trees.										
Carroll County 2 S Mt Carroll	29	1652CST			0	0					Thunderstorm Wind (G60)
	Thunderstorm winds downed trees across area roads, blocking them.										
Putnam County 2 W Magnolia	29	1703CST			0	0					Thunderstorm Wind (G60)
	Thunderstorm winds downed trees across route 18.										
ILZ001>002-007-009-015>018-024>026-034>035	Jo Daviess - Stephenson - Carroll - Whiteside - Rock Island - Henry - Bureau - Putnam - Mercer - Henderson - Warren - Hancock - McDonough										
	29 30	1710CST 0600CST			0	0					High Wind (G52)

Strong gradient winds followed behind a line of thunderstorms which occurred along a strong cold front. This caused widespread damage to trees and power lines. Numerous tin sheds and a few barns were destroyed during the 15 to 20 hours of strong to severe winds. Power outages were too numerous to count and one of these outages was credited with starting a furnace fire. The fire however was confined and no dollar damage was reported. In spite of the widespread damage to trees, several newspaper articles across the area reported that damage to unharvested crops was minimal.

ILLINOIS, South

Jefferson County Mt Vernon	17	1750CST			0	0					Thunderstorm Wind (G50)
	Trees were down.										
Alexander County Cairo	22	1259CST			0	0					Thunderstorm Wind (G50)
Pulaski County 3 N Mounds	22	1306CST			0	0					Thunderstorm Wind (G50)
	Trees were blown down.										
Hamilton County 1 E Blairsville	22	1315CST			0	0					Thunderstorm Wind (G50)
	A couple of trees were down.										
Massac County Metropolis	22	1330CST			0	0					Thunderstorm Wind (G50)

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>ILLINOIS, South</u>									
			Trees down across county.						
Williamson County									
Marion	22	1335CST			0	0			Thunderstorm Wind (G55)
			A wind gust to 63 MPH was reported by a television meteorologist in Marion.						
Pope County									
Bay City	22	1335CST			0	0			Thunderstorm Wind (G50)
			Two trees down and a metal sign blown down.						
Franklin County									
Royalton	22	1350CST			0	0	10K	0	Thunderstorm Wind
			A power line fell on a trailer, setting it on fire.						
Jefferson County									
Mt Vernon	22	1400CST			0	0	40K		Thunderstorm Wind
			Thunderstorm winds felled several trees, tore off roofs, and left thousands without power. Most of the damage was at a mobile home park, where a mobile home was blown over onto its side. About 65 residents at a nursing home were never in danger when a portion of the roof was blown off.						
Saline County									
Galatia	22	1415CST			0	0			Thunderstorm Wind (G50)
			Trees were down.						
ILZ075>078-080>089			Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson						
	22	1700CST			0	0	28K	0	High Wind
		2200CST							
			High winds in the wake of a passing cold front caused isolated damage in southern Illinois. The most notable damage occurred at a farmstead near West Frankfort, where a steel grain bin was blown over and a large section of barn roof blew off.						
<u>ILLINOIS, Southwest</u>									
Monroe County									
2 N Waterloo	17	1540CST			0	0			Hail (0.75)
			Illinois State Police reported 3/4 inch hail.						
St. Clair County									
2 E Fairview Hgts	17	1550CST			0	0			Hail (1.75)
			County sheriff reported golfball size hail.						
St. Clair County									
Mascoutah	17	1600CST			0	0			Thunderstorm Wind (G51)
			County sheriff reported trees down.						
St. Clair County									
2 E Belleville	17	1600CST			0	0			Thunderstorm Wind (G52)
			County sheriff reported power lines down just east of Belleville.						
Clinton County									
Trenton	17	1625CST			0	0			Thunderstorm Wind (G51)
			County sheriff reported trees down.						
Bond County									
Pierron	17	1640CST			0	0			Thunderstorm Wind (G55)
			County sheriff reported a mobile home blown over by thunderstorm wind gusts.						
Bond County									
2 S Pocahontas	17	1645CST			0	0			Thunderstorm Wind (G55)
			County sheriff reported trees down south of Pocahontas.						
Fayette County									
3 NW Vandalia	17	1710CST			0	0	15K		Thunderstorm Wind (G55)
			Thunderstorm wind gusts destroyed 3 older mobile homes and damaged 4 others on County Road 1800 North, just off State Route 185, about 3 miles northwest of Vandalia. The destroyed mobile homes were not occupied. Damage to the others was primarily limited to outbuildings and skirting along the bottom of the structures.						
St. Clair County									
Cahokia	22	1310CST			0	0			Thunderstorm Wind (G50)
			Thunderstorm wind gusts downed trees and power lines across much of Cahokia. Some minor roof damage also occurred.						
Madison County									
Madison	22	1310CST			0	0			Thunderstorm Wind (G50)
			Trees and power lines were downed across the city.						
Bond County									
Greenville	22	1400CST			0	0			Thunderstorm Wind (G50)
			Thunderstorm winds downed power lines and damaged a carport along Routs 127 just north of Greenville.						
Montgomery County									
Coffeen	22	1400CST			0	0			Thunderstorm Wind (G50)
			Thunderstorm winds damaged the roof and porch of a home in Coffeen.						

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
INDIANA, Central							
Vermillion County Newport	17	1930EST 1935EST			0 0	25K	Thunderstorm Wind
Thunderstorm winds blew power lines and trees down over much of the county. Ten houses were damaged by fallen trees. One house was moved 6 inches off the foundation by thunderstorm wind.							
Parke County Rockville	17	1930EST 1934EST			0 0	0.50K	Thunderstorm Wind
Thunderstorm winds blew down numerous trees.							
Montgomery County New Market	17	2004EST 2012EST			0 0	20K	Thunderstorm Wind
Numerous power lines and trees down due to thunderstorm winds in the New Market and Mace areas. A barn was damaged due to wind. There was wind damage to five homes and structural damage to a factory.							
Montgomery County Crawfordsville	17	2012EST 2018EST			0 0	0.50K	Thunderstorm Wind
Thunderstorm winds blew down several trees. Some minor street flooding was reported.							
Cass County Logansport	17	2015EST 2020EST			0 3	200K	Thunderstorm Wind
Thunderstorm winds blew down numerous power lines and damaged several homes and businesses. The roof was blown off a church. Three people were injured from tossed debris.							
Clay County 1 S Brazil	17	2025EST 2026EST			0 0		Thunderstorm Wind (G61)
Clay County Bowling Green	17	2030EST 2032EST			0 0	0.50K	Thunderstorm Wind
Several trees were blown down due to thunderstorm winds.							
Clinton County Manson	17	2030EST 2033EST			0 0	2K	Thunderstorm Wind
Thunderstorm winds blew a semi over on I-65. Trees were blown down and light poles were leaning.							
Cass County 3 E Logansport	17	2040EST 2041EST			0 0		Thunderstorm Wind (G52)
Warren County 2 SW Pine Vlg to Pine Vlg	29	2002EST 2006EST			0 0	0.50K	Thunderstorm Wind
Trees blown down by thunderstorm wind gusts.							
Fountain County Veedersburg	29	2050EST 2055EST			0 0	0.50K	Thunderstorm Wind
Thunderstorm winds blew down trees over parts of county.							
Montgomery County Crawfordsville	29	2100EST 2105EST			0 0	5K	Thunderstorm Wind
Thunderstorm winds blew down trees and power lines. Winds blew a tree onto a roof causing damage.							
Carroll County Flora	29	2103EST 2106EST			0 0	0.50K	Thunderstorm Wind
Thunderstorm winds blew trees down across the road.							
Tippecanoe County Concord	29	2121EST 2122EST			0 0	1K	Thunderstorm Wind
Thunderstorm winds blew a tree on a camper causing damage.							
Fountain County Newtown	29	2121EST 2123EST			0 0	0.50K	Thunderstorm Wind
Thunderstorm winds blew trees down over county.							
Shelby County Shelbyville	29	2130EST 2133EST			0 0	1K	Thunderstorm Wind
Trees and power lines were blown down by thunderstorm winds.							
Cass County Logansport	29	2144EST 2145EST			0 0	5K	Thunderstorm Wind
Tree blown onto house by thunderstorm winds.							

Storm Data and Unusual Weather Phenomena

October 1996

									October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
<u>INDIANA, Central</u>									
Howard County Russiaville	29	2150EST			0	0			Thunderstorm Wind (G60)
Miami County Grissom Afb	29	2155EST			0	0			Thunderstorm Wind (G67)
Boone County Lebanon	29	2200EST 2203EST			0	0	1K		Thunderstorm Wind
Grain augers overturned by thunderstorm winds. Numerous trees and limbs were blown down.									
Boone County Zionsville	29	2200EST 2204EST			0	0	0.50K		Thunderstorm Wind
Thunderstorm winds blew down power lines and tree limbs. A utility pole was blown onto road.									
Clinton County Frankfort	29	2203EST 2205EST			0	0	0.50K		Thunderstorm Wind
Trees and power lines were blown down by thunderstorm winds.									
Howard County Kokomo	29	2213EST			0	0			Thunderstorm Wind (G56)
Madison County Frankton	29	2239EST			0	0	1K		Thunderstorm Wind
Thunderstorm winds blew a loaded grain trailer and tractor onto road. Tree branches were blown down.									
Hamilton County Carmel	29	2255EST 2257EST			0	0	2K		Thunderstorm Wind
Thunderstorm winds blew down trees and power lines. A tree was blown onto a house causing damage.									
Delaware County Muncie	29	2300EST 2305EST			0	0	100K		Thunderstorm Wind
Thunderstorm winds blew down an under construction church, trees, and power lines.									
Madison County Lapel	29	2300EST			0	0			Thunderstorm Wind (G56)
Tipton County Windfall	29	2345EST 2350EST			0	0	1K		Thunderstorm Wind
Thunderstorm winds blew trees limbs and power lines down over parts of the county.									
<u>INDIANA, Northeast</u>									
Lagrange County Lagrange County	29	2200EST 2215EST			0	0	10K		Thunderstorm Wind
Thunderstorm winds blew down trees and power lines across LaGrange County. Lightning struck a house near LaGrange setting the home on fire producing minor damage.									
Noble County Albion	29	2200EST 2205EST			0	0			Thunderstorm Wind (G60)
Trees and power lines were reported down in Albion.									
Huntington County Huntington	29	2210EST 2215EST			0	0			Thunderstorm Wind (G58)
Wind gusts estimated as high as 67 mph blew down trees and power lines in and around Huntington.									
Wabash County North Manchester	29	2215EST 2220EST			0	0			Thunderstorm Wind (G54)
Trees and power lines were blown down in North Manchester, Indiana.									
Wells County Wells County	29	2230EST 2245EST			0	0			Thunderstorm Wind (G54)
Trees and power lines were reported down across Wells County.									
Grant County Marion	29	2235EST 2240EST			0	0			Thunderstorm Wind (G55)
Trees and power lines were reported down in Marion, Indiana.									
Allen County Ft Wayne	29	2245EST 2255EST			0	0			Thunderstorm Wind (G54)
Numerous trees and power lines were blown down in Fort Wayne, Indiana.									
Whitley County South Whitley	29	2245EST 2250EST			0	0	10K		Thunderstorm Wind (G54)
A tree blew down on a house in South Whitley producing minor damage. Trees and power lines were reported down in and around									

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
INDIANA, Northeast									
		South Whitley.							
Steuben County									
Steuben County	29	2250EST 2305EST			0	0			Thunderstorm Wind (G55)
		Trees and power lines were reported down across Steuben County.							
Blackford County									
Hartford City	29	2300EST 2305EST			0	0			Thunderstorm Wind
		Trees and power lines were reported down in Hartford City, Indiana.							
Jay County									
Jay County	29	2320EST 2340EST			0	0	50K		Thunderstorm Wind (G74)
		Widespread wind damage was produced across Jay County with trees, lines, telephone and electric poles and roofs blown down. Gusts to 85 mph were reported as thunderstorms rolled across the county.							
INZ018									
	Allen								
	30	0000EST 0800EST			0	0	40K	0	High Wind (G50)
		High winds blew down trees and lines across Allen County. In Cedarville the wind knocked down four free standing cinder block walls at the construction site of the new Cedarville Elementary School. The high winds, also, knocked down two walls at a new Kroger grocery store on the northside of Fort Wayne. Two buildings in Fort Wayne had windows blown out and a number of awnings were blown loose. Several homes received minor damage due to trees falling on them.							
INZ006									
	Lagrange								
	30	0000EST 0800EST			0	1	7K	0	High Wind (G50)
		High winds downed trees, poles and lines across LaGrange County. A motorist was injured when her car hit a downed tree in the area of 300S and 1200W.							
INZ007									
	Steuben								
	30	0000EST 0800EST			0	0			High Wind (G50)
		High winds downed trees, lines and poles across Steuben County. In the Hamilton area 4,000 customers were left without power after three poles were blown down.							
INZ009									
	De Kalb								
	30	0000EST 0800EST			0	0			High Wind (G50)
		High winds blew down trees, powerlines and poles across DeKalb County leaving many residents without power.							
INZ008									
	Noble								
	31	0000EST 0800EST			0	0	6K	0	High Wind (G50)
		High winds downed trees, powerlines and blew out windows across DeKalb County. In Kendallville a tree fell on a pickup truck and windows were blown out of the Elks Country Club.							
INDIANA, Northwest									
Lake County									
Countywide	29	1940EST 2000EST			0	0			Thunderstorm Wind
Newton County									
Countywide	29	1940EST 2010EST			0	0			Thunderstorm Wind
Benton County									
Countywide	29	1950EST 2030EST			0	0			Thunderstorm Wind (G55)
Porter County									
Countywide	29	2000EST 2030EST			0	0			Thunderstorm Wind
Jasper County									
Countywide	29	2000EST 2035EST			0	0			Thunderstorm Wind
La Porte County									
Countywide	29	2020EST 2050EST			0	0			Thunderstorm Wind (G50)
White County									
Countywide	29	2030EST 2115EST			0	0			Thunderstorm Wind
Starke County									
Countywide	29	2030EST 2105EST			0	0			Thunderstorm Wind

Storm Data and Unusual Weather Phenomena

October 1996

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

INDIANA, Northwest

Pulaski County Countywide	29	2035EST 2115EST			0	0			Thunderstorm Wind
St. Joseph County Countywide	29	2050EST 2130EST			0	0			Thunderstorm Wind
Marshall County Countywide	29	2100EST 2135EST			0	0			Thunderstorm Wind
Fulton County Countywide	29	2110EST 2140EST			0	0			Thunderstorm Wind
Elkhart County Countywide	29	2125EST 2145EST			0	0			Thunderstorm Wind
Kosciusko County Countywide	29	2135EST 2155EST			0	0			Thunderstorm Wind

A fast moving squall line produced wind gusts of 45 to 65 mph across northern Indiana. In Lake County trees fell on homes in Gary, 6 power poles were blown down near Cedar Lake and a large neon sign at a restaurant in Schererville blew down in the parking lot around 650 pm CST. In Newton County tree limbs and power lines were blown down around 650 pm CST. A wind gust to 63 mph was recorded at the EOC in Fowler in Benton County. In Porter County a barn roof was damaged. Trees were blown down in Rensselaer in Jasper County around 720 pm CST. In Michigan City in La Porte County a 58 mph wind gust was reported by the Coast Guard at about 730 pm CST. A fuel shed was blown off a dock and trees were downed. Trees, tree limbs and power lines were reported downed by winds in North Judson in Starke County just before 800 pm CST, at Monticello in White County around 900 pm EST and throughout St. Joseph, Marshall, and Pulaski Counties and at Rochester in Fulton County at 930 pm EST. Tree limbs and power lines were downed in Elkhart and Goshen in Elkhart County between 930 and 940 pm EST. The roof of a house was damaged by winds in Syracuse in Kosciusko County at 940 pm EST.

INDIANA, South Central

Floyd County Georgetown	17	2350EST			0	0	0.50K		Thunderstorm Wind (G50)
Minor roof damage to one home with trees down. Report was from the Sheriff.									

INDIANA, Southeast

Wayne County Richmond	30	0020EST 0025EST			0	0	3K		Thunderstorm Wind (G50)
Numerous trees downed.									

INDIANA, Southwest

Gibson County Princeton	22	1510CST			0	0	1K	0	Thunderstorm Wind (G50)
A couple of power lines were down.									
Posey County Mt Vernon	22	1512CST			0	0			Thunderstorm Wind (G52)
Several trees were down.									
Vanderburgh County St Wendells	22	1515CST			0	0	2K	0	Thunderstorm Wind (G50)
Power lines and a large tree were blown down.									

IOWA, Central

Emmet County Estherville	16	2245CST			0	0	5K		Thunderstorm Wind (G55)
A strong cold front approached Iowa from the northwest. A low pressure center developed along the cold front in northwest Kansas during the late afternoon and moved northeast along the front rapidly. This low helped draw unstable air north into Iowa with strong south winds and dew point temperatures in the lower 60s F. The dynamics aloft were well north of Iowa, however a line of thunderstorms that moved across Minnesota developed southwest into northwest Iowa. The storms produced gusty winds and pea size hail for the most part. One of the storms on the tail end of the line produced severe winds in Emmet County resulting in the downing of power lines in the city.									
IAZ004>007-015>017-023>028-033>039-044>050-057>062-070>075-081>086-092>097									
Emmet - Kossuth - Winnebago - Worth - Palo Alto - Hancock - Cerro Gordo - Pocahontas - Humboldt - Wright - Franklin - Butler - Bremer - Sac - Calhoun - Webster - Hamilton - Hardin - Grundy - Black Hawk - Crawford - Carroll - Greene - Boone - Story - Marshall - Tama - Audubon - Guthrie - Dallas - Polk - Jasper - Poweshiek - Cass - Adair - Madison - Warren - Marion - Mahaska - Adams - Union - Clarke - Lucas - Monroe - Wapello - Taylor - Ringgold - Decatur - Wayne - Appanoose - Davis									
	29	1100CST			0	0	500K	100K	High Wind (G57)
	30	0900CST							

A record low pressure system moved northeast out of the southern Rockies across southeast South Dakota, into Upper Michigan. Record low pressure for the month of October at several locations. As the low passed northwest and north of Iowa, high winds developed. The dry slot progressed into Iowa as mid tropospheric air mixed toward the ground in the already strong gradient. Damage was widespread across the state with trees downed in most locations. There was also a large number of reports of sign

Storm Data and Unusual Weather Phenomena

October 1996

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

IOWA, Central

damage as well. At the height of the storm, winds were sustained between 30 and 40 MPH with frequent gusts to 55 to 60 MPH. Some of the highest winds reported include 66 MPH at Ottumwa, and 63 MPH at many reporting sites including Mason City, Johnston, Atlantic, and Boone. Damage also occurred to the Iowa Corn crop as some of the remaining crop in the ground became lodged by the high winds.

IOWA, East Central and Southeast

Jones County Anamosa	29	1400CST 1415CST			0	0	15K		Thunderstorm Wind (G60)
Thunderstorm winds tipped over a mobile home and destroyed a shed.									
Cedar County Durant	29	1515CST 1530CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds caused tree damage and downed power lines.									
Johnson County 5 E Iowa City	29	1515CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds blew a barn down.									
Jones County Olin	29	1518CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds overturned a mobile home.									
Scott County Buffalo	29	1527CST 1540CST			0	0			Thunderstorm Wind (G52)
Thunderstorm winds measured by the Civil Defense at 60 MPH.									
Clinton County Dewitt	29	1530CST 1545CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds downed trees and damaged roofs.									
Dubuque County Epworth	29	1530CST			0	1	20K		Thunderstorm Wind (G60)
Thunderstorm winds downed trees and power lines. Winds also rolled a semi truck over and off the road.									
Scott County Blue Grass	29	1532CST			0	0			Thunderstorm Wind (G52)
Winds associated with a Thunderstorm were measured at 60 mph.									
Scott County Davenport	29	1532CST 1545CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds downed trees and power lines.									
Cedar County West Branch	29	1540CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds downed trees in West Branch.									
Clinton County Welton	29	1545CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds blew street signs and construction barriers down.									
Dubuque County Epworth	29	1546CST			0	1	20K		Thunderstorm Wind (G60)
Thunderstorm winds turned over a semi truck.									
Henry County Mt Pleasant	29	1615CST			0	0			Thunderstorm Wind (G60)
Thunderstorm winds snapped trees and downed powerlines.									

IAZ040>042-051-
053>054-063>068-
076>078-087>089-
098>099

Buchanan - Delaware - Dubuque - Benton - Jones - Jackson - Iowa - Johnson - Cedar - Clinton - Muscatine - Scott - Keokuk - Washington - Louisa - Jefferson - Henry - Des Moines - Van Buren - Lee

29	1630CST	0	1	20K	High Wind (G52)
30	0600CST				

Strong gradient winds occurred behind a line of thunderstorms along a strong cold front. This caused widespread damage to trees and power lines. Numerous tin sheds and a few barns were destroyed during the 15 to 20 hours of strong to severe winds. Power outages were too numerous to count. In Dubuque county on Highway 20 near Epworth Iowa, a semi-tractor trailer was overturned and its driver injured. In spite of all the damage to trees, many newspaper articles across the area reported that damage to unharvested crops was minimal.

IOWA, Northeast

Mitchell County Osage	17	0045CST			0	0			Hail (0.75)
Mitchell County Osage	17	0055CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage	Crops	Character of Storm
IOWA, Northeast										
IAZ011	Allamakee									
	30	0100CST			0	0	15K			High Wind (G48)
		0600CST								
	Winds gusting to 55 mph knocked down a large tree onto a parked car in Postville.									
IAZ030	Clayton									
	30	0100CST			0	0	100K			High Wind (G52)
		0600CST								
	A roof was completely blown off an apartment complex as winds gusted to 60 mph.									
IAZ019	Chickasaw									
	30	0100CST			0	0	5K			High Wind (G48)
		0600CST								
	Winds gusting as high as 55 mph blew over signs and knocked down some trees.									
IAZ029	Fayette									
	30	0100CST			0	0	30K			High Wind (G48)
		0600CST								
	Siding was blown off a few houses, some limbs fell on power lines and scattered trees were downed as winds gusted to 55 mph.									
IAZ018	Floyd									
	30	0100CST			0	0	18K			High Wind (G48)
		0600CST								
	Winds gusting to 55 mph knocked down a few trees and signs.									
IAZ009	Howard									
	30	0100CST			0	0	100K			High Wind (G52)
		0600CST								
	Wind gusts to 60 mph blew the entire roof off a rural electric company building.									
IAZ008	Mitchell									
	30	0100CST			0	0	10K			High Wind (G48)
		0600CST								
	Winds gusting to 55 mph blew down some power lines and limbs.									
IAZ010	Winneshiek									
	30	0100CST			0	0	20K			High Wind (G48)
		0600CST								
	A few trees and limbs were blown down and some shingles were blown off of roofs as winds gusted to 55 mph.									
IOWA, Northwest										
Sioux County										
Hospers	16	2140CST			0	0	10K			Thunderstorm Wind (G52)
	Thunderstorm winds caused extensive damage to two storage tanks and blew down several large trees.									
O'Brien County										
Archer to Hartley	16	2145CST			0	0	300K			Thunderstorm Wind (G62)
		2200CST								
	Thunderstorm winds destroyed a school bus garage, damaged school busses and a school, ripped the roof off of a bowling alley, blew down large trees, and broke house and vehicle windows.									
IAZ001-012-020-031	Lyon - Sioux - Plymouth - Woodbury									
	26	1000CST			0	0	10K			High Wind (G50)
		1600CST								
	Strong south winds ahead of a cold front caused tree and shingle damage, with minor home and vehicle damage occurring from debris.									
IAZ001>003-012>014-020>022-031>032	Lyon - Osceola - Dickinson - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida									
	29	1700CST			0	0	60K			High Wind (G50)
	30	0200CST								
	Strong winds behind a cold front caused tree damage and scattered other damage including a destroyed grain bin and cars damaged by tree debris.									
IOWA, Southwest										
IAZ043-055>056-069-079>080-090>091	Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page									
	26	1500CST			0	0				High Wind (G59)
	27	0100CST								
	A strong pressure gradient ahead of low pressure which moved across western Nebraska into the eastern Dakotas created strong south southwesterly winds during the day. The winds gusted as high as 68 mph across the area causing scattered power outages along with tree damage.									
IAZ043-055>056-069-079>080-090>091	Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page									
	29	1400CST			0	0				High Wind (G55)
	30	0400CST								
	A strong low pressure system which moved northeast across the state into the eastern Dakotas caused strong northwesterly winds which gusted as high as 63 mph across the area. This caused numerous power outages along with tree damage.									

Storm Data and Unusual Weather Phenomena

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Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
<u>KANSAS, East</u>									
Douglas County Lawrence	07	0030CST			0	0	50K		Lightning
A suspected lightning strike ignited a fire to an abandoned house on the east side of town. The house was completely destroyed.									
KSZ010>012-022>024-026-036>040-054>056-058>059	Marshall - Nemaha - Brown - Riley - Pottawatomie - Jackson - Jefferson - Geary - Morris - Wabaunsee - Shawnee - Douglas - Lyon - Osage - Franklin - Coffey - Anderson								
	22	0450CST 2242CST			0	0	3.5M		Heavy Snow
An early season winter storm produced a record breaking heavy wet snow in most of northeast and east central Kansas. Accumulations ranged from 3 to 8 inches at most locations east of a line from Marysville in northwest Marshall County to Herrington in extreme southeast Dickinson County. A few places received 9 to 11 inches. Scattered thunderstorms locally enhanced the snowfall rates, causing amounts to vary greatly over short distances. The National Weather Service at the Billard Airport in Topeka recorded 8.0 inches which set a new twenty-four hour and monthly snowfall record for October. Some other specific snowfall totals included Alta Vista 11, Council Grove 8 1/2, Lawrence 8, Hiawatha 8, Oskaloosa 8, and Ottawa 6.									
Since leaves still remained on many trees the stress from the weight of the snow on the leaves caused extensive damage to limbs which fell onto power lines and electrical transformers. The result was widespread power outages with more than 75,000 customers in northeast Kansas without power at the peak of the storm. The power company which services the region estimated 2.5 million dollars of damage to its operations.									
The storm also contributed to numerous traffic accidents with over 100 confirmed in Topeka and Shawnee County and over 40 in Pottawatomie County. One fatal accident occurred on US Highway 40 in Douglas County 1 mile east of Big Springs when a car collided head-on with a semi-truck. Another fatal accident occurred in Osage County along the Kansas Turnpike 20 miles southwest of Topeka when a car struck the guard rail then another vehicle that was parked along the shoulder of the highway. (F22V) (F26V)									
KSZ035	Dickinson	29	1200CST 1800CST		0	0	0.50K		High Wind (G50)
Strong winds damaged the metal siding of a building. The winds occurred during most of the afternoon.									
KSZ024	Jackson	29	1255CST		0	0	2K		High Wind (G54)
A strong wind gust ripped pieces of metal from the roof of a mobile home and dropped it across power lines which resulted in loss of power to the entire town of Holton.									
KSZ039	Shawnee	29	1340CST 1740CST		0	0			High Wind (G47)
Forbes Field Airport on the south side of topeka reported a wind gust to 54 miles an hour at 5:40 PM CST. Earlier the same location reported a sustained wind of 44 miles an hour ending at 1:40 PM CST.									
KSZ040	Douglas	29	1400CST 2100CST		0	0	0.50K		High Wind (G47)
Strong winds downed several trees and power lines in Lawrence.									
KSZ020	Cloud	29	1521CST		0	0			High Wind (G49)
Concordia Blosser Municipal airport recorded a sustained wind of 46 miles an hour ending at 3:21 PM CST. The period of the sustained wind included a gust to 57 miles an hour at 3:20 PM CST.									
<u>KANSAS, Extreme Southeast</u>									
NONE REPORTED.									
<u>KANSAS, North Central</u>									
NONE REPORTED.									
<u>KANSAS, Northeast</u>									
KSZ103	Leavenworth	22	1200CST 2300CST		0	0	250K		Heavy Snow
Heavy wet snow from a record setting early season snowfall downed numerous foliage filled trees and power lines. An estimated 15,000 Kansas Power and Light customers lost power during the storm. Property damage estimates were at a quarter million dollars.									
Snowfall amounts ranged from 7 inches at Lansing to 12 inches at Easton.									
KSZ104	Wyandotte	22	1200CST 2300CST		0	0	250K		Heavy Snow
Heavy wet snow from an record setting early season snowfall downed numerous power lines and foliage filled trees. An estimated 20,000 Kansas Power and Light customers lost power during the storm and up to a quarter million dollars in property damage was									

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
<u>KANSAS, Northeast</u>										
										estimated.
										Snowfall amounts ranged from around 6 inches in Kansas City to 4 inches in Bonner Springs.
KSZ105	Johnson									
	23	1300CST			0	0	500K		Heavy Snow	
		2300CST								A record setting early season snowfall knocked out power to an estimated 50,000 customers. The heavy wet snow also knocked over numerous trees which were still foliage filled and downed power lines. Property damage was estimated at a half a million dollars.
										Snowfall amounts ranged from 2 inches at Desoto, to 6 inches at Stanley and 8 inches at Shawnee.
KSZ104	Wyandotte									
	29	1224CST			0	0			High Wind (G48)	
		1434CST								Remote sensing data recorded a wind gust of 54 MPH in Bonner Springs at the intersection Interstate 70 and Kansas Highway 7. A 51 MPH wind gust was also reported at a local market in Kansas City.
<u>KANSAS, Northwest</u>										
Sherman County										
Goodland	07	1910MST			0	0			Hail (1.00)	
KSZ001>002-013>014-027>029	Cheyenne - Rawlins - Sherman - Thomas - Wallace - Logan - Gove									
	16	1700MST			0	0			High Wind (G70)	
		2100MST								
KSZ001>004-013>016-027>029-041>042	Cheyenne - Rawlins - Decatur - Norton - Sherman - Thomas - Sheridan - Graham - Wallace - Logan - Gove - Greeley - Wichita									
	29	1000MST			0	0			High Wind (G70)	
		1900MST								A powerful low pressure area moving through Nebraska brought damaging winds. Roof damage was reported at the new Colby High School. A camper trailer was turned over 2 miles east of Brewster. Visibility was reduced to near zero at times in blowing dust on Highway 36, two miles west of Norton.
<u>KANSAS, Southeast</u>										
										NONE REPORTED.
<u>KANSAS, Southwest</u>										
										NONE REPORTED.
<u>KENTUCKY, Central</u>										
KYZ041	Fayette									
	30	0530EST			0	0			High Wind (G50)	
		0545EST								High winds knocked down several trees and power lines in the southeastern part of Lexington.
<u>KENTUCKY, Eastern</u>										
Pike County										
Greasy Creek	02	1220EST			0	0	3K	0	Flash Flood	
		1530EST								Some roads south of Pikeville were flooded after streams overflowed their banks.
<u>KENTUCKY, Northeast</u>										
										NONE REPORTED.
<u>KENTUCKY, Northern</u>										
KYZ092	Kenton									
	29	0000EST			0	0	5K		High Wind (G50)	
		0200EST								Strong winds downed trees.
KYZ096	Pendleton									
	29	0200EST			0	0	10K		High Wind (G50)	
		0400EST								Strong winds blew the roof off a trailer and into a road.
<u>KENTUCKY, Southwest</u>										
Daviess County										
Owensboro	17	2030CST			0	0	6K	0	Thunderstorm Wind	
										Thunderstorm winds damaged a school under construction. Two 200-foot sections of concrete wall were blown down. Two construction trailers were pushed together. Trees were down.

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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
<u>KENTUCKY, Southwest</u>									
Hickman County Oakton	22	1305CST			0	0	2K	0	Thunderstorm Wind
	A shed was blown down.								
Carlisle County Cunningham	22	1315CST			0	0			Thunderstorm Wind (G50)
	Trees down.								
Ballard County Barlow	22	1320CST			0	0			Thunderstorm Wind (G50)
	Trees were blown down.								
Mccracken County (Pah)Barkley Arpt Pa	22	1325CST			0	0			Thunderstorm Wind (G52)
	A wind gust to 60 MPH occurred at Barkley Regional Airport in West Paducah.								
Graves County Mayfield to Pilot Oak	22	1340CST			0	0	10K	0	Thunderstorm Wind
	Trees were blown down. One tree fell on a house in Mayfield. A power pole was broken near Pilot Oak.								
Calloway County Murray	22	1347CST			0	0			Thunderstorm Wind (G50)
	Trees were down in Murray.								
Marshall County Hardin to Aurora	22	1410CST 1420CST			0	0			Thunderstorm Wind (G52)
	Trees were blown down.								
Caldwell County Princeton	27	1530CST 2030CST			0	0	25K		Urban/Sml Stream Fld
	About 2.5 inches of rain fell during the late afternoon and evening, causing some low-lying areas to flood. Traffic was detoured around flooded streets. A vehicle was stranded in water at a viaduct. Some basement flooding was reported.								
<u>LOUISIANA, Northeast</u>									
	NONE REPORTED.								
<u>LOUISIANA, Northwest</u>									
Lincoln Parish 10 E Ruston to Ruston	17	1626CST			0	0			Hail (0.50)
Natchitoches Parish Marthaville	17	1708CST			0	0			Hail (0.50)
Natchitoches Parish Marthaville	17	1710CST			0	0			Thunderstorm Wind (G60)
	Several trees were blown down causing power outages.								
Caldwell Parish Columbia	17	1805CST			0	0			Thunderstorm Wind (G60)
	Trees and power lines were downed resulting in over 700 people without power.								
Bossier Parish Plain Dealing	17	1904CST			0	0			Hail (1.25)
Webster Parish Minden	17	2008CST			0	0			Thunderstorm Wind (G65)
	Trees and power lines were blown down resulting in numerous power outages.								
Webster Parish Dixie Inn	17	2010CST			0	0			Thunderstorm Wind (G60)
La Salle Parish Jena	17	2043CST			0	0			Hail (0.75)
Jackson Parish Jonesboro	17	2203CST			0	0			Thunderstorm Wind (G65)
	Several trees were blown into power lines resulting in over 2000 people without power.								
Ouachita Parish Monroe	17	2228CST			0	0			Thunderstorm Wind (G65)
	Numerous reports of trees and power lines blown down resulting in over 2300 people without power.								
Grant Parish Fishville	17	2328CST			0	0			Thunderstorm Wind (G60)
	Trees were knocked down across power lines near the Marshall's Office.								
Caddo Parish Mooringsport	21	1820CST			0	0			Hail (1.00)
Webster Parish 2 S Cotton Vly	21	1820CST			0	0			Thunderstorm Wind (G60)
	Thunderstorm winds blew trees across Hwy 7.								

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage	Property	Crops	Character of Storm
<u>LOUISIANA, Northwest</u>										
Caddo Parish										
Oil City	21	1940CST			0	0				Hail (0.88)
Bossier Parish										
Benton	21	1954CST			0	0				Thunderstorm Wind (G61)
Webster Parish										
2 S Cotton Vly	21	2020CST			0	0				Thunderstorm Wind (G60)
Webster Parish										
5 S Minden	21	2020CST			0	0				Hail (1.75)
Caddo Parish										
Shreveport	21 22	2214CST 0215CST			0	0				Flash Flood
Intersection LA 1 and US 71 reported three feet of water due to heavy rain. La 538 closed except for one lane.										
Bossier Parish										
Benton	21 22	2214CST 0215CST			0	0				Flash Flood
One half foot of water was reported across Hwy 3 resulting from heavy rain.										
Webster Parish										
5 S Springhill	21 22	2214CST 0215CST			0	0				Flash Flood
One foot of water reported over Hwy 7.										
De Soto Parish										
Mansfield	22	0015CST			0	0				Thunderstorm Wind (G60)
Several trees were blown over across power lines causing numerous power outages.										
<u>LOUISIANA, Southeast</u>										
LAZ038-040-050-058-060>062-064-066>070	Tangipahoa - St. Tammany - Livingston - St. John The Baptist - St. Charles - Upper Jefferson - Orleans - Upper St. Bernard - Lower Terrebonne - Lower Lafourche - Lower Jefferson - Lower Plaquemines - Lower St. Bernard									
	05 08	0700CST 1600CST			0	0	5.5M			Coastal Flooding
Coastal flooding resulted from a sustained period of strong east winds. A tight pressure gradient persisted over the northern Gulf of Mexico due to the proximity of a strong high pressure system over the Southeast U.S. and Tropical Storm Josephine in the Central Gulf of Mexico. Tides of 3 to 4 feet above normal developed over the southeast Louisiana coastal areas from the mouth of the Pearl River through the mouth of the Mississippi River to Grand Isle and areas around Lake Pontchartrain. Particularly hard hit were areas outside the hurricane protection levees in Orleans and St Bernard Parishes where roads and a few houses were flooded. Louisiana Highway 1 was covered by a foot of water and was closed to all except emergency vehicle traffic. Minor coastal flooding was also reported along Lakes Pontchartrain and Maurepas, primarily affecting roads along the lake shore, although 2 houses in Mandeville sustained moderate damage and 4 houses in the Bayou Liberty area of Slidell were flooded. A maximum tide of 4.0 to 4.2 ft. NVGD occurred at Grande Isle from the early morning hours of October 5th through October 7th. At Bayou Bienvenue, near Lake Borgne in St Bernard Parish, a maximum tide of approximately 5.5 ft NVGD occurred from the mid morning hours of October 5th through October 6th.										
Damage cost estimates were provided by the respective parish offices of emergency preparedness. A combined cost of 3 million dollars was estimated for levee repair, dredging and beach stabilization and assistance provided by the State of Louisiana. Additional large costs included debris clean-up and repair of water and pump stations.										
East Baton Rouge Parish										
Baton Rouge	25	0000CST 0600CST			0	0	20K			Urban/Sml Stream Fld
Four to 5 inches of rain caused extensive urban flooding with some houses and cars being flooded.										
<u>LOUISIANA, Southwest</u>										
Cameron Parish										
Holly Beach	05 07	1600CST 1600CST			0	0	20K			Coastal Flooding
Coastal flooding occurred along Highway 82 between Holly Beach and Johnson Bayou. The north side of the highway received minor damage due to wave action. The Cameron tide gauge read between two and four feet above normal during this event.										
Calcasieu Parish										
Lake Charles	25 26	1645CST 1100CST			0	0	20K			Flood/Flash Flood
Between seven and ten inches of rain fell in less than 24 hours, resulting in widespread areas of high water. The hardest hit areas were near Iowa, and in southern sections of Lake Charles, south of Interstate 210.										
Acadia Parish										
Crowley	25 26	2045CST 1100CST			0	0	20K			Flood/Flash Flood
Over five inches of rain fell in less than six hours, resulting in widespread flooding across Crowley. Several businesses had at least one foot of water in them.										

Storm Data and Unusual Weather Phenomena

October 1996

									October 1996
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
LOUISIANA, Southwest									
St. Martin Parish Breaux Bridge	25	2145CST			0	0	20K		Thunderstorm Wind
Several trees were blown down, including one on a mobile home.									
St. Martin Parish Breaux Bridge	25 26	2230CST 1100CST			0	0	10K		Flood/Flash Flood
Nearly ten inches of rain fell in less than 24 hours, resulting in widespread flooding. The hardest hit area was Breaux Bridge.									
Iberia Parish New Iberia	25 26	2230CST 0800CST			0	0	10K		Flood/Flash Flood
Nearly ten inches of rain fell in less than 24 hours, resulting in widespread flooding across New Iberia. Jefferson Terrace, Spencer Loop and Front Street were closed due to high water.									
MAINE									
MEZ016>030	Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington								
	08 09	2100EST 0900EST			0	0			High Wind
Strong winds from a coastal storm that formed from the remnants of Tropical Storm Josephine knocked over trees and branches in coastal sections of Maine, causing numerous power outages.									
Penobscot County Hudson	14	0700EST			0	0	5K		Lightning
Lightning struck a wooden shed in Hudson causing it to burn to the ground. Damage was estimated at \$5000. A lawnmower stored in the shed was also destroyed.									
MEZ001>030	Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington								
	14	1300EST 2200EST			0	0			High Wind
Strong winds from a low pressure center that moved eastward north of the state knocked over trees onto power lines throughout the state causing more than 10,000 families to lose power. Falling trees also damaged buildings and vehicles.									
York County Kittery to Old Orchard Beach	20 21	1100EST 1600EST			0	0	350K		Storm Surge
A very slow moving coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced very heavy rains (up to 19 inches along the coast) and persistent strong onshore winds. Coastal storm surges, combined with runoff, caused coastal flooding at and near the times of high tide on the 20 th and 21st. The worst flooding occurred in northeastern coastal York County where whole communities were submerged in several feet of water. Ocean Park was particularly hard hit with many citizens evacuated by boat to emergency shelters.									
Cumberland County Scarborough to Brunswick	20 21	1100EST 1600EST			0	0	150K		Storm Surge
A very slow moving coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced very heavy rains (up to 19 inches along the coast) and persistent strong onshore winds. Coastal storm surges, combined with runoff, caused coastal flooding at and near the times of high tide on the 20 th and 21st. The worst flooding in the County occurred in southwestern coastal sections. At least 20 boats in the Portland area were torn from their moorings by the strong northeast winds and ran aground.									
York County Countywide	20 23	2200EST 1200EST			0	0	10.2M		Flood
A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced between 8 and 19 inches of rain throughout the County during a 30-hour period. Many homes and businesses were flooded. Roads and bridges were washed out.									
Cumberland County Countywide	21 23	0300EST 1800EST			1	0	15.0M		Flood
A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced between 4 and 19 inches of rain throughout the County during a 30-hour period. Many homes and businesses were flooded. Many roads and bridges were washed out. The city of Portland was without potable water for 24 hours as 4 major water mains were broken. One man drowned when the man and his wife attempted to drive across a flooded roadway that had been washed out. An area dam failed. M42VE									
Oxford County Countywide	21 22	1900EST 1800EST			0	0	1.1M		Flood
A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced between 1 and 7 inches of rain throughout the County during a 30-hour period. Many homes and businesses were flooded and roads and bridges were washed									

Storm Data and Unusual Weather Phenomena

October 1996

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

MAINE

out, particularly in the southern part of the County.

Cumberland County Westbrook

22 1000EST 0 0 500K Flash Flood
23 1045EST

Excessive rainfall caused the Highland Lake Dam to fail in Westbrook. A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced between 7 and 16 inches of rain in the area upstream of the dam. The dam break compounded problems with the Presumpscot River which had been flooding at the time.

MARYLAND, Central

MDZ014-017>018

Anne Arundel - St. Mary'S - Calvert

08 1430EST 0 0 75K High Wind (G67)
1600EST

The remnants of Tropical Storm Josephine evolved into a nor'easter which raced from the South Carolina low country to just off the southern New Jersey coast in a 12 hour period. The existence of a deep low pressure center, channeling of north winds down the Chesapeake Bay, and high water temperatures than those of the surrounding land areas combined to produce wind gusts in excess of 50 knots from the Bay through the western shore of central and southern Maryland.

The highest gust was recorded in St Mary's Co (MDZ017 - 77 mph). Numerous trees were knocked down in Calvert (MDZ018) and St Mary's Counties; power outages were widespread, numbering 7,000 in the predominantly rural eastern portions of the counties. Trees fell onto homes in Great Mills and North Town Creek in St Mary's Co; dozens more fell onto power lines and across roads. Lesser damage was noted in Anne Arundel Co; however, the high winds knocked down a few trees and several power lines, cutting service to 7,000 customers. The winds diminished rapidly with the passage of the storm.

MDZ017>018

St. Mary'S - Calvert

08 1430EST 0 0 10K Tidal Flooding
1800EST

The same nor'easter which spawned wind gusts in excess of 60 mph also produced waves of 6 feet or greater in the Chesapeake Bay. Fortunately, the wind direction was from the north/northeast, limiting the pounding along the shore. Nevertheless, overwash created by the high waves caused minor damage to piers and bulkheads in Calvert and St Mary's Counties. In St Mary's Co, flooding was noted along the Point Lookout shoreline and a portion of state route 238 was closed near Chaptico due to a foot of standing water.

Anne Arundel County Central Portion

18 2030EST 0 0 5K Flash Flood
2230EST

A line of heavy showers and embedded thunderstorms ahead of a cold front was followed by moderate rains behind the front. This combination caused several roads to become submerged in the Annapolis area, including most of the normally flood-prone highways. These roads included an on-ramp to eastbound federal highway 50, Brockbridge Road at the Prince Georges Co line, and the intersection of state routes 424 and 214 in Davidsonville

MARYLAND, Northeast

MDZ008-012-015- 019>020

Cecil - Kent - Queen Annes - Talbot - Caroline

08 0600EST 0 0 Heavy Rain And Wind
2000EST

Heavy rain associated with the remnants of Tropical Storm Josephine affected the Maryland Eastern Shore primarily during the daylight hours on the 8th. Peak wind gusts reached between 30 and 40 mph in most areas. While the heavy rain did cause the usual poor drainage flooding, recent dry weather and foliage still on the trees prevented further flooding. The wind gusts did pull down some small limbs. Storm totals included 2.40 inches in Federalsburg, 1.90 inches in Newark, Delaware and 0.87 inches in Conowingo.

Caroline County Countywide

18 2100EST 0 0 Heavy Rain
19 0900EST

Talbot County Countywide to Countywide

18 2100EST 0 0 Heavy Rain
19 0900EST

Queen Anne'S County Countywide

18 2100EST 0 0 Heavy Rain
19 0900EST

Kent County Countywide

18 2100EST 0 0 Heavy Rain
19 0900EST

Cecil County Countywide

18 2200EST 0 0 Heavy Rain
19 1000EST

Rain, heavy at times, fell across the Maryland Eastern Shore from the evening of the 18th through the morning of the 19th. The heaviest rain fell between 11 p.m. and 5 a.m. EDT on the 18th and 19th. Storm totals averaged 1.5 to 2.5 inches across much of the area. This produced some urban and poor drainage flooding, but no serious flooding or damage was reported. A low pressure system developed near Norfolk during the late evening of the 18th. At 8 a.m. EDT on the 19th, it was located near Atlantic City.

Storm Data and Unusual Weather Phenomena

October 1996

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

MARYLAND, Northeast

Tropical moisture associated with Hurricane Lili (Which was farther east in the Atlantic.) was ingested into this low and literally wrung out over the Maryland Eastern Shore. Representative storm totals included 3.16 inches in Conowingo, 2.48 inches at the Baltimore-Washington International Airport and 1.17 inches in Bridgeville, Delaware.

MARYLAND, South

MDZ021>025

Dorchester - Wicomico - Somerset - Inland Worcester - Maryland Beaches

08 0100EST 0 0 100K Tropical Storm
2200EST

Remnants of Tropical Storm Josephine moved quickly up the East Coast during Tuesday, October 8th, affecting the Lower Maryland Eastern Shore. The storm produced 1.5 to 3.5 inches of rain resulting in flooding of several roads. The Coast Guard Station in Ocean City recorded a wind gust of 77 mph. Several trees and power lines were blown down resulting in some minor structural damage and scattered power outages. In addition, the storm's winds broke loose a 160-foot barge from its moorings.

MARYLAND, West

NONE REPORTED.

MASSACHUSETTS, Central and East

Plymouth County

Countywide 08 1900EST 0 0 Heavy Rain
09 0700EST

Bristol County

Southern Portions 08 1900EST 0 0 Heavy Rain
09 0700EST

Barnstable County

Countywide 08 1900EST 0 0 Heavy Rain
09 0700EST

Dukes County

Countywide 08 1900EST 0 0 Heavy Rain
09 0700EST

Nantucket County

Countywide 08 1900EST 0 0 Heavy Rain
09 0700EST

MAZ014>016-019>024

Southeast Middlesex - Suffolk - Eastern Norfolk - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket

08 2200EST 0 0 High Wind (G58)
09 0500EST

The remnants of former Tropical Storm Josephine moved very quickly northeast from near Atlantic City, NJ during the early evening of October 8th to near Chatham, MA during the early morning hours of October 9th. The central pressure was 982 millibars as the system then continued on northeastward into the Gulf of Maine. High winds and heavy rainfall affected the southeast portion of the state. A peak gust to 67 mph was recorded at the Blue Hill Observatory in Milton. Other gusts included: Buzzards Bay Buoy, 61 mph; Logan International Airport, Boston, 59 mph; Nantucket Island, 58 mph; West Dennis, 55 mph; and Gloucester, 53 mph. Rainfall amounts generally ranged from 3.0 to 4.5 inches on Cape Cod and the Islands. A few amounts also exceeded 3.0 inches in Plymouth County; Hingham received 3.24 inches. Some other totals included: East Orleans, 4.40 inches; Vineyard Haven, 4.20 inches; East Falmouth, 4.00 inches; West Yarmouth, 3.75 inches; and Sandwich, 3.20 inches. There were a few reports of scattered brief power outages and some localized street flooding.

MAZ016

Eastern Norfolk

19 1400EST 0 0 High Wind (G55)
20 0800EST

MAZ005>007-013>016-018>019

Western Middlesex - Western Essex - Eastern Essex - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Western Plymouth - Eastern Plymouth

20 0200EST 0 0 Heavy Rain
21 1000EST

Suffolk County

Boston Metro Area 20 0900EST 0 0 Flash Flood
1900EST

Norfolk County

Brookline to 20 1000EST 0 0 Flash Flood
Quincy 2000EST

Suffolk County

Boston Metro Area 20 1900EST 0 0 Flash Flood
21 0500EST

Norfolk County

Brookline to 20 2000EST 0 0 Flash Flood
Quincy 21 0600EST

Middlesex County

Woburn to 20 2000EST 0 0 Flash Flood
Winchester 21 0600EST

Plymouth County

Carver 20 2045EST 0 0 Flash Flood
2300EST

Storm Data and Unusual Weather Phenomena

October 1996

		Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		October 1996	
Location	Date				Killed	Injured	Property	Crops	Character of Storm	
MASSACHUSETTS, Central and East										
MAZ013	Western Norfolk									
	21	0000EST			0	0			Flood	
	22	0000EST								
Middlesex County										
Waltham	21	0100EST 1100EST			0	0			Flash Flood	
Suffolk County										
Boston Metro Area	21	0500EST 1200EST			0	0	10M		Flash Flood	
Norfolk County										
Brookline to Quincy	21	0600EST 1200EST			0	0			Flash Flood	
Middlesex County										
Woburn to Winchester	21	0600EST 1000EST			0	0			Flash Flood	
Plymouth County										
Countywide	21	0600EST 1400EST			0	0			Flash Flood	
Middlesex County										
Wilmington	21	0700EST 1700EST			0	0			Flash Flood	
Essex County										
Byfield	21	0800EST 1800EST			0	0			Flash Flood	
Middlesex County										
West Groton	21	1000EST 2000EST			0	0			Flash Flood	
Middlesex County										
Waltham	21	1100EST 2100EST			0	0			Flash Flood	
Middlesex County										
Acton	21	1100EST 1500EST			0	0			Flash Flood	
Essex County										
Ipswich	21	1100EST 2100EST			0	0			Flash Flood	
Middlesex County										
Winchester	21	1200EST 1700EST			0	0			Flash Flood	
Essex County										
South Middleton	21	1200EST 2000EST			0	0			Flash Flood	
MAZ005	Western Middlesex									
	21	1500EST			0	0			Flood	
	24	1100EST								
Middlesex County										
Wilmington	21	1700EST 2000EST			0	0			Flash Flood	
Essex County										
Byfield	21	1800EST 2000EST			0	0			Flash Flood	
Middlesex County										
West Groton	21 22	2000EST 0400EST			0	0			Flash Flood	
Middlesex County										
Waltham	21	2100EST 2300EST			0	0			Flash Flood	
Essex County										
Ipswich	21	2100EST 2300EST			0	0			Flash Flood	
MAZ005	Western Middlesex									
	22	0630EST			0	0			Flood	
	23	1700EST								
MAZ006	Western Essex									
	22	1200EST			0	0			Flood	
	23	2000EST								
MAZ006	Western Essex									
	22	1500EST			0	0			Flood	
	23	2200EST								

An extensive, slow-moving surface low pressure system became positioned along the mid-Atlantic coast during the evening of October 19th. It meandered there for 48 hours before finally heading northeast across southeast New England. Record-breaking

Storm Data and Unusual Weather Phenomena

October 1996

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, Central and East

rainfall occurred in northeast Massachusetts where heavy rain bands remained stationary for many hours. Satellite water vapor imagery showed that moisture from Hurricane Lili, which was out in the central Atlantic, became entrained into the system, which enhanced the rainfall over eastern New England.

Strong to gale force east winds began by early afternoon on October 19th, well ahead of the rain, and continued into the morning hours of October 20th. The Blue Hill Observatory in Milton recorded east winds gusting over 45 mph throughout this period with a peak gust to 63 mph during the early morning hours on October 20th. In most areas, winds gusted to 40 to 50 mph. The Head of the Charles River Regatta was cancelled for the first time in 31 years due to strong winds associated with the storm.

Rainfall totals of 8 inches were widespread with this storm and this resulted in widespread small stream and tributary flooding. A maximum storm total of an amazing 13.03 inches was recorded at Newburyport in Essex County, exceeding the 100-year two day rainfall for Middlesex and Essex Counties. There was widespread severe urban flooding, especially in downtown Boston and from the Greater Boston Metropolitan Area northward, as a rainfall event of historic proportions occurred there. Major road systems affected by flooding included: Routes 3, 3A, 1, 1A, and the Middlesex Turnpike. Several dam break threats occurred, including the Woburn Dam in Woburn. Workers were able to stabilize the structure, but there was enough of a failure to cause significant flooding in the downstream portions of Woburn and Winchester. A multiple dike failure occurred in Plymouth County along what used to be a cranberry bog. Small stream flooding occurred in Plymouth County during the morning hours on the 21st. Hundreds of basements were flooded and in Revere, up to 700 homes were seriously damaged. The Roslindale section of Boston was especially hard hit when sewer systems backed up. Overflow of the Muddy River, an urban tributary, made parts of the Kenmore subway station in Boston look like river rapids and the water level in the station rose as high as 20 feet! Several other downtown stations were seriously flooded in Suffolk and extreme eastern Norfolk Counties.

The rainfall for Boston for October 20th was 6.11 inches, which broke the all-time rainfall record for any day during October. It also was second greatest calendar day total on record. A new 24-hour rainfall record was set for October at 6.66 inches from 5 AM on October 20th to 5 AM on the 21st. It also was the second greatest 24-hour amount on the record books. Similar all-time records were established at the Blue Hill Observatory in Milton, where the calendar day total of 7.10 inches on October 20th was just one of the several records that were set there. In Quincy, officials counted 300 flooded basements, 50 water-filled yards, and 87 streets that were closed at some time during the storm. North of Boston, it was a similar situation in Peabody and surrounding towns. Considerable flooding was reported in northeastern Massachusetts, while heavy rain amounted to 3 to 4 inches in the central part of the state, resulting in only some minor street flooding in Worcester County.

DAMAGE FROM THE HEAVY RAIN EVENT WAS IN THE TENS OF MILLIONS OF DOLLARS! Five counties...Essex, Middlesex, Suffolk, Norfolk, and Plymouth...sought and received Presidential Disaster Declarations.

The Neponset River reached flood stage of 9 feet in Norwood at 1 AM on the 21st, cresting at 9.4 feet at 11 AM, and falling below flood stage at 1 AM on the 22nd. The Squannacook River reached flood stage of 7 feet at West Groton at 10 AM on the 21st, cresting at 7.6 feet at 7 PM (highest since 8.2 feet, 4/6/87), falling below flood stage at 4 AM on the 22nd. The Charles River reached flood stage at 5 feet at Waltham at midnight on October 21st, crested at 6.1 feet at 1 PM on the 21st (highest since 10.22 feet on 4/8/87), and fell below flood stage at 11 PM on the 22nd. The Nashoba Brook crested at 5.55 feet at Acton at 3 PM on the 21st. The Nashua River reached flood stage of 8 feet at East Pepperell at 4 PM on October 21st, crested at 10.2 feet at 6 PM on the 22nd, then dropped below flood stage at noon on the 24th. The Aberjona River crested at 16.78 feet on October 21st at 5 PM, setting a new flood-of-record. The Shawsheen River crested at 10.48 feet at 8 PM on October 21st, setting a new flood-of-record. The Ipswich River crested at 7.88 feet at South Middleton at 8 PM on October 21st, setting a new flood-of-record. The Parker River at Byfield crested at 7.82 feet at 8 PM on October 21st, setting a new flood-of-record. The Merrimack River reached flood stage of 52 feet at Lowell at 7:30 AM on the 22nd, crested at 53.1 feet at noon on the 23rd, then dropped below flood stage at 6 PM on the 23rd. The Merrimack River reached flood stage of 20 feet at Lawrence at 1 PM on October 22nd, crested at 21 feet at 6 AM on the 23rd, then dropped below flood stage at 9 PM on the 23rd. The Merrimack River reached flood stage of 15 feet at Haverhill at 4 PM on the 22nd, crested at 15.5 feet at 8 AM on the 23rd, then dropped below flood stage at 11 PM on the 23rd.

MASSACHUSETTS, West

MAZ001

Berkshire

19 1900EST
20 0600EST

0 0 12K Strong Wind

A nearly stationary low pressure system over southern New Jersey and southeast Pennsylvania produced heavy rains and strong gusty winds across Berkshire County, Massachusetts from Saturday evening October 19 to the early morning hours of Sunday October 20. The storm dumped several inches of rain across the Berkshires. Due to the combination of saturated soil and water laden trees, strong gusty winds downed trees and power lines in Berkshire County. Approximately 2,500 customers lost power, with outages most widespread in the Pittsfield area.

MICHIGAN, East

Lenawee County

3 SW Rome Center

29 2332EST

0 0 Thunderstorm Wind (G55)

A strong low pressure area moving northeast across the central Plains triggered strong to severe thunderstorms across southeast Michigan during the evening of the 29th. A severe thunderstorm downed trees in Lenawee county at 2232 EST.

**MIZ047>049-053>055-
060>063-068>070-
075>076-082>083**

**Midland - Bay - Huron - Saginaw - Tuscola - Sanilac - Shiawassee - Genesee - Lapeer - St. Clair - Livingston - Oakland -
Macomb - Washtenaw - Wayne - Lenawee - Monroe**

30 0000EST
1800EST

0 0 90K High Wind (G60)

Storm Data and Unusual Weather Phenomena

October 1996

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

MICHIGAN, East

An intense low pressure system tracked north of Lake Superior on the 30th, with its trailing cold front crossing southeast Michigan during the early morning hours. High winds associated with the front did widespread damage. Reports of damage began with the roof being torn off of a house in Ida, in Monroe county, shortly after midnight. Through the day, high winds downed trees and powerlines, causing outages throughout southeast Michigan. Detroit Edison reported outages to 70,000 customers. In downtown Detroit, the high winds snapped a scaffolding cable on the Renaissance Center at around 730 am EDT, shattering 20 windowpanes and showering an atrium and parking lot with glass. Elsewhere, large trees blew over, crashing through the roofs of houses at Detroit Beach in Monroe county and in Ann Arbor (Washtenaw county).

MICHIGAN, Extreme Southwest

NONE REPORTED.

MICHIGAN, North

NONE REPORTED.

MICHIGAN, Upper

Menominee County										
Powers	17	0030EST			0	0				Hail (0.75)
		0033EST								
Menominee County										
Perronville	17	0145EST			0	0				Hail (0.75)
		0148EST								
Delta County										
4 W Cornell to	17	0200EST			0	0				Hail (0.75)
3.8 W Cornell		0202EST								

MICHIGAN, West

Berrien County										
2 SW New Buffalo to	29	2042EST			0	0	5K			Thunderstorm Wind
New Buffalo										

Trees were blown down between Grand beach and New Buffalo.

Berrien County										
Grand Beach	29	2120EST			0	0	3K			Thunderstorm Wind

Trees were reported blown down in Grand Beach.

Van Buren County										
South Haven	29	2124EST			0	0	3K			Thunderstorm Wind

Trees were downed by the wind in South Haven.

Van Buren County										
Keeler	29	2124EST			0	0	3K			Thunderstorm Wind

Trees were reported blown down in Keeler.

Allegan County										
Douglas	29	2124EST			0	0	3K			Thunderstorm Wind

Trees were reported down in Douglas.

St. Joseph County										
2 N Constantine to	29	2130EST			0	0	3K			Thunderstorm Wind
Constantine										

Trees were downed 2 miles north of Constantine.

Ottawa County										
Borculo	29	2136EST			0	0	50K			Thunderstorm Wind

Numerous trees and power lines were reported down across Ottawa County. Road signs were also bent over in many places. At a point about 2.5 miles northeast of Borculo, a garage was destroyed. This was a building with wood frame roof and cement block walls. The roof was lifted up and the walls blown down by excessive winds. Across the road a 12 foot diameter piece of a barn roof was blown out and carried 50 yards to the northeast. At both locations, branches with good, green wood were snapped out of trees. Diameters exceeded 8 inches. In Allendale, another garage was severely damaged. This building was 24 by 36 feet with cinder block walls.

Van Buren County										
Covert to	29	2142EST			0	0	10K			Thunderstorm Wind
Lawton										

Numerous trees were reported downed by the wind across Van Buren County.

Cass County										
Indian Lake to	29	2145EST			0	0	15K			Thunderstorm Wind
Jones										

Cass County reported numerous trees and power lines downed by the wind.

Storm Data and Unusual Weather Phenomena

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								October 1996	
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<u>MICHIGAN, West</u>									
Kalamazoo County Kalamazoo	29	2155EST			0	0	8K		Thunderstorm Wind
			Trees were blown down at several locations in the city of Kalamazoo.						
St. Joseph County 3 W Three Rivers	29	2200EST			0	0	3K		Thunderstorm Wind
			Wind blew down a power pole and lines, then started a fire.						
Allegan County 2 S Holland to Holland	29	2205EST			0	0	3K		Thunderstorm Wind
			Trees were blown down by the wind south of Holland.						
Calhoun County Springfield	29	2223EST			0	0	5K		Thunderstorm Wind
			Trees were reported down in Springfield.						
Calhoun County Eckford	29	2223EST			0	0	3K		Thunderstorm Wind
			Trees were blown down in Eckford.						
St. Joseph County Leonidas	29	2230EST			0	0	10K		Thunderstorm Wind
			High winds caused roof damage to a home.						
Hillsdale County 3 S Hillsdale to Hillsdale	29	2242EST			0	0	8K		Thunderstorm Wind
			Trees blew down and blocked roads at several locations.						
Branch County East Gilead	29	2245EST			0	0	5K		Thunderstorm Wind
			Trees were downed by the wind.						
Hillsdale County Jonesville	29	2252EST			0	0	8K		Thunderstorm Wind
			Power lines were reported blown down by the wind in numerous locations.						
<u>MINNESOTA, Central and South Central</u>									
Douglas County Carlos	14	2044CST			0	0			Hail (1.00)
Dakota County 4 NE Farmington	16	1804CST			0	0			Hail (1.00)
Nicollet County 2 N Courtland	16	1809CST			0	0			Hail (0.75)
Brown County 5 SW New Ulm	16	1810CST			0	0			Hail (1.00)
Watonwan County Darfur	16	1815CST			0	0			Hail (1.75)
Scott County 2 SE St Patrick	16	1855CST 1955CST			0	0			Hail (0.75)
			Hail continued off and on for about one hour. 3.5 inches of rain.						
Dakota County Coates	16	1900CST			0	0			Hail (1.25)
			Hail piled up several inches deep. Some hail still on the ground the following morning.						
Dakota County 4 NW Coates	16	1925CST			0	0			Hail (1.00)
Stearns County Cold Spring	16	1925CST			0	0			Thunderstorm Wind (G50)
			Trees and power lines down. Estimated windspeed.						
Martin County 5 W Fairmont	16	2307CST			0	0			Hail (0.75)
Watonwan County 3 NE Truman to 5 NE Truman	16	2315CST			0	0			Thunderstorm Wind (G55)

Storm Data and Unusual Weather Phenomena

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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
<u>MINNESOTA, Central and South Central</u>									
									Several garages moved off their foundations. Cattle shed and corn crib destroyed. Trees uprooted and toppled. Estimated windspeed.
Blue Earth County 5 SW Lake Crystal	16	2315CST			0	0			Thunderstorm Wind (G50)
									Garage blown over onto vehicle. 250 gallon fuel tank blown over. Estimated windspeed.
Martin County Fairmont	16	2330CST			0	0			Thunderstorm Wind (G55)
									Large tree sheared in half. Numerous large branches down. Estimated windspeed.
Lac Qui Parle County Dawson	26	1350CST			0	0			Hail (1.00)
Yellow Medicine County 5 N St Leo	26	1350CST			0	0			Hail (1.75)
									Accompanying strong winds resulted in structural and vehicle damage.
Swift County Benson	26	1400CST			0	0			Hail (1.00)
Swift County 1 SE Holloway to 4 NE Holloway	26	1415CST			0	0			Thunderstorm Wind (G60)
									Scattered damage to trees, sheds and outbuildings. Estimated windspeed.
Chippewa County Milan	26	1445CST			0	0			Thunderstorm Wind (G60)
									Trailer home blown over onto automobile. Estimated windspeed.
Swift County 5 SW Benson to 1 W Benson	26	1459CST 1510CST	4	440	0	0			Tornado (F1)
									Grain elevators tipped over. Gas pipeline offices destroyed. Farm buildings destroyed.
Swift County 2 N Benson	26	1500CST			0	0			Hail (1.00)
Pope County 5 SE Cyrus to 3 SE Cyrus	26	1515CST 1520CST	2	350	0	0			Tornado (F1)
									Lumber tossed in all directions. Trees uprooted. House moved off its foundation. Shed and silo destroyed.
Kandiyohi County 6 SW Belgrade to Brooten	26	1515CST 1525CST	7	500	0	0			Tornado (F1)
									Barn and corn crib destroyed. Mobile home pushed over. Large trees down.
Douglas County 7 SW Alexandria to Garfield	26	1515CST 1525CST	9	880	0	4			Tornado (F2)
									Several homes destroyed. Car flipped over. 1 women sustained broken bones and internal injuries when a portion of her house, with her inside, was flung 200 feet onto the interstate. 500 pound fuel tank pushed over.
Douglas County 3 E Garfield to 6 NW Miltna	26	1525CST 1535CST	8	500	0	2			Tornado (F1)
									Numerous structures on farmstead destroyed or damaged. Mobile homes rolled over.
Stearns County 6 S St Cloud	26	1614CST			0	0			Thunderstorm Wind (G60)
									Trees and power lines down. Estimated windspeed.
Stearns County 3 W Clearwater to 2 NW Clearwater	26	1614CST 1616CST	1	350	0	0			Tornado (F1)
									Barn damaged. Trees uprooted.
Stearns County 5 SW Albany to 2 W Albany	26	1617CST 1622CST	5	350	0	3			Tornado (F2)
									House collapsed on top of family. Outbuildings destroyed.
Isanti County 2 NW Cambridge to 2 E Braham	26	1712CST 1725CST	12	880	0	1			Tornado (F1)
									Numerous barns and garages destroyed. Businesses damaged in the town of Stanchfield. Camper destroyed, but occupant thrown clear with minor injuries.
Kanabec County 2 N Braham	26	1744CST			0	0			Hail (0.75)
Redwood County Milroy	29	1430CST			0	0			Thunderstorm Wind (G50)
									Roof torn off outbuilding. Estimated windspeed.

Storm Data and Unusual Weather Phenomena

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Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<u>MINNESOTA, Central and South Central</u>									
Carver County 1 NW Cologne to 2 E Coney Island	29	1630CST 1640CST	7	100	0	0			Tornado (F0)
		Corn auger tipped over.							
Carver County Chaska to Chanhasen	29	1656CST 1705CST			0	0			Funnel Cloud
Sherburne County Elk River	29	1835CST			0	0			Hail (0.75)
MNZ041>045-047>070-073>078-082>085-091>093	Douglas - Todd - Morrison - Mille Lacs - Kanabec - Stevens - Pope - Stearns - Benton - Sherburne - Isanti - Chisago - Lac Qui Parle - Swift - Chippewa - Kandiyohi - Meeker - Wright - Hennepin - Anoka - Ramsey - Washington - Yellow Medicine - Renville - Mcleod - Sibley - Carver - Scott - Dakota - Redwood - Brown - Nicollet - Le Sueur - Rice - Goodhue - Watonwan - Blue Earth - Waseca - Steele - Martin - Faribault - Freeborn								
	29 30	2100CST 0500CST			0	0			High Wind (G64)
	74 mph wind gust reported in Willmar. Airplane flipped over at Willmar airport. 73 mph wind reported in Austin, resulted in downed tree limbs and power lines. Structural damage in Montevideo, Northfield, Fairmont, Redwood Falls, Osakis, St. Peter and Mankato. Peak wind of 57 mph reported in Twin Cities.								
<u>MINNESOTA, Northeast</u>									
Koochiching County Littlefork	14	2220CST			0	0			Hail (0.75)
Crow Wing County Brainerd	26	1735CST			0	0			Hail (1.00)
Crow Wing County 21 NE Brainerd	26	1800CST	0.7	150	0	0	50K		Tornado (F2)
	A marginally F2 tornado made two brief touchdowns in a rural area of east central Crow Wing County. The tornado was confirmed by the county's Emergency Services Coordinator and trained spotters. Damage was concentrated on a cluster of farms near the Mississippi River. About ten buildings on one farm suffered extensive damage. The roof and doors were torn off a hay barn, and a dump truck was pushed about six feet into the side of a shed. Other outbuildings were knocked down, and a garage was shifted on its foundation. There was some structural damage and many uprooted trees on two nearby farms. Length and width of path and dollar amount of damage are estimated.								
<u>MINNESOTA, Northwest</u>									
MNZ006-009	Lake Of The Woods - North Beltrami								
	17	1700CST 2300CST			0	0			Heavy Snow
	A strong storm system moved through eastern Minnesota. Rain changed to snow across north central Minnesota late in the afternoon on October 17th and continued into the evening. Snowfall amounts across northern Beltrami and Lake of the Woods counties ranged from 3 to 6 inches. 10 inches of snow was reported in Clementson, MN, in Lake of the Woods county. No widespread damage was reported.								
Otter Tail County 7 SW New York Mills	26	1549CST			0	0			Hail (0.75)
	An unusual outbreak of severe weather, the latest on record, occurred across north central Minnesota. Intense low pressure tracking into Minnesota produced blizzard conditions over portions of South Dakota, while further east in Minnesota, unseasonably mild temperatures developed. Temperatures climbed near 70 with dew points in the 50s.								
Otter Tail County 3 E Henning to 2 W New York Mills	26	1610CST 1615CST	17	75	0	1	400K		Tornado (F2)
	This tornado followed a track through eastern Otter Tail county, with the first damage report along Highway 210. A man stopped his car along the road when he saw the threatening clouds. The tornado picked his car up and spun it around, with the man inside. The car windows were all broken, but the man only sustained cuts on his hands. The tornado destroyed several farm buildings, one full of dairy cows. 21 of the cows were killed. The last damage report was just west of New York Mills. Two deer hunters were in tree stands when the storm approached. One managed to get down to the ground and lay flat, but the other clung to the tree as the tornado passed. As the wind died down, the man found his tree was the only one left standing in a grove of 36 around him. Neither man was injured.								
Otter Tail County 1 NE Bluffton	26	1620CST			0	0			Hail (0.75)
Wadena County 4 S Sebeka to Sebeka	26	1630CST 1635CST	4	75	0	0	750K		Tornado (F2)
	This tornado followed a path along Highway 71 and passed through the west side of Sebeka. One car dealership reported approximately 40 vehicles damaged, at a loss of \$250,000. Numerous farm buildings and businesses were also damaged.								
Wadena County 3 S Wadena	26	1641CST			0	0			Hail (0.75)
Wadena County 5 E Nimrod	26	1710CST 1715CST			0	0	250K		Thunderstorm Wind

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									October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
<u>MINNESOTA, Northwest</u>									
Hubbard County 4 N Dorset	26	1714CST	0.5	25	0	0			Tornado (F0)
MNZ003-030-030	Clay - West Otter Tail 29	2210CST 2315CST			0	0	22K		High Wind
A roof was blown off a dugout and a fence was destroyed on a baseball diamond on the campus of Moorhead State University.									
<u>MINNESOTA, Southeast</u>									
MNZ086	Dodge 30	0100CST 0600CST			0	0	50K		High Wind (G52)
Wind gusts as high as 60 mph knocked down signs in Dodge Center and Mantorville.									
MNZ094	Mower 30	0100CST 0600CST			0	0	7.5K		High Wind (G52)
Wind gusts to 60 mph blew a Texaco sign down on a parked car.									
MNZ087	Olmsted 30	0100CST 0600CST			0	0	25K		High Wind (G52)
Winds gusting to 60 mph broke off a satellite dish at the emergency operations center at the Rochester airport. A few windows were also blown out in the city of Rochester.									
MNZ095	Fillmore 30	0100CST 0600CST			0	0	2.5K		High Wind (G52)
A few trees were blown down in Ostrander as winds gusted to 60 mph.									
MNZ088	Winona 30	0100CST 0600CST			0	0	1.5K		High Wind (G48)
Some trees were blown down as winds gusted to 55 mph.									
<u>MINNESOTA, Southwest</u>									
Cottonwood County Mountain Lake	16	1750CST			0	0	1K		Hail (0.75)
Hail damaged a truck and caused other minor vehicle damage.									
Lincoln County Lake Benton to Tyler	16	2000CST 2030CST			0	0	200K		Thunderstorm Wind
Thunderstorm winds destroyed a barn, damaged its contents, damaged other farm buildings, blew down several trees, and damaged structures at a golf course.									
Nobles County Round Lake	29	1330CST 1335CST	1	100	0	0	50K		Tornado (F0)
A tornado destroyed two barns, some bins and other small farm structures, 8 wagons, and blew down several trees. Two pigs were injured.									
MNZ071>072-080>081-089>090-097>098	Lincoln - Lyon - Murray - Cottonwood - Nobles - Jackson - Pipestone - Rock	29 30	1600CST 0200CST		0	0	70K		High Wind (G50)
Strong winds behind a cold front caused tree and power line damage and other scattered damage including a destroyed machine shed and the roof ripped off of a cafe.									
<u>MINNESOTA, West</u>									
NONE REPORTED.									
<u>MINNESOTA, West Central</u>									
Big Stone County Barry	26	1401CST 1402CST	1	25	0	0			Tornado (F0)
A tornado touched down near Barry and damaged a quonset hut. Path length and width were estimated.									
Traverse County Wheaton	26	1423CST 1425CST	1	30	0	0			Tornado (F1)
A tornado touched down in Wheaton and severely damaged the roof of a horse barn at the fairgrounds. The tornado leveled the garden center, broke some windows out of the care center. One large piece of debris smashed a wall of the care center laundry room. The care center also suffered roof and garage damage and a security fence was knocked over. The former massage therapy center was leveled and the back side of the carwash was blown out and the roof of the bowling alley was blown off. A piece of the bowling alley roof punched a hole in the roof of the Wheaton Inn. Shingles were blew off, some windows broke, and another part of the inn's roof buckled. Rocks from the roof of the bowling alley pitted the sides of cars at the inn. Path length and width were estimated.									
MNZ039-046	Traverse - Big Stone 29 30	1900CST 0600CST			0	0			High Wind (G49)

Storm Data and Unusual Weather Phenomena

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Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<u>MINNESOTA, West Central</u>									
An intense area of low pressure combined with a strong high pressure in Canada to bring high winds of 35 to 45 mph with gusts to around 55 mph to Big Stone and Traverse counties.									
<u>MISSISSIPPI, Central</u>									
Washington County Greenville	17	2151CST			0	0			Thunderstorm Wind (G55)
Local Television station recorded a 63 mile an hour wind gust. Numerous power outage occurred across Greenville.									
Bolivar County Gunnison	17	2215CST			0	0	1K		Thunderstorm Wind
Several trees were blown down and numerous power outages were reported.									
Washington County Elizabeth	17	2225CST			0	0			Hail (1.75)
Sunflower County Indianola	17	2250CST			0	0	10K		Thunderstorm Wind
Numerous power lines were blown down throughout the county.									
Leflore County Greenwood	17	2255CST			0	0			Thunderstorm Wind (G56)
Numerous power outages were reported.									
Leflore County Greenwood	17	2255CST			0	0			Hail (0.75)
Carroll County Carrollton	17	2305CST			0	0	2K		Thunderstorm Wind
Numerous trees and power lines were blown down.									
Montgomery County Winona	17	2345CST			0	0	10K		Thunderstorm Wind
Numerous large limbs and power lines were blown down.									
Winston County 4 N Louisville	18	0020CST			0	0			Hail (1.75)
Leake County 3 E Walnut Grove	18	0114CST			0	0	30K		Thunderstorm Wind
A mobile home was completely destroyed and another house had major damage.									
Forrest County Hattiesburg	26	0315CST			0	1	50K		Thunderstorm Wind
Several buildings had severe roof damage. Many power lines were blown down. One child was injured in one of the structures.									
Jones County Ovett	26	0340CST			0	0	3K		Thunderstorm Wind
Twenty five to thirty trees were blown down.									
<u>MISSISSIPPI, North</u>									
De Soto County South Haven	17	2100CST 2105CST			0	0	5K		Thunderstorm Wind
Several large trees were blown down, along with some damage to houses and outbuildings. One tree fell on a house.									
Marshall County Byhalia	17	2130CST 2135CST			0	0	0.50K		Hail (1.75)
Hail ranging in size from marble to golfball was reported.									
Union County Myrtle	17	2240CST 2245CST			0	0	0.01K		Hail (0.75)
Tippah County Blue Mtn	17	2245CST 2250CST			0	0	0.01K		Hail
Pontotoc County Pontotoc	17	2330CST 2335CST			0	0	2K		Thunderstorm Wind
Two power poles were blown down.									
Lee County Tupelo to Nettleton	17	2345CST 2355CST			0	0	2K		Thunderstorm Wind
Several trees and large trees limbs were blown down in Nettleton. A highway sign was blown down in Tupelo.									
Itawamba County Fulton	18	0015CST 0020CST			0	0	1K		Thunderstorm Wind
A few trees were blown down.									
Alcorn County Corinth	28	0100CST 0130CST			0	0	1K		Flash Flood
Several roads were flooded.									

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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
<u>MISSISSIPPI, North</u>									
Tippah County Walnut	28	0100CST 0130CST			0	0	1K		Flash Flood
		Route 15 was covered by flood water.							
<u>MISSISSIPPI, South</u>									
		NONE REPORTED.							
<u>MISSISSIPPI, Southeast</u>									
Wayne County Gretna	26	0455CST			0	0	1.5K		Thunderstorm Wind (G50)
		Several trees and power lines were blown down along U. S. Highway 84 near Gretna.							
<u>MISSOURI, East</u>									
Crawford County Cuba	17	1408CST			0	0			Hail (0.75)
		Police reported 3/4 inch hail in Cuba.							
Crawford County 2 N Cuba	17	1410CST			0	0			Hail (0.75)
		Spotters reported 3/4 inch hail just north of Cuba.							
Jefferson County Hillsboro	17	1512CST			0	0			Hail (1.00)
		Spotters reported 1 inch hail.							
Iron County Viburnum	17	1515CST			0	0			Hail (1.75)
		The public reported golfball size hail in Viburnum.							
Jefferson County Pevely	17	1530CST			0	0			Hail (0.75)
		Skywarn spotters reported 3/4 inch hail.							
Washington County 5 S Potosi	17	1535CST			0	0			Hail (0.75)
		Skywarn spotters reported 3/4 inch hail south of Potosi.							
Iron County Annapolis	17	1700CST			0	0			Hail (0.75)
		Fire department personnel reported 3/4 inch hail.							
St. Louis County Oakville	22	1255CST			0	0			Thunderstorm Wind (G50)
		Thunderstorm wind gusts downed a few trees and power lines, broke windows, and damaged the siding on a couple of homes in the Oakstown Hills Subdivision.							
St. Louis County Maryland Hgts	22	1300CST			0	0			Thunderstorm Wind (G50)
		Thunderstorm wind gusts downed trees and power lines. One tree fell on a mobile home.							
St. Louis (C) Southern Part	22	1305CST			0	0			Thunderstorm Wind (G50)
		Thunderstorm wind gusts downed power lines in the south part of the city.							
<u>MISSOURI, Lower</u>									
Dunklin County Kennett	17	1945CST 1950CST			0	0	0.10K		Hail (1.00)
<u>MISSOURI, Northwest</u>									
MOZ029	Clay								
	22	1300CST 2300CST			0	0	250K		Heavy Snow
		Heavy wet snow from a record early season snowfall produced numerous downed trees and power lines. An estimated 30,000 customers of Missouri Public Service lost power during the storm. Property damage throughout the county was estimated at a quarter million dollars.							
		Snowfall amounts ranged from 6 inches at Kearney, 7 inches at Liberty and 8.5 inches at Excelsior Springs.							
MOZ028	Platte								
	22	1300CST 2300CST			0	0	250K		Heavy Snow
		Heavy wet snow from a record breaking early season snowfall downed numerous trees still full of foliage and powerlines. An estimated 25,000 Missouri Power and Light customers lost power during the storm and total property damage was estimated at a quarter million dollars.							
		Officially 6.5 inches of snow fell at Kansas City International Airport and 5 inches was reported at Parkville.							
MOZ037	Jackson								
	23	1300CST 2300CST			0	0	1M		Heavy Snow

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
MISSOURI, Northwest									
		Heavy wet snow from a record early season snowfall downed numerous trees still full with foliage and power lines throughout the Kansas City, Independence, Blue Springs and Lee's Summit. An estimated 75,000 customers of Missouri Power and Light reported loss of power and there was an estimated 1 million dollars in property damage.							
		Snowfall totals ranged from 4.5 inches at Lone Jack to 7 inches at Blue Springs.							
MOZ029	Clay								
	29	1322CST 1439CST			0	0			High Wind (G62)
		A wind gust was recorded at 69 MPH at William Jewel College in Liberty. Wind gusts reached 48 MPH at a casino in North Kansas City.							
MOZ028	Platte								
	29	1401CST 1420CST			0	0			High Wind (G51)
		Wind gusts up to 57 MPH were recorded at Park College in Parkville.							
MOZ020	Buchanan								
	29	1730CST 1830CST			0	0			High Wind (G46)
		Wind gusts up to 51 MPH caused minor power outages and the downing of several large trees in the St Joseph area.							
MOZ015	Grundy								
	29	1900CST 2330CST			0	0			High Wind (G55)
		High winds gusting up to 63 MPH were reported in Trenton by a local radio station. A HAM Radio operator in Trenton reported large tree limbs down from the winds.							
MOZ005	Harrison								
	29	1915CST 1925CST			0	0			High Wind (G46)
		A Bethany radio station reported 51 MPH wind gusts in downtown Bethany.							
MOZ017	Adair								
	29	1929CST 1957CST			0	0			High Wind (G54)
		A local television station reported 60 MPH winds at Kirksville and some downed large trees.							
MISSOURI, Southeast									
Wayne County									
Patterson	17	1740CST			0	0			Hail (1.00)
Ripley County									
Doniphan	17	1755CST			0	0	2K		Thunderstorm Wind
		Small signs were blown over, and large tree limbs were down.							
Butler County									
Poplar Bluff	17	1820CST			0	0			Thunderstorm Wind (G52)
Cape Girardeau County									
Leemon	17	1840CST			0	0			Hail (1.75)
Scott County									
Benton	17	1840CST			0	0			Thunderstorm Wind (G52)
		Trees were down.							
Cape Girardeau County									
Leemon	17	1840CST 1900CST			0	0			Urban/Sml Stream Fld
		Indian Creek was out of its banks and over Highway J.							
Carter County									
Eastwood	21	1600CST			0	0			Hail (0.75)
Bollinger County									
Patton	22	1224CST			0	0	20K		Thunderstorm Wind
		Roofs were blown off. Trees were uprooted, and limbs were down.							
MISSOURI, Southwest									
Pulaski County									
St Robert	17	1250CST			0	0			Hail (1.75)
Maries County									
Belle	17	1304CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
MISSOURI, Southwest									
Phelps County Newburg	17	1325CST			0	0			Hail (1.75)
Phelps County Rolla	17	1340CST			0	0			Hail (0.88)
Phelps County St James	17	1348CST			0	0			Hail (0.75)
Phelps County Edgar Springs	17	1410CST			0	0			Hail (0.88)
Wright County Norwood	17	1415CST			0	0	0	0	Hail (1.75)
Dent County Lenox	17	1430CST			0	0			Hail (0.88)
Wright County Mountain Grove	17	1430CST			0	0			Hail (0.75)
Dent County 2 W Bangert	17	1445CST			0	0			Hail (1.75)
Texas County Elk Creek	17	1450CST			0	0			Hail (1.25)
Ozark County Dora	17	1515CST			0	0			Hail (0.75)
Texas County Summersville	17	1535CST			0	0			Hail (0.75)
Howell County 1 W West Plains	17	1558CST			0	0			Hail (0.75)
Shannon County Birch Tree	17	1614CST			0	0			Hail (0.75)
Shannon County Birch Tree	17	1621CST			0	0			Hail (0.75)
Oregon County Koshkonong	17	1655CST			0	0			Hail (0.75)
Oregon County Thayer	17	1704CST			0	0			Hail (0.75)
Newton County 2 N Seneca	27	0725CST			0	0			Hail (0.75)
Jasper County 1 N Carthage	27	0755CST			0	0	0	0	Thunderstorm Wind
Thunderstorm winds downed a large tree across County Highway 13.									
Lawrence County Miller	27	0805CST			0	0			Hail (0.75)
Dade County Lockwood	27	0811CST			0	0			Hail (0.75)
Dade County Dadeville	27	0830CST			0	0			Hail (1.00)
Greene County Willard	27	0835CST			0	0			Thunderstorm Wind (G52)
Greene County Springfield	27	0852CST			0	0			Hail (0.75)
Dime size hail was reported at National Weather Service Office.									
Laclede County 2.5 S Stoutland	27	1008CST			0	0	10K	0	Thunderstorm Wind
Thunderstorm winds blew down trees and a barn roof off, just southwest of the intersection of Highways T and FF.									
Laclede County Hazelgreen	27	1030CST			0	0			Hail (0.75)
Thunderstorm winds also gusted to 52 knots.									
Laclede County Crocker	27	1035CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
MISSOURI, Southwest										
MOZ088	Jasper									
	29	1030CST 1032CST			0	0	10K	0	High Wind (G52)	
									Non-thunderstorm gradient winds blew pieces of a motel roof off and knocked down power lines in the city of Carthage.	
MONTANA, Central										
MTZ005	North Central Montana									
	14	0915MST			0	0			High Wind (G53)	
									A spotter 11 miles south of Chinnok reported a wind gust of 61 mph.	
MTZ005	North Central Montana									
	15	1116MST			0	0			High Wind (G51)	
									A spotter 11 miles south of Chinook reported a wind gust of 59 mph.	
MTZ003>006	Northwest Chinook Zone - Southwest Montana - North Central Montana - Central Montana									
	19	1300MST			0	0			Winter Storm	
	20	1200MST								
									The first winter storm of the season dropped heavy snow over most of central Montana. Ulm received 9 inches, Bozeman 7 to 8 inches while most other areas reported 4 to 6 inches.	
MTZ003	Northwest Chinook Zone									
	21	1833MST			0	0			High Wind (G75)	
									A wind gust of 86 mph was reported by a spotter in Heart Butte.	
MTZ003-005	Northwest Chinook Zone - North Central Montana									
	22	1100MST 1200MST			0	0			High Wind (G53)	
									A spotter 11 miles south of Chinook reported a wind gust of 61 mph. Cut bank recorded a wind gust of 59 mph.	
MTZ004-006	Southwest Montana - Central Montana									
	25	0000MST			0	0			Heavy Snow	
	26	1200MST								
									Heavy snow fell over southwest Montana. 6 to 10 inches of snow was reported many areas with up to a foot of new snow in Pony and Lennep.	
MTZ003	Northwest Chinook Zone									
	29	0100MST			0	0			High Wind (G62)	
									A spotter 30 miles northeast of Conrad reported a wind gust of 71 mph associated with an arctic cold front moving into the area.	
MONTANA, East										
									NONE REPORTED.	
MONTANA, South										
MTZ007	South Central Montana									
	26	0100MST 1400MST			0	0			Heavy Snow	
									Observer reports 26-38 inches of snowfall and zero visibility in Roscoe of Carbon County.	
MTZ007	South Central Montana									
	26	0100MST 1800MST			0	0			Heavy Snow	
									In Lurter in Carbon County 24 inches of snowfall reported, four foot snow drifts and vehicles stranded.	
MTZ007	South Central Montana									
	26	0200MST 1800MST			0	0			Heavy Snow	
									Red Lodge in Carbon County, 24 inches of snowfall.	
MTZ007	South Central Montana									
	26	0200MST 1800MST			0	0			Heavy Snow	
									In McLeod in Sweet Grass County reported 27 inches of snowfall.	
MTZ007	South Central Montana									
	26	0200MST 1800MST			0	0			Heavy Snow	
									Twelve miles southeast of Pryor in Big Horn County spotter reported 18 inches of snowfall.	
MTZ007	South Central Montana									
	26	0200MST 1700MST			0	0			Heavy Snow	
									Hardin in Big Horn County reported 6 to 8 inches of snowfall.	

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<u>MONTANA, South</u>									
MTZ007	South Central Montana								
26	0300MST				0	0			Blizzard
	1300MST								
Sheriff at Red Lodge reporting white out conditions.									
MTZ007	South Central Montana								
26	0300MST				0	0			Heavy Snow
	0800MST								
Five inches of snowfall at NWSO Billings.									
MTZ007	South Central Montana								
26	0300MST				0	0			Heavy Snow
	1300MST								
Spotter in Nye reports 25 inches of snowfall.									
MTZ007	South Central Montana								
26	0300MST				0	0			Heavy Snow
	1700MST								
Spotter in Lodge Grass reported 16-18 inches of snowfall.									
<u>MONTANA, West</u>									
NONE REPORTED.									
<u>NEBRASKA, Central</u>									
Holt County									
5 SE O Neill	16	1650CST			0	0			Hail (1.50)
Holt County									
10 SE Chambers	16	1735CST			0	0			Hail (0.75)
Chase County									
5 W Wauneta	16	1820CST			0	0			Hail (0.75)
Hayes County									
3 E Wauneta	16	1830CST			0	0			Hail (0.88)
Holt County									
8 SE Bassett to 7 SE Bassett	26	0723CST	0.8	50	0	1	5K		Tornado (F1)
		0725CST							
TORNADO TOUCHED DOWN IN A PASTURE STRIKING A PICKUP AND ROLLING IT 138 FEET. DRIVER RECEIVED MINOR BUMPS AND BRUISES.									
Holt County									
22 N O Neill to 23 N O Neill	26	0750CST	1	75	0	3	150K		Tornado (F1)
		0752CST							
TORNADO PRODUCED ROOF DAMAGE TO HOUSE SETTING ON BLUFF OVER LOOKING NIOBRARA RIVER. TORNADO CROSSED HWY 281 AND BEGAN UPROOTING TREES IN VALLEY BEFORE STRIKING ANGELS FISHING CAMP PARTIALLY TEARING ROOF OFF HOUSE. BAIT HOUSE 20 YARDS NORTH OF HOUSE DESTROYED. FOUR TRAILER HOMES DESTROYED OR HEAVILY DAMAGED. SEVERAL CAMPERS DESTROYED.									
NEZ004>010-022>029-035>038-056>059-069>071	Sheridan - Cherry - Keya Paha - Boyd - Brown - Rock - Holt - Garden - Grant - Hooker - Thomas - Blaine - Loup - Garfield - Wheeler - Arthur - Mcpherson - Logan - Custer - Deuel - Keith - Perkins - Lincoln - Chase - Hayes - Frontier								
	29	0700CST			0	0			High Wind (G57)
		2100CST							
A strong surface low pressure system with sustained winds of 30 to 40 mph and gusts to around 60 mph, moved east across the region. Wind damage was reported to buildings trees and crops in the area along with numerous wind related power outages.									
<u>NEBRASKA, East</u>									
Antelope County									
2 S Clearwater	16	1745CST			0	0	3K		Thunderstorm Wind (G55)
		1750CST							
Thunderstorm winds destroyed a grain bin. Also, numerous large tree limbs were blown down.									
Antelope County									
Clearwater	16	1750CST			0	0			Hail (1.75)
Antelope County									
Neligh	16	1758CST			0	0			Hail (0.75)
Pierce County									
2 W Pierce	16	1830CST			0	0			Hail (1.75)
Knox County									
5 W Bloomfield	16	1832CST			0	0			Hail (1.75)
Knox County									
Bloomfield	16	1835CST			0	0			Thunderstorm Wind

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage	Crops	Character of Storm
NEBRASKA, East										
	Numerous large tree limbs were blown down.									
NEZ044	Dodge									
	17	0032CST			0	0				High Wind (G58)
	Non-convective winds gusted to 67 mph at the Fremont airport (FET).									
NEZ068-089>093	Otoe - Gage - Johnson - Nemaha - Pawnee - Richardson									
	22	1500CST			0	0			3.2M	Winter Storm
	23	0200CST								
	Five to eleven inches of heavy, wet snow blanketed the area. This combined with northerly winds which gusted as high as 46 mph caused widespread power and telephone outages and major tree damage. Fifteen percent of the sorghum was lost in Richardson, Pawnee, Nemaha, Johnson, and Otoe Counties.									
Knox County										
6 S Niobrara	26	0900CST			0	0	30K			Thunderstorm Wind
	Thunderstorm winds destroyed a hog barn.									
Knox County										
3 SE Verdigre to 3.2 SE Verdigre	26	0900CST 0901CST	0.2	7	0	0				Tornado (F0)
NEZ011>012-015>018-030>034-042>045-050>053-065>068-078-088>093	Knox - Cedar - Thurston - Antelope - Pierce - Wayne - Boone - Madison - Stanton - Cuming - Burt - Platte - Colfax - Dodge - Washington - Butler - Saunders - Douglas - Sarpy - Seward - Lancaster - Cass - Otoe - Saline - Jefferson - Gage - Johnson - Nemaha - Pawnee - Richardson									
	26	1500CST			0	0	58K			High Wind (G54)
	27	0100CST								
	A strong pressure gradient behind low pressure which moved across western Nebraska into the eastern Dakotas created strong south southwesterly winds during the day. The winds gusted as high as 62 mph across the area causing scattered power outages along with tree damage. In Lancaster County, siding was stripped from Memorial Stadium, a tree fell on a home causing major damage, and a tree fell on two cars creating minor damage. In Knox County, high winds near Sparta caused 14 hog farm shelters to loose their roofs, and a quonset 14 miles northeast of Verdigre was picked up and tossed into the trees. In Cuming County, part of a roof blew off a home near Wisner. In Stanton County, a large metal shed in Pilger was destroyed.									
NEZ011>012-015>018-030>034-042>045-050>053-065>068-078-088>093	Knox - Cedar - Thurston - Antelope - Pierce - Wayne - Boone - Madison - Stanton - Cuming - Burt - Platte - Colfax - Dodge - Washington - Butler - Saunders - Douglas - Sarpy - Seward - Lancaster - Cass - Otoe - Saline - Jefferson - Gage - Johnson - Nemaha - Pawnee - Richardson									
	29	1400CST			0	0	38K			High Wind (G58)
	30	0400CST								
	A strong low pressure system which moved northeast across the state into the eastern Dakotas caused strong northwesterly winds which gusted as high as 67 mph across the area. This caused numerous power outages along with tree damage. In Douglas County, a tree fell and destroyed a shed. Also two trees fell on cars. One of which was damaged significantly. In Madison County, a large tree limb fell on a car in downtown Norfolk.									
NEBRASKA, Extreme Northeast										
NEZ013>014	Dixon - Dakota									
	26	0900CST 1600CST			0	0	40K			High Wind (G50)
	Strong south winds ahead of a cold front damaged trees and caused debris damage to homes and vehicles, including major damage to the roof of a house in Wakefield from a falling tree.									
NEZ013>014	Dixon - Dakota									
	29	1700CST			0	0	100K			High Wind (G55)
	30	0200CST								
	Strong winds behind a cold front caused tree and power line damage and other scattered damaged, including the roof of a horse barn blown off and a vacant mobile home blown onto another mobile home.									
NEBRASKA, Extreme Southwest										
NEZ079>081	Dundy - Hitchcock - Red Willow									
	29	1000CST 1900CST			0	0				High Wind (G59)
	A powerful low pressure area moving through Nebraska brought damaging winds to Southwest Nebraska.									
NEBRASKA, South Central										
NEZ060	Dawson									
	26	0900CST 1700CST			0	0	10K	5K		High Wind (G52)
NEZ062	Hall									
	26	0900CST 1700CST			0	0	25K	50K		High Wind (G50)

Storm Data and Unusual Weather Phenomena

October 1996

October 1996										
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
NEBRASKA, South Central										
	Strong low pressure in northwest Kansas produced very strong south winds all day in the south central Nebraska. Sustained windspeeds of 30 to 45 mph were noted with frequent gusts around 60 mph. Two grain bins near Overton were damaged. Small outbuildings and roofs were damaged in Cairo. Unharvested corn incurred minor stalk breakage due to the wind.									
NEZ060	Dawson	29	1500CST 2000CST		0	0	100K	200K	High Wind (G61)	
NEZ074	Kearney	29	1630CST 2030CST		0	0	40K	50K	High Wind (G55)	
	A strong cold front and associated low pressure ushered in intense northwest winds to south central Nebraska. In Dawson county, windows were shattered and there were numerous reports of roof and tree damage. Sustained winds of 35 to 50 mph were observed with gusts to 70 mph. In Minden, trees and roofs were damaged and power was unavailable for a time during the evening. Unharvested corn suffered minor stalk breakage.									
NEBRASKA, West										
	NONE REPORTED.									
NEVADA, North										
	NONE REPORTED.									
NEVADA, South										
NVZ009	Extreme Southern Nevada	25	0400PST 1000PST		0	0	20K		High Wind (G49)	
	A strong cold front brought sustained winds over 40 mph to the Las Vegas Valley. Trees were downed and large branches fell on several power lines knocking power out to 15,000 people for up to six hours.									
NVZ008	South Central Nevada	30 31	1800PST 0600PST		0	0			Heavy Snow	
	A strong pacific storm dumped 6 to 10 inches of snow across Nye county overnight at the 6000 foot level.									
NEVADA, West										
	NONE REPORTED.									
NEW HAMPSHIRE, North and Central										
NHZ013>014	Interior Rockingham - Coastal Rockingham	08 09	2100EST 0400EST		0	0			High Wind	
	Strong winds from a coastal storm that formed from the remnants of Tropical Storm Josephine knocked over trees and branches in coastal sections of the state, causing numerous power outages.									
NHZ001>010-013>014	Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham	14	1000EST 1900EST		0	0			High Wind (G50)	
	High winds knocked over trees and powerlines throughout the state and snapped utility poles in some areas leaving thousands without power statewide. Falling trees also damaged cars and homes. The wind lifted the roof off a mobile home in North Woodstock.									
Rockingham County Seabrook Beach to New Castle		20 21	1100EST 1600EST		0	0	150K		Storm Surge	
	A very slow moving coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced very heavy rains (up to 13 inches along the coast) and persistent strong onshore winds. Coastal storm surges, combined with runoff, caused coastal flooding at and near the times of high tide on the 20 th and 21st.									
Rockingham County Countywide		20 23	2000EST 1200EST		0	0	4.8M		Flood	
	A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced 8 to 13 inches of rain throughout the County during a 30-hour period. Many homes and businesses were flooded. Roads and bridges were washed out. Several dams were damaged.									
Merrimack County Countywide		20 23	2000EST 1200EST		0	0	2.2M		Flood	
	A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced between 7 and 9 inches of precipitation throughout the County during a 30-hour period. Many homes and businesses were flooded. Roads and bridges were washed out.									
Strafford County Countywide		20 23	2300EST 1200EST		0	0	1.8M		Flood	
	A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced between 8 and 10 inches of rain throughout the County during a 30-hour period. Many homes and businesses were flooded. Roads and bridges were washed									

Storm Data and Unusual Weather Phenomena

October 1996

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

NEW HAMPSHIRE, North and Central

out and an area dam was damaged.

Grafton County Countywide

21 0600EST 0 0 1M Flood
22 1500EST

A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily produced between 3 and 8 inches of rain throughout the County during a 30-hour period. Roads and bridges were washed out.

Sullivan County Lempster

21 1215EST 0 0 1M Flash Flood
1815EST

A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily in the Atlantic produced about 5 inches of rain throughout the County during a 30-hour period, causing the Cold River Dam in Lempster to fail which resulted in a flash flood..

NHZ004

Northern Carroll

22 0200EST 0 0 Flood
1400EST

A coastal storm which was fed tropical moisture by the circulation around Hurricane Lily in the Atlantic produced about 6 inches of rain throughout Carroll County during a 30-hour period causing the Saco River to overflow its banks at Conway. The river reached a height of 11.5 feet, about 2.5 feet above flood stage.

NEW HAMPSHIRE, Southern

NHZ012

Hillsborough

20 0600EST 0 0 Heavy Rain
21 1100EST

Hillsborough County Peterborough

21 0000EST 0 0 Flash Flood
1000EST

Hillsborough County Peterborough

21 1000EST 0 0 Flash Flood
2000EST

NHZ012

Hillsborough

21 1000EST 0 0 Flood
2100EST

Hillsborough County Merrimack

21 1400EST 0 0 Flash Flood
22 0000EST

Hillsborough County Peterborough

21 2000EST 0 0 Flash Flood
2100EST

Hillsborough County Merrimack

22 0000EST 0 0 Flash Flood
1000EST

NHZ012

Hillsborough

22 0700EST 0 0 Flood
1200EST

NHZ012

Hillsborough

22 0800EST 0 0 Flood
23 0400EST

Hillsborough County Merrimack

22 1000EST 0 0 Flash Flood
2000EST

Hillsborough County Merrimack

22 2000EST 0 0 Flash Flood
2100EST

An extensive, slow moving surface low pressure system became positioned along the mid-Atlantic coast during the evening of October 19th and meandered there for 48 hours before finally heading northeast across southeast New England. Heavy rainfall flooded roads and basements and sent small streams over their banks. The major rivers also reached flood stage within one to two days, but flooding generally was minor.

Flooding occurred on highways bordering the Contoocook River in Hillsborough and other county towns. In New Boston, the Piscataquog River raged through town after 7 inches of rain and the privately owned Parker Dam breached under the pressure of the swollen river, causing street flooding in New Boston and Goffstown. Manchester reported a two-day total of 6.59 inches. Milford reported a total of 6.24 inches in a 48-hour period and Nashua had 5.04 inches in about the same time period.

The storm resulted in the discharge of an estimated 20 million gallons into the Merrimack River in Manchester. The governor declared an emergency in much of the state, including Hillsborough County. Damage estimates STATEWIDE ranged up to \$11,000,000.

This was the worst single flood event in the state since the floods of 1987.

The Contoocook River reached flood stage of 5 feet at Peterborough at 1 AM on October 21st, crested at 5.8 feet at 10 AM on the 21st, then dropped below flood stage at 10 PM late on the 21st. The Piscataquog River reached flood stage of 9 feet at Goffstown

Storm Data and Unusual Weather Phenomena

October 1996

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

NEW HAMPSHIRE, Southern

at 11 AM on October 21st, crested at 10.6 feet at 8 PM the same day, then dropped below flood stage at 10 AM on the 22nd. The Souhegan River reached flood stage of 8 feet at Merrimack at 2 PM on October 21st, crested at 10.0 feet at 3 AM on the 22nd (highest since 30.3 feet on 4/4/87), then fell below flood stage at 9 PM on the 22nd. The Merrimack River reached flood stage of 18 feet at Nashua at 8 AM on October 22nd, crested at 18.1 feet at noon the same day, and fell below flood stage at 1 PM the same day. The Merrimack River reached flood stage of 9 feet at Goffs Falls at 9 AM on October 22nd, crested at 11.4 feet at 10 PM the same day, then dropped below flood stage at 5 AM on October 23rd.

NEW JERSEY, Northeast

Bergen County									
Countywide	08 09	1100EST 0100EST			0	0			Heavy Rain
Essex County									
Countywide	08 09	1100EST 0100EST			0	0			Heavy Rain
Hudson County									
Countywide	08 09	1100EST 0100EST			0	0			Heavy Rain
Passaic County									
Countywide	08 09	1100EST 0100EST			0	0			Heavy Rain
Union County									
Countywide	08 09	1100EST 0100EST			0	0			Heavy Rain

The remnants of Tropical Storm Josephine moved rapidly northeast off the Atlantic Coast during Tuesday, October 8th. It passed east of the Jersey Coast just before midnight before moving east of Long Island just after midnight.

The low brought from 1 to 3 inches of rain along with strong gusty winds, especially along the immediate coast. Heavy rain caused localized street and poor drainage flooding.

Here are selected rainfall amounts for:

Hudson County: from 1.87 inches at Harrison to 2.49 inches at Jersey City.

Essex County: from 1.77 inches at West Orange to 2.87 inches at Essex Fells. At Newark Airport, 1.92 inches was recorded.

Passaic County: from 1.62 inches at Oak Ridge to 2.52 inches at Little Falls.

Bergen County: from 1.01 inches at Saddle River to 2.58 inches at Lodi.

Union County: 1.77 inches at Elizabeth.

Most peak wind gusts were measured from 40 to 50 mph. At Newark Airport, a peak wind gust of 47 mph was recorded.

NJZ002>006-011

Western Passaic - Bergen - Eastern Passaic - Essex - Hudson - Union

19	0900EST 2000EST	0	0	Wind
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A Nor'Easter produced strong gusty east winds and heavy rain across the region. Peak wind gusts from 40 to around 55 mph combined with torrential rain to down numerous trees and power lines regionwide.

In Hawthorne (Beverly Road and Washington Ave.) of Passaic County, trees crashed through the roofs of two homes and caused significant damage.

Here are selected peak wind gusts for:

Bergen County: 47 mph at Teterboro Airport.

Hudson County: 40 mph at Harrison.

Essex County: 57 mph at west Orange and 45 mph at Newark Airport.

Union County: 44 mph at Elizabeth.

Union County									
Rahway to Scotch Plains	19	1105EST 1400EST			0	0			Flood

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed	Injured	Property	Crops						
<u>NEW JERSEY, Northeast</u>									
Essex County									
Newark	19	1400EST			0	0			Flood
Hudson County									
Countywide	19	1400EST 1615EST			0	0			Flood
Bergen County									
Carlstadt to Hackensack	19	1430EST			0	0			Flood
Passaic County									
Countywide	19	1430EST			0	0			Flood
Essex County									
Bloomfield	19	1540EST 1850EST			0	0			Flood
Passaic County									
West Paterson	19	1540EST 1730EST			0	0			Flood
Hudson County									
Secaucus	19	1700EST			0	0			Flood
Union County									
New Providence	19	1715EST			0	0			Flood
Bergen County									
Lodi	19 20	1845EST 0945EST			0	0			Flood
Essex County									
Millburn to Short Hills	19 20	2015EST 0300EST			0	0	5M		Flood
Union County									
Springfield	19 20	2015EST 1030EST			0	0	4.3M		Flood

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low intensified as it moved slowly off the Southern New Jersey Coast during the 19th.

The difference in pressures caused strong and gusty east winds, which transported abundant moisture from the Atlantic Ocean across the region. Heavy flood producing rains resulted with amounts up to 8 inches. Although the rain ended by midnight on the 20th, river flooding extended until almost midnight on the 21st.

Heavy rainfall produced serious flooding of many rivers and small streams as well as serious widespread street and poor drainage flooding.

The Rahway River in Springfield (Union County) reached its' second highest level of record. In Cranford, downstream of the Springfield gage, 100 homes were evacuated, and in Rahway, further downstream, 75 homes and one high rise apartment were evacuated due to rising flood waters. Early reports from the Union County Emergency Management Office estimate \$4 million dollars in damage to private homeowners and \$300,000 in township damages.

Five gaged rivers exceeded their flood stages: the Saddle River at Lodi, the Ramapo River at Mahwah, the Rahway River at Springfield, Hohokus Brook at Hohokus, and the Third River at Bloomfield.

In Passaic County, one fatality occurred in Paterson when a 47 year old man lost control of his car while driving on rain-slicked roads and crashed into a bus. Significant flooding was observed in Wayne, Little Falls, Clifton, and Paterson.

In Essex County, the towns of Millburn, Short Hills, and Fairfield were hit hard. In Fairfield (like in so many other areas), several roads were forced to close due to flooding as the Passaic River crested. Commerce Road was under two feet of water leaving several vehicles stuck. Sections of Horseneck Road and Bloomfield Ave. were also impassable. In Roseland, the Mayor estimated that the cost to repair erosion damage to the culverts of Canoe and Fullerton Brooks was up to \$5 million dollars.

In Hudson County, low-lying roads across the entire county were shut by several feet of water including: Lincoln Highway and Route 440 in Jersey City and Kearny; Meadowlands Parkway and Secaucus Road in Secaucus; Observer Highway in Hoboken; and West Side Ave. in North Bergen.

A presidential disaster was declared for people in Union and Hudson Counties.

Here are selected rainfall amounts for:

Union County (5 to 8 inches): from 5.15 inches at New Providence to 7.99 inches at Mountainside.

Essex County (4 to 8 inches): from 4.12 inches at Newark Airport (a new daily record) to 7.68 inches in Verona.

Storm Data and Unusual Weather Phenomena

October 1996

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, Northeast

Hudson County (4 to 5 inches): from 4.46 inches at Harrison to 5.04 inches at Jersey City.

Passaic County (3 to 6 inches): from 3.25 inches at Greenwood Lake to 6.36 inches at Wayne.

Bergen County (3 to 5 inches): from 3.50 inches at Ramsey to 5.26 inches at Lodi.

NEW JERSEY, South and Northwest

NJZ001-007>010-012-015>019-021

Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Mercer - Salem - Gloucester - Camden - Burlington - Cumberland

**08 0700EST
2200EST**

0 0

Heavy Rain And Wind

Heavy rain associated with the remnants of Tropical Storm Josephine affected New Jersey primarily during the daylight hours on the 8th. Peak wind gusts averaged around 30 mph in Northwest New Jersey and 40 to 45 mph elsewhere. Stronger winds occurred along the coastal counties. The strong wind gusts did knock over some tree limbs mainly in Southern New Jersey. While the heavy rain did cause the usual poor drainage flooding, recent dry weather and foliage still on the trees prevented further flooding. Storm totals included 2.56 inches in Chatham (Morris County), 2.41 inches in Wertsville (Hunterdon County), 2.35 inches in Iselin (Middlesex County), 2.21 inches in Mays Landing (Atlantic County), 2.18 inches at the Marina in Atlantic City, 1.94 inches in West Cape May (Cape May County), 1.81 inches in Washington's Crossing (Mercer County), 1.83 inches at the McGuire A.F.B., 1.68 inches in New Lisbon (Burlington County), 1.60 inches in Pennsauken (Camden County), 1.59 inches in Millville (Cumberland County) and 1.38 inches in Hackettstown (Warren County).

NJZ014-024>026

Eastern Monmouth - Eastern Cape May - Eastern Atlantic - Eastern Ocean

**08 1530EST
2030EST**

0 0

Coastal Flooding

The strong onshore winds which coincided with the late afternoon and early evening high tide caused minor to locally moderate tidal flooding. Tidal departures at high tide averaged between 2.5 and 3.0 feet above normal.

In western Atlantic City three of the four lanes of the Black Horse Pike (U.S. Routes 40/322) were closed. In Ocean County within Little Egg Harbor Township parts of Osburn Island's roads were flooded. In Point Pleasant Beach New Jersey State Route 35 South and Broadway were flooded. In Monmouth County, the back roads in Sea Bright were flooded near the Shrewsbury River. Flooding was reported in Manasquan near the 4th Avenue Bridge. Minor flooding was reported in Keansburg.

The high tide at Atlantic City reached 7.3 feet above mean low water, a departure of 3.1 feet above normal. High tides at Cape May were 7.8 feet (2.6 feet above normal) above mean low water and at Sandy Hook at 6.9 feet (2.4 feet above normal) above mean low water. The high tide at North Wildwood reached 8.1 feet above mean low water. No serious injuries were reported.

NJZ013>014-020-022>026

Western Monmouth - Eastern Monmouth - Western Ocean - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean

**08 1630EST
2000EST**

0 0

High Wind (G61)

High winds associated with the remnants of Tropical Storm Josephine caused wind damage along coastal New Jersey. Wind gusts reached 70 mph at the Atlantic City Beach Patrol and 65 mph in Seaside Park.

In Cape May County the high winds pulled down power lines. They also tore part of a roof away in Cape May City. In Atlantic County, trees were uprooted in Margate and Brigantine. A house in Brigantine suffered roof damage. About 31,000 customers lost power. The hardest hit townships were Northfield and Egg Harbor. In Ocean County, the hardest hit communities were Berkley Township, Brick, Point Pleasant, Seaside Heights and Tom's River. About 14,000 homes lost power. In Brick, about 10 trees were uprooted, a few fell on homes and vehicles. There were numerous calls of downed trees and power lines in Dover Township. In Seaside Heights, a hotel under construction had pieces of its roof blow away. Awnings and street signs were blown away. In Monmouth County, downed trees and wires were reported in Spring Lake. No serious injuries were reported.

Other peak wind gusts included 61 mph in Harvey Cedars, 60 mph at the Atlantic City Marina, 54 mph in Cape May, 52 mph in Brigantine, 49 mph in Tom's River, 46 mph in Longport and 43 mph in Belmar.

Cumberland County

Countywide

**18 2100EST
19 0900EST**

0 0

Heavy Rain

Cape May County

Countywide

**18 2100EST
19 0900EST**

0 0

Heavy Rain

Salem County

Countywide

**18 2200EST
19 1000EST**

0 0

Heavy Rain

Gloucester County

Countywide

**18 2200EST
19 1000EST**

0 0

Heavy Rain

Storm Data and Unusual Weather Phenomena

October 1996

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, South and Northwest

Atlantic County										
Countywide	18	2200EST			0	0				Heavy Rain
	19	1000EST								
Ocean County										
Countywide	18	2300EST			0	0				Heavy Rain
	19	1100EST								
Monmouth County										
Countywide	19	0100EST			0	0				Heavy Rain
		1400EST								

Rain, heavy at times, fell across extreme Southern as well as Eastern New Jersey during the first half of the day on the 19th and extended into the afternoon in northern Ocean and in Monmouth County. The heaviest rain fell around sunrise on the 19th in Southern New Jersey and from late morning into early afternoon in Northeast New Jersey. Storm totals averaged two to three inches with higher amounts in Monmouth County. This produced some urban and poor drainage flooding, but no serious flooding or damage was reported. More serious flooding and damage did occur in West Central and Northwest New Jersey.

A low pressure system developed near Norfolk during the late evening of the 18th. At 8 a.m. EDT on the 19th, it was located east of Atlantic City. The low became captured by another low at higher levels of the atmosphere and consequently moved little the ensuing 24 hours. It was near Manasquan at 2 p.m. on the 19th, Allentown at 8 p.m. on the 19th, near Harrisburg at 2 a.m. on the 20th and Hagerstown MD at 8 a.m. on the 20th. Tropical moisture associated with Hurricane Lili (Which was farther east in the Atlantic.) was ingested into this low and literally was wrung out over New Jersey. The slowing of the low pressure system's forward speed prolonged the heavy rain, especially farther north in New Jersey.

Representative storm totals included 4.84 inches in New Monmouth, 4.05 inches in Matawan, 3.52 inches in Brick, 3.36 inches in Estell Manor, 3.31 inches in Harvey Cedars, 3.00 inches in Glassboro, 2.42 inches in Verga, 2.28 inches in Margate and 1.78 inches in Millville.

NJZ008-010-012>014-020-026

Morris - Somerset - Middlesex - Western Monmouth - Eastern Monmouth - Western Ocean - Eastern Ocean

19	0600EST	0	0	High Wind
	1500EST			

High winds, caused by the atmospheric pressure difference between a low pressure system near the Southern New Jersey Coast and a high pressure system over the Gulf of Saint Lawrence, produced wind damage from Morris County southeast to Ocean County. The damage was exacerbated by the heavy rain which loosened the soil and helped topple trees which under normal circumstances might have remained standing.

The highest wind gusts averaged around 55 mph along Coastal Ocean County. Trees were reported uprooted in the Point Pleasant Beach area. In Monmouth County, numerous limbs were reported down in Freehold. In Middlesex County, the high winds blew down tents at the Raritan Center Exposition Hall. In Metuchen, an uprooted tree put a hole in a house. In Carteret, several trees were knocked down and closed roads. In South Plainfield, a house lost a chimney and about a dozen trees were uprooted. In North Brunswick, a 10 block area had numerous limbs and wires down. In East Brunswick, the wind blew over a garbage truck and forced the closure of New Jersey State Route 18. General Power Utilities reported about 37,500 homes lost power throughout New Jersey, about a third within Morris County. In Washington Township a tree damaged a vehicle and home. In Chatham, four blocks were closed because of downed trees. Farther west a couple of trees were also uprooted in Warren County within Independence Township.

Camden County **Countywide**

19	0700EST	0	0	Flash Flood
	1300EST			

Rain, heavy at times, during the first half of the day on the 19th caused urban and poor drainage flooding, flash flooding of smaller streams and flooding along the Cooper River. The Cooper River in Haddonfield reached its 2.8 foot flood stage at 8 a.m. EDT, crested at 3.31 feet at 1215 p.m. EDT and was back within bankfull at 6 p.m. EDT. The heavy rain, strong east winds and high astronomical tides caused flooding farther downstream the evening of the 19th along tidal sections of the Cooper River in Camden. Admiral Wilson Boulevard was closed at 8 p.m. EDT. Storm precipitation totals included 2.97 inches in Cherry Hill, 2.91 inches in Pennsauken and 2.6 inches in Somerdale. No serious injuries or damage was reported.

Burlington County **Northwest**

19	0800EST	0	0	Flash Flood
	1400EST			

Rain, heavy at times, during the first half of the day on the 19th caused urban and poor drainage flooding and flash flooding of some of the smaller streams within Burlington County. Among the streams that flooded were the Barker Brook and Beaverdam Creek. The heavy rain and high astronomical tides forced the closure of the Delanco-Riverside Bridge both the nights of the 19th and 20th. It was the first time in two years that the bridge was closed due to tidal flooding. Representative storm totals included 5.41 inches in Blackwell Mills, 3.8 inches in Mount Holly, 3.68 inches in New Lisbon, 3.39 inches in Willingboro, 3.3 inches in Mount Laurel and 2.44 inches in Atsion. No serious injuries were reported.

Mercer County **Countywide**

19	0900EST	0	0	Flash Flood
	1959EST			

Rain, heavy at times, especially during the morning of the 19th caused widespread urban flooding and the flash flooding of several streams within Mercer County. The rain was over by early afternoon, but flooding along the Assunpink Creek lasted through the morning of the 20th. Flood waters from the Assunpink Creek reached the stoops of houses on two blocks in Trenton. The worst flooding was along Mulberry Street. The road was still closed as of 9 p.m. EDT on the 19th. The Princeton Pike and United States

Storm Data and Unusual Weather Phenomena

October 1996

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, South and Northwest

Route 1 were badly flooded in Trenton and several roads were also closed in Ewing. In Princeton, Quaker Road had four feet of water on it.

The Assunpink Creek in Trenton crested at 10.4 feet at 645 p.m. EDT on the 19th. Flood stage is 7 feet. Storm precipitation totals included 4.48 inches in Washington's Crossing, 4.2 inches in Princeton, 3.97 inches in Hightstown, 3.8 inches at the University of New Jersey, 3.6 inches in Windsor and 3.09 inches in Hamilton Square. No serious injuries were reported.

NJZ012>014-024>026

Middlesex - Western Monmouth - Eastern Monmouth - Eastern Cape May - Eastern Atlantic - Eastern Ocean

19 1100EST 0 0 Coastal Flooding
20 0330EST

A high pressure system near the Gulf of Saint Lawrence and a slow moving low pressure system kept a persistent onshore flow for a couple of high tide cycles, especially in the northern half of New Jersey. The low moved from near Atlantic City at 8 a.m. EDT on the 19th to near Manasquan at 2 p.m. EDT, to near Allentown, PA at 8 p.m. EDT, to near Harrisburg at 2 a.m. EDT on the 20th. Minor to locally moderate tidal flooding occurred across Atlantic and Cape May Counties and moderate tidal flooding occurred in Ocean, Monmouth and Middlesex Counties during the afternoon high tide on the 19th and the early morning high tide on the 20th. While the winds were lighter during the early morning on the 20th, the astronomical tides were higher and the onshore winds during the evening of the 19th prevented the water, especially in the back bays from draining. Tidal departures averaged about 3 feet above normal with the lowest tidal departures in Cape May County and the greatest in northern Monmouth County. The tide at Atlantic City peaked between 7.0 and 7.5 feet above mean low water.

Only a few tidal flood prone roadways in Atlantic and Cape May Counties flooded. Heavy rain also caused some poor drainage flooding during the morning of the 19th. In Ocean County, bay flooding was reported around Seaside Park and Ship Bottom. In Harvey Cedars several north-south roads were closed. In Toms River, back bay/river flooding approached several homes. In Point Pleasant Beach flooding was reported over the seawall and onto the Inlet Drive parking lot.

Tidal flooding was worse in Monmouth County. In Sea Bright tidal flooding along Beach and Front Streets came within about a foot and a half of the December 1992 nor'easter. Ocean Avenue was closed for seven hours and a local state of emergency was declared. Many basements on the bay side were flooded. Motorists were rescued from their vehicles. There also was extensive beach erosion. About 40 to 50 feet of beach was lost and jetties were exposed. Significant beach erosion also occurred in Monmouth Beach and the south end beaches near Sandy Hook. Within Shrewsbury Borough, the (Shrewsbury) River flooded downtown sections off of Ocean Avenue and the North Beach section. Near Sandy Hook about 50 persons on a retreat were evacuated as tidal flooding forced the closure of the southern access road. Within Ocean Township Schell's Lake overflowed and forced the evacuation of 16 apartments. In Hazlet, some homes along Raritan Bay were flooded. Sections of New Jersey State Routes 36 and 35 were flooded throughout the county.

In Middlesex County, the winds and tidal flooding forced the partial collapse of several docks and ripped several boats from their moorings in Perth Amboy. All interconnecting and parallel streets along the entire marina and waterfront were flooded. The water was seven feet deep in the front yards of homes on Garretson Avenue. There were more than 100 reports of basement flooding. Three boats were destroyed at the Raritan Yacht Club. The high school in Perth Amboy was also damaged after the water knocked over a retaining wall and pushed through some of the school's windows.

Hunterdon County
Countywide

19 1100EST 0 0 1M Flash Flood
20 2100EST

Rain, very heavy at times toward noon on the 19th, caused considerable highway and poor drainage flooding as well as flooding of some of the smaller creeks in Hunterdon County. Damage estimates were around one million dollars. Evacuations occurred along the Raritan River in Califon. Cars were stalling out in flood waters around Flemington. The hardest hit municipalities were Clinton, Lambertville, Milford and Readington. The school in Lambertville sustained extensive damage when several inches of water, mud and debris covered its floor. A culvert under North Main Street failed. It normally carries runoff from Music Mountain, but debris clogged the culvert, causing the creek behind the school to flood. Clogged debris also exacerbated the flooding problems in downtown Clinton where the Beaver Brook overflowed. In Readington, an 80 foot long and 12 foot high concrete wall between Dreahook and Readington Roads collapsed from the pressure of a tributary of Holland Brook that crosses under County Route 523. No serious injuries were reported.

The South Branch of the Raritan River at High Bridge crested at 11.1 feet at 245 a.m. EDT on the 20th. Flood stage is estimated at 10 feet. This crest represents about a 40 year return interval. Farther downstream, the river's highest crest at Stanton occurred at 9.9 feet at 6 p.m. EDT on the 19th. Flood stage is 8 feet.

Storm precipitation totals is 6.89 inches in Califon, 6.04 inches in White House, 5.9 inches in Clinton, 5.43 inches in Neshanic, 4.88 inches in Wertsville and 3.29 inches in Reigelsville.

Somerset County
Countywide

19 1200EST 0 0 31M Flash Flood
20 2100EST

Rain, very heavy at times around noon on the 19th caused widespread and severe flooding throughout Somerset County. For the major rivers, most of the crests were the second highest on record and represented a 25 to 50 year flood. The all-time record crests occurred with Tropical Storm Doria in August 1971. A state of emergency was declared and total damage was estimated at \$31 million dollars. Many motorists were stranded. Parts of Interstate 287, United States Routes 202 and 206, New Jersey State Route

Storm Data and Unusual Weather Phenomena

October 1996

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, South and Northwest

22 and County Route 610 were closed as long as the afternoon of the 20th. The Blackwell Mills and Griggstown Causeways remained closed until the 22nd in Franklin Township.

The worst damage was in Manville (The confluence of the Raritan and Millstone Rivers.) and Bound Brook (The Raritan River). In Manville 200 persons were evacuated, 160 spent the night in a shelter. The Lost Valley area was hit the hardest especially the homes on Huff, Boesel and Manville Avenues. A house on Huff Avenue collapsed. In Bound Brook, 115 persons were evacuated. Seventy-five homes and seventeen businesses were damaged. Fourteen of seventeen homes on Main Street were uninhabitable. Three feet of river water extended from Main to Hamilton Streets.

Other hard hit townships included Hillsborough. During the height of the heavy rain, the town was completely shut off. The East Brook overflowed and made the center of town impassable. Clogged catch basins enhanced the flooding. Emergency personnel responded to over 120 requests. Evacuations occurred in Green Brook Township and North Plainfield Borough and along the Delaware and Raritan Canal. In Branchburg, evacuations were ordered near New Jersey State Route 28 along the South Branch of the Raritan River. The Watchung Lake in Watchung overflowed. In Warren Township, several roads along the Passaic River were closed. In Bernardsville, the Mine Brook flooded the Old Mill Inn. In Montgomery Township, the 176-year-old Dead Tree Run Bridge was severely damaged. The Pine Brook flooded over it. About ten roads within the township were impassable making access into or out of the town nearly impossible. In Somerville, roof damage occurred to both the Van Derveer School and the YMCA.

The North Branch of the Raritan River had a RECORD BREAKING CREST at Raritan of 15.5 feet at 1130 p.m. EDT on the 19th. In Far Hills, the River crested at 5.9 feet at 630 p.m. EDT represented a 18 year recurrence interval. The Millstone River at Blackwell Mills crested at 15.6 feet at 5 a.m. EDT on the 20th, the third highest crest on record. This represented a 20 year recurrence interval. The main stem Raritan River at Manville crested at 22.4 feet at 415 a.m. EDT on the 20th, the second highest on record. The record is 23.8 feet set on August 28, 1971. The Raritan River at Bound Brook crested at 35.6 feet, 2nd highest on record at 615 a.m. EDT on the 20th. The record is 37.5 feet also set on August 28, 1971. The latter two locations flooding represent about a 50 year recurrence interval. No serious injuries were reported.

Storm precipitation totals included 7.05 inches in Pottersville, 6.93 inches in Far Hills, 6.4 inches in Basking Ridge, 6.1 inches in Somerville, 5.9 inches in Watchung, 5.87 inches in Martinsville, 5.7 inches in Bound Brook, 4.88 inches in Bridgewater and 4.76 inches in Montgomery.

Middlesex County Countywide

19 1300EST 0 1 2.7M Flash Flood
2100EST

Rain, very heavy at times especially around noon on the 19th in Middlesex County caused widespread urban and poor drainage flooding as well as flooding of the smaller streams. Flooding closed parts of United States Routes 1 and 9 and New Jersey State Routes 18, 27, 28, 35, 82 and 124 as well as the Garden State Parkway. Total damage estimates were around 2.7 million dollars. One person was injured when she was swept away by flood waters while walking toward the Metropark Train Station in Woodbridge during the afternoon of the 19th. She clinged to a branch in the rain swollen ditch for about 20 minutes before another passing woman and her son rescued her.

A Limited State of Emergency was declared in Dunellen, Old Bridge, Perth Amboy, South Brunswick, South River and Woodbridge. About 200 persons were evacuated in all, about 70 from Dunellen alone. In Dunellen, twenty homes were damaged by the flooding, a dozen had serious structural damage; one was moved off its foundation. Damage in the borough alone was close to half a million dollars. In Woodbridge 40 persons were evacuated from the Kensington Garden Apartments. Ten stores in the Foodtown Shopping Center were severely flooded by the south branch of the Rahway River. A house on Barron Avenue was condemned after flood waters from the Wedgewood Brook flooded the street. The flooding was exacerbated by a debris dam that formed where the brook travels under the Conrail Railroad Tracks.

In Piscataway, evacuations from the Birchview and Mayflower Apartment Complexes occurred on River Road (near the Raritan River). Kennels were flooded in South Brunswick. In South Plainfield, damage estimates reached 140,000 dollars. Fourteen roads were closed with water as deep as six feet and residents from 35 homes were evacuated.

Storm precipitation totals included 6.85 inches in Iselin, 6.51 inches in Edison, 5.5 inches in Woodbridge, 5.47 inches in South Plainfield and 4.59 inches in New Brunswick.

Morris County Countywide

19 1500EST 0 0 1M Flash Flood
2100EST

Rain, which fell very heavy at times during the early afternoon of the 19th caused considerable urban and poor drainage flooding as well flooding of most of the rivers and streams in the Passaic River Basin. Damage countywide was estimated at \$1,000,000. The Netcong, Passaic, Rockaway and Whippany Rivers all exceeded flood stage. For most places along the Passaic River Basin, this flooding represented about a 10 year recurrence interval.

Two teenage girls were saved after they were swept into the Whippany River in Morristown. The hardest hit municipalities included Denville, Florham Park, Hanover, Harding, Hopatcong, Long Hill and Roxbury.

In Hanover Township, the Whippany River also flooded and caused New Jersey State Route 10 to be closed. By the night of the 19th five families along Route 10 were evacuated and business owners were requested to leave. In Harding, the southbound lanes

Storm Data and Unusual Weather Phenomena

October 1996

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, South and Northwest

of Interstate 287 were flooded and traffic was backed up for seven miles. The Stirling section of Long Hill Township was hard hit by flooding. Four main roads were flooded. Ten pumps were used to keep the police department dry. In Roxbury Township, basements in Succasunna and Port Morris had water up to six feet deep. In Succasunna one house's foundation collapsed. Elsewhere in Roxbury Township, flooding along Ledgewood Circle reached some historical buildings for the first time in 20 years. In the Poet's Park development, a mud slide deposited considerable silt into the Ledgewood Brook. In Florham Park, flooding in "The Flats" reached a Cadillac dealership. An unknown amount of damage was done to about 35 new cadillacs. A tropical fish store was flooded and under four feet of water and the waters flooded the first floor of a museum up to eight inches deep.

The Rockaway River above the Boonton Reservoir crested at 5.93 feet at 4 a.m. EDT on the 20th. The Rockaway River below the Boonton Reservoir crested at 7.96 feet at 1130 a.m. EDT on the 20th. Flood stage at both locations is five feet. The Whippany River at Morristown crested at 7.8 feet at 1215 a.m. EDT, the second highest on record. Flood stage is estimated at 6 feet. Along the Passaic River, the highest crest at Chatham occurred at 1230 a.m. EDT on the 21st. Flood stage is 6 feet. In Millington, the Passaic made a 91-year-old record cresting at 9.9 feet at 615 p.m. EDT on the 20th. Flood stage is estimated at 8 feet. At Pine Brook, the Passaic crested at 21.1 feet at noon EDT on the 21st. Flood stage is estimated at 19 feet. At Two Bridges, The Passaic crested at 10.9 feet at 9 a.m. on the 22nd. Flood stage is estimated at 9 feet.

Storm precipitation totals included 8.63 inches in Gillette, 7.42 inches in Chatham, 7.15 inches in Ironia, 6.87 inches in West Wharton, 6.29 inches in Boonton, 6.25 inches in Montville, 6.16 inches in Long Valley, 6.04 inches in Berkshire Valley, 5.76 inches at the Oak Ridge Reservoir and 5.04 inches in Pequannock. No serious injuries were reported.

Warren County Countywide

19 1500EST 2100EST 0 0 Flash Flood

Rain, very heavy at times especially during the first half of the afternoon on the 19th, caused widespread urban and poor drainage flooding as well as several creeks and rivers throughout the county. Evacuations occurred in Washington and Franklin Townships. The Musconetcong River flooded and washed out several soccer fields as well as flooded the basements of a number of homes in the Butler Park area of Mansfield and Washington Townships. County fire departments spent much of the 19th and 20th pumping water out of basements. No serious injuries or damage were reported. Storm precipitation totals included 5.29 in Hackettstown, 4.87 inches in Stewartville, 4.52 inches in Columbia and 3.80 inches in Phillipsburg.

Sussex County Countywide

19 1730EST 2200EST 0 0 Flash Flood

Rain, very heavy at times during the afternoon on the 19th caused considerable poor drainage and urban flooding as well as the flooding of smaller streams in Sussex County. No serious injuries or damage were reported. Storm precipitation totals included 7.68 inches in Wawayanda, 5.44 inches in Cannistear, 4.71 inches in Newton, 3.56 inches in Sussex, 3.54 inches in Wantage and 3.02 inches in Montague.

NJZ008>010-015

Morris - Hunterdon - Somerset - Mercer

19 2059EST 27 1000EST 0 0 Flood

Rain, heavy at times, fell across the northern half of New Jersey during the daylight hours on the 19th. The heaviest rain fell around noon in central New Jersey and during the afternoon and early evening in Northern New Jersey. This produced some serious flooding, especially in Somerset County. Below are listed the crests and times gaged rivers and streams were above flood stage. Please refer to individual county entries for more details.

In Mercer County, the Assunpink Creek in Trenton was above flood stage from 10 a.m. EDT on the 19th through 7 a.m. EDT on the 20th. It crested at 10.4 feet at 645 p.m. EDT on the 19th. Flood stage is 7 feet.

In Hunterdon County, the South Branch of the Raritan River at High Bridge crested at 11.1 feet at 245 a.m. EDT on the 20th. Flood stage is estimated at 10 feet. This crest represents about a 40 year return interval. The river was above flood stage from 6 p.m. EDT on the 19th to 8 a.m. EDT on the 20th. Farther downstream, the river's highest crest at Stanton occurred at 9.9 feet at 6 p.m. EDT on the 19th. A second crest of 8.9 feet occurred at 730 a.m. EDT on the 20th. Flood stage is 8 feet. The river was above flood stage from noon EDT through 945 p.m. EDT on the 19th and again from 2 a.m. EDT through noon EDT on the 20th.

In Somerset County, the North Branch of the Raritan River had a RECORD BREAKING CREST at Raritan of 15.5 feet at 1130 p.m. EDT on the 19th. Flood stage is 10 feet. The river was above flood stage from 4 p.m. EDT on the 19th through 9 a.m. EDT on the 20th. In Far Hills, the River crested at 5.9 feet at 630 p.m. EDT representing a 18 year recurrence interval. Flood stage is estimated at 5 feet. The Millstone River at Blackwell Mills crested at 15.6 feet at 5 a.m. EDT on the 20th, the third highest crest on record. This represented a 20 year recurrence interval. Flood stage is 9 feet and the river was above flood stage from 330 p.m. EDT on the 19th through 4 p.m. EDT on the 21st. The main stem Raritan River at Manville crested at 22.4 feet at 415 a.m. EDT on the 20th, the second highest on record. The record is 23.8 feet set on August 28, 1971. The river was above its 12 foot flood stage from 300 p.m. EDT on the 19th through 1 a.m. EDT on the 21st. The Raritan River at Bound Brook crested at 35.6 feet, the second highest on record at 615 a.m. EDT on the 20th. The record is 37.5 feet also set on August 28, 1971. The river was above its 26 foot flood stage from 6 p.m. EDT on the 19th through the early morning of the 21st. For the main stem Raritan, this flooding represents about a 50 year recurrence interval. On Tuesday the 22nd at about 1 p.m. EDT, a 40-year-old man drowned near the confluence of the Millstone and Raritan Rivers on the Franklin/Bridgewater border. The gentleman was in a canoe that capsized and he became trapped in the Island Form Weir near the confluence point. The body was never recovered. While the river was higher than usual, it was within bankfull at the time of this tragic accident.

In Morris County, The Rockaway River above the Boonton Reservoir crested at 5.93 feet at 4 a.m. EDT on the 20th. It was above

Storm Data and Unusual Weather Phenomena

October 1996

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, South and Northwest

its 5 foot flood stage from 11 p.m. EDT on the 19th through 4 a.m. EDT on the 21st. The Rockaway River below the Boonton Reservoir crested at 7.96 feet at 1130 a.m. EDT on the 20th. It was above its 5 foot flood stage from 11 p.m. EDT on the 19th through 1245 a.m. EDT on the 27th. The Whippany River at Morristown crested at 7.8 feet at 1215 a.m. EDT, the second highest stage on record. Flood stage is estimated at 6 feet. The record stage is still 8.6 feet set on August 28, 1971. Along the Passaic River, the highest crest at Chatham occurred at 7.5 feet at 1230 a.m. EDT on the 21st. It also crested at 7.4 feet at 1115 p.m. EDT on the 19th. The river was above its 6 foot flood stage from 7 p.m. EDT on the 19th through 9 p.m. EDT on the 25th. In Millington, the Passaic made a NEW RECORD crest of 9.9 feet at 615 p.m. EDT on the 20th. The river was above its estimated flood stage of 8 feet from 7 p.m. EDT on the 19th through 3 a.m. EDT on the 23rd. At Pine Brook, the Passaic crested at 21.1 feet at noon EDT on the 21st. This was the last point on the river to fall below flood stage and was above it from 730 a.m. EDT on the 20th through 1045 a.m. EST on the 27th. Flood stage is estimated at 19 feet. At Two Bridges, the Passaic crested at 10.9 feet at 9 a.m. on the 22nd. It was above flood stage (9 feet) from 1045 p.m. EDT on the 20th through noon EDT on the 25th.

A low pressure system developed near Norfolk during the late evening of the 18th. At 8 a.m. EDT on the 19th, it was located east of Atlantic City. The low became captured by another low at higher levels of the atmosphere and consequently moved little the ensuing 24 hours. It was near Manasquan, NJ at 2 p.m. EDT on the 19th, Allentown, PA at 8 p.m. EDT on the 19th, near Harrisburg, PA at 2 a.m. EDT on the 20th and Hagerstown, MD at 8 a.m. EDT on the 20th. Tropical moisture associated with Hurricane Lili (Which was farther east in the Atlantic.) was ingested into this low and literally was wrung out over New Jersey. The slowing of the low pressure system's forward speed prolonged the heavy rain, especially farther north in New Jersey.

NEW MEXICO, Central and North

Bernalillo County

(Abq)Albuquerque Int

04 0915MST

0

1

Lightning

A 30 year old Air Force sergeant was sent to the hospital in critical condition after being struck by lightning at Kirkland Air Force Base.

Bernalillo County

Albuquerque

04 1000MST
1400MST

0

0

Heavy Rain

A late season slow moving thunderstorm produced unusually heavy street flooding along the west central part of old Route 66 through Albuquerque. Water topped the sidewalk level along several city blocks.

Lincoln County

2 E Capitan

04 2100MST
2200MST

1

0

Flash Flood

A 19 year old woman drowned trying to drive through a flooded low water crossing on Salado Creek. Water was estimated at 2-3 feet deep over the Capitan Gap crossing. F19VE

NMZ002>005

Northwest Mountains Including Jemez - Upper Rio Grande Valley - Sangre De Cristo Mountains - Northeast Highlands

20 1200MST
21 1700MST

1

0

Heavy Snow

As strong cold front produced record breaking snowfall and new daily record low temperatures across sections of north central New Mexico. Santa Fe Plaza had 11 inches of snow in less than 12 hours, breaking the record for heaviest single October snow of 7 inches set in 1965. Los Alamos with 12.5 inches of snow also set a new monthly record. Ski areas from Santa Fe north to Taos and Red River reported 8 to 12 inches of snow, while Gascon and other small villages on the east slope of the Sangre de Cristo Mountains received 14 to 16 inches. Numerous power outages were reported as the heavy wet snow broke tree limbs still full with fall leaves. The unusually early and heavy snow resulted in numerous traffic accidents and one weather related traffic fatality. M31VE

NMZ002>005-008-010>011-014

Northwest Mountains Including Jemez - Upper Rio Grande Valley - Sangre De Cristo Mountains - Northeast Highlands - Westcentral Mountains - Sandia/Manzano Mountains - Central High Plains/Estancia Valley County - Southwest Mountains/Upper Gila Region

26 1100MST
27 1800MST

0

0

Heavy Snow

A second heavy snow storm in less than a week swept across west central and northern New Mexico. Eastern slopes of the Sangre de Cristo and Sandia/Manzano Mountains were especially hard hit with snow of 8 to 20 inches. Taos ski area reported 36 inches in about 36 hours. Once again numerous power outages and minor traffic accidents were reported.

NEW MEXICO, South Central and Southwest

NONE REPORTED.

NEW MEXICO, Southeast

NONE REPORTED.

NEW YORK, Central

NYZ009-015>018-

022>025-036>037-

044>046-055>057-062

Northern Oneida - Yates - Seneca - Southern Cayuga - Onondaga - Steuben - Schuyler - Chemung - Tompkins - Madison - Southern Oneida - Cortland - Chenango - Otsego - Tioga - Broome - Delaware - Sullivan

04 0000EST
0800EST

0

0

Extreme Cold

A very cold air mass entered central New York and northeastern Pennsylvania on the morning of the 4th. Widespread freeze conditions and several record low temperatures were observed. Specifically, records were set in Cooperstown (22 degrees) and at the Binghamton Regional Airport (27 degrees).

Storm Data and Unusual Weather Phenomena

October 1996

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, Central

NYZ046-057-062

Otsego - Delaware - Sullivan

19 1200EST 0 0 5K High Wind
1800EST

A coastal low pressure system slowly moved north along the Atlantic seaboard during the day on the 19th. This system brought heavy rains and locally strong wind gusts to central New York and northeastern Pennsylvania. High winds were responsible for downing trees and power lines throughout the higher elevations of the Catskill and Pocono regions.

NEW YORK, Coastal

Bronx County

Countywide 08 1100EST 0 0 Heavy Rain
09 0100EST

Kings County

Countywide 08 1100EST 0 0 Heavy Rain
09 0100EST

New York County

Countywide 08 1100EST 0 0 Heavy Rain
09 0100EST

Queens County

Countywide 08 1100EST 0 0 Heavy Rain
09 0100EST

Richmond County

Countywide 08 1100EST 0 0 Heavy Rain
09 0100EST

Nassau County

Countywide 08 1200EST 0 0 Heavy Rain
09 0200EST

Rockland County

Countywide 08 1200EST 0 0 Heavy Rain
09 0130EST

Westchester County

Countywide 08 1200EST 0 0 Heavy Rain
09 0130EST

Orange County

Countywide 08 1300EST 0 0 Heavy Rain
09 0100EST

Putnam County

Countywide 08 1300EST 0 0 Heavy Rain
09 0100EST

Suffolk County

Countywide 08 1300EST 0 0 Heavy Rain
09 0300EST

The remnants of Tropical Storm Josephine moved rapidly northeast, off the Atlantic Coast during Tuesday, October 8th. It passed east of Long Island just after midnight on October 9th.

It produced 1 to 3 inches of rain that caused localized flooding of streets and poor drainage areas across the region. This low also caused strong gusty winds.

Here are selected rainfall amounts for:

New York City: from 1.61 inches at LaGuardia Airport to 2.18 inches at Kennedy Airport. At Central Park, 1.90 inches was measured.

Nassau County: from 1.37 inches at Levittown to 2.60 inches at Lynbrook.

Suffolk County: from 2.32 inches at the National Weather Service Office in Upton to 2.83 inches at Bridgehampton.

Westchester County: 1.94 inches at Westchester County Airport.

Rockland County: from 1.38 inches at West Nyack to 1.52 inches at Suffern.

Orange County: from 0.98 inches at Walden to 1.80 inches at Sterling Forest.

Most wind gusts measured at the airports were from 40 to 50 mph. However, a 58 mph wind gust was measured at Suffolk County Airport in Westhampton Beach.

NYZ081

Southeast Suffolk

08 2045EST 0 0 High Wind (G50)

Storm Data and Unusual Weather Phenomena

October 1996

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

NEW YORK, Coastal

The remnants of Tropical Storm Josephine moved rapidly northeast just off the Atlantic Coast during Tuesday, October 8th. It moved east of Long Island just after midnight on October 9th. It produced gale force winds at sea and a peak wind gust of 58 mph at Suffolk County Airport in Westhampton. At 9 pm, Bouy 44025 (about 20 miles southwest of Fire Island Inlet) measured sustained northeast winds at 40 knots with gusts to 52 knots.

**NYZ071-073>074-
077>081**

Southern Westchester - Bronx - Richmond (Staten Is.) - Nassau - Northwest Suffolk - Northeast Suffolk - Southwest Suffolk - Southeast Suffolk

19 1000EST 2100EST 3 0 High Wind (G80)

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low intensified as it moved slowly off the Southern New Jersey Coast on Saturday, the 19th.

As the difference in pressures increased, strong gusty east winds developed across the region by Saturday morning. High winds combined with torrential rain to down numerous trees and power lines. In Nassau County, several trees were downed from high winds in Syosset. In Staten Island, high winds downed power lines that trapped people in their cars. In addition, Bayonne Bridge was closed due to high winds. In the Bronx, high winds ripped off the surface of the roof on Building 13 in Co-op City.

High winds that downed trees were directly responsible for 3 deaths:

In Babylon (Southwest Suffolk County), a huge tree snapped in the wind and fell diagonally across a street. The tree fell on and crushed a 12 year old boy.

In Southern Westchester County: In Hasting-On-Hudson, a man died when a tree fell onto his car while driving along Rte. 9. In Hawthorne, another man died when a tree fell onto his car while driving on the Saw Mill Parkway.

Here are selected peak wind gusts for:

Northwest Suffolk County: 63 mph at Rocky Point.

Southwest Suffolk County: 81 mph at Fire Island.

Southeast Suffolk County: 92 mph at the United States Coast Guard Station at Shinnecock.
M12UT, M34VE, M79VE

**NYZ067>070-072-
075>076**

Orange - Putnam - Rockland - Northern Westchester - New York (Manhattan) - Kings (Brooklyn) - Queens

19 1000EST 2200EST 0 0 Wind

A Nor'Easter produced strong gusty east winds and heavy rain. Peak wind gusts from 30 to around 55 mph combined with heavy rain to down numerous trees and power lines across the entire region.

Here are selected peak wind gusts for:

New York County: 34 mph at Central Park.

Queens County: from 46 mph at LaGuardia Airport to 56 mph at Kennedy Airport.

Orange County: 32 mph at Sterling Forest.

Rockland County: 45 mph at West Nyack.

NYZ072>073-076>080

New York (Manhattan) - Bronx - Queens - Nassau - Northwest Suffolk - Northeast Suffolk - Southwest Suffolk

19 1100EST 1900EST 0 0 11.5M Coastal Flood

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low intensified and moved slowly off the Southern New Jersey Coast on Saturday, the 19th.

East winds developed across the region during the 18th. As the difference in pressure systems increased, east winds also increased. Over the sea, sustained wind speeds reached gale force (34 knots) Friday night and continued through Saturday. Strong east winds blowing over a long distance caused tides to average 3 to 6 feet above normal. Tide anomalies were 5.49 feet above normal at Willets Point at 5 pm and 3.62 feet above normal at the Battery at 2:18 pm. Widespread minor to major coastal flooding

Storm Data and Unusual Weather Phenomena

October 1996

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

and beach erosion resulted during Saturday afternoon and evening high tides.

In New York City, several hundred homes were damaged with close to \$15 million in damages to public facilities. The areas hardest hit were in Queens and Bronx Counties:

In Queens, 300 homes were damaged in Bayside.

In the Bronx, 239 homes were damaged on City Island.

Damage included basement and first floor flooding in single and multiple family homes. Many vehicles were damaged from being submerged in water. Many public facilities including 10 waste-water treatment plants, hospitals, correctional facilities, schools, parks, and beaches were damaged.

In Manhattan, up to 3 feet of water covered streets around the NY Post Building. Water overflowed the seawall at the Battery and at South Street.

In Bayville of Nassau County, up to 3 feet of water covered many streets. More than 100 homes were damaged and dozens of cars were totally damaged in flood waters. The hardest hit areas in East Bayville were on and around 5th, 6th, 7th, 1st, and 2nd Streets. Water flooded the causeway to Centre Island, where major flooding also occurred. The streets of many south shore communities like the village of Freeport were under up to 3 feet of water and over 1400 homes suffered damage.

In Eatons Neck of Northwest Suffolk County, water breached Asharoken Ave., the only road connecting Eatons Neck and Asharoken to Long Island. The road was closed to traffic about 3:30 pm, a couple of hours before high tide.

In Northeast Suffolk County, coastal flooding and serious erosion caused major damage to the Orient Point State Park. Tides were estimated up to 6 feet above normal. South Jamesport experienced significant flooding and beach erosion. Significant flooding occurred across Peconic Bay Blvd. and Peconic Avenue.

In Westchester County, mostly minor coastal flooding occurred. Up to 75 homes received only minor damage.

The five boroughs of New York City, Nassau, and Suffolk Counties were declared Presidential Disaster Areas.

Nassau County Countywide	19	1130EST 2000EST			0	0			Flood
Kings County Brooklyn	19	1230EST			0	0			Flood
Suffolk County Lindenhurst to Babylon	19	1255EST			0	0			Flood
Queens County Countywide	19	1300EST 2359EST			0	0	3.6M		Flood
Suffolk County Southampton	19	1300EST			0	0			Flood
Richmond County Countywide	19	1310EST 1900EST			0	0			Flood
Bronx County Riverdale	19	1330EST			0	0			Flood
New York County New York	19	1410EST 1530EST			0	0			Flood
Bronx County Countywide	19	1540EST			0	0			Flood
Kings County Countywide	19	1540EST 2000EST			0	0	1.5M		Flood
New York County Countywide	19	1540EST 2000EST			0	0			Flood
Rockland County Countywide	19	1600EST			0	0			Flood

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
NEW YORK, Coastal									
Westchester County									
Countywide	19	1650EST			0	0			Flood
Suffolk County									
Middle Is	19	1830EST			0	0			Flood
Putnam County									
Countywide	19	1900EST			0	0			Flood
Orange County									
Cornwall to Highland Falls	19	1930EST			0	0			Flood
Rockland County									
Suffern	19	1930EST			0	0			Flood
	20	1730EST							

On Friday October 18th, a strong low pressure system developed on a cold front over the DelMarVa Peninsula. With a high pressure system in place across Northern New England, the low slowly intensified and moved slowly off the Southern New Jersey Coast during Saturday October 19th.

The increasing difference in pressures caused strong and gusty east winds, which also transported abundant moisture from the Atlantic Ocean across the region. Heavy flood producing rains along with minor to major coastal flooding occurred.

Rain began during the early morning on the 19th and ended shortly after midnight on the 20th. Three to five inches of rain fell, with isolated higher amounts.

Heavy rain caused serious widespread street and poor drainage flooding: Rte. 218 between Cornwall and Highland Falls (Orange County) was closed due to flooding. In Westchester County, flooding caused the closures of the Hutchinson River Parkway between Wolfs Lane and East 3rd Street and the Bronx River Parkway between Sprain Brook Parkway and Scarsdale Road. Serious street flooding was reported on many other roads including South Street (around the South Street Seaport) in Manhattan, the Belt Parkway in Kings County and the Long Island Expressway along Nassau and Suffolk Counties.

Heavy rain also caused river flooding: The Mahwah River at Suffern was above its' 4 foot flood stage from 8:30 pm on the 19th through 6:30 pm on the 20th. Its' crest stage was 5.22 feet at 4:30 am on the 20th.

In Queens, while a plane was landing in heavy rain and strong gusty winds, it hit some approach lights on the side of the runway. After that, the nosegear collapsed and it started to skid and came to a stop at the east end of the airport. Four of 63 people on Delta Flight 554 suffered minor injuries while they evacuated the plane. Flushing and Springfield Gardens, two low-lying areas with inadequate drainage systems were particularly hit hard by heavy rains. Serious flooding of basements and first floors caused damaged to 226 homes in Flushing and 70 homes in Springfield Gardens. Numerous cars were also damaged in flood waters.

Here are selected rainfall amounts for:

New York City: from 3.10 inches at Kennedy Airport to 4.78 inches in Northeast Flushing. At Central Park, 4.35 inches was measured, which set a new daily record.

Orange County: from 2.07 inches at Walden to 3.52 inches at Port Jervis.

Rockland County: from 2.94 inches at West Nyack to 4.66 inches at Suffern.

Westchester County: from 2.37 inches at Ossining to 4.98 inches at Dobbs Ferry.

Nassau County: from 1.66 inches at Levittown to 4.90 inches at Lynbrook.

Suffolk County: from 2.10 inches at Farmingdale Airport to 5.86 inches at Riverhead.

NEW YORK, East

NYZ054-063>066

Eastern Rensselaer - Western Ulster - Eastern Ulster - Western Dutchess - Eastern Dutchess

19	1500EST	0	0	41K	Strong Wind
20	0400EST				

A nearly stationary low pressure system over southern New Jersey and southeast Pennsylvania produced heavy rains and strong gusty winds across eastern New York from Saturday afternoon October 19 to the early morning hours of Sunday October 20. The storm dumped 3 to 5 inches of rain across much of the Catskills and the Mid-Hudson Valley. Due to the combination of saturated soil and water laden trees, strong gusty winds downed trees and power lines across Dutchess and Ulster Counties. In Dutchess County nearly 4,000 customers lost power. The southern and eastern parts of the county were hardest hit. Locations which saw the most widespread damage included: Stormville, Hopewell Junction, Millerton and Clinton Corners. In Ulster County approximately 2,000 customers lost power. The greatest damage occurred in the City of Kingston, Village of Ellenville, Town of Denning, Woodstock and Saugerties. In the Town of Denning at Sundown, 7 utility poles had to be replaced. In Rensselaer County at Stephentown, an uncalibrated anemometer reported a gust to 60 miles an hour.

Storm Data and Unusual Weather Phenomena

October 1996

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

NEW YORK, East

Greene County West Kill	20	0500EST 1400EST			0	0	20K		Flash Flood
Ulster County Ellenville/Highland	20	0500EST 1200EST			0	0	12K		Flash Flood
NYZ040-047>048	Montgomery - Schoharie - Western Schenectady				0	0	8K		Flood
	20	0700EST							
	21	0800EST							
Greene County Windham	20	1400EST 2000EST			0	0	20K		Flash Flood

On October 19 and 20 a nearly stationary low pressure system over southern New Jersey and southeast Pennsylvania produced heavy rains across much of eastern New York. Rainfall totals in the Catskills averaged several inches, with 5.60 inches at East Jewitt in Greene County and 6.95 inches at Slide Mountain in Ulster County. The heavy rain produced flooding across parts of Greene and Ulster Counties and along the Schoharie Creek. In Greene County, several roads were flooded and closed. County route 21 in Windham and county route 26 in Greenville were closed. Local street flooding occurred in Windham, Oak Hill, Durham and Maplecrest. Three temporary bridges were damaged or destroyed. Two were located in West Kill, off county route 6 and the other was in Lanesville off state highway 214. Minor flooding also occurred along the Schoharie Creek in Greene County. At Prattsville the creek rose 1.5 feet above flood stage. In Ulster County, several roads were also flooded and closed, including in the Village of Ellenville and at Highland. Minor flooding occurred along the Esopus Creek which crested just over flood stage early Sunday morning October 20. Minor flooding occurred along the Schoharie Creek in Schoharie, Schenectady and Montgomery Counties. In Schoharie County, route 30 between Blenheim and Breakabeen was under water on Sunday October 20 from late morning until mid-afternoon. Bielfeldt Road and Redling Road in Schoharie County were also flooded. The flooding was confined to low-land flooding along the creek and several roads. No damage was incurred to houses.

NEW YORK, North

NONE REPORTED.

NEW YORK, West

Monroe County Rochester	19 20	1800EST 0000EST			0	0	100K		Flash Flood
Ontario County Canandaigua	19 20	1800EST 0000EST			0	0	50K		Flash Flood
Orleans County Albion	19 20	1800EST 0000EST			0	0	50K		Flash Flood
Wayne County Newark	19 20	1800EST 0000EST			0	0	75K		Flash Flood
Monroe County Rochester	20	0000EST 0600EST			0	0	100K		Flash Flood
Ontario County Canandaigua	20	0000EST 0600EST			0	0	50K		Flash Flood
Orleans County Albion	20	0000EST 0600EST			0	0	50K		Flash Flood
Wayne County Newark	20	0000EST 0600EST			0	0	75K		Flash Flood

An intense storm over the mid-Atlantic states pumped excessive rains all the way back to parts of western New York. Rainfall totals of three to four inches...onto already saturated grounds...were common across the Genesee Valley and Western Finger Lakes region. The flash floods closed roads and flooded basements.

NYZ010	Erie	30	1147EST 1600EST		0	0	100K		High Wind (G51)
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Low pressure moving northeast across Lake Superior brought strong winds to the area. The winds brought down trees, tree limbs, and power lines. Over 10,000 homes were without power. The winds tore a large section of a roof off a Buffalo Raceway barn in Hamburg. In Tonawanda, a car was crushed by a falling tree. Winds gusted to 60 mph at the Buffalo airport and to 69 mph at the Buffalo Coast Guard Station. Minor flooding was also reported along the Lake Erie shoreline as the strong southwest winds produced 10-15 foot waves.

NYZ002	Orleans	30	1200EST 1600EST		0	0	25K		High Wind
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Low pressure moving northeast across Lake Superior brought strong winds to the area. The winds brought down trees, tree limbs, and power lines. Over 2000 were without power.

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
<u>NEW YORK, West</u>										
NYZ012	Wyoming	30	1205EST		0	0	35K		High Wind	
			1600EST						Low pressure moving northeast across Lake Superior brought strong winds to the area. The winds brought down trees, tree limbs, and power lines. Over 2000 were without power.	
NYZ011	Genesee	30	1210EST		0	0	50K		High Wind	
			1600EST						Low pressure moving northeast across Lake Superior brought strong winds to the area. The winds brought down trees, tree limbs, and power lines. Over 2000 were without power. In Batavia, the winds blew down a large carnival tent and destroyed the tables and chairs that had been set up.	
NYZ001	Niagara	30	1245EST		0	0	50K		High Wind	
			1600EST						Low pressure moving northeast across Lake Superior brought strong winds to the area. The winds brought down trees, tree limbs, and power lines. Over 10,000 were without power. In Newfane, a large tree crashed onto a moving tractor trailer. No one was injured.	
NYZ003	Monroe	30	1300EST		0	2	25K		High Wind	
			1600EST						Low pressure moving northeast across Lake Superior brought strong winds to the area. The winds brought down trees, tree limbs, and power lines. In Penfield, two persons were injured when a tree fell on the car they were driving in. Winds gusted to 52 mph.	
<u>NORTH CAROLINA, Central</u>										
Wayne County	Goldsboro	08	0630EST		0	0			Flash Flood	
			0930EST						Heavy rain associated with Tropical Storm Josephine flooded highway 70 with 3 feet of water. Many secondary roads also flooded throughout the county.	
Cumberland County	Fayetteville	08	0630EST		0	0			Flash Flood	
			0930EST						Heavy rain associated with Tropical Storm Josephine flooded low lying areas. Many small streams overflowed and flooded secondary roads throughout the county. Urban flooding also occurred in Fayetteville.	
Sampson County	Clinton	08	0630EST		0	0			Flash Flood	
			0930EST						Heavy rain associated with Tropical Storm Josephine caused considerable urban flooding in Clinton. Small streams also overflowed and flooded secondary roads throughout the county.	
Wake County	Raleigh	08	0700EST		0	0			Flash Flood	
			1000EST						Heavy rains associated with Tropical Storm Josephine flooded several major roads in Raleigh including Atlantic Ave, New Bern Ave, Glenwood and portions of Avent Ferry. Small streams overflowed onto secondary roads throughout the county.	
Anson County	White Store Dam	11	1330EST		0	0			Flash Flood	
		12	0130EST						Emergency management in Anson county reported that water was leaking from the White Storm Dam on Bell Creek. The leak was getting worse with time and dam failure was likely. The dam impounds 175 acre/feet of water and is 20 feet high. The water flooded low lying areas downstream.	
Anson County	White Store Dam	12	0235EST		0	0			Flash Flood	
			1900EST						The White Storm Dam on Bell Creek continued to leak throughout the night. An inspector estimated that the dam would fail in less than 24 hours. Roads were closed south of the dam and homes below the dam were evacuated. Fortunately, the lake drained down to 8 feet by afternoon and the dam did not fail.	
Randolph County	Randleman	18	1710EST		0	0			Hail (0.75)	
Guilford County	Julian, Climax	18	1720EST		0	0			Hail (0.75)	
									Dime and nickel size hail covered the ground on highway 421 between Julian and Climax. Auto traffic piled the hail up on the side	

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NORTH CAROLINA, Central

of the road.

NORTH CAROLINA, Central Coastal

NCZ029-044>047-079>081-090>095-098-103>104	Martin - Pitt - Washington - Tyrrell - Western Dare - Greene - Beaufort - Western Hyde - Duplin - Lenoir - Jones - Craven - Pamlico - Carteret - Onslow - Eastern Dare - Eastern Hyde									
	08	0100EST 1300EST			0	0				Tropical Storm
The remnants of Tropical Storm Josephine moved up the Eastern Seaboard and across eastern North Carolina Tuesday morning. Heavy rains - as much as 6 inches - flooded roads and brought new concerns about rising rivers that had just fallen back to within their banks after Hurricane Fran. New River Air Station in Jacksonville reported 6 inches of rain. Several tornadoes and high winds were spawned by the tropical depression. In Onslow County, ten inches of water flooded the Agricultural Building. Highway 17 in Jones County between Maysville and Pollocksville was under 8 inches of water. Serious flooding of rural roads was reported in Duplin County. Over 5 inches of rain in Belhaven flooded all of the downtown businesses. In Greenville, four inches of rain fell in 3 1/2 hours flooding many streets and parking lots.										
Duplin County Wallace	08	0600EST 1300EST			0	0				Flash Flood
Jones County Maysville	08	0600EST 1100EST			0	0				Flash Flood
Onslow County Jacksonville	08	0600EST 1200EST			0	0	80K			Flash Flood
Onslow County Jacksonville	08	0630EST	0.3	50	0	0	60K			Tornado (F1)
Tornado ripped through the Courthouse Bay section of Camp Lejeune severely damaging 4 homes and lifting a Bronco and throwing it 75 yards.										
Dare County Frisco	08	0720EST	0.3	50	0	0	10K			Tornado (F0)
Several trailers knocked off foundations and numerous trees down.										
Jones County Pollocksville to 4 N Pollocksville	08	0755EST 0800EST			0	0				Thunderstorm Wind
Several trees down and outbuildings damaged along Highway 17 between Pollocksville and the Craven County line.										
Craven County 5 N New Bern	08	0800EST	0.6	50	0	0	15K			Tornado (F1)
Touchdown just north of Antioch Road and Highway 17 ripped the roof off a farmhouse and downed several trees.										
Beaufort County Belhaven	08	0800EST 1300EST			0	0	50K			Flash Flood
Beaufort County 5 SE Washington	08	0830EST	0.5	50	0	1	30K			Tornado (F1)
Touchdown on Camp Leach Road. Two mobile homes destroyed. One person was briefly trapped inside.										
Beaufort County 3 W Bath	08	0833EST 0834EST	1	50	0	0	30K			Tornado (F2)
Trailer totally demolished and several homes damaged on Highway 92.										
Carteret County Emerald Isle	08	0900EST 1300EST			0	0				Flash Flood
Pitt County Greenville	08	0900EST 1400EST			0	0	100K			Flash Flood
Carteret County Salter Path to Atlantic Beach	08	0915EST 0920EST			0	0	20K			Thunderstorm Wind (G60)
Squalls in thunderstorms along Bogue Banks damaged a 45 unit apartment complex in Smugglers Cove.										
Onslow County Swansboro	08	0915EST			0	0				Thunderstorm Wind (G51)

NORTH CAROLINA, Extreme Southwest

NONE REPORTED.

NORTH CAROLINA, North Coastal

NCZ012>017-030>032-102	Northampton - Hertford - Gates - Pasquotank - Camden - Western Currituck - Bertie - Chowan - Perquimans - Eastern Currituck									
	07	1800EST			0	0	100K			Tropical Storm
	08	1800EST								
Remnants of Tropical Storm Josephine moved quickly up the East Coast during Monday night and Tuesday, October 7th and 8th,										

Storm Data and Unusual Weather Phenomena

October 1996

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

NORTH CAROLINA, North Coastal

affecting northeast North Carolina. The storm produced 3.0 to 5.0 inches of rain across most of the area, but as much as 7.2 inches was reported in Currituck County. The heavy rain resulted in flooding of several roads and homes. Several trees and power lines were blown down resulting in some minor structural damage and scattered power outages.

NORTH CAROLINA, Northwest and North Central

NONE REPORTED.

NORTH CAROLINA, South Coastal

Brunswick County

Calabash to
Southport

08

0400EST
0700EST

0

0

Storm Surge

Remnants of Tropical Storm Josephine moving up the South Carolina coast circulated south winds gusting near 70 mph, causing high tides 3 feet higher and seawater flooding around one foot deep on sections of roads on barrier islands and Southport. Beach erosion of 6 to 9 feet removed sand placed earlier in season by Hurricanes Bertha and Fran.

Brunswick County

5 S Supply to
4.6 S Supply

08

0445EST
0446EST

0.4

15

0

0

100K

Tornado (F0)

Tornado skipped through Maple Creek subdivision and Stanbury Rd, Destroying three mobile homes and damaging a house. 72 year old man levitated as roof over his head was lifted by vortex.

New Hanover County

Wilmington

08

0500EST
0700EST

0

0

Storm Surge

Due to strong south winds, sustained near 40 mph and gusting 64 mph at it's mouth, the Cape Fear River with the morning high tide rose to cover Water Street.

Brunswick County

Calabash to
Leland

08

0500EST
0900EST

0

0

Flash Flood

Rains associated with the remnants of Tropical Storm Josephine measured up to 8 inches, causing widespread street flooding and making morning travel hazardous.

Brunswick County

7 N Southport

08

0520EST
0533EST

0

0

Thunderstorm Wind (G55)

Tree limbs were downed on NC 133 near Orton Pond.

Columbus County

Chadbourn to
Whiteville

08

0530EST
0600EST

0

0

50K

Thunderstorm Wind (G55)

As remnants of Tropical Storm Josephine passed over, gusty winds downing tree limbs on roads contributed to more than a dozen car accidents.

Pender County

Currie to
Burgaw

08

0555EST
0615EST

0

0

Thunderstorm Wind (G55)

With the remnants of Tropical Storm Josephine, winds downed trees and limbs and made travel hazardous.

New Hanover County

Ft Fisher to
Castle Hayne

08

0600EST
0900EST

0

0

Flash Flood

Heavy rains from remnants of Tropical Storm Josephine measured around 5 inches during the early morning hours, causing widespread street flooding.

Pender County

Scotts Hill to
Watha

08

0600EST
1100EST

0

0

Flash Flood

Nearly 8 inches of rain in places forced widespread street flooding and some homes were flooded over the floors.

New Hanover County

South Wilmington

08

0640EST
0641EST

0.2

10

0

0

Tornado (F0)

Report of tornado roar, with tree tops damaged south of Monkey Junction along Masonboro Loop Rd.

Bladen County

Bladenboro to
White Lake

08

0700EST
1000EST

0

0

Flash Flood

Heavy rains from the remnants of Tropical Storm Josephine measured up to 6 inches and made roads impassable.

Columbus County

Tabor City to
Bolton

08

0700EST
1100EST

0

0

Flash Flood

Remnants of Tropical Storm Josephine rained around 6 inches in three hours, making roads impassable. A woman and child were rescued from a car in Chadbourn, while a dozen more cars were lost to flood damage. County schools were closed. Lake Tabor came over its banks, flooding local area.

NORTH CAROLINA, Southwest

NCZ058

Graham

23

0100EST
0300EST

0

0

High Wind (G50)

In Graham county, a number of trees and limbs were downed by gradient winds ahead of a strong cold front. A cable supporting a

Storm Data and Unusual Weather Phenomena

October 1996

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

NORTH CAROLINA, Southwest

tower was broken and some residents reported mobile homes were shaken violently by the wind. High elevations in neighboring counties reported strong winds but no damage.

NORTH DAKOTA, Central and West

NDZ001>004-009>012-017>019-021-031>033-040>041-043>044 Divide - Burke - Renville - Bottineau - Williams - Mountrail - Ward - Mchenry - Mckenzie - Dunn - Mercer - Mclean - Golden Valley - Billings - Stark - Slope - Hettinger - Bowman - Adams

20 1630CST 0 2 Winter Storm
21 0400CST

The first winter storm of the year moved through Montana and slowed over North Dakota. Unseasonably warm air ahead of the low was replaced by cold arctic air. Snow began falling in the western part of the state on the evening of Sunday, Oct. 20th and continued into the morning of the 21st. 2 injuries were reported during the winter storm near Williston in an auto accident. The ages of those involved were not reported, nor were the extent of their injuries. The heaviest snow reported with the storm was 6 inches at Bowman, Williston and Berthold. 4 inches of snow fell at Minot. North winds up to 35 mph also created the first below zero wind chill values of the season. The winds also hampered travel with blowing snow and visibilities down to less than 1/4 mile. No road closures were reported however.

NORTH DAKOTA, East

Ransom County
1 S Lisbon
NDZ039

26 1438CST 0 0 Hail (0.75)
29 2205CST 0 0 2K High Wind (G53)

A strong cold front swept across the region. Intense northwest winds developed behind the front during the evening of the 29th and continued into the early hours of the 30th. Wind gusts up to 65 mph were noted.

OHIO, East OHZ040-059

Carroll - Belmont
30 0800EST 0 0 14K High Wind
1200EST

Strong winds, associated with an intense cold front, caused some damage across parts of east central Ohio.

In Carroll County, large trees were downed near Harlem Springs.

In Belmont County, numerous limbs fell on roads and vehicles in St. Clairsville. Some trees and branches were reported downed in several areas across the county.

A tree fell onto a truck on Belmont 56 North with two people inside. No injuries were reported. Power lines were downed on Banfield Road in St. Clairsville. Belmont County Road 4 was closed for 12 hours after a tree fell and downed some telephone wires.

OHIO, North

Stark County
Paris Township

18 0535EST 0 0 75K Lightning
Lightning struck and virtually destroyed a house. The second floor was gutted by flames and the entire house sustained smoke damage.

Lorain County
Countywide

18 1441EST 0 0 Flash Flood
Heavy thunderstorm rain caused flooding of streets and low lying areas. Several streams were reported out of their banks in the northeast part of the county.

Lucas County
Whitehouse

29 2325EST 0 0 Thunderstorm Wind (G50)
Many trees were downed.

Fulton County
Metamora

29 2349EST 0 0 Thunderstorm Wind (G61)
Winds were estimated gusting up to 70 miles per hour.

Lucas County
Northern Half

29 2359EST 0 0 Thunderstorm Wind (G52)
Trees were downed, particularly at Toledo and Sylvania. Winds were estimated gusting to 60 mph.

Henry County
New Bavaria

30 0003EST 0 0 Thunderstorm Wind (G50)
Trees were downed.

OHZ002>003-005>014-017>023-027>033-036>038-047 Fulton - Lucas - Henry - Wood - Ottawa - Sandusky - Erie - Lorain - Cuyahoga - Lake - Geauga - Ashtabula - Hancock - Seneca - Huron - Medina - Summit - Portage - Trumbull - Wyandot - Crawford - Richland - Ashland - Wayne - Stark - Mahoning - Marion - Morrow - Holmes - Knox

30 0010EST 1 2 5.3M 2.3M High Wind (G69)
1150EST

A deep low pressure moving east across Ontario Canada brought winds of 60 to 70 miles per hour, with higher gusts, to Northern Ohio. Trees, limbs and power lines were downed, some across roads, and others on cars, and buildings causing considerable damage. In Cuyahoga County, at Cleveland Hopkins Airport, a stewardess was blown off the steps of a commuter plane but was not injured. At least 2 cars, a truck and a house were struck by falling trees in Bay Village and shingles were blown from roofs in Berea. In Wayne County, signs were ripped from their standards and dropped on roads and a landfill was closed in Paint

Storm Data and Unusual Weather Phenomena

October 1996

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, North

Township because of flying metal and tin. At Apple Creek, the arc from wind whipped downed electrical wires leading to a barn may have ignited a fire which was then whipped into an inferno by the high winds. The barn and some of the cattle in it were destroyed. A 16 ton concrete wall at a Revco drugstore under construction in Akron in Summit County was toppled and, in Springfield Township, a storage facility under construction was destroyed. Also in Summit County, a 45 year old man, was struck by a falling tree at Raintree Country Club and died of head injuries. A wind gust of 67 miles per hour was reported at Kent in Portage County. A wind gust of 79 miles per hour was reported at Fairport Harbor in Lake County. A 71 mile per hour wind gust was reported in Ashtabula County, where a tree fell on a house in Geneva. In Jackson Township in Mahoning County, a construction barrel was blown into the path of a car, causing the car to collide with a truck and a concrete wall on Interstate 80. The driver of the car was treated for injuries. A 68 mile per hour wind gust was reported at Toledo Express Airport in Lucas County. On Interstate 75 near Bowling Green in Wood County, a wind gust caused a semi truck to veer left of center and sideswipe another rig. There were no injuries. Also in Bowling Green, at least one tree fell on a house, one tree fell on two cars and a dumpster landed on another car. In Perrysburg Township, also in Wood County, the Islamic Center of Toledo was damaged when two minarets on top of a building were toppled and in Liberty Township, a wind gust forced a car into a utility pole, slightly injuring the driver. In Sandusky County, corn stalks that had been injured by corn borers, were very susceptible to the high winds. The loss to the corn crop was estimated at 10 to 30 percent. In Washington Township in Richland County, half the roof was blown from a barn, crumpled, and scattered across a road and a field. Tin strips dangled like confetti from what was left of the roof.

M45GF

Hancock County Countywide

30 0035EST 0 0 2K Thunderstorm Wind (G50)
Trees and power lines were downed and, in Findlay, signs were blown off commercial buildings.

Sandusky County Countywide

30 0045EST 0 0 Thunderstorm Wind (G50)
Trees and wires were downed, particularly in the Fremont area.

Seneca County Countywide

30 0050EST 0 0 75K Thunderstorm Wind (G52)
Winds, gusting to 60 miles per hour, downed trees, power lines and large limbs, especially in Fostoria and Tiffin. At least four houses and two vehicles were hit by falling trees in Tiffin.

Ottawa County Countywide

30 0055EST 0 0 Thunderstorm Wind (G55)
Trees and limbs were downed, some on power lines, especially in the area of Oak Harbor.

Erie County Countywide

30 0111EST 0 0 Thunderstorm Wind (G50)
Trees were downed in several locations, some across roads, especially in Marietta Township and Berlin Heights.

Huron County Norwalk

30 0120EST 0 0 Thunderstorm Wind (G50)
Large limbs were downed, at least one on a power line.

Lorain County Countywide

30 0130EST 0 0 200K Thunderstorm Wind (G50)
Trees, limbs and power lines were downed in several locations, particularly in the Lorain and Elyria areas. A wind gust of 58 miles per hour was reported in the city of Lorain where a large limb fell on a police cruiser, breaking the windshield, at least one other tree fell on a car and a shed was blown into another car. Windows were blown out at Discount Auto Sales. Also, in the city of Lorain, a large tree fell on St. Lad's Club and crushed the back hall. In Elyria, a cement block wall on the third floor of a partially renovated apartment building was blown over.

Crawford County Bucyrus

30 0157EST 0 0 2K Thunderstorm Wind (G50)
One tree was downed on a car and signs were blown over and damaged.

OHIO, Northwest

Williams County Bryan

29 2300EST 0 0 Thunderstorm Wind (G54)
2305EST
Trees and power lines were reported down in Bryan, Ohio.

Defiance County Defiance

29 2300EST 0 0 Thunderstorm Wind
2305EST
Trees and power lines were blown down by thunderstorm winds.

OHIO, Southeast

NONE REPORTED.

OHIO, Southwest

OHZ073

Ross

29 0200EST 0 0 10K High Wind (G50)
1000EST

Strong winds downed numerous trees, large limbs, and electrical lines which caused scattered power outages.

OHZ070

Butler

29 0200EST 0 0 50K High Wind (G50)
1000EST

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
<u>OHIO, Southwest</u>							
High winds blew off part of a warehouse roof which took down power lines. Around 1,700 customers lost power.							
OHZ061	Montgomery	29 0200EST			0 0	5K	High Wind (G50)
		1000EST					
Strong winds downed trees and power lines.							
Paulding County	Antwerp to Cecil	29 2315EST			0 0	3K	Thunderstorm Wind (G50)
		2320EST					
Numerous trees downed.							
Van Wert County	Willshire	29 2340EST			0 0	3K	Thunderstorm Wind (G50)
		2350EST					
Numerous trees downed.							
Darke County	Union City	30 0010EST			0 0	5K	Thunderstorm Wind (G50)
		0020EST					
Numerous trees and power lines downed.							
Putnam County	Pandora	30 0012EST			0 0		Thunderstorm Wind (G54)
		0015EST					
A thunderstorm produced a wind gust to 63 mph.							
Mercer County	Carthage	30 0015EST			0 0	5K	Thunderstorm Wind (G50)
		0020EST					
Numerous trees and power lines downed.							
Auglaize County	Countywide	30 0030EST			0 0	10K	Thunderstorm Wind (G50)
		0045EST					
Numerous power lines and large limbs downed.							
Shelby County	Botkins	30 0040EST			0 0	3K	Thunderstorm Wind (G50)
		0045EST					
Numerous large limbs downed.							
Logan County	Bellefontaine to Quincy	30 0050EST			0 0	5K	Thunderstorm Wind (G50)
		0110EST					
Numerous trees downed.							
Miami County	Bradford	30 0051EST			0 0	5K	Thunderstorm Wind (G50)
		0055EST					
Numerous trees downed. Powerline pole snapped.							
Hardin County	Kenton	30 0110EST			0 0	3K	Thunderstorm Wind (G50)
		0115EST					
Numerous trees downed.							
Champaign County	Countywide	30 0200EST			0 0	10K	Thunderstorm Wind (G50)
		0220EST					
Numerous trees and power lines downed.							
<u>OKLAHOMA, Extreme Southeast</u>							
Mccurtain County	1 SSW Battiest	20 2132CST			0 0		Lightning
Six head of cattle were struck by lightning and killed instantly while standing under a tree during a thunderstorm.							
Mccurtain County	8 W Broken Bow	21 0130CST			0 0		Hail (1.00)
Mccurtain County	Battiest	27 2250CST			0 0		Flash Flood
		28 0400CST					
Numerous reports of flooding across secondary roadways in extreme northern sections of the county.							
<u>OKLAHOMA, Northeast</u>							
Pawnee County	Terlton	20 2125CST			0 0		Hail (0.88)
Pawnee County	Terlton	20 2128CST			0 0		Hail (1.75)
Pawnee County	Terlton	20 2131CST			0 0		Hail (1.75)
Osage County	New Prue	20 2140CST			0 0		Hail (0.88)

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
KilledInjuredPropertyCrops									
OKLAHOMA, Northeast									
Osage County 5 E Hominy	20	2140CST			0	0			Hail (0.88)
Osage County New Prue	20	2149CST			0	0			Thunderstorm Wind (G52)
Osage County New Prue	20	2149CST			0	0			Hail (1.75)
Osage County Skiatook	20	2200CST			0	0			Hail (0.75)
Tulsa County 4 ENE Skiatook	20	2207CST			0	0			Hail (1.75)
Washington County Vera	20	2215CST			0	0			Hail (0.75)
Tulsa County 3 N Owasso	20	2221CST			0	0			Hail (0.88)
Tulsa County Sand Springs	20	2245CST 2315CST			0	0			Flash Flood
Tulsa County Tulsa	20	2245CST 2315CST			0	0			Flash Flood
Rogers County Claremore	20	2249CST			0	0			Hail (0.75)
Tulsa County Tulsa	20	2251CST			0	0			Hail (0.75)
Tulsa County Tulsa	20	2259CST			0	0			Hail (0.88)
Adair County Watts	21	0045CST			0	0			Hail (0.75)
Severe thunderstorms moved across northeast Oklahoma during the evening of October 20th and very early morning of October 21st. Thunderstorm winds gusted to 60 miles an hour and golfball size fell in New Prue, and hail up to golfball size covered the ground in Terlton. Golfball size hail also fell 4 miles east northeast of Skiatook, and dime to nickel size hail fell at several other locations in northeast Oklahoma. The thunderstorms also produced very heavy rainfall which resulted in street flooding in Sand Springs and in the city of Tulsa.									
Pittsburg County Hartshorne	31	1328CST			0	0			Hail (0.75)
Latimer County Bengal	31	1355CST			0	0			Hail (0.88)
Latimer County Bengal	31	1357CST			0	0			Hail (0.88)

Severe thunderstorms moved across northeast Oklahoma during the evening of October 20th and very early morning of October 21st. Thunderstorm winds gusted to 60 miles an hour and golfball size fell in New Prue, and hail up to golfball size covered the ground in Terlton. Golfball size hail also fell 4 miles east northeast of Skiatook, and dime to nickel size hail fell at several other locations in northeast Oklahoma. The thunderstorms also produced very heavy rainfall which resulted in street flooding in Sand Springs and in the city of Tulsa.

Pittsburg County Hartshorne	31	1328CST			0	0			Hail (0.75)
Latimer County Bengal	31	1355CST			0	0			Hail (0.88)
Latimer County Bengal	31	1357CST			0	0			Hail (0.88)

A severe thunderstorm moved across southern Pittsburg and southern Latimer Counties during the afternoon of October 31st and produced nickel size hail at Bengal and dime size hail at Hartshorne.

OKLAHOMA, Panhandle

NONE REPORTED.

OKLAHOMA, Western, Central and Southeast

OKZ013-018>020-025- 027-035-037>041- 043>044-046>049	Noble - Kingfisher - Logan - Payne - Oklahoma - Grady - Kiowa - Tillman - Comanche - Stephens - Garvin - Murray - Coal - Cotton - Carter - Johnston - Atoka - Pushmataha								
20	1615CST	0	0	Summary: Oct. 20-21					
21	0900CST								

Severe thunderstorms developed over southwest Oklahoma and western north Texas during the late morning of the 20th. The storms then moved across central and southern Oklahoma during the afternoon and evening, producing large hail, damaging winds, and localized flash flooding.

Hail as large as softballs fell in Empire City in Stephens County. By far the most significant damage of the evening occurred in Duncan in Stephens County, where baseball sized hail resulted in widespread damage throughout the southern two-thirds of town.

The strongest estimated wind speed was 100 mph, reported by a spotter on the Garvin/Murray County line. Severe thunderstorm wind damage occurred southwest of Snyder in Kiowa County, east of Stillwater in Payne County, in Coleman and Tishomingo in Johnston County, in Durant in Bryan County, and northwest of Kosoma in Pushmataha County.

After several rounds of thunderstorms tracked across southern Oklahoma, flash flooding became a problem, particularly in southeastern parts of the state. Flash flooding reports were received from Davis in Murray County, south of Caney in Atoka County, Antlers in Pushmataha County, Durant in Bryan County, and Duncan in Stephens County.

See following individual Storm Data entries for further details and additional reports.

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
<u>OKLAHOMA, Western, Central and Southeast</u>										
Tillman County 4 SW Frederick	20	1620CST			0	0			Hail (1.00)	
Tillman County 5 N Manitou	20	1655CST			0	0			Thunderstorm Wind (G56)	
Wind gusts were estimated at 65 mph on US Highway 183.										
Comanche County 3 NW Chattanooga	20	1715CST			0	0			Hail (0.88)	
Comanche County 7 SW Lawton	20	1730CST			0	0			Hail (1.00)	
Cotton County 5 S Hulen	20	1750CST			0	0			Hail (1.00)	
Stephens County Duncan	20	1815CST 1830CST			0	0			Hail (2.75)	
Hail as large as baseballs fell over most of Duncan, causing widespread damage. The greatest damage occurred across the southern two-thirds of town where numerous house and business windows and car windshields were broken. One police car completely lost its windshield in the hail storm.										
Stephens County 4 W Duncan	20	1821CST			0	0			Hail (1.75)	
Stephens County 1 N Empire City	20	1821CST			0	0			Hail (1.75)	
Stephens County 2 SW Duncan	20	1826CST			0	0			Hail (2.75)	
Stephens County 2 S Duncan	20	1828CST			0	0			Hail (1.75)	
Stephens County 11 W Duncan	20	1845CST			0	0			Hail (2.75)	
Stephens County 5 W Velma	20	1846CST			0	0			Hail (0.88)	
Stephens County Velma	20	1851CST			0	0			Hail (1.75)	
Kingfisher County Kingfisher	20	1910CST			0	0			Hail (1.00)	
Kingfisher County 1 W Kingfisher	20	1915CST			0	0			Hail (1.00)	
Stephens County Empire City	20	1915CST			0	0			Hail (4.50)	
Hail as large as softballs broke out car and truck windows, windshields, and headlights.										
Stephens County Duncan	20	1923CST			0	0			Hail (0.75)	
Kiowa County 2 W Snyder	20	1924CST			0	0			Hail (1.00)	
Kiowa County 3 SW Snyder to 3 SE Snyder	20	1924CST			0	0	75K		Thunderstorm Wind	
Two sheds (25x30 and 25x50 ft) blew into the west and north side of a house. As both sheds were moving, they smashed a parked car. Numerous boards were also blown into the same house. Damage was estimated at \$75,000. Also, power lines were blown down at the same location.										
Comanche County 3 N Chattanooga	20	1930CST			0	0			Hail (0.88)	
Carter County 1 W Alpers	20	1936CST			0	0			Hail (0.88)	
Logan County Crescent	20	1937CST			0	0			Hail (1.00)	
Stephens County 5 S Duncan	20	2000CST			0	0			Flash Flood	
Highway 81 between Duncan and Comanche was closed due to water flowing over the road.										
Comanche County Lawton	20	2007CST 2012CST			0	0			Hail (1.75)	
Murray County Davis	20	2020CST			0	0			Hail (0.75)	
Noble County 3 S Perry	20	2030CST			0	0			Hail (0.75)	

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
OKLAHOMA, Western, Central and Southeast									
Murray County 2 W Davis	20	2032CST			0	0			Thunderstorm Wind (G87)
Severe thunderstorm wind gusts were estimated to be 100 mph by a spotter on Highway 7, 1 mile east of I-35 on the Garvin/Murray County line.									
Garvin County 10 S Wynnewood	20	2032CST			0	0			Thunderstorm Wind (G87)
Severe thunderstorm wind gusts were estimated at 100 mph by a spotter on Highway 7, 1 mile east of I-35 on the Garvin/Murray County line.									
Stephens County 2 NE Marlow	20	2037CST			0	0			Hail (1.00)
Grady County 9 SSE Rush Spgs to 9 SE Rush Spgs	20	2037CST			0	0			Hail (1.00)
Murray County 2 N Dougherty	20	2039CST			0	0			Thunderstorm Wind (G61)
Carter County 5 N Ardmore	20	2041CST			0	0			Hail (0.75)
Carter County 2 N Davis	20	2041CST			0	0			Thunderstorm Wind (G61)
Payne County 4 E Stillwater	20	2048CST			0	0			Thunderstorm Wind
Strong winds damaged an outbuilding and trailer house.									
Oklahoma County Oklahoma City	20	2050CST			0	0			Hail (0.75)
Carter County 5 SE Ardmore	20	2050CST			0	0			Hail (1.00)
Carter County Wilson	20	2055CST			0	0			Hail (1.00)
Murray County Davis	20	2100CST 2230CST			0	0			Flash Flood
Several roads were covered by high water.									
Stephens County 12 E Ketchum (Mesonet)	20	2110CST			0	0			Thunderstorm Wind (G50)
Johnston County 4 W Bromide	20	2144CST			0	0			Hail (1.75)
Coal County 2 E Clarita	20	2145CST			0	0			Hail (1.00)
Johnston County Tishomingo	20	2150CST			0	0			Hail (1.75)
Johnston County Tishomingo	20	2150CST			0	0	2K		Thunderstorm Wind
Severe thunderstorm winds tore the door off a large barn at the fairgrounds and destroyed a ticket booth at the Tishomingo football field.									
Johnston County Milburn	20	2220CST			0	0			Hail (1.75)
Johnston County Coleman	20	2222CST			0	0	15K		Thunderstorm Wind
Trees were blown down, a roof was blown off a building, and an awning was damaged.									
Coal County 1.5 E Cairo	20	2245CST			0	0			Hail (0.88)
Johnston County 5 N Tishomingo	20	2245CST			0	0			Hail (1.75)
Pushmataha County 6 NW Kosoma	20	2315CST			0	0			Thunderstorm Wind
Two-inch diameter trees limbs were blown down.									
Johnston County 3 W Nida	20	2315CST			0	0			Hail (1.50)
Atoka County Caney	20	2320CST			0	0			Hail (1.00)
Atoka County Atoka	20	2345CST			0	0			Hail (0.88)
Pushmataha County Antlers	20	2350CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<u>OKLAHOMA, Western, Central and Southeast</u>									
Bryan County 2 SE Silo	21	0015CST			0	0			Hail (0.88)
Bryan County Durant	21	0030CST			0	0			Thunderstorm Wind
			Severe thunderstorm winds split a large tree in half and uprooted another.						
Bryan County Durant	21	0050CST			0	0			Hail (1.00)
Pushmataha County Antlers	21	0900CST			0	0			Flash Flood
			Water to a depth of two feet caused several streets to be closed.						
Atoka County 1.5 S Caney	21	0900CST			0	0			Flash Flood
			High water covered U.S. Highway 69/75 and Davis and Clear Boggy Creeks were out of their banks.						
Bryan County Durant	21	0900CST			0	0			Flash Flood
			Flash flood waters washed out a small bridge across the highway south of Rock Creek School.						
OKZ027-038-043	Grady - Comanche - Coal								
	31	1045CST 1245CST			0	0			Summary: October 31
			Severe thunderstorms moved across parts of southern Oklahoma during the midday hours of the 31st, producing large hail. Hail as large as half dollars was reported west of Lawton in Comanche County. See following individual Storm Data entries for further details and additional reports.						
Comanche County 1 W Lawton	31	1050CST			0	0			Hail (1.25)
Grady County 5 W Alex	31	1115CST			0	0			Hail (0.75)
Grady County 10 SW Rush Spgs	31	1149CST			0	0			Hail (0.88)
Comanche County 7.5 SE Sterling	31	1149CST			0	0			Hail (0.88)
Coal County 1 N Tupelo	31	1245CST			0	0			Hail (0.75)
<u>OREGON, Central and East</u>									
			NONE REPORTED.						
<u>OREGON, Northwest</u>									
ORZ001>002	Northern Oregon Coast - Central Oregon Coast								
	14	0330PST 2000PST			0	0			High Wind (G48)
			A Pacific storm approached the North and Central Oregon Coast. On the North Oregon Coast Clatsop spit reported 55 mph winds. On the Central Coast Newport reported winds of 42 mph.						
ORZ001>003	Northern Oregon Coast - Central Oregon Coast - Southern Oregon Coast								
	17 18	1130PST 2000PST			0	0			High Wind (G72)
			A Pacific storm moved ashore into the Northwest. High winds raked the coast with sustained winds of 66 mph and gusts to 83 mph at Cannon Beach on the North Coast. Clatsop spit gusted to 67 mph. A roof was ripped off of a house in Cannon Beach. At Netarts and Astoria winds gusted to 60 mph. On the Central Coast Sea Lion Caves gusted to 62 mph while on the Southern Coast Cape Blanco recorded sustained winds of 54 mph and Port Orford reported a gust of 70 mph.						
ORZ006-011-013	Northern Cascades - Northeast Mountain Areas - Southern Cascades And Siskiyou Mountains								
	18 19	0500PST 1800PST			0	0			Heavy Snow
			A Pacific storm system brought heavy snow to the higher elevations of Oregon. In the Cascade Mountains, Timberline and Mt. Hood Meadows recieved 12 inches of snow. Crater Lake recieved 18 inches and Diamond Lake 10 inches. 8 inches fell at Willamette Pass. In the Northeast Mountains 8 to 10 inches of snow fell in the Spout Springs area.						
ORZ011	Northeast Mountain Areas								
	18 19	1300PST 0800PST			0	0			Wind Damage
			Winds gusting to 35 mph caused scattered power outages and fell trees in Union County and Wallowa County. In Wallowa County a falling tree severely damaged a mobile home. At the Union County Airport sustained winds were recorded at 25 mph with gusts to 35 mph.						
Multnomah County North Gresham	18	1330PST 1335PST			0	0			Funnel Cloud
			A Spotter reported a funnel cloud over Gresham. The funnel lasted about 5 minutes. Numerous showers and thunderstorms were occurring over northwestern Oregon in the cool, unstable air behind a cold front.						

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property Damage	Crops	Character of Storm
<u>OREGON, Northwest</u>									
Marion County Woodburn	19	1500PST 1700PST			0	7			Tstm Wind/Hail
A cold, unstable airmass produced thunderstorms with small hail throughout western Oregon. One thunderstorm dumped between 1 and 2 inches of accumulation of small hail onto a stretch of Interstate 5 near Woodburn. At least 6 traffic accidents occurred and 7 motorists were injured.									
ORZ002>003	Central Oregon Coast - Southern Oregon Coast								
	23	1500PST 2350PST			0	0			High Wind (G52)
A Pacific storm moved onto the Oregon Coast and brought high winds to the Central and Southern Coasts. Winds gusted to 60 mph at Newport. Sustained winds were recorded at 40 mph at Cape Blanco. The North Oregon Coast also saw strong winds with Clatsop Spit gusting to 50 mph and Cannon Beach gusting to 55 mph.									
ORZ011	Northeast Mountain Areas								
	23	1500PST			0	0			Heavy Snow
	24	1000PST							
Spout Springs and Tollgate recieved 4 inches of snow overnight.									
ORZ006-013	Northern Cascades - Southern Cascades And Siskiyou Mountains								
	24	1000PST			0	0			Heavy Snow
	25	1500PST							
A winter storm struck the Cascade Mountains and dumped 26 inches at Crater Lake, 15 inches at Santiam Pass, 17 inches at Willamette Pass, 16 inches at Diamond Lake and Lemolo and 12 inches at Tombstone.									
Lincoln County 8 N (Jnw)Newport Arpt	24	1400PST 1402PST	0.1	40	0	0			Tornado (F0)
A cool, unstable airmass produced showers and thunderstorms over Western Oregon on the 24th and 25th of October. Two waterspouts formed over the Pacific Ocean within minutes of each otherjust off Cape Foulweather on the 24th. One of the waterspouts briefly moved onshore and damaged powerlines before dissipating.									
ORZ009-011	South Central - Northeast Mountain Areas								
	24	2100PST			0	0			Heavy Snow
	25	1000PST							
A winter storm moved over South Central Oregon and into the Northeast Mountains. Chemult recieved 7 inches. In the Northeast Mountains, Tollgate recieved 5 inches and Spout Springs 5 inches.									
Multnomah County 5 SE Scapoose	25	1630PST 1635PST			0	0			Funnel Cloud
A brief Funnel Cloud was reported by a pilot near Scapoose. Showers and a possible thunderstorm were detected in the area by weather radar.									
ORZ001	Northern Oregon Coast								
	28	0300PST			0	0			Heavy Snow
	29	1500PST							
In the South Cascades, 6 inches of snow was recorded at Crater lake and 4 inches at Diamond Lake.									
<u>OREGON, Southeast</u>									
NONE REPORTED.									
<u>OREGON, Southwest</u>									
NONE REPORTED.									
<u>PACIFIC</u>									
NONE REPORTED.									
<u>PENNSYLVANIA, Central</u>									
Dauphin County Steelton	08	1700EST			0	0			Flash Flood
Route 441 was flooded and closed in Swatara Township near Steelton south of Harrisburg.									
Bedford County Bedford	18	1630EST			0	0			Thunderstorm Wind (G50)
Winds took down trees and power lines in Bedford.									
Cambria County Johnstown	18	1645EST			0	0			Thunderstorm Wind (G50)
Winds blew down trees just east of Johnstown.									
Cumberland County Shippensburg	18	1730EST			0	0			Thunderstorm Wind (G50)
Winds took down trees in Hopewell and Hampton.									
Centre County State College	18	1745EST			0	0			Thunderstorm Wind (G50)
Winds took down large limbs in Park Forest Village on the western edge of State College.									
Franklin County Amberson	18	1800EST			0	0			Thunderstorm Wind (G50)

Storm Data and Unusual Weather Phenomena

October 1996

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, Central

Winds took down trees on the mountain near Amberson.							
Juniata County Mifflintown	18	1800EST			0 0		Thunderstorm Wind (G50)
Trees were downed in Mifflintown.							
Huntingdon County Alexandria	18	1804EST			0 0		Thunderstorm Wind (G50)
Trees were blown down in Alexandria.							
Mifflin County Lewistown	18	1810EST			0 0		Thunderstorm Wind (G50)
Winds took down trees and power lines.							
Clinton County Renovo/Lock Haven	18	1815EST			0 0		Thunderstorm Wind (G50)
Winds took down trees in both Renovo and Lock Haven.							
Franklin County Shady Grove	18	1815EST			0 0		Thunderstorm Wind (G50)
Winds tore part of a roof off a farm house and barn 1 mile southeast of Shady Grove. Trees were also blown down.							
Adams County Gettysburg	18	1835EST			0 0		Thunderstorm Wind (G50)
Trees and power lines were blown down.							
Cumberland County Shippensburg	18	1845EST			0 0		Thunderstorm Wind (G50)
Winds took down trees in Hopewell, Hampton and Shippensburg.							
Perry County New Bloomfield	18	1900EST			0 0		Thunderstorm Wind (G50)
Trees were blown down in New Bloomfield.							
Snyder County Selinsgrove	18	1930EST			0 0		Thunderstorm Wind (G50)
Winds took down trees and power lines in Selinsgrove and McClure.							
Lancaster County White Horse	19	0200EST 1000EST			0 0		Flash Flood
Road flooding occurred due to heavy rain in Strasburg and Salisbury Townships.							
Schuylkill County Countywide	19	0530EST 1400EST			0 0		Flash Flood
Basement flooding occurred due to heavy rains throughout the county.							
Franklin County St Thomas	19	1000EST 1400EST			0 0		Flash Flood
Heavy rains caused small streams to come out of their banks.							
Huntingdon County Mt Union	19	1030EST 1900EST			0 0		Flash Flood
Heavy rains caused road and small stream flooding throughout much of the county.							

PENNSYLVANIA, East

PAZ054>055-060>062-067>071	Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia						
	08	0700EST 2200EST			0 0		Heavy Rain And Wind
Heavy rain associated with the remnants of Tropical Storm Josephine affected Eastern Pennsylvania primarily during the daylight hours on the 8th. Peak wind gusts averaged around 30 mph in the Poconos and the Lehigh Valley and around 45 mph in the greater Philadelphia Metropolitan Area. The strong wind gusts did knock over tree limbs in the local Philadelphia area and a tree was knocked down in Phoenixville (Chester County). About 1,500 homes lost power in Chester County. While the heavy rain did cause the usual poor drainage flooding, recent dry weather and foliage still on the trees prevented further flooding. Storm totals included 2.35 in Chadds Ford (Delaware County), 2.3 inches in Crum Creek (Delaware County), 2.13 inches at the Willow Grove N.A.S. (Montgomery County), 2.00 inches in Norristown (Montgomery County), 1.51 inches at the Northeast Philadelphia Airport, 1.48 inches in Reading, 1.46 inches at the Lehigh Valley International Airport and 1.33 inches at the Philadelphia International Airport. The peak wind gust at the Philadelphia International Airport was 46 mph.							
Chester County Countywide	19	0530EST 1130EST			0 0		Flash Flood
Heavy rain fell across Chester County during the first half of the day on the 19th. The heaviest rain fell around sunrise on the 19th. Storm totals averaged two to three inches and caused the flash flooding of several rivers and creeks throughout the county. There were numerous abandoned submerged vehicles and rescues, 15 alone in the West Chester area. Parts of United States Route 1 and Pennsylvania State Routes 52, 162, 842 and 926 were closed. A mudslide closed a road in East Fallowfield Township. Evacuations were ordered along the Brandywine Creek in East Bradford and Pocopson Townships.							

The East Branch of the Brandywine Creek in Downingtown reached its 7 foot flood stage at 630 a.m. EDT and crested at 12.6 feet

Storm Data and Unusual Weather Phenomena

[illegible]

PENNSYLVANIA, East

at noon EDT. It was below flood stage at 630 p.m. EDT. The West Branch of the Brandywine Creek in Modena reached its flood stage of 9 feet at noon EDT, crested at 9.5 feet at 130 p.m. EDT and back within bankfull 4 p.m. EDT. The West Branch of the Brandywine Creek in Coatesville crested at 8.7 feet at 1 p.m. EDT. Flood stage is estimated at 7 feet. Farther downstream the Brandywine Creek at Chadds Ford reached its 9 foot flood stage at 9 a.m. EDT and crested at 13.3 feet at 630 p.m. EDT.

Representative storm totals included 4.39 inches in East Brandywine, 4.16 inches in West Caln, 3.69 inches in Glenmoore and 2.56 inches in Honey Brook. No serious injuries or damage was reported.

Delaware County					
Countywide	19	0600EST	0	0	Flash Flood

19	0600EST 1200EST	0	0	Flash Flood
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Rain, heavy at times, during the first half of the day on the 19th caused flash flooding within Delaware County. The heaviest rain fell around daybreak. A state of emergency was declared in Darby during the morning of the 19th because of the severe flooding. Darby Creek flooded and blocked several roads and inundated dozens of homes. Two families had to take temporary shelter. Elsewhere several water rescues were performed in Upper Providence Township. Parts of Pennsylvania State Route 100 were closed, especially in Middletown Township. Several intersections were badly flooded in Glen Mills. The Chester Creek in Chester reached its 8 foot flood stage at 7 a.m. EDT, crested at 11.3 feet at 930 a.m. and was back within bankfull at 430 p.m. EDT. The Brandywine Creek along the Delaware/Chester County border at Chadds Ford reached its 9 foot flood stage at 9 a.m. EDT on the 19th, crested at 13.3 feet at 630 p.m. EDT and was back within bankfull at 6 a.m. EDT on the 20th. Storm totals included 3.15 inches in Ridley Park and 2.36 inches at the Philadelphia International Airport. No serious injuries were reported.

Countywide	19	0700EST	0	1	Flash Flood
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19	0700EST 1500EST	0	1	Flash Flood
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Rain, heavy at times, caused flash flooding of numerous streams within Berks County during the morning of the 19th. Many roads were closed. The heaviest rain fell close to daybreak. The runoff from the smaller streams eventually led to flooding along the Schuylkill River later in the day on the 19th and also on the 20th. One person was injured in Reading when the heavy rain caused the collapse of a second story ceiling.

Flooded creeks included the Antietam in Exeter Township, Allegheny Creek in Robeson Township, Monocacy Creek in Amity Township, Cacooching Creek in Spring Township, and Ironstone Creek in Colebrookdale Township. The Monocacy Creek Road in Amity Township remained closed for several days because of debris. The flooding forced the closure of Pennsylvania State Route 568 in Robeson Township. Numerous persons were rescued from stranded vehicles, including Albany Township. The Schuylkill River crested at 13.9 feet in Berne (Flood stage is 12 feet.) at 645 p.m. EDT on the 19th and 15.8 feet in Reading (Flood stage is 13 feet.) at 4 a.m. EDT on the 20th.

Representative storm totals included 4.9 inches in Hamburg, 4.14 inches in Reading and 3.5 inches in Vinemont. No serious injuries were reported.

Montgomery County					
Countywide	19	0700EST	0	0	Flash Flood

19	0700EST 1330EST	0	0	Flash Flood
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Rain, heavy at times, caused flash flooding of numerous streams within Montgomery County during the morning of the 19th especially in the lower part of the county. Many roads were closed. The heaviest rain fell a little after daybreak. The runoff from the smaller streams eventually led to flooding along the Perkiomen Creek and the Schuylkill River later in the day on the 19th and also on the 20th.

The hardest hit townships were Whitemarsh and Upper Dublin. The Fort Washington area of Whitemarsh Township was described as "closed". The Fort Washington Exchange from the Pennsylvania Turnpike (Interstate 276) had up to five feet of standing water on some of the ramps. Numerous motorists were rescued, some by lifeboats, including an 86-year-old woman. In Whitemarsh Township, a 10 foot by 12 foot sinkhole developed on Flourtown Road from the heavy rain. Part of the train bridge next to the road collapsed. The road was expected to be closed for a month. About a dozen other roads and bridges within the township were closed. The Wissahickon Creek flooded homes on East Valley Road. In Upper Dublin Township, about a dozen roadways were badly flooded and five were closed. Boat rescues of stranded motorists began about 8 a.m. EDT. Road closures also occurred in Horsham, Plymouth and Springfield Townships.

In the upper part of the county, flooding occurred along the East Branch of the Perkiomen Creek, especially near its confluence with Indian Creek and Vaughn's Run. Flooding also occurred along the Ridge Valley, Skippack and Unami Creeks. Several roads near these creeks were flooded and closed in Franconia, Upper Salford and Lower Salford Townships. Numerous basements were flooded in Souderton and Telford.

The Valley Creek at Valley Forge crested at 10.1 feet at 9 a.m. EDT. Later on the 19th, the Perkiomen Creek at Graterford crested at 15.7 feet at 6 p.m. EDT. Flood stage is 11 feet. On the 20th, the Schuylkill River at Pottstown crested at 14.4 feet at 9 a.m. EDT on the 20th. Flood stage is 13 feet. The Schuylkill River in Norristown crested at an estimated 18 feet. Flood stage is estimated at 17 feet.

Storm precipitation totals included 4.2 inches in Palm, 3.74 inches in Green Lane, 3.1 inches in Graterford and 2.18 inches in Valley Forge. No serious injuries were reported.

Philadelphia County					
Countywide	19	1000EST	0	0	Flash Flood

19	1000EST 1800EST	0	0	Flash Flood
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Storm Data and Unusual Weather Phenomena

October 1996

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

PENNSYLVANIA, East

Rain, heavy at times, especially around daybreak on the 19th caused urban and poor drainage flooding and flooding of some of the smaller streams and eventually the Schuylkill River. There were several abandoned and submerged vehicles throughout the city. Both Kelly and Lincoln Drives were closed because of Schuylkill River flooding from 3 p.m. EDT on the 19th through 230 p.m. EDT on the 20th. The heavy rain also caused a cave-in on Bustleton Road. The Frankford Creek in Juniata Park crested at 6.9 feet at 1045 a.m. EDT on the 19th. The Wissahickon Creek near the Schuylkill River in Fairmount Park crested at 7.0 feet at 5 p.m. EDT on the 19th. The Schuylkill River near the Fairmount Dam crested at 11.7 feet at 430 p.m. EDT on the 19th. Flood stage is 11 feet. Storm totals included 3.23 inches at the Northeast Philadelphia Airport, 2.91 inches in Center City and 2.36 inches at the Philadelphia International Airport. No serious injuries were reported.

Bucks County Countywide

19 1015EST 0 0 Flash Flood
1600EST

Rain, very heavy at times during the second half of the morning on the 19th caused considerable urban and poor drainage flooding as well as flooding along streams, including the Neshaminy Creek. About 100 rescues were performed of persons trying to drive on flooded roadways. Flooding in the county peaked at around 2 p.m. EDT. The Neshaminy Creek crested at 15.8 feet at 8 p.m. EDT on the 19th, the highest crest on the creek since June 29, 1973 when it reached 18.6 feet. Flood stage is 9 feet. Other creeks that flooded included the Beaver Run and East Branch of the Perkiomen.

Along, the Neshaminy Creek, the Northampton Fire Company had to rescue 15 persons attending a "flood party" on Bridge Path Road after basement flooding reached six feet deep. Wooden decks and oil tanks were floating downstream. The creek was rising at a rate as fast as four feet per hour. In Doylestown, the flooding exceeded its banks by 300 yards. Elsewhere in the lower part of the county, flooding forced the closure of Pennsylvania State Route 413 in Middletown Township; the water was five feet deep on several roadways in Bristol Township and a sandbagging effort was needed to keep flood waters at bay from a parochial school in Falls Township.

In central Bucks County, Pennsylvania State Route 313 in Doylestown was impassable. There were over 40 flooded basements in the Doylestown area alone. In the upper part of the county, several separate evacuations occurred. In Quakertown, a short circuit fire caused by a flooded basement (Water came from the Beaver Run Creek.) forced the evacuation of about 30 persons from the Park Manor Complex. Elsewhere in Quakertown, about 10 homes in the Washington Court Townhouses were evacuated after basement walls started to collapse. In Perkasio, about 20 persons were evacuated from the Covered Bridge Apartments as flood waters from the East Branch of the Perkiomen Creek pressed against the buildings. In Sellersville, flooding from the same creek forced the evacuation of 20 North Main Street residents from six buildings. A cape cod house was badly damaged. A four mile stretch of Pennsylvania State Route 309 between Quakertown and Coopersburg (Lehigh County) was closed into the night of the 19th. No serious injuries were reported.

Storm precipitation totals included 5.73 inches in Doylestown, 5.5 inches in Mechanicsville, 5.26 inches in Perkasio, 5.1 inches in Levittown and Fricks, 4.4 inches in Langhorne, 3.99 inches in Springtown, 3.65 inches in Southampton and 3.22 inches in New Hope.

PAZ060-067>071

Berks - Chester - Montgomery - Bucks - Delaware - Philadelphia

19 1130EST 0 0 Flood
20 1400EST

Rain, heavy at times, fell across Southeastern Pennsylvania during the first half of the day on the 19th. This caused the flash flooding of smaller creeks during the morning of the 19th that later translated and was confined to the larger creeks and rivers in the area from the afternoon of the 19th into the morning of the 20th. Below are listed crests and times gaged rivers and creeks were above flood stage. Further details can be found about smaller stream flooding within individual county entries.

In Chester County, the East Branch of the Brandywine Creek in Downingtown reached its 7 foot flood stage at 630 a.m. EDT and crested at 12.6 feet at noon EDT. It was below flood stage at 630 p.m. EDT. The West Branch of the Brandywine Creek in Modena reached its flood stage of 9 feet at noon EDT, crested at 9.5 feet at 130 p.m. EDT and back within bankfull 4 p.m. EDT. The West Branch of the Brandywine Creek in Coatesville crested at 8.7 feet at 1 p.m. EDT. Flood stage is estimated at 7 feet. The Brandywine Creek at Chadds Ford along the Delaware and Chester County border was above its 9 foot flood stage from 9 a.m. EDT on the 19th through 6 a.m. EDT on the 20th. It crested at 13.3 feet at 630 p.m. EDT on the 19th.

In Delaware County, the Chester Creek in Chester reached its 8 foot flood stage at 7 a.m. EDT, crested at 11.3 feet at 930 a.m. EDT and was back within bankfull at 430 p.m. EDT.

In Berks County, the Schuylkill River in Berne was above its 12 foot flood stage from noon EDT on the 19th through 2 a.m. EDT on the 20th. It crested at 13.9 feet at 645 p.m. EDT. The river crested at 8 p.m. EDT in Tilden Township. In Reading, the river was above its 13 foot flood stage from 8 p.m. EDT on the 19th through 11 a.m. EDT on the 20th and crested at 15.8 feet at 4 a.m. EDT on the 20th.

In Montgomery County, the Perkiomen Creek at Graterford crested at 15.7 feet at 6 p.m. EDT on the 19th. Flood stage is 11 feet. The creek was above flood stage from 930 a.m. EDT on the 19th through 1215 a.m. EDT on the 20th. In Collegeville and Lower Providence Township, four bridges over the Perkiomen Creek were closed. Along the Montgomery/Chester County border on the 20th, the Schuylkill River at Pottstown crested at 14.4 feet at 9 a.m. EDT. The river was above its 13 foot flood stage from 10 p.m. EDT on the 19th through 3 p.m. EDT on the 20th. The Schuylkill River in Norristown crested at an estimated 18 feet. Flood stage is estimated at 17 feet. In Montgomery County, the Schuylkill River reached near the Spring Mill train station and many businesses moved material to higher ground. Flood waters were lapping at the homes on two blocks.

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage			
					Killed	Injured	Property	Crops	Character of Storm	

PENNSYLVANIA, East

In Philadelphia, the Schuylkill River near the Fairmount Dam crested at 11.7 feet at 430 p.m. EDT on the 19th. Flood stage is 11 feet. The river was above flood stage from 330 p.m. EDT on the 19th to 6 a.m. EDT on the 20th. In Bucks County, the Neshaminy Creek crested at 15.8 feet at 8 p.m. EDT on the 19th. This was the highest crest on the creek since June 29, 1973 when it reached 18.6 feet. The creek was above its 9 foot flood stage from 1115 a.m. EDT on the 19th through 5 a.m. EDT on the 20th.

A low pressure system developed near Norfolk during the late evening of the 18th. At 8 a.m. EDT on the 19th, it was located east of Atlantic City. The low became captured by another low at higher levels of the atmosphere and consequently moved little the ensuing 24 hours. It was near Manasquan, NJ at 2 p.m. EDT on the 19th, Allentown, PA at 8 p.m. EDT on the 19th, near Harrisburg, PA at 2 a.m. EDT on the 20th and Hagerstown, MD at 8 a.m. EDT on the 20th. Tropical moisture associated with Hurricane Lili (Which was farther east in the Atlantic.) was ingested into this low and literally was wrung out over Pennsylvania. The slowing of the low pressure system's forward speed prolonged the heavy rain, especially farther north in Pennsylvania.

Lehigh County Countywide

19 1200EST 1800EST 0 1 Flash Flood

Rain, very heavy at times toward noon on the 19th, caused considerable highway and poor drainage flooding as well as flooding of some of the smaller creeks in Lehigh County. So many roads were barricaded that getting from one place to another was described as impossible. Major roadways flooded included Pennsylvania State Route 309 and U.S. Route 22. In Slatedale (Washington Township) a 60-year-old woman was injured when water from a quarry swept her from the front porch of the house. Elsewhere in Slatedale, five families were evacuated when flood waters from a tributary of the Trout Creek damaged 300 feet of a roadway. The most severe damage occurred in South Whitehall Township. Four homes were evacuated because of flooding and sections of Pennsylvania State Highway 309 were closed. In Whitehall Township eight homes were flooded by the Jordan Creek. Allentown was also affected. The city's 110,000 residents were asked to conserve water after the Little Lehigh River flooded the city's water filtration plant's basement. A couple of apartment building's top floor ceilings collapsed from excessive water on the roof.

Storm rainfall totals included 5.29 inches in Coopersburg and 3.74 inches at the Lehigh Valley International Airport. In addition to the heavy rain, wind gusts of around 30 mph coupled with the saturated soil took down weak trees and limbs and consequently power lines throughout the Lehigh Valley and Poconos. Pennsylvania Power and Light reported 11,000 homes lost power in their service area, 7,500 within Lehigh County.

Carbon County Countywide

19 1200EST 2000EST 0 0 Flash Flood

Rain, very heavy at times around noon on the 19th, caused considerable highway and poor drainage flooding as well as flooding of some of the smaller creeks in Carbon County. United States Route 209 was closed as the Department of Transportation feared a collapse. The Lizard Creek flooded Pennsylvania State Route 895 in East Penn Township. Flooding forced the closure of the Carbon Plaza Mall. Hundreds of basements flooded. The Aquashicola Creek flooded sections of Palmerton and the Maunch Chunk Creek flooded Jim Thorpe's water treatment plant. No serious injuries were reported.

Storm rainfall totals included 7.26 inches in Jundale, 5.38 inches in Lehigh, 4.8 inches in Packer Township and 3.8 inches in Towamensing.

Northampton County Countywide

19 1400EST 2000EST 0 0 Flash Flood

Rain, very heavy at times around noon on the 19th, caused considerable highway and poor drainage flooding as well as flooding of some of the smaller creeks in Northampton County. In Lower Saucon Township, the Saucon Creek flooded. A person helped evacuate his neighbor's daughter by boat, but it capsized. They were both rescued from the creek. The Saucon Creek also tore away a deck and gazebo as well as a Corvette from a catering hall. Flooded roadways were reported in Easton and Wilson as well as in Forks, Palmer and Upper Nazareth Townships. The flooding was exacerbated by fallen leaves which clogged the catch basins. In Bethlehem, flooding closed Saucon Park, but not before a woman and three children had to be rescued. The heavy rain also created two sinkholes in Bethlehem. Lehigh Drive (along the Lehigh River) in Easton was closed through the 20th.

Storm precipitation totals included 3.57 inches in Williams Township and 3.35 inches in Bath. No serious injuries were reported.

Monroe County Countywide

19 1600EST 2100EST 0 0 Flash Flood

Rain, very heavy at times during the afternoon on the 19th, caused considerable highway and poor drainage flooding as well as flooding the smaller creeks in Monroe County. Many roads were impassable, but no serious injuries or damage were reported. Storm totals included 5.88 inches in Stroudsburg, 5.27 inches in East Stroudsburg, 5.04 inches in Saylorsburg, 4.8 inches in Brodheadsville, 4.44 inches in Meckesville, 4.3 inches in Tannersville, 4.24 inches in Camelback, 3.44 inches in Lake Monroe, 3.4 inches in Tobyhanna, and 3.16 inches in Leavitt Falls.

PENNSYLVANIA, Northeast

PAZ038>040-043>044-047>048 Bradford - Susquehanna - Wayne - Wyoming - Lackawanna - Luzerne - Pike

04 0000EST 0800EST 0 0 Extreme Cold

Storm Data and Unusual Weather Phenomena

October 1996

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

PENNSYLVANIA, Northeast

A very cold air mass entered central New York and northeastern Pennsylvania on the morning of the 4th. Widespread freeze conditions were observed.

PAZ040-044-047>048

Wayne - Lackawanna - Luzerne - Pike

19	1200EST 1800EST	0	0	5K	High Wind
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A coastal low pressure system slowly moved north along the Atlantic seaboard during the day on the 19th. This system brought heavy rains and locally strong wind gusts to central New York and northeastern Pennsylvania. High winds were responsible for downing trees and power lines throughout the higher elevations of the Catskill and Pocono regions.

PENNSYLVANIA, Northwest

PAZ001>003

Northern Erie - Southern Erie - Crawford

30	1000EST 1140EST	0	0	1.5K	1.5K	High Wind (G50)
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Several trees and power lines were downed.

PENNSYLVANIA, West

PAZ007>008-020>021-030

Mercer - Venango - Beaver - Allegheny - Westmoreland

30	0700EST 1600EST	0	0	69K	High Wind (G55)
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Strong winds, associated with a strong low pressure center moving across northern Ohio and Pennsylvania and an intense cold front, caused widespread damage throughout parts of western Pennsylvania.

In Allegheny County, a gust to 62 mph was recorded at the Carnegie Science Center in Pittsburgh at 842 am. Around 9 am a window on the 30th floor of a downtown Pittsburgh building on Fifth Street and Liberty Avenue was blown out by the wind. Large maple trees were downed across Lincoln Avenue in the Point Breeze section of Pittsburgh and trees and power lines were downed in Moon Township. A gust to 57 mph was recorded at 4 pm in Sewickley Heights. Power lines were downed in Leetsdale.

In Beaver County, trees were downed onto wires in Monaca between 7 and 730 am. Wind gusts to 61 mph at 1012 am and 63 mph at 1132 occurred at the Beaver County Airport. A porch in Beaver sustained minor damage when large limbs fell onto it.

In Mercer County, numerous trees, up to a foot in diameter, and power lines were downed across the county between 9 and 1030 am. In Sharon a tree fell onto a car. Sharon, Ferrell and Hermitage, all in the western part of the county, were hardest hit. Wind gusts to 60 mph were recorded.

In Westmoreland County, between 10 am and noon, trees were downed in Latrobe and New Kensington. Power lines were also downed in New Kensington and Greensburg. The wind gusted to 41 mph at the Westmoreland County Airport. Wind gusts were estimated as high as 60 mph throughout the county.

In Venango County, a 50 to 60 foot tall pine tree was uprooted and landed across the porch and roof of a house in Franklin. In Cooperstown, a roof of a porch was torn off. Utility poles were snapped and wire downed in Titusville.

PUERTO RICO

St Thomas	01	1504AST 1514AST	0	0	Funnel Cloud
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A funnel cloud was reported five miles south of Water Island in St. Thomas.

Culebra Culebra	03	2045AST 2100AST	0	0	Waterspout
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A pilot reported several waterspouts three miles east southeast of Culebra.

Culebra Culebra	04	1250AST 1300AST	0	0	Waterspout
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Several waterspouts were reported 5 miles northeast of Culebra. Movement was west northwest.

Humacao Naguabo Humacao Ceib	04	1500AST 1515AST	0	0	Waterspout
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Observers from the Roosevelt Roads Naval Base reported two waterspouts just south of Naguabo area.

Carolina Carolina	05	0637AST 0652AST	0	0	Waterspout
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A large waterspout was reported by the Luis Munoz Marin Air Traffic Control Tower personnel seven miles northeast of the airport.

Culebra Culebra	17	1635AST 1650AST	0	0	Waterspout
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A waterspout was reported one and a half mile southeast of Culebra.

St Thomas	18	1750AST 2100AST	0	0	Heavy Rain
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Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage	Crops	Character of Storm
PUERTO RICO										
	A thunderstorm produced heavy rains and localized flooding across St. Thomas.									
Vega Baja Manati Orocovis Aibonito	21	1620AST 2200AST			0	0				Heavy Rain
	Civil Defense reported heavy rain and thunder in Orocovis, Aibonito,Barranquitas, Ciales, and Morovis.									
Arecibo Arecibo	21	1845AST 2200AST			0	0				Heavy Rain
	Civil defense reported heavy rains in Arecibo.									
Camuy Hatillo	21	2030AST 2230AST			0	0	2K			Heavy Rain
	Civil Defense reported a flooded house in Hatillo.									
Carolina Carolina Loiza	23	1830AST 2359AST			0	0				Coastal Flooding
	Coastal Flood Watch issued for north and northeast coasts of Puerto Rico, Vieques and Culebra. Large northerly swells generated from Hurricane Lili reached the area. A resident of the Pinones sector in Carolina reported swells washing over beach and road 187 around 19 AST on 10/23/96. Civil defense reported minor coastal flooding in Loiza, Pinones, Fajardo and Anasco.									
Carolina Carolina Pinones	24	0700AST 1300AST			0	0				Coastal Flooding
	Coastal flooding was reported at Pinones, road 187 was covered with water shortly after high tide and was closed much of the afternoon.									
Bayamon Bayamon	28	1558AST 2330AST			0	0				Heavy Rain
	Civil Defense reported flooding in Bayamon.									
Bayamon North Zone	28	2200AST 2330AST			0	0				Heavy Rain
	Civil Defense reported heavy rains in San Juan, Guaynabo, Bayamon, Toa Alta, Toa Baja, and Dorado.									
Vega Baja Manati Vega Baja	29	1520AST 1800AST			0	0				Heavy Rain
	Civil Defense reported very heavy rain in Vega Baja and some minor flooding of low lying areas.									
Bayamon Catano San Juan Bay	29	1620AST 1635AST			0	0				Waterspout
	Civil Defense reported a waterspout in the Catano vicinity, and over San Juan Bay.									
Ponce Juana Diaz Villalba	30	1520AST 1550AST			0	0				Hail (0.25)
	Civil Defense reported small hail at Barrio Hatillo in Villalba.									
Coamo Santa Isabel Coamo	30	2000AST 2030AST			0	0				Thunderstorm Wind (G40)
	Civil Defense reported several downed trees in the municipality Coamo. Power lines were downed and one automobile was damaged by a fallen tree.									
RHODE ISLAND										
Kent County Eastern Portions	08 09	1900EST 0500EST			0	0				Heavy Rain
Bristol County Countywide	08 09	1900EST 0500EST			0	0				Heavy Rain
Washington County Countywide	08 09	1900EST 0500EST			0	0				Heavy Rain
Newport County Countywide	08 09	1900EST 0500EST			0	0				Heavy Rain
RIZ004>007	Eastern Kent - Bristol - Washington - Newport	08 09	2200EST 0500EST		0	0				Strong Winds

The remnants of former Tropical Storm Josephine moved very quickly northeast from near Atlantic City, NJ during the early evening of October 8th to near Chatham, MA during the early morning hours of October 9th. The central pressure was 982 millibars as the system then continued northeastward into the Gulf of Maine. Strong winds and heavy rainfall affected the

Storm Data and Unusual Weather Phenomena

October 1996

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

RHODE ISLAND

southeast portion of the state. A peak gust to 55 mph was recorded at Quonset Point. Other peak gusts included: Block Island and Warwick (T.F.Green) Airports, 47 mph; Providence (downtown) and Newport, 40 mph. Rainfall totals ranged from about 2 inches at Newport and Westerly to 2.72 inches at West Warwick. There were just a few reports of scattered power outages.

RIZ006>007	Washington - Newport	19 1300EST			0	0				High Wind (G70)
		20 0600EST								
RIZ001>007	Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport	20 0200EST			0	0				Heavy Rain
		21 0800EST								
RIZ001	Northwest Providence	21 0600EST			0	0				Flood
		22 1300EST								

An extensive, slow moving surface low pressure system became positioned along the mid-Atlantic coast during the evening of October 19th and meandered there for 48 hours before finally heading northeast across southeast New England. This storm brought heavy rain to most of the state. Wind gusts to hurricane force were reported along the south coast, where a gust to 81 mph was recorded at Little Compton. Strong east wind gusting to gale force began by noon on October 19th well ahead of the rain and continued into the early morning hours of the 20th.

The Blackstone River at Woonsocket reached flood stage of 9 feet at 7 AM on October 21st, crested at 9.3 feet at midnight at the end of the day on the 21st, and then fell below flood stage at 2 PM on October 22nd.

SOUTH CAROLINA, Central

Orangeburg County	Rowesville	08 0318EST			0	0				Thunderstorm Wind (G50)
										A severe thunderstorm associated with Tropical Storm Josephine took down trees and powerlines near Rowesville in southern Orangeburg County.
Orangeburg County	Orangeburg	08 0330EST			0	0				Flash Flood
		0545EST								Heavy rains associated with Tropical Storm Josephine produced flash flooding over portions of Orangeburg County in and around the city of Orangeburg. Over five inches of rain fell and flood waters rose to the tops of hoods on automobiles.

SOUTH CAROLINA, North Coastal

SCZ046	Georgetown	08 0300EST			0	0				Tropical Storm
		0600EST								As Tropical Storm Josephine decayed and turned extratropical, winds gusted 50-60 mph along the coast, with rains 3-5 inches and minor beach erosion due to high tide 1-2 ft above normal.
Georgetown County	Pawleys Is to Murrells Inlet	08 0330EST			0	0				Flash Flood
		0730EST								As the remnants of Tropical Storm Josephine moved across the area, brief torrential rains near 3 inches caused widespread standing water, especially in the northeast part of the county.
Horry County	Garden City to Green Sea	08 0345EST			0	0				Flash Flood
		0800EST								As the remnants of Tropical Storm Josephine passed over, rains measuring 3 to 5 inches caused widespread street flooding, making travel hazardous.
SCZ034	Horry	08 0400EST			0	0				Tropical Storm
		0700EST								As the remnants of Tropical Storm Josephine moved up the coast, winds gusted 50-60 mph at the piers. Rains measured 3 to over 5 inches. Storm surge carried high tide to the primary dune, causing 2-4 ft dune lost, and dune was breached at northern end of county.
Georgetown County	Murrells Inlet	08 0430EST			0	0				Thunderstorm Wind (G60)
		0433EST								Trees and limbs were reported down by Emergency Management.
Horry County	Socastee	08 0435EST	0.5	15	0	0	250K			Tornado (F0)
		0437EST								Associated with remnants of Tropical Storm Josephine, roaring tornado caused spotty damage, downing trees and power lines and damaging homes in Brandy Mill and Lakewood Park subdivisions. Was reported to have occurred two minutes after tornado warning alerted weather radio.

SOUTH CAROLINA, Northwest

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1996

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, South Coastal

Charleston County
James Is **08** **0110EST** **0** **0** **Thunderstorm Wind (G50)**
0120EST
 Power lines down.

Beaufort County
Bluffton **08** **0145EST** **0** **0** **Thunderstorm Wind (G55)**
0150EST
 Trees fell on power lines near the town of Bluffton, knocking out power to nearly 300 homes.

Dorchester County
Summerville **08** **0228EST** **0** **0** **Thunderstorm Wind (G52)**
0235EST
 Trees down.

Colleton County
Walterboro **08** **0235EST** **0** **0** **Thunderstorm Wind (G54)**
0245EST
 Power lines down.

Dorchester County
3 SE St George **08** **0250EST** **0** **0** **Thunderstorm Wind (G53)**
0300EST
 Trees Down.

Dorchester County
Summerville **08** **0330EST** **0** **0** **Flash Flood**
0530EST

Beaufort County
Hilton Head Is **08** **0405EST** **0** **0** **Flash Flood**
0605EST

Charleston County
Charleston **08** **0415EST** **0** **0** **Flash Flood**
0630EST

Berkeley County
Moncks Corner **08** **0440EST** **0** **0** **Flash Flood**
0645EST

Remnants of Tropical Storm Josephine produced very heavy rains (4 to 6 inches) across south coastal counties in a few hours. Numerous roads were flooded in Charleston, Berkeley, Beaufort and Dorchester Counties. Flood waters reached mid-way up the sides of cars on Hilton Head Island. A roof collapsed on a restaurant in the City of Charleston. A few residents had several inches of water in their homes. Many homes along state route 61 north of Charleston suffered damage from flooding. Damage estimated for the four county area was \$250K.

SOUTH DAKOTA, Central and North

SDZ003 **Corson**
26 **0600CST** **0** **0** **120K** **Winter Storm**
1600CST

An intense area of low pressure brought heavy rains to western Corson county. As colder air moved in behind the low and winds gusted to 50 mph, the rain changed to snow and three to five inches of ice formed on power lines and poles. One-hundred fifteen poles were snapped leaving about 400 people without power in the McIntosh, Wautaga, and Keldron areas. Some people were without power for up to two days. McIntosh received 6 inches of snow.

Spink County
Redfield **26** **0818CST** **0** **0** **Lightning**
 Lightning struck a home in Redfield and damaged the computer, satellite dishes and receivers, stereo system, television, VCR, telephones, and answering machine. The microwave, cameras, truck compass, and some electrical plugs-ins were also damaged. The phone connector box cover was blown off the side of the house into the middle of the yard. Telephone cords were all black and some were in several pieces.

Edmunds County
Ipswich **26** **1020CST** **0** **0** **Hail (1.00)**

Clark County
2 NE Vienna **26** **1153CST** **0** **0** **Hail (0.75)**

Codington County
Florence **26** **1203CST** **0** **0** **Hail (0.75)**

Codington County
Henry **26** **1205CST** **0** **0** **Hail (0.75)**

Day County
10 S Waubay **26** **1230CST** **0** **0** **Hail (0.75)**

Hamlin County
5.5 E Castlewood to **26** **1230CST** **1** **25** **0** **0** **50K** **Tornado (F1)**
6.5 NE Castlewood **1232CST**

A tornado touched down at a farm east of Castlewood and took most of a 40 by 60 foot cattle shed and deposited in a cornfield

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
SOUTH DAKOTA, Central and North									
									across the road to the north. Several doors of buildings were torn off their hinges with one door thrown into some trees. A 2 X 6 was driven into the gravel road. Power lines were also downed leaving the farm without power until late in the day. The tornado proceeded north across Highway 22 where it ripped apart a new calf shed at another farm, tipped an elevator over, and pushed a three stall garage off of it's foundation. Alot of tree damage occurred at both farms. Path length and width were estimated.
Deuel County 11 SW Clear Lake to 10 SW Clear Lake	26	1235CST 1236CST	1	25	0	0			Tornado (F0)
									A tornado touched down 11 miles southwest of Clear Lake and knocked down several trees. The tornado also blew three windows out of a car. Path length and width were estimated.
Deuel County 8 N Clear Lake to 9 NE Clear Lake	26	1245CST 1247CST	1	25	0	0			Tornado (F1)
									A tornado touched downed eight miles north of Clear Lake on Highway 15 and tore away the top two thirds of an old abandoned barn. The tornado moved north and leveled all buildings at the next vacant farm. The tornado moved northeast and hit another farm. Two metal barn/shelters were damaged as tin was torn off the roofs and along the sides. A machine shed also received some damage. A large evergreen was uprooted and a 32-foot trailer camper was picked up and carried about 75 to 100 feet and dropped. The trailer home was completely torn from the frame and demolished. The chimney on the house was broken off and fell on the roof and the TV antenna was damaged. Several large trees were uprooted. Power lines were torn away from several buildings and a 40 X 60 foot machine shed was demolished. Path length and width were estimated.
Day County 9 SE Waubay	26	1245CST 1247CST			0	0			Thunderstorm Wind (G70)
									Winds gusting to 80 mph blew down and tore apart 3 grain bins on a farm southeast of Waubay. Also a machine shed lost part of its roof, had several broken rafters, and was moved 3 to 4 inches off of its foundation. The roof on a dairy barn was damaged, the end and the south side of the garage was pushed off of its foundation, and five grain augers were also tipped over.
Deuel County 1 N Tunerville to 1.5 N Tunerville	26	1250CST 1251CST	0.5	25	0	0			Tornado (F1)
									A tornado touched down one mile north of Tunerville and tore up, twisted and snapped off many, many trees in the grove located near a farm house. One tree located near the house fell onto the home and caused several rafters to break and the wall on the south side of the home to buldge out. One said "It took about two seconds for the storm to pass, it was moving very, very fast". A 60 to 70 foot tall tree in their front yard was toppled over. A storage building was picked up and placed on top of the fallen trees. A fish house was also completely torn apart. Path length and width were estimated.
Grant County 4 W Revillo to 5 NW Revillo	26	1305CST 1307CST	1	75	0	0			Tornado (F1)
									A tornado touched down at a farm about one-half mile north of the Revillo corner on Highway 15. The tornado destroyed most of the farm buildings except for the house which sustained a buckled north wall and a broken window. Several windows were broken on vehicles parked in buildings. A grain bin was also destroyed. Metal was found all over the farm site in the trees and also hanging on the power lines. Three power poles were snapped off at the farm. The guard rail along the highway was damaged with several posts pulled from the ground. Just to the north, a roof was damaged on another house and a 16 X 60 foot trailer home was completely demolished. The tornado also blew a steel grain bin into pieces. Path length and width were estimated.
Grant County 2 SE Milbank to 2.5 SE Milbank	26	1320CST 1322CST	0.5	25	0	0			Tornado (F0)
									A tornado touched down two miles southeast of Milbank and destroyed a large barn and a quonset at one farm. At another farm, a person watched a heavy dumpster and other heavy items whirled about like toys. The tornado destroyed the pole barn, the silo, a grain bin, and two other cattle sheds were damaged. There was also some damage to the home. Path length and width were estimated.
Grant County 3 NE Milbank to 3.5 NE Milbank	26	1324CST 1325CST	0.5	25	0	0			Tornado (F0)
									A tornado touched down three miles northeast of Milbank and ripped the roof off a mobile home. Path length and width were estimated.
Grant County 4 NW Milbank to 4.5 NW Milbank	26	1324CST 1325CST	0.5	25	0	0			Tornado (F0)
									A tornado touched down four miles northwest of Milbank and destroyed an irrigation system. Path length and width were estimated.
Roberts County 10 NE Corona	26	1334CST 1335CST	0.5	25	0	0			Tornado (F0)
									A tornado touched down near Bayview and caused some damage to a roof. Path length and width were estimated.
SDZ003>004-009- 015>016-033>037-045- 048-051	Corson - Campbell - Walworth - Dewey - Potter - Stanley - Sully - Hughes - Hyde - Hand - Jones - Lyman - Buffalo								
	29 30	1200CST 0300CST			0	0			High Wind (G58)
									An intense area of low pressure moving across the Central Plains combined with a strong high pressure in Canada to bring high

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
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, Central and North

winds of 35 to 50 mph with gusts to over 65 mph to central and north central South Dakota. Some wind gusts include, 58 mph at Mobridge, 67 mph at Pierre, 65 mph at Timber Lake, and 60 mph at Fort Thompson.

SDZ005>008-010>011-017>023 Mcpherson - Brown - Marshall - Roberts - Edmunds - Day - Faulk - Spink - Clark - Codington - Grant - Hamlin - Deuel

29 1800CST 0 0 High Wind (G56)
30 0400CST

An intense area of low pressure moving across the Central Plains combined with a strong high pressure in Canada to generate high winds of 40 to 50 mph with gusts to near 65 mph across northeast South Dakota. A 10 by 12 foot shed was moved over 50 feet near Mina Lake, stacks of lumber at the lumber yard in Leola were blown around, and also a few trees were downed across the area. Some wind gusts include, 56 mph at Sisseton, 59 mph at Watertown, 60 mph at Mina Lake and Redfield, and 64 mph at Aberdeen.

SOUTH DAKOTA, Southeast

Aurora County
White Lake

16 1700CST 0 0 Hail (0.75)
Hail nearly covered the ground.

Lake County
6 SE Madison to
8 NE Madison

16 1915CST 0 0 400K Thunderstorm Wind (G70)
1935CST

Thunderstorm winds destroyed two homes and damaged several others along the southwest shore of Lake Madison about 6 miles southeast of Madison. Power lines, trees, and docks were also damaged. A garage was lifted off of its foundation 8 miles northeast of Madison. Other scattered damage to trees, signs, power lines, and farm buildings occurred in the area.

Minnehaha County
Hartford to
1 S Humboldt

16 1930CST 0 0 30K Thunderstorm Wind
1935CST

Thunderstorm winds blew down large trees and destroyed the press box at a high school field at Hartford. A truck was blown over on Interstate highway 90 near Humboldt.

Lincoln County
Sioux Falls

16 2010CST 0 0 20K Lightning
Lightning struck the roof of a house and started a fire which extensively damaged the roof and top floor.

SDZ062-065>071

Minnehaha - Hutchinson - Turner - Lincoln - Bon Homme - Yankton - Clay - Union
26 0900CST 0 0 50K High Wind (G50)
1600CST

Strong south winds ahead of a cold front damaged trees and shrubs, blew off shingles, and caused some building damage including a farm building destroyed near Dimock.

Miner County
Carthage

26 1030CST 0 0 20K Thunderstorm Wind
Thunderstorm winds destroyed a barn and several small farm buildings.

Beadle County
1.5 W Iroquois to
Yale

26 1050CST 0 0 50K Thunderstorm Wind
1055CST

Thunderstorm winds destroyed a barn and other farm buildings, blew down several trees, and moved a garage off of its foundation.

Kingsbury County
Osceola

26 1120CST 0 0 10K Thunderstorm Wind
Thunderstorm winds destroyed a barn.

Minnehaha County
1 SE Sioux Falls

29 1340CST 0.1 50 0 0 Tornado (F0)
1342CST

A small tornado touched down briefly and caused no damage.

SDZ038>040-050-052>071

Beadle - Kingsbury - Brookings - Gregory - Jerauld - Sanborn - Miner - Lake - Moody - Brule - Aurora - Davison - Hanson - Mccook - Minnehaha - Charles Mix - Douglas - Hutchinson - Turner - Lincoln - Bon Homme - Yankton - Clay - Union
29 1500CST 0 0 440K High Wind (G57)
30 0200CST

Very strong winds behind a cold front caused widespread damage to trees, shingles, and power lines. Other damage included a ball park fence blown down, roofs of several buildings damaged, some small farm buildings destroyed, windows broken, and a large church spire blown down.

SOUTH DAKOTA, West

SDZ024-028

Northern Black Hills - Central Black Hills

16 0700MST 0 0 12K Heavy Snow
2200MST

A storm produced heavy snow in the central and northern Black Hills. Six inches of snow fell at Lead and Deadwood, seven inches at Deerfield, 11 inches southwest of Lead, and 14 inches at Rochford. Numerous power lines and trees were downed by the heavy wet snow.

SDZ001>002-012>014-024>026-026>032-041>043

Harding - Perkins - Butte - Meade Co. Plains - Ziebach - Northern Black Hills - Northern Foot Hills - Central Foot Hills - Southern Foot Hills - Central Black Hills - Southern Black Hills - Custer Plains - Pennington Plains - Haakon - Fall River Co. - Shannon - Jackson

26 0700MST 0 0 1.2M Winter Storm
2200MST

Storm Data and Unusual Weather Phenomena

October 1996

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, West

A winter storm with heavy snow and gusty northwest winds created blizzard-like conditions over western South Dakota. The heaviest snow fell in the central and northern Black Hills where one to two feet was common. Lead received 38.9 inches, setting an all-time state record for 24 hour snowfall. Winds frequently gusted over 45 mph, reducing visibility to zero and creating drifts several feet deep. Many roads in the Lead-Deadwood area were blocked for over 24 hours. The wet heavy snow downed numerous power lines and poles. Electric service to some rural areas was out for five days. Damage to power lines and poles in western South Dakota was estimated near \$600,000.

TENNESSEE, Central

Humphreys County 5 W Waverly	17	2240CST			0	0			Hail (0.75)
			Dime size hail reported by local law enforcement.						
Humphreys County 2 E Waverly	17	2300CST			0	0			Hail (1.00)
			Quarter size hail reported by local law enforcement.						
Hickman County Coble	17	2300CST			0	0			Thunderstorm Wind (G50)
			A few power lines were blown down.						
Wayne County Waynesboro	17	2310CST			0	0			Thunderstorm Wind (G50)
			Local law enforcement reported large tree limbs down.						
Perry County Whiteoak Crossing	17	2320CST			0	0			Thunderstorm Wind (G50)
			Local law enforcement reported 2 trees were blown down.						
Lewis County Hohenwald	17	2330CST			0	0			Thunderstorm Wind (G50)
			A few trees were blown down.						
Dickson County Dickson	17	2330CST			0	0			Thunderstorm Wind (G50)
			A few power lines were blown down.						
Hickman County Shippo Bend	17	2330CST			0	0			Thunderstorm Wind (G50)
			A few trees and power lines were blown down.						
Lawrence County St Joseph	17	2340CST			0	0			Thunderstorm Wind (G50)
			Local law enforcement reported power lines down.						
Maury County Bryant Station	17	2350CST			0	0			Thunderstorm Wind (G50)
			Local law enforcement reported 2 trees blown down.						
Lewis County Hohenwald	17	2355CST			0	0			Thunderstorm Wind (G50)
			Local law enforcement reported a few trees were blown down.						
Davidson County Hermitage	18	0010CST			0	0			Thunderstorm Wind (G50)
			National Weather Service employee reported large tree limbs were blown down.						
Giles County Pulaski	18	0010CST			0	0			Thunderstorm Wind (G50)
			A few trees and power lines were blown down.						
Williamson County Brentwood	18	0015CST			0	0			Thunderstorm Wind (G50)
			Local law enforcement reported a few power lines were blown down.						
Marshall County Verona	18	0030CST			0	0	5K		Thunderstorm Wind
			2 trees were blown down.						

TENNESSEE, East

NONE REPORTED.

TENNESSEE, West

Shelby County Memphis to Arlington	17	2040CST 2045CST			0	0	1K		Thunderstorm Wind
			A few trees were knocked down.						
Shelby County Cordova	17	2120CST 2125CST			0	0	10K		Lightning
			An abandoned restaurant was destroyed by a fire started by lightning.						

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
TENNESSEE, West										
Fayette County Rossville to Somerville	17	2130CST 2140CST			0	0	3K		Thunderstorm Wind	
There was a 40 yard path of damage near Rossville where two mobile homes were damaged. Trees were blown down near Oakland, west of Somerville and near Rossville.										
Fayette County Oakland	17	2130CST 2135CST			0	0	0.01K		Hail (0.75)	
Hardeman County Bolivar to Middleton	17	2140CST 2150CST			0	0	1K		Thunderstorm Wind	
Several trees were blown down in Bolivar and Middleton.										
Madison County 5 N Jackson to Jackson	17	2200CST 2205CST			0	0	0.02K		Hail (0.75)	
Chester County Henderson	17	2228CST 2233CST			0	0	1K		Thunderstorm Wind	
A few trees were blown down completely blocking Highway 45.										
Mcnairy County Adamsville	17	2230CST 2235CST			0	0	5K		Thunderstorm Wind	
Several power lines and power poles were blown down.										
Henderson County 10 N Lexington	17	2235CST 2240CST			0	0	1K		Thunderstorm Wind	
A few large tree limbs were blown down.										
Hardin County Savannah	17	2235CST 2240CST			0	0	0.01K		Hail (0.75)	
Henry County Cottage Grove	17	2330CST 2335CST			0	0	10K		Lightning	
A barn was destroyed by a fire started by lightning.										
Henry County Paris	17	2345CST 2350CST			0	0	1K		Thunderstorm Wind	
Several trees fell on top of power lines.										
Shelby County 2 SW (Mem)Memphis Intl Ar to 1 SW (Mem)Memphis Intl Ar	27	2015CST 2020CST			0	0	25K		Thunderstorm Wind	
A downburst from a thunderstorm damaged a section of Memphis just southwest of the airport. One restaurant suffured major roof damage and had its sign blown down. Three other businesses suffered lesser roof damage. Several trees were blown down as well.										
Shelby County Memphis	27	2100CST 2230CST			0	0	20K		Flash Flood	
Several cars were flooded south of downtown Memphis as well as in the east part of town.										
Hardeman County Whiteville	27	2120CST 2230CST			0	0	0.50K		Flash Flood	
A police car was nearly washed off of a road.										
Fayette County Somerville	27	2145CST 2245CST			0	0	1K		Flash Flood	
Many roads in the city as well as in the county were flooded.										
Chester County Henderson	27	2150CST 2300CST			0	0	1K		Flash Flood	
U.S. Highway 45 was under 2 feet of water. Several other roads in the area were flooded as well.										
Mcnairy County Purdy to Selmer	27	2200CST 2300CST			0	0	50K		Flash Flood	
A two-story house collapsed due to flood waters in Purdy. Several roads were flooded in the Selmer area with up to 18 inches of water across some roads.										

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
TENNESSEE, West									
Chester County Deanburg	27	2220CST 2315CST			0	0	1K		Flash Flood
Flash flooding produced a mudslide along Route 100W.									
TEXAS, Central									
Taylor County (Dys)Dyess Afb Abile	21	0630CST			0	0			Hail (1.75)
Taylor County 4 W Abilene	21	0635CST			0	0			Hail (0.88)
Callahan County 3 W Baird	21	0700CST			0	0			Hail (0.75)
Shackelford County 15 SW Albany	21	0730CST			0	0			Hail (0.75)
Nolan County Sweetwater	21	1740CST			0	0			Hail (0.75)
Taylor County Abilene	21	1835CST			0	0			Hail (0.75)
Coleman County Glen Cove	21	2211CST			0	0			Hail (0.75)
Tom Green County San Angelo	21	2250CST 2305CST			0	0			Hail (0.88)
Runnels County Ballinger	21	2250CST			0	0			Hail (0.88)
Tom Green County San Angelo Mathis Fl	21	2334CST			0	0			Hail (0.75)
Thunderstorms developed in the cold air behind a cold front that moved southward through west central Texas the evening and night of October 21st. These thunderstorms produced cold rain, hail, and ice pellets over much of the area.									
Mcculloch County Brady	27	1834CST			0	0			Hail (0.88)
Kimble County Segovia	28	0200CST 0400CST			0	0	50K	0	Flash Flood
Seven to nine inches of rain fell over parts of south central and southeast Kimble County.									
Mason County 15 SE Mason	28	0600CST 0800CST			0	0	50K	0	Flash Flood
Water was running over U.S. Highway 87 in southern Mason County.									
TXZ169>170	Kimble - Mason								
	28 29	0600CST 0600CST			0	0	3M	100K	Flood

Significant river flooding occurred along the Llano River in Kimble and Mason counties on October 28th. This flooding was a result of a stationary front over the hill country combined with deep tropical moisture during the early morning hours of the 28th. Most of the rainfall occurred in the headwaters of the Llano River over northern Edwards County. Heavy rain also occurred over eastern Kimble and southern Mason counties. Rainfall amounts of three to five inches were common over Kimble and Mason counties, with up to nine inches reported in parts of southeast Kimble County. The runoff quickly entered the Llano River and caused river flooding and damage to homes and roads.

An observer in Telegraph (extreme southern Kimble County) along the South Llano River reported the river had risen 20 feet on the morning of the 28th. Downstream at the South Llano State Park just outside of Junction (Kimble County), the river crested at 14 feet in the late morning. Eight people camping in the park were evacuated. The water then moved toward the city of Junction and caused camper parks to be evacuated. The water treatment plant was flooded requiring the residents of Junction to boil their drinking water. However, no damage was reported within the city limits of Junction.

The South Llano River reached its crest of 23.7 feet in the early afternoon (1400 CST) of the 28th just east of Junction, with a secondary crest of 24 feet that night.

Most of the flood damage in Kimble County occurred along the Johnson Fork, a tributary of the Llano River in the eastern part of the county. As many as four homes were flooded with as much as three feet of water in the homes. Several roads were damaged or washed out in the county including Farm-to-Market Road 2169 near Segovia and Highway 377 about 15 miles south of Junction. About 300 miles of fencing was also damaged.

In Mason County, lowland flooding occurred along the Llano River and Beaver Creek. The Llano River near Mason crested at 24.6 feet around 1030 CST on the 28th with a secondary crest of near 22 feet during the night of the 28th. Bankfull stage is six feet. Beaver Creek near Mason crested at 19.6 feet on the morning of the 28th. Flood stage is 12 feet. However, no major flood damage was reported in Mason County.

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
<u>TEXAS, Central Southeast</u>									
Chambers County Coast	05 08	0100CST 2300CST			0	0	20M		Coastal Flood
	05 08	0100CST 2300CST			0	0			Coastal Flood
Jack County	05 08	0100CST 2300CST			0	0	1M		Coastal Flood
	08	2300CST			0	0	250K		Coastal Flood
	Strong gradient winds produced by a combination of high pressure across the eastern U.S. and Tropical Storm Josephine caused coastal flooding along the Upper Texas Coast. Tides ranged from 2 to 5 feet above astronomical predicted levels and caused substantial beach erosion, damaged beach houses and low lying coastal roads. 7 homes were destroyed and 75-80 homes damaged.								
Galveston County .5 N Port Bolivar	16	1439CST 1445CST			0	0			Waterspout
Coast Guard reported waterspout just north of Bolivar.									
Matagorda County Matagorda	24	1325CST 1430CST			0	0	15K		Flash Flood
Streets in Matagorda flooded. FM 2031 was also flooded.									
<u>TEXAS, Extreme West</u>									
NONE REPORTED.									
<u>TEXAS, Mid - South</u>									
Nueces County Coastal Sections	05 08	0500CST 1800CST			0	0			Coastal Flooding
Tides three to four feet above normal at times of high tide, due to a prolonged tight pressure gradient between what would become Tropical Storm Josephine and a high pressure area to the north, resulted in extensive minor to moderate coastal flooding across the Nueces county coastline. Flooding resulted in the closure of the JFK causeway, and Laguna Shores Road. Portions of Shoreline Drive were under water, as well as some of the T-Heads. Flooding was reported in Port Aransas with water levels one foot over the docks. Minor flooding was reported along the coastal highways.									
Aransas County Coastal Locations	05 08	0500CST 1800CST			0	0			Coastal Flooding
Minor flooding occurred along the coastal highways of Aransas county due to the interaction between what would become Tropical Storm Josephine and a high pressure area to the north. The tight pressure gradient which resulted caused three to four foot tide levels above normal.									
Calhoun County Coastal Locations	05 08	0500CST 1800CST			0	0			Coastal Flooding
Minor to moderate coastal flooding resulted along the Calhoun county coastline due to a prolonged tight pressure gradient between what would become Tropical Storm Josephine, and a high pressure area to the north. Three to four foot tides above normal at times of high tide resulted in flooding of the barrier islands, water over the docks at Port O Connor, and water over Highway 316 at Magnolia Beach.									
<u>TEXAS, North</u>									
Milam County Gause	17	1749CST			0	0			Hail (0.75)
Erath County Lingleville	21	0622CST			0	0			Hail (1.00)
A warm, moist and very unstable air mass had established itself over northern Texas on the 20th and 21st. A strong capping inversion over the area inhibited thunderstorm development on the 20th but the cap was weakened early on the 21st as an upper level trough shifted into the Southern Plains. Thunderstorms developed along a Pacific cold front in the western portions shortly before sunrise, then moved ahead of the boundary into the highly unstable air mass. Low level wind shear was conducive for some of the storms to become supercell thunderstorms and one such storm moved across Hood, Johnson, southern Tarrant, Dallas, and Rockwall Counties between 0600 CST and 1000 CST. Extensive damage from downbursts and tornadoes, and hail up to golfball size occurred with this storm. Another supercell developed on the front over Stephens County during the mid-morning hours. This storm moved across Palo Pinto, Parker, Tarrant, Dallas, Rockwall, Kaufman and Van Zandt Counties with hail up to baseball size and damaging microbursts. Other severe thunderstorms redeveloped along the front as it moved into the central portions of the area around midday. One of these storms became a supercell over western Tarrant County and hail to softball size and damaging downbursts occurred as it tracked across Tarrant, southeast Denton and Collin Counties. By early afternoon, an outflow boundary from the morning's thunderstorm activity had pushed into the southern portion of North Texas and extended near a Waxahachie to Comanche line. Two tornadic supercells developed and tracked east-northeast along the boundary across Comanche, Hamilton, Bosque, Hill and Ellis Counties. Hail to baseball size and at least four brief tornadoes were produced by these storms.									
By early evening, the Pacific front had pushed into east Texas, ending much of the thunderstorm activity over north central Texas. This activity, however, redeveloped over the area later in the evening as an arctic front and a strong upper level disturbance									

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
<u>TEXAS, North</u>									
									approached. A few of the storms that formed above the shallow arctic air mass briefly became severe producing nickel to quarter size hail.
Erath County 3 W Morgan Mill	21	0630CST			0	0			Hail (1.00)
Hood County 4 S Granbury	21	0700CST 0705CST	0.5	40	0	0	40K		Tornado (F1)
									A tornado blew down a sign, uprooted trees, moved a trailer off its foundation and took the south side of a residence off.
Parker County Weatherford	21	0700CST			0	0	50K		Hail (1.75)
									Golfball size hail damaged windshields and cars, and killed an emu.
Hood County Granbury	21	0707CST			0	0			Hail (1.00)
Johnson County Godley	21	0735CST			0	0			Hail (1.50)
Johnson County Joshua	21	0738CST			0	0			Hail (0.75)
Tarrant County Crowley	21	0745CST			0	0	150K		Thunderstorm Wind (G70)
									Wind gusts to 80 mph blew in hangar doors and damaged at least six airplanes at Fort Worth Spinks Airport.
Johnson County Burleson	21	0750CST			0	0			Hail (1.75)
Johnson County Burleson	21	0750CST			0	0			Thunderstorm Wind (G70)
Palo Pinto County Palo Pinto	21	0830CST			0	0			Hail (0.75)
Dallas County Dallas	21	0835CST 0837CST	0.5	50	0	7	3M		Tornado (F1)
									A tornado ripped portions of the roof off an apartment complex, damaged 225 apartment units and injured 7 people. Serious damage occurred to cars and buildings due to flying debris. A mobile home was blown into the road.
Tarrant County Eagle Mtn Lake	21	0842CST			0	0			Hail (0.75)
Palo Pinto County Mineral Wells	21	0842CST			0	0			Hail (0.75)
Dallas County Mesquite	21	0845CST 0846CST	0.1	35	0	1	120K		Tornado (F0)
									A tornado lifted much of the roof off a residence, blew down 100 to 200 power lines, overturned a trailer, blew down 10 chimneys, and blew the glass out of a business. The flying glass injured a child.
Parker County Weatherford	21	0915CST			0	0			Hail (1.75)
Parker County 3 E Weatherford	21	0917CST			0	0			Hail (2.00)
Parker County Anneta	21	0920CST			0	0			Hail (1.75)
Rockwall County Rockwall	21	0922CST			0	0			Thunderstorm Wind (G52)
Tarrant County Ft Worth	21	0930CST			0	0	1M		Hail (2.00)
									Large hail damaged 500 new vehicles at an auto dealership on the west side of town.
Parker County Aledo	21	0931CST			0	0	10K		Hail (2.75)
									Baseball size hail broke windows.
Eastland County Eastland	21	0935CST			0	0			Hail (1.75)
Eastland County Eastland	21	0940CST			0	0	70K		Hail (1.75)
									Golfball size hail caused minor damage to about 70 cars at various dealerships.
Tarrant County Ft Worth	21	0947CST			0	0			Hail (0.75)
Tarrant County Ft Worth	21	0950CST			0	0			Hail (1.75)
Tarrant County Ft Worth	21	1005CST			0	0			Thunderstorm Wind (G52)
									60 mph winds were reported in Edgecliff Village.

Storm Data and Unusual Weather Phenomena

October 1996

									October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Estimated Damage Property	Crops	Character of Storm
TEXAS, North									
Erath County Thurber	21	1010CST			0	0			Hail (1.75)
Erath County 2 S Thurber	21	1010CST 1012CST	0.1	30	0	0			Tornado (F0)
A motorist reported a brief tornado touchdown.									
Tarrant County Bedford	21	1014CST			0	0			Hail (1.00)
Tarrant County Bedford	21	1014CST			0	0			Thunderstorm Wind (G52)
Tarrant County Hurst	21	1015CST			0	0			Hail (0.75)
Erath County 6 NW Morgan Mill	21	1020CST			0	0			Hail (1.75)
Dallas County Irving	21	1027CST			0	0			Hail (1.00)
Dallas County Coppell	21	1030CST			0	0			Hail (1.75)
Erath County 5 N Morgan Mill	21	1035CST			0	0			Hail (1.75)
Palo Pinto County 5 E Gordon	21	1035CST			0	0	50K		Hail (1.75)
Golfball size hail damaged cars on I-20.									
Tarrant County Grapevine	21	1040CST			0	0			Hail (1.50)
Dallas County Irving	21	1043CST			0	0			Hail (1.50)
Dallas County Addison	21	1043CST			0	0			Hail (1.00)
Dallas County Addison	21	1043CST			0	0			Thunderstorm Wind (G52)
Hunt County Quinlan	21	1045CST			0	0	2K		Thunderstorm Wind
Power lines were blown down.									
Collin County Plano	21	1050CST			0	0	3K		Thunderstorm Wind
A billboard was blown down onto power lines.									
Collin County Plano	21	1050CST			0	0			Hail (0.75)
Hood County 3 E Granbury	21	1120CST			0	0			Hail (1.00)
Parker County 4 S Weatherford	21	1120CST			0	0	20K		Hail (2.75)
Baseball size hail pulverized a mobile home.									
Wise County Boyd	21	1120CST			0	0			Hail (1.00)
Tarrant County Mansfield	21	1121CST			0	0			Hail (2.00)
Tarrant County Benbrook	21	1138CST			0	0			Hail (0.75)
Tarrant County Ft Worth	21	1139CST			0	0			Hail (1.75)
Johnson County Burleson	21	1140CST			0	0			Hail (1.00)
Dallas County Cedar Hill	21	1140CST			0	0			Hail (1.00)
Tarrant County Ft Worth	21	1156CST			0	0			Hail (1.00)
Dallas County Dallas	21	1203CST 1245CST			0	0			Flash Flood
Portions of frontage roads near Central Expressway were flooded.									
Tarrant County 6 NW Mansfield	21	1215CST			0	0			Hail (0.88)

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage	Crops	Character of Storm
TEXAS, North										
Tarrant County Arlington	21	1220CST 1320CST			0	0				Flash Flood
Heavy rain caused water to flow over roads.										
Dallas County Grand Prairie	21	1220CST 1300CST			0	0				Flash Flood
Heavy rain caused water to cover roads.										
Dallas County Irving	21	1230CST			0	0				Hail (1.00)
Dallas County Dallas	21	1230CST			0	0				Hail (2.00)
Hail larger than golfball size was reported on the west side of town.										
Comanche County 8 S Comanche	21	1230CST			0	0				Hail (0.75)
Dallas County Dallas	21	1240CST			0	0				Hail (1.50)
Lamar County 4 SE Paris	21	1250CST			0	0		2K		Thunderstorm Wind (G61)
Power lines were blown down by winds estimated at 70 mph.										
Rockwall County Rockwall	21	1255CST			0	0				Hail (1.00)
Kaufman County 8 W Terrell	21	1315CST			0	0				Hail (1.00)
Hamilton County Hico	21	1320CST			0	0				Hail (0.75)
Erath County 3 E Clairette	21	1325CST			0	0				Hail (0.75)
Rains County 5 NE Emory	21	1325CST			0	0				Hail (0.75)
Bosque County Morgan	21	1330CST			0	0				Hail (1.75)
Kaufman County Terrell	21	1333CST			0	0				Hail (1.00)
Tarrant County Lake Worth Vlg	21	1353CST			0	0				Hail (1.00)
Tarrant County Ft Worth	21	1354CST			0	0				Hail (0.88)
Nickel size hail fell at the National Weather Service Forecast Office on the north side of town.										
Rains County Emory	21	1355CST			0	0				Hail (0.75)
Tarrant County South Lake	21	1405CST			0	0				Hail (1.75)
Tarrant County Colleyville	21	1405CST			0	0				Hail (1.00)
Tarrant County North Richland Hills	21	1406CST			0	0				Hail (1.00)
Tarrant County Grapevine	21	1407CST			0	0				Hail (1.75)
Tarrant County Grapevine	21	1410CST			0	0		400K		Hail (4.50)
Baseball to softball size hail damaged automobiles, homes and businesses.										
Hamilton County 3 NE Hamilton	21	1415CST 1416CST	0.1	30	0	0				Tornado (F0)
A brief tornado touchdown was reported.										
Van Zandt County Wills Pt	21	1420CST			0	0				Hail (0.75)
Denton County Lewisville	21	1420CST			0	0		100K		Hail (4.50)
Baseball to softball size hail damaged automobiles, businesses and homes.										
Dallas County Coppell	21	1427CST			0	0				Hail (1.75)
Dallas County Carrollton	21	1430CST			0	0				Hail (1.00)

Storm Data and Unusual Weather Phenomena

October 1996

									October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Character of Storm	
					Killed	Injured	Property		Crops
TEXAS, North									
Hamilton County Hico	21	1430CST			0	0		Hail (0.75)	
Bosque County Morgan	21	1430CST			0	0		Hail (1.75)	
Bosque County Kopperl	21	1430CST 1431CST	0.1	30	0	0		Tornado (F0)	
A brief tornado touchdown was reported.									
Bosque County Meridian	21	1433CST			0	0		Hail (2.25)	
Collin County Plano	21	1435CST			0	0		Hail (2.00)	
Hill County 5 SE Blum	21	1440CST			0	0		Hail (1.75)	
Hamilton County Hamilton	21	1445CST			0	0		Hail (0.75)	
Hill County Osceola	21	1445CST 1446CST	0.1	30	0	0		Tornado (F0)	
A brief tornado touchdown was reported.									
Collin County Plano	21	1450CST			0	0		Hail (2.00)	
Hill County Osceola	21	1450CST			0	0		Hail (1.75)	
Hill County Itasca	21	1500CST			0	0		Hail (1.75)	
Bosque County 3 S Meridian	21	1510CST			0	0		Hail (1.00)	
Hill County 5 S Itasca	21	1515CST			0	0		Hail (1.00)	
Hill County Osceola	21	1515CST			0	0		Hail (0.75)	
Ellis County Maypearl	21	1515CST			0	0		Hail (0.88)	
Ellis County Italy	21	1522CST			0	0		Hail (0.75)	
Ellis County Avalon	21	1522CST			0	0		Hail (1.00)	
Ellis County Waxahachie	21	1527CST			0	0		Hail (0.75)	
Hamilton County Indian Gap	21	1530CST			0	0		Hail (1.00)	
Hill County Hillsboro	21	1552CST			0	0		Hail (1.00)	
Hill County Malone	21	1605CST			0	0		Hail (1.75)	
Navarro County Blooming Grove	21	1605CST			0	0		Thunderstorm Wind (G52)	
Ellis County Palmer	21	1608CST			0	0		Hail (1.00)	
Kaufman County Rosser	21	1620CST			0	0		Thunderstorm Wind (G52)	
Large tree limbs were blown down.									
Kaufman County 4 S Kaufman	21	1628CST			0	0		Hail (0.75)	
Navarro County 2 W Corsicana	21	1635CST			0	0		Hail (1.00)	
Van Zandt County Whiton	21	1640CST			0	0		Hail (0.75)	
Henderson County Eustace	21	1640CST			0	0		Hail (1.75)	
Lampasas County 6 S Lometa	21	1650CST			0	0		Thunderstorm Wind (G52)	
Van Zandt County Canton	21	1655CST			0	0		Hail (0.75)	

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
TEXAS, North									
Henderson County Malakoff	21	1700CST			0	0			Hail (1.75)
Coryell County King	21	1710CST			0	0			Hail (0.75)
Henderson County Athens	21	1712CST			0	0			Hail (0.75)
Young County 8 NW Newcastle	21	1901CST			0	0			Hail (0.88)
Young County Olney	21	1908CST			0	0			Hail (0.88)
Freestone County Donie	21	2000CST			0	0			Hail (0.75)
Anderson County 8 W Palestine	21	2021CST			0	0			Thunderstorm Wind (G52)
Leon County Buffalo	21	2040CST			0	0			Hail (0.75)
Limestone County Groesbeck	21	2040CST			0	0			Thunderstorm Wind (G52)
Anderson County Palestine	21	2047CST			0	0			Hail (0.75)
Dallas County Lancaster	21	2110CST			0	0			Hail (1.00)
Dallas County Lancaster	21	2112CST			0	0			Hail (1.75)
Tarrant County Ft Worth	27	2010CST 2130CST			0	0	4K		Flash Flood
Widespread 3 to 6 inch rainfall amounts in a couple hours resulted in serious urban flooding. Cars were flooded south of the mix-master on I-35.									
Dallas County Grand Prairie	27	2010CST 2130CST			0	0	4K		Flash Flood
Cars were reported flooded by high water.									
Tarrant County Watauga	27	2015CST 2130CST			0	0	4K		Flash Flood
Cars were reported flooded on Hightower Road.									
Johnson County Cleburne	27	2040CST 2200CST			0	0			Flash Flood
Street flooding was reported in town.									
Tarrant County Ft Worth	27	2054CST 2200CST			0	0			Flash Flood
Oakwood Crossing at Dearcreek Road was reported impassable due to high water.									
Johnson County Burleson	27	2115CST 2230CST			0	0			Flash Flood
Water was reported over the bridge at Highway 287 and Nelson.									
Johnson County Cleburne	27	2120CST 2300CST			0	0			Flash Flood
Water was reported over Highway 67.									
Collin County Frisco	27	2120CST 2300CST			0	0			Flash Flood
A woman was trapped in her car when her car stalled in high water.									
Dallas County Dallas	27	2217CST 2330CST			0	0			Flash Flood
Water was up to the bridge on Rowlett Creek on Little Road.									
Ellis County 4 N Palmer	27 28	2332CST 0100CST			0	0			Flash Flood
A service road on I-45 was reported flooded.									
Wise County 2 SE Bridgeport	28	0630CST 0800CST			0	0	6K		Flash Flood

Storm Data and Unusual Weather Phenomena

October 1996

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
<u>TEXAS, North</u>									
	At least two cars were washed off Highway 114.								
Jack County Perrin	28	0655CST 0800CST			0	0			Flash Flood
	Water was reported over a few roads around town.								
Jack County Vineyard	28	0745CST 0900CST			0	0			Flash Flood
	Roads were closed in and around town.								
Denton County Krum	28	0830CST 1000CST			0	0			Flash Flood
	Water was reported over roads with creeks and culverts overflowing their banks and threatening homes.								
Denton County Denton	28	0900CST 1000CST			0	0			Flash Flood
	Water was reported over roads with creeks and culverts overflowing their banks and threatening homes.								
<u>TEXAS, North Panhandle</u>									
Donley County Howardwick	07	1501CST			0	0			Hail (1.00)
Donley County Howardwick	07	1513CST			0	0			Hail (1.75)
Donley County 1 S Howardwick	07	1513CST			0	0			Hail (0.88)
Donley County Clarendon	07	1513CST			0	0			Hail (1.00)
	Thunderstorms across the southeast Texas panhandle produced hail as reported by the sheriff's office.								
TXZ012	Potter								
	25	2258CST			0	0			High Wind (G53)
	A deep low pressure system moving through Colorado combined with a jet max to produce very strong winds. While many locations in the Texas panhandle had strong winds the only report over 50 knots was at the NWS ASOS with a peak gust of 53 knots.								
<u>TEXAS, Northeast</u>									
Bowie County Redwater	17	1709CST			0	0			Hail (0.50)
Bowie County Leary	17	1725CST			0	0			Hail (1.75)
Rusk County Henderson	17	1810CST			0	0			Hail (0.75)
Rusk County Oak Hill	17	1813CST			0	0			Hail (0.75)
Red River County 3 W Avery	21	1140CST			0	0			Hail (0.75)
Bowie County New Boston	21	1302CST			0	0			Hail (1.00)
Wood County Hawkins	21	1336CST			0	0			Hail (1.00)
Camp County Newsome	21	1345CST			0	0			Hail (0.75)
Camp County Leesburg	21	1347CST			0	0			Hail (0.75)
Morris County Dangerfield	21	1422CST			0	0			Hail (0.75)
Morris County Dangerfield	21	1422CST			0	0			Thunderstorm Wind (G60)
Upshur County 2 W Gilmer	21	1425CST			0	0			Thunderstorm Wind (G60)
	Several trees blown down across Hwy 154.								
Cass County 14 NW Linden to 1 W Atlanta	21	1426CST 1458CST	22	25	0	0	35K	0	Tornado (F1)

A tornado skipped across central and east central Cass County. The tornado first touched down near FM250 and south of HWY 77 or 14 miles northwest of Linden where a stop sign was blown about 200 yds and several large oak trees with trunks to 10 feet in diameter were dragged eastward 20 feet. A large farm tractor was tossed upside down into a pond and a lawn mower was reported missing. The tornado lifted and traveled eastward as a funnel until the west side of Atlanta where the windows of a restaurant imploded inward and the roof was lifted off the building for a brief period before falling into its original position leaving minor damage. Two blocks southeast, another restaurant had its roof blown completely off. The tornado lifted again just before entering

Storm Data and Unusual Weather Phenomena

October 1996

October 1996									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>TEXAS, Northeast</u>									
	the city of Atlanta.								
Cass County 5 NE Linden	21	1442CST			0	0			Hail (1.75)
Cass County 5 N Atlanta	21	1550CST			0	0			Thunderstorm Wind (G70)
	Thunderstorm winds blew a tractor trailer off Hwy 59 flipping it onto its side. No injureis were reported.								
Harrison County Harleton	21	1654CST			0	0			Hail (0.75)
Marion County 1 E Jefferson	21	1655CST			0	0			Hail (1.75)
Harrison County Uncertain	21	1700CST			0	0			Hail (0.75)
Smith County Lindale	21	1730CST			0	0			Hail (1.50)
Smith County Tyler	21	1732CST			0	0	30K	0	Thunderstorm Wind (G70)
	Numerous trees were blown down inside the city. Five homes were damaged by falling trees and nearly 20,000 people lost power.								
Gregg County 5 W Longview	21	1815CST			0	0			Hail (0.75)
Gregg County Longview	21	1821CST			0	0			Thunderstorm Wind (G65)
Gregg County 3 W Longview	21	1824CST			0	0			Hail (0.60)
Upshur County 10 E Gilmer	21	1830CST			0	0			Thunderstorm Wind (G60)
	Several trees down across FM 1650.								
Rusk County 12 N Henderson	21	1830CST			0	0			Thunderstorm Wind (G60)
	Several trees were blown down across FM 782.								
Cherokee County 5 NE Jacksonville	21	1838CST			0	0			Thunderstorm Wind (G60)
Harrison County 1 W Hallsville	21	1850CST			0	0			Thunderstorm Wind (G60)
	Several trees were uprooted from the high winds.								
Harrison County Hallsville	21	1852CST			0	0			Hail (0.75)
Harrison County Marshall	21	1900CST			0	0			Hail (0.75)
Harrison County Hallsville	21 22	2142CST 0145CST			0	0			Flash Flood
	Several secondary roads were closed due to high water.								
Nacogdoches County Appleby	21	2330CST			0	0			Hail (0.75)
Shelby County 2 W Center	22	0010CST			0	0			Hail (0.75)
<u>TEXAS, South</u>									
Hidalgo County Pharr	02	1230CST			0	1			Lightning
Cameron County Countywide	04 06	1000CST 1200CST			0	0			Flash Flood
	Rain associated with the fringes of Tropical Storm Josephine/T.D.10 produceed widespread rainfall totals of more than 6 inches, and more than 10 inches in Brownsville. Extensive flooding of streets and low areas occurred with the worst in Green Valley east of San Benito, and in the eastern half of Brownsville where numerous homes were flooded.								
Willacy County Countywide	05 06	0200CST 1200CST			0	0			Flash Flood
	Rain on Fringe of Tropical Storm Josephine/T.D. 10 caused totals of six inches or more causing flooding of streets and low spots.								
TXZ251-254>255	Kenedy - Willacy - Cameron								
	05 08	0500CST 1600CST			0	0			Coastal Flood
	Swellls arriving from Tropical Storm Josephine/T.D. 10 caused extensive beach flooding and erosion on Padre Island and Boca Chica beaches.								

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Estimated Damage Crops	Character of Storm
TEXAS, South Central									
TXZ183>184-189-202>206-217>222-228	Val Verde - Edwards - Kendall - Kinney - Uvalde - Medina - Bexar - Comal - Maverick - Zavala - Frio - Atascosa - Wilson - Karnes - Dimmit								
	01 31	0001CST 2359CST			0	0	10M	20M	Drought
	Drought persisted through October across the southwestern part of South Central Texas, although heavy rainfall alleviated conditions over much of the Hill Country near the end of the month. Monthly damages are based on the estimated annual loss to agriculture across all of Texas through this year. Property damages do not include business or commercial revenue losses.								
Williamson County Cedar Park	17	1620CST 1630CST			0	0	5K	0	Thunderstorm Wind
	Trees blown down near Old Stage Road as reported by the sheriff.								
Williamson County Round Rock	17	1630CST 1640CST			0	0	15K	0	Hail (1.50)
	Hail to golfball-size near I-35 reported by amateur radio spotters.								
Travis County Western Part	17	1642CST 1650CST			0	0			Hail (0.75)
Travis County Northwest Austin	17	1642CST 1650CST			0	0	20K	0	Hail (1.50)
Travis County Austin	17	1645CST 1655CST			0	0	10K	0	Hail
	Trees blown over as reported by the public.								
Kerr County Countywide	27 28	1840CST 0300CST			0	0	5K	0	Flash Flood
	Late evening rainfall of between 3 and 5 inches over the county produced widespread flash flooding that inundated numerous county roads. The rainfall ended near midnight, with flash flooding ending in the early morning hours. Additional heavy rain later on the 28th redeveloped flash flooding.								
Gillespie County Countywide	27 28	1900CST 0300CST			0	0	3K	0	Flash Flood
	Widespread flash flooding reported across the county as 2 to 4 inches of rain fell in the late evening hours. Numerous roads were reported under water. The flash flooding ended in the early morning hour, but redeveloped again later.								
Kendall County Northwest Part	27	2000CST 2200CST			0	0			Flash Flood
	Rainfall of up to 4 inches in northwest Kendall County caused flash flooding that closed roads through the late evening.								
Bandera County Western Part	27 28	2130CST 0300CST			0	0	3K	0	Flash Flood
	Rainfall through the late evening hours of between 2 and 4 inches caused flash flooding over the western part of the county through the early morning hours.								
Burnet County Countywide to Western Part	27 28	2200CST 0100CST			0	0	3K	0	Flash Flood
	General rainfall of 2 to 3 inches in the late evening caused flash flooding that ended shortly after midnight.								
TXZ186	Kerr 27 28	2330CST 1500CST			0	0			Flood
	Rainfall of between 2 and 4 inches in western Kerr County from the evening of the 27th through the early morning of the 28th produced flooding along the Guadalupe River from Hunt to just above Comfort. The flood crest reached 19.7 feet at Hunt, where flood stage is 12 feet.								
Llano County Countywide	28	0030CST 0200CST			0	0	2K	0	Flash Flood
	Rainfall of between 2 and 4 inches, mainly over the southwest portion of the county, produced flash flooding of roads and low water crossings through the early morning hours.								
Edwards County Countywide	28	0130CST 0400CST			0	0	2K	0	Flash Flood
	Between 2 and 3 inches of rain in the early evening hours, causing flash flooding over much of the county. Vehicles were reported stalled along county roads between Rocksprings and Brackettville. The flash flooding redeveloped again later in the morning.								
Real County Countywide	28	0130CST 0400CST			0	0	3K	0	Flash Flood

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
TEXAS, South Central									
Kinney County Countywide	General 2 to 4 inch rainfall over nearly all the county resulted in widespread flooding of roads and low water crossings. The flash flooding ended in the early morning hours, but redeveloped again later in the morning.								
	28	0530CST 0700CST			0	0	3K	0	Flash Flood
Edwards County Countywide	General 3 to 4 inch rainfall across the county resulted in flash flooding across most of the county roads. Rainfall totals of up to 6 inches of rain were reported.								
	28	0600CST 0830CST			1	0	3K	0	Flash Flood
Kerr County Countywide	Severe flash flooding redeveloped due to rainfall of generally between 2 and 6 inches in the eastern part of the county. The heaviest rain fell in the eastern half of the county. Both the area just west of Barksdale and the area around Rocksprings reported 11 inches of rain from the evening of the 27th through the morning of th 28th. A 57-year old man drowned near Barksdale where the Nueces River crosses Highway 55 near the Edwards/Real County line. He had driven across earlier to visit friends. Witnesses indicated that he drove around a barrier near 0630CST in an attempt to cross the river on his return trip and his truck was swept away into the flooded waters. Four other people were rescued by helicopters as their vehicles were swept away in flooded draws. M57VE								
	28	0600CST 1200CST			0	2	5K	0	Flash Flood
Real County Countywide	Widespread additional heavy rainfall of 3 to 4 inches over Kerr County caused flash flooding to redevelop very quickly. Rainfall totals from the evening of the 27th through the morning of the 28th were 8.5 inches at Kerrville and 9 inches at Mountain Home. Two women were rescued from their motor home when it was swept off a bridge over Indian Creek into the Guadalupe River.								
	28	0600CST 1200CST			0	0	5K	0	Flash Flood
TXZ171>172-192	Additional heavy rainfall of 3 to 4 inches redeveloped flash flooding very rapidly across the county. Rainfall totals from the evening of the 27th through the morning of the 28th were between 4 and 6 inches, with up to 7 inches reported at Leakey.								
	Llano - Burnet - Travis								
	28	0800CST			0	0	250K	70K	Flood
	29	0600CST							
Bandera County Western	Rainfall of up to 13 inches west of Llano County on the Llano River watershed caused widespread flooding in both Llano and Burnet Counties. The river rose to a crest of nearly 31 feet in the city of Llano, highest since 1980. All river crossings were flooded through the mid afternoon. The flood wave continued through Lake LBJ and passed downstream, inundating all facilities near the river. Commercial boat docks were washed downstream, some as far as a mile away. The flood wave spread into southern Burnet County during the late evening hours of the 28th. Lake Marble Falls rose so high and so quickly that it cut off residential subdivisions, leaving residents stranded. The water began to recede in the evening of the 28th with all flooding ended by midnight. Over 36 billion gallons of water flowed into Lake Travis in Travis County.								
	28	0830CST 1200CST			0	0	5K	0	Flash Flood
Uvalde County North Central	Additional rainfall of 2 to 3 inches over western Bandera County resulted in flash flooding through the early morning hours. Rainfall totals from the evening of the 27th through the morning of the 28th were between 3 and 5 inches, with up to 7 inch totals in the southwest corner of the county.								
	28	0830CST 1200CST			0	0	10K	0	Flash Flood
Gillespie County Countywide	Heavy rainfall during the early morning hours of the 28th produced widespread amounts of 4 to 6 inches across the north central part of the county. Flash flooding continued through the early morning hours due to the heavy rain, with the highest amount of nearly 9 inches reported at Utopia.								
	28	0830CST 1200CST			0	1	50K	10K	Flash Flood
TXZ203-218-228	Additional heavy rainfall of 3 to 5 inches across the county caused the very rapid redevelopment of widespread flash flooding across the county. Most roads were closed through the early morning hours. Rainfall totals from the evening of the 27th through the morning of the 28th were generally 5 to 8 inches with up to 12 inches being reported at Harper. During the flood event, a deputy sheriff was injured as lightning struck the wet highway near where he was standing and knocked him down. He recovered and drove to a nearby hospital.								
	Uvalde - Zavala - Dimmit								
	28	0830CST			0	0	15M	40M	Flood
	31	0600CST							
	Rainfall of up to 13 inches on the headwaters of the Nueces River on the evening of the 27th and the morning of the 28th caused the river to rise rapidly. The Nueces finally crested just south of Uvalde at around 20 feet, where flood stage is 11 feet. This was the highest reading since 1962. As it moved southward into Zavala County near 1200CST on the 28th, flow was measured at 200,000 cfs. The river crested near Crystal City at 31 feet. Many homes had to be evacuated, with damage reported to nearly 40 home and mobile homes. The flood wave moved into Dimmit County near 1200CST on the 29th. The river crested near Asherton at just over 29 feet, where flood stage is 20 feet. Damage was reported to around 30 homes and mobile homes along the river. In addition to the damage indicated above, property damage was widespread, with hundreds of livestock drowned and millions of tons of rich topsoil washed away.								

Storm Data and Unusual Weather Phenomena

October 1996

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

TEXAS, South Central

TXZ203-219

Uvalde - Frio

28 1000CST
31 0600CST

0 0 200K 1.1M Flood

Flooding along the Frio River due to the heavy rainfall from the previous 24 hours developed in Uvalde County around 1000CST on the morning of the 28th and moved downstream, entering Frio County around 2000CST on the evening of the 29th. The crest of the flooding occurred near Derby on the night of the 30th, reaching a stage of nearly 9 feet. Flood stage at Derby is 6 feet.

TEXAS, South Panhandle

Briscoe County

5 E Quitaque

07 1630CST
1640CST

0 0 0 50K Hail (1.75)

Hall County

2 S Turkey

07 1630CST
1640CST

0 0 0 50K Hail (1.75)

Motley County

3 N Flomot to
4 SE Flomot

07 1700CST
1715CST

0 0 0 50K Hail (1.25)

Crosby County

5 E Crosbyton

07 1810CST
1820CST

0 0 Hail (1.75)

Severe storms pounded extreme southeast Briscoe, southwest Hall, and northwest Motley Counties on the afternoon and early evening of the 7th. Up to golfball-size hail was reported by the public and county sheriff's offices from Quitaque and Turkey south to Flomot. It almost completely stripped crops (mainly cotton) across that area.

TEXAS, Southeast

NONE REPORTED.

TEXAS, West

NONE REPORTED.

TEXAS, Western North

Hardeman County

Quanah

20 1536CST

0 0 Hail (0.75)

Hail completely covered the ground to depths of over 1 inch. Wind driven hail also broke several house windows in town.

Wilbarger County

Odell

20 1555CST

0 0 Thunderstorm Wind (G65)

Seven power poles were blown down.

Hardeman County

Quanah

20 1830CST

0 0 Hail (1.00)

Archer County

12 SSW Windthorst

21 1920CST

0 0 Hail (0.88)

Clay County

11 S Henrietta

21 1924CST

0 0 Hail (1.00)

Clay County

8 SE Henrietta

21 1945CST

0 0 Hail (1.00)

Hail one-inch in diameter covered Highway 287 to a depth of two inches. The road was subsequently closed for a short period of time.

UTAH, North, Central and South

UTZ003-010

Wasatch Front - Northern Mountains

19 1700MST
20 0500MST

0 0 300K Heavy Snow

The first significant snowstorm blanketed northern Utah overnight. The mountains generally received a foot of snow, though the Alta Ski Resort had the most with 17 inches. The valleys generally had from 2-5 inches. The town of Kearns did receive 7 inches however, the most for the valleys. The reason Kearns did so well was because Lake Effect Snowfall Bands persisted there for several hours. There were numerous traffic accidents during the storm.

UTZ001-003-010>011

Cache Valley - Wasatch Front - Northern Mountains - Southern Mountains And High Plateaus

24 1100MST
25 0800MST

0 20 1M Winter Storm

A stronger winter storm system moved into Utah. Heavy snow dumped 2-3 feet in the mountains, 7-14 inches on the benches and 2-6 inches in the valleys. The heavy, wet snow caused widespread tree damage. It also downed several power and phone lines. As usual with early season snowstorms, there were dozens of accidents along the Wasatch Front. Hunters in the mountains were unable to hunt during the storm due to the wind chill temperatures and low visibilities. The highest snowfall amounts: for the northern mountains the Alta Ski Resort had 36 inches, in the southern mountains Brianhead had 20 inches, the Bountiful Bench had 14 inches, and finally West Valley City received 6 inches.

UTZ011

Southern Mountains And High Plateaus

30 2000MST
31 0500MST

0 0 Heavy Snow

A cold front moved through the state. Moisture was spotty in Utah so snow amounts were below warning criteria in all but one

Storm Data and Unusual Weather Phenomena

October 1996

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

UTAH, North, Central and South

place. In the southern mountains about 20 miles east of Cedar City, Blowhard Mountain, received 8 inches of snow from the storm.

UTZ003

Wasatch Front

30 2300MST
31 0800MST

0 0

High Wind (G49)

Strong high pressure moved into Wyoming and tightened the surface pressure gradient across northern Utah. Strong canyon winds developed along the Wasatch Front due to this pattern. The northeast-east sustained wind speeds averaged from 35-45 mph (30-39 kts). A spotter on the Bountiful Bench reported a peak wind of 49 mph (43 kts), while an off-duty forecaster measured 48 mph (42 kts) in Centerville.

UTAH, Northeast

NONE REPORTED.

VERMONT, North and Central

VTZ007

Caledonia

05 0200EST
0900EST

0 0

Record Temperatures

High pressure moved into western New York early Friday, October 4, 1996 with associated early morning low temperatures in the 20's.

The high pressure area then drifted into northern New England early Saturday, October 5, 1996. Temperatures dropped into the upper teens and lower 20's in North Central and Northeast Vermont...and the mid and upper 20's elsewhere. A hard freeze resulted.

On October 5, 1996 low temperature records were set at the following locations:

Montpelier, VT (Washington County).....23

St. Johnsbury, VT (Caledonia County)....22

Elsewhere...a few early morning low temperatures on Saturday, October 5, 1996 were as follows:

West Burke (Caledonia County)...18 Rutland (Rutland County)....23

Albany (Orleans County).....19 Springfield (Windsor Cnty)..23

Burlington (Chittenden County)..28 Chelsea (Orleans County)....20

Morrisville (Lamoille County)...20

VTZ008

Washington

05 0200EST
0900EST

0 0

Record Temperatures

Addison County
Granville

21 0915EST
1500EST

0 0

10K

Flash Flood

A storm system over Pennsylvania on Sunday, October 20, 1996 drifted northeast...moving across New England Monday night, October 21, 1996. A fetch of moist air off the Atlantic resulting in bands of heavy rain across Northern and Eastern Vermont. Rainfall storm totals were generally between 2 and 4 1/2 inches...with the heaviest rain along and east of the Green Mountains.

The White River flooded portions of Route 100 to a depth of several inches in the Granville, Vt area (eastern Addison County) between 915 AM EST and 3 PM EST. Minor field flooding also occurred along the Connecticut River near South Newbury (Orange County) and the Black River near Craftsbury (Orleans County).

VERMONT, South

NONE REPORTED.

VIRGIN ISLANDS

NONE REPORTED.

VIRGINIA, East

VAZ088-098

Sussex - Virginia Beach

07 2000EST
08 1900EST

0 0

Tropical Storm

Lancaster County
White Stone

08 1220EST

0 0

10K

Thunderstorm Wind

Several trees blown down onto power lines and a few vehicles damaged.

Storm Data and Unusual Weather Phenomena

October 1996

										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm	
<u>VIRGINIA, East</u>										
Louisa County Wares Xrds to Ferncliff	18	1600EST 2300EST			0	0			Flash Flood	
Four to five inches of rain occurred within 6 hours between Wares Crossroads, Louisa, and Ferncliff. Several roads were closed due to high water and there were evacuations in a few areas.										
Louisa County Pendleton	18	1630EST			0	0	25K		Thunderstorm Wind	
A large oak tree was uprooted and crashed onto a home. The home received extensive roof, chimney, and ceiling damage plus a cracked foundation. Also, several hardwood trees were blown down at the intersection of Routes 618 and 700.										
Dinwiddie County Sutherland to Mc Kenney	18	1700EST 2300EST			0	0			Flash Flood	
Four to five inches of rain occurred within 6 hours between Sutherland, Dinwiddie, and McKenney. Several roads were closed due to high water including parts of Route 460.										
Dinwiddie County Dinwiddie	18	1720EST			0	0	20K		Thunderstorm Wind	
Cattle shed was destroyed, several trees were uprooted, and two homes received minor damage.										
Goochland County Hadensville to Bula	18	1845EST			0	0	2K		Thunderstorm Wind	
Several trees blown down near Route 606.										
Prince George County Prince George	18	1845EST			0	0	2K		Thunderstorm Wind	
Several trees blown down.										
Hanover County Montpelier to Doswell	18	1940EST 1945EST			0	0	2K		Thunderstorm Wind	
Several trees blown down.										
<u>VIRGINIA, Extreme Southwest</u>										
NONE REPORTED.										
<u>VIRGINIA, North</u>										
Augusta County West Portion	18	1630EST			0	0	3K		Thunderstorm Wind	
Thunderstorm winds blew the roof off an outbuilding in Churchville. The same line of storms also produced minor damage in the town of Swoope at approximately the same time.										
Rockingham County Harrisonburg	18	1630EST			0	0	50K		Thunderstorm Wind (G52)	
Thunderstorm winds estimated at 60 mph blew down a newly constructed wall and associated scaffolding at a local high school. The wall was part of a renovation. A channeling effect of winds between the school and the new wall may have contributed to the collapse.										
Fauquier County Morrisville	18	1825EST			0	0	5K		Thunderstorm Wind	
A line of showers and thunderstorms associated with a vigorous cold front produced an isolated microburst which knocked down several trees at a residence in southern Fauquier Co.										
VAZ052>054	Prince William - Fairfax - Arlington									
	18	1830EST 1900EST			0	0	2K		Gusty Wind/Hvy Rain	
A vigorous cold front, attended by a line of showers and thunderstorms, produced brief wind gusts to 45 mph and rainfall between 1.5 and 2.5 inches across much of northern Virginia during the evening of the 18th. A few trees and large limbs were knocked down, including one along interstate 95 in Prince William Co (VAZ052) and another which blocked the George Washington Parkway near Mt Vernon (VAZ053). Virginia Power reported 16,000 customers were without electricity during the height of the storm.										
Fauquier County S Portion	18	1945EST 2015EST			0	0			Flash Flood	
The intersection of local routes 806 and 828 was closed by high standing water up to 1 foot in depth. An automobile was swept off the road; at least 2 1/2 inches of rain fell in the area.										
<u>VIRGINIA, Northwest</u>										
Buchanan County Vansant to Prater	02	0900EST 1300EST			0	0	300K		Flash Flood	
Eight county homes were flooded, with the most damage										

Storm Data and Unusual Weather Phenomena

October 1996

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

VIRGINIA, Northwest

along Little Prater Creek and Route 617. Twentyfour roads had damage, mainly being undercut by swift flowing small streams. Rainfall of 4.3 inches fell at Vansant in less than 6 hours.

Dickenson County Eastern Portion

**02 0900EST
1300EST 0 0 Heavy Rain**

Rainfall of 3.6 inches was measured at Flanningan Dam and Birchleaf, while the Breaks Interstate Park had 3.3 inches. The rains fell within a 6 hour period. Mudslides occurred, but no damage to dwellings was reported.

VIRGINIA, Southwest

Halifax County 7.5 SE Scottsburg to 8 SE Scottsburg

**09 1540EST
1545EST 0.5 30 0 0 100K Tornado (F1)**

A tornado formed 7.5 miles southeast of Scottsburg during the afternoon hours on the 9th. The tornado traveled approximately 1/2 mile before dissipating. The tornado knocked a large tree onto a barn, destroying the barn, a truck, a four-wheeler, and a tractor, snapped off or uprooted several trees, destroyed dog kennels, and ripped roofs off of barns and homes.

Campbell County Lynchburg

**18 1625EST
1635EST 0 0 30K Thunderstorm Wind**

Thunderstorm winds during the late afternoon hours on the 18th uprooted trees, knocked down power poles and power lines, and broke off tree limbs in Lynchburg. One large tree landed on and severely damaged a home.

WASHINGTON, Northeast

NONE REPORTED.

WASHINGTON, Northwest

WAZ002

Northwest Interior

**14 1130PST
1600PST 0 0 High Wind (G51)**

A spotter at Port Ludlow reported southeast winds 45 mph gusting to 59 mph. Across the bay in Bellingham a tree fell onto a house and approximately 4500 people lost power during the windstorm.

Kitsap County Silverdale

**15 1325PST
1330PST 0 0 Funnel Cloud**

A funnel cloud was spotted by state patrol. 3/8 inch hail was also reported.

King County Bellevue

**15 1430PST
1730PST 0 0 95K Lightning**

Lightning was the probable cause to a house fire that caused \$95,000 in damage.

WAZ002

Northwest Interior

**17 0930PST
1600PST 0 0 High Wind (G56)**

Southeast winds of 40 mph with gust to 64 were reported near Friday Harbor. About 9000 customers in Snohomish county lost power.

WAZ012

Cascade Mountains

**17 1500PST
2000PST 0 0 Early Snowfall**

Early snowfall provided 12 inches to Stevens pass and made driving hazardous across the mountains. There were 15 accidents related to the weather and 3 people were killed. However, the deaths were not directly related to the weather.

WAZ006

Northeast

**19 0000PST
0500PST 0 0 Early Snowfall**

Nearly 3 inches of heavy, wet snow fell early saturday morning, knocking down branches and playing a role in 5 accidents.

WAZ002

Northwest Interior

**23 1730PST
1930PST 0 0 High Wind (G56)**

Winds were report by spotters of 40 to 46 mph at Port Ludlow and Lummi Island.

WASHINGTON, Southeast

NONE REPORTED.

WASHINGTON, Southwest

NONE REPORTED.

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Killed	Injured									

WEST VIRGINIA, East

NONE REPORTED.

WEST VIRGINIA, North

WVZ003-041

Ohio - Tucker

30 0900EST
1200EST

0 0 35K

High Wind (G52)

Strong winds, associated with an intense cold front, caused some damage across northern West Virginia.

In Ohio County, Wheeling was hardest hit. Trees, power lines and poles were downed. A roof was torn from a home and windows were blown out in a Wheeling business.

In Tucker County, wind gusts to 60 mph downed some trees and ripped vinyl siding off of a home.

WEST VIRGINIA, Southeast

NONE REPORTED.

WEST VIRGINIA, West

NONE REPORTED.

WISCONSIN, Extreme Southwest

NONE REPORTED.

WISCONSIN, Northeast

WIZ013-020>022-
030>031-035>040-045-
048>050

Marinette - Menominee - Oconto - Door - Marathon - Shawano - Wood - Portage - Waupaca - Outagamie - Brown -
Kewaunee - Waushara - Winnebago - Calumet - Manitowoc

16 0000CST
0800CST

0 0

Fog

Dense fog developed across most of central, northeast and east central Wisconsin, reducing visibilities to one-quarter mile or less.

Langlade County
1 SE Antigo

16 2105CST

0 0

Hail (0.75)

An isolated late-season severe thunderstorm produced dime size hail 1 mile southeast of Antigo.

Marathon County
5 SW Athens

17 0300CST

0 0

Lightning

A fire caused by lightning destroyed a 100-year old home 5 miles southwest of Athens, which is located in northwest Marathon county.

WIZ012>013-021>022-
038>040-048>050

Florence - Marinette - Oconto - Door - Outagamie - Brown - Kewaunee - Winnebago - Calumet - Manitowoc

21 0000CST
0900CST

0 0

Fog

Dense fog reduced visibilities to one-quarter mile or less across most of northeast and east central Wisconsin.

WIZ022-030>031-
035>040-045-048>050

Door - Marathon - Shawano - Wood - Portage - Waupaca - Outagamie - Brown - Kewaunee - Waushara - Winnebago -
Calumet - Manitowoc

30 0200CST
1800CST

0 0 100K

Strong Winds

A powerful cold front swept across central and east central Wisconsin, producing wind gusts to around 50 mph. The strong winds tore a steel roof off of a building near Iola (Waupaca county), depositing it on top of some nearby power lines. The winds were also responsible for destroying two construction projects, including a storage building near Marshfield (Wood county) and a brick wall of a proposed High School in Menasha (Winnebago county). Trees and branches were felled across the region, many of which landed on power lines. The resulting power outages affected a couple thousand people.

WISCONSIN, Northwest

NONE REPORTED.

WISCONSIN, Southeast

Waukesha County
Chenequa

06 2245CST

0 1 10K

Lightning

Lightning struck a home, blowing a hole in the roof. Falling, hot debris from this hole then dropped through the ceiling of a bedroom, and fell on a child at sleep. The child received slight burns from the hot debris. There was no significant fire.

Jefferson County
2.3 NNE Ixonia

06 2330CST

0 0 50K

Lightning

Lightning struck a home, blowing an 8 by 10 foot hole in the roof which caught fire. The fire seriously damaged the home's 2nd floor. Water damaged the first floor.

Kenosha County
Kenosha

16 2100CST

0 0 15K

Lightning

Lightning struck transformer, knocking out electrical power to 1500 residents.

Iowa County
1 W Ridgeway

16 2300CST

0 0 100K 10K

Lightning

Lightning started a fire that destroyed a 124 foot barn, one silo, and 40 milking cows. Another silo was damaged. In addition, a

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October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
WISCONSIN, Southeast							
nearby milk house was severely damaged. The barn's hay and feed was destroyed.							
Dane County Madison	17	0100CST			0 0	0.50K	Lightning
Near the highway beltline on the south side of Madison, lightning struck a tree which splintered in half. One of it's limbs then fell on and slightly damaged a backyard storage shed.							
Rock County Johnstown	17	0515CST			0 0	75K	Lightning
Lightning struck a farm house, which subsequently burned to the ground.							
Iowa County Waldwick	29	1500CST			0 0		Hail (1.00)
Dane County Monona	29	1608CST			0 0		Hail (0.88)
Waukesha County Mukwonago	29	1652CST 1657CST			0 0	1.2M	Hail (2.00)
A severe thunderstorm, producing damaging winds and large hail, left considerable damage in and around Mukwonago. Hail fell for 5 minutes, and was up to 2 inches in diameter. Over 200 automobiles were damaged by the large hail. Powerful winds, also a part of the storm, damaged the siding and roofs of 2 homes, and blew over a backyard shed.							
Walworth County East Troy	29	1655CST 1710CST			0 0	20K	Thunderstorm Wind
A severe thunderstorm, packing damaging winds and large hail, hit the East Troy area. Besides large hail up 1.50 inches in diameter being reported, powerful winds broke loose 4 small airplanes from their tie-downs at the East Troy airport. The planes suffered varying amounts of wing and fuselage damage.							
Rock County Hanover	29	1703CST			0 0	15K	Thunderstorm Wind
Powerful thunderstorm winds toppled large trees in and around Hanover.							
Rock County Union	29	1708CST			0 0	20K	Thunderstorm Wind
Powerful thunderstorm winds moved a 12 by 17 foot building off its foundation, destroying half of it.							
Jefferson County 2.5 NE Jefferson	29	1710CST			0 0	5K	Thunderstorm Wind
Powerful thunderstorm winds knocked down several large trees.							
Waukesha County New Berlin	29	1710CST			0 0		Hail (0.75)
Milwaukee County West Allis	29	1715CST			0 0		Hail (0.88)
Rock County Evansville	29	1735CST			0 0	10K	Thunderstorm Wind
Powerful thunderstorm winds toppled large trees in and around Evansville.							
Rock County Beloit	29	1735CST			0 0	20K	Thunderstorm Wind
Powerful thunderstorm winds blew over large trees in the city of Beloit. One tree fell on top an automobile, causing roof and trunk damage.							
Kenosha County Pleasant Prairie	29	1740CST			0 0	10K	Thunderstorm Wind
Powerful thunderstorm winds blew down a street light, as well as breaking large tree limbs.							
Walworth County Lake Geneva	29	1750CST			0 0	20K	Thunderstorm Wind
Powerful thunderstorm winds rocked and weakened a radio station's tower structure.							
Jefferson County 3.5 E Ft Atkinson	29	1755CST			0 0	20K	Thunderstorm Wind
Powerful thunderstorm winds blew over large trees east of Ft. Atkinson. One tree fell on and damaged a garage.							
Walworth County Delavan	29	1800CST			0 0	25K	Thunderstorm Wind
Powerful thunderstorm winds toppled large trees, some of which fell on and dragged down powerlines.							
Walworth County 3 NNE Genoa City	29	1805CST			0 0	15K	Thunderstorm Wind
Powerful thunderstorm winds toppled large trees north/northeast of the village of Genoa City. Spotters estimated wind speeds to be 70 mph.							
Waukesha County 1.5 E Wales	29	1815CST			0 0	20K	Thunderstorm Wind
Powerful thunderstorm winds blew over 13 large oak trees, one which fell on and damaged a home's wooden deck. The home's mail box was destroyed, as well as other yard ornaments. The fallen trees block a road for several hours.							
Racine County Burlington	29	1820CST			0 0	15K	Thunderstorm Wind
Powerful thunderstorm winds toppled large trees in and around Burlington, and brought down construction signs.							

Storm Data and Unusual Weather Phenomena

October 1996

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
WISCONSIN, Southeast							
Racine County Burlington	29	1820CST			0 0	0.80K	Lightning
							Lightning struck and damaged an apartment building's TV antenna.
Kenosha County 2 E Paddock Lake	29	1829CST			0 0	20K	Thunderstorm Wind
							Powerful thunderstorm winds toppled a silo, as well as some large trees.
WIZ071 Racine	29	1845CST 1915CST			0 0	50K	High Wind
							Post, cold-frontal high winds blew over and destroyed 2 grain bins and machine shed, and damaged another grain bin at an agricultural equipment business about 3 miles northeast of Paddock Lake. Several large trees in the same vicinity were snapped off half-way up. The business owner estimated the wind at 60 to 70 mph. There were several other reports of downed trees and stop signs across Kenosha county in this "gradient" high wind event that followed on the heels of a round of fast moving, low-top, severe thunderstorms that generated damaging winds and large hail across parts of southeast Wisconsin.
WIZ064 Jefferson	30	0130CST 0230CST			0 0	20K	High Wind
							High winds in Ft. Atkinson tore a movie theater's marquee sign from its mounts.
WIZ071 Racine	30	0200CST 0300CST			0 0	20K	High Wind (G65)
							High winds measured at 75 mph at the Burlington Airport, lifted a flipped over a Cessna 172 airplane, and toppled several large trees in the city of Burlington.
WIZ059 Washington	30	0230CST 0330CST			0 0		High Wind (G52)
							A measured wind gust of 60 mph occurred on the UW-Washington County campus in West Bend, as strong, gradient winds hit the area.
WIZ052 Sheboygan	30	0300CST 0400CST			0 0	20K	High Wind
							High winds in the Elkhart Lake area toppled a power pole which fell on a barn. The powerline then caught fire, resulting in damage to the lines and the barn. Large tree branches were also knocked out of nearby trees.
WIZ065 Waukesha	30	0600CST 0700CST			0 0	30K	High Wind
							High winds, probably peaking in the 60 mph range, raked Waukesha county and caused scattered damage. In Harland, a cement block wall, part of an addition to a building, was blown down. In Pewaukee at Hwy 16 and Capitol Drive, the panel of a Burger King sign was shredded. Large trees and/or branches were toppled in Nashotah, as well as in other locations north of I-94.
WISCONSIN, Southwest							
La Crosse County La Crosse	29	1434CST			0 0		Hail (0.75)
WISCONSIN, West							
Pierce County River Falls	16	1830CST 1930CST			0 0		Hail (0.88)
							Hail continued off and on for over one hour.
St. Croix County River Falls	16	1859CST			0 0		Hail (0.75)
Pierce County 1 SE River Falls	16	1900CST			0 0		Hail (0.75)
							Wind driven hail caused damage to many vehicles at an auto dealership. 4.0 inches of rain.
Pierce County River Falls	16	1900CST			0 0		Lightning
							Lightning struck utility transformer.
St. Croix County 6 N Hammond	16	1930CST			0 0		Hail (0.88)
WIZ023>024-026 St. Croix - Pierce - Pepin	29	2300CST 0500CST			0 0		High Wind (G50)
	30						Pontoon barges upended, spilling 60 foot long steel pipes into Lake Pepin along the Mississippi River.
WYOMING, Central and West							
WYZ004 Cody Foothills	25	1600MST 26 1600MST			0 0		Winter Storm
							Fall snow storm drops up to 8 inches of snow over lower elevations of area.

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									October 1996
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<u>WYOMING, Central and West</u>									
WYZ008	Owl Creek Mountains								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
Northern portions of Owl Creek mountains received up to a foot of snow.									
WYZ010	Dubois								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
Around a half foot of snow in Dubois.									
WYZ011	Wind River Mtns East								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
Around 20 inches of snow received at Sinks Canyon State Park.									
WYZ012	Lander Foothills								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
11 inches of snow received at Lander airport.									
WYZ013	Wind River Basin								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
6 inches of snow received at Hudson.									
WYZ014	Green Mountains								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
WYZ015	Natrona								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
Snow amounts ranged from around 8 inches at Casper to approximately 18 inches 20 miles south of Barnum. On the 26th, Blizzard conditions prevailed over mainly the eastern part of the county.									
WYZ052	Southern Big Horn Mountains								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
13.5 inches of snow fell 16 miles SSE of Ten Sleep.									
WYZ053	Buffalo Foothills								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
Parts of Johnson County received 1 1/2 feet of snow with estimated 50-60 mph winds causing blizzard conditions.									
WYZ009	South Big Horn Basin								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
Southern portion of Big Horn Basin received up to a foot of snow at lower elevations.									
WYZ022	Rock Springs/Green River								
	25	1600MST			0	0			Winter Storm
	26	1600MST							
Around a half foot of snow was received. Strong winds caused blowing and drifting of snow and closure of I-80 with numerous accidents.									
<u>WYOMING, Extreme Southwest</u>									
NONE REPORTED.									
<u>WYOMING, North Central</u>									
NONE REPORTED.									
<u>WYOMING, Northeast</u>									
WYZ054>058	Gillette - South Campbell - Moorcroft - Wyoming Black Hills - Weston								
	26	0400MST			0	0	62K		Winter Storm
		1600MST							
Six to 12 inches of snow with wind gusts over 45 mph produced occasional blizzard conditions. Drifts to three feet were common and blowing snow reduced visibilities to zero. Numerous roads were closed including Interstate 90 from Gillette to the Montana border. Widespread power outages were reported.									
<u>WYOMING, Southeast</u>									
WYZ062-064-066>067	North Carbon - North Laramie Range - Laramie Range - Platte								
	14	0845MST			0	0			High Wind (G49)
		1100MST							
Winds were sustained at 40 to 45 MPH at Arlington and ten miles south of Wheatland. Wind gusts in those areas were between 50 and 55 MPH.									

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										October 1996
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Number of Persons Injured	Estimated Damage	Property	Crops	Character of Storm
WYOMING, Southeast										
Albany County										
Laramie	16	1135MST 1150MST			0	0	20K			Thunderstorm Wind (G72)
A thunderstorm moved through the southern and central Laramie valley and produced storn wind gusts. The laramie airport reported a gust to 81 MPH. The strong winds downed some trees and cased other minor damage in and near Laramie.										
WYZ063										
	Snowy Range	18	0200MST 1900MST		0	0				Heavy Snow
Heavy snow fell in parts of the west slopes of the Snowy Range. The largest amount reporte was a foot, twenty miles southeast of Saratoga.										
WYZ062										
	North Carbon	24	0700MST 1230MST		0	0				High Wind (G59)
Winds were sustained at 40 to 45 MPH in Arlington, with gusts between 55 and 65 MPH.										
WYZ059>067-069										
Converse - Niobrara - Southwest Carbon - North Carbon - Snowy Range - North Laramie Range - Laramie Valley - Laramie Range - Platte - Cheyenne Foothills										
	25	1800MST			0	0				Blizzard
	26	1600MST								
Heavy snow and strong winds created blizzard conditions in much of south central and eastern Wyoming. The snow and winds closed many roads in that area, especially in and near the southeast mountains. The heaviest snowfal was in the Laramie and Snowy Ranges, where twelve to eighteen inches of snow was reported. Other snowfal amounts in the area where seven inches in Laramie, eight inches in Douglas and five inches in Lusk. Only one to four inches fell in parts of the southeast plains. Winds gusted to near 50 MPH and produced near zero visibilities. Drifts as high as 5 feet were observed in the Laramie range between Cheyenne and Laramie. The strong winds and snow caused power outages to many rural areas in south central and southeast Wyoming.										

STORM DAMAGE CATEGORIES

REFERENCE NOTES

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

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

Definition of Fujita Tornado Scale (F Scale)

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

(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 from 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 from 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 foundations blown off some distance; cars thrown and large missiles generated.

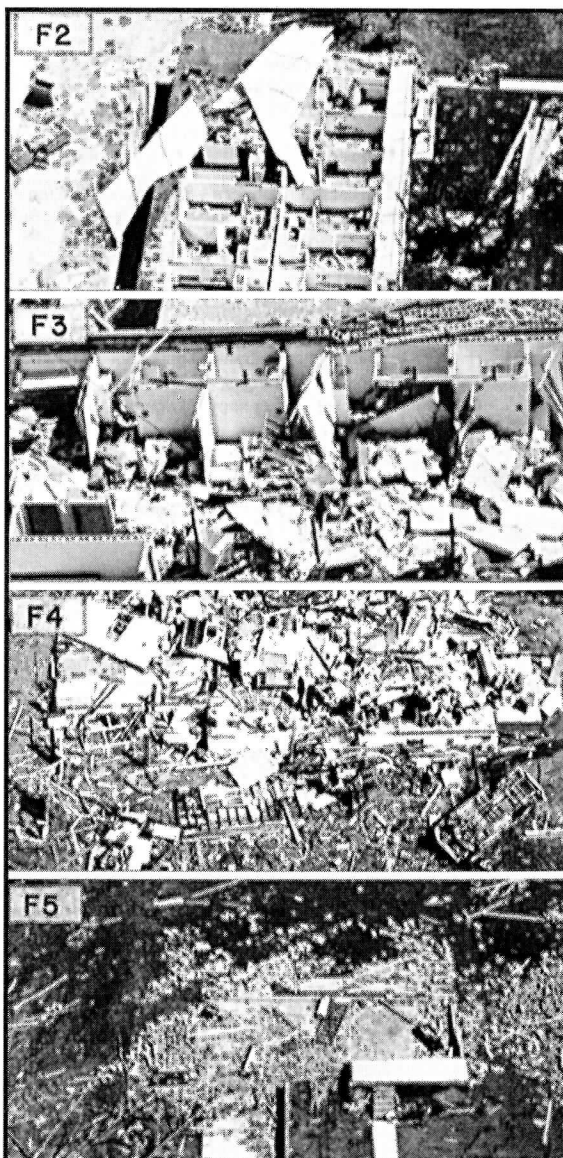
(F5) Incredible tornado (261-318 mph): Incredible damage; Strong frame houses lifted from foundation and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 meters; trees debarked; incredible phenomena will occur.

(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.

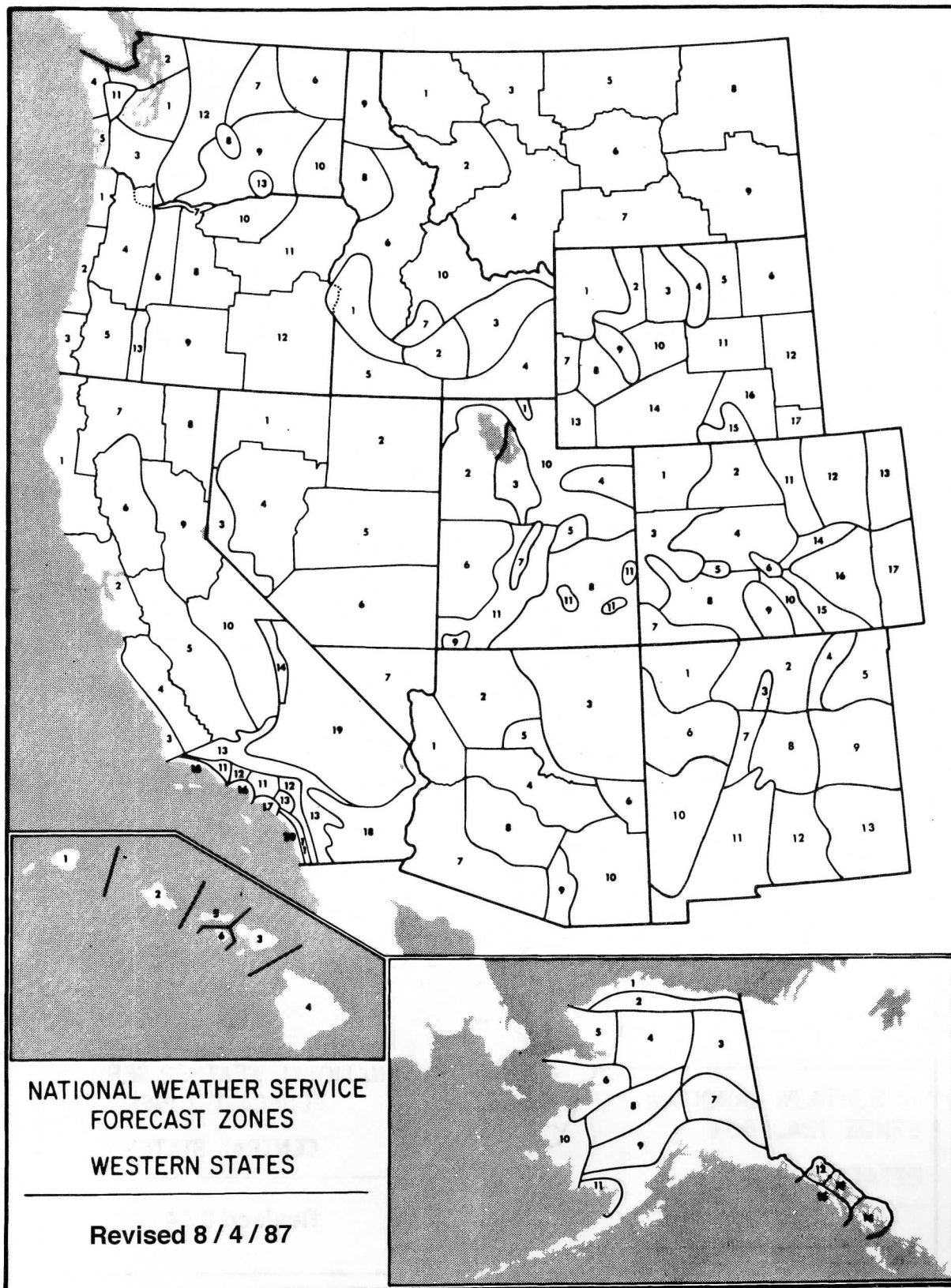
(F0+F1) *Weak Tornado*

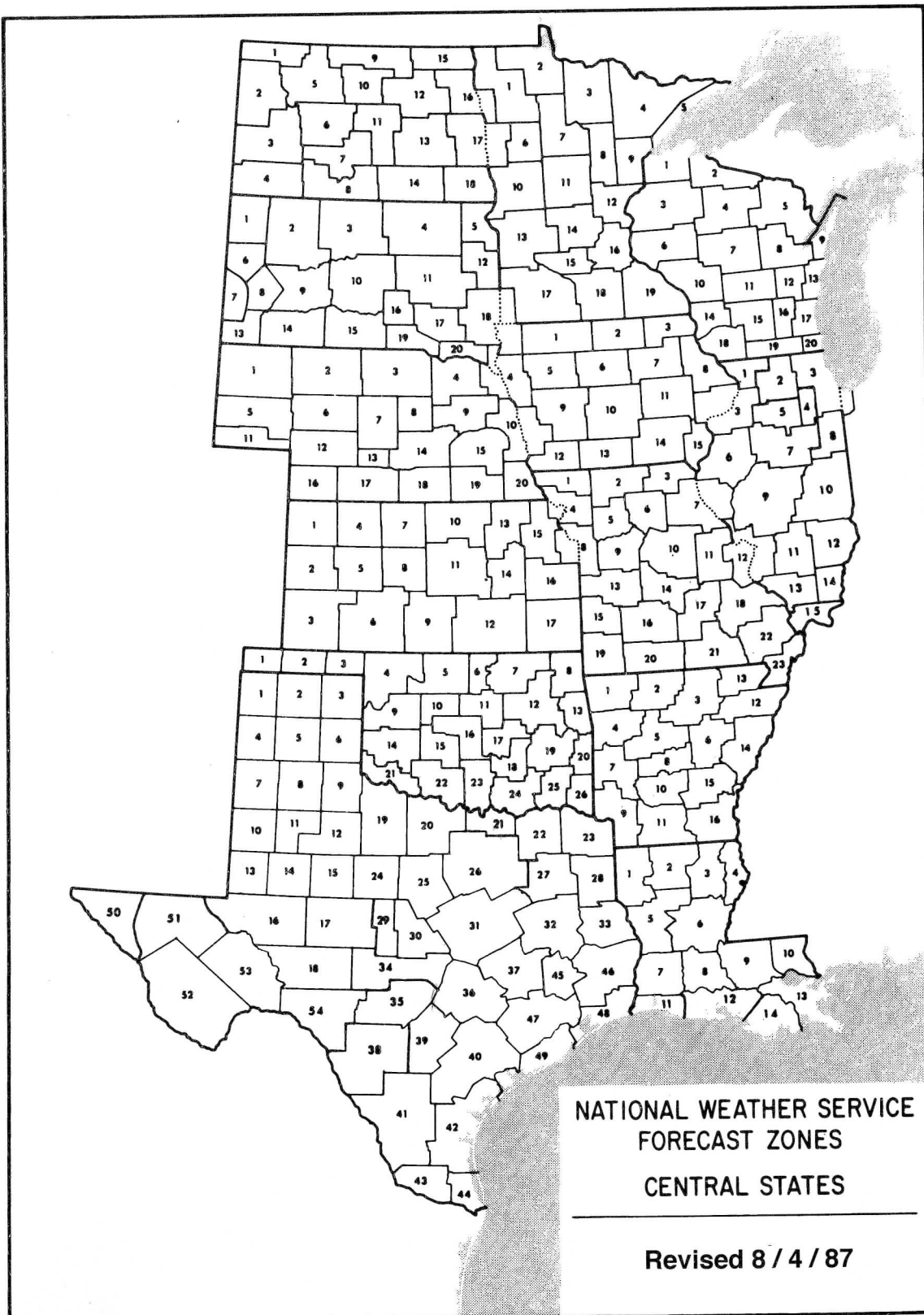
(F2+F3) *Strong Tornado*

(F4+F5) *Violent Tornado*



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





These and other publications are available from the National Climatic Data Center

Hourly Precipitation Data

This publication contains hourly precipitation amounts obtained from recording rain gages located at National Weather Service, Federal Aviation Administration, and cooperative observer stations. Published data are displayed in inches and tenths or inches and hundredths at local standard time. **HPD** includes maximum precipitation for nine (9) time periods from 15 minutes to 24 hours, for selected stations.

Climatological Data

Monthly editions contain station daily maximum and minimum temperatures and precipitation. Some stations provide daily snowfall, snow depth, evaporation, and soil temperature data. Each edition also contains monthly summaries for heating and cooling degree days (65 degree F base). The July issue contains a recap of monthly heating degree days and snow data for the preceding July through June.

The Annual issue contains monthly and annual averages of temperature, precipitation, temperature extremes, freeze data, soil temperatures, evaporation, and a recap of monthly cooling degree days.

Storm Data

Monthly issues contain a chronological listing, by states, of occurrences of storms and unusual weather phenomena. Reports contain information on storm paths, deaths, injuries, and property damage. An "Outstanding storms of the month" section highlights severe weather events with photographs, illustrations, and narratives. The December issue includes annual tornado, lightning, flash flood, and tropical cyclone summaries.

Monthly Climatic Data for the World

This publication contains monthly means for temperature, pressure, precipitation, vapor pressure, and sunshine for approximately 2,000 surface data collection stations worldwide and monthly mean upper air temperatures, dew point depressions, and wind velocities for approximately 500 observing sites.

Local Climatological Data

LCD summarizes temperature, relative humidity, precipitation, cloudiness, wind speed and direction observations for several hundred cities in the U.S. and its territories. Each monthly publication also contains the 3 hourly weather observations for that month and an hourly summary of precipitation. Annual **LCD** publications contain a summary of the past calendar year as well as historical averages and extremes.

For Information Call:

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