

**AUGUST 1998  
VOLUME 40  
NUMBER 8**

# **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.

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**Cover:** Only the foundation of this home remains after nearly 18 inches of rainfall resulted in a flash flood. The flooding caused 14 deaths, hundreds of injuries and millions in damage. *(Photograph courtesy of Larry Eblen, WCM, NWS New Braunfels, Texas)*

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**STORM DATA**  
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The Storm Data and Unusual Weather Phenomena narratives and Hurricane/Tropical Storm summaries are prepared by the National Weather Service. Monthly and annual statistics and summaries of tornado and lightning events resulting in deaths, injuries, and damage are compiled by cooperative efforts between the National Climatic Data Center and the Storm Prediction Center.

**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.

Maps of the National Weather Service County Warning Areas which are used in the Storm Data and Unusual Weather Phenomena section will be printed in all editions.

Except for limited editing to correct grammatical errors, materials submitted are generally published as received.

Note: "None Reported" means that no severe weather occurred and "Not Received" means that no reports were received for this region at the time of printing.

Subscription, pricing, and ordering information is available from:

National Climatic Data Center  
151 Patton Avenue  
Asheville, NC 28801  
(828) 271-4800 or (828) CLIMATE


The editors 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" section of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

Stuart Hinson  
National Climatic Data Center  
151 Patton Avenue  
Asheville, NC 28801

Any such items received by the editor will be for use in **STORM DATA** only. Any other use will be with the permission of the owner of said items. Materials submitted will be returned if requested in the original submission.

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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."

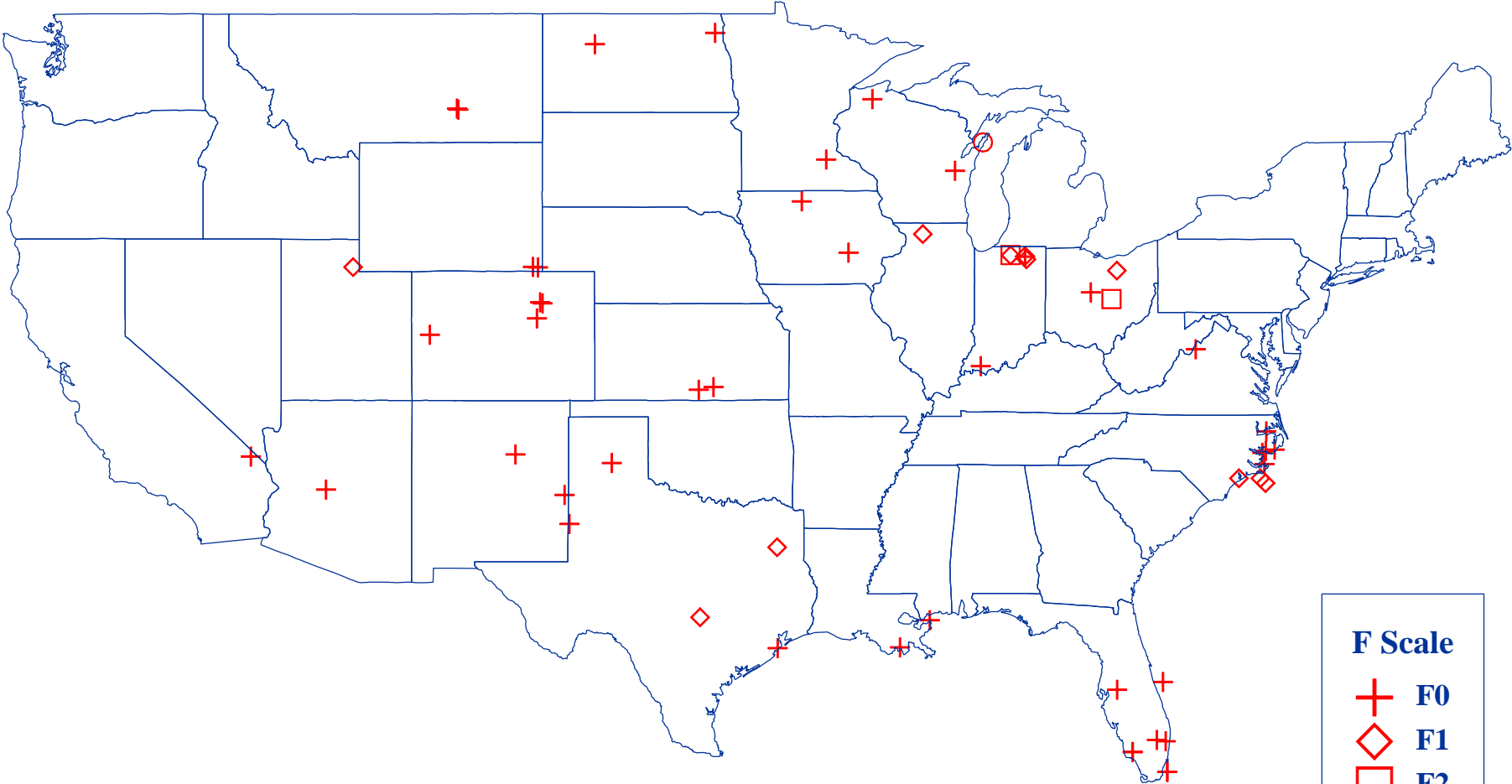


Thomas R. Karl  
Director,  
National Climatic Data Center

The Cyclone Track Map which usually appears on this page is not available for August 1998.

Should the data become available in the future, a cyclone track map will be produced and printed in a subsequent issue.

# August 1998 Confirmed Tornadoes



4

F Scale	F0	F1	F2	F3	F4	F5	Total
Number	43	11	2	1	0	0	57

**F Scale**

- +** F0
- ◇** F1
- F2
- F3
- △** F4
- ⊠** F5



## OUTSTANDING STORMS OF THE MONTH

### 1. FLASH FLOOD IN SOUTH-CENTRAL TEXAS KILLS 14 AND INJURES HUNDREDS

The remnants of once Tropical Storm Charley became nearly stationary early on August 23 as it moved over south-central Texas. Rainfall rates as high as 4 inches per hour resulted in flash flooding of low-lying areas. Flood waters forced hundreds of people using public campgrounds and recreational areas to seek higher ground. Later on the 23rd and into the 24th, another band of heavy rainfall caused additional flash flooding in Val Verde County. The San Felipe Creek overflowed its banks. Residents escaped the flood waters by climbing onto their rooftops to await rescue. Several law enforcement agencies conducted rescue efforts. One National Weather Service observing station in Del Rio, Texas (Del Rio 2NW) recorded almost 15 inches of rain in a 10-hour period on August 23. Most fatalities occurred when flood waters moved through a residential area and people could not reach safety in time. Local authorities who inspected the damage remarked that the aftermath was similar to an F5 tornado.



**Above Left:** Several automobiles and trees washed downstream by rapidly moving water.

**Above Right:** More debris can be seen along a washed-out road near a few remaining houses.

**Below Left:** Although the bridge remains intact, the roadway near the bridge has been washed away.

**Below Right:** Damage similar to this home was common to many homes along San Felipe Creek.

*(Photographs courtesy of Larry Eblen, Warning Coordination Meteorologist, National Weather Service, New Braunfels, TX)*



# Storm Data and Unusual Weather Phenomena

August 1998

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

## ALABAMA, North Central

### **Dallas County**

5 SE Selma      08      1600CST      0      0      5K      0      **Thunderstorm Wind (G50)**

A few large trees were blown down at Craig Field and reportedly blown about 500 feet.

### **Bibb County**

Centreville      10      1355CST      0      0      15K      0      **Thunderstorm Wind (G55)**

A few large trees were down in the Centerville area and a grocery store in Brent had its roof damaged.

### **Lamar County**

Sulligent      11      1702CST      0      0      5K      0      **Thunderstorm Wind (G50)**

Trees and power lines were down in Sulligent.

### **Lawrence County**

Mt Hope      29      1436CST      0      0      0      0      **Hail (0.75)**

### **Lawrence County**

9 NW Moulton      29      1438CST      0      0      0      0      **Hail (0.75)**

Dime size hail was reported in Mt Hope and Hatton, in the western part of the county.

### **Cherokee County**

Cedar Bluff      30      1422CST      0      0      0      0      **Hail (0.75)**

Dime size hail was reported in Cedar Bluff.

### **Chilton County**

Clanton      31      1340CST      0      0      8K      0      **Hail (2.25)**

### **Chilton County**

Clanton      31      1340CST      0      0      15K      0      **Thunderstorm Wind (G50)**

Part of a roof of a department store was damaged and several awnings were damaged. Hail the size of peaches was also reported.

### **Jefferson County**

Hueytown      31      1345CST      0      0      0      0      **Hail (0.75)**

Dime size hail was reported in Hueytown.

## ALABAMA, Southeast

NONE REPORTED.

## ALABAMA, Southwest

### **Mobile County**

Mobile      12      1600CST      0      0      10K      0      **Lightning**

Lightning struck a radio tower on the causeway just east of downtown Mobile and knocked the station off the air for more than an hour.

### **Baldwin County**

Little River      30      1515CST  
1516CST      0      0      0      0      **Hail (0.75)**

Dime size hail was reported near Little River.

## ALASKA, Northern

### **AKZ006**

#### **Southern Seward Peninsula-Eastern Norton Sound**

14      1145AST      0      0      0      0      **Flood**

15      1030AST

Heavy rain Friday morning and afternoon, preceded by 3 days of rain over the area, caused several rivers on the Seward Peninsula to rise and threaten villages. Minor flooding was reported at Council, on the Niukluk River, and also at Solomon on the north coast of Norton Sound. Rainfall at Nome from the 11th through 14th was 3.34 inches, a one in ten year event.

### **AKZ007**

#### **Tanana Valley**

17      1040AST      0      0      0      0      **Flood**

20      0930AST

Recurring rain across the western Tanana Valley during the first half of August brought river levels on the Chena River high enough to where it flooded a 200-ft stretch of road at 37.5 mile Chena Hot Springs Road. Up to 6 inches of water was on this section of

# Storm Data and Unusual Weather Phenomena

August 1998

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

## ALASKA, Northern

road at one period during the event. Minor flooding also occurred at Campsites on the Chatanika, Tolovana, and Tatalina Rivers. No property damage was incurred.

**AKZ007**

**Tanana Valley**

18	0000AST 0900AST	0	0				<b>Heavy Snow</b>
----	--------------------	---	---	--	--	--	-------------------

In Denali Park, Polychrome Pass at mile 46 Denali Park Road received up to 8 inches of snow overnight. Traffic was stopped at the Teklanika Rest Stop until the road was cleared at 11:45 am.

**AKZ007**

**Tanana Valley**

19	1200AST	0	0				<b>High Wind (G49)</b>
20	1000AST						

A storm in the Bering Sea caused strong winds across the Alaska Range, especially in Healy Canyon and Nearby Denali Park. Strongest winds reported were Healy: gusts to 51 mph, and at Polychrome Pass (Mile 46 Denali Park Road) in Denali Park, gusts to 56 mph were observed on a hand-held wind speed recorder by a NWS employee.

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

**Unalakleet**

20	0835AST 1055AST	0	0				<b>Storm Surge</b>
----	--------------------	---	---	--	--	--	--------------------

A strong Storm moved north over the Bering Sea resulting in moderate winds across the west coast, and heavy surf on the coast of the Seward Peninsula. No damage occurred at Nome, however, minor flooding was reported at Unalakleet.

**AKZ005-007>008**

**Upper Yukon Valley - Tanana Valley - Lower Yukon Valley**

31	0000AST 2300AST	0	0				<b>High Wind (G53)</b>
----	--------------------	---	---	--	--	--	------------------------

A storm moved north in the Gulf of Alaska deepening to 964 mb before drifting west toward Bristol Bay and weakening. The pressure gradient ahead of the frontal system increased greatly resulting in strong winds at a number of locations over Interior Alaska. Peak gusts recorded were: Tanana Valley: Delta Junction: 43 mph, Wonder Lake RAWS (BLM) 54 mph, Minchumina 61 mph. Upper Yukon Valley : ANWR RAWS 54 mph, Hodzana River RAWS 54 mph, Lower Yukon Valley: Poorman RAWS 57 mph.

## ALASKA, Southeast

NOT RECEIVED.

## ALASKA, Southern

**AKZ016-019**

**Bristol Bay Coastal - Western Alaska Peninsula**

01	0200AST	0	0				<b>High Wind (G41)</b>
02	1600AST						

A moderate front, moving slowly east across the Bering Sea, brought brisk southeasterly winds to much of the Alaska Peninsula and Bristol Bay area. Peak winds of 44 mph were reported at Cold Bay, 47 mph at Port Heiden along the Alaska Peninsula and 44 mph at King Salmon.

**AKZ011-016-  
019>020**

**Kuskokwim Delta - Bristol Bay Coastal - Western Alaska Peninsula - Aleutian Islands**

12	1000AST	0	0				<b>High Wind (G46)</b>
13	2300AST						

A moderate frontal system, moving northeastward through the Bering Sea, was preceded by brisk southerly winds. Gusts around 40 mph were reported in the Aleutians (at Adak), while winds peaked at 53 mph at the Cold Bay ASOS. Along the southwest Alaska coastal areas, wind gusts reached 52 mph (Cape Newenham AWOS).

**AKZ015**

**Cook Inlet**

16	0100AST 2359AST	0	0	10K			<b>High Wind (G45)</b>
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Strong southeasterly winds, gusting near 50 mph, were reported along the Anchorage Hillside and adjacent to western Cook Inlet. Numerous trees were blown down.

**AKZ011>012-  
014>016-019>020**

**Kuskokwim Delta - Kuskokwim Valley - Copper River Basin - Cook Inlet - Bristol Bay Coastal - Western Alaska Peninsula - Aleutian Islands**

19	0000AST	0	0				<b>High Wind (G60)</b>
20	1000AST						

**Bristol Bay Coastal  
Togiak**

20	0100AST 2359AST	0	0				<b>Heavy Rain</b>
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A strong Bering Sea storm and its associated front brought strong winds to many areas of southwest Alaska, the Alaska Range ,

# Storm Data and Unusual Weather Phenomena

August 1998

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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## ALASKA, Southern

Southcentral Alaska and even into the Copper River Basin. Strongest winds were southeasterly ahead of the front...while brisk southwesterly winds were observed along the south and southwest quadrant of the low. Wind gusts reached 54 mph along the Anchorage Hillside on the morning of the 20th, 50 mph at Cold Bay on the morning of the 19th, 49 mph at Dutch Harbor also on the morning of the 19th, 49 mph at Farewell Lakes on the morning of the 20th and 50 mph at Klawasi, also on the morning of the 20th. Wind gusts along land areas of the southwest Alaskan coast ranged from 45 to near 60 mph...however one ship adjacent to Cape Newenham recorded gusts of 70 mph. Also, heavy rains were observed along the southwest Alaskan coast as the front moved through...with Togiak recording 2.9 inches in a 24 hour period.

### **AKZ019>021**

#### **Western Alaska Peninsula - Aleutian Islands - Pribilof Islands**

24	1700AST								
25	1200AST				0	0			<b>High Wind (G46)</b>

A vigorous front, associated with a major Bering Sea storm, brought brisk southeasterly winds to the Alaska Peninsula and Pribilofs...as well as much of the Bering Sea. Wind gusts were reported from 45 to near 55 mph at many areas.

### **AKZ018**

#### **Kodiak Island-Eastern Alaska Peninsula**

30	0000AST								
31	2359AST				0	0			<b>High Wind (G52)</b>

Wind gusts up to 51 mph from the northeast were reported around the city of Kodiak on the 30th and 60 mph on the 31st..

## AMERICAN SAMOA

NOT RECEIVED.

## ARIZONA, Central and Northeast

### **Navajo County**

Heber

06	1120MST								
					0	0	0	0	<b>Hail (0.75)</b>

### **Navajo County**

Heber

06	1120MST								
	1230MST				0	0	0	0	<b>Urban/Sml Stream Fld</b>

A weather spotter reported flooded washes and streets as well as one inch diameter hail in downtown Heber.

### **Coconino County**

45 SE Happy Jack

06	1220MST								
					0	0	0	0	<b>Hail (1.25)</b>

Weather spotters reported 1.25 inch diameter hail at Buckskin Wash, near Forest Lakes.

### **Yavapai County**

12 SSW Prescott

06	1515MST	0.1	50			4K			
	1517MST				0	0			<b>Tornado (F0)</b>

A house under construction was destroyed by an F0 tornado. A neighbour to the house under construction reported he saw a narrow, rotating cloud that extended from the ground to the base of a thunderstorm. This rotating cloud moved from about 300 yards away from the house under construction into the house under construction. The walls of the house were removed from the foundation and reduced to 2 x 4 inch stock and 4 by 8 feet sheets of plywood. This material was suspended in air about 30 seconds.

### **Coconino County**

Bellemont

06	1550MST								
	1556MST				0	0	0	0	<b>Hail (1.00)</b>

One inch diameter hail was observed at the NWS office at Bellemont.

### **Gila County**

Tonto Basin

06	1720MST								
	1725MST				0	0	0	0	<b>Hail (1.00)</b>

A weather spotter reported one inch diameter hail at Tonto Village.

### **Coconino County**

2 SW Flagstaff

07	1320MST								
					0	0	0	0	<b>Hail (0.75)</b>

### **Coconino County**

7 NW Flagstaff

07	1330MST								
	1345MST				0	0	0	0	<b>Hail (1.00)</b>

A NWS meteorologist reported 0.75 inch diameter hail 2 miles SW of Flagstaff. Spotters at the Arizona Snowbowl ( 7 NW FLG at an elevation of 9100 feet) reported 1 inch diameter hail falling for 15 minutes.



# Storm Data and Unusual Weather Phenomena

August 1998

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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## ARIZONA, Central and Northeast

### **Yavapai County**

<b>Black Canyon City</b>	12	2025MST 2115MST			0	0	0	0	<b>Flash Flood</b>
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The Yavapai County Emergency Services Manager reported that Black Canyon Creek was out of its banks and flooding low lying portions of Black Canyon City, including Marin Avenue. Doppler radar estimated 2.5 inches of rain fell in a one hour period across the upper basin area of Black Canyon Creek.

### **Yavapai County**

<b>9 W Prescott</b>	13	1645MST			0	0	0	0	<b>Hail (1.25)</b>
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A weather spotter reported 1.25 inch diameter hail.

### **Yavapai County**

<b>Peeples Vly</b>	13	1655MST			0	0	0	0	<b>Hail (0.75)</b>
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A weather spotter in Peeples Valley reported 0.75 inch diameter hail.

### **Apache County**

<b>8 W Sawmill</b>	21	1119MST			0	0	0	0	<b>Funnel Cloud</b>
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A Chinle Police Department officer observed a funnel cloud between Fluted Rock and Sawmill.

### **Coconino County**

<b>Flagstaff</b>	23	1344MST			0	0	0	0	<b>Hail (1.75)</b>
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A weather spotter reported 1.75 inch diameter hail in Flagstaff.

### **Yavapai County**

<b>Prescott</b>	24	1434MST 1600MST			0	0	0	0	<b>Urban/Sml Stream Fld</b>
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### **Yavapai County**

<b>Prescott</b>	24	1500MST			0	0	0	0	<b>Lightning</b>
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An isolated thunderstorm dropped heavy rain over downtown Prescott. Doppler radar estimates of 2 to 3 inches of rain fall in two hours caused widespread street flooding. Water rose just above curb level and seeped into a few downtown businesses. Lightning struck two homes, causing minor damage to one.

### **Yavapai County**

<b>Chino Vly</b>	30	1645MST			0	0	0	0	<b>Hail (0.75)</b>
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### **Yavapai County**

<b>Chino Vly</b>	30	1703MST			0	0	0	0	<b>Hail (1.00)</b>
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### **Yavapai County**

<b>Chino Vly</b>	30	1715MST 1830MST			0	0	0	0	<b>Urban/Sml Stream Fld</b>
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An isolated thunderstorm dropped hail that ranged in diameter from 0.75 to 1.00 inch in diameter. The thunderstorm also produced rainfall sufficient to cause widespread street flooding and minor flooding of a few homes in Chino Valley.

## ARIZONA, Northwest

### **Mohave County**

<b>Kingman</b>	08	0400MST			0	0	8K		<b>Lightning</b>
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### **Mohave County**

<b>Kingman</b>	08	0435MST			0	0			<b>Urban/Sml Stream Fld</b>
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Strong thunderstorms rolled through Mohave County in the vicinity of Kingman producing continuous lightning and brief heavy rain. A Skywarn spotter reported local street flooding around Kingman and water running in the washes. Several transformers were struck by lightning resulting in loss of electricity throughout the city for a few hours.

### **Mohave County**

<b>Chloride</b>	14	1805MST			0	0			<b>Thunderstorm Wind (G52)</b>
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A weather spotter estimated wind gusts to 60 mph from a nearby thunderstorm. No damage was reported.

### **Mohave County**

<b>Lake Havasu City</b>	15	1755MST			0	0			<b>Flash Flood</b>
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A Skywarn spotter recorded 1.85 inches of rain in less than one hour on the south side of Lake Havasu City. Washes were reportedly running bank-to-bank and several roads around the city were blocked by water.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## ARIZONA, Northwest

### **Mohave County**

**Lake Havasu City**    29    2100MST                   0    7    20K       **Thunderstorm Wind**

A large window (14' by 6') was blown out at a restaurant causing minor cuts and injuries to seven people. The damaging winds also ripped off two balcony roofs from another resort building and sank a boat at a nearby dock.

### **Mohave County**

**8 N Bullhead City Arpt 30**    2150MST                   0    0             **Thunderstorm Wind (G53)**

The National Park Service recorded a 61 mph wind gust at Katherine's Landing on Lake Mohave. No damage was reported.

### **Mohave County**

**Lake Havasu City**    31    0400MST                   0    0    1K          **Thunderstorm Wind**

Thunderstorm winds were blamed for downing a lemon tree and tearing shingles off a roof during the early morning hours.

## ARIZONA, South

### **Pima County**

**Tucson to Tucson Avra Vly Arpt**    01    1615MST  
1740MST                   0    0             **Flash Flood**

Thunderstorms dumping heavy rain caused substantial road flooding around Craycroft and Interstate 10. Some washes in the Avra Valley area were overflowing their banks.

### **Pima County**

**Tucson**    05    1745MST  
1758MST                   0    0             **Hail (1.00)**

### **Pima County**

**Tucson**    05    1830MST  
1945MST                   0    0             **Flash Flood**

### **Pima County**

**12 S Vail**    05    1908MST                   0    0             **Thunderstorm Wind (G61)**

Severe thunderstorms with heavy rain dropped up to 1 inch diameter hail in the northeast foothills area of Tucson. Heavy rain from this storms caused a 1.5 foot rise in Ventana wash in less than an hour according to an automated stream gauge. A weather spotter along highway 83 about 12 miles south of vail estimated wind gusts to 70 mph.

### **Pinal County**

**San Manuel**    07    1710MST                   0    0             **Hail (1.25)**

### **Pima County**

**10 NE Tucson to Davis Monthan Afb**    09    1920MST  
1941MST                   0    0             **Thunderstorm Wind (G69)**

Thunderstorm winds gusting to 79 mph were measured at Davis Monthan AFB. These winds blew down a tree across the road on Kolb east of Tanque Verde.

### **Pima County**

**Tucson**    09    1955MST  
2030MST                   1    0             **Flash Flood**

A man was killed when he was caught in a flooded wash and drowned in the east part of Tucson. Street flooding was reported in central Tucson. M35IW

### **Cochise County**

**Douglas Arpt**    10    1548MST                   0    0             **Thunderstorm Wind (G50)**

### **Pima County**

**Tucson**    11    1741MST  
1800MST                   0    0    1K          **Thunderstorm Wind**

### **Pima County**

**Tucson**    11    1818MST  
1900MST                   0    0             **Flash Flood**

Thunderstorm winds blew down a tree in the eastern portion of Tucson and blew off a portion of a roof. Heavy rains from these thunderstorms caused widespread road closures in the southeast part of Tucson and water was reported up to car doors at 6th street and Tucson boulevard.

### **Pima County**

**Ajo to 10 SE Why**    11    1850MST  
2100MST                   0    0             **Flash Flood**

The Ajo sheriff reported several washes crossing highway 85 between Ajo and 10 miles southeast of Why were flooded.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## ARIZONA, South

### **Pinal County**

Eloy	13	2100MST			0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew a mobile home over and into the yard of next door residence.

### **Pima County**

Tucson	16	1810MST 1845MST			0	0			<b>Urban/Sml Stream Fld</b>
--------	----	--------------------	--	--	---	---	--	--	-----------------------------

Heavy rain in the west part of Tucson caused street flooding.

### **Pima County**

3 S Tuscon Avra Vly Arprt	17	1715MST 1800MST			0	0			<b>Flash Flood</b>
------------------------------	----	--------------------	--	--	---	---	--	--	--------------------

### **Pima County**

Tucson	17	1800MST 1830MST			0	0			<b>Urban/Sml Stream Fld</b>
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### **Graham County**

14 NW Bonita	17	1925MST 2000MST			0	0			<b>Flash Flood</b>
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Thunderstorms dumping up to 2.5 inches of rain in the Avra Valley area resulted in the closing of Sandario road just south of the Avra Valley Airport due to flooding. These same storms later caused flooding of Aravaipa creek in western Graham county with a spotter 14 miles northwest of Bonita reporting logs and a tree floating by in Aravaipa Creek. These same storms also produced some street flooding in west Tucson.

### **Pima County**

Green Vly	21	1730MST			0	0	10K		<b>Thunderstorm Wind (G56)</b>
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Thunderstorm winds estimated at 60-70 mph by fire department personnel blew down several trees, one of which was about 60 feet tall. One of the trees blew onto the patio of a house damaging the patio roof and wall.

### **Cochise County**

7 S Sierra Vista to 3 S Sierra Vista	24	1300MST 1330MST			0	0			<b>Urban/Sml Stream Fld</b>
---	----	--------------------	--	--	---	---	--	--	-----------------------------

Thunderstorms dropping up to 1 inch of rain in less than 45 minutes caused localized street flooding in Nicksville with washes running with water between 3-7 miles south of Sierra Vista.

### **Pinal County**

San Manuel	24	1730MST 1815MST			0	0			<b>Urban/Sml Stream Fld</b>
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Thunderstorm dumping 1.16 inches of rain caused street flooding in San Manuel.

### **Pima County**

Tucson	28	1507MST 1735MST			0	1	150K		<b>Thunderstorm Wind (G56)</b>
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### **Graham County**

4 W Ft Thomas	28	1527MST 1530MST			0	0	4K		<b>Thunderstorm Wind</b>
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### **Cochise County**

Benson	28	1645MST 1700MST			0	0	1K		<b>Thunderstorm Wind</b>
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### **Santa Cruz County**

Rio Rico	28	1825MST 1830MST			0	0	0.50K		<b>Thunderstorm Wind (G61)</b>
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Two distinct lines of severe thunderstorms swept through much of southeast Arizona from the northeast during the mid-afternoon to early evening hours. A high school student from Rincon High School in Tucson was injured from flying debris and taken to a local hospital. Numerous reports of trees blow down were received, some up to 2 feet in diameter. Eighteen power poles on the southwest side of Tucson were blown down leaving more than 20,000 customers without power and causing the evacuation of about 200 people from homes and businesses along West Ajo Way due to downed power lines. One of the downed power poles sparked a roof fire at Moreliana Fruit Bars causing an estimated \$85,000 of damage. A roof was blown off a trailer and a 20 foot tree blown onto a truck near Fort Thomas. Several reports of roof damage in Tucson were received. Winds blew a shed away and a 15 foot tree down in Benson. A wind gust to 64 mph was recorded at the University of Arizona. Power outages were reported in Rio Rico.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>ARIZONA, Southwest</b>									
<b>Gila County</b> 15 W Globe	06	1705MST			0	0			Hail (0.75)
									Large hail reported at Top of The World, along US 60. Up to 1.10 inches of rain in just 20 minutes. Several tree limbs broken off.
<b>AZZ025</b> <b>Yuma/Martinez Lake And Vicinity</b>	06	1900MST 1905MST			0	0			High Wind (G50)
									Near zero visibility in blowing dust and sand in Salome.
<b>La Paz County</b> Vicksburg	06	1930MST			0	0			Hail (0.75)
									Large hail at mile post 44 near Vicksburg.
<b>Gila County</b> 2 W Globe	07	1820MST			0	0	2K		Thunderstorm Wind (G50)
									Strong winds blew down at least one antenna.
<b>Pinal County</b> Superior	07	1930MST			0	0			Hail (1.00)
									Large hail and very heavy rain damaged part of a roof of a home.
<b>Maricopa County</b> 4 NE Buckeye	11	1912MST			0	0			Thunderstorm Wind (G52)
									Also, a report of .62 inch rain with the storm in 21 minutes.
<b>Maricopa County</b> Buckeye	11	1930MST			0	0	150K		Thunderstorm Wind (G50)
									Winds took down 6 power poles, and forced the closure of I-10 for 1 1/2 hours. A squad car from the Buckeye Police Department received minor damage when crushed by a falling power pole. Two private planes from Pierce Aviation were destroyed and several other planes were damaged by high winds. The roof of the administration building was damaged by the storm.
<b>Maricopa County</b> Wickenburg	12	1812MST			0	0	300K		Thunderstorm Wind (G65)
									A strong to severe complex of storms formed northeast of Wickenburg and moved to the southwest and intensified. The storms produced severe damage to at least 2 aircraft at the Wickenburg airport. About 6 power poles were blown down, and evaporative coolers were blown off roofs. Large tree limbs were broken off in Wickenburg. Sheriff's deputies rescued a boater and eight passengers on Lake Pleasant.
<b>Maricopa County</b> Tempe	12	1830MST 1833MST			0	0			Thunderstorm Wind (G50)
									Large tree limbs downed by winds near Broadway and Rural. Numerous streets in Tempe flooded.
<b>Maricopa County</b> Wickenburg	12	1830MST 1930MST			0	0			Flash Flood
									Very heavy rain, with considerable flash flooding around the town of Wickenburg. One spotter reported 2.5 inches fell in just 20 minutes. Wickenburg Police Department reported streets in town were "severely flooded."
<b>Maricopa County</b> Wickenburg	13	1745MST 1755MST			0	0			Thunderstorm Wind (G50)
									Winds uprooted trees and took down power poles in Wickenburg.
<b>Pinal County</b> Maricopa	13	2151MST			0	0			Thunderstorm Wind (G52)
									Near zero visibility with dense blowing dust.
<b>Gila County</b> 1 WNW Roosevelt	15	1730MST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>ARIZONA, Southwest</u></b>									
<b>Pinal County</b>									
Coolidge	15	1915MST 1930MST			0	0	20K		Thunderstorm Wind (G55)
Several palo verde trees blown down. Some homes and businesses in Coolidge received minor damage due to the winds. One resident reported a stored row boat that blew about a quarter mile. Washes near Casa Grande, southwest of Coolidge, were reported running about 4 feet deep.									
<b>Maricopa County</b>									
Gilbert	15	2000MST			0	0			Urban/Sml Stream Fld
One-half inch in 20 minutes; 1.10 inch in 45 minutes.									
<b>Maricopa County</b>									
Mesa	15	2015MST 2030MST			0	0			Thunderstorm Wind (G50)
About 12,000 residents were left without power as winds and lightning struck the area.									
<b>La Paz County</b>									
Bouse	16	1720MST			0	0			Thunderstorm Wind (G65)
Power poles down, telephone service knocked out, widespread structural damage, and washes running.									
<b>Gila County</b>									
Roosevelt	17	1618MST			0	0			Hail (0.75)
<b>Maricopa County</b>									
Phoenix to Tempe	17	1838MST 1910MST			0	0			Thunderstorm Wind (G50)
Several power poles knocked down due to microburst winds near 71st Ave and Van Buren. In Tempe, an off-duty employee reported a 6-inch tree limb blown down.									
<b>Gila County</b>									
Globe	24	1730MST 1830MST			0	0			Flash Flood
Heavy rain resulted in street flooding, road blocked to Icehouse Canyon. Up to 1.5 inches reported in less than an hour.									
<b>Pinal County</b>									
Coolidge	28	1725MST			0	0			Thunderstorm Wind (G55)
Winds took down 7 power poles, numerous tree limbs snapped off.									
<b>Maricopa County</b>									
Scottsdale	28	1809MST 1826MST			0	0			Thunderstorm Wind (G52)
Large area in the East Valley hit with high winds; 7 large trees knocked down in East Mesa and several power poles downed in Gilbert. Phoenix Sky Harbor Airport(PHX) recorded a peak gust of 53 mph at 1811 MST.									
<b>La Paz County</b>									
Ehrenburg	31	2058MST			0	0			Thunderstorm Wind (G60)
Strong winds affected much of La Paz County with power outages and dense blowing dust.									
<b><u>ARKANSAS, Central and North Central</u></b>									
<b>Scott County</b>									
2 S Mansfield	02	1640CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds caused some property damage and downed several power lines.									
<b>Logan County</b>									
2 SE Booneville	02	1740CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down a few trees and several large tree limbs.									
<b>Montgomery County</b>									
Pine Ridge	03	1330CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down a few large tree limbs.									
<b>Saline County</b>									
Benton	03	1430CST			1	0			Lightning
Lightning struck a small business, setting it on fire. The owner of the business was electrocuted. M39BU									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>ARKANSAS, Central and North Central</u></b>									
<b>Johnson County</b> Clarksville	03	1800CST			0	0	5K		Lightning
									Lightning struck a house and started a fire causing mainly roof damage.
<b>Garland County</b> 4 S Jessievile	04	1515CST			0	0			Lightning
									Lightning struck the roof of a home, causing damage to the roof and attic.
<b>Ouachita County</b> 2 NW Camden	04	1530CST			0	0			Thunderstorm Wind (G50)
<b>Ouachita County</b> Camden	04	1600CST			0	0			Urban/Sml Stream Fld
									Thunderstorm winds knocked a tree onto a power line on Highway 24 just northwest of Camden. 1 to 2 inches of rain fell in Camden in less than an hour, with some street flooding reported.
<b>Boone County</b> Harrison	04	1700CST			0	0			Flash Flood
<b>Boone County</b> Harrison	04	1700CST			0	0			Lightning
<b>Boone County</b> Harrison	04	1700CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down a power pole near Harrison. 3 to 4 inches of rain was also produced near town, washing out several roads. Lightning struck a house, setting it on fire and causing damage to the roof, attic and two rooms.
<b>Pulaski County</b> 1 S Jacksonville	05	1700CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down a few trees.
<b>Lonoke County</b> 5 W Furlow	05	1705CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down some large tree limbs.
<b>Prairie County</b> Hickory Plains	05	1720CST			0	0			Hail (1.00)
<b>Prairie County</b> Hickory Plains	05	1720CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down several trees at Hickory Plains, one on a mobile home. Quarter size hail was also produced.
<b>Prairie County</b> 2 E Hickory Plains	05	1800CST			0	0			Flash Flood
									Two to three inches of rain in less than an hour covered Highway 38 with one and a half feet of water.
<b>Ouachita County</b> Elliott	05	1826CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down several trees and power lines.
<b>Faulkner County</b> Conway	05	2030CST			0	0			Flash Flood
									One to two inches of rain in less than hour covered some city streets with water, especially Highway 65B.
<b>Polk County</b> Potter	07	1410CST			0	0			Hail (0.75)
<b>Polk County</b> Potter	07	1420CST			0	0			Hail (0.75)
<b>Johnson County</b> Ozone	08	1300CST			0	0			Hail (0.75)
<b>Johnson County</b> Ozone	08	1305CST			0	0			Hail (1.00)
<b>Faulkner County</b> Guy	08	1350CST			0	0			Hail (0.75)
<b>Faulkner County</b> Guy	08	1355CST			0	0			Hail (0.88)



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>ARKANSAS, Central and North Central</u></b>									
<b>Pope County</b>									
7 N Moreland	08	1355CST			0	0			Hail (1.00)
<b>Pope County</b>									
Pottsville	08	1415CST			0	0			Thunderstorm Wind (G50)
<b>Pope County</b>									
Atkins	08	1425CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds caused some damage in Pope County. Winds knocked a tree onto a van in Atkins, with a few large limbs and some power lines downed at Pottsville.
<b>Cleburne County</b>									
1 N Tumbling Shoals	08	1440CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked a tree down.
<b>Garland County</b>									
2 NW Hot Spgs	08	1550CST			0	0			Hail (1.75)
<b>Garland County</b>									
Royal	08	1555CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
Jacksonville	08	1606CST			0	0			Hail (0.75)
<b>Saline County</b>									
Owensville	08	1615CST			0	0			Thunderstorm Wind (G52)
									A storm spotter reported thunderstorm winds up to 60 mph.
<b>Garland County</b>									
Lonsdale	08	1620CST			0	0			Thunderstorm Wind (G60)
									Thunderstorm winds gusted to 70 mph.
<b>Montgomery County</b>									
Caddo Gap	08	1635CST			0	0			Hail (0.75)
<b>Montgomery County</b>									
Welsh	08	1640CST			0	0			Hail (0.75)
<b>Pike County</b>									
8 E Langley	08	1655CST			0	0			Hail (0.75)
<b>Polk County</b>									
1 E Mena	08	1712CST			0	0			Hail (1.00)
<b>Polk County</b>									
1 SE Mena	08	1715CST			0	0			Hail (1.75)
<b>Hot Spring County</b>									
Malvern	08	1645CST			0	0			Thunderstorm Wind (G50)
<b>Hot Spring County</b>									
Gifford	08	1650CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked downed trees at Gifford and in Malvern.
<b>Grant County</b>									
Prattsville	08	1715CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds caused some roof damage.
<b>Clark County</b>									
10 W Hollywood	08	1725CST			0	0			Hail (1.00)
<b>Baxter County</b>									
5 SW Norfolk	08	1835CST			0	0			Hail (0.75)
<b>Searcy County</b>									
Harriet	08	1930CST			0	0			Hail (0.75)
<b>Boone County</b>									
Bellefonte	09	0725CST			0	0			Hail (0.75)
<b>Boone County</b>									
Harrison	09	0915CST			0	0			Lightning

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>ARKANSAS, Central and North Central</u></b>									
<b>Boone County</b>									
Harrison	09	0915CST			0	0	60K		Thunderstorm Wind (G50)
									Thunderstorm winds damaged several roofs, knocked down several road signs, and destroyed an outbuilding. Lightning also struck several homes causing mainly roof fires.
<b>Independence County</b>									
Newark	09	1515CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down a few trees.
<b>Clark County</b>									
Okolona	09	1545CST			0	0			Hail (1.75)
<b>Clark County</b>									
Okolona	09	1545CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down some trees at Okolona. Golfball size hail was also produced.
<b>Pulaski County</b>									
10 W Little Rock	09	1615CST			0	0			Hail (0.75)
<b>Saline County</b>									
East End	09	1635CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down trees and power lines and damaged a few buildings.
<b>Ouachita County</b>									
5 SW Chidester	09	1655CST			0	0			Hail (0.75)
<b>Ouachita County</b>									
5 SW Chidester	09	1655CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down a few trees southwest of Chidester. Dime size hail was also produced.
<b>Lonoke County</b>									
England	09	1705CST			0	0			Thunderstorm Wind (G50)
<b>Lonoke County</b>									
England	09	1710CST			0	0			Hail (0.88)
									Thunderstorm winds knocked down trees and power lines at England. Nickel size hail was also produced.
<b>Prairie County</b>									
5 NW Hazen	09	1730CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down trees and power lines.
<b>Marion County</b>									
Flippin	10	1520CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down several trees.
<b>Baxter County</b>									
Cotter	10	1520CST			0	0			Thunderstorm Wind (G50)
<b>Baxter County</b>									
Gassville	10	1525CST			0	1			Thunderstorm Wind (G60)
<b>Baxter County</b>									
Norfolk	10	1600CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds caused some damage in Baxter County. Winds knocked down trees at Norfolk and blew over a shed. Trees and power lines were downed at Gassville, with several trees on houses and blocking roads. Also in Gassville, a man was knocked unconscious in his mobile home. A few trees and power lines were knocked down at Cotter.
<b>Fulton County</b>									
Viola	10	1615CST			0	0			Thunderstorm Wind (G50)
<b>Fulton County</b>									
3 N Salem	10	1650CST			0	0			Thunderstorm Wind (G50)
<b>Fulton County</b>									
Mammoth Spg	10	1725CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds caused some damage in Fulton County. Winds knocked a tree onto a house at Mammoth Spring. Trees were also downed just north of Salem, with a few large limbs knocked down near Salem.
<b>Baxter County</b>									
3 N Gamaliel	10	1635CST			0	0			Hail (0.88)



# Storm Data and Unusual Weather Phenomena

August 1998

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

## ARKANSAS, Northwest

weak north-south trough where southwest and southeast winds met. The storm initially formed a core aloft which then "dropped" to the ground, producing damaging outflow winds.

Late in the evening, a short line of thunderstorms formed along an advancing outflow boundary from earlier thunderstorms in the northeast corner of Oklahoma. This line became severe as it moved across far northern Benton County, producing wind damage near Pea Ridge and Garfield.

### **Madison County**

**St Paul**

<b>08</b>	<b>1305CST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.00)</b>
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**1315CST**

Pea to quarter size hail reported for ten minutes

### **Madison County**

**St Paul**

<b>08</b>	<b>1305CST</b>			<b>0</b>	<b>0</b>	<b>0.10K</b>		<b>Thunderstorm Wind</b>
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**1315CST**

4-6" diameter tree limbs blown down

Summary for August 8 1998:

Scattered pulse thunderstorms formed over the higher terrain of southern Madison County during the heat of the afternoon with the approach of an upper level pool of cold air at the base of an upper level trough. One thunderstorm pulsed up to severe levels near St. Paul as it moved southeast.

### **Carroll County**

**Berryville**

<b>09</b>	<b>0600CST</b>			<b>0</b>	<b>0</b>	<b>0.10K</b>		<b>Thunderstorm Wind</b>
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Several large tree limbs were blown down, reported by radio station KTHS.

Summary for August 9 1998:

An isolated severe thunderstorm developed during the early morning hours over eastern Carroll County near a pool of cold air in the upper levels of the atmosphere.

### **Benton County**

**Wareagle**

<b>18</b>	<b>1605CST</b>			<b>0</b>	<b>0</b>	<b>1K</b>		<b>Hail (1.00)</b>
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Dime to quarter-sized hail caused minor damage to an automobile at the War Eagle Mill

### **Benton County**

**Wareagle**

<b>18</b>	<b>1605CST</b>			<b>0</b>	<b>0</b>	<b>0.50K</b>		<b>Thunderstorm Wind</b>
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Several large trees and tree limbs were blown down along the road through War Eagle. One large limb briefly blocked the old one-way bridge across the War Eagle River.

Summary for August 18 1998:

Isolated pulse severe thunderstorms formed over northwestern Arkansas on the afternoon of August 18. One thunderstorm produced wind and hail damage in War Eagle. Other thunderstorms in Benton and Washington Counties produced no severe reports, but there were several reports of 35 to 40 mph winds from other storms.

### **Washington County**

**Farmington**

<b>19</b>	<b>1345CST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.00)</b>
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### **Washington County**

**Wedington**

<b>19</b>	<b>1350CST</b>			<b>0</b>	<b>0</b>	<b>0.10K</b>		<b>Thunderstorm Wind</b>
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Several large tree limbs were blown down

### **Benton County**

**2 E Siloam Spgs**

<b>19</b>	<b>1705CST</b>			<b>0</b>	<b>0</b>	<b>5K</b>		<b>Thunderstorm Wind</b>
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Dozens of large trees were blown down, one blocking County Road 7 two miles east of Siloam Springs. One car was severely damaged. Numerous power lines were blown down. Pea-sized hail and flash flooding were also reported with this storm. (See the flash flood entry.)

### **Benton County**

**Siloam Spgs**

<b>19</b>	<b>1705CST</b>			<b>0</b>	<b>0</b>	<b>0.30K</b>		<b>Thunderstorm Wind</b>
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Several trees were blown down and blocking a road near Siloam Springs.



# Storm Data and Unusual Weather Phenomena

August 1998

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

## CALIFORNIA, Extreme Southeast

### **Riverside County**

**20 W Blythe**      31      2059MST                0      0                     **Thunderstorm Wind (G61)**

Winds and dense blowing dust affected much of Eastern Riverside Co.

### **Imperial County**

**El Centro to Winterhaven**      31      2106MST  
2139MST                0      0                     **Thunderstorm Wind (G52)**

Much of Imperial Co affected by high winds, heavy rain.

## CALIFORNIA, North Central

### **Alpine County**

**Lake Alpine**      14      1310PST  
1400PST                0      0      0      0      **Hail (1.00)**

A spotter observed large hail during a thunderstorm.

### **Tuolumne County**

**3 S Dardanelle**      14      1420PST  
1600PST                0      0      20K      0      **Flash Flood**

A thunderstorm unleashed a torrent that caused Long Valley Creek to overflow its banks near the crossing of Forest Road 5N01. A family of four returning from a hiking trip and blinded by the heavy rain, drove their vehicle into the creek. The family was rescued by two passers-by.

## CALIFORNIA, Northeast

### **Nevada County**

**Truckee**      14      1449PST  
1450PST                0      0                     **Hail (1.00)**

NWS spotter reported 1 inch hail along California Route 89 near Truckee CA. No damage reported.

## CALIFORNIA, Northwest

NONE REPORTED.

## CALIFORNIA, South Central

### **CAZ020-023-025**

**Central San Joaquin Valley - Tulare County Mountains - Kern County Desert**  
04      1200PST                1      3                **Excessive Heat**  
06      1800PST

Temperatures in the Kern County Deserts soared to greater than 110 degrees in several locations during the period of August 4th through 6th. The China Lake/Ridgecrest/Inyokern area climbed to 111 degrees F. on August 4th and 112 on the 5th. California City 30 miles away reached 116 degs F. on the 5th. One heat-related fatality was reported for the 4th in the Inyokern/Ridgecrest area. One-heat related illness was reported at Millerton Lake where a ranger was treated in the course of a shore rescue on the 4th. Friant reported a high temperature of 111 deg F. this day. In West Fresno County, a firefighter suffered heat exhaustion while battling a structure fire in Mendota. In The Tulare County Mountains near Badger a hiker suffered a heat-related illness on the 4th. M47OU

### **Kern County**

**14 E Rosamond to Rosamond**      11      1700PST  
1730PST                0      0                     **Flood**

Spotter reports indicated that up to 0.91 inches of rain fell in a 40-minute time period from 1740 PDT until 1830 PDT ... another spotter reported 1.74" in about the same time period. A late report received indicated 2.07" of rain fell in just over an hour ending at 1830 PDT at Rosamond. Wind gusts measured up to 48 MPH with, again, another estimate of 60 MPH for winds, occurred with the widespread thunderstorms in the Kern Deserts. Easterly flow aloft and at the surface interacted with the Tehachapi/Mojave shear line to explode in late afternoon convective activity. Heavy rain brought tire deep water in Rosamond as well as flooding Rosamond Boulevard between Rosamond and Edwards AFB. A strong wind gust was measured at 77 MPH at a RAWS site at El Mirage just to the south of the county/CWFA line.

### **Fresno County**

**Helm**      14      0550PST  
0555PST                0      0      10K           **Dry Microburst**

NWS HNX WSR-88D detected no cell activity but high based cumulus evidently supported a weak microburst. A small indication was present on the radar at the time of occurrence but was already dissipated by the completion of the volume scan. This dry microburst wind speed likely was less than 50 MPH but due to the decrepit condition of one of the small telephone poles in this rural area, one pole sustained damage and did fail. In so failing, 4 adjacent poles also snapped off. Again, this was NOT A SEVERE EVENT but more one of interest despite the minor damage.



# Storm Data and Unusual Weather Phenomena

August 1998

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

## CALIFORNIA, South Central

### CAZ020

#### Central San Joaquin Valley

27	1500PST			1	0				Excessive Heat
	1700PST								

While temperatures were only above normal, humidities continued to be much above normal for the Central and Southern San Joaquin Valley. A student athlete succumbed to heat exhaustion apparently from a Thursday afternoon football practice ... passing away during the night and discovered early on Friday morning the 28th. M16OU

### Kern County

3 WNW Inyokern Arpt 30      1435PST  
1525PST

0      0      10K      Flash Flood

Worst cast hydro scenario with storm moving eastward at 3 MPH down the watershed of the steep Indian Wells Canyon. State Highway 14 affected by water over the roadway 1 mile north of State Highway 178. Small stream flood advisory issued for area at 1225 PST specifically mentioning Highway 14. Warning issued upon receipt of report at 1448 PST ... Initial report of 6 feet of water later confirmed that depth was something close to one foot. Damage limited to roadbed erosion.

### Kern County

3 ENE Lake Isabella to 31      1430PST  
3 E Lake Isabella      2359PST

0      0      5K      Thunderstorm Wind

### Kern County

3 ENE Lake Isabella to 31      1430PST  
3 E Lake Isabella      2359PST

0      1      1M      Wild/Forest Fire

Thunderstorm wind at 45 knots from the east swept into the Paradise Cove area along the south shore of Lake Isabella. Downed powerlines sparked a grass fire (Yankee Fire) that subsequently burned 1,100 acres at a cost to suppress of \$1M. There was one injury due to smoke inhalation. Moored boats and jet skies were endangered by the high wind at docks along the south shore. Flash Flood Warning erroneously issued in conjunction with Severe Thunderstorm Warning ... no verification on the FFW. Blowing dust was observed by several trained spotters at points east of the lake and along the south side of the lake. The Yankee Fire was contained on 9/2/98.

## CALIFORNIA, Southeast

### San Bernardino County

Twenty Nine Palms      11      1248PST

0      0      Hail (1.75)

The San Bernardino County Sheriff relayed a report of golfball size hail along Highway 62 near Twentynine Palms.

### San Bernardino County

Lucerne Vly      11      1517PST

0      0      Flash Flood

The California Highway Patrol reported flash flooding along Highway 247 in the Lucerne Valley.

### San Bernardino County

Lucerne Vly      11      1559PST

0      0      15K      Thunderstorm Wind

Downburst winds demolished a hay barn, snapped in half a 30 year old tree and uprooted a 40 year old tree.

### San Bernardino County

Lucerne Vly      11      1559PST

0      0      Flash Flood

Water and debris was observed crossing Highway 247 with 0.90 inches of rain recorded in a 45 minute period.

### San Bernardino County

5 SW Nipton to 4 SW Nipton      25      1120PST  
1130PST

1      20      0      0      Tornado (F0)

### San Bernardino County

8 W Nipton      25      1130PST

0      0      5K      Thunderstorm Wind

### San Bernardino County

4 W Nipton      25      1200PST

0      0      25K      Flash Flood

A small tornado was caught on videotape approximately 5 miles southwest of Nipton. At about the same time, a hood was

# Storm Data and Unusual Weather Phenomena

August 1998

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

## CALIFORNIA, Southeast

reportedly ripped off a dump truck in the same vicinity and a truck was blown off Interstate 15 near Highway 164 (the Nipton Road). The slow moving severe thunderstorm responsible for the tornado also produced an estimated 4 to 5 inches of rain over the same area. Serious flash flooding resulted as reported by the California Highway Patrol. Several cars were stranded by flood waters and some were swept off the Nipton Road near Interstate 15. Large rocks, trees, debris and water blocked Highway 64 between Nipton and Interstate 15.

### **San Bernardino County**

Twenty Nine Palms	31	1823PST							<b>Thunderstorm Wind (G55)</b>
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A thunderstorm wind gust to 63 mph was recorded at the Twentynine Palms Marine Corps Base and a gust to 58 mph also occurred at the Twentynine Palms airport about the same time. No damage report was received.

## CALIFORNIA, Southwest

### **San Diego County**

Warner Spgs	08	1515PST 1600PST							<b>Flash Flood</b>
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A thunderstorm with rainfall rates of 1 to 2 inches per hour and one half inch diameter hail moved through the Warner Springs area and adjacent mountains. The rain flooded the glider port runway there and local roads.

### **Riverside County**

Hemet	09	1430PST 1530PST							<b>Urban/Sml Stream Fld</b>
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### **Riverside County**

Riverside	09	1515PST 1615PST							<b>Thunderstorm Wind (G65)</b>
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The circulation around strong high pressure over the southwestern United States fed moist unstable air into the mountains of southern California. Afternoon heating sparked a thunderstorm over the Riverside County mountains, which moved over the Hemet area dropping one inch of rain in just one half hour. As the storm moved toward Moreno Valley and Riverside it became severe. Trees were uprooted in Moreno Valley, but the worst damage occurred in Riverside, where a motel lost a 30 by 90 foot section of its composite roofing and a tree snapped and fell on a car. The electric utility reported at least 2000 customers without power as a result of downed power lines.

### **San Bernardino County**

Forest Falls	11	1300PST 1400PST							<b>Urban/Sml Stream Fld</b>
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### **San Bernardino County**

Lucerne Vly	11	1330PST							<b>Lightning</b>
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### **San Bernardino County**

El Mirage	11	1530PST 1600PST							<b>Thunderstorm Wind (G67)</b>
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A moist, unstable, easterly flow, supported afternoon thunderstorms in the mountains and high deserts of San Bernardino County. The storms produced small hail, local street flooding, and locally strong winds. Flooded streets were reported in Forest Falls. In the high desert areas near Hesperia, the lightning ignited brush fires that were fanned by gusty outflow winds. Farther west in El Mirage, a severe thunderstorm produced wind gusts to 77 mph. In Lucerne Valley, lightning struck a barn and killed two farm animals.

### **San Bernardino County**

Cajon	12	1145PST 1215PST							<b>Hail (1.50)</b>
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### **Riverside County**

Hemet	12	1345PST 1445PST							<b>Tstm Wind/Hail</b>
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### **Riverside County**

San Jacinto	12	1345PST 1445PST							<b>Thunderstorm Wind (G61)</b>
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### **Riverside County**

Valle Vista	12	1345PST 1445PST							<b>Thunderstorm Wind (G61)</b>
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# Storm Data and Unusual Weather Phenomena

August 1998

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

## **CALIFORNIA, Southwest**

### **San Diego County**

Boulevard	12	1415PST 1445PST			0	0			Heavy Rain
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### **Riverside County**

Hemet Ryan Arpt	12	1435PST			0	0			Thunderstorm Wind (G54)
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A weak easterly wave sparked severe thunderstorms over the higher mountain areas throughout southwestern California. The strongest storms developed over the mountains of Riverside County and moved through the San Jacinto Valley, producing 70 mph winds and 3/4 inch diameter hail. The winds toppled trees and snapped power poles, disrupting electric service to some 12,000 customers for up to six hours. Winds at Hemet-Ryan Airport were clocked at 62 mph when the roof was lifted off the pilot ready-room. Extensive damage occurred to trees, and six trailer homes were damaged at the Hemet West Mobile Estates. Elsewhere, the highway patrol reported golf ball sized hail in the Cajon Pass, and a heavy downpour at Boulevard, in San Diego County, left 1.6 inches of rain in just 30 minutes.

### **San Bernardino County**

Apple Vly	13	1315PST 1415PST			0	0			Urban/Sml Stream Fld
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Thunderstorms over the high deserts produced heavy downpours and urban flooding in Apple Valley. Wind gusts and lightning combined to produce numerous brush fires near Phelan and Hesperia however no significant damage or injuries were reported.

### **San Bernardino County**

Big Bear Lake	14	1030PST 1100PST			0	0			Hail (0.75)
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### **San Bernardino County**

Fawnskin	14	1100PST 1130PST			0	0			Hail (0.75)
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Midday thunderstorms produced 3/4 inch diameter hail at Fawnskin and Big Bear Lake, in the San Bernardino Mountains.

### **Riverside County**

Sage	29	1400PST 1425PST			0	0			Thunderstorm Wind (G75)
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An intense thunderstorm moving off of the San Jacinto Mountains produced an apparent microburst at Sage. The winds did not hit any buildings, but numerous large trees were blown down and moved several feet on the ground. Wind instruments in the area clocked the maximum gust at 86 mph.

### **San Bernardino County**

Yucaipa	31	1440PST 1730PST			0	0			Wild/Forest Fire
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### **Riverside County**

Hemet	31	1445PST 1530PST			0	0			Thunderstorm Wind (G70)
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### **Riverside County**

Hemet	31	1445PST 1530PST			0	0			Urban/Sml Stream Fld
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### **Riverside County**

Moreno Valley	31	1500PST 1530PST			0	0			Wind
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### **San Bernardino County**

Lucerne Vly	31	1515PST 1545PST			0	0			Flash Flood
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### **Riverside County**

Hemet to Norco	31	1520PST 2359PST			0	0	4.5M		Wild/Forest Fire
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### **San Bernardino County**

Apple Vly	31	1600PST 2000PST			0	0			Flood
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# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b><u>CALIFORNIA, Southwest</u></b>									
<b>San Bernardino County</b>									
Rialto	31	1600PST 1630PST			0	1			Wind
<b>San Bernardino County</b>									
Forest Falls	31	1615PST 1715PST			0	0			Flood
<b>Orange County</b>									
2 NE Trabuco Canyon	31	1700PST 1715PST			0	0			Thunderstorm Wind (G56)
<b>San Bernardino County</b>									
Big Bear City	31	1700PST 1800PST			0	0			Urban/Sml Stream fld
<b>San Bernardino County</b>									
Hesperia	31	1830PST 2100PST			0	0			Flood
<b>San Bernardino County</b>									
Victorville	31	1830PST 2100PST			0	0			Flood
<b>San Diego County</b>									
San Marcos	31	1830PST 1930PST			0	0			Wind
<b>San Diego County</b>									
Ramona	31	1900PST 2359PST			0	0			Wild/Forest Fire
<b>Orange County</b>									
8 NE Lake Forest to 2 NE Lake Forest	31	2030PST 2359PST			0	0			Wild/Forest Fire

Strong thunderstorms fed by intense heat and humidity under strong high pressure aloft, developed as an upper-level low over southern Nevada began drifting toward southern California. A few thunderstorms reached coastal areas, but most of the flooding and high winds remained farther inland. Flooding was widespread throughout the Victor Valley where 1 to 2 inches of rain was reported. In Hesperia, water was running 1/2 foot deep over some roads, flooding homes and intersections. Running water trapped several people in Lucerne Valley. In the mountains, street flooding was reported in Big Bear City, and in Forest Falls, Valley of the Falls drive was washed out. Strong winds blew down trees in Rialto, where a child was pinned against a car. In Moreno Valley, toppled power poles trapped one woman in her car for a time and several thousand lost power. In northern sections of San Diego County, gusty winds blew down hundreds of trees, including the 100 year-old "Bicentennial Tree" in Vista, and unroofed one trailer home in San Marcos. At the height of the storm, 45,000 homes and businesses were without power due to lightning strikes and downed power lines. Perhaps the hardest hit area was Hemet, where scores of massive trees were uprooted or torn apart, shingles blown off roofs, and fences toppled. Water was running over a foot deep through the streets and actually flowed through the Hemet high school gymnasium. The combination of wind-blown power lines and lightning, sparked numerous grass and brush fires. In Yucaipa, a 30 acre blaze threatened several homes and forced the closure of Highway 38 before rain and fire fighters brought it under control. In Ramona, about 4800 acres were charred, and hundreds of people evacuated as well. A much more destructive wildfire developed from several lightning strikes and strong winds in the Juniper Flats area. This fire went on to burn some 6000 acres, and destroyed 44 residences, 46 other structures, and 98 vehicles. The total loss from this wildfire alone was estimated at \$4.45 million. Farther west in Orange County, a thunderstorm funnelled winds estimated at between 60 and 70 mph through Trabuco Canyon. Lightning once again ignited another blaze in the Santiago Canyon area of the Cleveland National Forest. The flames, fanned by winds in excess of 50 mph, charred almost 9000 acres before being brought under control. The steep terrain of the Santa Ana Mountains, coupled with heavy brush, made this fire particularly difficult to extinguish. Dozens were evacuated, but fire fighters were able to save the communities of Foothill Ranch and Portola Hills.

## **CALIFORNIA, Upper**

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Los Angeles County**

**Lancaster**      11      1615PST  
1620PST      0      0      **Thunderstorm Wind (G50)**

Strong thunderstorms winds knocked down 10 power poles in the city of Lancaster.

### **Los Angeles County**

**Palmdale**      11      1640PST  
1745PST      0      0      **Flash Flood**

Heavy rain, from strong thunderstorms, produced flash flooding in the city of Palmdale. A spotter reported over 2 inches of rain in less than 1 hour. Severe street flooding was reported with water overflowing the street curbs.

### **CAZ054**

**Los Angeles County Mountains Excluding The Santa Monica Range**  
31      0145PST  
0315PST      0      0      **High Wind (G46)**

A gust front from a thunderstorm complex over the San Bernardino county desert produced strong winds across the mountains of Los Angeles county. A spotter in the Acton area reported north to northeast winds gusting to 53 mph. No significant damage was reported.

### **Los Angeles County**

**Lancaster**      31      1500PST  
1730PST      0      0      **Urban/Sml Stream fld**

Strong thunderstorms produced heavy rain and street flooding across the Antelope Valley. Several spotters in the city of Lancaster reported widespread street flooding.

### **Los Angeles County**

**Palmdale Arpt**      31      1510PST  
1520PST      0      0      **Thunderstorm Wind (G50)**

The official observation from the Palmdale Airport reported a thunderstorm wind gust of 58 mph.

### **Los Angeles County**

**La Verne**      31      1640PST  
1650PST      0      0      **Thunderstorm Wind (G52)**

Strong thunderstorm winds, estimated at 60 mph, knocked down several trees with diameters of one foot or greater.

### **Los Angeles County**

**Glendora**      31      1655PST  
1710PST      0      0      **Thunderstorm Wind (G50)**

A spotter reported that strong thunderstorm winds knocked down several trees in the Glendora area.

### **Los Angeles County**

**Duarte**      31      1700PST  
1710PST      0      0      **Thunderstorm Wind (G50)**

Strong thunderstorm winds, estimated at 58 mph, knocked several trees and power lines in the Duarte area.

## CALIFORNIA, Western

NOT RECEIVED.

## COLORADO, Central and Northeast

### **Jefferson County**

**15 NW Arvada**      03      1154MST  
1202MST      0      0      0      **Hail (0.75)**

### **Arapahoe County**

**Deer Trail**      08      1650MST      0      0      **Hail (0.75)**

### **Logan County**

**Peetz**      08      1935MST      0      0      **Hail (0.75)**

### **Weld County**

**15 N Stoneham**      08      1935MST      0      0      **Hail (1.50)**

### **Arapahoe County**

**12 SW Byers**      08      1950MST      0      0      **Thunderstorm Wind (G52)**

### **Lincoln County**

**Hugo**      09      0413MST      0      0      **Hail (1.00)**

# Storm Data and Unusual Weather Phenomena

August 1998

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

## COLORADO, Central and Northeast

### **Larimer County**

13 NW Estes Park	09	1200MST			0	6	0	0	Lightning
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Six people received minor injuries when lightning struck a nearby scenic overlook atop Trail Ridge Road. The charge apparently travelled across the ground and shocked the group.

### **Douglas County**

14 NW Larkspur	09	1356MST			0	0			Hail (1.00)
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### **Douglas County**

11 SW Castle Rock	09	1415MST			0	0			Hail (0.75)
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### **Douglas County**

Franktown	09	1435MST			0	0			Hail (1.00)
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### **Adams County**

10 N Bennett	09	1448MST	0.1	25	0	0	0	0	Tornado (F0)
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### **Morgan County**

16 SSW Ft Morgan	09	1502MST			0	0			Hail (1.00)
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### **Weld County**

10 SE Roggen	09	1510MST	0.1	25	0	0	0	0	Tornado (F0)
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### **Morgan County**

Hoyt	09	1520MST	0.1	25	0	0	0	0	Tornado (F0)
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### **Weld County**

10 S Roggen	09	1545MST			0	0			Thunderstorm Wind (G53)
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### **Washington County**

10 ENE Anton	09	1630MST			0	0			Hail (2.00)
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### **Weld County**

1 SW New Raymer	09	1641MST			0	0			Hail (1.25)
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### **Washington County**

14 SE Elba	09	1730MST 1830MST			0	0			Flash Flood
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Heavy rain, up to 2 inches in less than an hour, caused flash flooding problems in portions of southern Washington County. Some roads were impassable near Arickaree School, 14 miles southeast of Elba.

### **Jefferson County**

Wheat Ridge to Lakewood	10	1545MST 1730MST			0	0	0		Flash Flood
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Heavy rain caused flooding and flash flooding problems over southwest portions of Metropolitan Denver. An observer in Lakewood recorded 3.26 inches of rainfall in one hour. Several streets were flooded in central Lakewood. In addition, a trailer park along Lena Gulch in Wheat Ridge was evacuated due to the highwaters.

### **Weld County**

12 SE Roggen	10	1735MST			0	0			Hail (1.00)
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### **Boulder County**

Nederland	14	1140MST			0	0	0		Lightning
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Lightning struck a hydroplant in Nederland causing a power outage. Residents in Nederland, Ward, Eldora, Jamestown and portions Gold Hill were without power for approximately an hour.

### **Logan County**

Crook	16	1835MST			0	0			Thunderstorm Wind (G54)
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A storm spotter recorded a peak wind gusts to 62 mph (54 kts) at Crook.

### **Elbert County**

14 N Elizabeth	21	1800MST 2030MST			0	0			Flash Flood
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Heavy rain caused flash flooding along Coal Creek in extreme northwest Elbert County. Large tree trunks and some boats were reportedly washed downstream. County Road 50, along the Arapahoe/Elbert County Line, was closed as floodwaters, up to a foot deep, covered the roadway. County Road 186 was also washed out.



# Storm Data and Unusual Weather Phenomena

August 1998

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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## COLORADO, Central and Northeast

### **Elbert County**

15 SSE Agate      30      1438MST      0      0      Hail (1.50)

### **Larimer County**

Loveland      30      2200MST      0      0      0      Thunderstorm Wind (G50)

Strong thunderstorm winds caused minor damage to several homes under construction in the Emerald Glen subdivision in northwest Loveland. Two power lines were also downed, knocking out service to 900 residents for a short time.

## COLORADO, East Central

### **Cheyenne County**

Cheyenne Wells      01      1920MST      0      0      Tstm Wind/Hail

Wind gusts to 60 mph.

### **Cheyenne County**

6 NE Cheyenne Wells      01      1935MST      0      0      Hail (0.75)

### **Cheyenne County**

.5 E Cheyenne Wells      01      1930MST  
2200MST      0      0      Flash Flood

Law Enforcement officials reported water flowing over Highway 40, one-half mile east of Cheyenne Wells. Had to close Highway down for a short time.

### **Yuma County**

11.2 NW Yuma to  
11.2 N Yuma      09      1729MST  
1750MST      0      0      Hail (1.25)

### **Kit Carson County**

5.5 S Seibert      09      1752MST      0      0      Hail (1.75)

### **Cheyenne County**

Cheyenne Wells      09      1807MST      0      0      Hail (0.75)

### **Cheyenne County**

5 N Cheyenne Wells      09      1830MST  
1850MST      0      0      Thunderstorm Wind (G70)

Thunderstorm winds uprooted two 100 year old trees, and 80x14 Trailer flipped 5 miles north of Cheyenne Wells. 10 minutes later, winds associated with same Thunderstorm blew Motorhome over 10 miles north of Cheyenne Wells.

### **Kit Carson County**

7.1 S Vona      09      1843MST      0      0      Hail (1.75)

### **Cheyenne County**

14 N Arapahoe      09      1850MST  
1855MST      0      0      Thunderstorm Wind (G60)

Straight line winds reported by NWS Cooperative Observer.

### **Cheyenne County**

3 SW Cheyenne Wells      09      2015MST      0      0      Hail (1.00)

### **Cheyenne County**

.5 E Cheyenne Wells      11      2220MST  
12      0100MST      0      0      Flash Flood

Law Enforcement officials reported 10 inches of water running across Highway 40, just east of Cheyenne Wells.

### **Kit Carson County**

2 N Burlington      19      1615MST      0      0      Hail (0.75)

### **Cheyenne County**

15 N Wild Horse      19      1700MST      0      0      Hail (1.00)

### **Kit Carson County**

10 S Bethune      19      1733MST      0      0      Hail (0.75)

### **Yuma County**

26 S Laird      19      1750MST      0      0      Hail (0.75)

## COLORADO, South Central and Southeast

### **Pueblo County**

6 SE Boone      03      0100MST  
0200MST      0      0      Flash Flood

Torrential rainfall from slow moving thunderstorms produced 1.5 to 3 inches of rain across eastern Pueblo county, flooding Kramer

# Storm Data and Unusual Weather Phenomena

August 1998

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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## COLORADO, South Central and Southeast

Creek and numerous county roads in the vicinity.

### **Fremont County**

Cotopaxi	03	1505MST 1510MST			0	0			Hail (0.88)
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### **Las Animas County**

8 NNW Thatcher	03	1720MST 1820MST			0	0			Thunderstorm Wind (G52)
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Severe thunderstorm winds brought down numerous tree limbs up to 10 inches in diameter.

### **Teller County**

6 E Woodland Park	08	1400MST			1	1			Lightning
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Zach Powers, 4, and his 10-year-old brother Dustyn, took shelter under a tree when a storm hit during a family hike at the Rampart Reservoir. Dustyn held an umbrella and held his brother's hand. Lightning apparently struck the umbrella, travelled through Dustyn and then Zach. Zach was airlifted to Memorial Hospital where he was pronounced dead in the emergency room. Dustyn received burns to his hands. M4OU

### **Pueblo County**

Rye	09	1500MST 1505MST			0	0			Hail (1.00)
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### **Pueblo County**

Beulah	09	1505MST 1510MST			0	0			Hail (0.75)
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### **El Paso County**

1 SW Colorado Spgs	09	1540MST 1545MST			0	0			Hail (0.75)
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### **Kiowa County**

Sheridan Lake	09	1605MST 1610MST			0	0			Hail (0.75)
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### **Kiowa County**

Eads	09	2000MST 2130MST			0	0			Flash Flood
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Slow moving thunderstorms produced heavy rain and hail 1/2 inch diameter in the vicinity of the town of Eads. Doppler radar estimated rainfall rates of 2 inches per hour. Several streets in Eads were flooded, closing them for approximately 1 hour until the flood waters receded, and a viaduct was flooded with several feet of water.

### **Las Animas County**

31 WNW Trinidad	10	1305MST 1310MST			0	0			Hail (0.75)
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### **Kiowa County**

2 NNE Brandon	10	1635MST 1650MST			0	0			Funnel Cloud
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A thundershower produced a funnel cloud seen by many near Brandon that lasted for about 15 minutes. The funnel cloud came down about half way to the ground with no debris cloud as reported by a trained weather spotter.

### **Las Animas County**

6 N Ville Green	10	1700MST 1705MST			0	0			Hail (0.75)
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### **El Paso County**

Ramah	11	1325MST 1330MST			0	0			Hail (0.75)
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### **El Paso County**

5 E Peyton	11	1408MST 1413MST			0	0			Hail (0.88)
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### **El Paso County**

5 WNW Calhan	11	1410MST 1415MST			0	0			Hail (1.00)
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### **El Paso County**

Colorado Spgs	14	1900MST 2030MST			0	0			Urban/Sml Stream Fld
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A line of slow moving thunderstorms produced heavy rainfall across parts of Colorado Springs, resulting in numerous reports of street flooding. Some busy intersections were under 12 to 18 inches of water, stalling cars and making travel difficult.

# Storm Data and Unusual Weather Phenomena

August 1998

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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## COLORADO, South Central and Southeast

### **El Paso County**

<b>Fountain</b>	19	1500MST			0	1			<b>Lightning</b>
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A lightning strike injured Larry Phelts, 28, while he was working out in a field near the town of Fountain. Mr. Phelts was leaning against his tractor when the lightning hit, causing him to lose consciousness briefly and to have a seizure. He sustained a first degree burn on his side and complained of tingling.

### **Teller County**

<b>Woodland Park</b>	20	1530MST 1535MST			0	0			<b>Hail (0.75)</b>
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### **Pueblo County**

<b>8 N Pueblo</b>	24	1400MST 1405MST			0	0			<b>Hail (1.00)</b>
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### **Otero County**

<b>10 SW Timpas</b>	24	1726MST 1731MST			0	0			<b>Hail (0.75)</b>
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### **Custer County**

<b>Wetmore</b>	25	1645MST 1930MST			0	0			<b>Flash Flood</b>
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### **Pueblo County**

<b>20 W Pueblo</b>	25	1645MST 1930MST			0	0			<b>Flash Flood</b>
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Numerous strong thunderstorms produced heavy rainfall over northeastern Custer and western Pueblo counties in the evening. Four to 5 inches of rain fell and 1/2 inch hail piled up 5 inches deep in some areas. Hardscrabble Creek in Custer county flooded over its banks. In Pueblo county Red Creek flowed out of its banks across Highway 96, and, for a time, parts of Highway 96 were under 3 feet of water.

### **Las Animas County**

<b>2 S Hoehne</b>	27	1645MST			0	0			<b>Thunderstorm Wind (G54)</b>
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### **Prowers County**

<b>1 N Lamar</b>	27	1700MST			0	0			<b>Thunderstorm Wind (G54)</b>
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### **Custer County**

<b>7 W Westcliffe</b>	30	1927MST 1932MST			0	0			<b>Hail (0.75)</b>
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### **Otero County**

<b>La Junta Arpt</b>	31	2104MST			0	0			<b>Thunderstorm Wind (G53)</b>
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## COLORADO, West

### **Eagle County**

<b>Edwards</b>	03	1205MST 1209MST			0	0			<b>Funnel Cloud</b>
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### **COZ020**

#### **Paradox Valley/Lower Dolores River**

	08	1330MST			0	0	10K		<b>High Wind</b>
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A large dust devil moved across the back yard of a farm house near Redvale, heaving lawn chairs and other items into the sky. The dust devil moved into a field and broke off half of a sideroll, hurling the sideroll about 200 yards. The sideroll struck 20 horses and pinned them to a fence. The steel posts of the fence snapped in two and several horses fell over the fence and broken steel posts. About half of the horses were injured, two seriously.

### **Mesa County**

<b>6.5 SW (Gjt)Walker Arpt</b>	08	1631MST 1636MST	0.1	.1	0	0			<b>Tornado (F0)</b>
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A weak tornado was reported by at least three eyewitnesses. The tornado touched down onto a gravel pit. The gravel pit was unoccupied. This was the first documented tornado in the Grand Junction metropolitan area.

### **Rio Blanco County**

<b>35 SW Meeker</b>	14	1322MST			1	1			<b>Lightning</b>
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Two pipeline workers took cover under a tree during a thunderstorm. Lightning struck the tree, killing one man and seriously injuring the other. M27UT

### **Rio Blanco County**

<b>30 SW Meeker to 35 SW Meeker</b>	14	1330MST 1400MST			0	0			<b>Wild/Forest Fire</b>
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Lightning strikes ignited four fires in the Piceance Basin. The fires burned 30 to 40 acres of brush and trees.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## COLORADO, West

### **Moffat County**

47 N Dinosaur to 45 N Dinosaur	14	1400MST			0	0			<b>Wild/Forest Fire</b>
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Lightning ignited a fire in the Cold Springs Wilderness Study Area. The fire burned 125 acres of brush and trees.

### **Eagle County**

15.5 W Eagle	18	1500MST 1530MST			0	0	0.50K		<b>Flash Flood</b>
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A flash flood came down a narrow canyon about 2 miles east of the entrance to Glenwood Canyon. The flash flood washed across the westbound lanes of I-70, carrying a large volume of mud and rocks. A Jeep Cherokee was pushed off the road by the wall of water and debris, receiving only minor damage. The debris closed the westbound lanes of I-70 for 3.5 hours.

### **Montezuma County**

1 SE Cortez	19	1300MST 1305MST			0	0			<b>Thunderstorm Wind (G50)</b>
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Power lines were blown together which knocked out power to 580 consumers for about 1.5 hours.

## CONNECTICUT, Northeast

NONE REPORTED.

## CONNECTICUT, Northwest

NONE REPORTED.

## CONNECTICUT, Southern

### **Fairfield County**

Stamford	11	1830EST			0	0			<b>Thunderstorm Wind (G52)</b>
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### **New Haven County**

Naugatuck	11	2000EST			0	2			<b>Thunderstorm Wind (G61)</b>
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As a line of thunderstorms moved across Fairfield County, it produced high winds and heavy downpours. High winds toppled trees that crushed a cab of a pickup truck in Scalzi Park, fell on the roof of a 3-story house at 1707 Summer Street and downed wires throughout Stamford.

As an isolated severe thunderstorm moved southeast across Naugatuck, it produced a wet microburst that caused high winds and heavy rain. High winds caused about a 3/4-mile wide area of widespread damage to trees from Highland Ave. to Woodland (about 1 and 1/2 miles in length). Two people (one adult and one child) were injured when a large tree fell on and crushed their second-floor porch on High Street. The adult and child were pinned under rubble. The adult suffered from serious injuries (broken hip and arm and dislocated elbow).

### **New Haven County**

Southeast Portion	17	0915EST			0	0			<b>Flood</b>
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### **Middlesex County**

Central Portion	17	0930EST			0	0			<b>Flood</b>
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### **New London County**

Lebanon	17	1000EST			0	0			<b>Urban/Sml Stream Fld</b>
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As thunderstorms moved over the same area, they produced heavy rain for long periods of time.

The heaviest rain, which fell in a band from Southeast New Haven County northeast across Central Middlesex County, caused widespread flooding of streets, low-lying, and poor drainage areas. Rain fell at the rate of up to 3 and 1/2 inches per hour across the region. In New Haven County, the heaviest rainfall was from 3.78 inches at Madison to 4.21 inches in Guilford. A spotter from West Haven measured 3 and 1/2 inches in 1 hour.

Heavy rain also occurred across Northwest New London County. Rainfall amounts were from 2.44 inches at Lebanon to 3.31 inches at Bartlett Brook.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## CONNECTICUT, Southern

### Fairfield County

Brook Field to Newtown	18	1400EST 1405EST			0	0			Thunderstorm Wind (G60)
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### New Haven County

Oxford to Derby	18	1417EST 1430EST			0	0			Thunderstorm Wind (G62)
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### New Haven County

North Haven	18	1915EST			0	0			Lightning
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As severe thunderstorms moved southeast, they produced high winds, heavy rain, and hail.

High winds downed trees and power lines from Brookfield to Newtown in Northern Fairfield County. High winds downed many trees and power lines from Oxford to Derby including Seymour and Ansonia across Western New Haven County. Hail was also observed in Derby.

Lightning struck a senior citizen housing complex at Parkside Manor on 192 Pool Road in North Haven. It ignited a fire that caused extensive damage to the building. The fire gutted the attic and cockloft areas and burned through a firewall. Twelve senior citizens had to evacuate the building.

### Fairfield County

Newtown to Sandy Hook	25	2330EST 2335EST			0	0			Thunderstorm Wind (G55)
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### New Haven County

Hamden	25	2345EST			0	0			Lightning
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### New Haven County

Hamden	26	0000EST			0	0			Thunderstorm Wind (G55)
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### New Haven County

Seymour	26	0300EST			0	0	90K		Lightning
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### Fairfield County

Stamford	26	1845EST			0	0			Lightning
----------	----	---------	--	--	---	---	--	--	-----------

As an area of thunderstorms moved east to northeast across the region, they produced high winds, frequent lightning, and heavy rain.

High winds downed trees that caused power lines to fall in front of Newtown High School. They also downed several trees on Sherman Street in Sandy Hook.

High winds also downed trees in Hamden. As one tree fell on Thorton Street, it crushed a car.

Thunderstorms produced lightning that struck and set ablaze:

- o the roof and attic of a house in Woodbridge. The extent of damage was unknown.
- o a house under construction at 84 Great Hill Road in Seymour. Fire totally damaged this house.
- o a garage at 164 Rensselaer Ave. in the Shippan Section of Stamford. The garage was extensively damaged.

## DELAWARE

NOT RECEIVED.

## DISTRICT OF COLUMBIA

### DCZ001

### District Of Columbia

01	0000EST			0	0		5K		Drought
31	2359EST								

Persistent high pressure produced unusually dry conditions during the entire month. Only 0.59 inches of rain fell at

# Storm Data and Unusual Weather Phenomena

August 1998

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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## DISTRICT OF COLUMBIA

Washington/National Airport - compared to the normal of 3.91 inches. The National Arboretum in Northeast Washington was hardest hit by the drought. The arboretum expected to lose a number of valuable pine trees, as well as several smaller oak trees that were over a decade old, due to lack of rainfall.

## FLORIDA, East Central

### **Brevard County**

Merritt Is	02	1356EST			0	1			<b>Lightning</b>
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An 18 year old man was struck and injured by lightning while walking over the Barge Canal Bridge in Merritt Island.

### **St. Lucie County**

3 W Ft Pierce	03	2140EST			0	0	20K		<b>Lightning</b>
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A huge explosion and fireball was created when lightning struck a natural gas pipeline station west of Ft. Pierce.

### **Okeechobee County**

Ft Drum	04	1629EST			0	0			<b>Thunderstorm Wind (G50)</b>
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Thunderstorm winds blew down trees along Highway 441 near Ft. Drum.

### **Okeechobee County**

Okeechobee	04	1629EST			0	0			<b>Hail (0.75)</b>
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### **Volusia County**

Glenwood	06	1533EST			0	0			<b>Thunderstorm Wind (G50)</b>
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Thunderstorm winds blew down trees near Glenwood.

### **Volusia County**

De Leon Spgs	06	1550EST			0	0			<b>Thunderstorm Wind (G50)</b>
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Thunderstorm winds blew down trees near DeLeon Springs.

### **Orange County**

Orlando	10	1720EST			0	0			<b>Funnel Cloud</b>
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### **St. Lucie County**

Port St Lucie	12	1440EST			0	0			<b>Urban/Sml Stream Fld</b>
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Heavy thunderstorm rains flooded streets and U. S. Highway 1 in Port St. Lucie.

### **Brevard County**

Micco	12	1550EST			0	1			<b>Lightning</b>
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Lightning struck a picnic pavilion under which thirteen people took shelter. One person was injured.

### **Brevard County**

Melbourne	13	1700EST			0	0			<b>Thunderstorm Wind (G50)</b>
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Thunderstorm winds blew down trees in Melbourne.

### **Brevard County**

Melbourne	13	1720EST			0	0			<b>Thunderstorm Wind (G50)</b>
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Thunderstorm winds blew down trees and large limbs damaging the roof of a house.



# Storm Data and Unusual Weather Phenomena

August 1998

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, East Central

### **Brevard County**

**Titusville**      14      1425EST                0      0                **Thunderstorm Wind (G50)**

Thunderstorm winds blew down large tree limbs in the Titusville area.

### **Brevard County**

**Merritt Is**      14      1525EST                0      0                **Thunderstorm Wind (G50)**

Thunderstorm winds blew down power lines in three locations in Merritt Island.

### **Brevard County**

**Indian Harbour Beach**      14      1535EST                0      0                **Thunderstorm Wind (G50)**

Thunderstorm winds blew down power lines in Indian Harbour Beach.

### **Okeechobee County**

**Okeechobee**      14      2110EST                0      0                **Thunderstorm Wind (G50)**

Thunderstorm winds blew down trees in the town of Okeechobee.

### **Orange County**

**Orlando**      16      1830EST                2      0                **Lightning**

Two men were struck and killed by lightning while fishing from a canoe in Lake Mack in Orlando.  
M35BO, M38BO

### **Brevard County**

**Port Canaveral**      19      0935EST      1      40      0      0                **Tornado (F0)**

An F0 tornado move on shore over Port Canaveral and damaged the roof a warehouse.

### **Brevard County**

**Melbourne**      31      1415EST                0      0                **Thunderstorm Wind (G50)**

Thunderstorm winds blew down a few trees along Highway One north of the Pineda Causeway.

## FLORIDA, Northeastern

### **Suwannee County**

**Live Oak**      03      2015EST                0      0      3.5K           **Thunderstorm Wind**

Large trees and power lines were blown down along I-10.

### **Columbia County**

**Lake City**      03      2030EST                0      0      2.5K           **Thunderstorm Wind**

Large trees and power lines were blown down.

### **Gilchrist County**

**Trenton**      03      2115EST                0      0      2.5K           **Thunderstorm Wind**

Large trees and power lines were blown down.

### **Marion County**

**Ocala**      03      2235EST                0      0      4K           **Thunderstorm Wind**

Large trees and power lines were blown down.

### **Flagler County**

**Flagler Beach**      05      1000EST                1      0                **Rip Currents**

Location: Crescent Beach Boat Ramp  
M50IW

### **Putnam County**

**Bostwick**      06      1505EST                0      0                **Hail (0.75)**

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>FLORIDA, Northeastern</u></b>									
<b>Union County</b>									
Raiford	06	1608EST			0	0			Hail (1.75)
<b>Duval County</b>									
Marietta	08	1230EST			0	0	1.5K		Thunderstorm Wind
			Large trees and power lines were blown down.						
<b>Alachua County</b>									
Newberry	08	1359EST			0	0			Hail (1.75)
<b>Gilchrist County</b>									
Trenton	08	1403EST			0	0			Hail (1.75)
<b>Suwannee County</b>									
Lancaster	08	1515EST			0	0	1.5K		Thunderstorm Wind
			Large trees and power lines were blown down.						
<b>Duval County</b>									
Whitehouse	09	1345EST			0	0	1.5K		Thunderstorm Wind
			Large trees and power lines were blown down.						
<b>Flagler County</b>									
Beverly Beach	10	1508EST			0	0	1K		Thunderstorm Wind
			Large trees and power lines were blown down.						
<b>Duval County</b>									
5 E Jacksonville	13	1425EST			0	0	5K		Thunderstorm Wind
			Large trees and power lines were blown down.						
<b>Flagler County</b>									
Mantanzas	14	1530EST			0	0	1K		Thunderstorm Wind
			Large trees and power lines were blown down.						
<b>Duval County</b>									
7 E Jacksonville	14	1728EST			0	0	65K		Thunderstorm Wind
			One home major damage, 5 minor. One vehicle destroyed. Large trees and power lines were blown down.						
<b>Marion County</b>									
2 W Ocala	16	1705EST			0	0	2K		Thunderstorm Wind
			Large trees and power lines were blown down.						
<b>Marion County</b>									
5 W Ocala	16	1730EST			0	0			Funnel Cloud
<b>Nassau County</b>									
Callahan	16	1810EST			0	0			Hail (0.75)
<b>Duval County</b>									
Arlington	17	1355EST			0	0			Hail (0.75)
<b>Duval County</b>									
Arlington	17	1355EST			0	0	1.5K		Thunderstorm Wind
			Large trees and power lines were blown down at the corner of St. Johns Bluff Rd. and Lone Pine Rd.						
<b>Duval County</b>									
5 SE Craig Muni Arpt to Craig Muni Arpt	17	1414EST			0	0			Funnel Cloud
<b>St. Johns County</b>									
1 N Durbin to Durbin	17	1449EST			0	0			Funnel Cloud

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Nassau County**

1 N Hilliard      17      1525EST      0      0      Hail (0.75)

### **Marion County**

Ocala      18      1530EST  
1830EST      0      0      3K      Flood

Rainfall amounts of 2 to 3 inches per hour produced flooding in the downtown area. Numerous streets were blocked off.

### **Alachua County**

5 NW Gainesville      21      1837EST      0      0      Funnel Cloud

### **Nassau County**

Fernandina Beach      23      1600EST      1      0      Rip Currents

M66IW

### **FLZ024**

#### **Nassau**

25      2258EST      0      0      10K      Flood

Three homes in Fernandina Beach with minor flooding due to an abnormal high tide.

### **Alachua County**

Gainesville      30      1455EST      0      0      1.5K      Thunderstorm Wind

Large trees and power lines were blown down.

### **Putnam County**

Interlachen      30      1506EST      0      0      1K      Thunderstorm Wind

Large trees and power lines were blown down.

### **Nassau County**

Callahan      30      1700EST      0      0      1K      Thunderstorm Wind

Large trees and power lines were blown down along CR-108.

### **Clay County**

Green Cove Spgs      31      1549EST      0      0      1.5K      Thunderstorm Wind

Large trees and power lines were blown down.

### **Clay County**

Orange Park      31      1645EST      0      0      1K      Thunderstorm Wind

Large trees and power lines were blown down.

### **Putnam County**

Bostwick      31      1655EST      0      0      0.50K      Thunderstorm Wind

Large limbs and power lines were blown down at the end of Palmetto Bluff Road.

### **Putnam County**

Palatka      31      1735EST      0      0      2.5K      Thunderstorm Wind

Vehicle damaged and numerous large trees were blown down on SR-19.

### **Putnam County**

San Mateo      31      1750EST      0      0      5K      Thunderstorm Wind

Large trees and power lines were blown down. Roof damage to mobile home.

## FLORIDA, Northwest

### **Taylor County**

Perry      14      1330EST      0      5      750K      Lightning

Lightning ignited a natural gas pipeline at the Florida Gas Transmission Company, about three miles northeast of Perry. A pair of explosions sent a 600-foot fireball skyward forcing the evacuation of about 100 residents. Five homes were incinerated and natural gas supplies were shut off to Perry and surrounding communities. Four firefighters and a gas plant employee suffered burns. The American Red Cross set up a temporary shelter at the Taylor County High School for displaced families. Units from Leon, Dixie, Jefferson, and Wakulla County joined the Taylor County and Perry firefighting efforts.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>FLORIDA, Northwest</u></b>									
<b>Leon County</b>									
Tallahassee	18	1732EST			0	0			Hail (0.88)
Nickel size hail reported near Capital Circle S.E. and Old St. Augustine Rd in Tallahassee.									
<b>Jackson County</b>									
Marianna	18	1830EST			0	0	20K		Tstm Wind/Hail
Numerous trees and power lines down, and a roof blown off a building in Marianna. Dime size hail also reported.									
<b>Leon County</b>									
Tallahassee	18	1900EST			0	0	5K		Thunderstorm Wind
Numerous trees and power lines down on Indianhead Acres, Circle, and Magnolia Dr in Tallahassee.									
<b><u>FLORIDA, Southern</u></b>									
<b>Monroe County</b>									
Key West	01	0650EST 0655EST			0	0			Funnel Cloud
Funnel cloud observed 5nm southeast of Key West.									
<b>Dade County</b>									
Homestead	01	1050EST 1059EST			0	0			Funnel Cloud
Funnel cloud was observed several miles west of Homestead General Airport.									
<b>Broward County</b>									
Davie	01	1515EST			0	1			Lightning
55 year old male was struck by lightning as he went out in the front yard to check a leaking roof. The location was in the city of Weston									
<b>Collier County</b>									
Marco	01	1700EST 1708EST			0	0			Funnel Cloud
A few rope-like funnel clouds were observed over the Big Marco River.									
<b>Palm Beach County</b>									
Jupiter	02	1430EST			0	1			Lightning
A man picnicking at Dubois Park near Jupiter Inlet was knocked unconscious by a lightning strike that forced him to the ground as it hit a tree near him.									
<b>Dade County</b>									
Miami Beach	03	0610EST			0	0			Waterspout
Pilot reported waterspout just offshore.									
<b>Palm Beach County</b>									
Loxahatchee	03	1620EST	0.1	15	0	0			Tornado (F0)
F0 tornado touched down briefly causing some minor damage near 14000 Citrus Dr.									
<b>Dade County</b>									
(Mia)Miami Intl	03	1625EST 1641EST			0	0			Funnel Cloud
Pilot reported two stationary funnel clouds 4nm west of KMIA and 14nm northwest of KMIA.									
<b>Dade County</b>									
West Miami	03	1641EST 1700EST	0.2	20	0	0			Tornado (F0)
Small tornado touched down over undeveloped area near Krome Ave between SW 8th St and Kendall Dr.									
<b>Dade County</b>									
West Miami	03	1642EST 1700EST	0.2	20	0	0			Tornado (F0)
Second tornado touched down over undeveloped area near Okeechobee Rd and US 27.									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b>FLORIDA, Southern</b>									
<b>Broward County</b>									
Davie	03	1810EST			0	0			Thunderstorm Wind (G61)
									Wind gust estimated.
<b>Broward County</b>									
Coral Spgs	03	1830EST			0	0			Funnel Cloud
<b>Hendry County</b>									
Clewiston	03	1910EST 1920EST	0.5	25	0	0			Tornado (F0)
									F0 tornado was observed 10nm west of Clewiston very near Glades County line.
<b>Broward County</b>									
Plantation	04	1548EST			0	0			Thunderstorm Wind (G61)
									Wind gusts estimated at 61 knots. Trees down north of Weston near I-595.
<b>Broward County</b>									
Plantation	04	1555EST			0	0			Funnel Cloud
									Several reports of funnel cloud near I-595 and Nob Hill Rd.
<b>Broward County</b>									
Davie	04	1623EST			0	0			Hail (0.88)
									Hail reported at I-75 and Arvida Parkway.
<b>Broward County</b>									
Pembroke Pines	04	1646EST			0	0			Funnel Cloud
									Funnel sighted at Chapel Trail east of US-27 on Pines Blvd. Winds estimated to be 52 knots.
<b>Broward County</b>									
Davie	04	1650EST			0	0			Funnel Cloud
									Funnel cloud sighted near SR-441 and I-595.
<b>Dade County</b>									
Biscayne Park	05	1230EST			0	1			Lightning
									A man was hit by a lightning bolt while he was pruning an Oak tree 20 feet above the ground. the 38 year old man climbed down the tree and then collapsed in front of a house in the 11900 block of Northeast 11 CT. It was not raining at the time.
<b>Broward County</b>									
Hollywood	05	1333EST			0	0			Tstm Wind/Hail
									Hollywood Memorial Hospital reported estimated wind gusts of 52 knots and .75 inch hail. Damage was done to the roof.
<b>Broward County</b>									
Central Portion	05	1635EST			0	0			Funnel Cloud
									Pilot reported funnel cloud 14nm west of Fort Lauderdale International Airport.
<b>Glades County</b>									
Moore Haven	05	1800EST 1830EST			0	0			Thunderstorm Wind (G50)
									Barn was destroyed. power lines were downed and trees uprooted.
<b>Glades County</b>									
Moore Haven	05	1815EST 1830EST			0	0			Funnel Cloud
<b>Monroe County</b>									
2 S Key West	06	0945EST 0951EST			0	0			Waterspout
<b>Monroe County</b>									
Key West	06	1722EST			0	0			Funnel Cloud

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>FLORIDA, Southern</b>									
<b>Broward County</b>									
Davie	07	1242EST			0	0			Funnel Cloud
									Funnel cloud was sighted near Griffin Rd along US-27.
<b>Palm Beach County</b>									
Pahokee	07	1409EST			0	0			Funnel Cloud
									Funnel cloud sighted near SR-715.
<b>Monroe County</b>									
3 E Duck Key	08	0908EST			0	0			Waterspout
<b>Monroe County</b>									
7 N Key West	09	1640EST 1705EST			0	0			Funnel Cloud
<b>Monroe County</b>									
7 N Key West	09	1705EST			0	0			Waterspout
<b>Monroe County</b>									
7 NW Key West	10	1125EST			0	0			Waterspout
<b>Monroe County</b>									
3 NE Key West	10	1346EST 1348EST			0	0			Waterspout
<b>Monroe County</b>									
3 NE Key West	10	1358EST 1401EST			0	0			Waterspout
<b>Monroe County</b>									
5 NNW Key West	10	1633EST 1702EST			0	0			Funnel Cloud
<b>Monroe County</b>									
10 NW Key West	10	1702EST 1740EST			0	0			Waterspout
<b>Dade County</b>									
(Mia)Miami Intl	13	1330EST			0	3			Lightning
									Three men were working near hangar when strike occurred.
<b>Dade County</b>									
Miami Beach	14	0828EST			0	0			Funnel Cloud
									Pilot reported funnel cloud over Biscayne Bay.
<b>Dade County</b>									
Kendall	14	1715EST 1730EST			0	0			Thunderstorm Wind (G60)
									Trees blown down near SW 104 ST and SW 137 AVE.
<b>Dade County</b>									
Opa Locka	14	1800EST 1810EST			0	0			Thunderstorm Wind (G60)
									Power lines down. Thousands of homes lost power. Roof and window damage reported at several homes. Shallow flooding reported throughout Northeast Miami-Dade county.
<b>Collier County</b>									
Naples	16	1330EST	0.1	15	0	0			Tornado (F0)
									Tornado touched down briefly just north of US 41 near SR 951. No damage reported.
<b>Collier County</b>									
Naples	16	1340EST 1344EST	0.1	10	0	0			Tornado (F0)
									Funnel cloud touched down briefly as f0 tornado with no resulting damage near SR951 and US41 southeast of Naples.

# Storm Data and Unusual Weather Phenomena

August 1998

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, Southern

### **Dade County**

Golden Beach	17	0948EST			0	0			Waterspout
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Pilot reported waterspout 18nm northwest of the Bimini islands.

### **Monroe County**

5 NE Key West Intl Arpt to Key West Intl Arpt	18	1455EST			0	0			Funnel Cloud
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### **Palm Beach County**

15 SE Palm Beach Intl Arpt	19	0855EST			0	0			Waterspout
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### **Dade County**

Key Biscayne	19	1220EST 1221EST			0	0			Waterspout
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Waterspout touched down 4nm southeast of Virginia Key.

### **Hendry County**

La Belle	21	1715EST			0	0			Funnel Cloud
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Funnel cloud observed by sheriffs office deputy just north of La Belle.

### **Monroe County**

7 NE Key West Intl Arpt	23	1830EST			0	0			Waterspout
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### **Dade County**

Biscayne Park	25	1830EST			0	0			Funnel Cloud
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Three waterspouts were observed just offshore Virginia Key.

### **Palm Beach County**

Palm Beach	27	0730EST			0	0			Waterspout
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Waterspout observed near the coast.

### **Monroe County**

10 S Key West Intl Arpt	27	1210EST			0	0			Funnel Cloud
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### **Collier County**

Immokalee	31	1647EST			0	0			Waterspout
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Waterspout observed touching down briefly on Lake Trafford.

## FLORIDA, West Central

### **Highlands County**

Lake Placid	04	1730EST			0	0	0	0	Hail (1.75)
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Golfball sized hail was reported in Lake Placid by the Highlands County Sheriffs Department.

### **Highlands County**

Lake Placid	04	1730EST			0	0	5K	0	Thunderstorm Wind
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Thunderstorm winds downed several large trees and branches in Sebring.

### **Highlands County**

Sebring	04	1821EST			0	1	0	0	Lightning
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The Highlands County EMS reported that a 27 year old male was struck and injured by lightning in Sebring.

### **Lee County**

North Ft Myers	06	1200EST			0	1	1K	0	Lightning
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Lightning struck and shattered an eight foot antenna of a boat on the Caloosahatchee River in North Ft. Myers. A 64 year old male was treated for minor electrical burns on his neck, left arm and shoulder.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### Hillsborough County

Plant City	06	1715EST	0.1	10	0	0	250K	0	Tornado (F0)
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A short lived tornado touched down and partially removed the roofs off two school buildings at the Robinson Elementary School on South Turkey Creek Road in Plant City. Five to six classrooms incurred damage to carpets, bulletin boards, computers and books from wind blown debris and rain.

### Hillsborough County

16 NE Tampa to Brandon	07	1710EST 1745EST			0	0	10K	0	Thunderstorm Wind
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Thunderstorm winds downed several large trees, branches and power lines from the Hillsborough River State Park along U.S. Highway 301 south across Seffner and Brandon.

### Citrus County

Citrus Spgs to Inverness	08	1445EST 1450EST			0	0	1K	0	Tstm Wind (G40)
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A thunderstorm wind gust estimated at 45 mph downed a large fruit stand tent along State Road 44 and South Croft Avenue while a small oak tree was toppled at Homestead Point. A few small trees were also downed in the Arrowhead subdivision.

### Lee County

Cape Coral to Sanibel	09	1515EST 1530EST			0	0	25K	0	Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines over southern portions of Cape Coral. Thunderstorm winds also downed a large tree limb from an Australian pine tree which crushed the roof of a station wagon in Sanibel.

### Manatee County

4 E Bradenton	09	1619EST			0	0	20K	0	Lightning
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Lightning struck and damaged the roof of a home on 50th Street East in the Braden River Lakes subdivision along State Road 64. Lightning burned two large holes in the roof of the home and pierced the ceiling in three locations.

### Manatee County

6 E Bradenton to 5 NE Bradenton	09	1623EST 1633EST			0	0	0	0	Hail (0.88)
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Nickel sized hail was observed one mile east of the Interstate 75 and State Road 64 intersection by an off-duty NWS meteorologist. Dime sized hail was observed near Ellenton by a Skywarn Spotter.

### Sarasota County

5.5 SE Sarasota	09	1630EST			0	0	100K	0	Lightning
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Lightning struck and caused significant fire damage to the roof and contents of a home on Hayden Boulevard near the intersection of Interstate 75 and Bee Ridge Road.

### Hillsborough County

1 S Tampa to 1 E Tampa	09	1700EST 1715EST			0	0	50K	0	Thunderstorm Wind
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Thunderstorm winds downed several large trees, branches and power lines from Harbor Island to Ybor City.

### Hillsborough County

Tampa	09	1718EST			0	0	0	0	Hail (0.75)
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Dime sized hail was observed at the parking lot of the downtown Tampa Police Department.

### Charlotte County

2 SE Port Charlotte	10	1720EST			0	0	0	0	Hail (0.75)
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Dime sized hail was reported near the intersection of U.S. Highway 41 and Harborview Road in Charlotte Harbor by the Charlotte County Sheriffs Office.

### Charlotte County

5 NW Port Charlotte	11	1500EST			0	0	5K	0	Tstm Wind (G40)
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Thunderstorm winds estimated at 45 mph removed the aluminum roof cover of a mobile home at the Holiday Park mobile home complex along U.S. Highway 41 northwest of Port Charlotte.



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b>FLORIDA, West Central</b>									
<b>Lee County</b> 8.5 SSE Ft Myers	12	1600EST			0	0	645K	0	Lightning
									Lightning struck and burned to the ground an upscale home on the 14400 block of Hickory Fairway Court near the intersection of Interstate 75 and Daniels Parkway.
<b>Lee County</b> Sanibel to Lehigh Acres	12	1600EST 1800EST			0	0	5K	0	Urban/Sml Stream Fld
									Heavy rainfall caused localized flooding of roadways and low lying areas south of State Road 82 from Sanibel east to near Lehigh Acres.
<b>Levy County</b> 6 S Williston	16	1530EST 1550EST			0	0	0	0	Hail (1.00)
									Quarter to dime sized hail was reported along U.S. Highway 41 between County Roads 322 and 326 by the public.
<b>Levy County</b> 6 S Williston	16	1545EST			0	0	25K	0	Thunderstorm Wind
									Thunderstorm winds downed several large branches along U.S. Highway 41 between County Roads 322 and 326.
<b>Pinellas County</b> Oldsmar	16	1630EST			0	0	0	0	Hail (0.75)
<b>Pinellas County</b> Oldsmar	16	1630EST			0	0	50K	0	Thunderstorm Wind
									Thunderstorm winds damaged the roofs and signs of several commercial structures in Oldsmar.
<b>Levy County</b> Bronson	16	1708EST			0	0	0	0	Hail (0.75)
<b>Levy County</b> Bronson	16	1725EST			0	0	0	0	Hail (0.75)
<b>Levy County</b> Bronson	16	1730EST 1800EST			0	0	20K	0	Thunderstorm Wind
									Thunderstorm winds damaged the roof of a barn and downed several small to large oak trees in Bronson.
<b>Hillsborough County</b> Plant City	16	1838EST			0	0	0	0	Hail (0.75)
<b>Manatee County</b> Bradenton to Palmetto	16	1846EST 1856EST			0	0	25K	0	Thunderstorm Wind
									Thunderstorm winds downed a large tree which fell atop and damaged a parked vehicle in Bradenton. Thunderstorm winds also downed several large trees at the Coach House mobile home park in Palmetto.
<b>Hillsborough County</b> Plant City	16	1900EST			0	0	5K	0	Thunderstorm Wind
									Thunderstorm winds downed several large trees in Plant City.
<b>Hillsborough County</b> 4 N Tampa	16	1915EST			0	0	1K	0	Thunderstorm Wind
									Thunderstorm winds downed a large tree near the intersection of Interstate 275 and U.S. Highway 92 in Tampa.
<b>Polk County</b> Bartow	16	2025EST			0	0	1K	0	Lightning
									Lightning struck a television antenna which sparked a fire that caused \$500 dollars worth of damage to a home on the 1600 block of Lagoon Circle in Bartow. A second home on the 1400 block of Davis Avenue in Bartow was struck by lightning which caused \$500 dollars worth of damage to the electrical system.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>FLORIDA, West Central</b>									
<b>Sumter County</b>									
1 SW Webster	17	1800EST			0	0	75K	0	Lightning
Lightning struck and burned to the ground a home on the 1200 block of County Road 753 southwest of Webster.									
<b>Hillsborough County</b>									
Temple Terrace	17	1820EST			0	0	0	0	Hail (0.75)
<b>Hillsborough County</b>									
Temple Terrace	17	1820EST 1826EST			0	0	10K	0	Thunderstorm Wind
An off duty NWS meteorologist reported thunderstorm wind gusts of 60 mph that downed several trees and power lines near the intersection of State Road 582 (Fowler Avenue) and County Road 581 (Bruce B. Downs Boulevard) in Temple Terrace.									
<b>Pasco County</b>									
Land O Lakes to Lacochee	17	1854EST 1905EST			0	0	15K	0	Thunderstorm Wind
Thunderstorm winds downed several power lines from Land O' Lakes to Lacochee in Pasco County.									
<b>Pinellas County</b>									
Palm Harbor	17	2000EST			0	0	1K	0	Lightning
Lightning struck the antenna of a television which caught fire and damaged the interior of a condo on the 1800 block of Pine Ridge Way West in Palm Harbor.									
<b>Lee County</b>									
7 SSW Ft Myers	19	1510EST			0	0	0	0	Hail (0.75)
Dime sized hail was reported by a weather spotter near College Parkway and County Road 867 in Ft. Myers.									
<b>Lee County</b>									
7 SSW Ft Myers	19	1510EST			0	0	1K	0	Tstm Wind (G45)
Thunderstorm winds estimated at 50 mph downed a few trees near College Parkway and County Road 867.									
<b>Pinellas County</b>									
1 WSW Treasure Is to 3 WSW Treasure Is	19	1540EST 1553EST			0	0	0	0	Waterspout
A well-defined and long-lasting waterspout was observed by hundreds of residents and beach-goers three miles west southwest of Treasure Island. The captain, a certified Skywarn Spotter, of a 150 foot cruise ship that passed within one mile of the waterspout, encountered 60 mph downburst wind and dime sized hail. The height of the waterspout was estimated at 2,000 feet and the base approximately 100 yards wide.									
<b>Pinellas County</b>									
St Petersburg Beach	19	1545EST 1550EST			0	0	1K	0	Thunderstorm Wind
Bay News Nine, an all news cable television station, reported thunderstorm wind gusts downed a few large trees and branches along 2nd Avenue N. in St. Petersburg Beach.									
<b>Sarasota County</b>									
2 W Sarasota	19	1615EST			0	0	5K	0	Heavy Rain
Heavy rain of 2.8 inches in an hour caused minor street flooding in Sarasota.									
<b>Hillsborough County</b>									
Tampa	20	1300EST			0	0	5K	0	Thunderstorm Wind
Tampa Electric Company reported that thunderstorm winds downed a power pole and several power lines in the Forest Hills area of Tampa.									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>FLORIDA, West Central</u></b>									
<b>Hillsborough County</b>									
11 NW Tampa	20	1325EST			0	0	15K	0	Thunderstorm Wind
									The Hillsborough County Office of Emergency Management reported that thunderstorm winds uprooted several trees in the Town n' Country area of Tampa.
<b>Highlands County</b>									
Sebring	20	1330EST 1430EST			0	0	2K	0	Urban/Sml Stream Fld
									Heavy rain caused localized flooding of streets and low lying areas in Sebring.
<b>Pinellas County</b>									
Clearwater	20	1330EST			0	0	20K	0	Thunderstorm Wind
									A local television station reported that thunderstorm winds downed several large trees and toppled a tree atop a vehicle in Clearwater.
<b>Pinellas County</b>									
Seminole to Largo	22	1400EST 1600EST			0	0	10K	0	Urban/Sml Stream Fld
									Heavy rainfall of three to four inches in less than two hours caused localized flooding of streets and low lying areas from Largo to Seminole.
<b>Pinellas County</b>									
Largo	22	1518EST 1522EST			0	0	0	0	Hail (0.75)
									Dime sized hail was reported by Skywarn Spotters near the intersection of 122nd Street and 102nd Avenue in Largo.
<b>Hillsborough County</b>									
6.5 W Tampa	23	1610EST			2	0	0	0	Rip Currents
									Two female children, ages five and six, drowned in rip currents at the Ben T. Davis Municipal Beach along State Road 60 (Courtney Campbell Causeway). F5IW, F6IW
<b>Charlotte County</b>									
Punta Gorda	27	1915EST 2030EST			0	0	5K	0	Urban/Sml Stream Fld
									Heavy rainfall caused localized street flooding in low lying and areas of poor drainage in Cape Coral.
<b>Polk County</b>									
Lakeland to Mulberry	28	2000EST 2130EST			0	0	2K	0	Urban/Sml Stream Fld
									Heavy rainfall of two to four inches in less than two hours caused localized flooding of streets and low lying areas from Lakeland south to Mulberry.
<b>Hernando County</b>									
Brooksville	30	1736EST			0	1	0	0	Lightning
									The Hernando County Sheriffs Department reported that an adult male was struck and injured by lightning.
<b>Pinellas County</b>									
4.5 SE Clearwater	30	2144EST			0	0	0	0	Hail (0.75)
									A Skywarn Spotter reported dime sized hail at the intersection of County Road 501 (Belcher Road) and State Road 686 (East Bay Drive).
<b><u>FLORIDA, West Panhandle</u></b>									
<b>Okaloosa County</b>									
Niceville	01	0520CST 0522CST			0	0	5K		Thunderstorm Wind (G50)
									A couple of houses had shingles torn from the roofs by high winds.

# Storm Data and Unusual Weather Phenomena

August 1998

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, West Panhandle

### **Okaloosa County**

Niceville	01	0520CST			0	0	10K		<b>Lightning</b>
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Lightning struck the roof of a home. The bolt knocked a hole in the roof and also damaged several appliances in the home.

### **Okaloosa County**

Niceville	01	0530CST			0	0	25K		<b>Lightning</b>
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Lightning somehow ran into a garage and blew out all four tires of an automobile that was in the garage. The strike blew a hole in the concrete floor of the garage four to five inches wide and two inches deep. The lightning showed no visible entrance into the garage from the outside.

### **Okaloosa County**

Mary Esther	01	1325CST 1327CST			0	0	3K		<b>Thunderstorm Wind (G50)</b>
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Trees were blown down just west of Mary Esther.

### **Santa Rosa County**

Navarre	01	1335CST 1337CST			0	0	10K		<b>Lightning</b>
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A crane being used for construction on Navarre Beach was caught in winds and was also struck by lightning from a storm that moved in from the east. The workers saw the storm coming and were trying to get the crane lowered when winds bent the crane and lightning struck the tall crane. No one was injured.

### **Santa Rosa County**

Navarre	01	1335CST			0	0	15K		<b>Lightning</b>
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Lightning struck a tree near a home and ran into the house through the tree root system. The lightning blew out the breaker box in the home and damaged some electrical appliances.

### **Santa Rosa County**

Harold	09	1340CST			0	3			<b>Lightning</b>
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Several people were riding 4-wheelers near the Blackwater River State Park when a storm suddenly moved in. Lightning struck a pine tree near the people and they decided to get under that tree, thinking if it got hit once, lightning wouldn't strike it again. Lightning did strike the tree again and three people were injured and taken to a local hospital. One of the males had burns on one of his feet and two others had hair singed on their arms and legs. All three were treated and released.

### **Santa Rosa County**

Milton	09	1345CST			0	0	4K		<b>Lightning</b>
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Lightning struck the Santa Rosa county communications center in Milton. The strike knocked out the 911 operations for the county for several minutes.

### **Santa Rosa County**

3 SE Milton	09	1400CST 1405CST			0	0			<b>Lightning</b>
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Four children were playing in an abandoned clay pit when a thunderstorm moved in. They decided to get under a cliff overhang to get away from the lightning and the rain. Heavy rains caused the cliff overhang to collapse on the four children. Three of the children died before they could be freed from the dirt.

### **Escambia County**

Walnut Hill	11	1720CST 1722CST			0	0	5K		<b>Thunderstorm Wind (G50)</b>
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Trees and power lines were blown down just southeast of Walnut Hill.

### **Escambia County**

Gonzalez	12	1405CST 1407CST			0	0	4K		<b>Thunderstorm Wind (G50)</b>
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Trees were blown down near Gonzalez.

### **Okaloosa County**

Milligan	16	0835CST 0837CST			0	0	4K		<b>Thunderstorm Wind (G50)</b>
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Trees were blown down near Milligan.

# Storm Data and Unusual Weather Phenomena

August 1998

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, West Panhandle

### **Okaloosa County**

Valparaiso	20	1700CST			0	0	2K		Lightning
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Lightning struck the Okaloosa county communications center, knocking it off the air for several minutes.

### **Escambia County**

Gulf Beach	30	0655CST 0658CST			0	0			Waterspout
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A waterspout was reported offshore, just southwest of Perdido Pass. The waterspout dissipated over the water.

## GEORGIA, East Central

NONE REPORTED.

## GEORGIA, Lower

### **Charlton County**

St George	08	1330EST			0	0	1.5K		Thunderstorm Wind
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Large trees and power lines were blown down.

### **Charlton County**

St George	09	1420EST			0	0	1.5K		Thunderstorm Wind
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Large trees and power lines were blown down.

### **Charlton County**

Mattox	14	1635EST			0	0			Funnel Cloud
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### **Appling County**

2 S Baxley	16	1710EST			0	0	2K		Thunderstorm Wind
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Large trees and power lines were blown down near Pineygrove Church.

### **Ware County**

Waycross	16	1720EST			0	0	0.50K		Thunderstorm Wind
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Large trees and power lines were blown down.

### **Wayne County**

Jesup	16	1720EST			0	0	1.5K		Thunderstorm Wind
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Large trees and power lines were blown down.

### **Ware County**

2 N Waycross	16	1740EST			0	0	1.5K		Thunderstorm Wind
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Large trees and power lines were blown down.

### **Wayne County**

Odum	16	1745EST			0	0	1.5K		Thunderstorm Wind
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Large trees and power lines were blown down.

### **Jeff Davis County**

Hazelhurst	18	1610EST			0	0			Hail (0.88)
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### **Jeff Davis County**

Hazelhurst	18	1625EST			0	0	0.50K		Thunderstorm Wind
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Large trees were blown down.

### **Ware County**

Dixie Union	31	1735EST			0	0	1.5K		Thunderstorm Wind
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Large trees and power lines were blown down.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b><u>GEORGIA, North and Central</u></b>									
<b>Laurens County</b> 2 E Dublin	07	1450EST			0	0			Hail (1.75)
	Laurens county 911 reported quarter to golf ball size hail.								
<b>Johnson County</b> Wrightsville	07	1505EST			0	0			Hail (0.75)
<b>Carroll County</b> 5 SW Villa Rica	08	1950EST			0	0			Funnel Cloud
	Carroll county 911 received numerous reports of a funnel cloud between Carrollton and Villa Rica along highway 61.								
<b>Carroll County</b> Carrollton	08	2000EST			0	0	10K		Thunderstorm Wind
	Carroll county 911 reported numerous trees down, some falling on a house.								
<b>Cobb County</b> Austell to Marietta	08	2012EST 2030EST			0	0			Hail (1.75)
	Numerous public reports indicated hail ranged from dime to quarter size. One report was of golf ball size hailstones.								
<b>Cobb County</b> Austell to Marietta	08	2015EST 2030EST			0	1	100K		Thunderstorm Wind
	A severe thunderstorm caused damage from near Austell to Marietta. Trees were uprooted or snapped off, falling on houses, vehicles, and power lines. One man was pinned for 3 hours by a tree that crashed through his home's roof. He sustained injuries but nothing was broken. Part of a Cobb county fire station's engine bay roof was peeled off. A chimney was knocked off of a house. Downed power lines left thousands without power into the next day.								
<b>Coweta County</b> Newnan	09	0000EST			0	0	80K		Lightning
	Lightning started a fire at a house on Evergreen causing extensive damage. Two other homes in the Newnan area were struck by lightning also, but no serious damage occurred.								
<b>Spalding County</b> Griffin	09	1420EST			0	0	5K		Lightning
	Lightning struck an electrical sub-station setting fire to a bank of capacitors.								
<b>Clarke County</b> Athens	09	1630EST			0	0	5K		Urban/Sml Stream Fld
	Over 3 inches of rain in an hour caused flooding of part of the Baxter Street area. The water rose to door level in areas with poor drainage. Water surged through the street, closing the road to traffic. Minor damage occurred from the rapidly rising water.								
<b>Pulaski County</b> Hawkinsville	12	1500EST			0	0	50K		Thunderstorm Wind
	A sudden downburst from a thunderstorm peeled the roof off a high school gymnasium. Georgia Emergency Agency reported numerous trees and power lines were downed as well.								
<b>Spalding County</b> Griffin	14	1845EST			0	0	5K		Flash Flood
	Slow moving thunderstorms produced 3 to 5 inches of rain in Griffin and parts of eastern Spalding county. Flooding of some streets and highways resulted.								
<b>Monroe County</b> Blount	18	1320EST 1330EST			0	0			Hail (1.75)
	The public reported golf ball size hail.								
<b>Butts County</b> 5 W Jackson to Jackson	18	1325EST 1335EST			0	0			Hail (1.00)
	Butts county 911 and the public reported dime to quarter size hail.								

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>GEORGIA, North and Central</b>									
<b>Coweta County</b>									
Newnan to Moreland	18	1405EST			0	0			Hail (0.75)
<b>Jasper County</b>									
Monticello	18	1410EST 1415EST			0	0			Hail (1.00)
<b>Coweta County</b>									
Thomas Xrds to Sharpsburg	18	1411EST 1425EST			0	0			Hail (0.75)
		Several public reports of dime size hail were received.							
<b>Coweta County</b>									
Thomas Xrds	18	1420EST			0	0	0.50K		Thunderstorm Wind
		Three trees were blown down.							
<b>Crawford County</b>									
3 SE Roberta to 3 S Roberta	18	1440EST			0	0			Hail (0.88)
<b>Fulton County</b>									
Union City	18	1455EST			0	0			Hail (0.75)
<b>Fulton County</b>									
Union City	18	1455EST			0	0	0.50K		Thunderstorm Wind
		Thunderstorm winds broke off large limbs, which knocked down power lines.							
<b>Peach County</b>									
2 NW Ft Vly	18	1458EST 1504EST			0	0			Hail (0.75)
		The public reported dime size hail and a few branches down near the Crawford/Peach county line.							
<b>Carroll County</b>									
5 SE Carrollton	18	1500EST			0	0			Hail (0.88)
<b>Emanuel County</b>									
5 S Swainsboro	18	1546EST			0	0	0.50K		Thunderstorm Wind
		Emanuel county 911 reported several trees down.							
<b>Jefferson County</b>									
6 N Louisville	18	1600EST			0	0	1K		Thunderstorm Wind
		Louisville 911 reported 3 trees down on highway 296 north of Louisville. Widespread power outages were also reported.							
<b>Glascocock County</b>									
Gibson	18	1640EST			0	0			Hail (0.75)
<b>Washington County</b>									
Warthen	18	1640EST			0	0	0.50K		Thunderstorm Wind
		The public reported several trees blown down.							
<b>Wilcox County</b>									
3 SE Abbeville	18	1730EST			0	0			Hail (0.75)
<b>Baldwin County</b>									
Milledgeville	19	1950EST			0	0	1K		Thunderstorm Wind
		Milledgeville 911 reported a large tree and a power line were blown down by thunderstorm winds.							
<b>Hall County</b>									
Flowery Branch	20	0700EST			0	0	5K		Urban/Sml Stream Fld
		Slow moving thunderstorms produced 5 to 6 inches of rain overnight in southwest Hall county. Low lying roads were covered with water, and 2 of them were washed out.							
<b>Cobb County</b>									
Marietta to 5 ENE Marietta	30	1530EST 1545EST			0	0			Hail (1.25)
		Several public reports were received of hail ranging from dime to half dollar size.							

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Fulton County**

2 W Roswell to  
Roswell

30     1534EST  
         1549EST

0     0

**Hail (0.88)**

### **Cobb County**

5 E Marietta to  
5 NE Marietta

30     1535EST

0     0

**10K**

**Thunderstorm Wind**

Public and newspaper reports indicated thunderstorm winds snapped or uprooted a few trees and tree limbs and knocked down power lines. Part of an 8 to 10 inch diameter tree fell on a house and another large limb smashed the back window of a car.

### **Bartow County**

5 W Kingston

30     1625EST

0     0

**0.50K**

**Thunderstorm Wind**

The public reported 2 hardwood trees blown over. One fell on highway 411.

### **Crisp County**

5 NE Cordele

30     1705EST

0     0

**10K**

**Thunderstorm Wind**

Crisp county 911 reported a trailer blown over and destroyed.

### **Troup County**

Andersons Corner

31     1515EST

0     0

**0.50K**

**Thunderstorm Wind**

Troup county 911 reported thunderstorm winds knocked a tree and a power line down near the intersection of highways 219 and 18.

### **Harris County**

Pine Mtn

31     1545EST

0     0

**0.50K**

**Thunderstorm Wind**

Harris county 911 reported trees blown down.

### **Sumter County**

3 N Americus

31     1630EST  
         1645EST

0     0

**0.50K**

**Thunderstorm Wind**

Sumter county 911 reported trees blown down on highway 19.

## GEORGIA, Northeast

NONE REPORTED.

## GEORGIA, Southeast

NONE REPORTED.

## GEORGIA, Southwest

### **Colquitt County**

Northwest Portion

18     1805EST

0     0

**Hail (0.75)**

Dime size hail.

### **Dougherty County**

Northeast Portion

18     1805EST

0     0

**Hail (0.75)**

Dime size hail.

### **Lee County**

Southeast Portion

18     1805EST

0     0

**Hail (0.75)**

Dime size hail.

### **Decatur County**

Mt Pleasant

18     1930EST

0     0

**1K**

**Thunderstorm Wind**

Trees down in northern portions of the county.

## GEORGIA, West Central

NONE REPORTED.



# Storm Data and Unusual Weather Phenomena

August 1998

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

## HAWAII

NOT RECEIVED.

## IDAHO, Extreme Southeast

### **Franklin County**

<b>Preston</b>	26	1334MST				0	0	2K	50K	Hail (1.00)
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A hail storm damaged crops in the Preston area.

## IDAHO, North

### **Lemhi County**

7 NE Salmon	09	1505MST				0	0			Thunderstorm Wind (G61)
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Cluster of thunderstorms in Lemhi County crossed over RAWs station which recorded wind gusts to 70 mph.

### **Lemhi County**

Salmon	21	1450MST				0	0			Thunderstorm Wind (G51)
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## IDAHO, Northwest

### **Kootenai County**

5 SW Coeur D Alene	12	1215PST 1600PST				0	0	10K	15K	Wild/Forest Fire
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Truck sparked a fire in a wheat field, damaging 15 acres of wheat and 1 acre of timber. Truck was also destroyed.

### **Bonner County**

2 N Hope	19	0200PST				0	0	5K	0	Wild/Forest Fire
	21	1300PST								

Lightning sparked three fires in the vicinity of Hope, each about an acre in size. Two small fires also started in the Priest Lake area.

### **Kootenai County**

2 N Rose Lake to 2 E Rose Lake	19	0300PST				0	0	20K	0	Wild/Forest Fire
	21	1500PST								

Lightning sparked 20 small fires in the Couer d'Alene National Forest near Rose Lake. Each fire was less than an acre.

### **Benewah County**

3 NW St Joe	19	0330PST				0	0	25K	0	Wild/Forest Fire
	21	1600PST								

Lightning sparked 25 small fires near St. Joe, each ranging 1-5 acres in size.

## IDAHO, Southeast

### **Blaine County**

Ketchum	04	1845MST				0	0			Thunderstorm Wind (G50)
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Wind knocked down a tree that crushed a trailer home. Wind caused power outages.

### **Butte County**

Arco	09	1730MST				0	0			Thunderstorm Wind (G52)
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### **Minidoka County**

Rupert	12	1925MST				0	0			Thunderstorm Wind (G56)
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Wind downed trees; one crushed a car. Siding and awning damage. Metal shed destroyed.

### **Bingham County**

10 W Ft Hall	31	1720MST				0	0			Lightning
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Lightning ignited fire that burned 10,000 acres of sagebrush and grass.

## IDAHO, Southwest

### **Twin Falls County**

2.5 SE Twin Falls	09	1440MST 1445MST				0	0			Hail (0.88)
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### **Camas County**

12 E Fairfield	09	1640MST				0	0			Hail (1.00)
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During the afternoon of August 9th scattered thunderstorms developed over south central Idaho. In Camas County one inch hail was reported near the Blaine County line. Near Twin Falls a spotter reported 7/8 inch diameter hail. No reports of damage were received.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## ILLINOIS, Central

### **Champaign County**

Thomasboro	03	1900CST 2200CST							Flash Flood
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### **Vermilion County**

Hope to Potomac	03	1900CST 2200CST							Flash Flood
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A series of thunderstorms moved across northern portions of Champaign and Vermilion counties over a three hour period with between 4 to 6 inches of rain falling. The Thomasboro, Collison, Hope, and Potomac areas were the most affected. Numerous roads were flooded and a few homes in the Collison area sustained minor damage. Also, several motorists had to be rescued after driving into flooded roadways. No injuries were reported.

### **Peoria County**

2 N Peoria	04	1634CST							Hail (1.00)
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### **Peoria County**

2 N Peoria	04	1700CST					0		Thunderstorm Wind
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Thunderstorm winds blew down a telephone pole across a road two miles north of Peoria.

### **Clark County**

West Union	04	2000CST 2254CST							Flash Flood
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A series of thunderstorms moved across western portions of Clark County dumping up to 6 inches of rain in the West Union area in less than three hours. Numerous roads were flooded. However, no structural damage or injuries were reported.

### **Champaign County**

Royal	05	1840CST 2100CST							Flash Flood
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A series of thunderstorms dumped up to 3 inches of rain over eastern Champaign County. Numerous roads were flooded and three homes had water in their basements in the Royal area. No injuries were reported.

### **Vermilion County**

Rossville	24	1535CST							Hail (1.00)
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## ILLINOIS, Northeast

### **Cook County**

Countywide	03	2300CST							Urban/Sml Stream Fld
	04	0600CST							

### **Du Page County**

Bolingbrook	03	2300CST							Urban/Sml Stream Fld
	04	0600CST							

### **Kankakee County**

Countywide	03	2300CST							Urban/Sml Stream Fld
	04	0600CST							

### **Will County**

Countywide	03	2300CST							Urban/Sml Stream Fld
	04	0600CST							

Heavy rain began late on the night of August 3 and continued into the early morning hours of the 4th. The heaviest rain fell in Will County but heavy rain was also reported in southern Du Page, Southwest Cook and part of Kankakee County. Some of the heavier rainfall amounts included 5.6 inches at Monee, 5 inches at Manhattan, 3.53 inches at Channahon, 3.51 inches at Bolingbrook, 3.05 inches at Peotone, 2.69 inches at Burr Ridge, 2.42 inches at Darien and 2 inches at Kankakee. The rain caused flooding of roads, viaducts and underpasses but most of the water was receding by morning rush hour.

### **Cook County**

Countywide	04	1100CST 1700CST			1	0			Urban/Sml Stream Fld
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### **Du Page County**

Countywide	04	1100CST 1700CST			0	0			Urban/Sml Stream Fld
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### **Kane County**

Aurora	04	1100CST 1700CST			0	0			Urban/Sml Stream Fld
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Thunderstorms produced heavy rain over southern Kane, much of Du Page and part of Cook County. Heavier rainfall amounts

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Property	Crops	Character of Storm
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## ILLINOIS, Northeast

included 2.72 inches at Aurora, 2.51 inches at Burr Ridge, 2.5 inches at Bolingbrook, 2.23 inches near Midway Airport and 1.99 inches at Willow Springs. Some of this area also had heavy rain late on the 3rd into the early morning hours of the 4th. Two day rain totals were 6.01 inches at Bolingbrook, 5.2 inches at Burr Ridge, 5.03 inches at Naperville, 3.95 inches at Olympia Fields, and 3.7 inches at Willow Springs. The afternoon storms caused more street flooding, backup of storm sewers and flooding of basements and low lying areas. A 6 year old boy was swept into a storm drain while playing in flood waters in Bolingbrook. He was carried over 1/4 mile through a drain pipe to a retention pond where he was pinned against a grate for 25 minutes until a rescue squad found him. He was pronounced dead at arrival at a nearby hospital.

### **Ogle County**

Forreston to Rochelle	24	1120CST 1200CST			0	0			Thunderstorm Wind (G50)
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### **Winnebago County**

Seward to 3 E New Milford	24	1130CST 1200CST			0	0			Thunderstorm Wind (G64)
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### **Lee County**

Countywide	24	1135CST 1210CST			0	0			Thunderstorm Wind (G50)
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### **De Kalb County**

Kirkland to Kingston	24	1207CST 1217CST			0	12			Thunderstorm Wind (G50)
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### **Kane County**

Elburn to Aurora	24	1222CST 1231CST			0	0			Thunderstorm Wind (G50)
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### **Du Page County**

Carol Stream to Naperville	24	1236CST 1245CST			0	1			Thunderstorm Wind (G64)
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### **Kendall County**

Oswego	24	1247CST			0	0			Thunderstorm Wind (G50)
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### **Cook County**

3 SW Chicago Midway Arpt to Chicago Hgts	24	1250CST 1313CST			0	1			Thunderstorm Wind (G61)
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### **Will County**

Joliet to Crete	24	1253CST 1310CST			0	0			Thunderstorm Wind (G68)
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### **ILZ021**

### **Grundy**

24		1303CST			0	1			High Wind (G44)
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A small intense line of thunderstorms raced across north central and northeast Illinois at 55 mph. There were numerous reports of tree limbs and power lines down as well as some structural damage to buildings and some trees uprooted. The most intense damage was from northern Ogle and extreme southern Winnebago Counties east southeast to southern Cook and eastern Will Counties. Some of the highest wind gusts included 74 mph at RFD at 1159 CST, 73 MPH at Carol Stream at 1236 CST, 80 mph at Joliet at 1253 pm CST, 61 mph at Burbank at 1300 CST and 67 mph at Midlothian at around 1310 CST. Four inch diameter tree limbs were blown down in southern Winnebago County. Tree damage was widespread across northern Ogle County, including trees and limbs on houses. State Roads 72 and 64 were down to one lane in places. The roof of Byron High School was damaged. There was also extensive damage to corn crops. Trees and power lines were down in Lee County. Trees and power lines were damaged in northern De Kalb County. A state trooper estimated winds in excess of 60 mph. A semi-tractor trailer driver was injured at Kirkland. A student suffered a broken leg and 10 other people had minor injuries at Northern Illinois University in DeKalb when the winds blew down tents and other debris at a display. In Kane County, trees were down at Elburn and signs were blown over at the Aurora toll plaza on I-88. A large tree fell on a house in Aurora. Large trees were blown down in northern Kendall County. In Minooka in northeast Grundy County winds gusted to 40 to 50 mph which caused a building under construction to collapse. A man was injured when he was trapped under the collapsed wall. In Du Page County, the roof was torn off a lumber store in Wheaton, a wall of a building under construction came down in Naperville and there was extensive damage to trees and houses in Wheaton and Lisle. A 39 year old worker was critically injured when he fell two stories from the roof of a building in Schaumburg. In Will County high winds damaged a roof at a shopping center in Crest Hill/Joliet, and tree limbs to 5 inches in diameter came down. Trees were also downed in Frankfort, New Lenox, Manhattan, Beecher, and Crete. In Cook County, a day care center in Bridgeview had part of its roof torn off and windows broken. A CTA bus shelter blew over in the far southwest side of Chicago injuring a woman. Part of the roof was peeled of Marist High School in the far southwest side of Chicago. About 260,000 customers in northern Illinois lost power. The winds uprooted or severely damaged at least 200 trees in Chicago, according to the Bureau of Forestry.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## ILLINOIS, Northwest

### **Jo Daviess County**

Central Portion	20	1852CST 2230CST							Urban/Sml Stream Fld
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### **Jo Daviess County**

West Central Portion	20	1930CST 2030CST				2K			Flash Flood
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Strong thunderstorms dumping 3 to nearly 5 inches of heavy rain over East Central Iowa and Northwest Illinois caused minor urban flooding in and around the city of Galena. The same storm also drenched the Small Pox Creek basin setting off a flash flood and causing damage in The Galena Territory. As the flood waters poured into the Lake Galena marina the surge of water broke pilings and tie-downs, and broke docks apart. Only minor damage was noted to eleven boats which were broken loose and set adrift in the lake. Two boats were found adjacent to the Eagle Ridge docks, one small fishing boat was found beneath a pontoon boat, and two boats sank. On a hillside above the lake a cornfield was also flattened by the storm. An observer for the Jo Daviess County Extension Service recorded 4.45 inches of rain near Lake Galena.

### **Jo Daviess County**

Elmville	24	1058CST							Thunderstorm Wind (G56)
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### **Jo Daviess County**

Hanover	24	1100CST							Thunderstorm Wind (G52)
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### **Carroll County**

Savanna	24	1110CST							Thunderstorm Wind (G70)
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### **Carroll County**

Mt Carroll to Lanark	24	1115CST 1130CST							Thunderstorm Wind (G74)
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### **Stephenson County**

3 N Pearl City	24	1118CST							Thunderstorm Wind (G65)
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### **Stephenson County**

Freeport to 3 S Freeport	24	1130CST							Thunderstorm Wind (G70)
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### **Stephenson County**

Pearl City	24	1130CST	0.5	50			80K		Tornado (F1)
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### **Stephenson County**

1 SE German Vly	24	1145CST							Thunderstorm Wind (G65)
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Severe thunderstorms developed over North Central Iowa and moved eastward into Illinois blowing down trees, limbs, and powerlines. Numerous homes and farm buildings were damaged by the winds, several vehicles were smashed by falling trees and branches, and thousands of acres of corn and soybeans were damaged or destroyed. In Stephenson County a tornado cut a path through the Pearl City area severely damaging a home and destroying a garage. At the Stephenson County Fair three-fourths of the tents were knocked down. A woman and a kid goat were injured when the tents collapsed. Telephone and electric service was out throughout much of the Elizabeth and Hanover areas due to trees falling on utility lines.

### **Carroll County**

Central Portion	24	2223CST 2325CST							Thunderstorm Wind (G56)
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Numerous trees and branches were downed by strong thunderstorm winds at Palisades State Park north of Savannah and at the Timberlake campground near Mount Carroll.

## ILLINOIS, South

### **Wayne County**

Fairfield	03	1730CST 1930CST							Urban/Sml Stream Fld
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U.S. Highway 45 and Illinois Route 161 both had water across them. In particular, U.S. 45 was flooded between Cisne and Geff, and Route 161 had water problems about a mile west of Johnsonville. Rainfall estimates across northwest Wayne County were between 2 and 4 inches in several hours.

### **Massac County**

Metropolis	07	1000CST 1145CST							Urban/Sml Stream Fld
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Thunderstorms produced one inch of rain in 20 minutes.



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b>INDIANA, Central</b>									
<b>Warren County</b>									
Countywide	03 04	2200EST 0200EST			0	0			Urban/Sml Stream Fld
<b>Madison County</b>									
Alexandria	05	1500EST 2300EST			0	0	5K		Flood
Two to five inch rains from the evening of Aug 4 through the afternoon of Aug 5 resulted in Pipe Creek overflowing its bank. This affected some peoples garages and basements on the north side of Alexandria and also in Frankton.									
<b>INZ028&gt;029-035-043&gt;044-051-060-067</b>									
<b>Warren - Tippecanoe - Fountain - Vermillion - Parke - Vigo - Sullivan - Knox</b>									
	06 15	0000EST 0700EST			0	0			Flood
Two to six inch rains in the headwaters of the Wabash River from Aug2 through Aug 6 resulted in the river exceeding bankful by 2 to 4 feet. This flood affected agricultural areas close to the river.									
<b>Marion County</b>									
Indianapolis	06	1500EST			0	0	250K		Lightning
Lightning strike at the Fox Club Apartments on Keystone Ave on Indianapolis' south side caused extensive fire damage.									
<b>Howard County</b>									
Greentown	24	1635EST			0	0	0.50K		Thunderstorm Wind
Two trees blown down.									
<b>Fountain County</b>									
Covington	24	1703EST 1705EST			0	0	0.50K		Thunderstorm Wind
Tree limbs blown down.									
<b>Madison County</b>									
Alexandria to Frankton	24	1705EST 1707EST			0	0	5K		Thunderstorm Wind (G51)
Numerous trees and power lines were blown down including the Chesterfield area. Some trees fell on vehicles.									
<b>Tippecanoe County</b>									
Lafayette	24	1715EST			0	0	0.50K		Thunderstorm Wind
Large tree blown down.									
<b>Madison County</b>									
Frankton	24	1716EST			0	0			Hail (1.00)
<b>Montgomery County</b>									
3 E Crawfordsville	24	1730EST			1	0	15K		Thunderstorm Wind
Tree fell on car killing occupant. Occurred on US 136. F65VE									
<b>Delaware County</b>									
5 W Muncie	24	1735EST			0	0	0.50K		Thunderstorm Wind
Sixteen inch diameter tree blown down.									
<b>Delaware County</b>									
Cowan	24	1743EST			0	0	1K		Thunderstorm Wind
Several large trees blown down.									
<b>Randolph County</b>									
2.5 SW Farmland	24	1745EST			0	0			Thunderstorm Wind (G56)
<b>Madison County</b>									
7 NW Anderson	24	1745EST			0	0	10K		Thunderstorm Wind
Trailer roof torn off by thunderstorm winds.									

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Henry County**

Middletown to Blountsville	24	1801EST 1815EST			0	0	25K		Thunderstorm Wind
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Thunderstorm winds blew down barn in Blountsville and tree in Middletown.

### **Randolph County**

Farmland to Modoc	24	1815EST			0	0	1K		Thunderstorm Wind
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Trees and power lines blown down.

### **Hamilton County**

Central Portion	24	1815EST 1930EST			0	0	300K		Lightning
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Lightning struck five buildings causing varying degrees of fire damage. In Fishers, a house was nearly destroyed by fire with estimates at 250 thousand dollars.

## INDIANA, Northeast

### **Adams County**

Decatur to Geneva	04 05	1740EST 1205EST			0	0	100K	150K	Flood
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NUMEROUS COUNTY ROADS ESPECIALLY ACROSS THE SOUTHERN HALF OF THE COUNTY WERE INUNDATED ALONG WITH LOW LYING AGRICULTURAL FARMLANDS.

### **Grant County**

Marion	04 05	1740EST 1525EST			0	0	1M	500K	Flood
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EXTENSIVE FLOODING THROUGHOUT MARION AND THE COUNTY. MANY ROADS AND BRIDGES UNDER WATER. NUMEROUS RESIDENCES WERE EVACUATED ALONG THE MISSISSINewa RIVER AS ARMY NATIONAL GUARDSMEN SANDBAGGED A WEAKENING DIKE ON THE EAST SIDE OF MARION. THE DIKE HELD BUT SEVERAL HOMES SUSTAINED WATER DAMAGE.

### **Blackford County**

Hartford City	05	0000EST 0300EST			0	0	50K	100K	Flood
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NUMEROUS COUNTY ROADS WERE FLOODED ALONG WITH AGRICULTURAL LAND.

### **Jay County**

Portland	05	0000EST 0300EST			0	0	100K	150K	Flood
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OAKWOOD MOBILE HOME PARK INUNDATED. SEVERAL RESIDENCES IN PORTLAND FLOODED. MOST RURAL COUNTY ROADS WERE CLOSED DUE TO THE HIGH WATER OVER THE ROADS.

Synoptic and Mesoscale conditions for August 5th...

A large upper trough was anchored over the central plains the morning of August 4th with a surface reflection across southeastern Iowa. A warm front stretched from this low across northern Indiana which provided the low level focus for shower and thunderstorm development the morning of the 4th. The airmass south of this front was tropical in nature with surface dewpoints in the middle 70s and precipitable water values from 1.75 to 2.00 inches. Mid level winds were quite weak however providing for slow storm movements and training echoes. Many locations from Laporte to Portland received from 1 to 3 inches of rain the morning of the 4th. By late afternoon a weak short wave trough ejected out of upper trough back in Iowa as a low level jet developed from Missouri into central Indiana. Showers and thunderstorms redeveloped north of the warm front once again from Huntington to Portland and remained nearly stationary through the evening. Very heavy rain fell throughout the evening and early morning hours on August 5th with many areas from Huntington to Portland reporting from 5 to 9 inches of rainfall. River flooding then occurred on the 6th and 7th along the Mississinewa...Salamonie and Wabash rivers.

### **Steuben County**

Clear Lake	24	0500EST			0	0			Thunderstorm Wind (G56)
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SEVERAL LARGE TREES BLOWN DOWN.

### **Steuben County**

2 NE Fremont	24	0500EST			0	0			Hail (0.75)
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### **La Porte County**

La Porte	24	1446EST			0	0	250K		Thunderstorm Wind
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TREES BLOWN DOWN ON ONE HOUSE AND SEVERAL CARS.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>INDIANA, Northeast</b>									
<b>La Porte County</b>									
Michigan City	24	1450EST			0	0	10K		Thunderstorm Wind
			TREE FELL ON CAR ON HIGHWAY 35.						
<b>La Porte County</b>									
La Porte	24	1503EST			0	0			Thunderstorm Wind (G52)
<b>La Porte County</b>									
La Porte	24	1505EST			0	0	0		Thunderstorm Wind
			LARGE TREES BLOWN DOWN WITH SEVERAL ROADS BLOCKED.						
<b>St. Joseph County</b>									
South Bend	24	1510EST			0	0			Thunderstorm Wind (G70)
			MANY TREES BLOWN DOWN.						
<b>St. Joseph County</b>									
South Bend	24	1515EST			0	0			Hail (0.75)
<b>Elkhart County</b>									
Dunlap	24	1527EST			0	0	50K		Thunderstorm Wind (G61)
			SEVERAL HOME ROOFS DAMAGED.						
<b>St. Joseph County</b>									
South Bend	24	1531EST			0	0	50K		Thunderstorm Wind
			SEVERAL POWER POLES SNAPPED OFF BY HIGH WINDS.						
<b>Kosciusko County</b>									
Milford	24	1550EST			0	0	50K		Thunderstorm Wind
			SEVERAL TREES AND POWER LINES DOWN.						
<b>Kosciusko County</b>									
Syracuse	24	1550EST			0	0	50K		Thunderstorm Wind
			SEVERAL TREES AND POWER LINES DOWN.						
<b>Lagrange County</b>									
Topeka	24	1550EST			0	0	0		Thunderstorm Wind
			LOTS OF LARGE TREES AND LIMBS BLOWN DOWN.						
<b>Lagrange County</b>									
Shipshewana	24	1551EST			0	0	0		Thunderstorm Wind
			SEVERAL TREES DOWN IN TOWN.						
<b>Whitley County</b>									
Churubusco	24	1605EST			0	0	75K		Thunderstorm Wind
			TREE FELL INTO A HOUSE CAUSING MAJOR STRUCTURAL DAMAGE. ANOTHER TREE FELL ON TOP OF A CAR FLATTENING IT.						
<b>Steuben County</b>									
Helmer	24	1611EST			0	0			Thunderstorm Wind (G52)
<b>Allen County</b>									
Ft Wayne	24	1614EST			0	0	50K		Thunderstorm Wind
			SEVERAL TREES AND POWER LINES DOWN. LARGE TREE FELL ONTO CAR CRUSHING IT.						
<b>Noble County</b>									
Kendallville	24	1614EST			0	0	30K		Thunderstorm Wind
			NUMEROUS TREES DOWN IN TOWN AND ACROSS MOST OF NOBLE COUNTY.						



# Storm Data and Unusual Weather Phenomena

August 1998

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

## INDIANA, Northeast

### **Noble County**

**Wolcottville**      24      1614EST                0      0      25K      **Thunderstorm Wind**

NUMEROUS TREES AND LARGE LIMBS BLOWN DOWN.

### **Allen County**

**Ft Wayne**      24      1625EST                0      0      100K      **Thunderstorm Wind**

BUILDING UNDER CONSTRUCTION DESTROYED.

### **Grant County**

**Hackleman**      24      1715EST                0      0      10K      **Thunderstorm Wind**

NUMEROUS TREES DOWN.

### **Grant County**

**Marion**      24      1723EST                0      0      150K      **Thunderstorm Wind**

WIDESPREAD TREE DAMAGE IN MARION AND ACROSS GRANT COUNTY.

### **St. Joseph County**

**South Bend**      25      0125EST                0      0      150K      **Thunderstorm Wind**

THE DOORS WERE BLOWN OFF A SQUAD CAR. NUMEROUS TREES AND POWER LINES WERE DOWN ACROSS TOWN AND ESPECIALLY ACROSS THE EASTERN THIRD OF THE COUNTY. ONE TREE FELL ONTO A HOME ALONG AUTEN ROAD WHICH CAUSED MODERATE DAMAGE.

### **Elkhart County**

**9 WNW Bristol to  
Bristol**      25      0130EST      9      100      0      0      200K      **Tornado (F0)**

THIS WAS THE SAME TORNADO WHICH BEGAN IN NILES EARLIER. DAMAGE WAS EXTENSIVE TO TREES AND POWER LINES FROM THE ELKHART/CASS COUNTY LINE TO BRISTOL. SOME HOMES SUFFERED MAINLY MINOR DAMAGE TO SIDING...ROOFS AND GUTTERS. SOME OUTBUILDINGS HOWEVER WERE COMPLETELY DESTROYED.

### **Elkhart County**

**2 SSE Dunlap to  
2.5 SSE Dunlap**      25      0135EST      0.5      100      0      0      300K      **Tornado (F1)**

THIS TORNADO LIKELY FORMED ALONG THE LEADING EDGE OF THE BOW ECHO WHICH PASSED THROUGH BERRIEN AND ST. JOSEPH COUNTIES EARLIER. IT TOUCHED DOWN ON TOP OF THE FORD DEALERSHIP ALONG HIGHWAY 33 TEARING OFF A LARGE PART OF THE ROOF AND ONE WALL. NEXT IT THREW A FORD AEROSTAR VAN INTO A POWER POLE AND PICKED UP AN RV TOSsing IT OVER 50 YARDS AWAY ACROSS THE HIGHWAY INTO A DITCH. NEXT IT CROSSED A STREET AND HIT A MANUFACTURED HOME DEALERSHIP SHIFTING SEVERAL HOMES OFF THEIR FOUNDATION, TEARING A LARGE PART OF THE OFFICE ROOF OFF AND FLIPPING A MOVING VAN. IT PROCEEDED DOWN ALONG HIGHWAY 33 FOR APPROXIMATELY ANOTHER 200 YARDS TEARING OFF PARTS OF ROOFS AND AIR CONDITIONING UNITS BEFORE LIFTING.

### **Elkhart County**

**Elkhart**      25      0135EST                0      0      250K      **Thunderstorm Wind**

EXTENSIVE TREE AND POWER LINE DAMAGE OCCURRED ACROSS THE ENTIRE COUNTY. SEVERAL BUILDINGS AND CARS IN DOWNTOWN GOSHEN SUSTAINED MINOR TO MODERATE STRUCTURAL DAMAGE DUE TO LARGE TREE AND LIMBS CRASHING DOWN. BUSINESSES ON THE EAST SIDE OF GOSHEN ALONG HIGHWAY 33 SUSTAINED DAMAGE. THE HOLIDAY INN HAD PART OF ITS ROOF BLOWN OFF. LOCAL BANK HAD ITS STEEL BANK SIGN FLATTENED.

## INDIANA, Northwest

### **Lake County**

**Countywide**      24      1410EST  
1425EST                0      2           **Thunderstorm Wind (G50)**

### **Porter County**

**Countywide**      24      1420EST  
1435EST                0      0           **Thunderstorm Wind (G50)**

A small intense squall line moved east southeast at 55 mph from the south suburbs of Chicago into northern Lake and Porter Counties. NIPSCO utility company and emergency management reported numerous tree limbs and power lines down, with most of the damage in the northern parts of Lake and Porter Counties. In Hobart, large trees and limbs were blown down. The roof was blown off a barn, and industrial buildings suffered roof and wall damage. An empty tractor trailer was overturned and a tree fell on a



# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Black Hawk County**

<b>Waterloo</b>	<b>05</b>	<b>0200CST 0400CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Urban/Sml Stream Fld</b>
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The same upper level warm core low mentioned a couple days prior continued to spin over Iowa. During the night heavy rainfall developed much like occurs in the central dense overcast of a tropical system. The rain was rapid and tropical in nature with two to four inches of rainfall in a little over an hours time. Urban flooding was the only problem in the county as antecedent soil conditions were extremely dry from a record dry month in July. Damage was very minor in spite of the high amounts of rainfall.

### **Wapello County Eddyville**

<b>Eddyville</b>	<b>05</b>	<b>1248CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>		<b>Thunderstorm Wind (G52)</b>
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Once again, thunderstorms developed under a closed low pressure system aloft over Iowa. Much of the state received rainfall with scattered thunderstorms, however the only report of severe weather was in Wapello County where 60 MPH winds were reported in Eddyville.

### **Tama County Tama**

<b>Tama</b>	<b>08</b>	<b>1455CST</b>	<b>0.1</b>	<b>20</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
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Isolated thunderstorms formed once again over the east half of Iowa as the state remained under the dominance of an upper level low pressure system. Though the areal coverage of thunderstorms was much less than in previous days, funnel clouds were once again reported. One touched down briefly to become a weak tornado, more like a land spout, near Tama in Tama County. No damage was reported however.

### **Polk County Des Moines Arprt**

<b>Des Moines Arprt</b>	<b>10</b>	<b>0158CST</b>			<b>0</b>	<b>0</b>	<b>100K</b>		<b>Thunderstorm Wind (G61)</b>
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A cold front moved slowly south into Iowa. The airmass was fairly unstable during the afternoon with temperatures around 90 degrees F. and dewpoint temperatures in the low to mid 70s. CAPE values were around 5000 J/Kg. Thunderstorms fired initially along the front, but weakened during the evening. After midnight a small cluster of thunderstorms formed in central Iowa. The were not severe as inflow and dynamics were weak. One storm produced a downburst over the Des Moines Airport with 70 MPH winds. The winds blew two parked Delta Comair jets that were parked together. One jet had extensive tail damage and the cockpit window broken out of it. The event appeared to be quite isolated as reports from around the airport indicated winds below 40 MPH.

### **Sac County 3 N Odebolt**

<b>3 N Odebolt</b>	<b>14</b>	<b>1930CST</b>			<b>0</b>	<b>0</b>	<b>3K</b>	<b>25K</b>	<b>Thunderstorm Wind (G61)</b>
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### **Sac County 3 N Odebolt**

<b>3 N Odebolt</b>	<b>14</b>	<b>1945CST</b>			<b>0</b>	<b>0</b>	<b>5K</b>	<b>50K</b>	<b>Hail (1.75)</b>
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### **Sac County Odebolt**

<b>Odebolt</b>	<b>14</b>	<b>2000CST 2230CST</b>			<b>0</b>	<b>0</b>	<b>25K</b>	<b>5K</b>	<b>Urban/Sml Stream Fld</b>
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### **Crawford County Deloit**

<b>Deloit</b>	<b>14</b>	<b>2010CST 2230CST</b>			<b>0</b>	<b>0</b>	<b>25K</b>	<b>5K</b>	<b>Urban/Sml Stream Fld</b>
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### **Polk County Ankeny**

<b>Ankeny</b>	<b>14</b>	<b>2238CST</b>			<b>0</b>	<b>0</b>	<b>1K</b>		<b>Hail (0.75)</b>
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A marginally unstable airmass was located over Iowa with dew point temperatures in the low 70s. A cold front moved into the northwest corner of the state during the late afternoon hours. A scattered line of thunderstorms developed along the front during the late afternoon into the evening hours. The storms produced little in the way of wind and very heavy rainfall. Reports indicated pea to small marble size hail in the Crawford County areas. In Deloit, 1.75 inches of rain fell in 45 minutes. This caused street flooding in the area. Heavy rain also fell to the north of the Deloit area in Sac County. This resulted in some minor flooding in the county with the Odebolt Creek rising above bankful. As the storms were developing, a few of them produced hail and high winds over west central Sac County. Golf ball size hail and winds of up to 70 MPH were reported north of Odebolt. During the late evening hours the storms formed into clusters with several cell mergers. A report of dime size hail was received from Ankeny in Polk County.

### **Bremer County Waverly**

<b>Waverly</b>	<b>20</b>	<b>1615CST 1800CST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Urban/Sml Stream Fld</b>
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### **Butler County New Hartford**

<b>New Hartford</b>	<b>20</b>	<b>1615CST 1800CST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Urban/Sml Stream Fld</b>
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# Storm Data and Unusual Weather Phenomena

August 1998

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

## IOWA, Central

### **Hamilton County**

Webster City	20	1830CST 2130CST			0	0	150K	25K	Flash Flood
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### **Carroll County**

2 S Carroll	20	2100CST			0	0	0.30K		Lightning
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Iowa was covered by a very unstable and moist airmass. Precipitable water values were in excess of 2 inches with surface dew point temperatures in the mid 70s F. to the low 80s over all of the state. By afternoon, temperatures had risen into the low to mid 90s in most of the south two thirds of Iowa. This combination produced CAPE values in excess of 6000 J/Kg over the west half of Iowa. A cold front was located to the northwest of the state during the day. It sank southeast during the late afternoon and thunderstorms fired up in the rich environment ahead of the front. Initially, they moved quite slowly with a training line of thunderstorms developing over northern Iowa. During the late afternoon the storms dropped up to 2.2 inches of rainfall in an hours time over Butler and Bremer Counties. This caused some urban flooding in the area, however with soil conditions relatively dry major flooding did not occur. The situation was worse farther to the west. Very intense thunderstorms dropped 4 to 6 inches of rain on Hamilton County between Webster City and Williams. Four inches of rain fell in one hour in Webster City, with a total of 6.26 inches recorded there. Five inches fell in under two hours in Fort Dodge. Serious flash flooding occurred over the county in spite of the relatively dry conditions of the past few weeks. The town of Webster City was virtually under water for a time due to the intense rainfall rate, flooding most basements in the town. A freak lightning strike took place south of Carroll in Carroll County. Lightning struck a childs toy on a driveway there. The "Bigfoot" motorized power toy was completely destroyed by the strike. All that was left was a charred residue on the driveway. The younger daughter, about two years old, was pictured in the newspaper pointing at the charred remains and saying "Mommy, I don't want my Barbie car outside anymore."

### **Palo Alto County**

Ayrshire	24	0720CST			0	0	5K	5K	Thunderstorm Wind (G52)
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### **Palo Alto County**

Graettinger	24	0720CST			0	0	5K	5K	Thunderstorm Wind (G52)
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### **Kossuth County**

10 SW Algona	24	0746CST 0749CST			0	0	5K	40K	Hail (1.75)
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### **Wright County**

Clarion	24	0755CST			0	0	2K	40K	Hail (1.00)
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### **Wright County**

4 NW Rowan	24	0812CST			0	0	5K	25K	Hail (1.75)
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### **Franklin County**

1 N Bradford	24	0816CST			0	0	2K	40K	Hail (1.00)
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### **Wright County**

Holmes	24	0825CST			0	0	20K	10K	Hail (1.75)
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### **Butler County**

1 S Austinville	24	0840CST			0	0	2K	40K	Hail (1.00)
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### **Palo Alto County**

2 NW West Bend	24	0845CST			0	0	50K	100K	Hail (2.75)
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### **Wright County**

5 N Clarion	24	0850CST			0	0	25K	100K	Hail (2.75)
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### **Black Hawk**

#### **County**

Cedar Falls	24	0905CST			0	0	2K		Thunderstorm Wind (G50)
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A very unstable airmass was located over Iowa with dew point temperatures in the low to mid 70s. At the same time, a jet speed maximum was moving across the northern tier of states. Speeds were around 75 knots at the 500 mb level with speeds in excess of 125 knots at the 250 mb level. This, in combination with a weak surface cold front, set the stage for the development of a mesoscale convective system over eastern South Dakota. The storms formed during the early morning hours and hit Iowa shortly after dawn. They moved east-southeast across the north third of the state. The system eventually took on the characteristics of a derecho as it raced across the state. By sunset, the centroid that moved across Iowa had reached southeast Ohio. The main severe weather features with the storms was hail and high wind. One inch to golf ball size hail pelted an area from Kossuth, through Wright, Franklin, to Butler County. Extensive crop damage was reported, though fortunately some of the crops had already come close to maturity. There was a swath of very large hail that fall across Palo Alto and Wright Counties. Baseball size hail pelted the area from northwest of West Bend to north of Clarion. Windows were broken out of houses between Rodman and West Bend in Palo Alto County. Crop damage was extensive as well. Winds from the storms were generally in the 40 to 50 MPH range, however several reports of 60 MPH winds, along with tree and power line damage, were received.

# Storm Data and Unusual Weather Phenomena

August 1998

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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## IOWA, Central

### **Mahaska County**

Oskaloosa	27	1715CST			0	0	200K		Lightning
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Thunderstorms moved across Iowa through much of the day. As one of the storms moved through Mahaska County, lightning struck a church in Oskaloosa. The church was set on fire and much of the building was destroyed.

## IOWA, East Central and Southeast

### **Buchanan County**

Independence	24	0938CST			0	0			Thunderstorm Wind (G52)
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### **Buchanan County**

Winthrop	24	0940CST			0	0			Thunderstorm Wind (G50)
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### **Delaware County**

Manchester	24	0950CST			0	0			Thunderstorm Wind (G52)
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### **Delaware County**

1 N Sand Spg	24	1010CST			0	0	35K		Thunderstorm Wind
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### **Dubuque County**

Countywide	24	1010CST 1055CST			0	0			Thunderstorm Wind (G70)
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### **Delaware County**

Earlville	24	1017CST			0	0			Thunderstorm Wind (G52)
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### **Jones County**

Monticello	24	1020CST			0	0	1K		Thunderstorm Wind
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### **Dubuque County**

Cascade	24	1022CST			0	0			Thunderstorm Wind (G69)
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### **Dubuque County**

Dubuque Arpt	24	1034CST			0	0			Thunderstorm Wind (G68)
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### **Dubuque County**

Key West	24	1035CST			0	0			Thunderstorm Wind (G52)
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### **Jackson County**

Countywide	24	1040CST 1120CST			0	0			Thunderstorm Wind (G78)
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### **Jackson County**

Fulton	24	1045CST			0	0			Thunderstorm Wind (G52)
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Severe thunderstorms developed over North Central Iowa and moved eastward into Buchanan County downing trees, limbs and powerlines across the county. The storms then pushed east across Northeast Iowa and into Illinois leaving a trail of damage. Numerous homes and farm buildings were damaged by the winds and several vehicles were smashed by falling trees and branches. A 1996 International daycab tractor trailer traveling south on Hwy 38 sustained \$35,000 in damage when it was overturned by strong winds north of Sand Springs. North of Maquoketa another semi on U.S. 61 was blown over. One homeowner south of Dubuque lost more than 50 trees on his 1.7 acre property, a fountain was smashed and rain gutters were ripped from his house. Bellevue State Park was closed due to nearly 100 downed trees. Damage to homes, trees and property in and around the cities of Andrew, Bernard, Cascade, and Springbrook was severe. In Dubuque strong winds ripped the roof off an Elementary school. The roof then caved in over four of the classrooms filling the rooms with insulation and debris. There were no injuries to the 190 students and 12 teachers at the school.

### **Jackson County**

Countywide	24	2119CST			0	0	120K		Thunderstorm Wind
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### **Jones County**

Canton	24	2128CST			0	0			Thunderstorm Wind (G52)
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### **Jackson County**

Preston	24	2212CST 2215CST			0	0			Thunderstorm Wind (G51)
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### **Jackson County**

Andrew	24	2218CST			0	0			Thunderstorm Wind (G56)
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### **Jackson County**

Preston	24	2223CST			0	0			Thunderstorm Wind (G56)
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### **Clinton County**

Goose Lake	24	2225CST			0	0			Thunderstorm Wind (G56)
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Strong thunderstorms racing across Northeast Iowa and Northwest Illinois left a trail of destruction with numerous trees,

# Storm Data and Unusual Weather Phenomena

August 1998

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

## IOWA, East Central and Southeast

powerlines, and buildings damaged or destroyed by gusty winds. The storms flattened acres of corn from Andrew to Goose Lake. Outside of Andrew several barns and farm buildings blew down and pieces of a metal building were blown into an electrical substation. Also destroyed by the winds were several hundred acres of timber property valued at \$1,200 per acre.

## IOWA, Northeast

NONE REPORTED.

## IOWA, Northwest

### **Woodbury County**

<b>2 W Pierson</b>	<b>14</b>	<b>2210CST</b>		<b>0</b>	<b>0</b>	<b>10K</b>	<b>Thunderstorm Wind (G61)</b>
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Thunderstorm winds damaged several greenhouses, outbuildings, a pole barn, a grain bin, and trees.

### **Clay County**

Spencer Arpt	24	0654CST		0	0		Thunderstorm Wind (G65)
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### **Clay County**

Spencer	24	0655CST		0	0		Thunderstorm Wind (G60)
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### **Lyon County**

Lester	24	0832CST		0	0		Hail (1.00)
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### **Lyon County**

Lester	24	0832CST		0	0		Thunderstorm Wind (G52)
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### **Lyon County**

Rock Rapids	24	0832CST 0842CST		0	0		Hail (2.00)
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## IOWA, Southwest

### **Pottawattamie**

#### **County**

5 SE Council Bluffs	07	1630CST		0	0		Funnel Cloud
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## KANSAS, East

### **Dickinson County**

Herington	02	0340CST		0	0	30K	Lightning
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lightning struck the roof of a house and started a fire which burned half of the roof and caused damage to some of the contents of the house.

### **Geary County**

Ft Riley	03	0140CST		0	0		Thunderstorm Wind (G50)
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Several large trees and large tree limbs down.

### **Osage County**

4.5 W Carbondale	03	1355CST		0	0		Hail (1.75)
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### **Osage County**

Scranton	03	1420CST		0	0		Hail (0.75)
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### **Osage County**

Osage City	03	1440CST		0	0		Hail (0.75)
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### **Osage County**

5 NE Osage City	03	1440CST		0	0		Thunderstorm Wind (G52)
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An 18" diameter walnut tree was downed and several 5" branches on other nearby trees were broken off.

### **Shawnee County**

7 NNW Topeka	03	1451CST		0	0		Hail (1.00)
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### **Shawnee County**

7 NNW Topeka	03	1451CST		0	0		Thunderstorm Wind (G52)
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### **Osage County**

Lyndon	03	1453CST		0	0		Thunderstorm Wind (G52)
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# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>KANSAS, East</u></b>									
<b>Franklin County</b>									
Richmond	09	0700CST 0900CST			0	0			Urban/Sml Stream Fld
An isolated thunderstorm produced 6 to 7 inches of rain flooding several streets in Richmond and surrounding communities. The flooding included highway 59 where several cars stalled when trying to cross the high water.									
<b>Franklin County</b>									
3 E Richmond	09	0750CST			0	0			Hail (1.00)
<b>Franklin County</b>									
Richmond	09	0750CST			0	0	3K		Thunderstorm Wind (G65)
Strong winds blew the roof off a trailer home.									
<b>Anderson County</b>									
Scipio	09	0822CST			0	0			Urban/Sml Stream Fld
Heavy rain caused brief flooding on Scipio road.									
<b>Anderson County</b>									
4 S Harris	26	1640CST			0	0			Thunderstorm Wind (G52)
<b>Franklin County</b>									
Princeton	26	1640CST			0	0	325K		Thunderstorm Wind (G60)
At least 10 homes along with numerous trees and power lines were badly damaged by 60 to 70 mph straight line winds.									
<b>Franklin County</b>									
2 SW Ottawa	26	1705CST			0	0			Thunderstorm Wind (G56)
<b>Franklin County</b>									
2 S Ottawa to Ottawa	26	1721CST 1724CST			0	0	1.3M	2M	Thunderstorm Wind (G60)
Severe thunderstorms moved north across Franklin county producing numerous reports of damaging winds. Five planes were overturned and a business severely damaged at Ottawa airport. Much crop damage was also reported.									
<b>Franklin County</b>									
Ottawa	26	1724CST			0	0			Hail (0.75)
<b>Dickinson County</b>									
Herington	26	1748CST			0	0	2K		Lightning
<b>Dickinson County</b>									
Herington	26	1818CST			0	0	2K		Lightning
Lightning struck a church and a residence doing minor damage at each place.									
<b>Morris County</b>									
1 WSW Wilsey	26	1825CST			0	0			Hail (0.75)
<b>Morris County</b>									
4 N Wilsey	26	1830CST			0	0			Thunderstorm Wind (G52)
<b>Dickinson County</b>									
Herington	27	2033CST			0	0			Lightning
Lightning struck a residence but caused no damage.									
<b>Geary County</b>									
Junction City	28	0330CST			0	0	0.50K		Lightning
Lightning struck a tree blowing off bark which struck a nearby car and dented the side.									
<b><u>KANSAS, Extreme Southeast</u></b>									
<b>Bourbon County</b>									
Uniontown	09	0800CST 1100CST			0	0			Flash Flood
<b>Crawford County</b>									
Walnut	09	0800CST 1100CST			0	0			Flash Flood
Minor flooding occurred on Little Walnut creek in western Crawford County. Minor street flooding also occurred in Uniontown in western Bourbon County.									

# Storm Data and Unusual Weather Phenomena

August 1998

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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## KANSAS, Extreme Southeast

### **Cherokee County**

Galena to 1 E Riverton	19	1552CST 1608CST			0	0	10K		Tstm Wind/Hail
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Thunderstorm winds estimated at 60 to 70 mph did extensive tree and power line damage in the Galena and Riverton areas. Nickel sized hail was also reported.

## KANSAS, North Central

### **Phillips County**

Phillipsburg	02	2213CST			0	0	100K	35K	Hail (2.00)
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### **Phillips County**

Logan	02	2230CST			0	0	100K	25K	Hail (2.50)
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### **Smith County**

7 N Smith Center	02	2235CST			0	0	50K	5K	Hail (0.75)
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Large hail to the size of tennis balls fell from severe thunderstorms rolling across Phillips and Smith county shortly before midnight.

## KANSAS, Northeast

### **Johnson County**

Edgerton	26	1755CST			0	0			Thunderstorm Wind (G70)
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A HAM Radio Operator in Johnson County reported several 70 MPH wind gusts within a 20 minute period between 1755 and 1815 LST during a severe thunderstorm in Edgerton.

### **Leavenworth County**

7 ESE Linwood	26	1817CST			0	0			Hail (1.75)
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Leavenworth County Emergency Management reported golfball-size hail 7 miles east southeast of Linwood.

### **Leavenworth County**

7 ESE Linwood	26	1817CST			0	0			Thunderstorm Wind (G70)
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Winds gusted to 70 MPH... 7 miles southeast of Linwood. This was the same storm that produced golfball-size hail in Leavenworth County.

## KANSAS, Northwest

### **Sherman County**

15 NW Goodland	09	2000MST			0	0			Thunderstorm Wind (G55)
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Two 5 inch diameter tree branches down.

### **Graham County**

3.6 SW Bogue	12	1845CST			0	0			Hail (0.75)
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### **Cheyenne County**

15 NW St Francis	19	1730CST			0	0			Hail (1.00)
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### **Sheridan County**

11 SW Hoxie	20	1715CST			0	0			Hail (0.75)
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### **Thomas County**

19.7 SE Colby	20	1745CST			0	0			Hail (0.75)
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### **Greeley County**

5 S Tribune	24	1810MST			0	0			Hail (1.00)
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### **Greeley County**

8 S Tribune	25	1930MST			0	0			Thunderstorm Wind (G55)
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One inch diameter tree branch broken from the wind.

## KANSAS, Southeast

### **Rice County**

3 W Chase	03	0200CST			0	0	50K		Lightning
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Lightning set fire to two oil tank batteries.



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>KANSAS, Southeast</u></b>									
<b>Kingman County</b> 2 S Mt Vernon	03	1111CST 1116CST	1	110	0	0			Tornado (F0)
<b>Sumner County</b> 10 SW Mulvane	03	1502CST			0	0			Thunderstorm Wind (G52)
									Trees blown down.
<b>Cowley County</b> 7 NW Arkansas City	03	1530CST			0	0			Thunderstorm Wind (G52)
<b>Neosho County</b> 5 SW St Paul	09	0901CST 0930CST			0	0	25K		Thunderstorm Wind (G52)
									Power poles and power lines blown down.
<b>Labette County</b> Bartlett	09	1015CST 1100CST			0	0			Flood
									Turkey Creek flooded closing county roads.
<b>Neosho County</b> 5 S Galesburg	09	1600CST 1630CST			0	0	250K		Hail (4.50)
									Tennisball to softball-sized hail pelted a one square mile section on the south side of Lake Parsons, inflicting extensive damage to boats, tents, campers, vehicles, buildings and crops.
<b>KSZ069-083</b>									
<b>Butler - Sedgwick</b> 17		1000CST 2200CST			2	0			Excessive Heat
									Two football players, one at Circle High School, Towanda, Butler County, and one at Wichita Southeast High School, Sedgwick County, suffered from heat stroke during practice at approximately 15:00 and 10:00, respectively. Both players died at area hospitals the following morning, 08/18/98. M17BF, M15BF
<b>Chase County</b> 15 W Strong City	19	1815CST			0	0			Thunderstorm Wind (G52)
<b>Cowley County</b> 1 NW Burden	25	1359CST			0	0			Hail (0.75)
<b>Kingman County</b> 7 S Kingman	25	1508CST 1515CST	1	110	0	0			Tornado (F0)
<b>Sedgwick County</b> 3 NE Derby to Derby	25	1546CST 1547CST			0	0			Thunderstorm Wind (G52)
<b>Sedgwick County</b> 4 SE Derby	25	1550CST			0	0	5K		Thunderstorm Wind (G52)
									Large birch tree blown down.
<b>Sedgwick County</b> Wichita	25	1605CST			0	0			Hail (1.00)
									Reported 2 miles northeast Mid-Continent airport.
<b>Kingman County</b> 5 N Norwich	25	1610CST			0	0	25K		Thunderstorm Wind (G52)
									Trees and power lines blown down.
<b>Sedgwick County</b> Wichita	25	1615CST			0	0			Thunderstorm Wind (G52)
									Reported 2 miles northeast Mid-Continent airport.
<b>Sedgwick County</b> Wichita	25	1617CST			0	0			Thunderstorm Wind (G63)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>KANSAS, Southeast</u></b>									
<b>Greenwood County</b>									
2 W Severy	26	1511CST			0	0			Thunderstorm Wind (G52)
			Several trees blown down.						
<b>Allen County</b>									
Iola	26	1525CST 1540CST			0	0	75K		Thunderstorm Wind (G71)
			Severe thunderstorm winds peeled off a 30-foot by 50-foot section of roofing from a business in Iola. The wind combined with heavy rain to damage much of the office area as well as most of the merchandise. Wind-driven rain also flooded sections of two schools in Iola.						
<b>Allen County</b>									
Iola	26	1531CST			0	0			Thunderstorm Wind (G52)
			Several 4-inch diameter limbs blown down.						
<b>Barton County</b>									
Odin	26	1650CST			0	0			Thunderstorm Wind (G52)
			Several trees blown down.						
<b>Barton County</b>									
Odin	26	1659CST			0	0			Thunderstorm Wind (G52)
			Numerous large tree limbs blown down.						
<b>Russell County</b>									
3 W Milberger	27	1543CST			0	0			Hail (0.75)
<b>Russell County</b>									
2 SW Russell	27	1555CST			0	0			Thunderstorm Wind (G52)
<b>Russell County</b>									
3 S Bunker Hill	27	1625CST			0	0			Hail (1.00)
<b>Lincoln County</b>									
Sylvan Grove	27	1656CST			0	0			Thunderstorm Wind (G52)
<b>Russell County</b>									
3 W Russell	27	1708CST			0	0			Hail (0.75)
<b>Russell County</b>									
3 W Russell	27	1708CST			0	0			Thunderstorm Wind (G52)
<b>Lincoln County</b>									
4 NE Lincoln	27	1729CST			0	0			Thunderstorm Wind (G52)
<b><u>KANSAS, Southwest</u></b>									
<b>Clark County</b>									
13 NE Ashland	10	0230CST			0	0			Hail (0.75)
<b>Ford County</b>									
21 SSW Dodge City	10	0237CST			0	0			Hail (0.75)
<b>Meade County</b>									
14 NW Meade	10	2200CST			0	0			Hail (0.75)
<b>Trego County</b>									
2 E Wakeeney	12	1815CST			0	0			Hail (1.00)
<b>Scott County</b>									
6 SE Scott City	12	2130CST			0	0			Hail (1.00)
<b>Scott County</b>									
8 S Scott City	12	2145CST			0	0			Hail (1.25)
<b>Scott County</b>									
11 SSW Scott City	12	2215CST			0	0			Hail (2.00)
<b>Scott County</b>									
11 SSW Scott City	12	2215CST			0	0			Thunderstorm Wind (G52)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>KANSAS, Southwest</u></b>									
<b>Ford County</b> 2 S Wright	25	1650CST			0	0			Flash Flood
									Water reported over the road.
<b>Morton County</b> Richfield	25	2215CST			0	0	50K		Thunderstorm Wind
									Microburst destroyed a mobile home that was unoccupied at the time. An outbuilding had a tree limb impaled into it.
<b>Kiowa County</b> 8 N Greensburg	26	1538CST			0	0			Thunderstorm Wind (G52)
<b>Rush County</b> 6 S Timken	26	1545CST			0	0			Hail (0.75)
<b>Pawnee County</b> 4 NW Ash Valley	26	1549CST			0	0			Hail (0.75)
<b>Edwards County</b> 5 S Centerview	26	1550CST			0	0			Hail (0.75)
<b>Pawnee County</b> 4 NW Ash Valley	26	1550CST			0	0			Thunderstorm Wind (G52)
<b>Trego County</b> 8 WSW Wakeeney	26	1550CST			0	0			Hail (0.75)
<b>Gray County</b> 4 ENE Cimarron	26	1845CST			0	0			Hail (1.00)
<b>Ford County</b> 10 NW Dodge City	26	1850CST			0	0			Hail (0.75)
<b>Gray County</b> 4 E Cimarron	26	1855CST			0	0			Hail (0.88)
<b>Trego County</b> 8 WSW Wakeeney	26	1901CST			0	0			Hail (0.75)
<b>Pawnee County</b> 9 N Larned	27	1353CST			0	0			Hail (0.75)
<b>Pawnee County</b> 4 E Ash Valley	27	1440CST			0	0			Hail (0.75)
<b>Edwards County</b> 1 SW Belpre	27	1505CST			0	0	50K		Thunderstorm Wind
									Sprinkler irrigation turned over. Four inch tree limbs down.
<b>Clark County</b> 6 SW Minneola	27	1515CST			0	0			Thunderstorm Wind (G52)
<b>Meade County</b> 3 NE Fowler	27	1530CST			0	0			Thunderstorm Wind (G61)
<b>Edwards County</b> 8 NW Kinsley	27	1540CST			0	0			Thunderstorm Wind (G52)
									Three inch tree limbs blown down.
<b>Pawnee County</b> 3 SW Zook	27	1553CST			0	0			Thunderstorm Wind (G52)
<b>Rush County</b> 6 SSW Rush Center	27	1600CST			0	0			Hail (0.75)
<b>Ellis County</b> Schoenchen	27	1650CST			0	0			Hail (0.88)
<b>Gray County</b> 4 SE Montezuma	27	1653CST			0	0	1K		Thunderstorm Wind
									Five inch tree limbs blow down.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>KANSAS, Southwest</u></b>									
<b>Hodgeman County</b>									
5 S Jetmore	27	1705CST			0	0			Hail (0.75)
<b>Hodgeman County</b>									
5 S Jetmore	27	1705CST			0	0			Thunderstorm Wind (G52)
<b>Ellis County</b>									
Victoria	27	1725CST			0	0			Hail (0.88)
<b>Hodgeman County</b>									
12 SSW Jetmore	27	1738CST			0	0			Hail (0.88)
<b>Hodgeman County</b>									
15 SW Jetmore	27	1745CST			0	0			Hail (1.75)
<b>Meade County</b>									
3 NW Missler	27	1800CST			0	0			Hail (1.00)
<b>Hodgeman County</b>									
8 SW Jetmore	27	1815CST			0	0			Hail (0.88)
<b>Hodgeman County</b>									
8 SW Jetmore	27	1815CST			0	0			Thunderstorm Wind (G65)
									Outbuilding blown down.
<b>Meade County</b>									
7 NW Meade	27	1815CST			0	0			Hail (0.88)
<b>Meade County</b>									
7 NW Meade	27	1815CST			0	0			Thunderstorm Wind (G65)
<b>Hodgeman County</b>									
8 SSW Jetmore	27	1900CST			0	0			Hail (1.25)
<b>Meade County</b>									
4 N Meade to 8 SSW Meade	27	1900CST			0	0			Thunderstorm Wind (G78)
									Five to 6 inch tree limbs blown down. One ten inch tree limb blown down.
<b>Stevens County</b>									
5 W Moscow	27	1905CST			0	0			Hail (1.75)
									Windows broken out.
<b>Grant County</b>									
12 S Ulysses	27	1920CST			0	0			Hail (0.75)
<b>Grant County</b>									
12 S Ulysses to 12 SW Ulysses	27	1920CST			0	0			Thunderstorm Wind (G57)
<b>Seward County</b>									
13 NNW Liberal	27	1945CST			0	0			Hail (1.00)
<b>Stevens County</b>									
14 E Hugoton	27	1945CST			0	0			Thunderstorm Wind (G61)
<b>Seward County</b>									
13 E Liberal	27	2010CST			0	0			Thunderstorm Wind (G52)
<b>Hodgeman County</b>									
8 S Jetmore	27	2055CST			0	0			Flash Flood
									Water flowing over many roads in the south part of the county. Some roads washed out.
<b><u>KENTUCKY, Central</u></b>									
<b>Hart County</b>									
Cub Run	11	1540EST			0	0			Thunderstorm Wind (G50)
									Spotters reported trees down.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## KENTUCKY, Eastern

NONE REPORTED.

## KENTUCKY, Northeast

NONE REPORTED.

## KENTUCKY, Northern

NONE REPORTED.

## KENTUCKY, Southwest

### **Mccracken County**

<b>(Pah)Barkley Arpt Pa</b>	<b>07</b>	<b>1000CST 1145CST</b>		<b>0</b>	<b>0</b>		<b>Urban/Sml Stream Fld</b>
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Thunderstorms produced 1.15 inches of rain in 45 minutes at the Paducah National Weather Service office.

### **Todd County**

<b>3 SE Kirkmansville to 5 SE Kirkmansville</b>	<b>11</b>	<b>1740CST 1920CST</b>		<b>0</b>	<b>0</b>		<b>Flash Flood</b>
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A nearly stationary thunderstorm dumped excessive rainfall over a small part of Todd County northwest of Elkton. Estimated rainfall amounts of 2.5 inches in one hour were reported. The storm occurred over a small part of the county that was sparsely populated.

## LOUISIANA, Northeast

### **Morehouse Parish**

<b>Beekman</b>	<b>01</b>	<b>1514CST</b>		<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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### **Morehouse Parish**

<b>Beekman</b>	<b>01</b>	<b>1514CST</b>		<b>0</b>	<b>0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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Several trees were blown down.

### **Concordia Parish**

<b>Countywide</b>	<b>30</b>	<b>1645CST</b>		<b>0</b>	<b>0</b>	<b>3K</b>	<b>Thunderstorm Wind</b>
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Trees were blown down in the southern part of the parish.

## LOUISIANA, Northwest

### **Caddo Parish**

<b>Shreveport</b>	<b>05</b>	<b>1544CST</b>		<b>0</b>	<b>0</b>	<b>25K</b>	<b>Thunderstorm Wind (G61)</b>
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Six power poles were toppled at I-49 and Bert Kouns road. I-49 was closed due to hot powerlines across the roads. Numerous trees were also toppled along I-49 and Linwood Ave.

### **Caddo Parish**

<b>Shreveport</b>	<b>05</b>	<b>1545CST</b>		<b>0</b>	<b>0</b>		<b>Hail (0.88)</b>
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### **Caddo Parish**

<b>Shreveport</b>	<b>05</b>	<b>1545CST</b>		<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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### **Caddo Parish**

<b>Shreveport</b>	<b>05</b>	<b>1552CST</b>		<b>0</b>	<b>0</b>		<b>Thunderstorm Wind (G52)</b>
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### **Bossier Parish**

<b>2 E Haughton</b>	<b>05</b>	<b>1600CST</b>		<b>0</b>	<b>0</b>		<b>Thunderstorm Wind (G61)</b>
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Several large trees down along Hwy 164.

### **Caddo Parish**

<b>Shreveport</b>	<b>05</b>	<b>1605CST</b>		<b>0</b>	<b>0</b>		<b>Thunderstorm Wind (G57)</b>
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Several large trees down.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>LOUISIANA, Northwest</b>									
<b>Webster Parish</b>									
Sibley	05	1605CST			0	0			Thunderstorm Wind (G61)
									Trees and powerlines toppled.
<b>Caddo Parish</b>									
Shreveport	05	1700CST			0	0			Thunderstorm Wind (G52)
									Numerous trees and powerlines down across the city.
<b>Webster Parish</b>									
Sibley	06	1045CST			0	0			Thunderstorm Wind (G61)
									Numerous trees and powerlines down.
<b>Red River Parish</b>									
8 NE Coushatta	10	1418CST			0	0			Thunderstorm Wind (G52)
<b>Sabine Parish</b>									
Pleasant Hill	10	1545CST			0	0			Thunderstorm Wind (G52)
<b>Webster Parish</b>									
Minden	12	1110CST			0	0			Lightning
									Lightning struck an automobile inside a carport at the Fred Evans residence on Tanglewood Drive in north Minden. The lightning flattened a tire on the vehicle.
<b>Webster Parish</b>									
Minden	12	1210CST			0	0	40K		Flash Flood
									Approximately 2.65 inches of rain fell on Minden between 1030 am and 1230 pm resulting in flash flooding of the Webster Parish Council on Aging Senior Center with 6 to 8 inches of water inside its building. Evacuation of the building was required. Along Minden's busy Homer Road business district, Minden Athletic was flooded and high water stalled vehicles. Houses in the McIntyre-College Street areas were flooded with water up 2 to 3 feet above street level. A 40 foot section of brick wall at the Tommy's Tire warehouse collapsed taking with it almost everything against the wall including tires and filing cabinets. A natural gas pipe was ripped from the building filling the air with gas causing evacuation of the area.
<b>Union Parish</b>									
Marion	12	1230CST			0	0			Flash Flood
									Highway flooding across Marion and Conagra.
<b>Natchitoches Parish</b>									
Powhatan	12	1430CST			0	0	5K		Thunderstorm Wind (G52)
									Two cars blown off road.
<b>Natchitoches Parish</b>									
Natchitoches	12	1455CST			0	0			Thunderstorm Wind (G52)
<b>Union Parish</b>									
Downsville	12	1520CST			0	0			Lightning
									Lightning struck a tree then an illegal tire dump setting 4 to 5 thousand tires on fire. A voluntary evacuation of everyone within a four-mile radius was ordered because of the toxicity of the smoke.
<b>Sabine Parish</b>									
Many	13	1310CST			0	0			Thunderstorm Wind (G52)
<b>Sabine Parish</b>									
8 S Converse	29	1625CST			0	0	4K		Thunderstorm Wind (G52)
									Outbuilding overturned and trees toppled.
<b>Sabine Parish</b>									
8 S Converse	29	1625CST			0	0			Lightning
									Lightning strike ignited grass fire.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## LOUISIANA, Northwest

### **Natchitoches Parish**

Natchitoches	29	1745CST			0	0	20K		Thunderstorm Wind (G52)
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Power poles and trees were toppled along Hwy 1 bypass.

## LOUISIANA, Southeast

**LAZ034>040-046>050-056>070** Pointe Coupee - West Feliciana - East Feliciana - St. Helena - Tangipahoa - Washington - St. Tammany - Iberville - West Baton Rouge - East Baton Rouge - Ascension - Livingston - Assumption - St. James - St. John The Baptist - Upper Lafourche - St. Charles - Upper Jefferson - Orleans - Upper Plaquemines - Upper St. Bernard - Upper Terrebonne - Lower Terrebonne - Lower Lafourche - Lower Jefferson - Lower Plaquemines - Lower St. Bernard

01	0000CST			0	0	77.5M	Drought
31	2359CST						

East Central and Southeast Louisiana saw another hot month as average temperatures were 2 to 3 degrees above normal for August. Audubon Park in New Orleans tied or broke 12 previous record daily high temperatures and New Orleans International Airport tied two previous record highs. In addition, August 1998 was the 4th warmest month on record at New Orleans International Airport and ranked among the ten warmest August in the century across the state. Southeast Louisiana received near normal precipitation amounts, while East Central Louisiana received a rainfall average of 2.35 inches below the normal amount of 5.74 inches. The Palmer Drought Index remained in the severe drought range for East Central Louisiana and in the moderate to mild drought range for Southeast Louisiana. Damage estimates for crops is for the entire growing season and is based on a final crop damage report by the Louisiana Crop Extension Service issued in October of 1998.

### **Tangipahoa Parish**

Loranger	01	1638CST			0	3	25K		Thunderstorm Wind
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Storm survey by NWS meteorologists revealed downburst winds overturned a mobile home, damaged a roof of a house and two storage sheds, and uprooted 30 trees.

### **St. Tammany Parish**

Waldheim	01	1655CST			0	0	1K		Thunderstorm Wind
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Thunderstorm wind gusts blew down several large trees across Louisiana Highway 21.

### **Plaquemines Parish**

Davant	01	1800CST			0	0	2K		Thunderstorm Wind
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Thunderstorm wind gusts blew down one large tree and downed several power lines.

### **Iberville Parish**

Plaquemine	02	1400CST			0	0	2K		Thunderstorm Wind
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Thunderstorm wind gusts blew down several trees and power lines.

### **Iberville Parish**

Plaquemine	02	1400CST			0	0			Hail (0.75)
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### **St. Tammany Parish**

Mandeville to Madisonville	07	1927CST 1945CST			0	0			Funnel Cloud
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A funnel cloud was reported one mile south of Mandeville. The funnel cloud moved northwest and dissipated just north of Madisonville.

### **St. Tammany Parish**

Slidell	13	1440CST			0	0	0.50K		Thunderstorm Wind
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Thunderstorm wind gusts blew down several trees in the southern parts of Slidell.

### **St. Tammany Parish**

Pearl River	13	1450CST			0	0	15K		Thunderstorm Wind
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Thunderstorm wind gusts blew down the Pearl River Police Department's 95 feet tall radio tower onto the police department building.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## LOUISIANA, Southeast

### Washington Parish Angie

15 1226CST 0 0 5K Thunderstorm Wind

Thunderstorm wind gusts blew down several large trees and downed one large tree onto a car.

### St. Tammany Parish Abita Spgs

18 1420CST 0 0 0.50K Thunderstorm Wind

Thunderstorm downburst winds blew down trees two miles south of Abita Springs along Louisiana Highway 59. Power lines were also downed.

### Washington Parish Bogalusa

19 1630CST 0 0 20K Thunderstorm Wind

Thunderstorm wind gusts blew down a very large oak tree on a house and damaged the roof. Power lines and other trees were downed in the city.

### Jefferson Parish Metairie

21 0005CST 0 0 15K Thunderstorm Wind

Thunderstorm wind gusts damaged the roof of one residential home and downed power lines.

### Jefferson Parish Metairie

21 1000CST 0 0 Urban/Sml Stream Fld  
1400CST

Between five and seven inches of rain fell in three hours, resulting in temporary street flooding in Metairie.

### Orleans Parish New Orleans

21 1000CST 0 0 Urban/Sml Stream Fld  
1400CST

Between five and seven inches of rain fell in three hours, resulting in street flooding and high water on the campus of Southern University of New Orleans.

### Terrebonne Parish Bourg

24 1130CST 0 10 0 0 Tornado (F0)

A weak tornado touchdown for a few seconds two miles south of Bourg. No damage was reported.

## LOUISIANA, Southwest

### LAZ028>033-041>045-052>053 Rapides - Avoyelles - Beauregard - Allen - Evangeline - St. Landry - Calcasieu - Jefferson Davis - Acadia - Lafayette - Upper St. Martin - Vermilion - Iberia

01 0000CST 0 0 137.9M Drought  
31 2359CST

The drought of 1998 continued in the month of August across southwest and central Louisiana. Between four and five inches of rain fell in the entire month of August across this region, which was actually the most in a month since April 1998. Total dollar figure losses by southwest and central Louisiana farmers was nearly \$138,000,000. The hardest hit parishes were Avoyelles and St. Landry Parishes, where over \$55,000,000 was lost. By product, the worst loss was soybeans, with an estimated \$40,000,000 lost, followed by sugarcane at \$25,000,000, and corn grain at \$24,000,000. These statistics were tabulated by the Agricultural Center at Louisiana State University.

### St. Mary Parish Charenton

02 1510CST 0 0 6M Thunderstorm Wind

Severe thunderstorms moving southwest across Louisiana blew down several trees and power lines around Charenton. A large blimp used in detecting drug smugglers was destroyed. The value of the blimp was \$6 million. Some eyewitnesses saw lightning near the blimp, but local officials believed it was the high winds that tore the blimp apart. Unofficial wind equipment at the radar site recorded 75 knot winds.

### Jefferson Davis Parish Lacassine

02 1745CST 0 0 40K Thunderstorm Wind

Local utility company reported ten or more power poles blown down in the Lacassine area.

### Calcasieu Parish Holmwood

02 1835CST 0 0 20K Thunderstorm Wind

Sheriff office reported many trees and power lines down in Holmwood.



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b>LOUISIANA, Southwest</b>									
<b>Cameron Parish</b>									
Holly Beach	02	2200CST			0	0			Lightning
Lightning ignited a 2,000 acre marsh fire. Most damage occurred at the Sabine National Wildlife Refuge.									
<b>Avoyelles Parish</b>									
Bunkie	06	1720CST			0	0	25K		Thunderstorm Wind
Trees and power lines were blown down in and around Bunkie.									
<b>Rapides Parish</b>									
Alexandria	06	1800CST 1900CST			0	0	150K		Flash Flood
Heavy rain produced over two inches of rain in less than 30 minutes, resulting in flash flooding in Alexandria and Pineville. Many streets were entirely flooded, and several vehicles had water as high as car windows. Several underpasses in Alexandria and Pineville quickly flooded, trapping some people in cars and trucks, but no injuries were reported.									
<b>Rapides Parish</b>									
Alexandria	06	1800CST			0	0	50K		Thunderstorm Wind
Severe thunderstorms blew down many trees and power lines, and damaged the roof of a convenience store in Alexandria.									
<b>Iberia Parish</b>									
2 S New Iberia	18	1700CST			0	0	10K		Thunderstorm Wind
Several large trees blown down reported by sheriff department.									
<b>Lafayette Parish</b>									
Lafayette	18	1730CST			0	0	25K		Thunderstorm Wind
Several mobile homes damaged.									
<b>Acadia Parish</b>									
6 NW Rayne	18	1745CST			0	0	10K		Thunderstorm Wind
Several trees and power lines blown down.									
<b>Jefferson Davis Parish</b>									
Fenton	18	1850CST			0	0			Thunderstorm Wind (G50)
50 to 60 mph winds reported by Fenton Police Department.									
<b>LAZ051</b>									
<b>Cameron</b>									
	21	1100CST			0	0	40K		Tropical Storm
	22	0600CST							
Tropical Storm Charley caused some problems in Cameron Parish. High tides of around 3.1 feet resulted in some beach erosion at Rutherford Beach and Constance Beach. At Gulf Breeze Beach, at least two feet of sand was lost for a 500 yard wide stretch. Sand dunes at Little Florida Beach and Long Beach were eroded slightly at the base of six to ten foot dunes.									
Jetty Road in downtown Cameron had only minor flooding. In Holly Beach, water rose to the second row of camps, but did not enter any of the buildings. On Highway 82 between Holly Beach and Johnson Bayou, spray from seven foot seas caused minor flooding, but the highway was never closed. Four jail inmates were able to clean debris within half a day using push brooms. Five camps at Gulf Breeze Beach had water rise to the first floor, causing minor damage. The access road to Martin Beach at Johnson Bayou was still flooded three days after the tides had decreased.									
Wind gusts along the coast were between 30 and 40 knots at the height of the storm. Between two and four inches of rain fell across Cameron Parish, but the Doppler radar indicated much more fell over the Gulf coastal waters.									
No evacuations were ordered for Cameron Parish. No deaths or injuries were reported.									
<b>Beauregard Parish</b>									
Oretta	28	1730CST			0	0	60K		Thunderstorm Wind
Three mobile homes and a house had roof damage. Four out buildings were also damaged. Many trees and power lines were reported downed by the Emergency Manager.									
<b>Rapides Parish</b>									
Alexandria	29	1650CST			0	0	25K		Thunderstorm Wind
Trees and power lines were blown down in central and southern sections of Alexandria.									
<b>Allen Parish</b>									
Oakdale	30	1400CST			0	0	20K		Thunderstorm Wind
Trees and power lines were blown down.									

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Calcasieu Parish**

**Starks**      **30**      **1458CST**                **0**      **0**      **10K**           **Thunderstorm Wind**  
Trees and power lines blown down in Starks. Also some downed trees reported in DeQuincy.

### **Rapides Parish**

**Woodworth**      **30**      **1518CST**                **0**      **0**      **25K**           **Thunderstorm Wind**  
Trees and power lines were blown down in Woodworth.

### **Calcasieu Parish**

**Vinton**      **30**      **1545CST**                **0**      **0**      **30K**           **Lightning**  
Lightning struck near the service entrance to a home in Vinton, and quickly spread to the rest of the house. No injuries were reported.

### **Calcasieu Parish**

**10 N Sulphur**      **31**      **2000CST**                **0**      **3**      **50K**           **Lightning**  
Lightning struck the attic, and quickly spread across the second floor of a house in DeQuincy. Two firefighters were treated and released at the hospital for heat exhaustion, and the homeowner's wife was treated and released from the hospital after she passed out at the scene.

## MAINE

NOT RECEIVED.

## MARYLAND, Central

### **MDZ009>010-013>014-016>018**      **Montgomery - Howard - Prince Georges - Anne Arundel - Charles - St. Mary'S - Calvert**

**01**      **0000EST**                **0**      **0**                **Drought**  
**31**      **2359EST**

Persistent high pressure brought unusually dry weather to central and lower southern Maryland. Only 0.91 inches of rain fell at Baltimore/Washington International Airport (MDZ014), compared with the monthly normal of 3.91 inches. Similar measurements were found across lower southern Maryland. The lack of rainfall significantly reduced crop yields. Charles and St Mary's Cos were expected to lose between 30 and 40 percent of their corn crop. The soybean crop was also expected to be down around 20 percent from 1997 yields - a season which was also somewhat dry. By mid month, the Maryland Department of Agriculture reported that 51 percent of the state's corn crop and 56 percent of the soybean crop was rated "fair" to "very poor". In addition, the tobacco crop was showing signs of water stress by the end of the month.

### **Carroll County**

**Westminster**      **10**      **1435EST**                **0**      **0**      **40K**           **Lightning**  
**1600EST**

### **Anne Arundel**

**County**

**Annapolis**      **10**      **1555EST**                **0**      **1**                **Lightning**

An area of thunderstorms, containing frequent lightning, moved through Carroll, Baltimore, Howard, and Anne Arundel Cos. A 12 year-old boy was struck by lightning while fishing at the Annapolis Naval Station marina just before 5 PM EDT. He was given CPR for several minutes by an off-duty Navy employee, and was successfully resuscitated. Farther north, lightning started a house fire and hit two transformers in Westminster. The storm dumped 2.3 inches of rain in three hours, resulting in local ponding of water on area roads. Lightning also struck several power lines across the region, and caused power loss to over 10,000 customers in the Baltimore Gas and Electric service area. In Harford Co, downpours were blamed for several traffic accidents.

## MARYLAND, Northeast

NOT RECEIVED.

## MARYLAND, South

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## MARYLAND, West

NONE REPORTED.

## MASSACHUSETTS, Central and East

### **Middlesex County**

<b>Billerica</b>	<b>11</b>	<b>2045EST</b> <b>2106EST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.00)</b>
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### **Essex County**

<b>Methuen to Haverhill</b>	<b>11</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
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### **Norfolk County**

<b>Milton</b>	<b>11</b>	<b>2100EST</b> <b>2130EST</b>			<b>0</b>	<b>0</b>	<b>3K</b>		<b>Lightning</b>
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### **Middlesex County**

<b>Tewksbury</b>	<b>11</b>	<b>2130EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
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Severe thunderstorms affected several places in Middlesex and Essex Counties during mid-evening. In Middlesex County, nickel to quarter size hail was reported in Billerica along with a wind gust to 45 mph. The hail fell for about 20 minutes. In Wayland, a half-inch of rain fell in 10 minutes and a wind gust to 42 mph was reported. Dime size hail was reported in Tewksbury. In Essex County, thunderstorm winds gusting to an estimated 60 mph blew down several large trees, which resulted in scattered power outages in Methuen and Haverhill. In Norfolk County, four homes sustained minor damage in Milton from several lightning strikes between 10:00 and 10:30 PM. Damage included a few roof shingles blown off at one home, chimney bricks knocked down at another, and circuit breakers damaged at two other homes.

### **Essex County**

<b>Salisbury</b>	<b>24</b>	<b>1626EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.88)</b>
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A severe thunderstorm dropped nickel size hail in Salisbury, as reported by the local police.

## **MAZ019-021**

### **Eastern Plymouth - Southern Plymouth**

	<b>29</b>	<b>0000EST</b> <b>1200EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Rain</b>
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Tropical Storm Bonnie tracked to the east-northeast well to the south of Cape Cod and the Islands. A heavy outer rain band affected a small part of southern Plymouth County. Torrential downpours occurred in the town of Plymouth, where a spotter at Whitehorse Beach recorded 4.00 inches of rainfall and another National Weather Service Cooperative Observer also in Plymouth had 3.95 inches. A spotter in Wareham recorded 2.80 inches. On Cape Cod, 1.44 inches fell in Hyannis and 1.10 inches fell in Orleans. On Nantucket Island, the rainfall totalled 1.23 inches. The strongest winds reported on land were in the range of 25 to 35 mph. Offshore, the Georges Bank Buoy reported a peak gust to 52 mph. The Nantucket Shoals Buoy had a gust to 38 mph and the Buzzards Bay Buoy recorded 31 mph.

A boating accident occurred at 1215 PM one-half mile off of Wianno Beach in Osterville, but it was not directly related to the effects of Bonnie. A 50-year-old male was killed when his rowboat overturned in somewhat choppy waters; his companion was able to swim to shore. According to the US Coast Guard stationed at Woods Hole, the man was a poor swimmer, not wearing a life jacket, dressed only in shorts and t-shirt. Sea conditions at the time were 1 to 2 feet and choppy, with winds of 10 to 15 knots and a visibility of 8 miles.

## MASSACHUSETTS, West

NONE REPORTED.

## MICHIGAN, East

### **Lenawee County**

<b>Adrian</b>	<b>06</b>	<b>0450EST</b> <b>0910EST</b>			<b>0</b>	<b>0</b>	<b>50K</b>		<b>Flood</b>
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### **Washtenaw County**

<b>Ann Arbor</b>	<b>06</b>	<b>0500EST</b> <b>0930EST</b>			<b>0</b>	<b>0</b>	<b>800K</b>		<b>Flood</b>
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### **Oakland County**

<b>Novi to Southfield</b>	<b>06</b>	<b>0645EST</b> <b>0940EST</b>			<b>0</b>	<b>0</b>	<b>500K</b>		<b>Flood</b>
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# Storm Data and Unusual Weather Phenomena

August 1998

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

## MICHIGAN, East

### Wayne County

Northville to  
Livonia

<b>06</b>	<b>0645EST</b>			<b>0</b>	<b>0</b>	<b>500K</b>	<b>Flood</b>
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A warm front, oriented west to east, was located just south of Michigan during the early morning hours. A series of showers and thunderstorms developed just north of the front. These storms moved east, parallel to the warm front, in a typical train-echo pattern. The result was a classic heavy rain event for southeast Michigan. Some rainfall totals were: 5.7 inches in Hudson, 5.09 inches in Manchester, 4.12 inches in Ann Arbor, 3.78 inches in Farmington Hills, and 3.55 inches in Ypsilanti.

Southeast Michigan had been quite dry for the past month, and so the soil was able to absorb much of the heavy rain. As a result, flooding problems in rural areas were surprisingly minor, and largely confined to Lenawee County. A few vehicles left in flood prone locations overnight were swamped by high water in the morning.

Urban areas were an entirely different story. The increased area covered by impermeable surfaces, such as concrete and buildings, led to rapid runoff despite dry soil conditions. As a result, urban areas in the heavy rain swath saw substantial flooding, including Adrian and Ann Arbor. In Ann Arbor, Mallets Creek rose out of its banks. The creek destroyed sidewalks in the Briarwood Mall area, and swept three cars into a retention pond. Some flooding also took place on the Athletic (South) Campus of the University of Michigan.

Although rainfall totals were not as high, flooding also developed further east in the near northwest suburbs of Detroit. Flooded roads played havoc with the morning commute in Southfield, Troy, Livonia, Novi, and other cities. Parts of I-75, I-696, and Woodward Avenue (M-1), were closed. Basements were flooded in Farmington and Royal Oak, and several businesses in Farmington Hills experienced water damage. In Northville, a train derailed when it attempted to cross tracks that were washed out. Nineteen hundred gallons of diesel fuel was spilled as a result.

Runoff from the heavy rain resulted in some river flooding, mainly in the more urbanized basins (see below).

### MIZ075

#### Washtenaw

<b>06</b>	<b>1030EST</b>			<b>0</b>	<b>0</b>		<b>Flood</b>
<b>07</b>	<b>1130EST</b>						

The Saline River at Saline went above flood stage of 10 feet at 1130 am EDT on the 6th. It crested at about 10.5 feet at 11 pm, then fell below flood stage at 1230 pm on the 7th.

### MIZ070

#### Macomb

<b>06</b>	<b>1100EST</b>			<b>0</b>	<b>0</b>		<b>Flood</b>
	<b>2200EST</b>						

The Clinton River near Fraser went above flood stage of 16 feet at noon EDT on the 6th. It crested at 16.6 feet at 2 pm, then fell below flood stage at 11 pm.

### MIZ076-076

#### Wayne

<b>06</b>	<b>1730EST</b>			<b>0</b>	<b>0</b>		<b>Flood</b>
<b>07</b>	<b>1330EST</b>						

The Rouge River at Detroit went above flood stage of 15 feet at 630 pm EDT on the 6th. It crested at 17.4 feet at 1 am on the 7th, then fell below flood stage at 2 pm.

The Lower Rouge River at Inkster went above flood stage of 10 feet at 5 am EDT on the 7th. It crested at 10.1 feet at 530 am, then fell below flood stage at 230 pm.

### Huron County

Bad Axe

<b>08</b>	<b>1830EST</b>			<b>0</b>	<b>0</b>	<b>18K</b>	<b>Thunderstorm Wind (G52)</b>
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A isolated severe thunderstorm downed several trees and power lines. One large tree fell onto a house.

### Macomb County

2 S Mt Clemens

<b>09</b>	<b>1400EST</b>			<b>0</b>	<b>0</b>	<b>300K</b>	<b>Flood</b>
	<b>1850EST</b>						

### Shiawassee County

Corunna

<b>09</b>	<b>1800EST</b>			<b>0</b>	<b>0</b>	<b>75K</b>	<b>Lightning</b>
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### Oakland County

Farmington to  
Southfield

<b>09</b>	<b>1815EST</b>			<b>0</b>	<b>0</b>	<b>10K</b>	<b>Flood</b>
	<b>1955EST</b>						

A warm and humid airmass blanketed southeast Michigan. Thunderstorms repeatedly developed in the afternoon along a lake breeze boundary off of Lake St Clair. These thunderstorms generated extremely heavy rainfall over a small portion of eastern Macomb County. National Weather Service radar estimated over eight inches of rain in the southern part of Clinton Township, near 15 Mile Road and Gratiot Avenue (M-3). An volunteer observer for a local television station measured 8.16 inches of rain near this location. This rain fell between 1 pm and 430 pm EDT.

# Storm Data and Unusual Weather Phenomena

August 1998

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

Substantial urban flooding resulted in southern Clinton Township and southern Mt Clemens. Most roads in the immediate vicinity were closed due to high water, including Gratiot, Harper, Little Mack, and Metro Parkway. Cars stranded on Gratiot were up to their windshields in water, and numerous homes had flooded yards and basements. Minor urban flooding also took place in adjacent Harrison Township. More serious flooding in the area was averted because the areal extent of heavy rain was extremely small.

In the late afternoon and early evening hours, a band of showers and thunderstorms produced heavy rain in southern Oakland County. Rainfall amounts were generally less than two inches; however, this area had seen flood-producing rainfall just three days previous, and was thus vulnerable to any additional rain. High water closed many roads in southern Oakland County, with most of the flooding problems near the I-696 corridor.

Lightning struck the Shiawassee County complex early in the evening. The strike damaged computers, heating and cooling systems, and elevators at the courthouse.

### **Huron County**

<b>Harbor Beach</b>	10	1400EST			0	0	6K		<b>Thunderstorm Wind (G54)</b>
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### **Livingston County**

4 NW Brighton	10	1530EST			0	0	1.5M		<b>Lightning</b>
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### **Genesee County**

4 WNW Flint Bishop Arpt	10	1755EST			0	0			<b>Thunderstorm Wind (G52)</b>
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Scattered, pulse-type thunderstorms developed ahead of a cold front moving south across lower Michigan. Two cells produced severe weather. A 62 mph gust was observed at the Harbor Beach Marina, and eight tightly packed trees were downed nearby. A television meteorologist reported 60 mph winds with a thunderstorm in Clayton Township, just west of Flint.

Lightning struck a building supply store northwest of Brighton late in the afternoon. The resulting fire completely destroyed the building.

### **Genesee County**

Clio	23	1850EST			0	0			<b>Hail (1.00)</b>
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### **Tuscola County**

Kingston	23	1930EST			0	0			<b>Hail (0.88)</b>
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Scattered thunderstorms developed in the afternoon along a thermal-moisture boundary. Two of the storms briefly became severe, producing marginally large hail.

### **Lenawee County**

3 SSE Addison	24	0425EST			0	0	8K		<b>Thunderstorm Wind (G55)</b>
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### **Lenawee County**

3 N Adrian to Adrian	24	0445EST			0	0	10K		<b>Thunderstorm Wind (G55)</b>
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### **Monroe County**

Temperance	24	0520EST			0	0	2K		<b>Thunderstorm Wind (G52)</b>
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An upper level disturbance acted on a warm and humid airmass, igniting a cluster of thunderstorms in southwest lower Michigan just after 3 am EDT. These storms raced to the east, affecting the southernmost tier of Michigan counties. Numerous trees were downed in western and central Lenawee County, while large limbs and power lines came down in southern Monroe County.

### **Oakland County**

Southfield	25	0200EST			0	0	125K		<b>Lightning</b>
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Lightning struck an apartment building, causing a fire that destroyed two units and damaged the administrative office.

## MICHIGAN, Extreme Southwest

### **Cass County**

Marcellus	24	0310EST			0	0			<b>Hail (0.75)</b>
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### **Branch County**

Bronson	24	0355EST			0	0			<b>Hail (1.75)</b>
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### **Branch County**

Coldwater	24	0400EST			0	0	25K		<b>Thunderstorm Wind</b>
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TREES AND POWER LINES DOWN.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## MICHIGAN, Extreme Southwest

<b>Hillsdale County</b>									
Hillsdale	24	0430EST			0	0	50K		Thunderstorm Wind
WIDESPREAD TREE DAMAGE AND POWER LINES DOWN ACROSS THE COUNTY.									
<b>Cass County</b>									
Edwardsburg	24	1525EST			0	0			Thunderstorm Wind (G52)
<b>Cass County</b>									
2 E Adamsville	24	1604EST			0	0	10K		Thunderstorm Wind
TREE FELL ONTO A PICKUP TRUCK TOTALLY SMASHING IT.									
<b>Berrien County</b>									
Benton Center	25	0038EST			0	0			Hail (0.75)
<b>Cass County</b>									
Marcellus	25	0040EST			0	0			Hail (0.75)
<b>Berrien County</b>									
Coloma	25	0048EST			0	0			Urban/Sml Stream Fld
WATER UP TO THE BOTTOM OF CAR DOORS ON STREETS.									
<b>Berrien County</b>									
St Joseph	25	0052EST			0	0			Hail (1.75)
<b>Berrien County</b>									
Niles to 2 ESE Niles	25	0100EST	2	400	0	0	1.1M		Tornado (F1)
EXTENSIVE DAMAGE TO TREES ACROSS THE CITY WHICH BLOCKED 15 SEPARATE STREETS AT ONE TIME. 60 HOMES DAMAGED SUSTAINED MINOR TO SEVERE STRUCTURAL DAMAGE. MANY VEHICLES WERE DAMAGED OR DESTROYED BY FALLEN TREES AND LIMBS. SEVERAL POWER POLES AND LINES TAKEN OUT. THE FRENCH PAPER COMPANY LOST ROOFS ON THREE DIFFERENT BUILDINGS AS DID THE D&D TIRE COMPANY WHICH HAD ITS WAREHOUSE ROOF RIPPED OFF. DEMOND GROCERY STORE LOST 20K DOLLARS WORTH OF PERISHABLE FOOD ITEMS DUE TO THE EXTENDED EXTENSIVE POWER OUTAGE THAT AFFECTED 41,500 PEOPLE AT ONE POINT. ONE MAN LOST 21 LARGE TREES IN HIS YARD ALONE. THE MICHIGAN STATE GOVERNOR DECLARED THE CITY OF NILES A DISASTER AREA. AN OFF DUTY MICHIGAN STATE POLICE OFFICER TRAGICALLY LOST HIS LIFE WHEN HE WAS ELECTROCUTED BY A DOWNED POWER LINE.									
<b>Cass County</b>									
8 WNW Edwardsburg to 1 E Adamsville	25	0110EST	9	800	0	0	500K		Tornado (F2)
ONE MOBILE HOME WAS COMPLETELY DEMOLISHED ON SOUTH SIDE OF JUNO LAKE AND SEVERAL OTHER HOMES AROUND JUNO, PAINTER, EAGLE AND CHRISTAN LAKE SUFFERED MINOR TO MODERATE STRUCTURAL DAMAGE. AN RV WAS TOSSED ABOUT AND ROTATED 180 DEGREES WHICH CAUSED MAJOR DAMAGE. NUMEROUS TREES WERE COMPLETELY FLATTENED WHICH ALSO CAUSED DAMAGE TO HOMES. MANY ROADS WERE BLOCKED BY FALLEN TREES...SNAPPED POWER POLES AND DOWNED POWER LINES.									
THIS TORNADO BEGAN IN NILES AND PEAKED IN INTENSITY AND WIDTH 3 MILES NORTHWEST OF EDWARDSBURG WHERE IT WIDENED OUT TO ONE HALF MILE. IT CONTINUED ON TOWARD THE TOWN OF BRISTOL IN NORTHEAST ELKHART COUNTY BEFORE LIFTING.									
<b>Cass County</b>									
1 E Adamsville to 5 ESE Adamsville	25	0115EST 0120EST	6	300	0	0	300K		Tornado (F1)
THE TORNADO HAD WEAKENED AS IT PASSED JUST EAST OF ADAMSVILLE. IT STILL CAUSED EXTENSIVE DAMAGE TO SEVERAL FARMS ALONG AND PRIMARILY SOUTH OF HIGHWAY 12. SEVERAL HOMES AND VEHICLES SUSTAINED MAJOR DAMAGE DUE TO FALLEN TREES.									
<b>Branch County</b>									
Bronson	25	0120EST			0	0			Thunderstorm Wind (G52)
<b>Branch County</b>									
Batavia	25	0130EST			0	0	25K		Thunderstorm Wind
SEVERAL TREES AND POWER LINES DOWN IN TOWN.									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MICHIGAN, Extreme Southwest</u></b>									
<b>Branch County</b>									
Kinderhook	25	0130EST			0	0	25K		Thunderstorm Wind
									LOTS OF TREES AND POWER LINES DOWN.
<b>St. Joseph County</b>									
Constantine to Sturgis	25	0130EST 0132EST			0	0	100K		Thunderstorm Wind
									EXTENSIVE TREES AND POWER LINES DOWN ACROSS THE COUNTY.
<b>Cass County</b>									
Cassopolis	25	0132EST			0	0			Thunderstorm Wind (G52)
<b>St. Joseph County</b>									
Sturgis	25	0136EST			0	0			Thunderstorm Wind (G52)
<b>Hillsdale County</b>									
Hillsdale	25	0200EST			0	0	100K		Thunderstorm Wind
									SEVERAL TREES DOWN ACROSS THE SOUTHERN THIRD OF THE COUNTY INCLUDING ONE WHOLE LINE OF POWER POLES WHICH WERE FLATTENED TO THE GROUND.
<b>Hillsdale County</b>									
Reading	25	0200EST			0	0	10K		Thunderstorm Wind
									TREE FELL ON A HOME WHICH SUSTAINED JUST MINOR DAMAGE.
<b><u>MICHIGAN, North</u></b>									
<b>Chippewa County</b>									
Sault Ste Marie	23	1630EST			0	0			Thunderstorm Wind (G52)
									Several trees were toppled across the city. One tree fell against a house damaging the roof...a porch and some siding.
<b>Emmet County</b>									
5 SW Petoskey	23	2130EST			0	0			Hail (1.00)
<b>Emmet County</b>									
Conway	23	2141EST			0	0			Thunderstorm Wind (G52)
									Several trees toppled near Conway.
<b>Cheboygan County</b>									
Indian River	23	2200EST			0	0			Thunderstorm Wind (G52)
									Several trees toppled along Wildwood road.
<b>Manistee County</b>									
Onekama	23	2201EST			0	0			Hail (1.75)
<b>Wexford County</b>									
Cadillac	23	2255EST			0	0			Hail (0.75)
<b>Wexford County</b>									
Cadillac	23	2301EST			0	0			Hail (1.00)
<b>Montmorency County</b>									
7 N Hillman	23	2308EST			0	0			Hail (0.75)
<b>Chippewa County</b>									
Sault Ste Marie	24	0130EST			0	0			Thunderstorm Wind (G52)
									Several trees were toppled across the city.
<b>Chippewa County</b>									
Sault Ste Marie	29	1148EST			0	0			Hail (1.00)
<b><u>MICHIGAN, Upper</u></b>									
<b>Marquette County</b>									
1 S Palmer	09	2100EST			0	0			Thunderstorm Wind (G53)
									Two 6-8 inch diameter trees down.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Baraga County**

**Three Lakes**      14      1030EST      0      0      **Thunderstorm Wind (G55)**

Large tree down.

### **Iron County**

**Crystal Falls**      14      1445EST      0      0      **Hail (0.75)**

Small branches down.

### **Gogebic County**

**6 SE Watersmeet**      23      1100EST      1      0      5K      **Thunderstorm Wind (G60)**

Large trees down. One tree fell on fiber-glass camper resulting in a fatality at Imp Lake Campground in Ottawa National Forest. M74CA

### **Menominee County**

**6 N Menominee**      23      1756EST      0      0      **Hail (1.00)**

### **Menominee County**

**3 N Menominee to  
3.5 E Menominee**      23      1800EST  
1805EST      0      0      **Funnel Cloud**

Funnel cloud observed moving to the southeast and passing three miles north of Menominee. It formed a waterspout as it entered the Bay of Green Bay 3.5 miles east of Menominee. The waterspout traversed the Bay of Green Bay and entered Wisconsin's Door Peninsula 15 miles southeast of Menominee, Michigan, as an F2 tornado.

### **Ontonagon County**

**Rockland to  
Mass**      23      2145EST  
2150EST      0      0      3K      **Thunderstorm Wind (G50)**

18 inch diameter tree down on a van. Tree down across Creek Road.

### **Marquette County**

**10 SW Ishpeming**      23      2305EST      0      0      **Thunderstorm Wind (G50)**

Large tree down over County Road 581.

### **Marquette County**

**Marquette**      23      2310EST      0      0      1K      **Thunderstorm Wind (G50)**

Two foot diameter tree snapped off seven feet above ground. Tree fell on a house, damaging some shingles and siding.

### **Alger County**

**4 NE Melstrand**      24      0000EST      0      0      **Thunderstorm Wind (G50)**

Sixteen inch diameter trees down. Other smaller trees down.

## MICHIGAN, West

NOT RECEIVED.

## MINNESOTA, Central and South Central

### **Isanti County**

**Stanchfield**      09      1620CST      0      0      **Thunderstorm Wind (G56)**

Pine trees blown over. Estimated windspeed.

### **Anoka County**

**Lino Lakes**      09      1756CST      0      0      **Hail (0.88)**

### **Ramsey County**

**White Bear Lake**      09      1800CST      1      0      **Lightning**

One man died because of lightning strike while under a tree. M37UT

### **Anoka County**

**Anoka**      09      1805CST      0      0      **Thunderstorm Wind (G51)**

### **Hennepin County**

**Minneapolis**      09      1845CST      0      0      **Hail (1.25)**

Reported in North Minneapolis near Central Avenue.



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>MINNESOTA, Central and South Central</b>									
<b>Ramsey County</b> St Paul	09	1850CST			0	0			Hail (0.75)
									Reported at the corner of Jefferson and Hamlin.
<b>Ramsey County</b> St Paul	09	1856CST			0	0			Hail (1.25)
									Reported in Highland Park area.
<b>Ramsey County</b> St Paul	09	1856CST			0	0			Hail (0.88)
									Reported at Cleveland and Ford Parkway.
<b>Scott County</b> Prior Lake	09	1953CST			0	0			Hail (0.75)
<b>Douglas County</b> Brandon	19	1410CST			0	0			Hail (1.25)
<b>Douglas County</b> (Axx)Chndlr Fld Alxn	19	1444CST			0	0			Thunderstorm Wind (G58)
<b>Pope County</b> 1 NE Lowry	19	1445CST			0	0			Hail (1.00)
<b>Douglas County</b> Alexandria	19	1500CST			0	0			Thunderstorm Wind (G58)
									Trees blown down. Estimated windspeed.
<b>Pope County</b> Glenwood	19	1500CST 1700CST			0	0			Urban/Sml Stream Fld
									3 to 4 inches of rain in less than 2 hours resulted in street flooding.
<b>Todd County</b> Staples	19	1515CST			0	0			Thunderstorm Wind (G50)
									Trailer blown over. Several large trees blown over. Estimated windspeed.
<b>Swift County</b> Benson	19	1600CST 1800CST			0	0			Urban/Sml Stream Fld
									3 to 4 inches of rain in less than 2 hours caused street and basement flooding.
<b>Blue Earth County</b> Lake Crystal	19	2213CST			0	0			Thunderstorm Wind (G52)
									Tree blown down.
<b>Freeborn County</b> Albert Lea	20	0100CST 0300CST			0	0			Urban/Sml Stream Fld
									Automobiles inundated.
<b>Hennepin County</b> Bloomington	22	1700CST 2100CST			0	0			Flash Flood
									6 inches measured at NWS meteorologists home.
<b>Scott County</b> Savage	22	1700CST 2100CST			0	0			Flash Flood
<b>Carver County</b> Chanhassen	22	1853CST			0	0			Hail (0.75)
									Measured at NWS forecast office.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### Scott County

Savage                      22      1908CST      0.1      50                      0      0                      Tornado (F0)

Trailer blown over. Garage destroyed.

### Scott County

Savage                      22      1914CST                      0      0                      Thunderstorm Wind (G52)

Trees blown over.

### Hennepin County

Bloomington              22      1925CST                      0      0                      Thunderstorm Wind (G50)

Large branches down. Estimated windspeed.

### Scott County

Shakopee                    22      2022CST                      0      0                      Hail (1.00)

### Scott County

Shakopee                    22      2022CST                      0      0                      Thunderstorm Wind (G52)

### Lac Qui Parle County

Madison                    23      0254CST                      0      0                      Thunderstorm Wind (G50)

Power lines down. Estimated windspeed.

### Swift County

Appleton Arpt              23      0255CST                      0      0                      Thunderstorm Wind (G58)

### Chippewa County

Clara City                    23      0315CST                      0      0                      Thunderstorm Wind (G50)

Power lines down. Estimated windspeed.

### Kandiyohi County

Willmar                      23      0340CST                      0      0                      Thunderstorm Wind (G55)

Trees and power lines down. Estimated windspeed.

### Sibley County

Arlington                    23      0515CST                      0      0                      Hail (0.75)

### Scott County

Blakeley                    23      0522CST                      0      0                      Hail (0.75)

## MINNESOTA, Northeast

### Koochiching County

International Falls        16      1500CST                      0      0      25K                      Lightning

Lightning struck and shattered a 20-foot fiberglass church steeple. The lightning also caused a fire that was confined to the steeple and roof. No one was injured.

### Koochiching County

2 S Pelland                    16      1655CST                      0      0                      Hail (0.88)

### Koochiching County

Littlefork                    16      1727CST                      0      0                      Hail (2.75)

### Cass County

Walker                      16      1915CST                      0      0                      Thunderstorm Wind (G70)

Winds estimated at 70 to 80 mph knocked down trees and power lines.

### St. Louis County

5 W Tower                    16      1917CST                      0      0                      Thunderstorm Wind (G50)

Trees were blown down on houses and roads. The wind speed is estimated.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Cass County**

**Remer**      16      1950CST                0      0                **Thunderstorm Wind (G50)**  
Ten-inch diameter trees were blown down. The wind speed is estimated.

### **St. Louis County**

**Hibbing**      16      2000CST                0      0      10K           **Lightning**  
Lightning struck a home, starting a fire that caused an estimated \$10,000 in damage. There were no injuries.

### **St. Louis County**

**Hibbing**      16      2010CST                0      0                **Hail (0.75)**

### **Cass County**

**Longville**      16      2013CST                0      0                **Thunderstorm Wind (G50)**  
Trees were blown down. The wind speed is estimated.

### **Cass County**

**Remer**      16      2023CST                0      0                **Thunderstorm Wind (G50)**  
Trees were blown down. The wind speed is estimated.

### **St. Louis County**

**Aurora**      23      1706CST                0      0                **Hail (1.00)**

### **St. Louis County**

**Hoyt Lakes**      23      1714CST                0      0                **Hail (0.75)**

### **St. Louis County**

**Twig**      23      1740CST  
1747CST                0      0                **Hail (1.50)**

### **St. Louis County**

**Hermantown**      23      1750CST                0      0                **Hail (1.25)**

### **St. Louis County**

**Duluth**      23      1754CST  
1805CST                0      0      50M           **Hail (3.50)**  
Hail size ranged from .75 inch in diameter in the Woodland neighborhood on the northeast side of the city to 3.5 inches in Lincoln Park in West Duluth. The hail caused considerable damage to vehicles, roofs, gardens, and patio furniture. The dollar amount of property damage is an estimate based on insurance claims.

### **Lake County**

**Beaver Bay**      23      1800CST                0      0                **Hail (1.50)**

### **St. Louis County**

**Duluth**      23      1816CST                0      0                **Thunderstorm Wind (G53)**  
A thunderstorm wind gust to 53 knots was measured by automated observing equipment at Sky Harbor Airport in the Duluth-Superior harbor.

### **Itasca County**

**10 W Squaw Lake**      26      1430CST                0      0                **Thunderstorm Wind (G52)**  
Strong thunderstorm winds caused considerable tree damage. A National Weather Service cooperative observer estimated the wind speed at 60 mph.

## MINNESOTA, Northwest

### **Becker County**

**Callaway**      16      1730CST                0      0                **Hail (1.00)**

### **Becker County**

**Detroit Lakes**      16      1745CST                0      0                **Hail (1.00)**

### **Becker County**

**Evergreen**      16      1815CST                0      0                **Hail (0.88)**

### **Otter Tail County**

**Vergas**      16      1815CST                0      0                **Hail (0.75)**

### **Becker County**

**Detroit Lakes**      16      1830CST  
1840CST                0      0                **Hail (1.00)**

### **Becker County**

**Evergreen**      16      1850CST                0      0                **Hail (1.00)**

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MINNESOTA, Northwest</u></b>									
<b>Becker County</b>									
Wolf Lake	16	1850CST			0	0			Hail (1.00)
<b>Becker County</b>									
Frazee	16	1900CST			0	0			Hail (2.50)
<b>Hubbard County</b>									
Laporte	16	1920CST			0	0	0.40K		Thunderstorm Wind
Several large trees were blown down.									
<b>Becker County</b>									
7 SE Detroit Lakes	16	1925CST			0	0			Hail (1.00)
<b>Otter Tail County</b>									
7 NE Vergas	16	1930CST			0	0			Hail (0.75)
<b>Polk County</b>									
5 N Eldred	22	2142CST			0	0			Hail (0.75)
<b>Lake Of The Woods County</b>									
12 NW Baudette	26	1640CST			0	0	20K		Hail (1.75)
Vehicles and awnings at the Sportsman Lodge were damaged by the large hail.									
<b>Lake Of The Woods County</b>									
5 SE Baudette	26	1700CST			0	0			Hail (1.75)
<b>Polk County</b>									
1 N Beltrami	31	1510CST			0	0			Hail (0.75)
<b>Polk County</b>									
Mc Intosh	31	1530CST			0	0			Hail (0.75)
<b>Kittson County</b>									
St Vincent	31	1615CST			0	0			Hail (0.75)
<b>Mahnomen County</b>									
Naytahwaush	31	1630CST			0	0			Hail (0.75)
<b>Kittson County</b>									
Hallock	31	1647CST			0	0			Hail (0.75)
<b>Kittson County</b>									
Kennedy	31	1705CST 1710CST			0	0			Hail (0.75)
<b>Marshall County</b>									
Stephen	31	1730CST			0	0			Hail (0.75)
<b>Red Lake County</b>									
Plummer	31	1915CST			0	0			Hail (0.75)
<b>Polk County</b>									
Mc Intosh	31	1945CST			0	0			Hail (0.75)
<b><u>MINNESOTA, Southeast</u></b>									
<b>Winona County</b>									
Winona	09	1606CST			0	0	30K		Thunderstorm Wind (G52)
<b>Winona County</b>									
Winona	09	1615CST			0	0	55K		Thunderstorm Wind (G55)
<b>Winona County</b>									
Winona	09	1622CST			0	0	40K		Thunderstorm Wind (G55)
<b>Winona County</b>									
Minneiska	09	1630CST			0	0	2K		Hail (0.75)
<b>Winona County</b>									
Winona	09	1647CST			0	0	75K		Thunderstorm Wind (G55)

# Storm Data and Unusual Weather Phenomena

August 1998

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

## MINNESOTA, Southeast

<b>Houston County</b> 2 N La Crescent	09	1659CST			0	0	50K		Thunderstorm Wind (G55)
<b>Houston County</b> 3 W La Crescent	09	1720CST			0	0	6K	0.25K	Thunderstorm Wind (G54) 60 to 65 mph winds downed numerous trees and power lines, broke store windows in downtown Winona and damaged a television tower near La Crescent.
<b>Winona County</b> Stockton to Winona	09	1710CST 2000CST			0	0	150K	55K	Flash Flood
<b>Houston County</b> 5 W La Crescent	09	1930CST 2030CST			0	0	35K	40K	Flash Flood
<b>Fillmore County</b> Rushford	09	2030CST 2145CST			0	0	25K	50K	Flash Flood 3 to 5 inches of rain fell in about an hour and a half, causing flash flooding in the bluff country of southeast Minnesota. In the city of Winona, 1.5 feet of water covered Mankato Avenue and Highway 61, while rock slides occurred near Stockton.

## MINNESOTA, Southwest

<b>Jackson County</b> 5 W Heron Lake	03 04	1700CST 0500CST			0	0			Heavy Rain Heavy rain over a 12 hour period flooded fields and basements in a small rural area. The runoff caused an unknown amount of crop damage. A farmer reported that 11 1/2 inches of rain fell.
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## MINNESOTA, West

NONE REPORTED.

## MINNESOTA, West Central

NONE REPORTED.

## MISSISSIPPI, Central

<b>Hinds County</b> Jackson	07	1530CST 1600CST			0	0			Urban/Sml Stream Fld Minor street flooding was reported in downtown Jackson.
<b>Lawrence County</b> Monticello	11	1120CST			0	0			Hail (0.88)
<b>Lauderdale County</b> Countywide	20	1915CST			0	0	1K		Thunderstorm Wind Two trees were blown down.
<b>Lincoln County</b> 10 S Brookhaven	30	1300CST			0	0			Hail (0.75)
<b>Rankin County</b> Pelahatchie	30	1415CST			0	0			Hail (0.75)
<b>Rankin County</b> Pelahatchie	30	1415CST			0	0	1K		Thunderstorm Wind A couple of trees were blown down.
<b>Rankin County</b> 3 N Pelahatchie	30	1420CST			0	0	2K		Thunderstorm Wind Several trees were blown down.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Hinds County**

4 W Terry      30      1510CST                0      0                **Hail (0.75)**

### **Washington County**

3 E Hollandale      31      1625CST                0      0      40K           **Thunderstorm Wind**

A mobile home was demolished. A few trees and powerlines were blown down.

### **Washington County**

6 E Hollandale      31      1630CST                0      0      10K           **Thunderstorm Wind**

Minor damage was reported to five homes.

## MISSISSIPPI, North

### **Tishomingo County**

2 N Cross Roads      06      1845CST                0      0      50K           **Lightning**

A home was destroyed by a fire started by lightning.

### **Prentiss County**

Booneville      11      2115CST  
2120CST                0      0      1K           **Thunderstorm Wind**

A couple of trees were knocked down.

### **Tate County**

Senatobia      14      0920CST  
1300CST                0      0      1K           **Urban/Sml Stream Fld**

Two inches of rain in a two-hour period caused water to enter a hospital. Five patients had to be moved to other rooms and nearly 40 rooms had water in them.

### **Prentiss County**

Booneville      14      1000CST  
1200CST                0      0      1K           **Urban/Sml Stream Fld**

Several yards were under water as heavy rains clogged up the city sewer system.

## MISSISSIPPI, South

### **Hancock County**

Lakeshore      08      1245CST                1      0                **Lightning**

Lightning killed a man as he attempted to run for cover from the thunderstorm.  
M38OU

### **Hancock County**

Waveland      13      1502CST      0      10      0      0           **Tornado (F0)**

Mississippi Highway Patrol reported a brief touchdown of a weak tornado near the Interstate Highway 10 and Mississippi Highway 603 interchange. No damage was reported.

## MISSISSIPPI, Southeast

NONE REPORTED.

## MISSOURI, East

### **St. Louis County**

Countywide      18      0630CST  
0900CST                0      0                **Flash Flood**

### **St. Louis (C)**

Countywide      18      0630CST  
0900CST                0      0                **Flash Flood**

Rainfall of 2 to 4 inches fell quickly across the St. Louis Metropolitan area right before the morning rush hour. Numerous streets flooded across the area, including Interstate 44. Metrolink, the area light rail system also had to be shut down due to flooded tracks near Union Station.

# Storm Data and Unusual Weather Phenomena

August 1998

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

**MISSOURI, East**

**MOZ034>035-041- Monroe - Ralls - Boone - Callaway - Montgomery - Gasconade - St. Charles - Franklin - St. Louis  
050>051-059- - St. Louis (C) - Jefferson - St. Francois - Madison  
061>065-074-085**

<b>23</b>	<b>1100CST</b>								
<b>25</b>	<b>1100CST</b>				<b>0</b>	<b>10</b>			<b>Excessive Heat</b>

A late summer heat wave primarily caused problems for area schools that had just opened for the 1998-1999 school year. Most school districts opened only for the morning hours, sending the children home around noon. The Missouri Department of Health reported 10 heat related injuries. High temperatures were in the middle to upper 90s with Heat Index readings around 105.

**Boone County**

Columbia

<b>27</b>	<b>0830CST</b>								
	<b>1030CST</b>				<b>0</b>	<b>0</b>			<b>Urban/Sml Stream Fld</b>

Heavy rain caused some street flooding in Columbia. Some roads and intersections had water up to the bottom of cars.

**MISSOURI, Lower**

**Dunklin County**

Malden

<b>06</b>	<b>1930CST</b>								
	<b>2100CST</b>				<b>0</b>	<b>0</b>	<b>10K</b>		<b>Flash Flood</b>

Three houses had water in them due to flash flooding. Several drainage ditches were filled with water.

**MISSOURI, Northwest**

**MOZ021-038>039-046 Clinton - Lafayette - Saline - Cooper**

<b>01</b>	<b>0000CST</b>								
<b>05</b>	<b>2359CST</b>				<b>0</b>	<b>0</b>			<b>Flood</b>

Minor to moderate river flooding carried over from late July into the early part of August.

Petite Saline Creek  
Boonville, MO

Flood Stage	16 ft
Above Flood Stage	8/1
Crest	19.15 ft

Blackwater River  
Blue Lick, MO

Flood Stage	24 ft
Above Flood Stage	8/1 to 8/5
Crest	30.57 ft on 8/2

South Grand River  
Urich, MO

Flood Stage	24 ft
Above Flood Stage	8/1
Crest	24.8 ft

Missouri River  
Waverly, MO

Flood Stage	20 ft
Above Flood Stage	8/1
Crest	20.94 ft

Miami, MO

Flood Stage	18 ft
Above Flood Stage	8/1
Crest	Estimated 19.4 ft

Boonville, MO

# Storm Data and Unusual Weather Phenomena

August 1998

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

Flood Stage 21 ft  
Above Flood Stage 8/1  
Crest 21.31 ft

### **Cass County**

**Drexel 03 1230CST 0 0 3K Thunderstorm Wind**

Thunderstorm winds knocked down large tree limbs in Drexel.

### **Adair County**

**Sublette 10 1425CST 0 0 20K Thunderstorm Wind**

Thunderstorm winds uprooted trees up to 4 inches in diameter and blew over a chicken coop along Route AA near Sublette. Also in Sublette a trailer was blown over by the thunderstorm winds.

### **Nodaway County**

**Burlington Jct 13 1632CST 0 0 Thunderstorm Wind (G70)**

Thunderstorm winds gusted to 70 MPH at Burlington Junction.

### **Atchison County**

**3 N Fairfax 13 1647CST 0 0 Hail (0.88)**

Nickel-size hail was reported during a severe thunderstorm 3 miles north of Fairfax.

### **Johnson County**

**Warrensburg 19 1618CST 0 0 Hail (0.88)**

Nickel-size hail was reported during a severe thunderstorm in Warrensburg.

### **Buchanan County**

**2 NE Easton 27 1839CST 0 0 Hail (0.75)**

Dime-size hail was reported during a thunderstorm 2 miles northeast of Easton.

### **Buchanan County**

**St Joseph 27 1921CST 0 0 Thunderstorm Wind (G65)**

A St. Joseph radio station reported a 65 MPH wind just during a severe thunderstorm in St Joseph.

### **Carroll County**

**Carrollton 27 2115CST 0 0 Thunderstorm Wind (G60)**

The Carrollton Fire Department reported a 60 MPH wind gust during a thunderstorm at Carrollton.

## MISSOURI, Southeast

### **Ripley County**

**Doniphan 05 2045CST 0 0 Urban/Sml Stream Fld**  
2215CST

Thunderstorms produced an estimated 2 to 2.5 inches of rain per hour. Creeks were rising near some homes. Water was over the road on Highway 160 east of Doniphan.

### **Wayne County**

**2 N Patterson 10 1730CST 0 0 20K Flash Flood**  
2050CST

A nearly stationary cluster of thunderstorms dumped excessive rainfall amounts over a very small portion of Wayne County near Sam A. Baker State Park. Unofficial rainfall estimates were between 4 and 6 inches just north of Patterson, most of which fell within 3 hours. Clark Creek overflowed across low water bridges near Patterson.

### **Wayne County**

**Piedmont 10 1815CST 0 0 5K Thunderstorm Wind (G52)**

Trees and signs were blown down near Piedmont.

### **Bollinger County**

**2 N Marble Hill 10 1910CST 0 0 Hail (1.00)**



# Storm Data and Unusual Weather Phenomena

August 1998

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

## MISSOURI, Southeast

### **Bollinger County**

<b>Marble Hill</b>	<b>10</b>	<b>1940CST 2100CST</b>			<b>0</b>	<b>0</b>	<b>5K</b>	<b>Flash Flood</b>
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A very slow-moving thunderstorm dumped excessive rainfall over a small part of Bollinger County near Marble Hill. The heaviest rain fell just north and west of Marble Hill. Rainfall amounts were estimated up to 2.5 inches in 45 minutes in an isolated spot. Numerous small streams were out of their banks near Marble Hill, and an eighth of a mile of county road was covered with water just outside the Marble Hill city limits.

### **Wayne County**

<b>Patterson</b>	<b>11</b>	<b>1645CST 1845CST</b>			<b>0</b>	<b>0</b>		<b>Flash Flood</b>
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A slow-moving band of thunderstorms produced heavy rain over the part of Wayne County that experienced flash flooding on the 10th. Although the duration of heavy rain was shorter than the previous day, amounts were estimated as high as 2 inches in one hour. Lower water bridges and some secondary roads were flooded along Clarks Creek. Highway 34 was flooded in spots between Piedmont and Patterson.

### **New Madrid County**

<b>New Madrid</b>	<b>11</b>	<b>2215CST 2315CST</b>			<b>0</b>	<b>0</b>		<b>Urban/Sml Stream Fld</b>
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A nearly stationary cluster of thunderstorms produced excessive rainfall over a small part of New Madrid County. The heaviest rainfall occurred just east of New Madrid in the New Madrid Bend area along the Mississippi River. However, amounts as high as 2 inches per hour in the city of New Madrid resulted in minor street flooding.

## MISSOURI, Southwest

### **Barry County**

<b>Exeter</b>	<b>02</b>	<b>2210CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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The county sheriff's office reported that thunderstorm winds downed power lines near Exeter.

### **Barry County**

<b>5 E Cassville</b>	<b>02</b>	<b>2215CST</b>			<b>0</b>	<b>0</b>	<b>1K</b>	<b>Thunderstorm Wind</b>
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The county sheriff's office reported building material from a shed on Hwy 248 east of Cassville.

### **Mcdonald County**

<b>Noel</b>	<b>04</b>	<b>1555CST</b>			<b>0</b>	<b>0</b>	<b>1K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds downed trees just east of Noel.

### **Mcdonald County**

<b>South West City</b>	<b>04</b>	<b>1600CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew tree limbs and power lines down.

### **Mcdonald County**

<b>Pineville</b>	<b>09</b>	<b>1429CST 1438CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.88)</b>
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The county sheriff reported dime to nickel sized hail in and near Pineville.

### **Mcdonald County**

<b>Lanagan</b>	<b>09</b>	<b>1450CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.88)</b>
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The county sheriff's office reported nickel size hail.

### **Howell County**

<b>6 W West Plains</b>	<b>10</b>	<b>1622CST</b>			<b>0</b>	<b>0</b>		<b>Hail (1.00)</b>
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### **Howell County**

<b>West Plains</b>	<b>10</b>	<b>1625CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.88)</b>
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### **Phelps County**

<b>Rolla</b>	<b>10</b>	<b>1640CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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### **Howell County**

<b>West Plains</b>	<b>10</b>	<b>1642CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds knocked down power lines near West Plains.

### **Oregon County**

<b>Thayer</b>	<b>10</b>	<b>1710CST 1715CST</b>			<b>0</b>	<b>0</b>	<b>3K</b>	<b>Tstm Wind/Hail</b>
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Thunderstorm winds knocked 20 to 30 trees down and downed power lines in Thayer. Nickel sized hail was also reported.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Oregon County**

7 NE Myrtle      10      1800CST      0      0      3K      **Thunderstorm Wind**

Power lines and trees were blown down by thunderstorm winds.

### **Howell County**

West Plains      10      1830CST  
2300CST      0      0      **Flash Flood**

County law enforcement reported flooding on several roads in and near West Plains.

### **Howell County**

5 NW West Plains      10      2055CST      0      0      **Hail (0.75)**

### **Howell County**

West Plains      11      1200CST  
1300CST      0      0      **Flash Flood**

A local radio station reported street flooding in West Plains.

### **Lawrence County**

Countywide      13      1130CST  
1230CST      0      0      5K      **Flash Flood**

### **Greene County**

Springfield      13      1245CST  
1315CST      0      0      **Flash Flood**

Thunderstorms produced flash flooding on several roads in Lawrence County. County law enforcement reported a couple of vehicles washed off the road along Highway 97 in Lawrence County. Flooding was also reported on Chestnut Expressway near Interstate 44 in Springfield (Greene County).

### **Cedar County**

Filley      26      2040CST      0      0      1K      **Thunderstorm Wind**

Thunderstorm winds knocked large tree limbs down.

## MONTANA, Central

NOT RECEIVED.

## MONTANA, East

### **Valley County**

12 S Glasgow      01      1654MST      0      0      **Thunderstorm Wind (G52)**

### **Valley County**

5 NW Ft Peck      01      1700MST      0      0      **Hail (1.00)**

### **Valley County**

5 NE Frazer      01      1740MST      0      0      **Thunderstorm Wind (G52)**

### **Roosevelt County**

8 E Bainville      01      1810MST      0      0      **Hail (0.88)**

### **Richland County**

Fairview      01      1840MST      0      0      **Thunderstorm Wind (G52)**

### **Daniels County**

Scobey      01      1850MST      0      0      6K      **Thunderstorm Wind**

A severe thunderstorm moved into Scobey while a concert was going on at the fair grounds. Loud speakers and equipment were blown off of the stage. Power was knocked out in parts of Scobey and the local radio station was off of the air.

### **Sheridan County**

6 W Reserve      01      1855MST      0      0      **Hail (1.75)**

### **Sheridan County**

10 SE Plentywood      01      1910MST      0      0      **Hail (0.75)**

### **Daniels County**

Whitetail      01      1915MST      0      0      **Thunderstorm Wind (G52)**

### **Daniels County**

Flaxville      01      1920MST      0      0      **Thunderstorm Wind (G52)**

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MONTANA, East</u></b>									
<b>Phillips County</b> 5 N Saco	07	2010MST			0	0	3K		<b>Dry Microburst</b>
A spotter north of Saco reported winds to 75 miles an hour. The microburst uprooted cottonwood trees and moved a pick up topper 100 yards.									
<b>McCone County</b> 18 N Circle	10	1242MST			0	0			<b>Hail (0.75)</b>
<b>Richland County</b> 15 NW Enid	10	1315MST			0	0			<b>Hail (0.88)</b>
<b>Roosevelt County</b> Poplar	10	1320MST			0	0			<b>Hail (0.75)</b>
<b>Roosevelt County</b> 22 N Brockton	10	1345MST			0	0			<b>Hail (1.75)</b>
<b>Dawson County</b> 12 NE Bloomfield	10	1420MST			0	0			<b>Hail (0.75)</b>
<b>Richland County</b> 12 W Crane	10	1430MST			0	0			<b>Hail (0.75)</b>
<b>Dawson County</b> Glendive	10	1450MST			0	0			<b>Hail (0.88)</b>
<b>Daniels County</b> Whitetail	10	1500MST			0	0		6K	<b>Thunderstorm Wind</b>
Strong winds and half inch hail destroyed a wheat field which was ready to be harvested.									
<b>Dawson County</b> 2 W Glendive	10	1500MST			0	0	2K		<b>Thunderstorm Wind</b>
Severe thunderstorm winds blew over a small steel building onto a flatbed trailer. Large hay bales were blown around and trees were blown over.									
<b>McCone County</b> 9 N Vida	13	1755MST			0	0	1K		<b>Thunderstorm Wind</b>
A roof was blown off of a small machine shed.									
<b>McCone County</b> 1 NW Vida	13	1800MST			0	0			<b>Hail (1.00)</b>
<b>McCone County</b> 6 NW Vida	13	1807MST			0	0			<b>Hail (0.75)</b>
<b>Roosevelt County</b> 2 W Brockton	14	0215MST			0	0			<b>Hail (0.75)</b>
<b>Richland County</b> 20 NW Lambert	14	0230MST			0	0			<b>Hail (0.75)</b>
<b>McCone County</b> 10 SE Vida	15	0015MST			0	0			<b>Hail (0.88)</b>
<b>Valley County</b> 15 N Hinsdale	17	1945MST			0	0			<b>Thunderstorm Wind (G52)</b>
<b>Valley County</b> 1 E Hinsdale	17	2000MST			0	0			<b>Thunderstorm Wind (G50)</b>
A tourist driving east on Highway 2 reported almost losing control of his vehicle in high winds.									
<b>Valley County</b> 35 N Hinsdale	17	2000MST			0	0			<b>Thunderstorm Wind (G62)</b>
<b>Valley County</b> 8 E Larslan	17	2120MST			0	0			<b>Hail (0.75)</b>
<b>Sheridan County</b> 7 E Reserve	21	1721MST			0	0			<b>Hail (1.00)</b>

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MONTANA, East</u></b>									
<b>Sheridan County</b>									
7 E Reserve	21	1732MST			0	0			Hail (1.75)
<b>Sheridan County</b>									
5 N Dagmar	21	1735MST			0	0			Hail (1.00)
<b>Sheridan County</b>									
5 E Dagmar	21	1803MST			0	0			Hail (0.75)
<b>McCone County</b>									
12 NNW Weldon	22	0015MST			0	0			Hail (0.75)
<b>Prairie County</b>									
2 NW Terry	22	1815MST			0	0			Thunderstorm Wind (G52)
<b>Richland County</b>									
14 NE Lambert	26	1814MST			0	0			Hail (0.75)
<b>Richland County</b>									
7 NE Lambert	26	1820MST			0	0			Hail (0.75)
<b>Richland County</b>									
Sidney	26	1839MST			0	0			Hail (0.75)
<b>Richland County</b>									
Sidney	26	1843MST			0	0			Hail (1.00)
<b>Sheridan County</b>									
Westby	26	1843MST			0	0			Hail (0.75)
<b>Richland County</b>									
15 W Nohly	26	1925MST			0	0			Hail (0.75)
<b><u>MONTANA, South</u></b>									
<b>Carter County</b>									
20 W Alzada	01	1620MST			0	0			Hail (1.00)
Marble to quarter sized hail was reported by a spotter.									
<b>Powder River County</b>									
Biddle	10	1253MST			0	0			Thunderstorm Wind (G52)
<b>Powder River County</b>									
7 N Biddle	10	1255MST			0	0			Thunderstorm Wind (G52)
Two spotters in the Biddle area reported 60 mph wind gusts from a thunderstorm.									
<b>Musselshell County</b>									
Roundup	14	1815MST 1905MST			0	0	10K		Thunderstorm Wind
A strong thunderstorm downed several trees and a few power lines in and around Roundup.									
<b>Carbon County</b>									
Boyd	15	1430MST 1530MST			0	0	1K		Thunderstorm Wind
Two trees were downed around Boyd during a thunderstorm.									
<b>Sweet Grass County</b>									
4 SE Greycliff	17	1900MST			0	0			Wild/Forest Fire
	18	1700MST							
<b>Sweet Grass County</b>									
6 SW Greycliff	17	1900MST			0	0			Wild/Forest Fire
	18	1700MST							
Dry lightning set off two wildfires in Sweet Grass County. One near Bridger Creek southeast of Greycliff burned 320 acres. The other burned 80 acres near Dear Creek southwest of Greycliff.									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MONTANA, South</u></b>									
<b>Yellowstone County</b>									
18 S Billings	18	1500MST 1900MST			0	0			Wild/Forest Fire
Dry lightning set off a wildfire on Prior Creek Road on the Crow Indian Reservation which burned 25 acres of grassland and timber.									
<b>Carter County</b>									
30 W Alzada	20	1450MST			0	0			Hail (1.00)
<b>Fallon County</b>									
3 S Plevna	20	1545MST			0	0			Hail (0.75)
<b>Carter County</b>									
Countywide	20	1500MST 2200MST			0	0			Flash Flood
<b>Fallon County</b>									
Countywide	20	1500MST 2200MST			0	0			Flash Flood
Slow moving thunderstorms produced up to five inches of rainfall over Fallon and Carter Counties. Both Russell Creek and Box Elder Creek were running at or near bankfull. Highway 12 was reported closed because of flooding between Baker and Plevna, and water was reported over the road 10 miles Southeast of Ekalaka.									
<b>Big Horn County</b>									
1 NW Crow Agency	22	1449MST 1502MST			0	0			Hail (1.00)
<b>Rosebud County</b>									
6 S Birney to Birney	22	1600MST 1602MST			0	0	5K		Hail (0.75)
Several trees were reported damaged by hail and thunderstorm wind gusts.									
<b>Powder River County</b>									
Broadus	22	1700MST			0	0			Thunderstorm Wind (G52)
<b>Rosebud County</b>									
Rock Spgs	22	1736MST			0	0			Thunderstorm Wind (G66)
<b>Carter County</b>									
Ekalaka	22	1750MST			0	0			Thunderstorm Wind (G61)
<b>Carter County</b>									
30 N Alzada	22	1800MST			0	0			Thunderstorm Wind (G52)
<b>Carter County</b>									
12 SE Ekalaka	22	1820MST			0	0			Thunderstorm Wind (G52)
<b>Fallon County</b>									
Baker	22	1820MST			0	0			Thunderstorm Wind (G54)
Wind gusts to 62 mph knocked KFLN radio off the air for a brief period.									
<b>Musselshell County</b>									
10 S Roundup	23	1916MST			0	0			Hail (1.75)
<b>Treasure County</b>									
9 S Bighorn to 13 SE Bighorn	23	2045MST 2100MST	7	50	0	0	100K		Tornado (F0)
<b>Treasure County</b>									
20 SW Hysham to 23 SE Hysham	23	2100MST 2115MST	7	50	0	0	200K		Tornado (F0)
Two small tornadoes in Treasure County knocked down several trees, antennas and power poles. One power pole which contained a transformer started some fires after it fell. The tornadoes also damaged some houses and sheds.									
<b>Treasure County</b>									
12 S Hysham	23	2113MST			0	0			Hail (0.75)
<b>Yellowstone County</b>									
Pompeys Pillar	23	2118MST			0	0			Thunderstorm Wind (G61)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MONTANA, South</u></b>									
<b>Rosebud County</b>									
Colstrip	23	2135MST			0	0	1K		Thunderstorm Wind
									Some windows were damaged at a residence.
<b>Rosebud County</b>									
12 NW Colstrip	23	2150MST			0	0			Hail (0.75)
<b>Rosebud County</b>									
12 NW Colstrip	23	2150MST			0	0			Thunderstorm Wind (G52)
<b>Treasure County</b>									
5 S Bighorn	23	2204MST			0	0			Thunderstorm Wind (G52)
<b>Rosebud County</b>									
15 NE Colstrip	23	2216MST			0	0			Hail (0.88)
<b>Treasure County</b>									
Hysham	23	2225MST			0	0			Thunderstorm Wind (G52)
									A Montana State Highway patrolman reported a 60 mph wind gust in the Hysham Hills area.
<b>Carter County</b>									
7 SE Ekalaka	23	2315MST			0	0			Hail (0.75)
<b>Carter County</b>									
15 W Alzada	26	1804MST			0	0			Hail (1.75)
<b>Carter County</b>									
Alzada	26	1825MST			0	0			Hail (0.88)
<b><u>MONTANA, West</u></b>									
<b>Deer Lodge County</b>									
Anaconda	06	2330MST			0	0			Thunderstorm Wind (G61)
									Wind gusts estimated up to 70 mph broke windows and tore siding off a few homes. Highway signs were also knocked over.
<b>Deer Lodge County</b>									
13 WNW Anaconda	07	1420MST			0	0			Hail (1.75)
									Public called KXLF in Butte and reported golf ball sized hail near Georgetown Lake between 320 PM and 330 PM MDT.
<b>Mineral County</b>									
Superior	20	1707MST			0	0			Hail (1.00)
<b>Missoula County</b>									
(Mso)Missoula Intl A	22	0040MST			0	0			Hail (0.75)
<b>Lake County</b>									
Arlee	22	0045MST			0	0			Thunderstorm Wind (G50)
<b><u>NEBRASKA, Central</u></b>									
<b>Hooker County</b>									
15 SW Mullen	02	1500MST			0	0			Hail (0.75)
<b>Garden County</b>									
23 NNE Lisco	09	1850MST			0	0			Hail (0.75)
<b>Hayes County</b>									
3 WSW Hamlet	09	2200CST			0	0			Hail (0.75)
<b>Sheridan County</b>									
13 SSE Hay Spgs	11	1345MST			0	0	5K		Hail (1.75)
									Golfball size hail damaged rangeland.
<b>Cherry County</b>									
50 S Merriman	11	1430MST			0	0			Hail (0.75)
<b>Sheridan County</b>									
14 NNW Antioch	11	1445MST			0	0			Hail (0.88)
<b>Garden County</b>									
33 N Lisco to 6 S Lisco	11	1515MST			0	0	5K		Thunderstorm Wind
									Thunderstorm winds blew down several large branches.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>NEBRASKA, Central</b>									
<b>Garden County</b> 9 NNE Oshkosh	11	1515MST			0	0	10K	10K	Hail (1.75)
									Golfball size hail accompanied by strong winds damaged buildings, vehicles, and crops.
<b>Garden County</b> Oshkosh	11	1625MST			0	0			Hail (0.75)
<b>Deuel County</b> 6 SE Chappell	11	1800MST			0	0			Hail (1.00)
<b>Holt County</b> 18 NNE Atkinson	14	1508CST			0	0	5K	10K	Hail (1.75)
									Golfball hail damaged buildings and destroyed crops.
<b>Rock County</b> 4 W Rose	14	1600CST			0	0			Hail (1.00)
<b>Holt County</b> 5 S Chambers	14	1642CST			0	0			Hail (0.75)
<b>Blaine County</b> 10 S Brewster	14	1645CST			0	0			Hail (0.75)
<b>Blaine County</b> 3 SE Dunning	14	1700CST			0	0			Hail (1.00)
<b>Custer County</b> 13 NW Anselmo	14	1735CST			0	0			Hail (0.75)
<b>Logan County</b> 16 NE Stapleton	14	1815CST			0	0			Hail (0.75)
<b>Rock County</b> 19 NE Rose	14	1820CST			0	0			Hail (0.88)
<b>Holt County</b> 18 SW Atkinson	14	1825CST			0	0			Hail (0.88)
<b>Logan County</b> Stapleton	14	1855CST			0	0	200K	25K	Hail (1.75)
									Golfball size hail accompanied by 50 to 60 mph winds caused extensive damage to buildings and vehicles in and around Stapleton. Considerable crop damage near Stapleton.
<b>Lincoln County</b> 5 NNE Hershey	14	2000CST			0	0		25K	Hail (1.50)
									Half dollar size hail heavily damaged corn.
<b>Lincoln County</b> 2 NW Hershey	14	2015CST			0	0			Hail (1.00)
<b>Perkins County</b> 11 NNW Grant	19	1305MST			0	0			Hail (0.88)
<b>Brown County</b> 11 S Johnstown	19	1510CST			0	0	10K		Hail (1.00)
									Thunderstorm winds downed several large trees.
<b>Chase County</b> 11 N Wauneta	19	1515MST			0	0			Hail (0.75)
<b>Brown County</b> 20 S Johnstown	19	1525CST			0	0	5K		Thunderstorm Wind
									Large tree blown down.
<b>Keya Paha County</b> 18 E Springview	19	1530CST			0	0			Hail (0.75)
<b>Rock County</b> 9 SW Bassett	19	1605CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NEBRASKA, Central</u></b>									
<b>Hayes County</b>									
16 WNW Hayes Center	19	1610CST			0	0			Hail (1.25)
<b>Brown County</b>									
18 S Johnstown	19	1615CST			0	0			Hail (0.75)
<b>Keya Paha County</b>									
23 NE Springview	19	1630CST			0	0	5K		Hail (1.75)
<b>Rock County</b>									
5 NE Newport	19	1640CST			0	0			Hail (0.75)
<b>Lincoln County</b>									
7 SSW Hershey	19	1650CST			0	0	10K		Hail (1.50)
<b>Lincoln County</b>									
Hershey	19	1710CST			0	0			Hail (1.00)
<b>Rock County</b>									
4 NE Rose	19	1745CST			0	0			Hail (0.75)
<b>Boyd County</b>									
3 NW Lynch	19	1747CST			0	0			Hail (0.75)
<b>Logan County</b>									
Stapleton	19	1758CST			0	0			Thunderstorm Wind (G52)
<b>Blaine County</b>									
1 N Brewster	19	1800CST			0	0			Hail (0.75)
<b>Custer County</b>									
10 SE Oconto	20	1500CST			0	0			Hail (0.88)
<b>Garden County</b>									
20 N Oshkosh	23	2300MST			0	0	50K		Lightning
									Lightning started several grass fires destroying over 3500 acres of rangeland on numerous ranches.
<b>Garfield County</b>									
17 ENE Burwell	24	0255CST			0	0	5K		Thunderstorm Wind
									Several large trees uprooted.
<b>Wheeler County</b>									
15 NW Bartlett	24	0320CST			0	0	5K		Thunderstorm Wind
									Several large tree limbs blow n down.
<b><u>NEBRASKA, East</u></b>									
<b>Antelope County</b>									
6 N Orchard	14	1745CST			0	0			Hail (1.00)
									Hail covered the ground.
<b>Knox County</b>									
13 WSW Creighton	14	1807CST			0	0			Hail (1.75)
<b>Antelope County</b>									
9 NE Brunswick	14	1858CST			0	0			Hail (1.00)
<b>Knox County</b>									
5 SE Creighton	14	1900CST			0	0			Hail (0.75)
<b>Pierce County</b>									
4 N Plainview	14	1900CST			0	0			Hail (2.00)
<b>Knox County</b>									
3 E Creighton	14	1905CST			0	0			Hail (1.75)
<b>Pierce County</b>									
5 N Plainview	14	1905CST			0	0			Hail (1.75)
<b>Wayne County</b>									
1 SE Wakefield	14	2020CST			0	0			Hail (0.75)



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>NEBRASKA, East</b>									
<b>Thurston County</b>									
2 S Emerson	14	2030CST			0	0			Hail (0.75)
<b>Madison County</b>									
Madison	20	1615CST			0	0			Hail (0.75)
<b>Boone County</b>									
Albion	20	1627CST			0	0			Hail (1.50)
<b>Stanton County</b>									
Stanton	20	1630CST			0	0			Hail (0.75)
<b>Boone County</b>									
St Edward	20	1630CST			0	0			Thunderstorm Wind (G60)
									Several trees and numerous large limbs downed.
<b>Platte County</b>									
Humphrey	20	1715CST			0	0			Thunderstorm Wind (G50)
									Large tree limbs down plus some damage to crops and buildings around Humphrey.
<b>Douglas County</b>									
Valley	20	1725CST			0	0			Thunderstorm Wind (G53)
<b>Douglas County</b>									
Bennington	20	1739CST			0	0			Thunderstorm Wind (G56)
<b>Sarpy County</b>									
Chalco	20	1817CST			0	0			Thunderstorm Wind (G59)
<b>NEZ042</b>									
		<b>Platte</b>							
	20	2000CST			0	0			Flood
	21	1000CST							
									Flooding of highway spur into Humphrey from 4.75 to 5.25 inches of rain that fell on the evening of 8/20/98.
<b>Douglas County</b>									
Omaha	20	2155CST			0	0			Lightning
									Numerous lightning strikes knocked the power out for 15,000 OPPD customers.
<b>Sarpy County</b>									
Offutt Afb	20	2255CST			0	0			Thunderstorm Wind (G73)
<b>Sarpy County</b>									
15 W Bellevue	20	2310CST			0	0			Lightning
									Lightning struck 911 transmitter forcing sheriffs department to use cell phones for 20 minutes.
<b>Saunders County</b>									
Countywide	21	0005CST 0200CST			0	0			Flash Flood
									Six inches of rain in the Wahoo area caused flash flooding which briefly closed highway 77 1 mile north of Wahoo, highway 92 1 mile west of Wahoo and 1st st. in Wahoo.
<b>NEZ032</b>									
		<b>Stanton</b>							
	21	0600CST 1200CST			0	0			Flood
									Flooding of Maple Creek 8 miles south of Stanton closed one lane of highway 32 in addition to several county roads.
<b>Saunders County</b>									
Prague	21	0639CST			0	0			Flash Flood
									Sand Creek out of its banks in Prague area.
<b>Richardson County</b>									
Verdon	27	1530CST			0	0	8K		Thunderstorm Wind
									Thunderstorm winds tore corner of a roof off of a home in addition to uprooting several trees.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## NEBRASKA, Extreme Northeast

NONE REPORTED.

## NEBRASKA, Extreme Southwest

### **Dundy County**

Benkelman	11	2100MST							Thunderstorm Wind (G58)
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Winds caused porch to collapse at one home and damaged a deck on a mobile home. Numerous 1" diameter branches broken in Benkelman.

### **Dundy County**

15 N Max	19	1530MST							Hail (1.00)
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Corn was stripped from the Hail.

### **Red Willow County**

6.5 S Bartley	20	1940CST							Tstm Wind/Hail
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A few 4-5 inch diameter tree branches broken during event.

### **Hitchcock County**

4 W Stratton	20	2010CST							Hail (1.00)
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## NEBRASKA, South Central

### **Sherman County**

Loup City	02	1930CST			0	0	0	0	Thunderstorm Wind (G52)
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### **Gosper County**

6 N Elwood	02	1937CST			0	0	0	0	Thunderstorm Wind (G52)
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### **Phelps County**

Bertrand	02	1945CST			0	0	5K	200K	Thunderstorm Wind (G52)
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### **Gosper County**

14 S Smithfield	02	2020CST			0	0	0	0	Hail (0.75)
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### **Kearney County**

Axtell	02	2032CST			0	0	0	0	Thunderstorm Wind (G52)
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### **Adams County**

1 S Prosser	02	2105CST			0	0	0	200K	Thunderstorm Wind (G52)
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### **Adams County**

1 W Juniata	02	2110CST			0	0	50K	200K	Hail (0.75)
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### **Adams County**

Hastings	02	2132CST			0	0	0	2K	Thunderstorm Wind (G52)
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### **Clay County**

Edgar	02	2148CST			0	0	0	200K	Thunderstorm Wind (G52)
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Scattered thunderstorms pushed southeast across south-central Nebraska during the late evening hours. Strong winds and some hail accompanied the storms. A large tree limb fell on a roof in Hastings causing some minor damage. In Kenesaw, one and one-half inches of rain fell in less than 40 minutes.

### **Sherman County**

6 N Loup City	20	1440CST			0	0	50K	5K	Thunderstorm Wind (G55)
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### **Sherman County**

1 N Ashton	20	1530CST			0	0	300K	10K	Thunderstorm Wind (G69)
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An isolated down burst wind from a severe thunderstorm toppled trees and some power lines just north of Ashton. Corn fields near the down burst sustained minor stalk breakage and some hail damage by the small hail and wind which pelted the area.

### **Merrick County**

1 N Central City	21	0030CST			0	0	75K	5K	Thunderstorm Wind (G69)
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## NEBRASKA, West

### **Dawes County**

11 SW Chadron	08	1715MST			0	0	0	0	Thunderstorm Wind (G52)
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# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b><u>NEBRASKA, West</u></b>									
<b>Dawes County</b> 10 S Chadron	08	1725MST 1734MST			0	0	5K	0	Hail (1.75)
			A storm produced golfball size hail in Chadron State Park.						
<b>Dawes County</b> 7 SE Chadron	08	1747MST 1758MST			0	0	0	0	Hail (0.75)
<b>Cheyenne County</b> Dalton	09	1745MST 1746MST			0	0	0	0	Thunderstorm Wind (G52)
<b>Cheyenne County</b> 6 NE Gurley	14	2050MST			0	0	0	0	Thunderstorm Wind (G65)
<b>Cheyenne County</b> 8 N Lodgepole	14	2118MST 2123MST			0	0	0	0	Hail (0.75)
<b>Kimball County</b> 15 SE Kimball	16	1630MST 1830MST			0	0	0	0	Wild/Forest Fire
			Lightning touched off a grass fire which burned 80 acres of conservation grassland, 15 miles southeast of Kimball. The fire took firefighters 2 hours to extinguish it.						
<b>Dawes County</b> 12 ENE Chadron	19	1315MST 1440MST			0	0	0	0	Wild/Forest Fire
			A fire, which was caused by lightning, burned 10 acres of grass and small timber before being controlled by firefighters.						
<b><u>NEVADA, North</u></b>									
<b>Elko County</b> Currie	25	1318PST 1325PST			0	0			Thunderstorm Wind (G50)
			A severe thunderstorm produced wind gusts to 58 mph at Spruce Mountain, 40 miles southeast of Elko.						
<b>White Pine County</b> Cherry Creek	25	1509PST 1515PST			0	0			Thunderstorm Wind (G52)
			A severe thunderstorm produced wind gusts to 60 mph at Bald Mountain Mine, 30 miles west of Cherry Creek.						
<b><u>NEVADA, South</u></b>									
<b>Clark County</b> Las Vegas N Air Term	07	1330PST			0	0	40K		Thunderstorm Wind (G55)
			Damaging winds from a nearby thunderstorm overturned two small planes at the North Las Vegas Airport and knocked down a few power poles at the intersection of Craig Road and Rancho Drive.						
<b>Clark County</b> Mead Lake	07	1403PST			0	1	5K		Thunderstorm Wind
<b>Clark County</b> Logandale	07	1430PST			0	0			Hail (1.75)
<b>Clark County</b> Mead Lake	07	1445PST			0	0	10K		Thunderstorm Wind
			Severe thunderstorms ripped through the Lake Mead National Recreation Area capsizing at least two boats and producing golfball sized hail near Logandale. A man in a capsized boat at Las Vegas Bay sustained minor injuries and had to be rescued by the Park Service. Six people from another boat near Callville Bay also had to be pulled from the water when their vessel overturned.						
<b>Clark County</b> Las Vegas	07	1449PST			0	0			Thunderstorm Wind (G53)
			A 61 mph thunderstorm wind gust was recorded by the ASOS at McCarran International Airport.						
<b>Clark County</b> 8 S Jean	14	1702PST			0	1			Lightning
			A motorcyclist was critically injured when he was struck by lightning while riding on Interstate 15 near Primm.						

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>NEVADA, South</b>									
<b>Clark County</b>									
North Las Vegas	14	1900PST			0	0	50K		Thunderstorm Wind
<b>Clark County</b>									
Las Vegas	14	1905PST			0	0			Thunderstorm Wind (G57)
<b>Clark County</b>									
Apex	14	1930PST			0	0			Thunderstorm Wind (G63)
<b>Clark County</b>									
North Las Vegas	14	1945PST 2100PST			0	0			Flash Flood
<b>Clark County</b>									
Las Vegas	14	2015PST			0	0	5K		Lightning
An intense cluster of thunderstorms produced high winds, locally heavy rain and an impressive lightning display as they rolled through the Las Vegas Valley. Several roofs were blown off mobile homes on east Craig Road in North Las Vegas and gusts up to 72 mph were measured at Apex. Firefighters had to rescue at least five motorists stranded by flash flood waters in the area of Cheyenne Avenue and Las Vegas Boulevard. Lightning strikes damaged several transformers, temporarily cutting electricity to about 7,200 people. Lightning also struck a home in the northwest area of Summerlin causing minor damage.									
<b>Clark County</b>									
Mead Lake	14	1900PST 2100PST			0	0	100K		Flash Flood
<b>Clark County</b>									
Mead Lake	14	1935PST			0	0	75K		Thunderstorm Wind
<b>Clark County</b>									
Mead Lake	14	2000PST			0	0			Thunderstorm Wind (G52)
Damaging winds and severe flash flooding ripped through the western part of Lake Mead. Las Vegas Bay Marina's service dock and main access dock were blown apart resulting in approximately 100 gallons of fuel spilled. Callville Bay Marina also sustained substantial damage from the winds. Flash flooding washed out all approved roads near Callville Bay and produced major erosion around culverts along a section of North Shore Road. Washes between Las Vegas Bay and Callville Bay were filled bank-to-bank with up to 16 feet of water. 30 people at Boxcar Wash (near Callville Bay) were temporarily stranded and had to be rescued by Park Rangers due to flash flooding.									
<b>Clark County</b>									
Cottonwood Lndg	15	1615PST			0	0			Flash Flood
<b>Clark County</b>									
5 N Searchlight	15	1615PST			0	0			Flash Flood
Heavy rain showers produced flash flooding which temporarily closed U.S. Highway 95 near Searchlight and the access road to Cottonwood Cove on Lake Mohave. No serious damage was reported.									
<b>Clark County</b>									
Henderson	24	1310PST			0	0			Thunderstorm Wind (G52)
A thunderstorm developing over the McCullough Range, just south of Green Valley, turned severe as it rolled into Henderson. The Henderson police department reported wind gusts up to 60 mph. Brief heavy rain produced pooling water up to 6 inches deep in some intersections and at the underpass of Lake Mead Drive and Interstate 515. About 3,000 homes and businesses also lost electricity for an hour or two.									
<b>Clark County</b>									
5 W Searchlight	25	1430PST			0	0	40K		Flash Flood
A large area of Highway 164 was flooded west of Searchlight. Road crews reported several miles of debris and shoulder erosion. It was estimated that road repairs would take a couple of weeks.									
<b>Clark County</b>									
Mead Lake	30	1550PST			0	0	1K		Thunderstorm Wind (G61)
The National Park Service reported a 70 mph wind gust and light damage to some boat docks at Las Vegas Bay Marina.									
<b>Lincoln County</b>									
Ursine	30	1640PST			0	0			Flash Flood
<b>Lincoln County</b>									
8 N Pioche	30	1706PST			0	0			Flash Flood
Strong thunderstorms producing heavy rain caused flash flooding in northeast Lincoln County. The Sheriff's Office reported flooding across Highway 322 near Ursine. A weather spotter near Pioche reported an alfalfa field had been flooded as 1.60 inches									

# Storm Data and Unusual Weather Phenomena

August 1998

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

## NEVADA, South

of rain fell in less than an hour.

### **Nye County** Pahrump

30	1725PST					0	0	15K	Thunderstorm Wind
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The Nye County Sheriff reported thunderstorm winds had downed three power poles and blown a roof off a mobile home.

### **Clark County** Las Vegas

30	1855PST					0	0	20K	Thunderstorm Wind
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High winds knocked down several power lines as thunderstorms rolled across the Las Vegas Valley. Brief power outages resulted throughout the city.

## NEVADA, West

NONE REPORTED.

## NEW HAMPSHIRE, North and Central

NOT RECEIVED.

## NEW HAMPSHIRE, Southern

### **Hillsborough County**

Milford

11	1945EST					0	0		Hail (0.75)
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NHZ012

### **Hillsborough**

11	1950EST					0	0		Strong Wind
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An early evening thunderstorm brought some gusty winds and hail to a few towns in Hillsborough County. A spotter in Milford reported pea to penny size hail, which accumulated on the ground. Strong winds blew down tree limbs onto wires and roadways in Hudson and lightning knocked out a communication system in Nashua. Scattered power outages were reported in the Nashua area.

NHZ012

### **Hillsborough**

24	1555EST					0	0		Strong Wind
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A thunderstorm brought gusty winds to 40 to 50 mph, which resulted in a few power outages.

### **Hillsborough County**

Weare

25	1611EST					0	0		Thunderstorm Wind (G50)
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Wind damage was reported in Weare in Hillsborough County. Trees limbs and wires were reported blown down, as per the local fire department.

## NEW JERSEY, Northeast

### **Essex County**

Southeast Portion

17	1400EST					0	0		Flood
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### **Union County**

Southeast Portion

17	1400EST					0	0		Flood
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### **Hudson County**

East Portion

17	1405EST					0	0		Flood
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As thunderstorms moved over the same area, they produced heavy rain for long periods of time.

The heaviest rain, which fell in a band from Southeast Union County northeast across Eastern Hudson County caused widespread flooding of streets, low-lying, and poor drainage areas.

Rain fell at rates up to 1 and 1/2 inches per hour. At both Newark Airport and in Elizabeth, 2.69 inches of rain fell.

## NEW JERSEY, South and Northwest

NOT RECEIVED.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b><u>NEW MEXICO, Central and North</u></b>									
<b>Chaves County</b> 6 NW Roswell	01	1400MST 1700MST			0	0	2K		Heavy Rain
									A slow moving thunderstorm northwest of Roswell produced about 3.00 inches of rain and brief flooding of one rural home.
<b>San Miguel County</b> 6 SE Las Vegas	03	1255MST 1300MST	0.1	30	0	0			Tornado (F0)
									Several funnel clouds were reported during a five minute period near McAlister Lake. A brief tornado touchdown overturned a cattle feeder.
<b>Mora County</b> Watrous to Valmora	03	1400MST			0	0			Hail (1.00)
									Quarter size hail was reported in both Watrous and Valmora.
<b>Guadalupe County</b> Anton Chico	03	1415MST			0	0			Hail (0.75)
<b>Socorro County</b> 8 SE Magdalena	04	1315MST			0	0			Funnel Cloud
									A funnel cloud was spotted from the Langmuir Lightning Research Lab in the Magdalena mountains.
<b>Quay County</b> San Jon	04	1820MST			0	0			Funnel Cloud
<b>Quay County</b> San Jon	04	1829MST	0.1	30	0	0			Tornado (F0)
									A brief tornado touchdown was noted by several observers.
<b>Socorro County</b> Sabinal	04	1930MST 2100MST			0	0	5K		Heavy Rain
									An irrigation ditch broke and caused flooding of 6 homes during heavy rain of near 2-3 inches.
<b>Colfax County</b> Colfax	09	1325MST			0	0			Hail (0.75)
<b>Union County</b> 5 NW Clayton	10	1732MST			0	0			Hail (1.75)
<b>De Baca County</b> 10 NW Ft Sumner	10	1755MST			0	0			Thunderstorm Wind (G61)
									Gusts estimated at 70 mph were reported by ranchers and spotters northwest of Fort Sumner.
<b>Guadalupe County</b> 8 W Santa Rosa	11	1335MST			0	0			Hail (0.75)
<b>Santa Fe County</b> Santa Fe	12	1630MST			0	1			Lightning
									A 44-year old man was resuscitated by coworkers after suffering a near fatal, single lightning strike while working on a church roof.
<b>San Miguel County</b> Conchas Dam	19	1900MST 2130MST			0	0			Flash Flood
									Three and one-half inches of rain in several hours caused large areas of standing water and closed roads around Conchas.
<b>Bernalillo County</b> Albuquerque	25	1830MST 2000MST			0	0	50K		Heavy Rain
									Heavy rain produced extensive street flooding and damaged business and homes in the South Valley section of Albuquerque.
<b>Catron County</b> 7 SW Reserve	28	1615MST			0	0			Hail (1.00)

# Storm Data and Unusual Weather Phenomena

August 1998

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

## NEW MEXICO, Central and North

### **Catron County**

<b>Reserve</b>	<b>28</b>	<b>1635MST 1800MST</b>			<b>0</b>	<b>0</b>	<b>150K</b>	<b>Flash Flood</b>
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Heavy damage was reported at the Catron County Fairgrounds following torrential rain of 2.5 inches in about an hour. Early warnings from the National Weather Service allowed county officials to evacuate 6 homes well ahead of the water and debris flow. Unusual for western New Mexico, this severe storm also produced large hail.

### **Santa Fe County**

<b>Santa Fe</b>	<b>30</b>	<b>2030MST</b>			<b>0</b>	<b>1</b>		<b>Lightning</b>
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A 30-year old man was struck by lightning when he left his residence as a thunderstorm faded.

## NEW MEXICO, South Central and Southwest

### **Sierra County**

<b>Kingston</b>	<b>04</b>	<b>1243MST 1250MST</b>			<b>1</b>	<b>0</b>		<b>Hail (1.00)</b>
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F65PH

### **Otero County**

<b>Alamogordo</b>	<b>04</b>	<b>1635MST 1715MST</b>			<b>0</b>	<b>0</b>		<b>Thunderstorm Wind (G100)</b>
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A line of strong thunderstorms accompanied by very strong winds moved through the Alamogordo area during the late afternoon and early evening hours. Wind gusts of 112 mph were reported from at least one automated sensor site on the White Sands Missile Range and winds of at least 75 mph were reported at Holloman AFB before the station's wind equipment broke. Considerable tree damage was noted around the area however damage to structures was limited. The worst damage was found in the Alamogordo subdivision of Bolles Acres. The back porch/deck of a residence was destroyed, as was a 20 foot long trailer, and a small barn constructed of sheet metal on a 2X4 frame. Debris from the barn was carried about 100 yds and struck a site-built stucco home with enough force to penetrate an exposed wall and protrude into the inside of the structure.

## NEW MEXICO, Southeast

### **NMZ027>029**

#### **Guadalupe Mountains Of Eddy County - Eddy County Plains - Lea**

<b>01</b>	<b>0000MST</b>			<b>0</b>	<b>0</b>			<b>Drought</b>
<b>31</b>	<b>2359MST</b>							

A severe drought continues across the region. Damage estimates will be compiled after the fall harvest.

## NEW YORK, Central

### **Cayuga County**

<b>Kings Ferry to Venice Center</b>	<b>24</b>	<b>0630EST 0640EST</b>			<b>0</b>	<b>0</b>	<b>15K</b>	<b>Thunderstorm Wind</b>
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A thunderstorm intensified to severe limits early in the morning across southern portions of the county. Numerous trees and wires were downed in both King's Ferry and Venice Center between 730 and 740 am EDT.

### **Onondaga County**

<b>Lysander to Manlius</b>	<b>24</b>	<b>0630EST 0652EST</b>			<b>0</b>	<b>0</b>	<b>175K</b>	<b>Thunderstorm Wind</b>
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A short, but intense squall line moved into northwestern sections of the county around 730 am EDT. From there, a line of severe thunderstorms plowed eastward across the northern communities of the county, including the Syracuse metropolitan area. Widespread wind damage resulted.

In the town of Lysander, several trees were toppled and/or uprooted. Two trees reportedly fell upon a parked vehicle and caused extensive damage. Just to the southeast in Van Buren Township, the roof was blown off of a barn. Three adjacent silos were also heavily damaged. From northern sections of Syracuse straight across to Manlius, dozens of trees were blown down. Several roads had to be closed until crews could clear fallen debris and repair damaged traffic signals. In Manlius, two trees and a utility pole were toppled onto a house. Heavy damage was sustained in the home's front porch and garage areas.

As the cell moved to the Onondaga/Madison county line, it began to weaken.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## NEW YORK, Central

### **Steuben County**

<b>Howard to Savona</b>	<b>24</b>	<b>1035EST 1055EST</b>			<b>0</b>	<b>0</b>	<b>45K</b>		<b>Thunderstorm Wind</b>
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A line of thunderstorms became severe over central portions of the county during the late morning hours. Widespread wind damage was the result.

Several large trees and power lines were downed in the towns of Jasper and Howard as the line of storms moved through from 1135 to 1140 am EDT. In Jasper, portions of route 72 had to be closed for about an hour while crews cleared fallen debris. Further east from Bath through Savona, more trees were toppled and additional road closures came about. Most notably, route 13 through downtown Bath was blocked by large tree limbs.

As the southern end of the squall line moved into eastern sections of the county, it began to weaken.

### **Schuyler County**

<b>Townsend to Mecklenburg</b>	<b>24</b>	<b>1100EST 1115EST</b>			<b>0</b>	<b>0</b>	<b>65K</b>		<b>Thunderstorm Wind</b>
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The same line of severe thunderstorms that affected Steuben county earlier moved into Schuyler county and produced more widespread wind damage for the midday period.

As the storms entered western sections of the county, dime sized hail was observed by a skywarn spotter in Townsend and 70 mph winds were also recorded by this individual. Further east, many trees were downed in Tyrone, Watkins Glen, and Montour Falls. Several streets were littered with large tree limbs, fallen wires, and in some cases damaged traffic signals. Finally, additional trees and power lines were felled in Mecklenburg as the storms ripped through far eastern portions of the county.

### **Tompkins County**

<b>Trumansburg to Dryden</b>	<b>24</b>	<b>1120EST 1145EST</b>			<b>0</b>	<b>0</b>	<b>80K</b>		<b>Thunderstorm Wind</b>
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Severe thunderstorms continued eastward from Schuyler county and across the northern tier communities of Tompkins county. A swath of wind damage in the form of downed trees, power lines, and road signs was inflicted from Trumansburg in the far northwestern corner of the county eastward across the Ithaca area and into Groton and Dryden. A couple of homes in Dryden sustained minor roof and siding damage as they were hit by falling trees.

Once the storms approached the Tompkins/Cortland county line, they began to weaken temporarily.

### **Madison County**

<b>Lebanon</b>	<b>24</b>	<b>1213EST</b>			<b>0</b>	<b>0</b>		<b>Hail (1.00)</b>
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A thunderstorm strengthened to severe limits over far southern portions of the county early in the afternoon. Nickel sized hail was observed in and near Lebanon at about 113 pm EDT.

### **Chenango County**

<b>Sherburne</b>	<b>24</b>	<b>1215EST</b>			<b>0</b>	<b>0</b>	<b>15K</b>		<b>Thunderstorm Wind</b>
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The same batch of thunderstorms that produced plenty of severe weather earlier in the day upstream in Steuben, Schuyler, and Tompkins counties reintensified to severe levels over northern Chenango county. A few trees were toppled early in the afternoon in both North Norwich and Sherburne.

### **Sullivan County**

<b>Loch Sheldrake</b>	<b>24</b>	<b>1310EST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
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A thunderstorm cell briefly reached severe levels over central portions of the county early in the afternoon. Large tree limbs and wires were toppled in Loch Sheldrake at around 210 pm EDT.

### **Onondaga County**

<b>Clay to Manlius</b>	<b>24</b>	<b>1820EST 1830EST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Thunderstorm Wind</b>
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A cluster of thunderstorms quickly became severe early in the evening over northern portions of the county. A skywarn spotter first reported dime sized hail in the town of Clay around 720 pm EDT. By 730 pm EDT as the cell pushed southeastward into Manlius, another skywarn spotter recorded a wind gust to 70 mph with several large trees and power lines downed.



# Storm Data and Unusual Weather Phenomena

August 1998

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

## NEW YORK, Central

### **Madison County**

<b>Sullivan to Erieville</b>	24	1842EST 1855EST			0	0			<b>Hail (1.00)</b>
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The same severe thunderstorm that produced wind damage and hail in Onondaga county remained severe as it crossed into northern Madison county. Hailstones from dime sized to about nickel sized were observed by skywarn spotters from Sullivan to Erieville.

### **Onondaga County**

<b>Manlius</b>	24	1845EST 2000EST			1	0	20K		<b>Flash Flood</b>
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As a severe thunderstorm moved through the region early in the evening, it dumped torrential rains. Rainfall amounts of 1 to 2 inches were observed in less than 30 minutes. This caused the Limestone Creek to quickly rise out of its banks.

A four year old girl was out playing by the creek near her backyard when waters rapidly rose. She was caught in the rushing water and found downstream later that evening. Unfortunately, she did not survive the ordeal. Some minor damage was also incurred to portions of other properties from the force of the water.

Later that evening, water levels receded about as quickly as they came up.

F4OU

## NEW YORK, Coastal

### **New York County**

Countywide	17	1400EST			0	0			<b>Flood</b>
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### **Queens County**

Northwest Portion	17	1400EST			0	0			<b>Flood</b>
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### **Richmond County**

Northwest Portion	17	1400EST			0	0			<b>Flood</b>
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### **Bronx County**

Countywide	17	1410EST			0	0			<b>Flood</b>
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### **Westchester County**

South Portion	17	1410EST			0	0			<b>Flood</b>
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As thunderstorms moved over the same area, they produced heavy rain for long periods of time.

The heaviest rain, which fell in a band from Northern Richmond County northeast across New York County and extreme Southern Westchester County, caused widespread flooding of streets (such as the Hutchinson River Parkway in Westchester and Bronx Counties and FDR Drive in New York County), low-lying, and poor drainage areas.

Rain fell at rates up to around 2 inches per hour. At LaGuardia Airport, 3.54 inches of rain fell and at Central Park, 2.38 inches was measured.

### **Suffolk County**

<b>East Quogue to Westhampton Beach</b>	18	1600EST 1700EST			0	0			<b>Urban/Sml Stream Fld</b>
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As a cluster of thunderstorms moved over the area, they produced heavy rain that caused flooding of streets, low-lying and poor drainage areas. The heaviest rainfall amounts were from 2.98 inches at East Quogue to 3.04 inches at Westhampton Beach. Rainfall rates were from 1 and 1/2 to 2 inches per hour.

### **Queens County**

<b>Rockaway Beach</b>	24	1600EST			1	0			<b>Rip Currents</b>
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A 42 year old man died in heavy surf caused by distant Hurricane Bonnie off Rockaway Beach in Queens.  
M42IW

## NEW YORK, East

### **Washington County**

<b>Argyle</b>	11	1730EST			0	0	2K		<b>Thunderstorm Wind</b>
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# Storm Data and Unusual Weather Phenomena

August 1998

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, East

### Washington County

Salem

11 1730EST 0 0 Hail (0.75)

A cold front moving into New York State produced an isolated severe thunderstorm during the early evening across southern Washington County. The storm brought trees down and produced dime size hail in the town of Salem.

### Fulton County

Gloversville

23 2135EST 0 0 2K Lightning

### Fulton County

Gloversville

23 2147EST 0 0 3K Thunderstorm Wind

### Montgomery County

Cranesville

23 2205EST 0 0 9K Thunderstorm Wind

A warm front lifting north across New York state produced numerous clusters of showers and thunderstorms late Sunday evening. One cell became severe as it moved down the Mohawk Valley into Montgomery and Fulton Counties. The storm downed numerous trees and power lines in Gloversville, Lock 10 in Cranesville and the town of Florida. In addition 1,000 customers were without power for as long as ten hours in eastern Montgomery County. Lightning caused a small fire in an attic of a home in Gloversville.

### Saratoga County

Porter Corners

24 1346EST 0 0 2.5K Thunderstorm Wind

### Saratoga County

Northumberland

24 1405EST 0 0 1.5K Thunderstorm Wind

### Saratoga County

Wilton

24 1407EST 0 0 3K Thunderstorm Wind

### Saratoga County

Greenfield

24 1408EST 0 0 2K Thunderstorm Wind

### Warren County

Lake Luzerne

24 1415EST 0 0 2K Thunderstorm Wind

A stationary front in western New York interacted with a very humid air mass to produce numerous thunderstorms during the afternoon hours. A couple of cells became severe across the Lake George Saratoga Region. Thunderstorm winds downed trees in the towns of Porters Corners, Northumberland, Wilton and Greenfield in Saratoga County. Thunderstorm winds downed wires at Lake Luzerne in Warren County.

## NEW YORK, North

NOT RECEIVED.

## NEW YORK, West

### Monroe County

Mendon

14 1818EST 0 0 8K Hail (1.00)

### Ontario County

Ionia

14 1825EST 0 0 5K Hail (0.75)

### Wayne County

Ontario

14 1845EST 0 0 7K Hail (0.75)

Severe thunderstorms moved onshore from Lake Ontario and produced hail up to one inch in diameter.

### Cattaraugus County

Allegany

14 1900EST 0 0 7K Thunderstorm Wind

### Cattaraugus County

Allegany

14 1930EST  
2215EST 0 0 12K Flash Flood

An isolated thunderstorm produced damaging winds which downed trees and power lines in Allegany State Park. The slow moving thunderstorm also produced two to three inches of rain which resulted in localized flooding. Several roads in the park were washed out.

### Oswego County

Mexico

23 1925EST 0 0 8K Thunderstorm Wind

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b>NEW YORK, West</b>									
<b>Oswego County</b>									
Pulaski	23	1940EST			0	0	10K		Thunderstorm Wind
<b>Oswego County</b>									
New Haven	23	1945EST			0	0	7K		Thunderstorm Wind
<b>Oswego County</b>									
Oswego	23	2100EST			0	0	12K		Thunderstorm Wind (G51)
<b>Oswego County</b>									
Constantia	23	2125EST			0	0	8K		Thunderstorm Wind
			Severe thunderstorms moved onshore from Lake Ontario and roared across the county. The thunderstorm winds downed trees and power lines and poles throughout the region.						
<b>Monroe County</b>									
Greece	24	0450EST			0	0	35K		Thunderstorm Wind
<b>Monroe County</b>									
Greece	24	0530EST			0	0	15K		Thunderstorm Wind
<b>Wayne County</b>									
Sodus	24	0530EST			0	0	50K	35K	Thunderstorm Wind (G50)
<b>Cayuga County</b>									
Cato	24	0550EST			0	0	12K		Thunderstorm Wind
<b>Ontario County</b>									
Farmington	24	0605EST			0	0	15K		Thunderstorm Wind
<b>Cayuga County</b>									
Ira	24	0713EST			0	0	10K		Thunderstorm Wind
			Thunderstorms moved across the southern Lake Ontario counties during the early morning hours. The thunderstorms produced damaging winds which downed trees and power lines. Several thousand customers were left without power for several hours. Winds were estimated in some areas at 60-70 mph. In Sodus, a home was damaged by a large falling tree.						
<b>Chautauqua County</b>									
Frewsburg	24	0835EST			0	0	12K		Thunderstorm Wind
<b>Cattaraugus County</b>									
Randolph	24	0915EST			0	0	20K		Thunderstorm Wind
<b>Allegany County</b>									
Bolivar	24	0952EST			0	0	15K		Hail (0.75)
			Severe thunderstorms moved across the western southern tier of the state during the morning hours. The thunderstorms produced hail up to three-quarters of an inch and strong winds which downed trees and power lines.						
<b>Jefferson County</b>									
Adams Center	24	1530EST			0	0	12K		Hail (0.75)
<b>Lewis County</b>									
Lyons Falls	24	1600EST			0	0	15K		Thunderstorm Wind
<b>Oswego County</b>									
Altmar	24	1710EST			0	0	12K		Thunderstorm Wind
<b>Cayuga County</b>									
Fair Haven	24	1740EST			0	0	20K		Thunderstorm Wind
<b>Oswego County</b>									
Fulton	24	1745EST			0	0	13K		Hail (1.00)
<b>Wayne County</b>									
Wolcott	24	1750EST			0	0	15K		Thunderstorm Wind
<b>Oswego County</b>									
Hannibal	24	1805EST			0	0	8K		Hail (1.50)
			Thunderstorms moved across the eastern Lake Ontario region during the afternoon hours. The thunderstorms produced damaging winds which downed trees and power lines and poles. Hail up to an inch-and-a-half was reported with the storms.						
<b>Niagara County</b>									
North Tonawanda	24	2230EST			0	0	35K		Thunderstorm Wind

# Storm Data and Unusual Weather Phenomena

August 1998

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

## NEW YORK, West

### **Erie County**

**Williamsville**      24      2240EST      0      0      20K      **Thunderstorm Wind**

Severe thunderstorms moved across the Niagara peninsula during the late evening hours downing trees and utility wires in Erie and Niagara counties. Hundreds of trees and branches were downed making some roads impassable. Several thousand customers were without power for a few hours while phone service in some localities took twelve to eighteen hours to restore.

### **Monroe County**

**Rochester**      25      2030EST  
2100EST      0      0      22K      **Flash Flood**

### **Monroe County**

**Rochester**      25      2100EST  
2330EST      0      0      35K      **Flash Flood**

Slow moving thunderstorms moved across the Rochester metro area producing two to four inches of rain in just a few hours. Widespread urban flooding occurred. The Monroe County Sheriff reported numerous roads closed across the south and southeast suburbs of Rochester.

## NORTH CAROLINA, Central

### **Wayne County**

**10 NE Goldsboro**      01      1530EST      1      0      **Lightning**

A 12 year girl, racing for safety from a thunderstorm, was struck by lightning and killed in a farm field. The field was located in rural northeast Wayne county, near Shackleford and Big Daddy's roads.  
F12OU

### **Wake County**

**Raleigh**      08      0230EST  
0430EST      0      0      20K      **Urban/Sml Stream Fld**

Several slow moving thunderstorms dumped up to 3 inches of rain on southern and western portions of Raleigh during the early morning hours. Several streets and roads were closed due to high water including Avent Ferry Road near NC State University. Three cars were caught in a low lying parking lot and completely submerged in the water. They sustained heavy damage. No injuries were reported.

### **Granville County**

**Oxford**      09      1430EST      0      1      **Lightning**

A 64 year old Oxford man suffered only minor injuries after being struck by lightning. He was walking in his yard with his grandson at the time. The lightning bolt burned a hole in his shirt and singed hairs on his left knee. He was taken to the hospital but then released.

### **Wayne County**

**Goldsboro**      12      1630EST      0      0      **Tstm Wind/Hail**

In the 1200 block of Park Avenue B, the top of one oak tree fell on the front of a house while one block away, a large oak fell into and blocked the street for hours.

### **Wake County**

**Raleigh**      16      2015EST  
2215EST      0      0      40K      **Urban/Sml Stream Fld**

The same storm that caused wind damage also caused flooding over western and into central Wake county from near the RDU Airport east into the city of Raleigh. Several roads had to be closed including Avent Ferry near NC State University. Rainfall amounts of 2 to 3 inches fell in 1 to 1.5 hours sending small creeks and branches out of their banks. At least 5 cars were heavily damaged from the rising water. They were parked near a small creek in an apartment parking lot.

### **Wake County**

**Raleigh**      16      2030EST      0      0      **Thunderstorm Wind (G50)**

An area of thunderstorms developed over Chapel Hill to Jordan Lake and Durham and moved slowly east into Wake county. The storms consolidated into one large cell that became severe from west Raleigh east into the downtown area. There were numerous reports of trees blown down and debris blocking roads especially in the area just west of downtown. Frequent lightning knocked out power to over 4000 Raleigh residents.

# Storm Data and Unusual Weather Phenomena

August 1998

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

**NCZ026>028-041>043-077>078-086-088>089**      **Franklin - Nash - Edgecombe - Wake - Johnston - Wilson - Harnett - Wayne - Hoke - Cumberland - Sampson**

27	2000EST								
28	1500EST				0	0	50M		Hurricane

Hurricane Bonnie made landfall along the southern coast of North Carolina. Only fringe effects were felt in the central sections of the state. Rainbands associated with Bonnie spread inland as far west as Louisburg...Raleigh...Raven Rock...Fort Bragg...and Fayetteville. Torrential rains and strong gusty winds accompanied the rainbands through the night on the 27th and into the daylight hours on the 28th. The strongest winds were recorded over Sampson and Wayne counties where gusts over 50 mph occurred. Elsewhere, gusts to 40 mph occurred with the rainbands. Damage was sporadic and confined to the southeast portions of central North Carolina. About 20 roads were blocked for several hours in Harnett county and there were numerous reports of trees being blown down across Sampson, Wayne, Johnston, Wilson, Harnett, and Cumberland counties. About ten thousand people lost power in these areas sometime during the storm. Tobacco losses were extensive. The estimated total value of the tobacco crop lost due to Bonnie ranged from 25 to 50 million dollars.

Rainfall amounts averaged 2 to 4 inches over the eastern Piedmont and Sandhills with amounts dropping rapidly west of Raleigh and Fayetteville. For example, downtown Raleigh recorded around 2 inches of rain while the Raleigh/Durham Airport, 10 miles west of downtown, recorded only 1/3 of an inch. Elsewhere, some of the higher amounts included: Wilson 4.94 inches, Clinton 4.45 inches, Goldsboro 3.74 inches, Erwin 2.80 inches, Clayton 2.76 inches, Rocky Mount 2.74 inches, and Fayetteville 2.17 inches.

### **Sampson County** Salemberg

30	2215EST								
					0	0			Flash Flood

The Sampson county sheriff's department reported small stream and street flooding in Salemberg.

### **Cumberland County** Stedman

30	2215EST								
					0	0			Flash Flood

A trained spotter reported street flooding in Stedman.

### **Montgomery County** Troy

31	1250EST								
					0	0			Lightning

Lightning struck and destroyed an outbuilding in Troy.

### **Richmond County** 8 E Rockingham

31	1400EST						75K		
					0	0			Thunderstorm Wind (G50)

A downburst hit the Rockingham Dragway. The wind destroyed the scoreboard and a large outbuilding. Torrential rainfall also created localized flooding.

### **Nash County**

Rocky Mt Wilson Arpt

31	1450EST						10K		
					0	0			Lightning

Lightning struck 3 separate houses in the city of Rocky Mount during an afternoon thunderstorm. The first strike hit at 4020 Benjamin Court at 1450 EST. Lightning struck the roof of the home showering shingles onto the yard and street. Three holes were found in the roof. The second strike occurred 10 minutes later at 2156 Joeline Driver. This strike sparked a small fire in the roof. Then at 1530, another bolt hit a transformer outside a home on 1609 Maple Creek Drive. This strike wiped out all the electrical appliances and touched off a fire in the circuit breaker.

## NORTH CAROLINA, Central Coastal

### **Duplin County** 5 S Chinquapin

12	1620EST								
	1625EST				0	0			Hail (1.25)

Half dollar size hail reported by the public south of Chinquapin.

# Storm Data and Unusual Weather Phenomena

August 1998

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

26	0000EST								
28	1100EST				0	0	6.4M	117M	Hurricane

Hurricane Bonnie, a minimal Category III Hurricane approached the coast of North Carolina on August 26th. The slow moving hurricane initially crossed Cape Fear during the late afternoon on the 26th, then pivoted northeast along the North Carolina coast during the evening. With part of the circulation center on land, the storm weakened to Category I storm in the early morning hours of the 27th before making landfall near the Onslow/Pender county line. The storm then continued to move slowly northeast at speeds of 10 mph or less. Bonnie was downgraded to a Tropical Storm during the afternoon of the 27th but later was reclassified as a Hurricane as she moved off Kitty Hawk late in the evening. Bonnie was a unique storm in that the strongest winds were not located around the center of circulation like a typical hurricane but encompassed a large area in the eastern semi-circle. The most damaging winds were contained in the precursor rain bands where localized downbursts produced significant damage...especially along the coast of Carteret county which appeared to sustain the most damage from the storm. The slow movement of the storm contributed to excessive rainfall amounts with totals of 7-10 inches common across eastern North Carolina. Since much of the region had experienced below normal rainfall during the summer months, the resulting flood was not as damaging as it could have been. The Southeast Cape Fear River in Duplin county had the most significant flooding with areas near Chinquapin reporting high water. Elsewhere flooding of poor drainage and low lying areas predominated. Coastal/Storm surge flooding was not as extensive as with Hurricanes Fran or Bertha but several locations did report significant problems. The hardest hit area was Belhaven where storm surge flooding along the Pungo River flooded 2/3rds of the homes in the area with water levels as high as 6 ft above normal. Other coastal flooding was reported in Manns Harbor and Stumpy Point in Dare county, Washington in Beaufort county, Near Hobucken in Pamlico county, Swansboro in Onslow county and along the south shore of the Albemarle sound in Washington and Tyrrell counties. Many docks, piers and bulkheads were damaged or destroyed by the storm. Along the Outer Banks, soundside flooding from the Pamlico Sound late on the 27th and early on the 28th produced water levels 4-6 feet above normal in Manteo on Roanoke Island and over portions of Hatteras Island where Route 12 was closed briefly due to high water. Storm surge at the beaches of Onslow and Carteret counties was generally 3-5 feet above normal with moderate beach erosion. North Topsail Beach lost most of the protective dunes constructed after the hurricanes of 1996. Tens of thousands of tires, part of an artificial reef, washed up on the shore of Bogue Banks. Wind damage was greatest along Bogue Banks where two hotels and one department store lost roofs. The Iron Steamer and Indian Beach piers sustained significant damage losing large sections due to the combination of wind and rough surf. The hurricane also produced 7 confirmed tornadoes during the afternoon and evening of the 26th. The heavy rains and strong winds also led to significant crop damage with Onslow county reporting over 110 million dollars in damages. Several minor injuries but no loss of life were reported during the storm.

### **Carteret County**     **.5 W Beaufort**

26	1225EST	0.3	30	0	0	225K			
	1228EST								Tornado (F1)

The most destructive of the tornadoes associated with Hurricane Bonnie started out as a waterspout then came ashore as a tornado on Privers Island about 1/2 mile west of the city of Beaufort. The tornado extensively damaged 3 buildings at the Duke Marine Lab. It completely destroyed an old dormitory building which was a double wide mobile home bricked over. Debris from the destroyed building caused severe damage to an adjacent library and broke windows in a nearby research laboratory. A large truck located on the premises was also destroyed.

### **Craven County**     **8 NW Havelock**

26	1410EST	0.5	40	0	0	200K			
									Tornado (F1)

A brief tornado touchdown in the Riverdale section of Craven county, about 8 miles northwest of Havelock. This storm completely knocked a home off it's foundation and caused damage to several other homes in the neighborhood. The home that was destroyed had an anemometer which stopped on 105 mph.

### **Pamlico County**     **2 W Oriental**

26	1600EST	0.1	20	0	0				
									Tornado (F0)

Several large trees were knocked down in vicinity of Dawson Point road near Oriental.

### **Duplin County**     **Potters Hill**

26	1605EST	0.2	30	0	0	85K			
									Tornado (F1)

Another brief touchdown destroyed the Fire Hall in Potters Hill on NC Highway 41. Some nearby homes also sustained minor damage. The tornado ripped the fire department bay off it's foundation and moved it a few inches. The strong winds also battered the walls of the meeting hall, leaving them warped and leaning.

### **Tyrrell County**     **13 SE Columbia**

26	1635EST	2	30	0	0	40K			
									Tornado (F0)

A tornado touchdown in Gum Neck about 13 miles southeast of Columbia damaged 2 storage buildings and tossed them 100 yards. A couple of farm sheds were damaged and several large trees were down on homes. The tornado also destroyed a power transformer on Highway 41.

# Storm Data and Unusual Weather Phenomena

August 1998

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 Coastal

### **Beaufort County**

**Pinetown**      26      1739EST      0.1      20      0      0                **Tornado (F0)**  
Public reported a tornado touchdown with no damage.

### **Washington County**

**Wenona**      26      1900EST      0.5      40      0      0      65K      **Tornado (F0)**  
A tornado ripped off most of the roof on a home in Wenona. 2 homes on either side of the damaged home were unscathed.

### **Onslow County**

**2 SW Jacksonville to  
Jacksonville**      29      1703EST                0      0                **Thunderstorm Wind (G51)**  
Microburst over New River Air Station southwest of Jacksonville produced a gust to 59 mph.

### **Pitt County**

**Renston**      31      1715EST                0      0                **Thunderstorm Wind (G50)**  
Law enforcement officials reported trees and power lines down in Renston.

## NORTH CAROLINA, Extreme Southwest

NONE REPORTED.

## NORTH CAROLINA, North Coastal

### **Chowan County**

**Edenton**      26      1725EST      0.3      50      0      0      10K      **Tornado (F0)**

A small tornado produced minor damage with a tree blown into the front porch of a house.

**NCZ015>017-  
030>032-102**

### **Pasquotank - Camden - Western Currituck - Bertie - Chowan - Perquimans - Eastern Currituck**

26      2000EST                1      0      13.4M      **Hurricane**  
28      1100EST

Hurricane Bonnie moved along the coast of northeast North Carolina on August 27th. Very strong winds and heavy rains associated with Bonnie's spiral bands hammered northeast North Carolina Thursday afternoon into early Friday morning. The highest sustained wind speed recorded at the Elizabeth City Coast Guard Station (ECG) was 59 mph with gusts to 73 mph. The Currituck county EOC reported a gust to 93 mph. Numerous trees and power lines blown down resulted in scattered property damage and widespread power outages. A 12 year old girl was killed when a large tree fell on her home. Coastal Pasquotank and Camden counties in North Carolina experienced approximately a 6 foot surge in the Albemarle Sound flooding coastal sections of those counties including the business district of downtown Elizabeth City. Chowan county experienced a 5 to 6 foot surge from the Albemarle Sound causing some flooding in Edenton. Currituck county reported only minor flooding from the Currituck Sound. Rainfall amounts generally ranged from 1 to 3 inches and caused some street flooding. The lowest sea level pressure recorded at the Elizabeth City Coast Guard Station (ECG) was 995.7 mb. F12PH

## NORTH CAROLINA, Northwest and North Central

### **Wilkes County**

**1 NNW Joynes to  
Traphill**      15      2255EST                0      0      20K      **Flash Flood**  
16      0200EST

### **Alleghany County**

**Cherry Lane**      15      2347EST                0      0           **Flash Flood**  
16      0145EST

### **Surry County**

**7 SW Low Gap**      16      0110EST                0      0           **Flash Flood**  
0220EST

### **Surry County**

**1.5 NW Low Gap**      16      0200EST                0      0           **Flash Flood**  
0325EST

Thunderstorms late in the evening of the 15th and early morning of the 16th produced flash flooding.

Thunderstorm rains flooded and closed Route 21 near Cherry Lane. One mile north northwest of Joynes, in Stone Mountain State Park, creeks and streams were flooded stranding campers; paved roads, gravel roads, and several bridges were washed out. Flooding washed out numerous roads from one mile north northwest of Joynes to Traphill. Several roads were closed for a few

# Storm Data and Unusual Weather Phenomena

August 1998

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, Northwest and North Central

days.

Thunderstorm rains flooded Route 89, one and one half miles northwest of Low Gap and caused the Mitchell River to flood State Route 1333, seven miles southwest of Low Gap.

## NORTH CAROLINA, South Coastal

### **Bladen County**

1 W White Lake	12	1430EST 1500EST			0	0	10K		<b>Thunderstorm Wind (G60)</b>
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Straight line wind snapped about 20 trees and 1 landed on the mobile home.

### **Brunswick County**

Leland	19	1535EST 1540EST			0	0			<b>Hail (1.00)</b>
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### **Brunswick County**

Leland	19	1550EST 1730EST			0	0			<b>Flash Flood</b>
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Heavy rains from slow moving thunderstorms caused flooding along US 74-76 near the Leland exit.

### **New Hanover**

#### **County**

Wilmington	19	1620EST 1740EST			0	0			<b>Flash Flood</b>
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Heavy rains from slow moving thunderstorms produced flooding along South College Road and Cedar Avenue.

### **NCZ100**

#### **Brunswick**

26	0600EST				0	0	35M		<b>Hurricane</b>
27	0400EST								

The eye of slow-moving Hurricane Bonnie made landfall at Bald Head Island during mid-afternoon and took 2 hours to exit the county. Wind reports ranged as high as 93 mph at Southport, where damage was most extensive...the 50-foot steeple was blown down from the Mt Carmel Methodist Church and many trees and homes were damaged. Rainfall ranged from around 7 inches in the east side of the county, where there was extensive ponding of water, to 2 inches in the west. Storm surge was 5-8 feet on the eastern barrier islands, with 2 feet overwash reported on Bald Head Island. Extensive beach erosion occurred on the eastern end of Holden Beach, where up to 20 feet of dune was lost and some homes were undermined. In Supply, the Brunswick Community Hospital suffered the loss of 3000 square feet of roof and an air conditioner. Federal Disaster declared.

### **NCZ099**

#### **Columbus**

26	0600EST				0	0	250K	4M	<b>High Wind (G60)</b>
27	0500EST								

Hurricane Bonnie moved slowly up the coast, with the east side of the county feeling the effects more strongly than the west. Most damage was downed trees and power lines, although some trees hit houses. Rainfall ranged from 8 inches in the east to 3 inches in the west, resulting in extensive ponding, especially around Riegelwood.

### **NCZ101**

#### **New Hanover**

26	0600EST				0	0	26.2M		<b>Hurricane</b>
27	0500EST								

The eye of slow-moving Hurricane Bonnie made landfall at Cape Fear during the late afternoon and moved up the coast, with the stronger east side of the storm remaining offshore. Wind gusts were generally around 100 MPH along the coast and lighter inland. At the airport, gusts reached 74 MPH. Rainfall amounts were around 10 inches, causing ponding of water and flooding across the north end of the county around Castle Hayne. Storm surge was 7 to 9 feet, with most barrier island overwash from the sound side, not the ocean side. Federal Disaster declared.

### **NCZ097**

#### **Pender**

26	0900EST				0	0	11M	6.1M	<b>Hurricane</b>
27	0600EST								

Hurricane Bonnie moved slowly up the county coastline with the more powerful wind on the east side of the storm remaining offshore. The highest wind gust report was 98 MPH in Topsail Beach. Rainfall was around 10 inches, causing widespread flooding and the closing of many roads through midmorning of the 27th. Storm surge was 5 to 7 feet, with minor barrier island overwash from the sound side, and little if any from the ocean side. Federal Disaster declared.



# Storm Data and Unusual Weather Phenomena

August 1998

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

### NCZ096

#### Bladen

26	1000EST				0	0	250K	4M	High Wind (G60)
27	0500EST								

As Hurricane Bonnie moved up the coast, the strongest winds mostly affected the east side of the county including Kelly, Rowan, Murphytown, Carvers Creek, and East Arcadia where downed trees and powerlines were widespread. Five mobile homes were destroyed, and 250 homes had minor to moderate damage. Rainfall ranged from near 7 inches on the east side of the county, where flooding caused heavy crop damage, to 3 inches on the west side.

### NCZ087

#### Robeson

26	1500EST				0	0			High Wind (G50)
	2200EST								

The outskirts of Hurricane Bonnie caused scattered downed trees and minor power interruptions. Rainfall was 2 to 3 inches, resulting in ponding of water.

### Pender County

Currie to  
Maple Hill

30	1600EST				0	0			Flash Flood
	1800EST								

Thunderstorms caused heavy rains measuring over 3 inches per hour, resulting in flooding of creeks and swamps already swollen by Hurricane Bonnie rains.

### Robeson County

Pembroke to  
Lumberton

30	2330EST				0	0			Flash Flood
31	0100EST								

Slow moving thunderstorms dropped 3 to 4 inches of rain across the area, causing extensive ponding of water in urban areas. Lightning caused power outages in Pembroke and Lumberton.

### Bladen County

White Oak to  
Ammon

31	1650EST				0	0			Flash Flood
	1745EST								

Thunderstorms drifted slowly east, dropping 3 inches of rain in an hour, causing flooding along NC53 and NC242.

### Pender County

6 E Burgaw to  
6 W Maple Hill

31	1915EST				0	0			Flash Flood
	2359EST								

Slow moving thunderstorms added water to recent rains from Hurricane Bonnie, causing Holly Shelter Creek to spill onto highway NC53. Homes in the area were surrounded by high water.

## NORTH CAROLINA, Southwest

### Mecklenburg

#### County

Charlotte

08	1830EST				0	0	12K		Thunderstorm Wind (G52)
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### Rowan County

Salisbury

08	1837EST				0	0	1K		Thunderstorm Wind (G52)
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A couple of severe thunderstorms developed late in the afternoon in the North Carolina Piedmont. In East Charlotte trusses were blown off a house under construction and limbs were knocked down. On the south side of Salisbury a large tree and a power pole were blown down resulting in power outages for a few hours.

### Mecklenburg

#### County

Charlotte

09	1700EST				0	0			Urban Flood
	1900EST								

Flood-prone areas of South Charlotte were flooded during heavy rainfall in an afternoon thunderstorm. Four lanes of Archdale Road were also blocked. This area usually does not flood easily.

### Henderson County

Horse Shoe

13	1945EST				0	0	15K		Lightning
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Lightning struck a house and caused a roof fire.

## NORTH DAKOTA, Central and West

### Bottineau County

2 E Gardena

01	0010CST				0	0			Flood
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175 bails hay destroyed by high water

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NORTH DAKOTA, Central and West</u></b>									
<b>Bowman County</b>									
Bowman	01	1530CST			0	0			Lightning
									100 acres burned
<b>Williams County</b>									
Trenton	01	1925CST			0	0			Hail (1.75)
									roof and crop damage
<b>Mckenzie County</b>									
Watford City	01	2030CST			0	0			Thunderstorm Wind (G60)
<b>Bowman County</b>									
6 SW Bowman	01	2310MST			0	0			Lightning
									100 acres destoryed by fire caused by lightning
<b>Billings County</b>									
Medora	10	0200MST			0	0			Lightning
									53 acres theodore roosevelt nat'l park by fire caused by lightning
<b>Morton County</b>									
Glen Ullin	18	1520MST			0	0			Thunderstorm Wind (G57)
<b>Mountrail County</b>									
6 NW Plaza	18	1630CST	0.2	20	0	0			Tornado (F0)
<b>Mountrail County</b>									
6 N Plaza	18	1630CST			0	0			Hail (0.75)
<b>Morton County</b>									
5 SW Mandan	18	1830CST			0	0			Hail (0.75)
<b>Morton County</b>									
6 S Mandan	18	1840CST			0	0	40K		Lightning
<b>Morton County</b>									
7 S Mandan	18	1858CST			0	0			Hail (0.75)
<b>Burleigh County</b>									
2 S Bismarck Arpt	18	1903CST			0	0			Hail (1.00)
<b>Emmons County</b>									
7 S Kintyre	18	1930CST			0	0			Hail (0.75)
<b>Emmons County</b>									
Strasburg	18	2010CST			0	0			Hail (1.00)
									lasted 20 minuates
<b>Logan County</b>									
Gackle	18	2200CST			0	0			Thunderstorm Wind (G50)
									branches down
<b>Hettinger County</b>									
New England	21	1723MST			0	0			Hail (1.75)
<b>Hettinger County</b>									
Burt	21	1730MST			0	0			Hail (0.75)
<b>Stark County</b>									
11 SW Dickinson	21	1830MST			0	0			Hail (1.00)
<b>Grant County</b>									
15 N Elgin to 14 S Elgin	21	1918MST			0	0			Hail (1.75)
									hail reported over heart butte dam 14 s glen ullin

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NORTH DAKOTA, Central and West</u></b>									
<b>Morton County</b> 6 E New Salem	21	2038CST			0	0			Hail (1.75)
									minor damage to homes and crops 6.5 inches rain
<b>Morton County</b> 15 W Mandan	21	2200CST			0	0			Flood
									heavy rain over crown butte and sweet briar dams near i-94 caused flooding over the interstate ( not by dam overflow)
<b>Burleigh County</b> 6 S Bismarck	21	2245CST			0	0			Flood
									hwy 1804 washed out 4.48in in 2 hours
<b>Burleigh County</b> 6 S Bismarck Arpt	21	2245CST			0	0			Flash Flood
									4.48 inches in 2 hours washed out parts of highway 1804 near the desert bottoms
<b>Golden Valley County</b> 13 E Beach	22	1630MST			0	0			Hail (1.00)
<b>Billings County</b> Medora	22	1635MST			0	0			Hail (1.00)
<b>Billings County</b> 5 S Medora	22	1645MST			0	0			Hail (1.00)
<b>Billings County</b> 3 S Fryburg	22	1653MST			0	0			Hail (1.75)
<b>Stark County</b> 18 S Dickinson	22	1742MST			0	0			Hail (2.00)
									windows broken out in farm house
<b>Hettinger County</b> 13 N Regent	22	1755MST			0	0			Hail (1.75)
<b>Hettinger County</b> 7 N Mott	22	1835MST			0	0			Hail (0.75)
									4 to 6 inches deep hail reported on ground
<b>Grant County</b> 2 NW New Leipzig	22	1900MST			0	0			Hail (1.25)
<b>Adams County</b> Hettinger	24	0056MST			0	0			Hail (0.75)
<b>Mckenzie County</b> East Fairview	26	1948CST			0	0			Hail (0.75)
<b>Mckenzie County</b> 15 SE Keene	26	2235CST			0	0			Hail (1.75)
<b>Mclean County</b> 4 E Emmet	27	0055CST			0	0			Hail (0.75)
<b>Burke County</b> Bowbells	27	0830CST			0	0			Lightning
									99 year old church destroyed by fire caused by lightning

# Storm Data and Unusual Weather Phenomena

August 1998

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

## NORTH DAKOTA, East

### **NDZ026**

#### **Nelson**

**01 0000CST**

**0 0**

**Flood**

**15 2359CST**

The north and south ends of Nelson county were plagued by water problems. Lake Laretta grew from a 1 1/2 mile long lake to 5 miles long, threatening the city of Michigan. Maintaining roads and losing farmland to high water levels were major problems for the county. Over 100,000 acres of Nelson county were taken out of production due to rising water levels. Flooding problems also occurred near Stump Lake, where high Devils Lake water levels threatened to add to the flooding concerns.

### **NDZ014>015**

#### **Benson - Ramsey**

**02 0000CST**

**0 0**

**Flood**

**31 2359CST**

Devils Lake peaked at 1444.77 feet MSL, slightly less than the original forecast. This was due to the lack of significant rainfalls in the basin toward late summer. Even so, the elevation of the lake has risen around 20 feet since 1993. Over 200 structures have had to be moved. In 1993, the lake covered 38,000 acres. In 1998, Devils Lake covered 110,000 acres, or 172 square miles. An estimated 1 million trees have died along the shoreline. Dikes were built to protect the city of Devils Lake. Several major roads had to be raised and protected from the pounding of waves. Talk continued through the summer on the best ways to alleviate the high water levels. An outlet to the Sheyenne River or an outlet to Stump Lake were two options being considered. There is no clearcut or near-term solution to the problem.

### **Pembina County**

**2 E Mountain**

**12 1650CST**

**0 0**

**Hail (0.75)**

### **Pembina County**

**4 W Cavalier**

**12 1655CST**

**0 0**

**Hail (0.75)**

### **Pembina County**

**Mountain**

**12 1715CST**

**0 0**

**Hail (0.88)**

### **Cavalier County**

**Milton**

**12 1750CST**

**0 0**

**Hail (0.75)**

### **Walsh County**

**Edinburg**

**12 1805CST**

**0 0**

**Hail (0.75)**

### **Walsh County**

**1 N Adams**

**12 1825CST**

**0 0**

**Hail (0.88)**

### **Walsh County**

**7 SW Adams**

**12 1848CST**

**0 0**

**Hail (0.75)**

### **Nelson County**

**5 N Michigan City**

**12 1930CST**

**0 0**

**Hail (0.88)**

### **Cavalier County**

**1.5 E Union**

**13 1530CST**

**0 0**

**Hail (1.75)**

### **Walsh County**

**2 N Edinburg**

**13 1539CST**

**0 0**

**Hail (0.88)**

### **Cass County**

**Alice**

**16 1705CST**

**0 0**

**Hail (1.00)**

### **Towner County**

**Bisbee**

**18 2040CST**

**0 0**

**Hail (0.75)**

### **Grand Forks**

#### **County**

**8 NW Thompson**

**22 2110CST**

**0 0**

**Hail (0.75)**

### **Towner County**

**2 N Perth**

**26 1100CST**

**0 0**

**Hail (1.00)**

### **Towner County**

**6 N Bisbee**

**26 1115CST**

**0 0**

**Hail (1.00)**

### **Cavalier County**

**Maida**

**26 1500CST**

**0 0**

**Hail (0.75)**

### **Pembina County**

**4 S Walhalla**

**26 1510CST**

**0 0**

**Hail (1.00)**

### **Pembina County**

**7 NW Cavalier**

**26 1530CST**

**0 0**

**Hail (0.75)**

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NORTH DAKOTA, East</u></b>									
<b>Pembina County</b>									
Cavalier	26	1545CST 1555CST			0	0			Hail (0.75)
<b>Pembina County</b>									
Hamilton	26	1615CST			0	0	0.20K		Thunderstorm Wind
<b>Pembina County</b>									
4 S Walhalla	26	1719CST			0	0			Hail (1.00)
<b>Pembina County</b>									
6 S Walhalla	26	1730CST 1755CST			0	0			Hail (1.00)
<b>Pembina County</b>									
4 W Hensel	26	1750CST	0.5	25	0	0			Tornado (F0)
<b>Pembina County</b>									
10 W Cavalier	26	1806CST			0	0			Hail (1.75)
<b>Pembina County</b>									
Akra	26	1815CST			0	0			Hail (1.00)
<b>Pembina County</b>									
4 W Cavalier	26	1820CST			0	0			Hail (0.75)
<b>Pembina County</b>									
1 E Cavalier	26	1820CST			0	0			Hail (1.50)
<b>Pembina County</b>									
Crystal	26	1825CST			0	0			Hail (2.75)
<b>Pembina County</b>									
Cavalier	26	1835CST			0	0			Hail (1.25)
<b>Pembina County</b>									
St Thomas	26	1855CST			0	0			Hail (2.00)
									The hail lasted for 20 minutes and covered the ground.
<b>Pembina County</b>									
4 SE St Thomas	26	1905CST			0	0			Hail (1.75)
<b>Walsh County</b>									
7 NW Grafton	26	1943CST			0	0			Hail (1.00)
									One inch hail fell at Auburn, ND.
<b>Walsh County</b>									
5 E Grafton	26	1943CST			0	0			Hail (2.75)
									Baseball-sized hail fell at Oakwood, ND, breaking windows and damaging cars.
<b>Walsh County</b>									
5 NE Grafton	26	1943CST			0	0			Hail (1.75)
<b>Pembina County</b>									
Pembina	31	1559CST			0	0			Thunderstorm Wind (G61)
<b><u>OHIO, East</u></b>									
<b>Belmont County</b>									
Martins Ferry	24	1350EST			0	0			Hail (1.25)
<b>Tuscarawas County</b>									
Sugar Creek	24	1405EST			0	0			Hail (1.00)
<b>Tuscarawas County</b>									
Dover	24	1415EST			0	0			Hail (0.75)
<b>Tuscarawas County</b>									
New Philadelphia	24	1420EST			0	0			Hail (0.75)
<b>Tuscarawas County</b>									
Stone Creek	24	1420EST			0	0			Hail (0.88)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OHIO, East</b>									
<b>Tuscarawas County</b>									
Tuscarawas	24	1433EST			0	0			Hail (0.75)
Numerous spotters throughout Tuscarawas county reported dime to quarter size diameter hail.									
<b>Harrison County</b>									
Hopedale	24	1425EST			0	0			Hail (1.25)
Hail, up to the size of half-dollars, covered the ground.									
<b>Jefferson County</b>									
Wintersville	24	1448EST 1455EST			0	0			Hail (2.00)
A spotter reported hail lasting for several minutes and up to two inches in diameter.									
<b>OHZ050</b>									
<b>Jefferson</b>									
24		1510EST 1530EST			0	0			Flood
Flood waters were up to 1 foot deep across parts of Lincoln Avenue in Steubenville.									
<b>Belmont County</b>									
St Clairsville	24	1540EST			0	0	2K		Thunderstorm Wind
Thunderstorm winds downed a large tree and some power lines.									
<b>Belmont County</b>									
2 NE Key	24	1550EST			0	0	3K		Thunderstorm Wind
Large trees and power lines were blown down by thunderstorm winds.									
<b>Carroll County</b>									
Mechanicstown	24	1643EST			0	0			Hail (0.75)
<b>Jefferson County</b>									
Countywide	24	1700EST 1720EST			0	0	5K		Thunderstorm Wind
Large limbs and power lines were downed throughout the county.									
<b>Monroe County</b>									
Malaga	24	1740EST			0	0	1K		Thunderstorm Wind
A large tree was downed onto Route 800 near Malaga.									
<b>Coshocton County</b>									
3 N Chili	24	1740EST			0	0			Hail (1.75)
<b>Coshocton County</b>									
Keene	24	1740EST			0	0			Hail (1.75)
<b>Coshocton County</b>									
1 E Isleta	24	1757EST			0	0			Hail (1.00)
<b>Coshocton County</b>									
Coshocton	24	1810EST			0	0	15K		Thunderstorm Wind
A large tree was uprooted and landed on a house.									
<b>Guernsey County</b>									
Kimbolton	24	1810EST			0	0			Hail (0.75)
<b>Coshocton County</b>									
Chili	24	1945EST			0	0	2K		Thunderstorm Wind
A few large trees were downed by thunderstorm winds.									
<b>Columbiana County</b>									
12 S Lisbon	25	1335EST			0	0	2K		Thunderstorm Wind
Thunderstorm winds downed a few trees.									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OHIO, East</b>									
<b>Coshocton County</b>									
Coshocton	25	1517EST			0	0			Hail (0.88)
<b>Muskingum County</b>									
Black Run	25	1530EST			0	0	5K		Thunderstorm Wind
<b>Muskingum County</b>									
Zanesville	25	1530EST			0	0	2K		Thunderstorm Wind
<b>Muskingum County</b>									
New Concord	25	1540EST			0	0	2K		Thunderstorm Wind (G52)
Thunderstorm winds downed several trees throughout parts of Muskingum County.									
<b>Muskingum County</b>									
Central Portion	25	1530EST 1540EST			0	0	50K		Thunderstorm Wind
Several trees were downed by thunderstorm winds throughout Falls Township, one onto a car. In South Zanesville a mobile home was knocked off its foundation and a billboard fell onto a car.									
<b>Guernsey County</b>									
Cambridge	25	1545EST			0	0	50K		Thunderstorm Wind
Several trees were downed, including one on a car. A porch was ripped off of a house. Downed trees were blocking roads.									
<b>Guernsey County</b>									
1 S Cambridge to Buffalo	25	1550EST 1555EST			0	3	400K		Thunderstorm Wind
An intense thunderstorm gust known as a macroburst raked across central Guernsey County, wind gusts were estimated between 80 and 90 mph. The thunderstorm formed in northeast Guernsey County about 430 pm just ahead of another very intense thunderstorm moving through Muskingum County. It then moved southeast at nearly 40 mph.									
The swath of damage produced by this intense downburst of wind was estimated to be nearly 8 miles long. Its width fluctuated between 0.75 miles to over 2.5 miles. The damage started just south of Cambridge and continued southeast to near the town of Buffalo. There were 3 reported injuries which consisted of cuts and abrasions. One person was treated and released from the hospital.									
The town of Byesville was hardest hit. Hundreds of trees were snapped or toppled. Power lines and telephone poles were also downed which resulted in widespread power outages. There were some outbuildings destroyed, as well as damage to shingles, siding and roofs. Part of a roof of a school was torn off. Billboards, business signs and Interstate highway signs were also partially or totally destroyed. It was also reported that about 30 automobiles in a grocery store parking lot had their windows completely shattered. A plate glass window in a fast food restaurant was also shattered. The area was declared a disaster area by the Governor of Ohio.									
On Interstate 77, there was a report of a tractor-trailed truck which was stopped in its tracks by the tremendous gust as it tried to move forward. It actually spun its wheels as if it were on ice without moving and an automobile behind it collided with the truck.									
<b>Guernsey County</b>									
Kipling	25	1555EST			0	0	15K		Thunderstorm Wind
Several trees and power lines were downed by thunderstorm winds.									
<b>Tuscarawas County</b>									
Countywide	25	1600EST 1620EST			0	0	30K		Thunderstorm Wind
Thunderstorm winds downed several trees throughout the county. One tree fell onto a garage and a large limb fell onto a power line.									
<b>Harrison County</b>									
Cadiz	25	1608EST			0	0	2K		Thunderstorm Wind
Large tree limbs fell onto power lines.									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops		
<b><u>OHIO, East</u></b>										
<b>Muskingum County</b>										
Bloomfield	25	1625EST			0	0	3K		Thunderstorm Wind	
									Strong thunderstorm winds knocked down a few trees onto power lines.	
<b>Harrison County</b>										
3 W Cadiz	25	1630EST			0	0	2K		Thunderstorm Wind	
									Thunderstorm winds downed a few trees.	
<b>Noble County</b>										
Caldwell	25	1645EST			0	0			Hail (0.75)	
<b><u>OHIO, North</u></b>										
<b>Hancock County</b>										
New Stark	08	1755EST 1930EST			0	0			Flood	
									Heavy thunderstorm rain caused flooding of several roads.	
<b>Erie County</b>										
Sandusky	09	1632EST			0	0	12K		Lightning	
									Lightning struck the roof of a house, and the ensuing fire caused considerable damage.	
<b>Ashtabula County</b>										
Conneaut	10	0700EST 0950EST			0	0	50K		Flood	
									Heavy thunderstorm rain caused flooding of basements. Several roads were closed at underpasses due to flooding.	
<b>Medina County</b>										
North Portion	10	0905EST 1400EST			0	0			Flood	
									Heavy thunderstorm rain caused flooding of low lying areas and roads, some of which were closed due to the flooding.	
<b>Cuyahoga County</b>										
Cleveland	10	0930EST 1200EST			0	0	275K		Flood	
									Heavy thunderstorm rain caused widespread flooding of roads and low lying areas in Cleveland and surrounding suburbs. In Newburgh Heights, Interstate 77 was flooded with three to four feet of water and an elderly couple had to be rescued from their floating car. Over five inches of rain was measured in some southern and eastern sections as storms repeatedly crossed the area for several hours.	
<b>Summit County</b>										
Akron	10	1000EST 1200EST			0	0			Flood	
									Heavy thunderstorm rain caused flooding of roads.	
<b>Lake County</b>										
Lake Line	10	1012EST 1200EST			0	0			Flood	
									Heavy thunderstorm rain caused flooding of several roads in Willowick.	
<b>Geauga County</b>										
Chardon	10	1015EST 1200EST			0	0			Flood	
									Heavy thunderstorm rain caused flooding of roads in Chardon and Chester Townships.	
<b>Stark County</b>										
Massillion	10	1145EST			0	0	80K		Lightning	
									In Perry Township, lightning struck a dairy and started a fire that caused major damage.	
<b>Ottawa County</b>										
Genoa	24	0600EST			0	0	14K		Lightning	
									Lightning struck a straw pile and the resulting fire destroyed 7000 bales.	



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b>OHIO, North</b>									
<b>Lucas County</b>									
Waterville	24	0610EST			0	0	10K		Hail (0.75)
									Some crops were damaged.
<b>Wood County</b>									
Tontogany	24	0630EST			0	0	10K		Hail (0.75)
									Some crops were damaged.
<b>Seneca County</b>									
Tiffin	24	0656EST			0	0	20K		Thunderstorm Wind
									A tree was downed on a house.
<b>Geauga County</b>									
Countywide	24	0700EST			0	0	10K		Thunderstorm Wind
									Trees were downed, some on roadways.
<b>Lake County</b>									
Countywide	24	0705EST			0	0	25K		Thunderstorm Wind (G55)
									Numerous trees and power lines were downed. At Fairport Harbor, a wind gust was measured at 63 miles per hour.
<b>Ashtabula County</b>									
Countywide	24	0725EST			0	0	25K		Thunderstorm Wind
									Numerous limbs, power lines and large trees were downed.
<b>Huron County</b>									
Countywide	24	0730EST			0	0	20K		Hail (0.75)
									Large hail was reported in several places throughout the county. Some crops were damaged.
<b>Seneca County</b>									
Countywide	24	0731EST			0	0	20K		Hail (0.75)
									Large hail was reported in several places across the county. Some crops were damaged.
<b>Medina County</b>									
Lodi	24	0755EST			0	0	3K		Thunderstorm Wind
									Trees were downed.
<b>Richland County</b>									
Countywide	24	0800EST			0	0	5K		Thunderstorm Wind
									Numerous large tree limbs were downed.
<b>Medina County</b>									
Homerville	24	0800EST 0805EST	0.5	15	0	0	75K		Tornado (F1)
									A tornado touched down at Homerville and remained on the ground for a short time. Two garages and a pole barn were destroyed, two houses were damaged and trees were downed.
<b>Ashland County</b>									
Loudonville	24	0800EST			0	0	75K	10K	Thunderstorm Wind
									Severe thunderstorm winds downed trees, destroyed one garage and blew the roof off a barn. Another barn was blown down, killing some of the livestock inside. Crops were damaged.
<b>Wayne County</b>									
Countywide	24	0815EST			0	0	5K		Thunderstorm Wind
									Trees were downed, mainly in the northern portion of the county.
<b>Stark County</b>									
Canton	24	1355EST			0	0	80K		Lightning
									Lightning struck a house in Canton Township. The resulting fire caused major damage.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OHIO, North</b>									
<b>Holmes County</b>									
Mt Hope	24	1400EST			0	0		10K	Hail (0.75)
									Some crops were damaged.
<b>Summit County</b>									
Akron	24	1500EST			0	0	50K		Thunderstorm Wind
									In Akron and in Springfield Township, trees and power lines were downed, some on vehicles and houses.
<b>Stark County</b>									
Alliance	24	1600EST 1800EST			0	0			Flood
									Heavy thunderstorm rain caused flooding of streets.
<b>Stark County</b>									
Alliance	24	1610EST			0	0	5K		Hail (0.75)
									Some crops were damaged.
<b>Wayne County</b>									
Wooster	24	1710EST			0	0	5K		Hail (1.75)
									Some crops were damaged.
<b>Holmes County</b>									
Millersburg	24	1710EST			0	0	5K		Hail (1.75)
									Some crops were damaged.
<b>Lucas County</b>									
Countywide	24	1730EST			0	0	15K		Thunderstorm Wind
									Trees were downed.
<b>Hancock County</b>									
Findlay	24	1740EST			0	0	3K		Thunderstorm Wind
									Trees were downed.
<b>Wood County</b>									
Countywide	24	1745EST			0	0	5K		Thunderstorm Wind
									Trees were downed.
<b>Wyandot County</b>									
Countywide	24	1750EST			0	0	20K		Thunderstorm Wind (G52)
									Trees and power lines were downed. Wind gusts were estimated at 60 miles per hour.
<b>Sandusky County</b>									
Countywide	24	1805EST			0	0	30K		Thunderstorm Wind
									Trees and power lines were downed, some on vehicles.
<b>Marion County</b>									
Prospect	24	1810EST			0	0	150K		Thunderstorm Wind
									Trees and power lines were downed, some falling on cars and houses and some blocking roads. One house under construction was destroyed.
<b>Seneca County</b>									
Countywide	24	1815EST			0	0	20K		Thunderstorm Wind
									Trees and power lines were downed.
<b>Richland County</b>									
Countywide	24	1830EST			0	0	20K		Thunderstorm Wind
									Numerous trees were downed.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OHIO, North</b>									
<b>Ashland County</b> Countywide	24	1830EST			0	0	10K		Thunderstorm Wind
									Large trees were downed, mainly in the southern portion of the county.
<b>Crawford County</b> Bucyrus	24	1845EST			0	0	7K		Thunderstorm Wind
									Trees and road signs were downed.
<b>Knox County</b> Countywide	24	1850EST			0	0	20K		Thunderstorm Wind
									Numerous trees were downed.
<b>Huron County</b> Countywide	24	1855EST			0	0	20K		Thunderstorm Wind
									Trees were downed.
<b>Morrow County</b> Countywide	24	1900EST			0	0	25K		Thunderstorm Wind
									Numerous trees and power lines were downed.
<b>Lorain County</b> Central Portion	24	1900EST			0	0	5K		Thunderstorm Wind
									Trees and power lines were downed in Oberlin and Camden.
<b>Holmes County</b> Millersburg	24	1915EST			0	0	2K		Thunderstorm Wind
									Several large tree limbs were downed.
<b>Ashland County</b> Countywide	24	1920EST			0	0	7K		Thunderstorm Wind
									Trees were downed, mainly in the southern portion of the county.
<b>Medina County</b> Medina	24	1920EST			0	0		5K	Hail (0.75)
									Some crops were damaged.
<b>Wayne County</b> Countywide	24	1930EST			0	0	20K		Thunderstorm Wind
									Numerous trees and power lines were downed.
<b>Stark County</b> Navarre	24	1940EST			0	0	7K		Thunderstorm Wind
									Several trees were downed in the southwest portion of the county.
<b>Lucas County</b> Toledo	25	0323EST			0	0	25K		Thunderstorm Wind
									Power poles were downed in Toledo and trees were downed in Holland.
<b>Wood County</b> Countywide	25	0330EST			0	0	15K		Thunderstorm Wind
									Trees and power lines were downed.
<b>Ottawa County</b> Elmore	25	0330EST			0	0	7K		Thunderstorm Wind
									Trees and power lines were downed.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b>OHIO, North</b>									
<b>Sandusky County</b>									
Fremont	25	0350EST			0	0	10K		Thunderstorm Wind
									Many trees were downed.
<b>Huron County</b>									
Countywide	25	0405EST			0	0	25K		Thunderstorm Wind
									Many trees and power lines were downed, especially in the Wakeman area.
<b>Lorain County</b>									
Kipton	25	0418EST			0	0	2K		Thunderstorm Wind
									Trees were downed.
<b>Erie County</b>									
Countywide	25	0430EST			0	0	10K		Thunderstorm Wind
									Several trees were downed.
<b>Seneca County</b>									
Countywide	25	0445EST			0	0	10K		Thunderstorm Wind
									Power lines and large tree limbs were downed.
<b>Medina County</b>									
Countywide	25	0446EST			0	0	25K		Thunderstorm Wind
									Trees, power lines and power poles were downed, particularly in the Medina area.
<b>Lorain County</b>									
Wellington	25	0500EST			0	0	5K		Thunderstorm Wind
									Trees and limbs were downed.
<b>Wayne County</b>									
Wooster	25	0515EST			0	0	5K		Thunderstorm Wind
									Several trees were downed.
<b>Summit County</b>									
Countywide	25	0530EST			0	0	5K		Thunderstorm Wind
									Many large tree limbs were downed.
<b>Wayne County</b>									
Wooster	25	1000EST			0	0	50K		Lightning
									Lightning struck a two story barn starting a fire that destroyed the barn and six thousand to eight thousand bales of hay and straw stored there.
<b>Wood County</b>									
Weston	25	1025EST 1115EST			0	0			Flood
									Heavy thunderstorm rain caused flooding of streets and numerous small streams.
<b>Hancock County</b>									
North Portion	25	1030EST 1120EST			0	0			Flood
									Heavy thunderstorm rain caused flooding of roads and low lying areas.
<b>Seneca County</b>									
Countywide	25	1045EST 1230EST			0	0	100K		Flood
									Heavy thunderstorm rain caused flooding of roads and low lying areas. Some roads had to be closed. Basements were flooded in the town of Attica and Clinton Mobile Home Court on State Route 101 was flooded when Willow Creek overflowed its banks.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OHIO, North</b>									
<b>Huron County</b> Countywide	25	1115EST 1245EST			0	0	1M		Flood
									Heavy thunderstorm rain caused widespread flooding. The towns of Willard, Greenwich and New London in the southern portion of the county sustained the most damage with fifty to sixty homes flooded; some were total losses. Up to 1000 basements were flooded. Roads were flooded, some washed out in places, and four people had to be rescued from stranded vehicles.
<b>Wayne County</b> Rittman	25	1200EST			0	0	7K		Thunderstorm Wind
									Trees and power lines were downed.
<b>Wood County</b> Cygnet	25 27	1200EST 1200EST			0	0	75K		Flood
									Heavy thunderstorm rain caused the Rocky Ford to overflow its banks. Some businesses incurred water damage, as well as numerous homes. Homes in the nearby town of Bloomdale also experienced flooding.
<b>Summit County</b> Clinton	25	1210EST			0	0		10K	Hail (1.75)
									Some crops were damaged.
<b>Stark County</b> Uniontown	25	1215EST			0	0		10K	Hail (1.00)
									Large hail (1.00") also fell at Alliance. Some crops were damaged.
<b>Crawford County</b> Galion	25	1330EST			0	0		10K	Hail (1.50)
									Large hail was reported near Galion. Some crops were damaged.
<b>Marion County</b> Marion	25	1345EST 1350EST	3	30	0	0	300K		Tornado (F0)
									A weak tornado touched down about four miles west of Marion and remained on the ground for a short time. A garage and two barns were destroyed and a large shed was badly damaged. Numerous trees and power lines were downed and some minor damage occurred to several homes in the area. Most of the damage appeared to be caused by an intense microburst, which accompanied the tornado. Winds were estimated at 80 to 90 miles per hour.
<b>Marion County</b> Marion	25	1350EST			0	0		5K	Hail (2.50)
									Some crops were damaged.
<b>Morrow County</b> Countywide	25	1405EST			0	0	50K		Thunderstorm Wind
									Trees were downed and some buildings sustained minor damage mostly in the southern portion of the county.
<b>Morrow County</b> Mt Gilead	25	1410EST			0	0		5K	Hail (1.75)
									Some crops were damaged.
<b>Ashland County</b> Countywide	25	1410EST			0	0	7K		Thunderstorm Wind
									Trees were downed, mainly in the southern portion of the county.
<b>Ashland County</b> Ashland	25	1410EST			0	0		5K	Hail (2.00)
									Large hail fell six miles south of the city of Ashland. Some crops were damaged.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OHIO, North</b>									
<b>Morrow County</b>									
Marengo	25	1425EST			0	0	20K		Lightning
A lightning strike blew the tops off two 6000 gallon oil tanks. Only 150 gallons spilled out and a small fire was quickly extinguished.									
<b>Medina County</b>									
Medina	25	1430EST 1615EST			0	0	75K		Flood
Heavy thunderstorm rain caused flooding of basements, businesses and roads. Many roads had up to 12 inches of water on them. Cottages were flooded at Chippewa Lake.									
<b>Knox County</b>									
Brandon	25	1445EST			0	0	75K		Thunderstorm Wind
Numerous trees were downed along with some power poles. Also, some homes were damaged.									
<b>Holmes County</b>									
Countywide	25	1500EST 1645EST			0	0			Flood
Heavy thunderstorm rain caused flooding of streets, streams and low lying areas.									
<b>Ashland County</b>									
Countywide	25	1505EST 1635EST			0	0	200K		Flood
Heavy thunderstorm rain caused flooding of numerous streets, streams, basements and low lying areas. The water was as deep as the tops of cars on some roads; a few people had to be rescued from their vehicles. Culverts collapsed on several roads.									
<b>Stark County</b>									
Countywide	25	1515EST 1625EST			0	0			Flood
Heavy thunderstorm rain caused flooding of streets, streams and low lying areas.									
<b>Summit County</b>									
Countywide	25	1530EST 1630EST			0	0			Flood
Heavy thunderstorm rain caused flooding of streets, streams and low lying areas.									
<b>OHZ009</b>									
<b>Erie</b>									
	25	1600EST			0	0	500K		Flood
	27	0300EST							
The Huron River at Milan exceeded its flood stage of 14 feet and crested at 23.4 feet at 0700 EST on 08/26/98. Flooding occurred in the lagoon communities from Milan to near Huron and small businesses near US Route 250. Basements and streets were also flooded. Seventy five homes were evacuated in Franklin Flats, 10 to 12 homes on Mudbrook Road were evacuated and 70 campers at Huron Valley Campground. This crest level was more than nine feet above flood stage and the second highest in 30 years.									
<b>OHZ008</b>									
<b>Sandusky</b>									
	25	1700EST			0	0	50K		Flood
	29	1100EST							
The Portage River at Woodville exceeded its flood stage of nine feet and crested at 14 feet at 0535 EST on 08/27/98. Flooding occurred in Trail Marker Park. Also, streets, basements and other low lying areas experienced flooding.									
<b>OHZ003</b>									
<b>Lucas</b>									
	25	2100EST			0	0			Flood
	26	0900EST							
The Maumee River at Waterville exceeded its flood stage of nine feet and crested at 9.4 feet at 0200 EST on 08/26/98. There was only minor flooding of low lying areas.									
<b>OHZ006</b>									
<b>Wood</b>									
	26	0300EST			0	0	75K		Flood
	27	0100EST							
The Portage River at Pemberville over flowed its banks and caused flooding of streets, basements and low lying areas. Downtown businesses sustained only minor damage after citizens worked around the clock to put sandbags in place, while some people had to be evacuated from their homes by boat..									
<b>Seneca County</b>									
Bettsville	26	0500EST 1600EST			0	0	50K		Flood
Heavy thunderstorm rain caused flooding of basements, roads and low lying areas.									

# Storm Data and Unusual Weather Phenomena

August 1998

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

## OHIO, North

### **OHZ019**

#### **Huron**

26	0515EST			0	0	50K	<b>Flood</b>
27	0300EST						

The Huron River at Monroeville overflowed its banks and flooded streets, basements and low lying areas. Some people had to evacuate their homes.

### **OHZ019**

#### **Huron**

26	0515EST			0	0	75K	<b>Flood</b>
	1700EST						

The Vermilion River at Clarksfield overflowed its banks and flooded streets, basements and low lying areas. Six families had to evacuate their homes.

## OHIO, Northwest

### **Henry County**

#### **Napoleon**

05	1700EST			0	0	150K	50K	<b>Flood</b>
06	0200EST							

SOUTHERN HALF OF THE COUNTY SUSTAINED THE WORST FLOODING. MANY RURAL COUNTY ROADS WERE WASHED OUT TO SOME DEGREE WITH EXTENSIVE DAMAGE TO LOWLAND AGRICULTURAL FARM FIELDS.

### **Paulding County**

#### **Paulding**

05	1700EST			0	0	400K	250K	<b>Flood</b>
06	0200EST							

EXTENSIVE FLOODING OCCURRED THROUGHOUT THE COUNTY WITH ROADS AND FARM FIELDS WASHED AWAY BY THE FLOODING.

### **Putnam County**

#### **Continental to Gilboa**

05	1700EST			0	0	250K	100K	<b>Flood</b>
06	0200EST							

EXTENSIVE FLOODING OCCURRED ACROSS THE COUNTY ESPECIALLY THE NORTHERN HALF. MANY COUNTY ROADS WERE WASHED OUT TO SOME DEGREE.

Synoptic and Mesoscale conditions for August 6th...

The same storm system which had plagued parts of eastern Indiana the night before with very heavy rain shifted its focus into northwest Ohio the night of August 5. A warm top heavy rain event developed late in the afternoon of the 5th as thunderstorms developed along a warm front which stretched from the surface low now in western Illinois into northwest Ohio. Storms continued to backbuild along the front towards the theta-e ridge which extended from central Illinois into northern Indiana and train across the same areas in northwest Ohio into the morning of the 6th. Several locations from Paulding to Napoleon received from 3 to 7 inches of rain.

### **Fulton County**

#### **Wauseon**

24	0230EST			0	0	50K	<b>Thunderstorm Wind</b>
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A FARM HAD ITS BARN COMPLETELY DEMOLISHED. NUMEROUS TREES WERE ALSO DAMAGED.

### **Williams County**

#### **Bryan**

24	0500EST			0	0	20K	<b>Thunderstorm Wind</b>
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THE FRONTIER CABLEVISION BUILDING LOST PART OF ITS ROOF.

### **Williams County**

#### **Pioneer**

24	0500EST			0	0		<b>Hail (0.88)</b>
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### **Fulton County**

#### **Fayette**

24	0515EST			0	0		<b>Thunderstorm Wind (G56)</b>
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NUMEROUS TREES AND POWER LINES DOWN THROUGHOUT THE TOWN.

### **Fulton County**

#### **Wauseon**

24	0525EST			0	0		<b>Hail (0.88)</b>
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### **Fulton County**

#### **Wauseon**

24	0525EST			0	0		<b>Thunderstorm Wind (G52)</b>
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NUMEROUS TREES AND POWER LINES DOWN.

### **Williams County**

#### **Montpelier**

24	0550EST			0	0		<b>Hail (1.00)</b>
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# Storm Data and Unusual Weather Phenomena

August 1998

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, Northwest

### **Fulton County**

**Archbold**      24      0614EST                0      0      650K      2M      Hail (4.50)

SEVERAL HOMES NEAR ARCHBOLD SUSTAINED MODERATE TO SEVERE STRUCTURAL DAMAGE FROM THE HIGH WINDS. ONE HOME OWNER HAD HIS CHIMNEY COLLAPSE WHICH FELL THROUGH THE ROOF. THEY ALSO LOST SEVERAL WINDOWS ON THE WEST SIDE OF THE HOME FROM FLYING DEBRIS. ANOTHER HOME OWNER HAD HIS BARN BLOWN OFF ITS FOUNDATION AND HAD EVERY TREE ON THEIR PROPERTY UPROOTED. SEVERAL CROP FIELDS IN THE AREA WERE HEAVILY DAMAGED BY THE HIGH WINDS AND HAIL.

### **Henry County**

**Napoleon**      24      0700EST                0      0                Hail (0.75)

### **Henry County**

**Napoleon**      24      0700EST                0      0      10K           Thunderstorm Wind (G52)

HIGH WINDS BROKE SEVEN UTILITY POLES ALONG COUNTY ROAD 12. THE CITY WAS ALSO HIT WITH DIME SIZE HAIL FOR ABOUT 10 MINUTES.

### **Fulton County**

**Archbold**      24      1015EST                0      0      150K      1M      Flood

TWO PEOPLE HAD TO BE RESCUED FROM THEIR VEHICLES AS THEY ATTEMPTED TO CROSS FLOODED ROADS. THE SAUDER VILLAGE MUSEUM SUSTAINED THE MOST DAMAGE AS FLAT RUN CREEK INUNDATED THE GROUND FLOOR WITH WATER. SEVERAL HOMES IN ARCHBOLD HAD WATER BACKUP THROUGH THE SEWER INTO THEIR BASEMENTS.

### **Paulding County**

**Paulding**      24      1635EST                0      0      50K           Thunderstorm Wind

TREES AND POWER LINES DOWN THROUGHOUT PAULDING COUNTY.

### **Van Wert County**

**Scott**      24      1647EST                0      0                Thunderstorm Wind (G52)

### **Putnam County**

**5 N Columbus Grove**      24      1710EST                0      0                Hail (1.00)

### **Putnam County**

**5 N Columbus Grove**      24      1710EST                0      0                Thunderstorm Wind (G61)

### **Fulton County**

**Archbold**      25      0300EST                0      0      100K           Thunderstorm Wind (G64)

A ROOF WAS BLOWN OFF ON A HOME AT 5326 CR RD 20. ANOTHER HOME HAD ITS WINDOWS BLOWN IN ON THE WEST SIDE OF THE HOME AND A BARN WAS MOVED OFF ITS FOUNDATION 3 FEET. IN ADDITION SEVERAL LARGE TREES IN ARCHBOLD WERE UPROOTED.

### **Fulton County**

**Wauseon**      25      0300EST                0      0      100K           Thunderstorm Wind

AIR CONDITIONING UNITS ON TOP OF THE LOCAL WALMART WERE BLOWN OFF. THE GREENHOUSE WAS ALSO DEMOLISHED.

## **OHZ001**

### **Williams**

25      0315EST                0      0                Flood

STATE ROUTE 191 CLOSED FROM WEST UNITY TO STRIKER DUE TO HIGH WATER OVER THE ROAD. SEVERAL OTHER COUNTY ROADS WERE ALSO BRIEFLY CLOSED.

### **Williams County**

**West Unity**      25      0315EST                0      0      20K           Thunderstorm Wind

A LINE OF LARGE UTILITY POLES WERE SNAPPED OR BLOWN DOWN.

Synoptic and mesoscale conditions for August 23-25th...



# Storm Data and Unusual Weather Phenomena

August 1998

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

## OHIO, Northwest

Impressive surface based instability developed late the night of the 23th ahead of a weak surface trough axis from southern lake Michigan back into western Illinois where mid 70 dewpoints had pooled. Surface based CAPES were on the order of 3000 J/kg with lifted indices to -10. At the same time a potent upper level trough was rotating through southern Ontario. Strong mid level capping inversion was in place at the time however increasing divergence underneath the exit region of a 100 knot jet streak across northern Michigan helped to intensify the low level jet across Illinois early on the morning of the 24th. Convection initiated across lake Michigan and quickly became severe as it became surface based over land. Wetbulb zero and freezing level temperatures were favorable for large hail and mid level winds on the southern edge of trough axis increased to 50 knots which were favorable for damaging wind gusts.

A stronger shortwave trough was located upstream across Montana the morning of the 24th. This system and associated frontal boundary across Minnesota into Michigan were forecast to combine across the area by late afternoon into the evening of the 25th and touch off another round of severe thunderstorms. The convection across southern Michigan into Ohio the morning of the 24th left behind an outflow boundary which helped pool upper 70 dewpoints across northern Indiana. By afternoon CAPES had increased to over 3000 J/kg. A surface wave developed along the cold front across Iowa by late morning where increasing surface convergence and mid level vorticity advection and cooling ahead of Montana shortwave helped to initiate a severe thunderstorm complex across northern Iowa. This system quickly turned into a derecho and raced into northern Indiana by mid afternoon.

By late evening on the 24th... rapid destabilization occurred from northern Illinois into southern Wisconsin with the approach of Montana shortwave. Low level jet increased to 40 knots across central Illinois into lake Michigan which fired off another round of severe thunderstorms from the Illinois/Wisconsin border area eastward into southern lake Michigan. This convection quickly organized into a squall line by the morning of the 25th with several embedded supercells. One isolated supercell ahead of the line which failed to produce a tornado... did produce a swath of large hail and high winds across southern Michigan. Another supercell within the squall line interacted with the outflow of this isolated supercell and produced a long track tornado as it moved southeast from Niles to Bristol. One additional tornado which was likely a gustnado did develop along the leading edge of the bowing squall line between Dunlap and Goshen. As the bow matured, damaging winds became the primary threat.

## OHIO, Southeast

### **OHZ076-085**

### **Washington - Meigs**

<b>01</b>	<b>0000EST</b>	<b>0</b>	<b>0</b>		<b>Monthly Rainfall</b>
<b>31</b>	<b>2300EST</b>				

Total August rains amounted to less than an inch for several locations. The Belleville Lock and Dam near Reedsville had only 0.76 inches. Marietta recorded 0.86 inches. Normal August rain is 3.5 to 4 inches. This same region started the summer excessively wet, with 10 to 16 inches of rain during the month of June.

### **Perry County**

New Lexington	25	1615EST	0	0	5K	Thunderstorm Wind
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### **Perry County**

Shawnee to Corning	25	1640EST	0	0	5K	Thunderstorm Wind
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### **Morgan County**

Malta to Mc Connelsville	25	1645EST 1650EST	0	0	15K	Thunderstorm Wind
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### **Morgan County**

Neelysville	25	1710EST	0	0	5K	Thunderstorm Wind
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### **Vinton County**

Creola	25	1720EST	0	0	2K	Thunderstorm Wind
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### **Washington County**

Beverly to Watertown	25	1725EST	0	0	5K	Thunderstorm Wind
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### **Athens County**

5 SE Athens	25	1735EST	0	0	2K	Thunderstorm Wind
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### **Meigs County**

Darwin to Burlingham	25	1800EST	0	0	5K	Thunderstorm Wind
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### **Athens County**

New Marshfield	25	1810EST	0	0	2K	Thunderstorm Wind
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### **Jackson County**

Wellston	25	1848EST	0	0	2K	Thunderstorm Wind
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# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>OHIO, Southeast</u></b>									
Damage was minimal, confined mostly to down electrical lines. Roads were blocked by tree branches.									
<b><u>OHIO, Southwest</u></b>									
<b>Montgomery County</b>									
Dayton	06	2025EST 2100EST			0	0			Flood
Heavy rainfall caused flooding of streets.									
<b>Hardin County</b>									
Mc Guffey	08	1610EST 1800EST			0	0			Flood
Heavy rainfall caused flooding across county roads, including Rte 309.									
<b>Darke County</b>									
Greenville	24	1815EST 1820EST			0	0			Hail (0.75)
<b>Preble County</b>									
Eaton	24	1837EST 1845EST			0	0	3K		Thunderstorm Wind (G50)
Numerous large limbs downed.									
<b>Hardin County</b>									
5 E Kenton	25	1325EST 1335EST			0	0	10K		Thunderstorm Wind (G60)
Numerous trees knocked down.									
<b>Licking County</b>									
2 W Utica to 10 NE Newark	25	1445EST 1500EST	10	250	0	0	300K		Tornado (F2)
A tornado knocked down numerous trees, destroyed 2 barns, and caused significant damage to 4 homes.									
<b>Logan County</b>									
Countywide	25	1445EST 1500EST			0	0	5K		Thunderstorm Wind (G50)
Numerous trees knocked down.									
<b>Darke County</b>									
Versailles	25	1450EST 1500EST			0	0	5K		Thunderstorm Wind (G50)
Several trees knocked down.									
<b>Shelby County</b>									
Pemberton	25	1450EST 1500EST			0	0	5K		Thunderstorm Wind (G50)
Many trees knocked down.									
<b>Delaware County</b>									
Olive Green	25	1500EST 1510EST			0	0	5K		Thunderstorm Wind (G50)
Trees knocked down.									
<b>Miami County</b>									
Bloomer	25	1503EST 1510EST			0	0			Hail (0.75)
<b>Champaign County</b>									
Urbana	25	1510EST 1515EST			0	0	10K		Hail (2.50)
Hail up to the size of tennis balls caused at least one broken windshield.									
<b>Union County</b>									
Plain City	25	1526EST 1535EST			0	0	20K		Thunderstorm Wind (G60)
Trees downed across the country, one of which fell on a house.									
<b>Franklin County</b>									
Dublin	25	1535EST 1545EST			0	0	5K		Thunderstorm Wind (G50)
Trees downed.									

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OHIO, Southwest</b>									
<b>Madison County</b>									
West Jefferson	25	1539EST 1545EST			0	0			Hail (0.75)
<b>Licking County</b>									
Countywide	25	1545EST			0	0	5K		Thunderstorm Wind (G50)
									Trees knocked down.
<b>Clark County</b>									
Countywide	25	1549EST 1600EST			0	0	5K		Thunderstorm Wind (G50)
									Several trees downed.
<b>Fayette County</b>									
Bloomingsburg	25	1645EST 1655EST			0	0	5K		Thunderstorm Wind (G50)
									Trees knocked down.
<b>Pickaway County</b>									
Commercial Pt	25	1650EST 1700EST			0	0	5K		Thunderstorm Wind (G50)
									Trees knocked down.
<b>Fairfield County</b>									
Clearport	25	1700EST 1710EST			0	0	5K		Thunderstorm Wind (G50)
									Trees and power lines knocked down.
<b>Hocking County</b>									
Countywide	25	1730EST			0	0	5K		Thunderstorm Wind (G50)
									Trees knocked down.
<b>Montgomery County</b>									
Dayton	25	1730EST 1740EST			0	0	5K		Thunderstorm Wind (G50)
									Trees knocked down.
<b>Ross County</b>									
Countywide	25	1730EST 1750EST			0	0	5K		Thunderstorm Wind (G50)
									Trees knocked down.
<b>Pike County</b>									
Elm Grove	25	1835EST 1845EST			0	0	5K		Thunderstorm Wind (G50)
									Trees downed.
<b>Scioto County</b>									
Lucasville to Minford	25	1938EST 1950EST			0	0	5K		Thunderstorm Wind (G50)
									Trees downed.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## **OKLAHOMA, Eastern**

### **OKZ073**

#### **Pittsburg**

<b>01</b>	0000CST			<b>0</b>	<b>0</b>				<b>Excessive Heat</b>
<b>02</b>	2359CST								

On August 1, 1998, the high temperature at the McAlester Regional Airport (KMLC) was 107 degrees, breaking the old record high temperature for the date.

On August 2, 1998, the high temperature at the McAlester Regional Airport (KMLC) was 108 degrees, breaking the record high temperature for the second day in row. Also on August 2, the low temperature for the day was 82, making that the warmest low temperature on record for this date in McAlester.

These two days were the continuation of a heat wave that gripped southeast Oklahoma in July 1998. For further information on the heat wave, see the excessive heat entry in the July 1998 Storm Data publication. The heat wave finally broke on August 4, which was the first day since July 16 that the temperature failed to reach at least 100 degrees in McAlester. August 2 marked eleven days in a row with high temperatures of at least 105 degrees in McAlester.

Drought conditions continued to accompany the heat in August over southeast Oklahoma with only 0.70" of rain measured at McAlester in August. For more information on the drought, see the Drought entry in the July 1998 Storm Data publication.

### **Craig County**

7 E Centralia

<b>02</b>	2310CST			<b>0</b>	<b>0</b>				<b>Thunderstorm Wind (G54)</b>
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A 62 mph gust was measured at an Oklahoma mesonet site.

Summary for August 2 1998:

A weak line of elevated showers and thunderstorms moving across the northern border counties of Oklahoma strengthened briefly over Craig County, causing a possible small-scale microburst. Calls to the area yielded no damage reports.

### **Choctaw County**

6 W Soper

<b>03</b>	1410CST			<b>0</b>	<b>0</b>	<b>70K</b>			<b>Thunderstorm Wind</b>
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Thunderstorm winds nearly destroyed one house. A shop was severely damaged, and other houses in the area suffered roof damage. Some trees were also blown down. There were fortunately no injuries.

### **Choctaw County**

2 NW Hugo

<b>03</b>	1450CST			<b>0</b>	<b>0</b>				<b>Thunderstorm Wind (G64)</b>
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The Oklahoma mesonet site near Hugo measured a gust to 73 mph. Calls to the Hugo Police Department yielded no damage or severe weather in town.

Summary for August 3 1998:

Two apparent microbursts on the afternoon of August 3 caused isolated reports of severe weather in Choctaw County. These microbursts affected fairly small areas.

### **Rogers County**

3 N Foyil

<b>04</b>	1640CST			<b>0</b>	<b>0</b>	<b>20K</b>			<b>Thunderstorm Wind</b>
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A mobile home was blown onto a highway and destroyed. However, it should be noted that the mobile home had not yet been tied down.

Summary for August 4 1998:

Widely scattered thunderstorms developed in northeast Oklahoma on the afternoon and evening of August 4 along a nearly stationary front as an upper level disturbance approached. One thunderstorm became severe across northern Rogers County.

### **Wagoner County**

Coweta

<b>08</b>	1437CST			<b>0</b>	<b>0</b>				<b>Hail (1.00)</b>
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Summary for August 8 1998:

A line of elevated light rain showers slowly moved east across northeast Oklahoma during the day on August 8. As these showers moved east of Tulsa during the heat of the day, an isolated severe thunderstorm developed and moved across southern Wagoner County, producing strong winds and hail as large as quarters. As the storm was in its developing stages over southern Tulsa County, there was a report of winds to 55 miles an hour at Bixby. Other showers and thunderstorms developed over southeast Oklahoma as

# Storm Data and Unusual Weather Phenomena

August 1998

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

a pool of cold air aloft destabilized the atmosphere, but these other storms remained below severe levels.

**Wagoner County**  
4 SW Coweta      **09**      **0615CST**                **0**      **0**      **0.10K**           **Thunderstorm Wind**

Several large tree limbs blown down

**Muskogee County**  
2 NW Haskell      **09**      **0630CST**                **0**      **0**      **0.10K**           **Thunderstorm Wind**

Several large tree limbs blown down

**Wagoner County**  
7 SE Wagoner      **09**      **0705CST**                **1**      **0**                **Lightning**

A 58-year old woman was killed by lightning at Sequoyah Bay State Park while fishing. F58BO

**Craig County**  
15 W Welch      **09**      **0810CST**                **0**      **0**                **Thunderstorm Wind (G52)**

60 mph gust reported by NWS Cooperative Observer in the community of Hollow

Summary of events for August 9 1998:

Numerous thunderstorms developed over eastern Oklahoma on Sunday morning, August 9, in response to the lift provided by a north-south warm front and an upper level low over southeast Missouri. Out of the numerous thunderstorms, there were widely scattered severe thunderstorms. One severe thunderstorm moved east through southern Wagoner and northern Muskogee County between 700 and 800 AM. This storm also produced a lightning death at Sequoyah Bay State Park after 800 AM. Further north, a train of strong to severe thunderstorms moved south out of Kansas and across Craig County, producing a report of severe winds in northwestern Craig County.

**Le Flore County**  
1 N Whitesboro      **12**      **1345CST**                **0**      **0**                **Hail (0.88)**

Summary for August 12 1998:

An isolated severe thunderstorm developed over the higher terrain of southern Le Flore County on the afternoon of August 12. This was a typical air mass thunderstorm, and it produced a report of nickel-sized hail.

**Mayes County**  
4 S Locust Grove      **19**      **1440CST**                **0**      **0**                **Hail (0.88)**

**Rogers County**  
4 E Claremore      **19**      **1510CST**                **0**      **0**      **9K**           **Thunderstorm Wind (G61)**

A 50-foot cattle trailer was turned completely over. Large elm trees were twisted and one was uprooted. There was structural damage to the aluminum frame and door locks on a building at the A-Bar Ranch east of the Claremore Municipal Airport. Winds were estimated at 70 miles an hour by the general public.

**Mayes County**  
Pryor      **19**      **1530CST**                **0**      **0**      **2K**           **Thunderstorm Wind**

A large tree was blown into the side of a house. In addition, a shed was destroyed, power lines were blown down, and large limbs were blown down.

**Wagoner County**  
Okay      **19**      **1530CST**                **0**      **0**                **Hail (0.75)**

**Delaware County**  
5 W Jay      **19**      **1535CST**                **0**      **0**                **Thunderstorm Wind (G61)**

**Tulsa County**  
1 N Broken Arrow      **19**      **1628CST**                **0**      **0**                **Hail (0.75)**

Dime-sized hail reported near 51st and Lynn Lane. A few smaller tree limbs were also blown down.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Pittsburg County**

**5 W Savanna**      **19**      **1630CST**                **0**      **13**                **Tstm Wind/Hail**

Thirteen soldiers at the Army Ammunition Plant were injured as strong thunderstorm winds blew tents into a group of soldiers. It is unlikely that severe winds were needed to blow tents away, therefore this is considered a non-severe report. The report came from the son of a Southern Region Headquarter employee.

### **Le Flore County**

**Heavener**      **19**      **1645CST**                **0**      **0**      **0.50K**           **Thunderstorm Wind (G61)**

65 to 70 mph winds knocked down two large trees on the west side of town. Hail of one-quarter to one-half inch in diameter was also reported.

### **Washington County**

**2 N Bartlesville**      **19**      **1730CST**                **0**      **0**                **Hail (0.75)**

### **Washington County**

**Dewey**      **19**      **1730CST**                **0**      **0**      **0.50K**           **Thunderstorm Wind**

Trees were blown down near Dewey.

### **Latimer County**

**7 S Bengal**      **19**      **1745CST**                **0**      **0**      **1K**           **Thunderstorm Wind**

A telephone pole and one-foot diameter tree limbs were blown down. Report was from 3 miles southwest of Talihina in Latimer County.

Summary of events for August 19 1998:

A trough of low pressure oriented from northwest to southeast and a cold pool of air aloft brought quite a few pulse severe thunderstorms to eastern Oklahoma on the afternoon and early evening of August 19. The trough started out in northwest Arkansas and then shifted southwest during the afternoon, causing the severe weather emphasis to shift southwest during the afternoon. The primary threats from these pulse storms were damaging thunderstorm winds and hail as large as nickels. Most areas of storm damage were confined to small areas due to the pulse nature of the storms.

## **OKZ060**

### **Tulsa**

**25**      **0000CST**                **0**      **0**                **Excessive Heat**  
**2359CST**

The low temperature at the Tulsa International Airport for the day was 80 degrees. This ties for being the warmest low temperature on record for this date in Tulsa.

### **Washington County**

**Dewey**      **26**      **1240CST**                **0**      **0**      **6K**           **Thunderstorm Wind**

A roof was removed from a mobile home. Also, several utility poles were blown down, and several tree limbs were blown down.

### **Muskogee County**

**Muskogee**      **26**      **1830CST**                **0**      **0**      **11K**           **Thunderstorm Wind**

A thunderstorm on the south side of Muskogee caused considerable wind damage as the storm collapsed. Most of the damage was confined to a 2-mile long area along Peak Blvd. bounded by US Hwy 69 on the west and Cherokee Street on the east. The Muskogee Phoenix daily newspaper reported the following damage:

- The trailer portion of an 18-wheeler was blown over, although it is unknown whether or not the trailer was loaded.
- A shop had its overhead doors blown out.
- One building partially collapsed, and another building under construction had a secured wall blown over.
- Sheet metal was blown off the roof of one building.
- A fence partially constructed of concrete block was blown over.
- The ASOS at Davis Field measured a peak gust of 47 mph, although this location was south of the main damage area.

Summary of events for August 26 1998:

Widely scattered pulse thunderstorms developed on the afternoon and evening of August 26 as a weak trough of low pressure interacted with cool air aloft. Two of the day's thunderstorms were notable. One developed just north of Bartlesville early in the afternoon and collapsed near Dewey, spawning destructive outflow winds. The other noteworthy thunderstorm developed quickly to the south of Muskogee early in the evening. This thunderstorm collapsed as it moved north into the city, producing damaging outflow winds.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## OKLAHOMA, Eastern

### **Tulsa County**

Tulsa	28	1615CST			0	0	0.50K		<b>Thunderstorm Wind</b>
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A 6-inch tree limb fell onto a car at 15th and Utica in Tulsa.

### **Tulsa County**

Tulsa	28	1645CST			0	0	0.10K		<b>Thunderstorm Wind</b>
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A tree was blown down in southwest Tulsa.

### **Okfuskee County**

Welty	28	1750CST			0	0	1K		<b>Thunderstorm Wind</b>
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There was roof damage and a tree blown down in Welty.

### **Okfuskee County**

Boley	28	1819CST			0	0			<b>Thunderstorm Wind (G52)</b>
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At the correctional facility in Boley.

Summary of events for August 28 1998:

Two isolated severe thunderstorms developed along a southward moving cold front during the late afternoon and early evening of August 28. The first thunderstorm moved southward over the city of Tulsa from downtown to near Jenks, knocking down some tree limbs and trees along the way. Another isolated severe storm developed over northern Okfuskee County and moved southward from near Micawber and Welty to Boley, producing scattered wind damage.

### **Pushmataha**

#### **County**

Rattan	30	1435CST			0	0			<b>Hail (1.00)</b>
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Dime to quarter-sized hail nearly covered the ground.

Summary for August 30 1998:

An isolated severe thunderstorm developed over the higher terrain of southern Pushmataha County and close to a weakening cold front/trough. The storm moved southward, producing a report of large hail.

## OKLAHOMA, Extreme Southeast

### **Mccurtain County**

Bethel	06	1815CST			0	0	5K		<b>Thunderstorm Wind (G52)</b>
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Several power poles were toppled from the high winds.

### **Mccurtain County**

10 SE Smithville	08	1710CST			0	0			<b>Hail (1.00)</b>
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Hail completely covered the ground.

## OKLAHOMA, Panhandle

NONE REPORTED.

## OKLAHOMA, Western, Central and Southeast

NOT RECEIVED.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## OREGON, Central and East

### Jefferson County

<b>Madras</b>	<b>02</b>	<b>1500PST</b>			<b>0</b>	<b>0</b>			<b>Wild/Forest Fire</b>
	<b>03</b>	<b>1700PST</b>							

A wild fire burned 500 acres of rangeland about 5 miles west of Madras and prompted the evacuation of about 150 homes. No homes burned, however, one outbuilding and some farm equipment was destroyed by the fire. About 300 firefighters, 24 fire engines, helicopters and three air tankers were called in to help fight the fire. Two firefighters were injured, one suffered heat exhaustion and the other had a back injury.

### Wheeler County

<b>Clarno</b>	<b>08</b>	<b>1600PST</b>			<b>0</b>	<b>0</b>			<b>Wild/Forest Fire</b>
	<b>11</b>	<b>1800PST</b>							

More than 8,000 acres burned in the Clarno area. Warm temperatures, dry air, and wind hampered fire fighting efforts. One outbuilding and a private vehicle were destroyed by the fire. Three air tankers and a helicopter were used to help put out the fire.

### Umatilla County

<b>Vinson to Pendleton</b>	<b>15</b>	<b>1130PST</b>			<b>0</b>	<b>0</b>			<b>Wild/Forest Fire</b>
	<b>16</b>	<b>1600PST</b>							

### Umatilla County

<b>Barnhart to Pendleton Arpt</b>	<b>15</b>	<b>1400PST</b>			<b>0</b>	<b>0</b>			<b>Wild/Forest Fire</b>
		<b>2030PST</b>							

Two grass fires near Pendleton burned more than 40,000 acres of grass land and wheat stubble, one home, several unoccupied buildings, and ten cars. The 35,000 acre Coombs Canyon fire started at about 12:30 pm by exhaust from a vehicle in wheat stubble about 15 miles southwest of Pendleton. Strong wind pushed the fire to Birch Creek, about five miles southwest of Pendleton. The 5,000 acre Rieth-Barnhart fire started around 3:30 pm by a target shooter. Strong wind pushed this fire through the Pendleton Regional Airport and burned one home, several other buildings, vehicles, power poles, and communication cables. The fire crossed Interstate 84 at 6:30 pm and prompted police to close the freeway for a few hours. Highway 37 was also closed to allow fire fighters to access the fire. Fire fighters were able to stop the fire before it crossed Highway 37. In all, over 250 fire fighters from as far away as central Oregon and southern Washington battled the blazes. Three Oregon National Guard helicopters were also used to help put out one of the fires. No injuries or deaths were reported. Numerous apartments, residences, and businesses were evacuated. The National Weather Service office in Pendleton was also affected by the evacuations, power outages, and communications failures.

### Jefferson County

<b>Countywide</b>	<b>19</b>	<b>1530PST</b>			<b>0</b>	<b>0</b>			<b>Wild/Forest Fire</b>
	<b>22</b>	<b>1300PST</b>							

Lightning caused a 160 acre forest fire in extreme southwestern Jefferson County. Campers in the southern part of the Mount Jefferson Wilderness area were evacuated. Trails and Forest Service roads were closed and Highway 20 was restricted from four lanes to two so that fire fighters could access the fire. Three air tankers and two helicopters were used to help control the fire. The fire was contained on August 22. A second fire burned 300 acres of wheat stubble and grassland north of Madras. That fire was contained on August 20.

### Deschutes County

<b>Redmond</b>	<b>19</b>	<b>1600PST</b>			<b>0</b>	<b>0</b>			<b>Lightning</b>
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A lightning strike knocked out communication and computer systems at the Redmond City Hall and Police Department. Phone lines were repaired on the night of August 20, however some of the computer components were still down a week later.

### Deschutes County

<b>Bend</b>	<b>20</b>	<b>1656PST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
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A spotter in Bend reported 3/4 inch hail.

### Deschutes County

<b>Brothers</b>	<b>22</b>	<b>2130PST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G61)</b>
		<b>2230PST</b>							

A spotter 20 miles southwest of Brothers reported 60 mph wind gusts, heavy rain, pea sized hail, and frequent lightning from 1030 pm to 1130 pm.

## OREGON, Northwest

### Lane County

<b>Oakridge</b>	<b>13</b>	<b>1200PST</b>			<b>0</b>	<b>0</b>	<b>100K</b>		<b>Wild/Forest Fire</b>
	<b>18</b>	<b>2000PST</b>							

An accidentally human-caused fire consumed 260 acres of timber on steep ridges along the North Fork of the Willamette River east of Road 19 near Huckleberry Flats in the High Prairie area. No injuries or significant property damage were attributed to what was known as the Gorge fire.



# Storm Data and Unusual Weather Phenomena

August 1998

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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## OREGON, Northwest

### **Clackamas County**

Wilsonville	20	2000PST 2300PST			0	0	75K		Lightning
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Lightning struck the roof of the SpringRidge apartments in Charbonneau near Wilsonville around 930 PM PDT. The blaze damaged part of the roof and attic. Power to 1700 homes in the area was also lost temporarily .

## OREGON, Southeast

NONE REPORTED.

## OREGON, Southwest

NONE REPORTED.

## PACIFIC

NOT RECEIVED.

## PENNSYLVANIA, Central

### **York County**

York	10	1630EST			1	0			Thunderstorm Wind (G51)
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Thunderstorms with torrential downpours downed a tree on a vehicle in York, fatally injuring the occupant. M42VE

### **Fulton County**

Harrisonville	14	1345EST			0	0			Thunderstorm Wind (G51)
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A number of trees were uprooted.

### **Elk County**

North Portion	14	1930EST 2330EST			0	0			Flash Flood
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Heavy rains fell causing flooding of small streams and basements. Boats were used for water rescue in Clermont.

### **Mckean County**

West Portion	14	1930EST			0	0			Flash Flood
	15	0300EST							

### **Bedford County**

Weyant	15	1805EST 2015EST			0	0			Flash Flood
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Several roads were closed due to flooding in the Weyant area.

### **Cameron County**

Emporium	16	1845EST			0	0			Thunderstorm Wind (G51)
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Trees down about 4 miles north of Emporium.

### **Warren County**

Lottsville	24	0846EST			0	0			Thunderstorm Wind (G51)
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At least 7 homes sustained damage from fallen trees in Lottsville. Grain trailers were toppled and siding was stripped from a grocery store. Several roads were closed.

### **Mckean County**

Bradford	24	0924EST			0	0			Thunderstorm Wind (G51)
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Powerlines were down in Bradford.

### **Elk County**

Ridgway	24	0925EST			0	0			Thunderstorm Wind (G51)
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Trees were down east of Ridgway on Route 120.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## PENNSYLVANIA, Central

### **Clearfield County**

Du Bois	24	0930EST							Thunderstorm Wind (G51)
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Trees were down in Clear Run just north of Dubois.

### **Elk County**

Brockport	24	0930EST							Thunderstorm Wind (G51)
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Trees were blown down near Brockport.

### **Cameron County**

Emporium	24	0945EST							Thunderstorm Wind (G51)
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A large limb was blown down in Emporium and a tree was toppled north of town.

### **Potter County**

Shinglehouse	24	0945EST							Thunderstorm Wind (G51)
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Trees down.

### **Clinton County**

Beech Creek	25	2100EST							Thunderstorm Wind (G51)
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Trees down.

### **Sullivan County**

Muncy Vly	25	2105EST							Thunderstorm Wind (G51)
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Trees down 2 miles south of Muncy Valley.

### **Columbia County**

Catawissa	25	2115EST							Thunderstorm Wind (G51)
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A tree was blown down in Catawissa and phone lines were down in Benton.

## PENNSYLVANIA, East

NOT RECEIVED.

## PENNSYLVANIA, Northeast

### **Wyoming County**

Tunkhannock	26	2230EST			10K				Thunderstorm Wind
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A thunderstorm briefly intensified to severe levels over central sections of the county late in the evening. Large tree limbs were blown down in Tunkhannock shortly before midnight EDT.

## PENNSYLVANIA, Northwest

### **Crawford County**

Countywide	24	0750EST			25K				Thunderstorm Wind
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Numerous trees and power lines were downed, especially in and around Conneautville.

### **Erie County**

Countywide	24	0800EST			30K				Thunderstorm Wind (G52)
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Numerous trees and power lines were downed. Two cars were damaged by falling trees in Corry, while wind gusts of 60 miles per hour were measured at Edinboro and Franklin Center.

## PENNSYLVANIA, West

### **Allegheny County**

Mc Keesport	09	2050EST			1K	0			Lightning
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A lightning strike felled two trees. Pea-size hail and 0.85 inches of rain in 15 minutes was also reported.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>PENNSYLVANIA, West</b>									
<b>Allegheny County</b>									
Coraopolis	16	1730EST 1815EST			0	0			Flood
		Street flooding was reported in Coraopolis.							
<b>Mercer County</b>									
Greenville	24	0753EST			0	0	2K		Thunderstorm Wind
<b>Mercer County</b>									
Greenville	24	0800EST			0	0			Hail (1.00)
		A severe thunderstorm downed large trees and one-inch diameter hail was also reported.							
<b>Venango County</b>									
Polk	24	0815EST			0	0	2K		Thunderstorm Wind
<b>Venango County</b>									
Franklin	24	0820EST			0	0	5K		Thunderstorm Wind
<b>Venango County</b>									
Sugarcreek	24	0820EST			0	0	2K		Thunderstorm Wind
<b>Venango County</b>									
Oil City	24	0825EST			0	0	5K		Thunderstorm Wind
<b>Venango County</b>									
Cranberry	24	0840EST			0	0	2K		Thunderstorm Wind
		Thunderstorm winds downed numerous trees and large branches throughout the county. Franklin and Oil City were particularly hard hit and some power lines were also downed.							
<b>Venango County</b>									
Dempseytown	24	0820EST			0	0	5K		Lightning
<b>Venango County</b>									
Clintonville	24	0845EST			0	0	5K		Lightning
		Lightning strikes caused damage to two houses.							
<b>Beaver County</b>									
Cannelton	24	0900EST			0	0			Hail (0.88)
<b>Lawrence County</b>									
Wampum	24	0910EST			0	0	2K		Thunderstorm Wind
		Large trees were downed by thunderstorm winds.							
<b>Clarion County</b>									
Vowinckel	24	0915EST			0	0	2K		Thunderstorm Wind
		Thunderstorm winds downed large trees.							
<b>Jefferson County</b>									
Crenshaw	24	0920EST			0	0	1K		Thunderstorm Wind
<b>Armstrong County</b>									
Cadogan	24	0925EST			0	0	4K		Thunderstorm Wind
<b>Armstrong County</b>									
Schenley	24	0930EST			0	0	4K		Thunderstorm Wind
<b>Armstrong County</b>									
Furnace Run	24	0935EST			0	0	2K		Thunderstorm Wind
<b>Armstrong County</b>									
West Kittanning	24	0940EST			0	0	4K		Thunderstorm Wind
		Strong thunderstorm winds swept through Armstrong County and through Crenshaw in Jefferson County. Several power lines and numerous large trees and branches were downed.							
<b>Armstrong County</b>									
Ford City	24	0940EST			0	0	10K		Lightning
		Lightning struck a school and sparked a fire.							

# Storm Data and Unusual Weather Phenomena

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		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>PENNSYLVANIA, West</u></b>									
<b>Allegheny County</b>									
Wilksburg	24	0950EST			0	0	2K		Thunderstorm Wind
									Power lines were downed by thunderstorm winds.
<b>Lawrence County</b>									
New Castle	24	1220EST			0	0	1K		Lightning
									Lightning caused damage to a chimney.
<b>Washington County</b>									
Washington	24	1545EST			0	0	2K		Thunderstorm Wind
									Thunderstorm winds downed trees onto Country Club Road.
<b>PAZ029</b>									
<b>Washington</b>									
Washington	24	1545EST 1600EST			0	0	10K		Flood
									Several basements were flooded in North Franklin and Chartiers Townships. Arden Road was also flooded.
<b>Beaver County</b>									
Beaver Falls to Eastvale	25	1430EST 1435EST			0	0	3K		Thunderstorm Wind
									Thunderstorm winds downed trees from Beaver Falls to nearby Eastvale.
<b>Allegheny County</b>									
Gibsonia	25	1552EST			0	0			Hail (1.00)
<b>Allegheny County</b>									
Russelton	25	1555EST			0	0			Hail (1.25)
<b><u>PUERTO RICO</u></b>									
<b>Arecibo</b>									
Utua	07	1400AST 1600AST			0	0			Heavy Rain
									A small stream went out of its banks covering a bridge.
<b>Ponce</b>									
Yauco	07	1700AST 1900AST			0	0			Heavy Rain
									Landslides were reported at the Fraile sector.
<b>Mayaguez</b>									
Countywide	07	1900AST 2100AST			0	0			Urban/Sml Stream Fld
									Several roads were reported impassable in parts of San German, Cabo Rojo, and Hormigueros.
<b>San Juan</b>									
North Portion	11	1300AST 1600AST			0	0	500K		Flash Flood
									Heavy rains produced flooding and landslides in Caimito sector in San Juan. Twenty five homes were totally or partially damaged when a stream went out of its banks. Several roads between Caguas and San Juan were also impassable affecting several vehicles. In Guaynabo a small stream went out of its banks affecting a parking lot and several houses.
<b>Mayaguez</b>									
Northwest Portion	11	1300AST 1600AST			0	0			Flash Flood
									Flooding was observed near coastal sites and in the vicinity of the rivers in Anasco and Mayaguez. Many streets and roads were flooded in downtown Mayaguez.
<b>San Juan</b>									
Countywide	12	1300AST 1500AST			0	0			Urban/Sml Stream Fld
									Heavy rains produced urban flooding in parts of San Juan, Bayamon, Guaynabo, Toa Baja. Various streets were reported impassable.
<b>Aguadilla</b>									
Aguadilla	12	1400AST 1600AST			0	0			Urban/Sml Stream Fld

# Storm Data and Unusual Weather Phenomena

August 1998

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## PUERTO RICO

Several streets were reported impassable in Aguadilla due to heavy rains.

### **Humacao**

Countywide

24	1200AST 2000AST				0	0	250K		Flash Flood
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### **San Juan**

Countywide

24	1200AST 2000AST				0	0	250K		Flash Flood
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A strong tropical wave produced widespread flooding and damaging winds across the north and east sections of Puerto Rico. Flooded roads, landslides and widespread power outages were reported across the east sections of Puerto Rico. In Vieques a stream went out of its banks flooding Villa Muneca sector. Two people were evacuated. Flooding of streets were reported in Carolina, Humacao, and Naguabo. Landslides were reported in Ceiba, Canovanas, and Toa Alta. About 15000 users were without electricity due to trees falling on power lines. An unofficial spotter report from Aibonito indicated a 24 hour rainfall value of 7.00 inches ending at 6 am on August 25th. A peak gust of 47 mph was recorded at Isla Verde International Airport.

### **San Juan**

North Portion

28	1300AST 1700AST				0	0	50K		Flash Flood
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Heavy rains associated with hurricane Danielle when it was passing northeast of the region produced several flooded roads and landslides in Bayamon, Guaynabo, Toa Alta, and Vega Alta. Various streams in Bayamon and Guaynabo went out of their banks flooding adjacent roads. In sector los Barros in Bayamon a house was partially damaged due to the collapse of a holding wall.

## RHODE ISLAND

NONE REPORTED.

## SOUTH CAROLINA, Central

### **Orangeburg**

County

Branchville

12	1512EST				0	0	0	0	Thunderstorm Wind (G60)
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Fire Dept reported many trees and some powerlines down on highway 61.

### **Richland County**

Columbia

12	1625EST				0	0	0	0	Thunderstorm Wind (G50)
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Sheriff reported couple of trees down in South Columbia near Bluff Road.

### **Aiken County**

Bath

18	1725EST				0	0	0	0	Thunderstorm Wind (G55)
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Sheriff reported several trees down, one on a home on Henderson Street.

### **Aiken County**

Aiken

18	1739EST				0	0	0	0	Thunderstorm Wind (G55)
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Sheriff reported several trees down on Coleman's bridge.

### **Lexington County**

Swansea

30	1600EST				1	0	12K	0	Thunderstorm Wind (G55)
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Sheriff reported one person killed when his pickup truck was hit by a falling tree. Several trees were taken down in the Swansea area. M34OT

### **Clarendon County**

3 W Manning

31	1700EST				0	0			Thunderstorm Wind (G50)
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Sheriff reported roof blow off large equipment shed.

# Storm Data and Unusual Weather Phenomena

August 1998

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		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>SOUTH CAROLINA, North Coastal</b>									
<b>Georgetown County</b>									
1.5 E Murrells Inlet	10	0530EST 0830EST			0	0			Waterspout
Residents from Murrells Inlet to Litchfield Beach reported waterspouts developing from showers and thunderstorms off the coast. The waterspouts remained off the coast and caused no damage.									
<b>Horry County</b>									
1.5 E Garden City	10	0530EST 0830EST			0	0			Waterspout
Murrells Inlet /Garden City Fire Department sighted six or seven waterspouts developing from showers and thunderstorms off the coast. The waterspouts remained off the coast and caused no damage.									
<b>Horry County</b>									
Nixons Xrds	16	1200EST			1	1			Lightning
Husband and wife struck by lightning near 13th hole at Colonial Charters Golf Course. Woman was revived, but the man died. M60GF									
<b>Horry County</b>									
Surfside Beach to Garden City	20	0045EST 0245EST			0	0			Flash Flood
Heavy rains measured 4 to 6 inches in 3 hours, causing widespread flooding of roadways. Water entered some homes.									
<b>Georgetown County</b>									
Murrells Inlet to Pawleys Is	20	0150EST 0330EST			0	0			Flash Flood
Heavy rains from slow moving thunderstorms measuring 3 to 5 inches caused overflowing ditches and flooding along roadways.									
<b>SCZ034 Horry</b>									
	26	1200EST 2200EST			0	0	3.8M		Hurricane
The center of Hurricane Bonnie came within 70 miles of the Horry County coast as the storm tracked north during the afternoon and early evening. Highest wind reports were from the NNW, ranging as high as 82 MPH at the Cherry Grove pier, while at the Myrtle Beach Pavilion the highest gust was 76 MPH. Rainfall ranged as from 2 to nearly 4 inches. Widespread damage was heaviest in the northeast part of the county - mainly downed trees, wires and structural damage. Ocean levels rose 2-3 feet above normal with no overwash. Federal Disaster Declaration.									
<b>SCZ039 Williamsburg</b>									
	26	1200EST 1600EST			0	0			High Wind (G50)
The outskirts of Hurricane Bonnie brushed the northeast part of the county, causing some downed trees and brief power outages.									
<b>SCZ046 Georgetown</b>									
	26	1200EST 1600EST			0	0			High Wind (G55)
The center of Hurricane Bonnie tracked north about 90 miles east of the northeast part of the county. Tree, powerline, and minor structural damage occurred along the coast, where ocean levels rose about 2 feet above normal. There were no reports of overwash. Rainfall was less than one inch.									
<b>SCZ032 Florence</b>									
	26	1300EST 1900EST			0	0	25K		High Wind (G55)
The outskirts of Hurricane Bonnie caused scattered damage, mainly on the east side of the county, downing trees and power lines. One mobile home was destroyed. Rainfall was around a half inch.									
<b>SCZ033 Marion</b>									
	26	1400EST 2000EST			0	0	10K		High Wind (G55)
The outskirts of Hurricane Bonnie brushed the county and downed trees onto power lines. Rainfall was around a half inch, with no flooding reported.									
<b>SCZ024 Dillon</b>									
	26	1600EST 1900EST			0	0			High Wind (G58)
The outskirts of Hurricane Bonnie brushed the county, downing scattered trees and causing power outages. The wind report was from WBTW-TV. Rainfall was less than 1 inch.									

# Storm Data and Unusual Weather Phenomena

August 1998

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					Killed	Injured	Property

## SOUTH CAROLINA, Northwest

### **Greenville County**

<b>Greer</b>	11	1900EST			0	0	5K	<b>Lightning</b>
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Gusty winds or lightning, most likely lightning, caused a tree to split in downtown Greer. The tree fell on a storefront awning.

### **Laurens County**

Laurens	13	1620EST			0	0		<b>Thunderstorm Wind (G50)</b>
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### **Laurens County**

Laurens	13	1640EST			0	0		<b>Thunderstorm Wind (G50)</b>
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### **Anderson County**

<b>Belton</b>	13	1743EST			0	0		<b>Thunderstorm Wind (G50)</b>
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A slow-moving severe thunderstorm moved northwest to southeast across the city causing widespread tree and power line damage. Some people said the storm lasted up to an hour. A similar storm affected Belton, blowing trees down onto several streets in the town.

### **Spartanburg County**

<b>Spartanburg to 8 S Spartanburg</b>	14	2200EST			0	0	2.5M	<b>Flash Flood</b>
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A flash flood developed rapidly late in the evening following 4 to 5 inches of rainfall in a short time. The flash flood affected several creeks from the city of Spartanburg southward to Roebuck, Walnut Grove, and Pauline. The most damage may have occurred along Timms Creek and Lawson Fork Creek. Several roads were washed out, several people required rescue from their homes, a country club experienced severe damage, and a restaurant was destroyed. Most of the severe flooding was in the first 2 hours.

### **Spartanburg County**

<b>Spartanburg</b>	15	2100EST			0	0	500K	<b>Flash Flood</b>
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For the second consecutive night a flash flood hit Spartanburg. This time the primary flood occurred along Fairforest Creek and the communities affected were the west side of the city, Arcadia, Una, and Reidville Road. A road buckled leaving a 6 to 8 foot crater, rescues of motorists were required at Una, and a motel was flooded which required evacuation of the residents.

## SOUTH CAROLINA, South Coastal

### **SCZ050**

<b>Charleston</b>	26	0815EST			0	0		<b>Hurricane</b>
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Several trees down in the Mt. Pleasant area of Charleston County as Hurricane Bonnie passed east of the area headed for the North Carolina coast.

### **Jasper County**

<b>Ridgeland to Hardeeville</b>	31	1400EST 1410EST			0	0		<b>Thunderstorm Wind (G55)</b>
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Trees and power lines down.

### **Dorchester County**

<b>Ridgeville</b>	31	1525EST 1528EST			0	0		<b>Thunderstorm Wind (G50)</b>
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Trees and power lines down.

### **Charleston County**

<b>North Charleston</b>	31	1545EST 1550EST			0	0	80K	<b>Thunderstorm Wind (G60)</b>
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Winds blew a 60-foot yacht off its stand and into a shed causing considerable damage to the yacht.

## SOUTH DAKOTA, Central and North

### **Dewey County**

<b>Isabel</b>	15	1755CST			0	0		<b>Hail (1.75)</b>
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# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>SOUTH DAKOTA, Central and North</u></b>									
<b>Dewey County</b>									
Isabel	15	1820CST			0	0			Hail (1.75)
<b>Dewey County</b>									
6 SW Isabel	15	1840CST			0	0			Hail (2.75)
					Large hail in and southwest of Isabel broke several windows on vehicles and structures.				
<b>Clark County</b>									
Willow Lake	19	1640CST			0	0			Hail (0.75)
<b>Hughes County</b>									
Pierre Arpt	22	2250CST			0	0			Thunderstorm Wind (G50)
<b>Grant County</b>									
Milbank	23	0150CST 0205CST			0	0			Thunderstorm Wind (G56)
					Winds gusting to 65 mph in and around Milbank took the roof off a mobile home in southeast Milbank and wrapped it around a utility pole. The people inside the mobile home got out uninjured, but their belongings inside were rain soaked. The Summit Dairy Barn had sustained major damage. The high winds also blew a shed and a large tennis court fence down. Several trees along with many large tree branches were downed all over town. The power was out on the west side of town for a few hours.				
<b>Day County</b>									
Roslyn	23	0153CST			0	0			Thunderstorm Wind (G61)
					Winds gusting to 70 mph downed many large branches in Roslyn. Power was also knocked out for a time in town.				
<b>Codington County</b>									
3 N Watertown	23	0200CST			0	0			Thunderstorm Wind (G52)
					Winds of 60 mph downed many branches north of Watertown and also blew a barn door off.				
<b>Roberts County</b>									
Wilmot	23	0200CST			0	0			Thunderstorm Wind (G52)
					Winds gusting to 60 mph brought several large branches down in Wilmot.				
<b>Sully County</b>									
1 W Onida	24	0445CST			0	0			Hail (1.75)
<b>Sully County</b>									
1 W Onida	24	0445CST			0	0			Thunderstorm Wind (G61)
<b>Sully County</b>									
4 NW Onida	24	0450CST			0	0			Hail (1.00)
<b>Sully County</b>									
Onida	24	0450CST			0	0			Thunderstorm Wind (G87)
<b>Sully County</b>									
3 N Onida	24	0455CST			0	0			Hail (1.75)
<b>Sully County</b>									
20 SE Onida	24	0500CST			0	0			Hail (1.00)
<b>Hyde County</b>									
Highmore	24	0525CST			0	0			Hail (0.75)
<b>Hand County</b>									
7 S Ree Hgts	24	0537CST			0	0			Hail (2.25)
<b>Hand County</b>									
19 S Miller	24	0555CST			0	0			Hail (2.75)
<b>Hand County</b>									
10 SE Miller	24	0600CST			0	0			Hail (1.75)
<b>Hand County</b>									
12 S Vayland	24	0610CST			0	0			Hail (0.75)

A line of severe thunderstorms moved rapidly southeast across Sully, Hyde, and Hand counties in the morning hours producing destructive winds of up to 100 mph and hail up to the size of baseballs. The wind and hail damaged or destroyed a wide swath of sunflowers and corn beginning from just to the west and north of Onida on east to Holabird, Highmore, to the south of Ree Heights and Miller before finally exiting the southeast part of Hand county. The wind and hail also damaged or destroyed many gardens, broke numerous vehicle and structure windows, along with causing a lot of damage to the vehicles and the structures. Four highline poles south of Highmore on Highway 47 were snapped off. The school in Highmore had twenty screens shredded by the hail and the



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## SOUTH DAKOTA, Central and North

wind. At a farm northeast of Onida, a grain bin was blown over 200 yards. The winds also blew the roof off a barn, moved a garage several inches off its foundation east of Onida, and blew a trailer home over near Holabird. Lastly, a countless number of tree limbs and trees were downed by the high winds.

### **Jones County**

Murdo	26	1742CST			0	0			<b>Hail (0.75)</b>
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### **Dewey County**

11 N Lantry	26	1800CST			0	0			<b>Hail (2.75)</b>
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### **Dewey County**

11 N Lantry	26	1800CST			0	0			<b>Thunderstorm Wind (G70)</b>
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Winds gusting to 80 mph combined with baseball size hail broke windows out of a house north of Lantry and also damaged the house and other buildings.

### **Walworth County**

1 S Glenham	26	1822CST			0	0			<b>Hail (1.75)</b>
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### **Dewey County**

Timber Lake	26	1850CST			0	0			<b>Hail (0.88)</b>
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### **Walworth County**

Java	26	1855CST			0	0			<b>Thunderstorm Wind (G52)</b>
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### **Walworth County**

Selby	26	1850CST			0	0			<b>Thunderstorm Wind (G61)</b>
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### **SDZ003>004-009**

#### **Corson - Campbell - Walworth**

26	2000CST				0	0			<b>Flood</b>
27	1200CST								

Very heavy rains of 3 to over 6 inches fell across far eastern Corson, most of Campbell and Walworth counties during the evening hours of the 26th. The heavy rain caused the flooding of many roads along with some highways through the night and through the morning of the 27th. Near Selby, high winds, heavy rain, and some hail caused a lot of damage to sunflowers and moved a barn three feet off of its foundation. In Selby, wind driven rain pushed water through some ceilings and into basements. An old barn near Glenham was also blown down by the strong winds. Some rainfall amounts included, 3.50 inches at Herried, 3.80 inches at Java, 4.20 inches at Selby, 4.50 inches 3N of Selby and just southeast of McLaughlin, 5 inches at Glenham, 5.75 inches 8N of Moberge, and 6.35 inches 1.5 miles southeast of Glenham.

### **Corson County**

Kenel	26	2008CST			0	0			<b>Lightning</b>
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Lightning struck the Kenel Catholic Church starting it on fire. The church burned to the ground.

## SOUTH DAKOTA, Southeast

### **Hutchinson County**

Parkston	05	1600CST			0	1			<b>Lightning</b>
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Lightning injured one of two people who took shelter under a tree at a golf course. The injured man received minor burns.

### **Charles Mix**

#### **County**

6 E Platte	19	1600CST 1930CST			0	0			<b>Heavy Rain</b>
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Heavy rain was measured at 9.5 inches by a cooperative observer. The rain flooded fields and contributed to crop damage caused by hail and wind during the storm.

### **Charles Mix**

#### **County**

6 E Platte	19	1606CST 1625CST			0	0			<b>Hail (1.75)</b>
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Large hail caused crop damage, with heavy rain and strong winds contributing to the damage. The amount of damage was not known.

### **Charles Mix**

#### **County**

6 E Platte	19	1625CST			0	0			<b>Thunderstorm Wind (G52)</b>
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Thunderstorm winds, along with heavy rain, aggravated crop damage caused by hail.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>SOUTH DAKOTA, Southeast</u></b>									
<b>Charles Mix County</b>									
6 E Platte	19	1725CST			0	0			Hail (0.75)
									A recurrence of large hail during a storm contributed to crop damage.
<b>Sanborn County</b>									
Artesian	19	1700CST			0	0			Hail (0.75)
<b>Sanborn County</b>									
Artesian	19	1700CST			0	0	10K		Thunderstorm Wind (G52)
									Thunderstorm winds broke large tree limbs and damaged power lines.
<b>Kingsbury County</b>									
1 E Lake Preston	19	1735CST			0	0	10K		Thunderstorm Wind (G52)
									Thunderstorm winds destroyed a hog barn, killing one hog out of the 200 that were in the barn.
<b>Lake County</b>									
5 NE Ramona	19	1817CST			0	0			Thunderstorm Wind (G52)
<b>Mccook County</b>									
Bridgewater	23	0600CST			0	0	10K		Lightning
									Lightning struck twice at an electrical substation, damaging a transformer and other electrical equipment. Power was cut off to Bridgewater, and to the towns of Emery, Alexandria, and Fulton in neighboring Hanson County.
<b>Jerauld County</b>									
10 NW Wessington Spgs	24	0555CST			0	0			Hail (1.75)
<b>Jerauld County</b>									
10 NW Wessington Spgs	24	0555CST			0	0			Thunderstorm Wind (G52)
<b>Beadle County</b>									
2 W Huron to Cavour	24	0620CST 0635CST			0	0	1M		Thunderstorm Wind (G72)
									Thunderstorm winds caused widespread tree, power line, and structural damage. An empty 170,000 bushel grain bin was demolished, siding and shingles from houses were blown off, and trees and power lines were damaged in most of Huron. In Cavour, the top of a barn was blown onto and damaged a combine, and a hog barn and machine shed were damaged. At least two semi tractor trailers were blown over.
<b>Sanborn County</b>									
Letcher	24	0635CST 0640CST			0	0			Hail (1.75)
<b>Davison County</b>									
Mitchell to 3 N Mitchell	24	0643CST 0650CST			0	0			Hail (1.75)
									Large hail caused property and crop damage, but the amount of damage was unknown.
<b>Miner County</b>									
4 S Carthage	24	0650CST			0	0	20K		Thunderstorm Wind (G61)
									Thunderstorm winds blew the roof and a wall from a garage, and blew down power poles and lines.
<b>Hanson County</b>									
7 W Fulton	24	0655CST			0	0			Hail (1.75)
<b>Mccook County</b>									
5 NW Bridgewater	24	0715CST			0	0			Hail (2.50)
<b>Turner County</b>									
Dolton to Parker	24	0735CST 0745CST			0	0			Thunderstorm Wind (G61)
									Thunderstorm winds caused tree damage, including at least one large tree uprooted. Power lines and poles were also blown down.
<b>Turner County</b>									
Parker	24	0745CST			0	0			Hail (0.75)
<b>Lake County</b>									
4 W Chester	24	0755CST			0	0			Thunderstorm Wind (G52)
									Thunderstorm winds caused tree damage.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Minnehaha County**

**Crooks**      24      0801CST                0      0                **Hail (1.00)**

### **Minnehaha County**

**Crooks**      24      0805CST                0      0                **Thunderstorm Wind (G62)**

### **Minnehaha County**

**Sioux Falls Arpt**      24      0810CST                0      0                **Hail (0.75)**

## SOUTH DAKOTA, West

NOT RECEIVED.

## TENNESSEE, Central

### **Overton County**

**Northeast Portion**      11      1630CST                1      2                **Lightning**

Lightning struck a man while working in his tobacco field in the Wirmingham community. A bolt of lightning struck him in the back of his head. The lightning bolt also knocked down 2 others nearby.  
M38OU

### **Lawrence County**

**Lawrenceburg**      13      2000CST  
2130CST                0      1      20K      **Flash Flood**

Lawrence county 911 center reported several roads blocked off in Lawrenceburg and in the northern part of the county due to high water. There were 2 accidents on U.S. Highway 64 west of town that was attributed to the flash flooding. One accident did result in one injury.

### **Lawrence County**

**South Portion**      14      1215CST  
1330CST                0      0                **Flash Flood**

High water was reported over U.S. Highway 43 between Loretto and Leoma.

## TENNESSEE, East

NONE REPORTED.

## TENNESSEE, West

### **Shelby County**

**Bartlett**      07      0500CST  
0505CST                0      0      5K      **Lightning**

Lightning struck and damaged a large tree in Bartlett.

### **Shelby County**

**Memphis**      08      2030CST  
2230CST                0      0      1K      **Flash Flood**

Several roads in the northern part of Memphis were flooded.

### **Dyer County**

**Dyersburg**      12      0030CST  
0300CST                0      0      5K      **Flash Flood**

Several streets were flooded forcing about 30 residents to be evacuated.

### **Madison County**

**Jackson**      12      0240CST  
0400CST                0      0      1K      **Urban/Sml Stream Fld**

Several streets were briefly flooded due to heavy rainfall.

### **Lake County**

**Tiptonville**      12      0500CST  
0700CST                0      0      1K      **Urban/Sml Stream Fld**

Several roads were covered with water.

### **Obion County**

**Union City**      12      0500CST  
0700CST                0      0      1K      **Urban/Sml Stream Fld**

A few roads were covered with water.

# Storm Data and Unusual Weather Phenomena

August 1998

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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## TENNESSEE, West

### **Fayette County**

**Macon**

12	0830CST 1000CST				0	0	5K			<b>Flash Flood</b>
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Twelve residents had to be evacuated as water reached into several yards. Several roads were closed due to flooding.

## TEXAS, Central

**TXZ049-053>054-064>066-071>073-076>078-098>099-113>114-127>128-139>140-154-168>170**

**Fisher - Mitchell - Nolan - Sterling - Coke - Runnels - Irion - Tom Green - Concho - Crockett - Schleicher - Sutton - Haskell - Throckmorton - Jones - Shackelford - Taylor - Callahan - Coleman - Brown - Mcculloch - Menard - Kimble - Mason**

01 31	0000CST 2359CST				0	0	150.2M			<b>Drought</b>
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The devastating drought of 1998 that began when little or no rain fell during the normally wet spring months continued through the end of summer. The two main crops across the area, wheat and cotton, were both near total losses, with additional losses to the cattle, sheep, and goat industries. Preliminary loss figures top \$150 million dollars.

### **Menard County**

**Menard**

04	1715CST				0	0				<b>Hail (0.75)</b>
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### **Menard County**

**Ft Mckavett**

13	1600CST				0	0	1K			<b>Thunderstorm Wind</b>
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Winds estimated at 60 mph blew out several windows at Fort McKavett State Park.

### **Crockett County**

**30 S Ozona**

19	0805CST 1005CST				0	0				<b>Flash Flood</b>
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A low water crossing on Farm Road 1973 in southern Crockett county was covered by 3 feet of water.

### **Kimble County**

**South Portion to  
Central Portion**

23	0900CST 1300CST				0	0				<b>Flood</b>
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Heavy rains forced the South Llano River out of its banks, with the river reported 1/4 mile wide near Telegraph. The bridge at Hooks Crossing was closed.

### **Kimble County**

**Countywide**

23	1700CST 2000CST				0	0				<b>Flood</b>
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The flood waters continued through much of Kimble County, closing numerous roads including Highway 377 and Farm Road 2169.

After coming ashore along the South Texas Coast, the remnants of Tropical Storm Charley moved into the Northwest Hill Country during the morning of the 23rd. Rainfall totals of 3 to 6 inches across Southern Kimble and northern Edwards County forced the Llano River and its smaller tributaries quickly out of their banks. The Llano River near Telegraph was reported over 1/4 mile wide, with low water crossings and bridges reported and flooded and impassable downstream to the Mason County line.

### **Irion County**

**Countywide**

25	0530CST 1000CST				0	0				<b>Flash Flood</b>
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Rainfall totals of up to 6 inches flooded many of the low water crossings throughout the county. County Roads 101, 102, 202, and 212 were all reported flooded and impassable.

### **Crockett County**

**Countywide**

25	0700CST 1800CST				0	0				<b>Flash Flood</b>
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Rainfall of up to 11 inches flooded most roads across Crockett County, including US Highway 190 and State Highways 137 and 163.

### **Schleicher County**

**Countywide**

25	0900CST 1800CST				0	0				<b>Flash Flood</b>
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Rainfall totals of up to 6 inches flooded several roads across Schleicher County, including US Highway 190 and Farm Roads 915 and 2129.



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>TEXAS, Central Southeast</b>									
<b>Fort Bend County</b>									
3 S Katy	03	1708CST			0	0	5K		Hail (0.75)
									3/4" hail and 50 mph winds just south of I-10 & Pine Oak.
<b>Harris County</b>									
Katy	03	1715CST			0	0	3K		Thunderstorm Wind
									Large limbs blown down along HWY 90.
<b>Harris County</b>									
Katy	03	1715CST			0	0	25K		Thunderstorm Wind
									Trees down in Katy (some on roofs). Katy High School sustained \$10,000 in damage.
<b>Fort Bend County</b>									
Rosenberg	03	1738CST			0	0	5K		Thunderstorm Wind (G50)
									Large limbs down along HWY 36 at Frito Lay Plant.
<b>Wharton County</b>									
East Bernard	03	1819CST			0	0	3K		Thunderstorm Wind
									Large limbs blown down.
<b>Grimes County</b>									
Navasota	04	2016CST 2115CST			0	0	2K		Flash Flood
									Street flooding in Navasota.
<b>TXZ213-213-213</b>									
	05	0409CST 0805CST			3	0			Excessive Heat
									Heat related death (no a/c). M72PH, F63PH, F64PH
<b>Harris County</b>									
Houston	05	1645CST			0	0	10K		Thunderstorm Wind
									Trees down at key map location 491K, 491C, and 531Y.
<b>Madison County</b>									
5 W Midway	05	1647CST			0	0	15K		Thunderstorm Wind
									Tin roof blown off barn along CR 208 along with numerous trees down. Trees down along CR 209 (one on a house).
<b>TXZ213</b>									
	06	1250CST			1	0			Excessive Heat
									Heat related death (no a/c). M64PH
<b>Wharton County</b>									
2 E Boling	10	1620CST			0	0	20K		Thunderstorm Wind
									Large trees down along FM 422 & CR 124. Large tree fell on Brooks Nursery causing \$15,000 in damage.
<b>Madison County</b>									
6 N Madisonville	12	1430CST			0	0	3K		Thunderstorm Wind
									Trees down along HWY 75 and along FM1452 northeast of Midway.
<b>Brazos County</b>									
Bryan	12	1605CST			0	0	10K		Thunderstorm Wind
									Microburst downed trees and caused roof damage to homes.
<b>Brazoria County</b>									
Pearland	12	1630CST			0	0	2K		Thunderstorm Wind
									Large limbs blown down in Pearland.

# Storm Data and Unusual Weather Phenomena

August 1998

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

### **Chambers County**

7 E Anahuac      13      1547CST                0      0      3K      Hail (0.75)

### **Harris County**

Countywide      20      1640CST  
1700CST      0      0      30K      Thunderstorm Wind

Numerous trees down across SW quarter of Harris County.

### **Fort Bend County**

4 SE Needville      20      1820CST                0      0      10K      Thunderstorm Wind

Trees blown down and damage to a mobile home.

### **Wharton County**

Wharton      20      1825CST                0      0      25K      Thunderstorm Wind

Trees blown down (some on houses) in Wharton and in Hungerford.

### **TXZ213>214- 235>238**

### **Harris - Chambers - Jackson - Matagorda - Brazoria - Galveston**

21      0000CST      0      0      25K      Tropical Storm  
22      2359CST

Tropical Storm Charley made landfall on the middle Texas coast during the morning on August 22nd. Luckily, damage was minimal across the area, with beach erosion accounting for the damage estimates. Tides ran 2-3 feet above predicted astronomical levels. Most areas across SE Texas averaged 2-4 inches of rainfall, however locations to the coast received 4-6 inches. An unofficial report of 9 inches was reported at the mouth of the San Bernard River in Brazoria County. The peak recorded wind gust of 69 mph was measured at the Colorado River Locks in Matagorda County. However, most locations across the coast had gusts less than 46 mph.

### **Galveston County**

League City      22      0430CST      0.1      25      0      0      20K      Tornado (F0)

Tornado downed trees and tore bricks off a house. Damage to roof and vehicle as well.

### **Houston County**

Countywide      29      1610CST  
1615CST      0      0      20K      Tstm Wind/Hail

Numerous trees down in Kennard, Weches, and Crockett. Wind estimated at 60 mph. 3/4" hail in Crockett as well.

### **Walker County**

Huntsville      30      1435CST                0      0      3K      Thunderstorm Wind

Trees blown down in northern Huntsville.

### **Trinity County**

3 E Groveton      30      1524CST                0      0      3K      Thunderstorm Wind

Trees blown down on FM 2262.

### **Trinity County**

Trinity      30      1540CST                0      0      3K      Thunderstorm Wind (G50)

## TEXAS, Extreme West

NONE REPORTED.

## TEXAS, Mid - South

### **Nueces County**

Corpus Christi      14      1607CST                0      0      Thunderstorm Wind (G50)

NWS anemometer recorded a wind gust to 58 mph.

### **McMullen County**

Calliham      16      1700CST                0      0      Thunderstorm Wind (G55)

Numerous reports of power lines downed by strong thunderstorm wind gusts along with small metal building being blown over.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, Mid - South

**TXZ231-246-246-246**

**Live Oak - Refugio**

	22	0305CST 0900CST			0	0			Flood
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**Refugio County**  
Refugio

	22	0405CST			0	0			Thunderstorm Wind (G50)
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Several large trees downed by thunderstorm wind.

**San Patricio County**  
Taft

	22	0430CST			0	0			Thunderstorm Wind (G50)
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Widespread flooding developed across the Coastal Bend region of South Texas on August 22, 1998 in association with the landfalling Tropical Storm "Charley". Charley moved inland near Port Aransas during the predawn hours, producing wind gusts ranging between 30 and 45 knots. The Port OConnor Coast Guard recorded the highest wind gust of 55 knots (63 mph). Torrential rainfall occurred across the interior sections of the Coastal Bend as rainbands from Charley pushed inland. Rainfall totals ranging between 6 to 8 inches, with isolated amounts near 11 inches, resulted in widespread flooding over portions of Refugio, Live Oak and San Patricio counties.

**Live Oak County**  
Northwest Portion

	23	0530CST			0	0			Flash Flood
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Flooding reported over highway 99 west of Interstate Highway 37 near the Live Oak/McMullen county border.

**McMullen County**  
6 N Calliham

	23	0530CST			0	0			Flash Flood
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Flooding reported over highway 99 along the McMullen/Live Oak county border.

## TEXAS, North

**TXZ119**

**Dallas**

	03	1600CST			5	0			Excessive Heat
	13	1600CST							

A prolonged excessive heat event continued across portions of North Texas in August.

A 67 year old woman was found in her home on 08/03/98. The cause of death was determined to be hyperthermia and high blood pressure.

A 44 year old man was found on a Dallas Street on 08/04/98. The man died later in a Dallas hospital from hyperthermia.

A 77 year old man died on a golf park on 08/04/98. The cause of death was determined to be hyperthermia and heart disease.

A man, unknown age, died outside his apartment on 08/07/98. The cause of death was hyperthermia and cirrhosis.

An 86 year old man was found inside his home, which had a non-working air conditioner on 08/13/98. Hyperthermia, heart disease and high blood pressure were determined to be the causes of his death. F67PH, M44OU, M77GF, M?PH, M86PH

**Van Zandt County**  
5 W Canton

	03	1730CST			0	0	1K		Thunderstorm Wind
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Large trees were blown down by high winds.

**Leon County**  
Centerville

	04	1711CST			0	0	0		Thunderstorm Wind
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A tree was blown down onto U.S Highway 75 in town.

**Lamar County**  
Paris

	10	1345CST			0	0	2K		Thunderstorm Wind
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Sheet metal panels were blown off a roof by high winds.

**Van Zandt County**  
Phalba

	11	1440CST			0	0	2K		Thunderstorm Wind
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Trees and power lines were blown down by high winds.



# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>TEXAS, North</u></b>									
<b>Tarrant County</b>									
Haltom City	11	1515CST			0	0	3K		Thunderstorm Wind
									Trees were blown down onto a car and a house.
<b>Van Zandt County</b>									
Martins Mills	11	1515CST			0	0	2K		Thunderstorm Wind
									Trees and power lines were blown down by high winds.
<b>Van Zandt County</b>									
Edom	11	1604CST			0	0	2K		Thunderstorm Wind
									Power lines were blown down by high winds.
<b>Tarrant County</b>									
Ft Worth	11	1630CST			0	0	2K		Thunderstorm Wind
									Power lines were blown down by high winds in south Fort Worth.
<b>Hood County</b>									
3 N Granbury	28	1615CST			0	0	15K		Thunderstorm Wind
									High winds unroofed a house and blew down a power pole.
<b>Hill County</b>									
Hubbard	28	2030CST			0	0			Thunderstorm Wind (G52)
<b>Bell County</b>									
Belton Lake	29	1530CST			0	0	2K		Thunderstorm Wind
									Boat docks at a marina were blown loose by high winds.
<b>Bell County</b>									
5 NW Temple	29	1600CST			0	0	10K		Thunderstorm Wind
									High winds damaged a house roof and blew out windows.
<b>Bell County</b>									
Temple	29	1615CST			0	0	25K		Lightning
									Lightning started a fire at an apartment complex.
<b>Lampasas County</b>									
Kempner	29	1635CST			0	0	50K		Thunderstorm Wind
									High winds unroofed a church, damaged a nursing home and a house, uprooted trees and blew over a fruit stand.
<b>Henderson County</b>									
Malakoff	30	1335CST			0	0	2K		Thunderstorm Wind (G52)
									High winds blew down power lines, power poles, and large tree limbs.
<b>Fannin County</b>									
Bailey	30	1745CST			0	0	2K		Thunderstorm Wind (G52)
									High winds destroyed sheds and outbuildings, and blew down large tree limbs.
<b><u>TEXAS, North Panhandle</u></b>									
<b>TXZ001&gt;020</b>									
<b>Dallam - Sherman - Hansford - Ochiltree - Lipscomb - Hartley - Moore - Hutchinson - Roberts - Hemphill - Oldham - Potter - Carson - Gray - Wheeler - Deaf Smith - Randall - Armstrong - Donley - Collingsworth</b>									
	01	0000CST			0	0			Drought
	31	2359CST							
									A moderate to severe drought continued in August across the Texas panhandle as reported by the USGS. A voluntary water rationing was still in effect for the Amarillo area through most of the month. A burn ban continued in effect for most counties. A dollar estimate on crop damage will be available after the growing season.
<b>Randall County</b>									
12 SE Amarillo	07	1610CST 1615CST	0.5	25	0	0			Tornado (F0)
									A landspout was observed and reported during the early evening hours. The track was estimated.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>TEXAS, North Panhandle</u></b>									
<b>Randall County</b>									
6 S Amarillo	10	1541CST 1545CST			0	0			Hail (1.00)
<b>Gray County</b>									
20 SE Pampa	10	1739CST			0	0			Hail (1.00)
<b>Hutchinson County</b>									
Stinnett	10	1745CST			0	0			Hail (0.88)
Severe thunderstorms developed during the late afternoon over the south central Texas panhandle and moved north producing large hail.									
<b><u>TEXAS, Northeast</u></b>									
<b>Upshur County</b>									
2 WSW Rosewood to 2 WNW Rosewood	03	1419CST 1421CST	0.7	25	0	0	50K		Tornado (F1)
Tornado began in Harmony on the southern end of an open field cattle ranch, moved northward across the ranch snapping about 3 dozen dead pine trees, moved across a large insulated storage shed, destroying the shed and its contents. It then destroyed a power pole which knocked out power to about 25 thousand customers, moved across Hwy 154 lifting a westbound Ford Escort about 50 feet along the road. The Escort was speared by a 2X4 through the drivers rear passenger window and also a 2X4 was stuck through the car roof just behind the driver seat. The tornado then moved across the Harmony old High School peeling back asphalt shingling and ripping a chain link hurricane fence down. A second car was crushed by a snapped pine tree. It then moved into the woods and dissipated. Tornado was said to have a test tube shape by 3 eyewitnesses including an elementary school teacher who watched the entire event from her classroom. A rancher and ranch hand who watched the event from a barn about 50 yards from the tornado path. It appears the tornado was a landspout by definition.									
<b>Rusk County</b>									
Turnertown	03	1445CST			0	0	80K		Thunderstorm Wind (G55)
Two mobile homes destroyed by fallen trees.									
<b>Camp County</b>									
Pittsburg	03	1500CST			0	0			Thunderstorm Wind (G60)
Trees and powerlines down.									
<b>Bowie County</b>									
2 NW New Boston	03	1600CST			0	0	4K		Thunderstorm Wind (G70)
Outbuilding destroyed by wind.									
<b>Bowie County</b>									
10 NE New Boston	03	1610CST			0	0			Thunderstorm Wind (G61)
Trees and powerlines down.									
<b>Marion County</b>									
2 N Jefferson	03	1630CST			0	0			Thunderstorm Wind (G52)
Several trees down.									
<b>Smith County</b>									
5 W Winona	05	1455CST			0	0	15K		Thunderstorm Wind (G52)
Powerlines down along FM16.									
<b>Cass County</b>									
8 SE Linden	05	1540CST			0	0			Thunderstorm Wind (G61)
Powerlines were snapped from fallen trees.									
<b>Panola County</b>									
10 SW Carthage	05	1600CST			0	0			Thunderstorm Wind (G52)
Numerous trees down along FM 1971.									
<b>Shelby County</b>									
Center	10	1700CST			0	0			Thunderstorm Wind (G52)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>TEXAS, Northeast</b>									
<b>Panola County</b> 5 SW Carthage	10	1800CST			0	0			Thunderstorm Wind (G52)
									Powerlines toppled along FM315.
<b>Shelby County</b> Center	10	1800CST			0	0	22K		Tstm Wind/Hail
									Several inches of hail covered the ground for a distance of 2 miles long by 50 yards wide. A microburst with winds estimated around 50 mph toppled a pine tree which fell across a house.
<b>Wood County</b> Hawkins	11	1510CST			0	0			Thunderstorm Wind (G52)
									Trees and powerlines down.
<b>Wood County</b> Hawkins	11	1520CST			0	0			Hail (1.75)
<b>Wood County</b> Hawkins	11	1520CST			0	0			Thunderstorm Wind (G70)
									Numerous large trees down.
<b>Red River County</b> Clarksville	12	1515CST			0	0			Hail (0.75)
<b>Red River County</b> Clarksville	12	1518CST			0	0			Hail (1.75)
<b>Bowie County</b> De Kalb	12	1624CST			0	0	35K		Thunderstorm Wind (G52)
									Trees and powerlines down with one tree across a house.
<b>Morris County</b> Omaha	12	1638CST			0	0			Hail (0.75)
<b>Nacogdoches County</b> 3 E Nacogdoches	29	1438CST			0	0			Lightning
									Lightning touched off a grass fire east of Nacogdoches.
<b>Nacogdoches County</b> 2 W Nacogdoches	29	1440CST			0	0			Thunderstorm Wind (G70)
<b>Angelina County</b> Lufkin	29	1555CST			0	0	12K		Thunderstorm Wind
									Trees and powerlines toppled along FM 842 and SR 103.
<b>Sabine County</b> 3 N Brookeland	29	1610CST			0	0			Hail (0.75)
<b>Rusk County</b> 7 S Henderson	29	1700CST			0	0			Thunderstorm Wind (G61)
									Trees and powerlines down along Hwy 259.
<b>Panola County</b> 3 NE De Berry	29	1830CST			0	0			Thunderstorm Wind (G52)
									Numerous trees down.
<b>Smith County</b> Winona	29	1847CST			0	0			Thunderstorm Wind (G52)
<b>Smith County</b> Tyler	29	1912CST			0	0			Hail (1.00)

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, Northeast

### **Smith County**

Tyler	29	1912CST			0	0			Thunderstorm Wind (G52)
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## TEXAS, South

### **Hidalgo County**

Mission	14	1940CST			0	0	10K		Lightning
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Strike caused house fire.

## TEXAS, South Central

### **Frio County**

Southwest Portion	06	0700CST 1030CST			0	0	10K	0	Flash Flood
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### **Bexar County**

San Antonio	06	0745CST 0900CST			0	0	20K	0	Flash Flood
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### **Dimmit County**

Northeast Portion	06	0830CST 1030CST			0	0	3K	0	Flash Flood
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Up to 8 inches of rain fell in southwestern Frio County, causing widespread flooding in Dilley. Brief flooding also took place in San Antonio over the northern side of the city as 2 inches fell in 30 minutes. A general 3-inch rain across Dimmit County, with 6 inch totals in the northeastern part of county, caused numerous roads to go under water with flash flooding in the cities of Carrizo Springs and near Big Wells.

### **Bexar County**

San Antonio	13	1735CST 1740CST			0	0	0	0	Hail (1.50)
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### **Bexar County**

Countywide	14	1605CST			0	3	50K	0	Flash Flood
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A general 4-6 inch countywide rainfall produced widespread flash flooding across the county. Three youths became trapped in a drainage pipe in the swiftly moving water and had to be rescued by local emergency personnel. All three were treated for cuts and bruises and released.

### **Travis County**

10 NE Austin	16	1700CST 1701CST			0	2	0	0	Lightning
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Lightning struck a 22-year-old man and his uncle northeast of Austin. The uncle was treated at the scene and released. The young man was taken to a hospital and recovered several days later.

### **Kinney County**

Countywide	18	0600CST 0730CST			0	0	3K	0	Flash Flood
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### **Maverick County**

Countywide	18	0600CST 0730CST			0	0	3K	0	Flash Flood
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Rainfall of 3 to 6 inches fell over the three counties where soils had already been brought to saturation by rainfall over the previous 24 hours.

### **Uvalde County**

Countywide	18	1000CST 1700CST			0	10	150K	0	Flash Flood
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### **Zavala County**

Countywide	18	1000CST 1800CST			0	5	5K	0	Flash Flood
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### **Kinney County**

Countywide	18	1230CST 1600CST			0	0	3K	0	Flash Flood
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Widespread heavy rainfall began to fall again through the mid morning of the 18th. General 3 to 4 inch amounts were reported with totals nearing 10 inches south and west of Uvalde. Severe flash flooding developed very quickly in Uvalde County. The river gauge 9 miles southwest of Uvalde measured 9.16 inches, and the Texas A&M Ag research station in Uvalde 5.65 inches. US highways 90, 55, and 83 were flooded in places. Autos were washed downstream and rescues performed on Highways 83 and 55. Several cars were washed downstream with rescues at a low area of FM 481. In all, 18 rescues were performed in autos and

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, South Central

residences in Uvalde and Zavala Counties and over 25 people evacuated from their homes.. Flood waves moving down the Nueces and Leona Rivers caused additional problems later.

### **TXZ218**

#### **Zavala**

18	1300CST				0	5	15K	0	<b>Flood</b>
19	1800CST								

The ensuing rise along the Nueces River closed a portion of US highway 57 shortly after midnight on the morning of the 19th, and continued into the late afternoon. The river also threatened homes later that afternoon in Crystal City, but did not cause any damage.

### **TXZ218**

#### **Zavala**

18	2100CST				0	5	75K	0	<b>Flood</b>
19	1600CST								

The Leona River which begins just north of the city of Uvalde responded to the rainfall with a rapid rise as it moved south of the Uvalde-Zavala County line. It flooded several homes near Batesville, with additional evacuations and rescues required around the town.

### **Kinney County**

#### **West Portion**

19	0001CST				0	0	5K	0	<b>Flash Flood</b>
	0130CST								

Flash flooding redeveloped briefly over the western part of Kinney County as an additional 2 to 3 inch rainfall with isolated totals near 4 inches fell near midnight. The water covered several low water crossings and briefly threatened homes west of Brackettville, although no buildings actually flooded.

### **Fayette County**

#### **10 NE Schulenburg to 5 NE Schulenburg**

20	1915CST				0	0	30K	0	<b>Thunderstorm Wind</b>
	1920CST								

### **Lavaca County**

#### **Moulton to 10 NE Hallettsville**

20	1945CST				0	0	20K	0	<b>Thunderstorm Wind</b>
	1950CST								

### **De Witt County**

#### **Hockheim to 8 E Hockheim**

20	2035CST				0	0	20K	0	<b>Thunderstorm Wind</b>
	2040CST								

Sheriff's Departments across the three counties reported numerous trees knocked over and power lines blown down by severe winds as a line of thunderstorms moved across the area.

### **Lavaca County**

#### **Countywide**

22	0500CST				0	0	30K	50K	<b>Flash Flood</b>
	0700CST								

### **De Witt County**

#### **Countywide**

22	0700CST				0	0	30K	50K	<b>Flash Flood</b>
	0900CST								

### **Karnes County**

#### **Countywide**

22	0700CST				0	0	20K	30K	<b>Flash Flood</b>
	0900CST								

### **Bexar County**

#### **Countywide**

22	0730CST				0	0	50K	10K	<b>Flash Flood</b>
	1600CST								

### **Atascosa County**

#### **Countywide**

22	1000CST				0	0	20K	20K	<b>Flash Flood</b>
	1300CST								

### **Guadalupe County**

#### **Countywide**

22	1000CST				0	0	20K	20K	<b>Flash Flood</b>
	1600CST								

### **Wilson County**

#### **Countywide**

22	1000CST				0	0	20K	15K	<b>Flash Flood</b>
	1200CST								

### **Medina County**

#### **Countywide**

22	1200CST				0	0	10K	20K	<b>Flash Flood</b>
	1400CST								

### **Comal County**

#### **Countywide**

22	1300CST				0	0	20K	10K	<b>Flash Flood</b>
	1500CST								

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, South Central

### **Gonzales County**

Countywide	22	1300CST 1700CST			0	0	10K	20K	Flash Flood
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### **Kendall County**

Countywide	22	1300CST 1500CST			0	0	10K	20K	Flash Flood
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### **Hays County**

Countywide	22	1500CST 1800CST			0	0	20K	10K	Flash Flood
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### **Bandera County**

Countywide	22	1600CST 2300CST			0	0	10K	10K	Flash Flood
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### **Kerr County**

Countywide	22	1600CST 2100CST			0	0	10K	10K	Flash Flood
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Tropical Storm Charley made landfall near Port Aransas the night of Friday, August 21st. With very light winds through the mid and upper atmosphere and extremely high precipitable water values, the stage had been set for an extended heavy rainfall event. Initially, Charley moved westward near 30 kts during the day on Saturday, and initially produced the heaviest rain in its northeast quadrant. Rainfall rates through the morning and into the afternoon were generally between 1 and 2 inches per hour. As the storm center approached the Hill Country area west of San Antonio Saturday afternoon, it began to slow and stall. To this point, rain totals of between 3 and 6 inches had been received over much of South Central Texas, but flooding problems had been limited mainly to flash flooding over low water crossings along secondary roads. Damage was generally confined to roads and crops in the fields.

### **Uvalde County**

Countywide	23	0030CST 0800CST			0	0	200K	40K	Flash Flood
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### **Zavala County**

Countywide	23	0030CST 0700CST			0	0	10K	20K	Flash Flood
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### **Kinney County**

Countywide	23	0100CST 0400CST			0	0	20K	10K	Flash Flood
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### **Real County**

Countywide	23	0200CST 0900CST			4	0	600K	10K	Flash Flood
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F20VE, F16VE, M2VE, F3VE

### **Edwards County**

Countywide	23	0300CST 0900CST			0	0	100K	10K	Flash Flood
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By nightfall on the evening of Saturday, August 22nd, the remains of Charley had stalled over southern Uvalde and northern Zavala Counties. Heavy rainfall from the previous week had left soils in the two counties saturated. Through the night and into the early morning hours of Sunday, August 23rd, heavy rainfall in bands continued over mainly these two counties. Thunderstorms in the bands were producing rainfall rates approaching five inches per hour. A total of between 6 and 8 inches was reported between the towns of Uvalde, Batesville and Leakey. A devastating flood wave developed along the Frio, Dry Frio, Sabinal and Nueces Rivers and moved over camps, recreational areas and residential sections of Uvalde, Real and Zavala Counties.

Four lives were lost where a small creek crosses Highway 41 about four miles west of the highway 83 intersection in the extreme northeast corner of Real County near 7:30 am CST. This was at the divide between the South Fork of the Llano, the Frio, and the Guadalupe River drainages. Most likely the incident occurred in the South Fork of the Llano River drainage. Eleven citizens of Mexico were traveling in a 3/4 ton pickup truck as it drove into the flooded roadway. All occupants were thrown into the river, and all but four were rescued by volunteer firemen from Hunt, Mountain Home, and Kerrville.

### **TXZ185-203-218**

#### **Real - Uvalde - Zavala**

23	0200CST 2200CST				0	50	1.4M	30K	Flood
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Flooding along the headwaters of the Frio River was devastating, but campers had been removed in advance from the camps, preventing the need for dangerous last-minute rescues. Still, the flooding covered the entire camping area of Garner State Park in northeast Uvalde County. Water was reported to be five to six feet deep in some of the park building. Parts of some park structures were destroyed by the flood and washed downstream. Picnic tables and debris were strewn everywhere. Steel signs were bent to the ground. Without this timely evacuation, lives almost surely would have been lost. Flow in the camping area was several feet

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, South Central

deep and moving very fast.

Over twenty homes were flooded along the Frio River between Leakey and Concan. One log home floated downstream so serenely that furnishings inside were scarcely disturbed. A coffee pot on the kitchen counter remained in place. The crest at Concan was near 25.5 feet, about a foot higher than the disastrous flood of last year. Up to nine feet of water was reported in the camping areas of many commercial recreation camps between Rio Frio and Concan. Again, without early evacuations, several lives would surely have been lost. Helicopters were used to remove at least 40 campers from the flooded camps while nearly four times that many decided to remain.

Flooding on the Dry Frio River was also disastrous, with several homes flooded and numerous vehicles washed downstream. Debris was strewn over many of the local Farm-to-Market roads, and several low bridges were rendered inaccessible.

The Nueces River would again rise above flood stage, this time inundating ten homes downstream in Crystal City. Nearly all the secondary and primary roads in Zavala County were flooded as the wave passed. The river gauge at Asherton would crest at 29.98 feet, flood stage 20 feet, and would flood SH190.

The Sabinal River rose to 17.67 feet by mid morning of the 23rd and again to 21.3 feet by mid afternoon of the 23rd.

<b>De Witt County</b> Countywide	23	0230CST 1100CST			0	0	10K	10K	Flash Flood
<b>Lavaca County</b> Countywide	23	0230CST 1100CST			0	0	10K	10K	Flash Flood
<b>Gonzales County</b> Countywide	23	0600CST 1200CST			0	0	10K	10K	Flash Flood
<b>Kerr County</b> Countywide	23	0630CST 1200CST			0	0	10K	0	Flash Flood
<b>Caldwell County</b> Countywide	23	0730CST 1100CST			0	0	10K	5K	Flash Flood
<b>Guadalupe County</b> Countywide	23	0730CST 1100CST			0	0	10K	5K	Flash Flood
<b>Hays County</b> Countywide	23	0730CST 1100CST			0	0	10K	0	Flash Flood
<b>Val Verde County</b> North Portion	23	0900CST 1400CST			0	5	20K	10K	Flash Flood
<b>Atascosa County</b> Countywide	23	1700CST 1900CST			0	0	10K	10K	Flash Flood
<b>Bexar County</b> Countywide	23	1700CST 1900CST			0	10	10K	0	Flash Flood

Moderate to heavy rainfall continued through much of the morning on Sunday the 23rd, producing widespread flash flooding over secondary roads and over low water crossings. Flooding also developed over much of Kerr County as the heavy rain forced the Guadalupe River out of banks from Hunt eastward to near Kerrville.

Poor visibility in heavy rain caused a woman to drive into a flooded low-water crossing about 8 miles north of the city of Uvalde near 8:30 am Sunday. She and her 13 month-old son were swept into rain-swollen Indian Creek for several minutes, then deposited suddenly by the raging waters onto a patch of dry land. Firefighters found her clutching a tree with one hand and her child with the other. They were taken to a nearby hospital, treated and released.

Rain continued over a large part of South Central Texas into the afternoon of Sunday, August 23rd, with the heaviest rainfall over

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, South Central

the western Hill Country and the Edwards Plateau. Rainfall amounts were highest in northern Val Verde County, with general 4 to 6 inches totals. Flooding had threated homes along San Felipe Creek in Del Rio through the morning. And, in spite of increasingly strong warnings and requests for evacuation of the area, as well as attempts by Police, Sheriff's Deputies and Firefighters to move residents out of San Felipe Creek, most refused to move.

### **TXZ186**

#### **Kerr**

<b>23</b>	<b>0900CST</b>				<b>0</b>	<b>20</b>	<b>30K</b>	<b>0</b>	<b>Flood</b>
	<b>1800CST</b>								

The Guadalupe River at Hunt crested at 17.6 feet, putting five and a half feet of turbulent flow over the highway 39 bridge, a main artery between the eastern and western portions of Kerr County. A rise of this magnitude isolates people in portions of the Guadalupe River drainage for hours.

### **Edwards County**

#### **Countywide**

<b>23</b>	<b>2200CST</b>				<b>0</b>	<b>0</b>	<b>50K</b>	<b>5K</b>	<b>Flash Flood</b>
<b>24</b>	<b>0700CST</b>								

### **Kinney County**

#### **Countywide**

<b>23</b>	<b>2200CST</b>				<b>0</b>	<b>0</b>	<b>30K</b>	<b>10K</b>	<b>Flash Flood</b>
<b>24</b>	<b>0700CST</b>								

### **Val Verde County**

#### **Countywide**

<b>23</b>	<b>2200CST</b>				<b>9</b>	<b>150</b>	<b>40M</b>	<b>100K</b>	<b>Flash Flood</b>
<b>24</b>	<b>1000CST</b>								

M37MH, F52MH, F56PH, F67PH, F77PH, M71PH, M72PH, M74PH, M74PH

By nightfall on the 23rd, the central low pressure associated with the remainder of Charley had indeed stalled near Del Rio. A second seige of devastating rain fell between 9 pm and 2 am, producing over 10 inches by midnight. The intense rain was again in a "feeder band", oriented north to south over Del Rio and extending up the Devils River to above Bakers Crossing, eventually drifting slowly eastward to the Sycamore and Pinto Creek drainages. Heavy rain began falling in Del Rio at 9 pm, and produced 10 inches of rain by midnight. In all, nearly 18 inches of rain fell between 8 am Sunday morning and 6 am Monday morning. This is approximately the annual rainfall for Del Rio.

Explosive flash flooding redeveloped in the city, washing away homes and vehicles near 11:30 pm that evening. San Felipe Creek again rose out of banks, this time rising to several feet deep in homes in a very few minutes. The flood was so rapdi that people were cut off in sections of the flood plain and escaped to the roofs of their homes. The Creek, several hundred yards wide in places, moved downstream like a freight train, destroying and pulverizing anything in its path. Rescues were desperat as neighborhood citizens, the Sheriffs Department, Police Department, Fire Department, Border Patrol agents, DPS, and several law enforcement personnel mobilized rapidly. Dozens of residential blocks of homes were left unrecognizable by the flood wave. Whole blocks of residential areas were left as empty lots, with the asphalt of their streets completely gone, and covered in debris. The scene was comparable to an F4 or F5 tornado.

The County Sheriff reported that he and several Border Patrol agents formed a human chain at one point to try to reach a family stranded on the roof of a home in the creek. As they entered the fast flow, the turbulence broke apart their chain, sweeping all of them downstream. Somehow they all survived. In another case, a Sheriff's deputy lifted a paraplegic lady on his shoulder and waded out of chest high water with her. The powerful, turbulent flow knocked her husband from his feet, and the deputy, with a woman over his shoulder, still was able to reach out and grasp the husband, rescuing him. The fact that only nine drowned in the devastating flood in a testimony to the excellent rescue work by the aforementioned. Six persons remain unaccounted for.

Another area of widespread residential flooding was in the extreme northern part of Del Rio. Poor drainage in a very subtle draw flooded over 10 square blocks of homes up to three to four feet. As the flow moved downstream a mile or two below Highway 90, it swept some mobile homes from their pads.

### **TXZ183**

#### **Val Verde**

<b>24</b>	<b>0100CST</b>				<b>0</b>	<b>0</b>	<b>50K</b>	<b>0</b>	<b>Flood</b>
	<b>0700CST</b>								

The Devils River at Paffords Crossing crested near 12.4 feet, 107,000 cubic feet per second, near 3:30CST that morning. This level was life threatening to any campers, recreationists, or fishermen camped near the river. There were no injuries or fatalities from the Devils River due to early warnings.

### **TXZ202-217**

#### **Kinney - Maverick**

<b>24</b>	<b>0100CST</b>				<b>0</b>	<b>0</b>	<b>20K</b>	<b>2M</b>	<b>Flood</b>
<b>25</b>	<b>1100CST</b>								

The heavy rainfall from the late night rainfall of the 23rd and the early morning rainfall of the 24th produced a flood wave along the Rio Grande River that moved through Kinney County during the morning and afternoon of the 24th, and across Maverick County from the afternoon of the 24th through the morning of Tuesday, the 25th. Hundreds of cattle were drowned in Kinney and northwestern Maverick County as the river rose rapidly. Little property damage was reported in Kinney.



# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, South Central

The Rio Grande crested at Eagle Pass at 34.98 feet near midnight on the 24th. This level flooded and severely damaged businesses and homes in the lowest block adjacent to the River. This involved several hundred structures. In addition, several homes flooded as the Rio Grande River backed up Seco Creek, putting up to five feet of water in homes near it. Elm Creek closed the Highway 277 bridge for a time as the Rio Grande River backed up it. Eagle Pass Creek flooded bridges and streets and threatened a few of the lowest businesses. Any level above the 35 foot crest of this flood will flood many more businesses and homes.

### **Uvalde County** Countywide

24	0400CST 0800CST			0	0	3K	0	Flash Flood
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### **Real County** Countywide

24	0530CST 1000CST			0	0	3K	0	Flash Flood
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### **Kinney County** Countywide

24	1030CST 1200CST			0	0	0	0	Flash Flood
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Showers and thunderstorms left over from the devastating rainfall over Val Verde County continued to spread slowly eastward, moving into Uvalde, Edwards and Real Counties. Although rainfall amounts were only 2 to 3 inches, the soil was already saturated from the previous night's rain and all creeks and streams were swollen and near flooding. Flash flooding redeveloped before sunrise and continued into the morning.

### **Kinney County** Countywide

25	0330CST 1000CST			0	0	0	0	Flash Flood
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### **Edwards County** Countywide

25	0400CST 1030CST			0	0	0	0	Flash Flood
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### **Real County** Countywide

25	0430CST 1100CST			0	0	0	0	Flash Flood
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### **Uvalde County** Countywide

25	0430CST 1130CST			0	0	0	0	Flash Flood
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### **Val Verde County** East Portion

25	0645CST 1130CST			0	0	0	0	Flash Flood
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Showers and thunderstorms that had formed near the remains of Charley (located near Ozona through the night of the 24th) once again moved into the Edwards Plateau and western part of the Hill Country, producing general 1 to 2 inch amounts with isolated totals near 4 inches. Again, falling over soils, creeks and streams that remained saturate, the rainfall redeveloped flash flooding through the late morning. Little damage was indicate due to the widespread destruction that had already taken place in area roads and streets.

## **TXZ183**

### **Val Verde**

25	2130CST			0	0	50K	10K	Flood
27	0900CST							

The Pecos River drainage above Iraan received 7 inches of rain in three hours ending near 7 AM of Tuesday August 25. Four inches fell between 6 and 7 AM. This produced a potentially deadly 14 foot crest at Pandale Crossing (70,820 cfs). The National Park Service was notified of this forecasted crest which would move soon through the box canyon of the Pecos River above Langtry. All campers were reportedly already moved out of the flood plain, but the Val Verde County Sheriff reported evacuating two fishermen by helicopter downstream from Pandale. Langtry, downstream above Amistad Lake, crested on the 27th at 11.72 feet, 22,111 cfs.

### **Val Verde County** Southeast Portion

25	2130CST			0	0	0	0	Flash Flood
26	0900CST							

### **Kinney County** West Portion

25	2230CST			0	0	0	0	Flash Flood
26	0630CST							

### **Edwards County** South Portion

26	0500CST 0630CST			0	0	0	0	Flash Flood
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For the fourth night in a row, scattered showers and thunderstorms redeveloped by the late night and early morning hours. The rain began in eastern Val Verde County between Lake Amistad and Del Rio, then spread into western Kinney County and finally into

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, South Central

southern Edwards County. General 1 to 2 inch totals were recorded, with the highest amounts near 3 inches near Del Rio. Flash flooding again redeveloped, ending in the early morning hours in Kinney and Edwards counties, but continuing into the mid morning in Val Verde County.

### **Burnet County**

Granite Mtn	29	1550CST 1555CST			0	0	0	0	Hail (1.00)
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### **Burnet County**

Granite Mtn	29	1550CST 1555CST			0	0	5K	0	Thunderstorm Wind
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Representatives of the Lower Colorado River Authority reported trees and power lines blown down in high winds by severe thunderstorms.

### **Williamson County**

Cedar Park	29	1720CST 1735CST			0	0	50K	0	Thunderstorm Wind
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### **Williamson County**

Cedar Park	29	1722CST 1725CST			0	0	10K	0	Thunderstorm Wind (G69)
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Severe thunderstorm winds produced widespread damage over southern Williamson County. Damage was reported to the roofs of several houses in Taylor, with numerous trees and power lines blown down between Taylor and Cedar Park.

### **Travis County**

Lake Travis to Jonestown	29	1740CST 1750CST			0	0	10K	0	Thunderstorm Wind
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### **Travis County**

Lake Travis	29	1745CST 1746CST	0.1	100	0	0	30K	0	Tornado (F1)
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A small and short-lived tornado was observed by the public at Lake Travis. The tornado tore the roof off a mobile home and caused other minor damage in the immediate area before lifting and dissipating. The tornado was preceded by severe thunderstorm winds that knocked over trees and power lines in the area. Damage was also reported to trees and power lines across much of western Travis County, between Lake Travis and Jonestown. Spotty damage was also reported in the Pflugerville area to roofs of homes.

### **Val Verde County**

Northeast Portion	29	1930CST 2000CST			0	0	0	0	Flash Flood
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### **Edwards County**

West Portion	29	2010CST 2200CST			0	0	0	0	Flash Flood
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Scattered showers and thunderstorms that formed in the late afternoon heating produced general 1 inch rain totals that briefly flooded isolated low water crossings in northeastern Val Verde County and western Edwards County.

### **Hays County**

Buda	30	1912CST 1920CST			0	0	20K	0	Thunderstorm Wind
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The Sheriff's Department reported power lines blown down by severe thunderstorm winds.

### **Uvalde County**

Concan	31	1545CST 1630CST			0	0	3K	0	Flash Flood
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Rainfall of up to 3 inches in less than 90 minutes caused brief flooding of roads and low water crossings in the Concan area.

## TEXAS, South Panhandle

### **TXZ021>044**

**Parmer - Castro - Swisher - Briscoe - Hall - Childress - Bailey - Lamb - Hale - Floyd - Motley - Cottle - Cochran - Hockley - Lubbock - Crosby - Dickens - King - Yoakum - Terry - Lynn - Garza - Kent - Stonewall**

01	0000CST				0	0			Drought
31	2300CST								

Despite average rains for the month of August across the Texas South Plains, extreme southern Panhandle, and Low Rolling Plains, the long-term drought across the region continued to harm agriculture. More details, including rough estimates of crop damage, will be included in later months after the extent of the drought is better understood.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, South Panhandle

### **Lubbock County**

**Lubbock**      **03**      **1805CST**                          **0**      **0**      **0**      **0**      **Thunderstorm Wind (G52)**

A gust to 52 knots (60 mph) was recorded by an automated weather station in Lubbock.

### **Yoakum County**

**2 NE Bronco**      **07**      **1650CST**      **0.5**      **10**      **0**      **0**      **0**      **0**      **Tornado (F0)**

The Yoakum County Sheriff's Office, as well as other witnesses, reported a weak tornado just northeast of the community of Bronco (which is west-northwest of Plains). Witnesses reported that it was "large but thin." NWS Doppler radar indicated a fairly strong though very small storm that was nearly stationary (other storms in the area were moving northwest at 15-20 mph). This may have been a landspout-type of tornado. It remained over open pasture and did not cause damage.

### **Castro County**

**8 NW Dimmitt**      **07**      **1730CST**                          **0**      **0**      **0**      **50K**      **Hail (0.75)**

### **Parmer County**

**3 S Friona**      **07**      **1820CST**                          **0**      **0**      **0**      **30K**      **Hail (0.75)**

An Amarillo TV station storm team reported dime-sized hail northwest of Dimmitt and south of Friona.

## TEXAS, Southeast

### **Newton County**

**Deweyville**      **05**      **1740CST**                          **0**      **0**      **10K**           **Thunderstorm Wind**

Trees blown down near Deweyville. Reported by SKYWARN observer.

### **Jefferson County**

**Beaumont**      **13**      **1552CST**                          **0**      **0**      **15K**           **Thunderstorm Wind**

A rood was blown off a storage building at Lamar University. Several trees were also blown down in the area.

### **Jefferson County**

**5 W Beaumont**      **14**      **1200CST**                          **1**      **1**      **75K**           **Thunderstorm Wind**

Two men were in a house under construction when a combination of wind and rain caused the collapse of the building. One man was killed, and the other was slightly injured. M30LS

### **Jefferson County**

**Beaumont**      **14**      **1300CST**  
**1400CST**                          **0**      **0**      **10K**           **Flash Flood**

### **Orange County**

**Orange**      **14**      **1300CST**  
**1400CST**                          **0**      **0**      **10K**           **Flash Flood**

Between three and five inches of rain fell in less than one hour across Jefferson and Orange Counties. Several roads were impassable, including many streets near Interstate 10. Two to three feet of water was reported across many streets.

### **TXZ215**

#### **Jefferson**

**21**      **1100CST**                          **0**      **0**      **60K**           **Tropical Storm**  
**22**      **0600CST**

Tropical Storm Charley did some damage across Jefferson County's coastal areas. Wind gusts were estimated between 30 and 40 knots at the height of the storm, and as much as six inches of rain fell around rural sections of Jefferson County.

At Sabine Pass, minor beach erosion occurred between Sabine and Sea Rim State Park. Coastal flooding destroyed the access road behind the Sabine Pass Pilots House. Highway 87 between Sabine Pass and Port Arthur had around one foot of water across it in two places during high tide.

No evacuations were ordered for Jefferson County, and no deaths or injuries were reported.

### **Hardin County**

**1 N Silsbee**      **21**      **1459CST**                          **0**      **0**      **25K**           **Thunderstorm Wind**

Trees and power lines were blown down. Reported by SKYWARN observer. This storm was associated with an outer rainband on Tropical Storm Charley.

### **Jasper County**

**Gist**      **29**      **1900CST**                          **0**      **0**      **45K**           **Thunderstorm Wind**

Trees and power lines were blown down in Gist. One tree fell on a mobile home, destroying it.

### **Orange County**

**Orange**      **29**      **1915CST**                          **0**      **0**      **25K**           **Thunderstorm Wind**

Numerous trees and power lines downed in Orange.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## TEXAS, Southeast

### **Jefferson County**

**Beaumont**      29      2000CST                     0      0      50K           **Thunderstorm Wind**  
 Numerous trees and power lines downed in Beaumont. Several carports were blown down.

### **Orange County**

**Vidor**      30      1740CST                     0      0      10K           **Thunderstorm Wind**  
 Trees were blown down in Vidor.

### **Orange County**

**4 N Vidor**      31      1723CST                     0      0      10K           **Thunderstorm Wind**  
 Trees and power lines down north of Vidor.

## TEXAS, West

**TXZ045>048-  
050>052-057>063-  
067>070-074>075-  
079>082**

**Gaines - Dawson - Borden - Scurry - Andrews - Martin - Howard - Van Horn/Guadalupe  
Mountains Area - Reeves County And Upper Trans Pecos - Loving - Winkler - Ector - Midland -  
Glasscock - Ward - Crane - Upton - Reagan - Davis Mountains - Pecos - Presidio Valley - Marfa  
Plateau - Big Bend Area - Terrell**

01      0000CST                     0      0                **Drought**  
 31      2359CST

A severe drought continues across the region. Damage estimates will be compiled after the fall harvest.

### **Brewster County**

**Terlingua**      18      1700CST  
1900CST                     0      0                **Flash Flood**  
 Heavy rains from tropical thunderstorms caused flash flooding on State Highway 170 near Terlingua.

### **Pecos County**

**East Portion**      25      1030CST  
1230CST                     0      0                **Flash Flood**

Torrential tropical downpours from the remnants of Tropical Storm Charley in the early morning hours caused flash flooding along State Highway 349 between Iraan and Sheffield. Just south of Iraan fast moving waters swept pavement away from this highway and farther south water was flowing over a bridge. The highway was reopened in a limited fashion later that night, but crews continued highway repairs for the next week. Unconfirmed reports of 7 inches of rain were received from citizens of Sheffield.

These rains and rains in Crockett County combined to cause flooding on the Pecos River. At Sheffield the river rose to 4 feet above Flood Stage.

## TEXAS, Western North

NOT RECEIVED.

## UTAH, North, Central and South

### **Millard County**

**50 NE Garrison**      07      1900MST                     0      0      0      0      **Thunderstorm Wind (G51)**  
 The Tule Valley RAWS recorded a severe thundertorm wind gust to 59 mph (51kts).

### **Juab County**

**15 S Juab**      08      1500MST                     0      0      0      0      **Thunderstorm Wind (G52)**  
 The Sevier Reservoir RAWS measured a severe thunderstorm wind gust to 60 mph (52kts).

### **Cache County**

**Wellsville**      20      1715MST                     0      0      0      0      **Funnel Cloud**

### **Weber County**

**25 E Ogden**      20      1730MST      0.1      20      0      6      10K      2K      **Tornado (F1)**  
 A tornado touched down in the Weber Memorial Campground in eastern Weber county. 6 people camping were injured from flying debris. A funnel cloud was observed in the Wellsville area in Cache county.

### **Emery County**

**50 SW Green River**      21      1730MST  
1900MST                     0      0      2K      1K      **Flash Flood**

Flooding was reported on SR24 near the Goblin Valley turnoff. 8-12" of pea-sized hail piled up on I-70 at mile marker 131.

### **Duchesne County**

**15 SE Duchesne**      22      1230MST  
1250MST                     0      0      10K      2K      **Flash Flood**

A flash flood caused the road in Antelope Canyon to be washed out.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## UTAH, North, Central and South

### **Garfield County**

Henrieville to Escalante	24	1420MST 1450MST			0	0	20K	3K	Flash Flood
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Flash flooding of the Escalante River occurred on SR12 between Henrieville and Escalante. The roadway had to be closed due to water, rocks and debris on it.

### **Tooele County**

(Dpg)Michael Aaf Dug	25	1830MST			0	0	1K	0	Thunderstorm Wind (G52)
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### **Salt Lake County**

South Jordan	25	2140MST			0	0	0	0.80K	Thunderstorm Wind (G53)
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A microburst wind gust to 60 mph (52kts) was measured by military observers on the Dugway Proving Grounds. Later a Salt Lake TV Meteorologist measured a severe thunderstorm wind gust to 61 mph (53kts).

### **Tooele County**

(Dpg)Michael Aaf Dug	26	1310MST			0	0	0	0	Hail (0.75)
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### **Cache County**

Lewiston	26	1330MST			0	0	10K	5K	Tstm Wind/Hail
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### **Box Elder County**

14 W Thatcher	26	1500MST			0	0	0	2K	Hail (0.75)
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### **Salt Lake County**

Holladay to Salt Lake City	26	1500MST 1530MST			0	1	10K	0	Lightning
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### **Utah County**

American Fork to Alpine	26	1527MST 1600MST			0	0	300K	100K	Hail (1.25)
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### **Weber County**

Ogden	26	1550MST			0	0	100K	20K	Thunderstorm Wind (G52)
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### **Davis County**

Kaysville	26	1555MST			0	0	400K	100K	Thunderstorm Wind (G61)
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A severe thunderstorm outbreak left damage in its wake across northern Utah. Large hail, microburst winds and heavy rain were reported in several counties. The largest hail of 1 1/4" fell in Alpine. A microburst wind to 70 mph (61kts) was measured in Kaysville. Lightning sparked a house fire in Holladay. A separate bolt injured a boy in Salt Lake City. Heavy rains caused basement flooding in Davis county and caused 9 mud slides in American Fork Canyon. Widespread damage occurred to roofs, power poles, and trees. 2 planes were flipped over at the Ogden Municipal Airport. A barn was toppled in West Haven as well.

### **Washington County**

Zion National Park	30	1520MST			0	0	1K	3K	Hail (0.75)
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A severe thunderstorm dropped 3/4" diameter hail on the headquarters at Zion National Park. Minor flooding was also reported in the area and SR212 was temporarily closed.

## UTAH, Northeast

NONE REPORTED.

## VERMONT, North and Central

NOT RECEIVED.

## VERMONT, South

NONE REPORTED.

## VIRGIN ISLANDS

### **St. Croix County**

St. Croix	15	1810AST 1825AST			0	0			Waterspout
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A waterspout was sighted north of Buck Island in St. Croix.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## VIRGIN ISLANDS

### **VIZ030**

#### **St. Thomas**

21	0430AST 0530AST			0	0			<b>Tropical Storm</b>
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Tropical storm Bonnie as it tracked north of St. Thomas produced a peak wind of 42 mph from the north northwest at 42 mph at the airport at 0451 AST.

### **St. Croix County**

#### **St. Croix**

24	1130AST 1200AST			0	0			<b>Thunderstorm Wind (G56)</b>
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A strong tropical wave produced heavy rains and wind gust up to 65 mph at Maria Hill in St. Croix.

## VIRGINIA, East

### **VAZ091-094>098**

#### **York - Newport News - Norfolk - Suffolk - Chesapeake - Virginia Beach**

26	2000EST			0	4	23.5M	3.1M	<b>Hurricane</b>
28	1100EST							

Hurricane Bonnie moved just offshore of southeast Virginia on August 27th and 28th. Very strong winds and heavy rains associated with Bonnie's spiral bands hammered the Hampton Roads area Thursday evening into Friday morning. The highest sustained wind speed recorded was 81 mph at Cape Henry (anemometer elevation is 90 ft). Other sustained wind speeds were 78 mph at the Chesapeake Light Station Buoy just offshore (anemometer elevation is 90 ft), 53 mph at Langley Air Force Base, and 46 mph at the Norfolk International Airport. The highest gusts recorded were 104 mph at Cape Henry, 93 mph at the Chesapeake Light Station Buoy, 67 mph at Langley Air Force Base, and 64 mph at the Norfolk International Airport. Widespread power outages (up to 250,000 customers/750,000 people) were reported in the Hampton Roads area, along with reports of numerous trees down, trees down on homes, power lines down and some structural damage due to wind. Many windows were reported to have been blown out of hotels along the Virginia Beach oceanfront by the high winds. Some street flooding occurred in Norfolk, Virginia Beach, and Portsmouth due to heavy rain and a 2 to 4 foot storm surge. The peak tidal departure at Sewells Point in Norfolk was 3.5 feet above normal or 6.0 feet above MLLW. This resulted in moderate coastal flooding at the time of high tide. Rainfall amounts generally ranged from 1 to 3 inches across the Hampton Roads area with isolated amounts of 4 to 7 inches occurring in the Norfolk-Virginia Beach area. The lowest sea level pressure recorded was 999 mb at the Oceana Naval Air Station.

## VIRGINIA, Extreme Southwest

NONE REPORTED.

## VIRGINIA, North

### **VAZ025>031-036>042-050>052-055>057**

#### **Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Nelson - Albemarle - Greene - Madison - Rappahannock - Fauquier - Loudoun - Orange - Culpeper - Prince William - Stafford - Spotsylvania - King George**

01	0000EST			0	0			<b>Drought</b>
31	2359EST							

Persistent high pressure brought unusually dry weather during the entire month for much of northern and central Virginia. Only 0.45 inches of rain fell at Washington Dulles Airport (VAZ042), which was significantly less than the normal of 3.94 inches. Similar readings were found across most of central and northern Virginia. The lack of rainfall substantially reduced crop yields. Corn, hay, and soybeans were hardest hit. Many farmers had to dip into winter reserves to feed livestock. Stafford, Fauquier, and Culpeper Cos. expected to lose around half their corn crop. In general, the drought was expected to reduce the corn and soybean harvest by 20 to 40 percent across the region.

The lack of rainfall also contributed to increasingly dry timber and brush. The U.S. Forest Service reported the George Washington and Jefferson National Forests were twice as dry as normal, and five fires broke out in these parks during the first week of the month. One of these fires burned a small portion of land near Schothorn Gap in Page Co. In addition to the fire threat, reservoirs continued to dry out. A water emergency was declared in Spotsylvania Co (VAZ056) on the 30th as the Ni River reservoir had neared dangerously low levels.

### **Fairfax County**

#### **Chantilly to Great Falls**

10	1435EST			0	0	101K		<b>Lightning</b>
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A thunderstorm, containing frequent lightning, moved through northern Fairfax Co, starting three fires within five minutes. The first structure hit was a commercial building in Fair Oaks (near Chantilly), with the resulting fire damaging a computer. The second structure hit was the attic of a garden apartment building in McLean, where \$50,000 in damage was reported. The third lightning-induced fire damaged the roof and attic of a home in Great Falls, resulting in another \$50,000 in damage.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## VIRGINIA, Northwest

NONE REPORTED.

## VIRGINIA, Southwest

<b>Campbell County</b> 5 S Lynchburg City	08	1435EST 1510EST			0	0			Flash Flood
<b>Campbell County</b> Evington	08	1445EST 1600EST			0	0			Flash Flood
<b>Danville (C)</b> Danville	08	1630EST 1715EST			0	0			Flash Flood

Thunderstorms on the 8th produced very heavy rain resulting in flash flooding.

Thunderstorm rains flooded Route 29, five miles south of Lynchburg, Evington Road and Westburg Road in Evington, Memorial Drive in Danville, and caused a mudslide on Route 58 in Danville.

<b>Henry County</b> Countywide	10	1200EST 1300EST			0	0	10K		Lightning
<b>Martinsville (C)</b> Martinsville	10	1215EST 1315EST			0	0			Urban/Sml Stream Fld

Thunderstorms on the 10th produced street flooding and damaging lightning.

Thunderstorm rains caused flooding on Bridge Street in Martinsville resulting in the road being closed for about an hour.

Lightning strikes to power equipment resulted in numerous power outages across Henry County.

<b>Henry County</b> Bassett	16	1840EST 2100EST			0	0			Flash Flood
<b>Henry County</b> 5 W Bassett	16	1845EST			0	0	15K		Flash Flood

Thunderstorm rains on the 16th flooded Ridge Road, Longview Drive, and Wall Street in Bassett. Willie Craig Road, five miles west of Bassett was washed out. After flood waters receded a car collapsed the road between 1930 EST and 2000 EST.

## WASHINGTON, Northeast

<b>Chelan County</b> 25 NW Chelan	02 30	2300PST 1400PST			0	0	10M	80M	Wild/Forest Fire
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Lightning sparked a large fire at Twenty five mile creek on Lake Chelan. Over 6300 acres of forest land have burned. The fire was allowed to burn out and will not be officially out until mid October.

<b>Whitman County</b> 5 N Diamond to 1 S Diamond	06 07	0130PST 1800PST			0	0	50K	10K	Wild/Forest Fire
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Dry and windy conditions help spread small three wild fires in farm fields near Diamond. About 11 acres of wheat and timber were burned. One grain elevator was destroyed.

<b>Adams County</b> 10 S Ritzville	06 07	1000PST 1900PST			0	1	60K	2M	Wild/Forest Fire
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A tractor sparked a fire in a wheat field which was fanned by gusty winds. Over 20,000 acres were burned and a rancher was injured.

<b>Lincoln County</b> 4 N Davenport	10 11	1430PST 0100PST			0	0	2K	100K	Wild/Forest Fire
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Dry and windy conditions helped fan a wild fire in wheat field. A truck sparked the fire which burned over 1000 acres of farm land and timber.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## WASHINGTON, Northeast

### **Ferry County**

**4 N Orient**      10      1700PST  
1715PST      0      0      0      0      **Heavy Rain**  
One inch of rain in 15 minutes

### **Lincoln County**

**10 S Davenport**      21      1200PST  
2000PST      0      0      7K      1K      **Wild/Forest Fire**  
Lightning sparked a small fire on a grassy hillside south of Davenport. Over 70 acres of grass and timber were burned.

### **Okanogan County**

**18 NE Wauconda**      21      1600PST  
1630PST      0      0      0      0      **Heavy Rain**  
A half of rain in 30 minutes.

### **Ferry County**

**5 W Curlew**      21      2200PST  
23      1900PST      0      0      50K      60K      **Wild/Forest Fire**  
Lightning sparked many fires near Curlew lake in forest land. Over 40 fires were reported with over 1300 acres burned.

## WASHINGTON, Northwest

NONE REPORTED.

## WASHINGTON, Southeast

NONE REPORTED.

## WASHINGTON, Southwest

NONE REPORTED.

## WEST VIRGINIA, East

### **WVZ050>055**

**Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy**  
01      0000EST      0      0      **Drought**  
31      2359EST

Persistent high pressure brought unusually dry weather to portions of eastern West Virginia. Less than 1 inch of rain fell across much of the region; values which were only 25 percent of normal for the month. The lack of rainfall significantly reduced crop yields in an area from Martinsburg to Franklin. Hay and pasture were hardest hit, affecting livestock feed supplies.

### **Grant County**

**Central Portion to North Portion**      09      1720EST  
1800EST      0      0      2K      **Flash Flood**

### **Grant County**

**1 S Petersburg to .5 S Petersburg**      09      1800EST      0.5      33      0      0      15K      **Tornado (F0)**  
1801EST

### **Grant County**

**Petersburg**      09      1800EST      0      0      3K      **Thunderstorm Wind**

An area of strong to thunderstorms, producing abundant rainfall, formed near the Allegheny highlands of Grant county during the evening. Initially, thunderstorms moving over the same areas of northern Grant Co produced very heavy rainfall. Doppler radar estimated that more than 2 inches of rain fell in 2 hours. Spotters and law enforcement across the county reported between 0.95 and 4 1/2 inches of rain with the storm. One individual cell developed over Petersburg, producing a variety of weather.

Local law enforcement noted minor street and basement flooding beginning around 1720EST. The storm, which became severe, blew down several six-inch diameter tree limbs and one power pole. A spotter just southwest of Petersburg on federal highway 220/West Virginia highway 2 reported 1/2 inch diameter hail which was "enough to scoop up". The hail also stripped leaves off corn stalks, but did not damage the ears.

The same spotter reported a funnel cloud near the Pansy/Bethel Church area shortly before 1800EST. A tornado apparently developed shortly after, remaining on the ground for 1/2 mile. The twister (F0) was 33 feet wide, and moved generally from southeast to northwest. The tornado snapped, twisted, and/or uprooted 10 sycamore trees between 10 and 30 inches in diameter. Two locust trees were stripped, a roadside produce stand's roof was damaged, and the railing on a front porch of a home was ripped



# Storm Data and Unusual Weather Phenomena

August 1998

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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## WEST VIRGINIA, East

off and twisted into a ball.

## WEST VIRGINIA, North

### **Hancock County**

<b>Weirton</b>	24	0930EST			0	0	10K		<b>Lightning</b>
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Lightning sparked an attic fire in a house that resulted in roof and smoke damage.

### **Ohio County**

1 SW Triadelphia	24	1540EST 1615EST			0	0			<b>Flash Flood</b>
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Debris collected at a bridge and rising water was forced Peters Run out of its banks briefly and flooded Peters Run Road.

### **Marshall County**

<b>Moundsville</b>	24	1600EST			0	0	8K		<b>Thunderstorm Wind</b>
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Large trees were downed by thunderstorm winds onto Route 250. One tree fell onto a car.

### **Brooke County**

Countywide	24	1610EST 2000EST			0	0	10K		<b>Flash Flood</b>
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Several small streams came out of their banks across the county and several roads were flooded. Street flooding was especially widespread in and near Follansbee and Bethany. Some basements were also flooded in Follansbee. A storm total of 4.15 inches was reported just south of Weirton.

### **Hancock County**

<b>Weirton</b>	24	1740EST			0	0	8K		<b>Lightning</b>
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Lightning charred an exterior wall of a house and caused smoke damage.

### **Wetzel County**

<b>New Martinsville</b>	24	1850EST			0	0	3K		<b>Thunderstorm Wind</b>
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Several trees were downed by thunderstorm winds, some onto roads.

## WEST VIRGINIA, Southeast

NONE REPORTED.

## WEST VIRGINIA, West

### **WVZ009**

<b>Wood</b>									
01		0000EST			0	0			<b>Monthly Rainfall</b>
31		2300EST							

The total August rain amounted to less than an inch for much of the county. The cooperative observer in Parkersburg recorded only 0.67 inches. Normal August rains are in the 3.5 to 4 inch range. This same region had started the summer excessively wet, with 10 to 14 inches of rain in June.

### **Tyler County**

<b>Middlebourne</b>	24	1820EST			0	0	2K		<b>Thunderstorm Wind</b>
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Large tree branches and one large tree were blown down, in and just outside the town.

### **Ritchie County**

<b>Cairo</b>	25	1820EST			0	0	8K		<b>Thunderstorm Wind</b>
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Fallen tree branches caused an electrical outage to about 6,000 customers in the county.

## WISCONSIN, Extreme Southwest

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b>WISCONSIN, Northeast</b>									
<b>Vilas County</b>									
Arbor Vitae	01	1310CST			0	0			Dust Devil
A large dust devil developed and picked up two lawn chairs and knocked over concrete parking markers.									
<b>WIZ050</b>									
<b>Manitowoc</b>									
	06	2200CST			0	0	5K		Flood
	07	0200CST							
Four inches of rain fell in the city of Manitowoc between 11 pm and 3 am (CDT), bringing the 24-hour rainfall to nearly 7 inches. Many streets and basements were flooded in the Manitowoc area.									
<b>Vilas County</b>									
Phelps	14	1320CST			0	0			Hail (1.00)
<b>Marinette County</b>									
Goodman	14	1450CST			0	0			Thunderstorm Wind (G50)
<b>Winnebago County</b>									
2 NW Menasha to 1 E Neenah	14	1538CST 1545CST			0	0			Thunderstorm Wind (G60)
<b>Winnebago County</b>									
Menasha	14	1540CST			0	0			Hail (1.75)
<b>Calumet County</b>									
Appleton	14	1552CST			0	0			Hail (1.50)
<b>Calumet County</b>									
3 S Sherwood	14	1600CST			0	0			Hail (2.00)
Several thunderstorms produced large hail and damaging winds over northern and east-central Wisconsin. The strongest storm hit northern Winnebago and Calumet counties, where wind gusts near 70 mph and large hail occurred. Seven 40-foot-tall power distribution poles were blown over near near Menasha (Winnebago co.). The strong winds also blew down trees and power lines around Menasha. On Doty Island, near Neenah (Winnebago co.), several trees fell onto homes.									
<b>Lincoln County</b>									
5 N Harrison	17	0220CST			0	0			Thunderstorm Wind (G55)
A thunderstorm produced downburst winds which knocked about 150 trees down, including 20 inch diameter red pines. A small part of a ski lodge roof was blown off. Wind speed was estimated to be near 65 mph.									
<b>Wood County</b>									
Pittsville	17	0426CST			0	0			Lightning
Lightning struck and started a shed on fire near Pittsville. The shed was used to store hay.									
<b>Waupaca County</b>									
6 N Iola	23	1415CST			0	0			Hail (0.75)
<b>Waupaca County</b>									
New London	23	1452CST			0	0			Hail (1.00)
<b>Waupaca County</b>									
New London	23	1455CST			0	0			Hail (1.75)
<b>Waupaca County</b>									
New London	23	1455CST			0	0			Thunderstorm Wind (G50)
<b>Outagamie County</b>									
3 N Hortonville	23	1459CST			0	0			Thunderstorm Wind (G50)
<b>Outagamie County</b>									
3 SE Hortonville	23	1506CST			0	0			Hail (0.75)
<b>Outagamie County</b>									
1 W Appleton	23	1520CST			0	0			Hail (1.75)
<b>Winnebago County</b>									
Menasha	23	1522CST	0.1	10	0	0			Tornado (F0)
<b>Waupaca County</b>									
New London	23	1525CST			0	0			Hail (1.75)
<b>Winnebago County</b>									
Appleton	23	1529CST			0	0			Hail (2.00)
<b>Outagamie County</b>									
Little Chute	23	1535CST			0	0			Hail (1.75)

# Storm Data and Unusual Weather Phenomena

August 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>WISCONSIN, Northeast</b>									
<b>Outagamie County</b>									
Kaukauna	23	1537CST			0	0			Hail (1.25)
<b>Outagamie County</b>									
Appleton	23	1544CST			0	0			Hail (2.00)
<b>Calumet County</b>									
1 S Forest Jct	23	1546CST			0	0			Hail (1.00)
<b>Calumet County</b>									
Appleton	23	1550CST			0	0			Hail (1.50)
<b>Calumet County</b>									
Brillion	23	1550CST			0	0			Hail (1.50)
<b>Outagamie County</b>									
Appleton	23	1550CST			0	0			Hail (1.50)
<b>Calumet County</b>									
2 N Brillion	23	1554CST			0	0			Thunderstorm Wind (G50)
<b>Calumet County</b>									
Brillion	23	1559CST			0	0			Thunderstorm Wind (G52)
<b>Calumet County</b>									
Sherwood	23	1600CST			0	0			Hail (2.00)
<b>Calumet County</b>									
1 NE Hilbert	23	1604CST			0	0			Hail (0.75)
<b>Manitowoc County</b>									
Cato	23	1626CST			0	0			Thunderstorm Wind (G52)
<b>Manitowoc County</b>									
Whitelaw	23	1627CST			0	0			Hail (1.75)
<b>Manitowoc County</b>									
Valders	23	1628CST			0	0			Thunderstorm Wind (G52)
<b>Marinette County</b>									
10 NW Marinette	23	1640CST			0	0			Hail (1.50)
<b>Door County</b>									
10 W Egg Harbor to 3 SW Egg Harbor	23	1712CST 1730CST			0	0			Waterspout
<b>Door County</b>									
3 SW Egg Harbor to 5 SE Egg Harbor	23	1730CST 1744CST	5.1	1300	0	2	4.7M	1.8M	Tornado (F3)
<b>Door County</b>									
Baileys Harbor	23	1830CST			0	0			Hail (0.75)

Three supercell thunderstorms dropped large hail and tornadoes across northeast and central Wisconsin during the afternoon and early evening. The first two storms developed quickly over central Wisconsin and then tracked east-southeast through the Fox Cities. These two storms primarily produced large hail (1 to 2 inches in diameter) and some wind damage. A brief tornado touched down with the first storm near Menasha (Winnebago co.). The third storm developed farther north in the northeast part of the state. This storm evolved more slowly, but went through the classic life-cycle of a tornadic supercell and spawned an F3 tornado in Door county.

Large hail struck the Fox Cities, especially Appleton, producing over \$5 million in damage to vehicles and roofs of buildings. This was the second multi-million dollar hailstorm this year in Appleton. In Sherwood (Calumet co.), hail damage to a golf course was so severe that it did not open until two days later. In Brillion (Calumet co.), hail shattered large glass panels of a church.

The most severe damage occurred when a tornado tore a path 5.1 miles long and over a half-mile wide across Door county. The tornado came onshore from Green Bay at Murphy Park, on the Door county west coast at 630 pm. Thousands of trees were flattened in the heavily wooded area. About 30 homes, businesses and barns were destroyed or heavily damaged by the storm, but only two minor injuries were reported. Some livestock, however, including five horses, were lost. The tornado knocked down seven power poles holding electrical transmission lines, bringing blackouts to most of the north half of Door county. Thirty adults and 17 children at a campground found refuge in a concrete building as the tornado approached the grounds. Two minor injuries occurred at the camping resort as it took a direct hit. The twister made it almost two-thirds of the way across the county, before dissipating about 3 miles west of the Door county east coast.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## WISCONSIN, Northwest

### **Douglas County**

**Superior**      23      1801CST                     0      0                **Hail (1.75)**

### **Douglas County**

**.5 N Maple**      23      1835CST      0.1      25      0      0      28.5K      **Tornado (F0)**

An older model trailer home was tipped on its side by a weak tornado. Douglas County Sheriff's deputies followed the funnel cloud and saw it briefly touch down. The east half of the roof of the mobile home was located about 150 yards away, wrapped around a tree. The mobile home was not fastened down. A nearby garage was also destroyed.

### **Douglas County**

**Brule**      23      1855CST                     0      0                **Hail (0.75)**

### **Bayfield County**

**Iron River**      23      1900CST                     0      0                **Hail (1.75)**

### **Ashland County**

**4 SW Butternut**      23      2130CST                     0      0                **Thunderstorm Wind (G55)**

A 35-foot TV antenna was bent in half and numerous 6-8 inch diameter branches were torn off elm trees. Several trees up to 30 inches in diameter were uprooted. The wind speed is estimated.

## WISCONSIN, Southeast

### **Columbia County**

**Arlington to Lodi**      04      0700CST  
1200CST                     0      0      20K      **Flash Flood**

A series of thunderstorms, slowly moving northeast at 10 mph, trained through southern Columbia Co. and dumped 5 to 7 inches of rain between 0500CST and 1000CST. The resultant flash flooding led to shoulder gravel washouts on several roads, basement flooding (especially in Lodi), storm sewer backups, quick flooding of area rivers and streams, and some damage to a city park.

The large-scale atmospheric setup for this flash flood consisted of a cutoff upper level low pressure over the Northern Plains and the associated surface low over Iowa. From the surface low pressure a frontal boundary extended northeast through Wisconsin. This combination pulled deep tropical moisture (surface dewpoints in the 70s) into Wisconsin. The frontal boundary served as a focus for thunderstorm development. Through August 6th, the upper level low pressure meandered southeast into Iowa while the surface low pressure moved to the Wisconsin-Illinois border, along a southwest-northeast orientated surface trough of low pressure.

### **Rock County**

**Beloit**      05      0200CST  
0800CST                     0      0                **Urban/Sml Stream Flld**

A series of thunderstorms moving slowly northeast at 10 mph trained over the Beloit area during the early morning hours. Minor urban flooding of streets to a depth of 6 inches to around 1 foot and some minor basement flooding were the main reports. An estimated 3 to 4 inches of rain fell from about 0100CST to 0800CST, but north of Beloit, 5.6 inches of rain fell at the Rock County Airport. The resultant airport runway flooding was the 1st occurrence on record!

### **Waukesha County**

**Big Bend to 2 S Big Bend**      05      0700CST  
1000CST                     0      0      40K      **Flash Flood**

A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Big Bend area of southeast Waukesha Co., dumping 4 to 6 inches of rain between 0400CST and 0900CST in Big Bend. A portion of Highway 164 was washed away by the flood waters, while a couple other roads had shoulder gravel washouts. A woman was rescued from her stalled car in 4 foot deep waters. Likewise, an elderly man was rescued from his stalled car. Just south of the village of Big Bend, a drainage ditch and feeder creek into the Fox River flooded and washed away a pedestrian bridge at the Fox River Inn on Highway 164. There was also significant soil erosion at that location. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Racine County**

**Waterford to 4 N Waterford**      05      0700CST  
1100CST                     0      0      200K      **Flash Flood**

A series of thunderstorms, slowly moving northeast at 10 mph, trained through western Racine Co., dumping 4 to 6 inches of rain between 0400CST and 0835CST in Waterford. Water levels in some farm fields reached an unbelievable 5 to 6 feet. Highway 164 north of Waterford was closed due to "rivers" of water 1 to 3 feet deep surging across the road surface. Shoulder gravel washouts were noted on Highway 164 and several other rural roads. A total of 10 homes were damaged. One home in Waterford sustained severe damage when its basement wall collapsed due to water pressure. A couple retaining walls in a Waterford subdivision were pushed over by the flood waters. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Rock County**

**Janesville**      05      0750CST  
1030CST                     0      0      550K      **Flash Flood**

A series of thunderstorms, slowly moving northeast at 10 mph, trained through Rock Co., dumping 3 to 4 inches of rain within a

# Storm Data and Unusual Weather Phenomena

August 1998

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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## WISCONSIN, Southeast

couple hours. The resultant flash flood left damage to about 50 homes in Janesville, washed out gravel road shoulders, and stalled or floated many vehicles. Water levels on many roads reached a depth of 1 to 3 feet, and forced the closure of the I-94 exit ramp at Highway 14. Some homes had basement wall damage, while many streets were closed until water levels receded. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Walworth County Whitewater**

<b>05</b>	<b>0900CST 1300CST</b>		<b>0</b>	<b>0</b>	<b>100K</b>	<b>Flash Flood</b>
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Whitewater area... dumping 4 to 8 inches of rain between 0630CST and 1100CST. The resultant flash flooding closed some city roads due to water levels of 1 to 3 feet. Several stalled cars were reported. Water poured into the lower level of two UW-Whitewater buildings. In one of the buildings, water depths reach 4 feet, resulting in damage to the A/C system and electrical system. The loss of power resulted in the loss of a police radio frequency, since the radio equipment is housed in this building. Two homes suffered contents damage, while 1 business reported substantial damage. On the south side of the city, surging waters in a drainage ditch eroded the southwest embankment of the intersection of Highways 59 and 89. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Milwaukee County Milwaukee**

<b>05</b>	<b>1000CST 1300CST</b>		<b>0</b>	<b>0</b>	<b>20K</b>	<b>Urban/Sml Stream Fld</b>
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Milwaukee area... dumping 2 to 4 inches of rain between 0900CST and 1300CST. The resultant urban flooding closed some roads, notably College Ave. from 27th to 31st street. Water depths on some city streets reached 1 to 2 feet. The Public Safety Building in downtown Milwaukee had a flooded basement. A tunnel at Mitchell International Airport had water levels of 4 feet, and the terminal also had some minor flooding in a baggage room. Water covered the passing lane on I-94 near the KK River. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Green County Juda**

<b>05</b>	<b>1500CST</b>		<b>0</b>	<b>0</b>		<b>Funnel Cloud</b>
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### **Rock County Janesville to Milton**

<b>05</b>	<b>1515CST 1800CST</b>		<b>0</b>	<b>1</b>	<b>1.5M</b>	<b>150K</b>	<b>Flash Flood</b>
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Janesville to Milton area. This round of an additional 1 to 4 inches brought the day's total to 6 to 10 inches based on WSR-88D Doppler radars. The resultant flash flooding damaged the basement contents in about 70 homes, washed out some gravel shoulders on roads, and peeled back the pavement on a couple roads. Water levels on some area streets reached 3 to 4 feet. A 13-year old boy was injured in Janesville's Palmer Park after being swept into a culvert. He was under water for about 9 minutes. One Janesville home was destroyed when its basement wall collapsed. The surging waters busted out windows in several other homes. Another Janesville home was destroyed when one sidewall crumbled from the force of waist-high water. The Janesville Elks Club's parking lot sustained pavement damage. Nearby farm fields had water depths of 2 to 5 feet in low spots, with resultant damage to the corn crop. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Walworth County 1 W Williams Bay**

<b>05</b>	<b>1840CST 1841CST</b>		<b>0</b>	<b>0</b>		<b>Funnel Cloud</b>
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### **Rock County Clinton to 4 E Clinton**

<b>05</b>	<b>1945CST 2200CST</b>		<b>0</b>	<b>2</b>	<b>250K</b>	<b>Flash Flood</b>
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Clinton area, dumping an additional 4 to almost 6 inches. The day's rainfall total reached 8 inches based on WSR-88D Doppler radars. The resultant flash flooding washed out two bridges on roads north and northeast of Clinton. Two miles north of Clinton, at about 2010CST, a 12 foot long bridge on Highway 140 over Turtle Creek was washed away by surging waters. A few minutes later, with the bridge missing and visibilities poor, a vehicle was driven into Turtle Creek. It's two occupants were rescued by the local fire department. At 1020 pm, a couple miles east and upstream on Turtle Creek, a bridge on the Bradford-Clinton Townline Road was washed out by the flood waters. A vehicle was traveling on this bridge when it collapsed. The car and its two occupants were swept downstream about 100 yards. The injured occupants, after hanging on to tree branches for 1 hour, were rescued by the local fire department. In Clinton, several homes and businesses sustained flooding damage to their contents. East of Clinton on County X, several cars and trucks were swept off the road by the flood waters.

The village of Clinton registered 5.79 inches of rain between 1900CST and 2200CST. Turtle Creek in Clinton was above flood stage from 1115am on August 5th to 7pm on the 6th. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

# Storm Data and Unusual Weather Phenomena

August 1998

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

## WISCONSIN, Southeast

### **Walworth County**

<b>Delavan</b>	<b>05</b>	<b>2000CST 2300CST</b>			<b>0</b>	<b>0</b>			<b>Urban/Sml Stream Fld</b>
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the Delavan area, dumping 2 to 4 inches of rain. The resultant urban flooding generated water depths of 1 to 2.5 feet on some city streets. Some roads were closed, and several vehicles stalled. Just north of Delavan, Turtle Creek, which runs into Lake Comus, was reported to be 2 feet over flood stage. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Walworth County**

<b>6 SE Whitewater to Tibbet</b>	<b>05</b>	<b>2030CST 2300CST</b>			<b>0</b>	<b>0</b>	<b>30K</b>		<b>Flash Flood</b>
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A series of thunderstorms, slowly moving northeast at 10 mph, trained through the area southeast of Whitewater to northwest of Elkhorn, dumping an additional 1 to 3 inches of rain on top of an earlier 3 to 5 inches. The resultant flash flooding waters washed out gravel shoulders on several roads, and stalled several vehicles. Water levels in some of the low spots on roads reached 2 to 4 feet. Northeast of Tibbet, near lake Wandawega, a woman was rescued from her vehicle by the local fire department. Twenty homes suffered contents damage in basement flooding. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co.

### **Sheboygan County**

<b>Sheboygan</b>	<b>06</b>	<b>0540CST 1300CST</b>			<b>0</b>	<b>0</b>	<b>40M</b>	<b>50K</b>	<b>Flash Flood</b>
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A devastating, record flash flood hit the area from Sheboygan Falls to the city of Sheboygan during the early morning hours, with Sheboygan having the worst of the flooding. An incredible 10.75 inches of rain fell at the Sheboygan Press building, and unofficial reports indicate that around 12 inches may have fallen in parts of the city. The rain started about 0100CST, and continued until about 0800CST as a series of thunderstorms, moving slowly northeast at 10 mph, trained through the same areas. Rainfall amounts diminished going west through the county... 5 inches fell in Plymouth. A "state of emergency" was declared by the Governor.

At least 3 bridges in Sheboygan were severely damaged and immediately closed to traffic. Several other roads had chunks of pavement torn loose, or curbs washed away. The monetary damage to the road and bridge infrastructure amounted to almost 6 million dollars! About 400 residential homes sustained minor damage, about 500 suffered major damage, and 6 were destroyed. Consequently, over 500 of these structures were left uninhabitable due to collapsed basement walls, shifting of foundations, etc. One elderly man was trapped in his home, but was rescued at the last second as his entire home disintegrated. Six businesses sustained minor damage, and 4 suffered major damage. Several downtown buildings had walls crumble due to the force of flood waters. Some city hillsides also collapsed. One man lost two vehicles, a camper, and basement and 1st floor personal property to the raging water currents. The City School District suffered substantial damage (\$1.2 million), especially to North High School. The Red Cross set up shelter for those who needed it, but also lost some of its emergency supplies due to a flooded basement. Two large apartment complexes had to have most of their residents evacuated due to water depths of 4 to 7 feet in the 1st floor rooms! One woman was rescued while floating on a mattress in water only 1 foot from the ceiling. Only minor crop damage was reported.

Many area and city roads were closed, and in some spots the water depth reached 5 to 6 feet! County Highway EE south of State 28 washed out, while I-43 west of the city of Sheboygan was reduced to one lane travel both ways. State 23 was closed at I-43 for a couple hours. Area golf courses were hit hard with many soil/tree washouts reported.

Many creeks throughout the eastern part of the county were described as "raging currents." Fisherman Creek in the city of Sheboygan was responsible for 1 bridge washout. The cities infrastructure suffered about \$2.5 million in damage. The Sheboygan River in Sheboygan set a new record crest of 12.02 feet at 1700CST (6pm), or 4.02 feet above flood stage. It remained above flood stage at this location from 0745CST on August 6th through 1400CST on the 7th. The max discharge was 7820 cfs, or between a 25 and 50 year flood.

Some quotes from newspapers: "The Great Flood of 1998", "It Just Never Stopped", "And the Rains Came", "Sheboygan Submerged", "We Were so Scared We Didn't Know What to do", "The Deluge of 98", and "Sheboygan Under Siege". The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co. Eastern Washington and Ozaukee Co. were persistent atmospheric breeding areas for all the thunderstorms that affected Sheboygan Co.

### **Sheboygan County**

<b>Sheboygan</b>	<b>06</b>	<b>0630CST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Lightning</b>
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Lightning struck a cemetery building, and ignited a fire that damaged the building.

### **Milwaukee County**

<b>Wauwatosa to Brown Deer</b>	<b>06</b>	<b>1430CST</b>			<b>0</b>	<b>1</b>	<b>22.1M</b>		<b>Flash Flood</b>
	<b>07</b>	<b>0100CST</b>							

# Storm Data and Unusual Weather Phenomena

August 1998

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

## WISCONSIN, Southeast

### **Waukesha County**

<b>Brookfield to New Berlin</b>	<b>06 07</b>	<b>1430CST 0100CST</b>			<b>2</b>	<b>1</b>	<b>17.3M</b>	<b>Flash Flood</b>
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A monumental flash flood event ravaged adjacent portions of Milwaukee and Waukesha counties during the afternoon and evening hours. For the northwest quarter of Milwaukee Co., and the northeast/ eastcentral parts of Waukesha Co., it was the second year in row (press headline - "deja vu all over again"). In Milwaukee Co., the damage wasn't as bad as that in June 1997, but for Waukesha Co. it was the worst flooding ever. Here are the details broken down by county:

#### 1) Milwaukee County...

The flash flood was the result of 5 to almost 9 inches of rain, between 1330CST (230pm) and 2000CST (9pm), falling on top of 1 to 3 inches that fell the previous two days. Maximum storm rainfall was 8.90 inches in Milwaukee on north 78th Street. A location in northern Wauwatosa came in with 8.40 inches between 2 pm and 9pm, while at 76th and Silver Springs in northwest Milwaukee, 7.12 inches were measured.

The flash flooding quickly exhausted the local resources available in the city of Brown Deer, while the Red Cross opened shelters. One-hundred and twenty people in Milwaukee Co. became homeless due to home damage, while another 215 were evacuated. All together, 3517 residential structures sustained damage in the county: 3308 minor, 206 major damage, and 3 destroyed. Five businesses reported minor damage, and 18 major damage. Two private/utility structures had minor damage, and 7 had major damage. These three categories collectively had damage amounts of \$20.05 million. There was an additional \$2.092 million in damage to the public sector such as road systems, buildings, water control, etc. About 6500 residential and 50 business places lost power due to various outages.

One 13 year-old boy was injured as he was swept by flood waters into a culvert and submerged for 15 minutes. Many roads were flooded and closed with water levels reaching 3 to 5 feet. Boats were needed to rescue several people. Highway 45 was closed, while Timmerman Field had minor flooding. A retaining wall in northwest Milwaukee collapsed due to high water levels. The city of Wauwatosa has decided to purchase some of the homes in the Menomonie River flood plain, and the city of Brown Deer will purchase some homes in the South Branch Creek flood plain to mitigate future damage.

The Menomonie River in Wauwatosa crested at a record 18.3 feet on August 6th at 2026CST (826pm), about a foot higher than that observed a year ago. It was above flood stage from 1600CST (500pm) on the 6th to 840CST (940 am) on August 7th. The discharge at this location was 12800 cfs, or between a 50 and 100 year flood. Water levels were so high in Wauwatosa that an Amtrack train was halted with 350 passengers on board. Underwood Creek in Wauwatosa crested at a record 13.10 feet, or 2.10 feet above flood stage. It was above flood stage from 1655CST (555pm) on August 6th to 1930CST (830 pm) on the 6th.

The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co. Eastern Walworth and western Racine Co. were persistent atmospheric breeding areas for all the thunderstorms that moved northeast over Milwaukee Co. Interestingly, the atmosphere recovered it's flash-flood potential during the late morning hours (after the Sheboygan County flash flood early on August 6th) as a southwest- northeast orientated surface front sagged south from Washington and Ozaukee counties to Walworth and Racine Counties by early afternoon.

#### 2) Waukesha County...

The worst flash flooding of the 1900's struck eastern Waukesha Co. , resulting in large monetary loses, and forcing some residents to decide to move out of flood plains. The worst flash flooding occurred from Brookfield through Elm Grove into New Berlin, and was the result of 6 to almost 12 inches of rain between 1230CST (130pm) and 2000CST (9pm), falling on top of 1 to 2 inches that fell in the previous two days. Maximum storm rainfall was 11.75 inches in Elm Grove at the intersection of North and Calhoun. There was an 11.50 inch report out of Brookfield, while the Brookfield High School registered 8.75 inches.

Tragically, 2 teenage boys, ages 10 and 14, died when swirling flood waters swept them into a drainage ditch at 1710CST (610pm) which flowed into Underwood Creek in Elm Grove at Watertown Plank and Sunnyslope Roads. Rescue workers had to put on scuba diving gear to locate one of the boys. Flood waters of 4 to 5 feet covered much of New Berlin, half of Brookfields roads were submerged, and water to a depth of 4 to 7 feet settled in over Elm Grove. In fact, The Mill Place Shopping Center in Elm Grove still had standing water on August 7th. Flooding was so bad at the I-94 and Moreland Rd. interchange that local officials closed that intersection. Rescue workers in boats had to pluck people out of their stalled vehicles in that area. Compounding the flooding problem was the accumulation of raw sewage which backed into many basements.

Overall, 2680 residential homes sustained minor flood damage, while 10 had major damage. Thirty businesses suffered minor damage, 20 had major damage, and 2 were destroyed. One utility building sustained minor damage. There was nearly a half-million dollars in damage in the public sector to road systems, buildings, etc.

Many roads suffered gravel washouts on the shoulders, while a portion of Blackwolf Run golf course washed away. Many streams and creeks had high water levels for days after the bulk of the flash flood. The Fox River in Pewaukee crested at 12.08 feet at

# Storm Data and Unusual Weather Phenomena

August 1998

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

## WISCONSIN, Southeast

0100CST (2am) on August 8th, or 2.08 feet over flood stage, and would stay above flood stage through the 10th. The synoptic reasons for this flooding can be found in the August 4th entry for flash flooding in Columbia Co. Eastern Walworth and western Racine Co. were persistent atmospheric breeding areas for all the thunderstorms that affected eastern Waukesha Co.

### **Green County**

1 N New Glarus

14 1739CST 0 0 Hail (1.75)

### **Green County**

2 E Albany

14 1800CST 0 0 Hail (1.00)

A west-east line of thunderstorms dropped southeast across southcentral Wisconsin, and a couple cells on the west flank briefly pulsed to severe weather limits. Large hail were the only reports.

### **Jefferson County**

2 W Watertown

21 1423CST 0 0 Funnel Cloud

### **Dodge County**

2 NE Theresa

22 1736CST 0 0 1K Thunderstorm Wind (G59)

### **Washington County**

3 W Wayne

22 1751CST 0 0 1K Thunderstorm Wind

A short line of thunderstorms moved east through northern Washington Co. and briefly pulsed to above severe limits. Powerful downburst winds toppled several large trees in northeastern Dodge Co. (gust to 68 mph), and then moved into northwestern Washington Co.

### **Jefferson County**

Jefferson

24 2107CST 0 0 Hail (2.00)

### **Waukesha County**

2 E Dousman

24 2133CST 0 0 Hail (0.75)

### **Rock County**

Beloit

24 2232CST 0 0 3.5M Lightning

A cluster of thunderstorms moved east and briefly pulsed to severe weather limits, and dumped large hail over parts of southeastern Wisconsin. Another thunderstorm's lightning struck a 139 year-old historical church in Beloit. The resultant fire destroyed the structure, and it's most of the contents were a total loss.

## WISCONSIN, Southwest

### **Buffalo County**

Fountain City

09 1600CST 0 0 2K Thunderstorm Wind (G61)

### **La Crosse County**

2 S Holmen

09 1652CST 0 0 Thunderstorm Wind (G50)

### **Trempealeau**

#### **County**

3 E Trempealeau

09 1652CST 0 0 15K 25K Thunderstorm Wind (G52)

### **La Crosse County**

New Amsterdam

09 1655CST 0 0 35K 20K Thunderstorm Wind (G61)

### **La Crosse County**

2 S Holmen

09 1657CST 0 0 1K Thunderstorm Wind (G55)

### **La Crosse County**

Onalaska

09 1658CST 0 0 45K Thunderstorm Wind (G62)

### **La Crosse County**

La Crosse Muni Arpt

09 1700CST 0 0 Thunderstorm Wind (G50)

### **La Crosse County**

St Joseph

09 1725CST 0 0 30K Hail (0.75)

### **La Crosse County**

St Joseph

09 1725CST 0 0 20K Thunderstorm Wind (G61)

Spotter groups clocked wind gusts as high as 71 mph, which knocked down several trees, power lines and damaged some crops.

### **La Crosse County**

Onalaska

09 1715CST 0 0 Urban/Sml Stream Fld  
1800CST

Ham radio operators reported widespread urban flooding of streets and intersections, resulting from 3.5 inches of rain in less than an hour.



# Storm Data and Unusual Weather Phenomena

August 1998

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

## WISCONSIN, Southwest

<b>Monroe County</b>									
Norwalk	14	1544CST			0	0			Hail (0.75)
<b>Monroe County</b>									
1 W Cataract	14	1550CST			0	0	15K		Thunderstorm Wind (G52)
<b>Vernon County</b>									
6 W Viroqua	14	1615CST			0	0	25K		Hail (0.75)
<b>Crawford County</b>									
Mt Sterling	14	1715CST			0	0	10K	30K	Hail (0.75)
<b>Crawford County</b>									
Seneca	14	1752CST			0	0	25K		Hail (0.75)
Law enforcement officials and spotters reported dime size hail, which damaged some crops.									
<b>Adams County</b>									
Friendship	22	1405CST			0	0	12K		Thunderstorm Wind (G52)
Law enforcement officials reported some power lines were downed as winds gusted to 60 mph.									

## WISCONSIN, West

<b>Pepin County</b>									
Stockholm	14	1615CST			0	0			Thunderstorm Wind (G50)

Tree blown onto power line. Estimated windspeed. Marble hail also reported.

## WYOMING, Central and West

<b>Park County</b>									
1 S Powell	08	1920MST			0	0			Hail (1.00)
<b>Big Horn County</b>									
1 W Lovell	08	1950MST			0	0			Hail (1.00)
Hail up to 1 inch in diameter fell along and near the Shoshone River between Powell and Lovell. Damage to barley and sugar beet crops. No damage estimates available.									
<b>Johnson County</b>									
27 E Buffalo	10	1140MST			0	0			Thunderstorm Wind (G52)
<b>Hot Springs County</b>									
8 NE Thermopolis	14	1640MST 1646MST			0	0			Hail (0.75)
<b>Hot Springs County</b>									
8 NE Thermopolis	14	1640MST 1646MST			0	0			Thunderstorm Wind (G56)
Along Route 172.									
<b>Big Horn County</b>									
Greybull	15	1612MST			0	0			Thunderstorm Wind (G50)
Mail boxes blown over in Greybull. Gusts to 55 mph at Greybull airport. In Basin, 3/4 inch diameter tree limbs down and winds estimated 50 to 60 mph.									
<b>Fremont County</b>									
(Riv)Riverton Rgnl A	30	1720MST			0	0			Thunderstorm Wind (G51)

## WYOMING, Extreme Southwest

NONE REPORTED.

## WYOMING, North Central

<b>Sheridan County</b>									
6 NE Sheridan	19	1900MST 1920MST			0	0	20K		Urban/Sml Stream Fld
The Little Goose Creek flooded a small subdivision when a slow moving thunderstorm produced over 1.50 inches of rainfall in 20 minutes. A house basement was reported to have been flooded.									

# Storm Data and Unusual Weather Phenomena

August 1998

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

## WYOMING, Northeast

NOT RECEIVED.

## WYOMING, Southeast

### **Converse County**

<b>Douglas</b>	<b>01</b>	1318MST 1327MST			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Hail (0.75)</b>
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### **Laramie County**

10 NE Cheyenne to 14 NE Cheyenne	<b>09</b>	1343MST 1405MST	<b>4</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Tornado (F0)</b>
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A brief tornado moved across open country 10 miles northeast of Cheyenne.

### **Carbon County**

15 S Arlington	<b>10</b>	1430MST			<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>Lightning</b>
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A woman was killed by a lightning bolt while hiking in the Snowy Range. A friend that was hiking with her was injured. The two were trying to get to lower levels of the mountains after spotting the storm, but the storm caught them in the open.  
F51OU

### **Laramie County**

1 N Burns to 4 NE Burns	<b>21</b>	1515MST 1535MST	<b>5</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Tornado (F0)</b>
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A weak tornado moved across open country northeast of Burns and dissipated.

### **Goshen County**

14 SW Torrington	<b>21</b>	1620MST 1622MST			<b>0</b>	<b>0</b>	<b>4K</b>	<b>0</b>	<b>Thunderstorm Wind (G62)</b>
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A storm produced a wind gust of 70 mph which ripped the roof off of a shop building 14 miles southwest of Torrington.



# Storm Data and Unusual Weather Phenomena

May 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Beckham County**

8 S Elk City      08      2145CST                0      0      18.5K      **Thunderstorm Wind**

**Washita County**

Canute      08      2210CST                0      0           **Hail (0.88)**

**Washita County**

Canute      08      2210CST                0      0      0.60K      **Thunderstorm Wind**

Two severe thunderstorms developed over western Oklahoma the evening of May 8th. The first storm formed over Beckham, Greer, Kiowa and Washita Counties between 1900 CST and 1930 CST. Several mobile homes and barns were destroyed and one horse was killed 5 miles south of Carter in Beckham County. In Sentinel in Washita County severe winds destroyed fences, an elevator, a barn and several storage buildings while a gas pump was damaged, and a wood structure was blown onto Interstate 44. One mile south of Willow in Greer County 5 high-line power poles were broken. The other severe thunderstorm formed 2 hours later in Beckham County first blowing a roof off of a mobile home 2 miles north of Delhi, then knocking down power lines onto Highway 34 in Erick. As the storm moved to 4 miles south of Sayre, a metal tower was blown onto Highway 283 while roof damage occurred to a mobile home. Substantial damage was reported in Sayre where a semi-truck was blown off of Interstate 40. Additional damage included roof damage to a barn and well house, uprooted trees, one onto a house, a destroyed gas pump and a destroyed mobile home on Highway 52 just east of Sayre. Also east of Sayre, an ostrich was killed, and power was knocked out for 4 hours. Six miles east of Sayre, one person was injured due to flying debris; an oil rig was damaged, and one trailer was overturned while 3 others shifted off their foundation. Eight miles south of Elk City, two metal buildings were destroyed; a grain silo was blown over; a stock trailer was blown into a canyon and destroyed, and a barn roof was damaged. Two barns were destroyed; a trailer was blown off of its foundation; a house chimney was damaged, and house windows were broken 6 miles south of Elk City, while large trees fell over in Elk City crushing a fence and swing set. A tin roof was blown off a small out building in Canute. Power outages and downed 4 to 5 inch tree limbs were also reported.

**Cleveland County**

2 W Moore      09      0615CST                0      0           **Hail (0.75)**

**Cleveland County**

Norman      09      0620CST                0      0      0.10K      **Thunderstorm Wind**

**Oklahoma County**

Tinker Afb      09      0630CST                0      0           **Hail (0.75)**

**Pottawatomie**

**County**

4 S Mc Loud      09      0705CST                0      0           **Hail (0.88)**

Isolated severe thunderstorms developed during the early morning of May 9th, resulting in a downed 6 inch diameter tree in Norman. Nickel size hail was reported 4 miles south of McLoud, while dime size hail fell 2 miles west of Moore and at Tinker Air Force Base.

**Beckham County**

20 SW Erick      14      2000CST                0      0           **Hail (0.75)**

**Beckham County**

12 SW Erick      14      2005CST                0      0           **Hail (0.88)**

**Beckham County**

2 N Erick      14      2030CST                0      0           **Thunderstorm Wind (G70)**

**Beckham County**

Erick      14      2030CST                0      0      45K      **Thunderstorm Wind (G52)**

**Roger Mills County**

3 N Sweetwater      14      2030CST                0      0           **Hail (0.75)**

**Beckham County**

1 S Elk City      14      2040CST                0      0      2K      **Thunderstorm Wind**

**Roger Mills County**

7 N Sweetwater      14      2040CST                0      0           **Hail (1.00)**

**Roger Mills County**

7 N Sweetwater      14      2040CST                0      0           **Thunderstorm Wind (G52)**

**Roger Mills County**

Cheyenne      14      2050CST                0      0      54.1K      **Thunderstorm Wind**

**Harmon County**

3 WNW Vinson      14      2100CST                0      0           **Hail (0.75)**

# Storm Data and Unusual Weather Phenomena

May 1998

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

## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

<b>Harmon County</b>									
Hollis	14	2135CST			0	0			Hail (1.25)
<b>Roger Mills County</b>									
2 N Dempsey	14	2145CST			0	0			Hail (0.75)
<b>Roger Mills County</b>									
2 N Dempsey	14	2145CST			0	0	0.01K		Thunderstorm Wind
<b>Beckham County</b>									
4 ESE Erick	14	2200CST			0	0			Thunderstorm Wind (G60)
<b>Major County</b>									
17 N Chester	14	2205CST			0	0	50K		Thunderstorm Wind
<b>Beckham County</b>									
Elk City	14	2215CST			0	0	9K		Thunderstorm Wind
<b>Roger Mills County</b>									
Cheyenne	14	2215CST			0	0	0.20K		Thunderstorm Wind
<b>Woods County</b>									
Waynoka	14	2215CST			0	0	2.5K		Thunderstorm Wind
<b>Greer County</b>									
15 WNW Willow	15	0100CST			0	0			Hail (0.75)
<b>Greer County</b>									
15 WNW Willow	15	0100CST			0	0	2K		Thunderstorm Wind
<b>Roger Mills County</b>									
2 SW Durham	15	0130CST			0	0			Hail (0.75)
<b>Roger Mills County</b>									
2 SW Durham	15	0130CST			0	0	0.10K		Thunderstorm Wind
<b>Roger Mills County</b>									
6 SW Cheyenne	15	0140CST			0	0	2.5K		Thunderstorm Wind
<b>Roger Mills County</b>									
2 N Dempsey	15	0155CST			0	0			Thunderstorm Wind (G70)
<b>Jackson County</b>									
Altus Muni Arpt	15	0200CST			0	0	20K		Thunderstorm Wind (G61)
<b>Roger Mills County</b>									
2 W Cheyenne	15	0200CST			0	0	2K		Thunderstorm Wind
<b>Roger Mills County</b>									
Cheyenne	15	0200CST			0	0			Thunderstorm Wind (G70)
<b>Ellis County</b>									
Shattuck	15	0204CST			0	0	1K		Thunderstorm Wind
<b>Jackson County</b>									
Martha	15	0209CST			0	0	1.4K		Thunderstorm Wind
<b>Tillman County</b>									
Tipton	15	0227CST			0	0	0.80K		Thunderstorm Wind
<b>Harper County</b>									
8 SW Laverne	15	0230CST			0	0			Hail (1.00)
<b>Woodward County</b>									
Woodward	15	0233CST			0	0	0.50K		Thunderstorm Wind
<b>Dewey County</b>									
5 SE Vici	15	0245CST			0	0	0.01K		Thunderstorm Wind
<b>Major County</b>									
19 N Chester	15	0300CST			0	0	1K		Thunderstorm Wind
<b>Comanche County</b>									
20 NW Lawton	15	0302CST			0	0	1.8K		Thunderstorm Wind



# Storm Data and Unusual Weather Phenomena

May 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

and 0515 CST on May 15th. A roof was blown off of a barn 15 miles northwest of Willow; 6 to 8 inch diameter tree limbs were blown down 2 miles southwest of Durham. Six miles southwest of Cheyenne, a wellhouse blew over, and roof damage occurred to a house. In Cheyenne severe winds damaged several homes, while a roof was blown off a trailer house 2 miles west of Cheyenne. Two hangar doors were blown off at Altus Municipal Airport. Numerous trees were downed in Shattuck in Ellis County; seven utility poles were snapped in Martha. Reports of snapped utility poles also came from Tipton. Trees were downed in Woodward; 2 inch diameter tree limbs were broken 5 miles southeast of Vici, and a roof was blown off of a garage 19 miles north of Chester in Major County. An antenna was destroyed 20 miles northwest of Lawton, while trees were uprooted, and damage occurred to a roof. In Helena several 3 inch diameter tree limbs were blown down; a swingset was blown over; a large cedar tree was snapped in half; power lines were downed; and damage occurred to many roofs, while in Okeene a large metal building was destroyed, and utility poles were snapped. In Lacey in Kingfisher County 2 large irrigation systems were destroyed. There were also reports of power outages and damage to many mobile homes and barns. One mile west of Loyal the doors and roof were blown off of a barn, while a shed was destroyed, and power lines were downed 1 mile south of Hennessey. A barn was demolished in Omega. Roof damage was reported southwest of Kingfisher. In Calumet in Canadian County a grain storage bin was damaged, and a barn was destroyed. Limbs and power lines were downed all across Garfield County, while a sheet metal building was destroyed in Enid. A guinea hen and two geese were also killed, and roofs were damaged, while a U-haul trailer was blown off of the highway 1 mile south of Enid. Several barns were damaged in Brahman. Power lines and numerous tree limbs were downed in Brahman and Tonkawa. A semi truck was blown off of Interstate 35 in Blackwell. Large trees were blown over 2 miles southeast of Lamont, and fences were blown down in Norman.

#### **Oklahoma County**

Oklahoma City	20	1100CST			0	1			Lightning
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#### **Oklahoma County**

Oklahoma City	20	1100CST			0	0	2K		Thunderstorm Wind
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An isolated severe thunderstorm developed over Oklahoma City the morning of May 20th. One man sustained minor burns when he was struck by lightning, and power was knocked out to 53 homes at May and NW 14th Street for over two hours.

#### **Alfalfa County**

1 S Amorita	24	1745CST	0.1	10	0	0			Tornado (F0)
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#### **Alfalfa County**

3 ENE Amorita	24	1750CST	0.1	10	0	0			Tornado (F0)
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#### **Alfalfa County**

8 E Amorita to 10 ESE Amorita	24	1755CST 1759CST	3.5	100	0	0	3K		Tornado (F1)
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#### **Grant County**

8 SW Manchester to 9 SSE Manchester	24	1759CST 1805CST	1.5	100	0	0			Tornado (F0)
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#### **Grant County**

4 WNW Wakita	24	1823CST	0.1	10	0	0			Tornado (F0)
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#### **Grant County**

2 SW Wakita to 2 S Wakita	24	1825CST 1829CST	2.5	50	0	0			Tornado (F0)
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#### **Grant County**

9 W Medford	24	1839CST	0.1	10	0	0			Tornado (F0)
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#### **Grant County**

3 SE Wakita	24	1840CST	0.1	10	0	0			Tornado (F0)
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#### **Grant County**

6 W Medford	24	1846CST 1853CST	1	250	0	0			Tornado (F0)
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#### **Grant County**

6 W Medford	24	1847CST 1850CST	0.8	175	0	0			Tornado (F0)
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#### **Grant County**

4 W Medford	24	1909CST			0	0			Hail (2.75)
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#### **Kiowa County**

4 S Hobart	24	1910CST			0	0			Hail (0.75)
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#### **Grant County**

Deer Creek	24	1920CST			0	0			Hail (1.00)
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# Storm Data and Unusual Weather Phenomena

May 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Grant County**

2 SW Medford to 2 S Medford      24      1920CST  
1924CST      2      75      0      0      5K      Tornado (F1)

**Grant County**

Medford      24      1923CST      0      0      Hail (3.50)

**Grant County**

3 SE Jefferson to 7 E Pond Creek      24      1929CST  
1934CST      5      275      0      0      1K      Tornado (F0)

**Jackson County**

Duke      24      1930CST      0      0      Hail (0.75)

**Grant County**

4 ENE Pond Creek      24      1935CST  
1936CST      1      200      0      0      5K      Tornado (F1)

**Grant County**

1 N Salt Fork      24      1950CST      2      400      0      0      15K      Tornado (F1)

**Kay County**

1 WNW Braman      24      1955CST      0.1      10      0      0      Tornado (F0)

**Kay County**

4 N Blackwell      24      2000CST      0      0      Thunderstorm Wind (G52)

**Grant County**

3.5 S Lamont to 4 NW Lamont      24      2010CST  
2025CST      5.3      1300      0      0      2M      Tornado (F3)

**Grant County**

13 W Medford to 4 WNW Pond Creek      24      2029CST  
2038CST      0      0      10K      Thunderstorm Wind (G96)

**Kay County**

8 E Newkirk      24      2030CST  
Measured by Oklahoma Mesonet.      0      0      Thunderstorm Wind (G63)

**Kay County**

8 E Newkirk      24      2035CST  
Measured by Oklahoma Mesonet.      0      0      Thunderstorm Wind (G55)

**Woods County**

16 NNE Freedom      24      2105CST  
Measured by Oklahoma Mesonet.      0      0      Thunderstorm Wind (G51)

**Woods County**

16 E Freedom      24      2110CST  
Measured by Oklahoma Mesonet.      0      0      Thunderstorm Wind (G57)

**Alfalfa County**

9 S Cherokee      24      2115CST      0      0      Hail (1.00)

**Alfalfa County**

9 S Cherokee      24      2115CST      0      0      Thunderstorm Wind (G61)

**Kay County**

5 NW Tonkawa      24      2130CST      0.1      10      0      0      Tornado (F0)

**Woodward County**

21 NNE Mooreland      24      2130CST  
Measured by Oklahoma Mesonet.      0      0      Thunderstorm Wind (G58)

**Alfalfa County**

Goltry      24      2140CST      0      0      Hail (2.50)

**Alfalfa County**

Goltry      24      2140CST      0      0      Thunderstorm Wind (G61)

**Kay County**

Blackwell      24      2140CST      0      0      Hail (1.75)



# Storm Data and Unusual Weather Phenomena

May 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

<b>Kay County</b>									
Blackwell	24	2140CST			0	0			Thunderstorm Wind (G52)
<b>Kay County</b>									
Tonkawa	24	2140CST			0	0			Hail (1.00)
<b>Kay County</b>									
Tonkawa	24	2140CST			0	0			Thunderstorm Wind (G52)
<b>Noble County</b>									
7 W Billings	24	2140CST			0	0			Thunderstorm Wind (G61)
<b>Grant County</b>									
Jefferson	24	2145CST			0	0			Hail (0.88)
<b>Grant County</b>									
Jefferson	24	2145CST			0	0	4K		Thunderstorm Wind
<b>Harper County</b>									
11 NNE Selman	24	2155CST			0	0			Hail (1.25)
<b>Alfalfa County</b>									
8 S Cherokee	24	2200CST			0	0			Hail (1.75)
<b>Alfalfa County</b>									
8 S Cherokee	24	2200CST			0	0			Thunderstorm Wind (G61)
<b>Harper County</b>									
9 ENE Buffalo	24	2200CST			0	0			Hail (0.75)
<b>Woods County</b>									
14 NNE Camp Houston	24	2200CST			0	0			Hail (0.75)
<b>Woods County</b>									
14 NNE Camp Houston	24	2200CST			0	0	0.50K		Thunderstorm Wind
<b>Alfalfa County</b>									
Goltry	24	2230CST			0	0			Hail (2.50)
<b>Alfalfa County</b>									
Goltry	24	2230CST			0	0			Thunderstorm Wind (G61)
<b>Kay County</b>									
Blackwell	24	2230CST			0	0			Flash Flood
<b>Kay County</b>									
Blackwell	24	2230CST			0	0			Hail (0.75)
<b>Alfalfa County</b>									
Cherokee	24	2240CST			0	0			Hail (1.75)
<b>Alfalfa County</b>									
Cherokee	24	2240CST			0	0			Thunderstorm Wind (G61)
<b>Garfield County</b>									
Kremlin	24	2300CST			0	0			Hail (0.88)
<b>Alfalfa County</b>									
Goltry	24	2305CST			0	0			Hail (2.75)
<b>Garfield County</b>									
Enid	24	2305CST			0	0			Hail (1.75)
<b>Major County</b>									
5 NNE Meno	24	2310CST			0	0			Hail (0.88)
<b>Garfield County</b>									
Hillsdale	24	2315CST			0	0			Hail (2.00)
<b>Garfield County</b>									
3 SE Breckinridge	24	2340CST			0	0			Thunderstorm Wind (G57)
		Measured by Oklahoma Mesonet.							
<b>Alfalfa County</b>									
9 W Cherokee	24	2345CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

May 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

<b>Alfalfa County</b>									
9 W Cherokee	24	2345CST			0	0	0.01K		Thunderstorm Wind
<b>Harper County</b>									
9 ENE Buffalo	25	0000CST			0	0			Hail (0.88)
<b>Harper County</b>									
11 NNE Selman	25	0000CST			0	0			Thunderstorm Wind (G70)
<b>Woods County</b>									
Alva	25	0055CST			0	0			Hail (1.75)
<b>Woods County</b>									
Alva	25	0055CST			0	1	55K		Thunderstorm Wind
<b>Alfalfa County</b>									
6 W Cherokee	25	0100CST			0	0			Hail (1.00)
<b>Alfalfa County</b>									
6 W Cherokee	25	0100CST			0	0			Thunderstorm Wind (G52)
<b>Alfalfa County</b>									
Cherokee	25	0115CST			0	0			Hail (1.00)
<b>Alfalfa County</b>									
Cherokee	25	0130CST			0	0	10K		Flash Flood
<b>Alfalfa County</b>									
Cherokee	25	0130CST			0	0			Thunderstorm Wind (G61)
<b>Garfield County</b>									
Hillsdale	25	0200CST			0	0			Hail (2.50)
<b>Dewey County</b>									
5 NNE Leedey	25	0245CST			0	0			Hail (1.00)
<b>Custer County</b>									
Thomas	25	0300CST			0	0	0.11K		Thunderstorm Wind
<b>Blaine County</b>									
Watonga	25	0315CST			0	0			Hail (1.75)
<b>Caddo County</b>									
Hinton	25	0326CST			0	0			Thunderstorm Wind (G60)
<b>Canadian County</b>									
Okarche	25	0345CST			0	0			Hail (2.50)
<b>Kingfisher County</b>									
4 WNW Kingfisher	25	0400CST			0	0			Hail (0.75)
<b>Kingfisher County</b>									
3 S Kingfisher	25	0400CST			0	0			Hail (0.88)
<b>Canadian County</b>									
6 N Piedmont	25	0415CST			0	0			Hail (1.00)
<b>Canadian County</b>									
Piedmont	25	0415CST			0	0	40K		Lightning
<b>Oklahoma County</b>									
Oklahoma City	25	0420CST			0	0			Hail (1.50)
<b>Oklahoma County</b>									
Edmond	25	0430CST			0	0			Hail (0.75)
<b>Oklahoma County</b>									
Edmond	25	0430CST			0	0	0.10K		Thunderstorm Wind
<b>Oklahoma County</b>									
Oklahoma City	25	0430CST			0	0			Hail (0.75)
<b>Oklahoma County</b>									
Del City	25	0500CST			0	0			Hail (0.88)

# Storm Data and Unusual Weather Phenomena

May 1998

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

## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Oklahoma County**

3 S Choctaw      25      0515CST      0      0      Hail (0.88)

#### **Pottawatomie County**

4 S Mc Loud      25      0535CST      0      0      Hail (0.75)

#### **Pottawatomie County**

Shawnee      25      0545CST      0      0      1K      Thunderstorm Wind

A large complex of severe thunderstorms moved from southern Kansas into northern and central Oklahoma during the evening of May 24th and the early morning of May 25th, resulting in 16 tornadoes, most of which occurred in Grant County. The strongest tornado, an F3, occurred near Lamont in Grant County. There were also reports of hail up to 3.5 inches in diameter, straight line wind damage, and flooding.

The first tornado, an F0, touched down in an open field 1 mile south of Amorita in Alfalfa County at 1745 CST lasting for less than one minute with no reports of damage. The second tornado, also an F0, was reported 5 minutes later by media chasers to have touched down in an open field 3 miles east northeast of Amorita. Touchdown was very brief with no damage reported. The third tornado was also observed by media chasers, this time in northeast Alfalfa County 8 miles east of Amorita. The tornado, an F1, damaged one house and knocked down power lines as it moved southeast and weakened while crossing into western Grant County for a total damage path length of 5 miles. There were no reports of damage with this segment of the tornado in Grant County and thus was rated an F0. An unusual aspect of this tornado was that it was reported to be rotating anticyclonically. The fourth and fifth tornadoes were also rated F0, the fourth reported by media chasers to have touched down in an open field 4 west northwest of Wakita with no damage, and the fifth observed by Wakita Fire Department to be on the ground for 2.5 miles from 2 miles southwest of Wakita to 2 miles south of Wakita. No damage was reported.

An off-duty National Weather Service meteorologist observed the sixth tornado, an F0, in an open field 9 miles west of Medford. The seventh tornado, also an F0, produced no damage as it rotated anticyclonically 3 miles southeast of Wakita. The eighth and ninth tornadoes, both F0, occurred simultaneously 6 miles west of Medford. The eighth tornado touched down just north of Highway 11 while the ninth tornado touched down just south of Highway 11. One house and a business were damaged by the tenth tornado which occurred in Grant County from 2 miles southwest of Medford to 2 miles south of Medford. The eleventh tornado, an F0, was observed by an off duty National Weather Service meteorologist to be knocking down trees and power lines in a 5 mile long damage path in southern Grant County. The twelfth tornado, an F1, snapped trees in half and damaged a private airstrip 4 miles east northeast of Pond Creek while the thirteenth tornado, also an F1, damaged several homes and knocked down trees and power lines 1 mile north of Salt Fork. The fourteenth tornado, an F0, was reported by spotters to have touched down briefly in an open field causing no damage.

The most destructive tornado occurred near the city of Lamont where damage estimates reached 2 million dollars. National Weather Service meteorologists conducted a survey of the area and found a damage path 5 1/4 miles long and 3/4 of a mile wide with F3 damage occurring 2 miles west of Lamont where a well-built brick home had all of its exterior walls destroyed. In addition, 6 single-family homes were destroyed 1.5 miles south of Lamont, while in the city of Lamont 3 single-family dwellings sustained major damage. Nine single-family homes suffered minor damage. Nearly a dozen vehicles were destroyed, including automobiles, pickup trucks, farm trucks, and farm tractors. Several barns were destroyed including one barn where 30 sheep were also killed. More than 70 utility poles were ripped down in a 3 mile stretch. The Lamont tornado, as it is referred, was unusual in its direction of movement. Several eye witnesses reported a southeast to northwest movement. WSR-88D data also showed the mesocyclone associated with the tornado moving from south to north in a looping manner when the tornado was reported. The last tornado, the sixteenth of this episode, touched down briefly in an open field 5 miles northwest of Tonkawa at 2130 CST. Tonkawa Emergency Management reported no damage. Thus, this tornado was rated an F0.

In addition to these tornadoes, a large macroburst containing damaging straight-line winds occurred from 13 miles west of Medford (Grant County) to 4 miles west northwest of Pond Creek. Satellite dishes owned by Classic Cable Company, which were rated at 110 mph, were flattened by the winds. Straight-line wind damage was also reported in Alva where one man sustained minor injuries when he was blown into the bed of a pickup truck. Also in Alva at least 3 mobile homes suffered major damage; several carports were destroyed; awning and minor roof damage occurred to many homes; and trees and power lines were blown down. One indirect fatality occurred in Alva when a man slipped and suffered a heart attack while seeking shelter in a storm cellar. Other reports of straight-line wind damage include major roof damage to an old schoolhouse gymnasium in the city of Jefferson in Grant County. Two large cedar trees were also uprooted in Jefferson. A tree limb was blown through a picture window 14 miles north northeast of Camp Houston in Woods County. Windows were also blown out of a shed, and numerous trees were downed. Four to six inch tree limbs were blown down 9 miles west of Cherokee in Alfalfa County. In Thomas in Custer County one utility pole was snapped and large limbs were blown down. Power lines were knocked down in Edmond in Oklahoma County. Severe winds also damaged the roof of the Fred Humphrey Pavillion in Shawnee in Pottawatomie County. The largest hail reported measured 3.5 inches in diameter

# Storm Data and Unusual Weather Phenomena

May 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

and occurred in Medford in Grant County. Three reported events of at least tennis ball size hail occurred in Goltry (Alfalfa County) in less than 2 hours: tennis ball size hail at 2140 CST and 2230 CST, and baseball size hail at 2305 CST. Between 30 and 100 percent of the wheat crop was destroyed due to large hail from about 2 miles west of Jet to near Goltry. Another area south of Cherokee, near the junction of US 64 and SH 8 also sustained major wheat crop damage. In addition numerous vehicles had their windows broken. Tennis ball size hail also damaged the wheat crop and numerous vehicles in Okarche in Canadian County while in Watonga in Blaine County golf ball size hail damaged RV vehicles and street lights. Quarter size hail damaged several vehicles 6 miles north of Piedmont in Canadian County. Lightning struck a house in Piedmont causing a house to catch on fire. The last of the severe thunderstorms moved through northern Oklahoma during the early morning of May 25th, resulting in flooding near Cherokee and the National Wildlife Refuge in Alfalfa County, where 5.5 inches of rain fell. Several streets and the city park were also flooded in Blackwell in Kay County during the evening of May 24th.

#### **Coal County**

Lehigh	25	2220CST			0	0	0		<b>Hail (1.75)</b>
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### TEXAS, Western North

#### **Baylor County**

Seymour	08	1745CST			0	0	20K		<b>Thunderstorm Wind</b>
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#### **Baylor County**

Westover	08	1805CST			0	0	0		<b>Thunderstorm Wind (G57)</b>
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#### **Archer County**

Archer City	08	1825CST			0	0	10.5K		<b>Thunderstorm Wind</b>
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#### **Archer County**

Windthorst	08	1845CST			0	0			<b>Thunderstorm Wind (G57)</b>
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#### **Clay County**

9 SW Joy	08	1850CST			0	0			<b>Thunderstorm Wind (G61)</b>
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Severe thunderstorms affected western portions of north Texas during the afternoon of May 8th. Three to four walls of a building at Texas Compress and Warehouse Corporation in Seymour in Baylor County collapsed while in Archer City in Archer County severe thunderstorm winds destroyed an old barn and garage. Two cable television poles and a large tree were also blown down on the south side of Archer City.

#### **Knox County**

Truscott	15	0140CST			0	0	0.01K		<b>Thunderstorm Wind</b>
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#### **Wilbarger County**

5 NW Vernon	15	0215CST			0	0	0.60K		<b>Thunderstorm Wind</b>
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Isolated severe thunderstorms developed over Knox and Wilbarger Counties during the early morning of May 15th. Four to five inch diameter tree limbs were blown down near Truscott in Knox County and utility poles were snapped 5 miles northwest of Vernon in Wilbarger County.

#### **Knox County**

10 W Benjamin	24	1655CST			0	0			<b>Hail (1.00)</b>
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#### **Knox County**

10 W Benjamin	24	1655CST			0	0			<b>Thunderstorm Wind (G61)</b>
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#### **Knox County**

Benjamin	24	1710CST			0	0			<b>Hail (0.88)</b>
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#### **Foard County**

8 N Crowell	24	1720CST			0	0			<b>Hail (0.88)</b>
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#### **Hardeman County**

13 S Quanah	24	1720CST			0	0			<b>Hail (0.88)</b>
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#### **Hardeman County**

Quanah	24	1735CST			0	0			<b>Hail (1.00)</b>
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#### **Hardeman County**

Quanah	24	1735CST			0	0			<b>Thunderstorm Wind (G50)</b>
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Measured at Quanah Fire Department.

#### **Hardeman County**

5 SE Quanah	24	1740CST			0	0	1K		<b>Thunderstorm Wind</b>
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Severe thunderstorms developed over western portions of north Texas during the afternoon of May 24th, resulting in numerous reports of large hail and damaging winds. Several camping trailers were damaged 5 miles southeast of Quanah in Hardeman County at Lake Pauline. Quarter size hail was reported in Quanah in Hardeman County and also in Knox County 10 miles west of

# Storm Data and Unusual Weather Phenomena

May 1998

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

## ADDITIONS/CORRECTIONS

### TEXAS, Western North

Benjamin.

#### **Foard County**

**Crowell**

**25 2220CST**

**0 0 0.50K**

**Thunderstorm Wind**

An isolated severe thunderstorm developed over Foard County during the evening of May 25th, resulting in 4 to 6 inch diameter tree limbs being blown down in Crowell.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### ARKANSAS, Central and North Central

#### **Newton County**

Fallsville	08	1328CST			0	0			Hail (0.88)
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#### **Newton County**

Fallsville	08	1328CST			0	0			Thunderstorm Wind (G50)
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Thunderstorm winds knocked down several trees at Fallsville. Nickel size hail was also produced.

### DELAWARE

#### **DEZ001**

#### **New Castle**

25	0900EST				1	0			Excessive Heat
26	1800EST								

F84OT

#### **DEZ002>003**

#### **Kent - Inland Sussex**

25	0900EST				0	0			Hot Spell
26	1800EST								

A two day hot spell brought some of the highest temperatures of the summer to the Delmarva Peninsula and ended abruptly with severe thunderstorms during the late afternoon and early evening of the 26th. The excessive heat caused the death of an 84-year-old Wilmington woman. The highest temperatures occurred on the 26th and included 95 degrees in Greenwood and Georgetown (both Sussex County), 94 degrees in Bridgeville (Sussex County) and Wilmington (New Castle County) and 93 degrees at the New Castle County Airport.

### MARYLAND, West

#### **Garrett County**

Grantsville	02	2045EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Garrett County**

Friendsville	02	2112EST			0	0			Hail (1.50)
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#### **Garrett County**

4 W Friendsville to 3 SW Friendsville	02	2050EST 2100EST	3	300	0	0	1M		Tornado (F2)
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An F2 tornado passed southeast through southern Fayette County PA, the northeast tip of Preston County WV, and into northwest Garrett County MD. The total length of the tornado as it passed across these three counties was 12 miles. Damage included a completely destroyed dairy barn, two completely destroyed house trailers, and at least 21 other structures heavily damaged, many with roofs partially or completely peeled off. Several cows were killed, with one cow thrown through the air over 100 yards. A clearly visible 300-yard wide, 1-mile long swath of trees which were completely sheared/uprooted was present near the Pennsylvania/West Virginia state border. One Fayette County official estimated at least two million dollars damage in lost timber alone in that county. Despite the damage, interviews with law enforcement officials, paramedics and local residents revealed no injuries occurred.

#### **Garrett County**

1 NW Finzel to 1.5 SE Finzel	02	2138EST 2142EST	2.5	700	0	0	500K		Tornado (F2)
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An F2 tornado passed through the town of Finzel in extreme northeast Garrett County. Several buildings were destroyed, including a small house and cinder-block garage.

#### **Garrett County**

Countywide	16	1615EST 1630EST			0	0	25K		Thunderstorm Wind
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Thunderstorm winds blew down numerous large trees across the county.

#### **Garrett County**

Friendsville	26	1415EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew several large trees down.

#### **Garrett County**

Keysers Ridge	30	1615EST			0	0			Hail (0.75)
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### MASSACHUSETTS, Central and East

#### **Plymouth County**

Mattapoisett	26	1720EST			0	0			Thunderstorm Wind (G50)
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Trees and power lines were reported down in Mattapoisett at 620 PM, per the local police department.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### NEW MEXICO, Central and North

#### **Roosevelt County**

5 E Tolar	07	1700MST 1718MST			0	0			<b>Hail (2.50)</b>
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A strong thunderstorm which formed over south central De Baca county moved northeast and developed into a supercell near Taiban. The storm then split with the right cell intensifying and moving eastward just north of Highway 60 and producing an extended period of large hail and several brief tornadoes mainly across southern Curry county. No injuries or significant damage were reported as the storm remained mostly over open country.

### NEW YORK, North

#### **St. Lawrence County**

Starlake	02	1955EST			0	0	1K		<b>Thunderstorm Wind</b>
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#### **St. Lawrence County**

Cranberry Lake	02	2005EST			0	0	1K		<b>Thunderstorm Wind</b>
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A low pressure system moved east from the Great Lakes region Tuesday morning (June 2nd) into southern Canada by Tuesday night (June 2nd). The associated cold front triggered late afternoon and evening thunderstorms across northern New York. In particular, across St. Lawrence county during the evening hours, large tree branches were blown down in Star Lake and also in Cranberrylake where they fell across the road. Frequent cloud to ground lightning was reported, and a house was struck and destroyed by lightning in Waddington, New York.

#### **St. Lawrence County**

Edwards	04	1430EST			0	0			<b>Tstm Wind/Hail</b>
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A surface and upper level low pressure system over eastern Canada Thursday, June 4th resulted in scattered afternoon and evening thunderstorms with gusty winds and small hail across northern New York. Specifically, in Edwards (St Lawrence county) a thunderstorm resulted in pea size hail with wind gusts up to 50 mph.

#### **Essex County**

Lake Placid	04	1600EST 1605EST			0	0			<b>Tstm Wind/Hail</b>
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A surface and upper level low pressure system over eastern Canada Thursday, June 4th resulted in scattered afternoon and evening thunderstorms with gusty winds and small hail across northern New York. Specifically, in Lake Placid (Essex county) the wind gusted to 40 mph (35 knots).

#### **Franklin County**

Malone	04	1700EST 1730EST			0	0			<b>Tstm Wind/Hail</b>
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A surface and upper level low pressure system over eastern Canada Thursday, June 4th resulted in scattered afternoon and evening thunderstorms with gusty winds and small hail across northern New York. Specifically, in Malone (Franklin county) a thunderstorm resulted in 1/2 inch hail covering the ground.

#### **Essex County**

Ticonderoga	17	1415EST 1700EST			0	0	25K		<b>Flash Flood</b>
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A slowly moving broad area of low pressure over the eastern Great Lakes and New York state combined with an unstable atmosphere to result in slow moving thunderstorms across portions of the area. These thunderstorms were accompanied by torrential downpours. Specifically, in and around the New York town of Ticonderoga, roads were washed out.

#### **Essex County**

East Portion	18	1230EST 1400EST			0	0	100K		<b>Flash Flood</b>
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Afternoon showers and thunderstorms developed over the Adirondacks and moved across eastern portions of the county Thursday, June 18th. Torrential rainfall from these thunderstorms resulted in flash flooding of brooks, streams and small rivers. In the New York towns of Lewis and Willsboro, roads were washed out.

#### **Clinton County**

Altona	18	1745EST 1900EST			0	0	50K		<b>Flash Flood</b>
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Showers and thunderstorms moved southeast across Clinton county during the late afternoon and evening of Thursday, June 18th. Torrential rain fell in and around Altona, New York with several roads washed out. A number of homes were sandbagged to prevent flooding of structures. The Great Chazy River flooded areas along its path in this area.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### NEW YORK, North

#### **Essex County**

<b>Elizabethtown</b>	22	1700EST 1710EST			0    0		<b>Tstm Wind/Hail</b>
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Thunderstorms moved across portions of northern New York during the late afternoon and evening of Monday, June 22nd. Specifically, in Essex county New York, near Elizabethtown, winds associated with thunderstorms gusted up to 50 mph (43 knots) with locally very heavy rainfall.

#### **Franklin County**

<b>Brushton</b>	25	1807EST			0    0	5K	<b>Thunderstorm Wind</b>
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#### **Franklin County**

<b>Dickinson</b>	25	1815EST			0    0	1K	<b>Thunderstorm Wind</b>
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#### **Franklin County**

<b>Paul Smiths</b>	25	1900EST			0    0	1K	<b>Thunderstorm Wind</b>
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening thunderstorms with strong winds and torrential downpours Thursday, June 25th. Specifically, in Franklin county New York, numerous trees and power lines were blown down in the towns of Brushton, Dickinson and Paul Smiths.

#### **Essex County**

<b>Lake Placid</b>	25	1930EST			0    0	5K	<b>Thunderstorm Wind</b>
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening thunderstorms with strong winds and torrential downpours Thursday, June 25th. Specifically, in Essex county New York, trees were blown down in the town of Lake Placid.

#### **Franklin County**

<b>Saranac Lake</b>	25	2000EST 2230EST			0    0	5K	<b>Flash Flood</b>
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening thunderstorms with locally torrential downpours Thursday, June 25th. Specifically, in Franklin county New York, water flooded roads in the Saranac Lake area.

#### **Essex County**

<b>Lake Placid</b>	25	2000EST 2130EST			0    0	5K	<b>Flash Flood</b>
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening thunderstorms with locally torrential downpours Thursday, June 25th. Specifically, in Essex county New York, water flooded roads in the Lake Placid area.

#### **Clinton County**

<b>Beekmantown</b>	25 26	2245EST 0130EST			0    0	10K	<b>Flash Flood</b>
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#### **Clinton County**

<b>Dannemora</b>	26	0027EST 0130EST			0    0	10K	<b>Flash Flood</b>
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening and late night thunderstorms Thursday (June 25th) into early Friday (June 26th) with locally torrential downpours. Specifically, in Clinton county New York, a number of roads were washed out in the towns of Beekmantown and Dannemora.

#### **Essex County**

<b>Keeseville</b>	25 26	2245EST 0130EST			0    0	10K	<b>Flash Flood</b>
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening and late night thunderstorms Thursday (June 25th) into early Friday (June 26th) with locally torrential downpours. Specifically, in Essex county New York, extensive flooding of roads in the Keeseville area resulted.

#### **Essex County**

<b>Port Douglass</b>	25 26	2325EST 0100EST			0    0	1M	<b>Flash Flood</b>
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening and late night thunderstorms Thursday (June 25th) into early Friday (June 26th) with locally torrential downpours. Specifically, in and around Port Douglas, NY roads and railroad track were washed out. During the late night hours, a train engine and 5 train cars derailed with extensive damage.

#### **Clinton County**

<b>Countywide</b>	27	0100EST 2100EST			0    0	7M	<b>Flood</b>
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### NEW YORK, North

An area of low pressure tracked across New York and New England during the late night of Friday (June 26) and morning of Saturday (June 27). Extensive flooding occurred, especially in the eastern half of the county.

Many rivers flooded, especially the Saranac, Ausable, Little Ausable, Great Chazy and Salmon Rivers. A State of Emergency was declared, as numerous roads and bridges were washed out in Peru, Harkness, Keeseville, Dannemora, Altona and Saranac areas. Portions of I-87 were closed due to flooding and a sinkhole. A dam burst in the Peru area around 3 AM June 27 adding to the extreme flood conditions.

The Little Ausable River resulted in massive flooding of an apartment complex in Peru, NY requiring evacuations. Most rivers began subsiding by midday Saturday June 27th, although The Great Chazy remained in flood until 9 PM Saturday June 27th in the area around Champlain, NY.

#### **Essex County Countywide**

27	0200EST 1200EST		0	0	5M	<b>Flood</b>
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An area of low pressure tracked across New York and New England during the late night of Friday (June 26) and morning of Saturday (June 27). Extensive flooding occurred, especially in the eastern half of the county.

Many rivers flooded, especially the, Ausable and Bouquet. A State of Emergency was declared, as numerous roads and bridges were washed out in Keeseville and Chesterfield areas. Additional damage to railroad tracks resulted in Port Douglas and Port Kent areas. A sinkhole developed in the road leading to the Lake Champlain Ferry in Port Kent, NY closing the Ferry down.

Most rivers began subsiding during the Saturday morning, June 27th.

#### **Franklin County Countywide**

27	0300EST		0	0	500K	<b>Flood</b>
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An area of low pressure tracked across New York and New England during the late night of Friday (June 26) and morning of Saturday (June 27). Extensive flooding occurred, especially in the northern half of the county.

A State of Emergency was declared, as numerous roads and bridges were washed out especially in Malone, Westville, Whippleville and Fort Covington with bridges washed out in Fort Covington and Bangor.

#### **Clinton County Moers**

29	1554EST		0	0		<b>Hail (0.75)</b>
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A warm front moved across the region during the morning of Monday, June 29th with an increasingly moist atmosphere. A cold front moved into Vermont during the late afternoon and evening of June 29th. Thunderstorms developed along and ahead of this front with locally strong winds and large hail. Specifically, in Moers (Clinton county) a thunderstorm resulted in 3/4 inch hail.

#### **Franklin County Malone**

29	1830EST		0	0		<b>Hail (1.75)</b>
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A warm front moved across the region during the morning of Monday, June 29th with an increasingly moist atmosphere. A cold front moved across northern New York during the late afternoon and evening of June 29th. Thunderstorms developed along and ahead of this front with locally strong winds and large hail. Specifically, in Malone (Franklin county) a thunderstorm resulted in 1 3/4 inch hail.

#### **Clinton County South Portion**

30	1245EST 1500EST		0	0	20K	<b>Flash Flood</b>
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#### **Essex County North Portion**

30	1245EST 1500EST		0	0	20K	<b>Flash Flood</b>
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A storm system moved across southern Canada during Tuesday, June 30, 1998. Ahead of the associated cold front, a very moist airmass was in place across northern New York. This triggered late morning and afternoon thunderstorms with torrential rain. Local roads were washed out in extreme southern Clinton county and northern Essex county. The most extensive damage occurred in Keeseville, NY.

### OHIO, East

#### **Columbiana County North Georgetown Columbiana County Salem**

02	1525EST		0	0		<b>Hail (1.00)</b>
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02	1535EST		0	0		<b>Hail (0.88)</b>
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### **OHIO, East**

<b>Columbiana County</b>									
Salem	02	1542EST			0	0			Hail (1.13)
<b>Columbiana County</b>									
Salem	02	1550EST			0	0			Flash Flood
Street flooding reported in downtown Salem.									
<b>Columbiana County</b>									
Fredericktown	02	1617EST			0	0			Hail (1.00)
<b>Columbiana County</b>									
Columbiana	02	1755EST			0	0			Hail (3.00)
<b>Columbiana County</b>									
Leetonia	02	1755EST			0	0			Hail (3.00)
<b>Jefferson County</b>									
Toronto	02	1900EST			0	0			Hail (1.00)
<b>Tuscarawas County</b>									
New Philadelphia	12	2030EST			0	0	20K		Thunderstorm Wind
Thunderstorm winds downed numerous trees and power lines across the town of New Philadelphia.									
<b>Carroll County</b>									
Augusta	12	2040EST			0	0	2K		Thunderstorm Wind
Thunderstorm winds blew several large tree limbs down.									
<b>Columbiana County</b>									
Salem	12	2042EST			0	0			Thunderstorm Wind (G55)
<b>Coshocton County</b>									
3 W Coshocton	12	2045EST			0	0	2K		Thunderstorm Wind
Thunderstorm winds blew a large tree down.									
<b>Columbiana County</b>									
Fredericktown	12	2110EST			0	0			Hail (1.00)
<b>Jefferson County</b>									
Winterville	12	2145EST			0	0	15K		Thunderstorm Wind
Thunderstorm winds blew numerous large trees down across the Winterville and surrounding areas.									
<b>Belmont County</b>									
St Clairsville	13	1315EST			0	0			Hail (0.88)
<b>Belmont County</b>									
Martins Ferry	13	1330EST			0	0			Hail (0.88)
<b>Muskingum County</b>									
2 SE Duncan Falls	15	1900EST 2200EST			0	0			Flash Flood
Cuttler Lake Road flooded from thunderstorm rains.									
<b>Muskingum County</b>									
Gaysport	15	1900EST 2200EST			0	0			Flash Flood
Buttermilk Road flooded from thunderstorm rains. Streams out of banks were flooding SR 376.									
<b>Noble County</b>									
Belle Vly	15	1915EST 2200EST			0	0			Flash Flood
Several roads flooded from thunderstorm rains in the Belle Valley area.									

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### **OHIO, East**

#### **Noble County**

5 E Caldwell      15      1915EST  
2200EST      0      0                **Flash Flood**

SR 147 flooded from thunderstorm rains.

#### **Muskingum County**

Zanesville      16      1340EST      0      0      20K      **Thunderstorm Wind**

Numerous trees blown down throughout the city of Zanesville from thunderstorm winds.

#### **Guernsey County**

Cambridge      16      1400EST      0      0           **Hail (0.75)**

#### **Noble County**

Caldwell      16      1401EST      0      0           **Hail (0.75)**

#### **Guernsey County**

Byesville      16      1405EST      0      0      10K      **Thunderstorm Wind**

Thunderstorm winds blew a large tree down onto a house.

#### **Guernsey County**

Cambridge      16      1407EST      0      0      20K      **Thunderstorm Wind**

Trees blown down throughout the city from thunderstorm winds.

#### **Noble County**

Caldwell      16      1410EST      0      0      5K      **Thunderstorm Wind**

Thunderstorm winds blew down several trees.

#### **Belmont County**

Bridgeport      16      1430EST      0      0      20K      **Thunderstorm Wind**

Thunderstorm winds blew a large tree onto a parked pickup truck, crushing it.

#### **Belmont County**

3 W Crabapple      16      1430EST      0      0      2K      **Thunderstorm Wind**

Thunderstorm winds blew down several large tree limbs.

#### **Noble County**

Caldwell      16      1430EST      0      0      20K      **Thunderstorm Wind**

Four trees blown down by thunderstorm winds. One tree fell onto a house and caused damage to the siding.

#### **Monroe County**

Woodsfield      16      1435EST      0      0      5K      **Thunderstorm Wind**

Thunderstorm winds blew down several trees.

#### **Monroe County**

Woodsfield      16      1440EST      0      0           **Hail (0.75)**

#### **Belmont County**

Shadyside      16      1445EST      0      0      5K      **Thunderstorm Wind**

Thunderstorm winds blew down three large trees.

#### **Belmont County**

St Clairsville      16      1450EST      0      0      5K      **Thunderstorm Wind**

Thunderstorm winds blew down several trees.

#### **Belmont County**

Bellaire      16      1500EST      0      0      5K      **Thunderstorm Wind**

Thunderstorm winds blew down several trees.

#### **Harrison County**

7 W Cadiz      16      1500EST      0      0           **Hail (0.75)**

#### **Jefferson County**

Countywide      16      1500EST  
1530EST      0      0      50K      **Thunderstorm Wind**

EOC reported numerous trees down from thunderstorm winds across the county. Trees fell onto two vehicles, but there were no injuries.

#### **Jefferson County**

Dillonvale      16      1515EST      0      0      10K      **Thunderstorm Wind**

Thunderstorm winds blew a large tree down onto a house.

# Storm Data and Unusual Weather Phenomena

June 1998

Location	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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Tuscarawas County**

West Chester	16	1521EST		0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew several large trees down.

#### **Columbiana**

##### **County**

Lisbon	16	1555EST		0	0	1K		Thunderstorm Wind
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Thunderstorm winds blew a tree down across Echodale Road.

#### **Columbiana**

##### **County**

Glenmoor	16	1636EST		0	0	2K		Thunderstorm Wind
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Thunderstorm winds blew a large tree down onto Route 7.

#### **Belmont County**

St Clairsville	16	1700EST 1800EST		0	0	20K		Flash Flood
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Thunderstorm rains produced minor flooding, with several houses reporting four to five feet of water in their basements.

#### **Guernsey County**

Winterset	19	0445EST		0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew several trees down onto US Route 22.

#### **Belmont County**

Colerain	19	0532EST 0730EST		0	0	30K		Flash Flood
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Thunderstorm rains caused flooding on SR 5, closing it. CR 4 was closed for a half-hour due to localized flooding. Several basements in the Colerain area were flooded.

#### **Jefferson County**

Emerson	19	0538EST 0730EST		0	0			Flash Flood
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Thunderstorm rains flooded CR 5.

#### **Belmont County**

Bridgeport	19	0545EST 0745EST		0	0			Flash Flood
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US Route 40 closed due to localized flooding in the Bridgeport area.

#### **Muskingum County**

Frayszeburg to Frazier	22	1755EST		0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew down several trees in the northwest part of the county.

#### **Muskingum County**

1 N Zanesville	22	1825EST 1840EST		0	0	10K		Thunderstorm Wind
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Thunderstorm winds blew down four power poles and power lines just north of Zanesville. Several trees were also reported down across the eastern part of the county.

#### **Monroe County**

Woodsfield	26	1217EST		0	0			Hail (1.00)
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Severe thunderstorms bringing damaging winds and torrential rains affected much of east-central Ohio, western Pennsylvania and northern West Virginia during the period of June 26-30. These storms caused eight deaths and several injuries, along with millions of dollars of damage across the region. High pressure anchored over the Tennessee Valley contributed to the northward transport of a tropical airmass into eastern Ohio by the afternoon of June 26th. Explosive thunderstorm development on the afternoon of June 26th over northeast Ohio and western Pennsylvania formed a Mesoscale Convective System (MCS) by late afternoon. As this MCS propagated slowly to the southeast during the evening, it left behind a northwest-to-southeast oriented outflow boundary. This boundary remained nearly stationary for over 36 hours and served to focus waves of thunderstorms from the evening of June 26th through the early morning hours of June 28th across eastern Ohio. As a result, flash flooding from these continuous waves of thunderstorms was widespread across east central Ohio. Travel across this area was nearly impossible, as many roads were under water. On June 29th and 30th, severe thunderstorms moving rapidly through the area from the northwest brought damaging straight-line winds of up to 85 MPH across the region. The accompanying heavy rainfall with these storms only worsened the flooding across east-central Ohio.

Five counties in southeastern Ohio experienced widespread flooding from June 26-30: Tuscarawas, Muskingum, Guernsey, Noble and Monroe. These counties, along with 16 other Ohio counties, have been included in a Presidential Disaster Declaration.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

WSR-88D Radar estimated between 7-9 inches storm total rainfall amounts during this period. The only flooding at a river forecast point occurred on the Wills Creek at Cambridge, Ohio in Guernsey County. The river crested at 26.92 feet, 12 feet above flood stage and almost 2.5 feet above the record flood stage of 24.51 feet previously set in 1980. In addition to the torrential rains, many of these thunderstorms produced damaging winds as they passed over the region, downing numerous trees and depositing hail up to 1.75 inches in diameter. Four tornadoes were also confirmed during this period.

Muskingum and Noble Counties in Ohio were the hardest hit. Noble County had six deaths which all occurred on June 28th. Four people drowned around 2AM in the Duck Creek in the town of Caldwell. A 90-year-old male and an 89-year-old female were killed when part of their home was washed away. A 71-year-old male and a 31-year-old male were killed as their cars flooded. Around the same time in Belle Valley, a 37-year-old male was killed when he attempted to swim in flood waters of the West Fork of the Duck Creek after being stranded on the roof of a building. There was one tornado-related death in Noble County as a 54-year-old woman was killed in the town of Summerfield at 8:05 PM on June 27th when a F2 tornado demolished her mobile home.

In addition, there were two deaths in Belmont County on June 28th. A 41-year-old female was killed when she tried to drive through a flooded portion of Steep Run Creek near Barton at around 8:30 PM, and a 16-year-old boy was struck and killed by lightning.

There were numerous injuries, including the husband of the woman who was killed by the tornado in Summerfield. Flood waters forced an estimated 9000 people from their homes across east central Ohio, with 2000 evacuations alone in the Guernsey County city of Cambridge due to this flooding. Preliminary damage assessments by the USDA estimate that Guernsey and Muskingum Counties each had more than \$14 million in crop loss alone. Property damage from the flood waters will also total in the millions.

#### **Harrison County**

New Athens

26	1645EST								
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**Hail (1.00)**

#### **Jefferson County**

Countywide

26	1815EST								
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Thunderstorm winds blew down numerous trees and power lines across Jefferson County.

**20K**

**Thunderstorm Wind**

#### **Tuscarawas County**

Gnadenhutten

26	1838EST								
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**Hail (1.00)**

#### **Belmont County**

St Clairsville

26	1850EST								
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**Hail (0.75)**

#### **Belmont County**

3 NW Shadyside

26	1900EST								
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**Hail (1.00)**

#### **Belmont County**

Shadyside

26	1915EST								
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Thunderstorm winds blew down several trees and power lines.

**5K**

**Thunderstorm Wind**

#### **Belmont County**

Powhatan Pt

26	1920EST								
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Thunderstorm winds blew several large trees down.

**5K**

**Thunderstorm Wind**

#### **Belmont County**

Shadyside

26	1920EST 2200EST								
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Thunderstorm rains produced flooding of two to three feet of water on Central Avenue. Several businesses received damage from the water. Wegee Creek rose out of its banks.

**0**

**0**

**100K**

**Flash Flood**

#### **Belmont County**

St Clairsville

26	1920EST 2200EST								
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Thunderstorm rains produced minor flooding along SR 147.

**0**

**0**

**Flash Flood**

#### **Belmont County**

Shadyside

26	1920EST 2200EST								
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Thunderstorm rains produced flooding of two to three feet of water on Central Avenue. Wegee Creek out of banks.

**0**

**0**

**Flash Flood**

#### **Belmont County**

St Clairsville

26	1920EST 2200EST								
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Thunderstorm rains produced flooding along SR 147.

**0**

**0**

**Flash Flood**

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Belmont County**

Alledonia	27	1000EST 1200EST			0	0			Flash Flood
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Catina Creek rose out of its banks and flooded surrounding roads.

#### **Belmont County**

Lafferty	27	1000EST 1200EST			0	0			Flash Flood
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Several roads across the Lafferty area were flooded from thunderstorm rains.

#### **Belmont County**

Powhatan Pt	27	2200EST			0	0			Flash Flood
	28	0300EST							

Two feet of water from thunderstorm rains covered a portion of SR 148.

#### **Belmont County**

Countywide	28	0130EST 0700EST			0	0			Flash Flood
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Wegee and Pipe Creeks out of their banks in Shadyside; other streams and creeks of their banks across the county. Several roads across the county are closed due to water on roads.

#### **Belmont County**

Countywide	28	1941EST 2359EST			1	0	5M	5M	Flood
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Additional thunderstorm rains on the 28th produced flash flooding across the entire county, forcing the closure of several county and state roads across the area. Some of the harder hit areas included Powhatan Point, Shadyside, Barton, and the Colerain area where several evacuations and rescues were necessary starting on the evening of the 28th. One death occurred in the Barton area around 830 PM on the 28th when a 41-year-old woman's vehicle was swept from County Road 4 and into the Steep Run Creek.

#### **Tuscarawas County**

Newcomerstown	26	1930EST 2200EST			0	0			Flash Flood
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Thunderstorm rains produced street flooding in Newcomerstown.

#### **Tuscarawas County**

South Portion	26	2130EST			0	0			Flash Flood
	27	0300EST							

Thunderstorm rains produced widespread flash flooding, with water reported on numerous roads across the southern part of the county.

#### **Tuscarawas County**

Gnadenhutzen	27	0900EST 1200EST			0	0			Flash Flood
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Thunderstorm rains produced flooding on US Route 36.

#### **Tuscarawas County**

1 NE Newcomerstown	27	1030EST 1200EST			0	0			Flash Flood
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Thunderstorm rains produced flooding on SR 258.

#### **Tuscarawas County**

Countywide	27	1920EST			0	0			Flash Flood
	28	0300EST							

Creeks reported out of banks countywide.

#### **Tuscarawas County**

Countywide	28	1800EST			0	0	20M		Flood
	30	2359EST							

Thunderstorm continued to move across Tuscarawas County during the day of the 28th. By that evening, major flash flooding problems were reported countywide. The city of Uhrichsville was especially hard hit, with 300 families forced to evacuate. The west side of town was reported to be mostly under water by the early morning hours of the 30th. Flooding problems continued across the county past the end of the month, as several roads in low-lying and flood control areas remained closed well into July.

#### **Coshocton County**

Conesville	26	1930EST			0	0	2K		Thunderstorm Wind
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Thunderstorm winds blew several large tree limbs down.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Monroe County**

**8 E Beallsville**      26      1945EST                0      0      2K      **Thunderstorm Wind**  
Thunderstorm winds blew several large tree limbs down.

#### **Muskingum County**

**Frayszeburg**      26      1945EST                0      0      30K      **Thunderstorm Wind**  
Thunderstorm winds blew the roof off of a house. Several large trees across the area were also blown down/uprooted.

#### **Guernsey County**

**Derwent**      26      2000EST                0      0      20K      **Thunderstorm Wind**  
Thunderstorm winds blew several large trees and power lines down. One tree fell onto a house trailer.

#### **Guernsey County**

**1 W Antrim**      26      2000EST  
2200EST                0      0           **Flash Flood**  
Thunderstorm rains forced Brushy Fork Creek out of its banks, with flooding reported on US Route 22.

#### **Guernsey County**

**Cambridge**      26      2000EST  
2200EST                0      0           **Flash Flood**  
Runoff from thunderstorm rains covered Peters Creek Road with water.

#### **Guernsey County**

**Birmingham**      26      2130EST  
27      0300EST                0      0           **Flash Flood**  
Widespread flash flooding reported in town of Birmingham, with residents using boats in streets.

#### **Guernsey County**

**Countywide**      27      1015EST  
30      2359EST                0      0      5M      14M      **Flood**  
Thunderstorms continued to move across Guernsey county on the 27th, bringing widespread flooding to the entire county. The town of Byesville was especially hard hit, as two cars were swept off the road in on the evening of the 27th, but both drivers were rescued. Thunderstorms continued on the 28th, forcing the closure of many roads across the county. Major flooding was reported in the town of Cambridge, as 9.71 inches of rain were recorded by the Cambridge cooperative observer from June 26th through 29th. Wills Creek at Cambridge crested at 26.92 feet at 6 PM EDT on June 29th, 14 feet above flood stage and nearly 2.5 feet above the previous flood of record. This flooding forced the evacuation of 2000 people in Cambridge alone. Of the estimated total damage across the county, around \$14 million was in agricultural damage alone.

#### **Belmont County**

**Crabapple**      26      2003EST                0      0           **Hail (0.75)**

#### **Noble County**

**Countywide**      26      2015EST  
2030EST                0      0      15K      **Thunderstorm Wind**  
Thunderstorm winds blew numerous trees down across county.

#### **Monroe County**

**Woodsfield**      26      2025EST                0      0      10K      **Thunderstorm Wind**  
Thunderstorm winds blew numerous large trees down across the town.

#### **Monroe County**

**Graysville**      26      2035EST                0      0      30K      **Thunderstorm Wind**  
Thunderstorm winds blew down several large trees; some fell onto parked cars.

#### **Noble County**

**Countywide**      26      2100EST  
2300EST                0      0           **Flash Flood**  
Ohio DOT reported several roads covered with water from thunderstorm rains.

#### **Monroe County**

**Calais**      26      2130EST  
27      0300EST                0      0           **Flash Flood**  
Thunderstorm rains produced flooding from Wills Creek onto SR 379 in Calais. Other roads in town were flooded as well.

#### **Monroe County**

**Countywide**      27      2010EST  
30      2359EST                0      0      5M      10M      **Flood**  
Another series of thunderstorms passed over the county on the evening of the 27th, triggering extensive flash flooding across the entire county. Subsequent thunderstorms over the next several days continued the flooding through the end of the month.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

Numerous roads across the county were closed due to flooding. The towns of Woodsfield and Cameron were especially hard hit. In Cameron, flood waters from Sunfish Creek prompted several evacuations. Extensive street flooding was reported in Woodsfield.

**Muskingum County**  
Frayszeburg

27	0410EST 1300EST				0	0			<b>Flash Flood</b>
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Several thunderstorms passed over this county and produced major flash flooding. Many sections of town were reported to be inundated by water. State Routes 146, 16 and 60 were all closed by high water. Several families were evacuated from the area.

**Muskingum County**  
Dresden

27	0530EST 1100EST				0	0			<b>Flash Flood</b>
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Thunderstorm rains produced major flash flooding in Dresden. The Sheriff reported many roads across the northern part of the county were flooded.

**Muskingum County**  
Countywide

27	1830EST				0	0	10M	14M	<b>Flood</b>
30	2359EST								

Another in a series of thunderstorms passing over the county on the evening of the 27th produced widespread flash flooding. Several towns in the county, including Fraszeysburg, Dresden, Chandlersville and Gaysport reported extensive damage. Some portions of towns, especially Fraszeysburg and Chandlersville, were under water. Many roads across the county were closed due to the high water, with some remaining closed well into July. Numerous evacuations were required across the county. A preliminary estimate of crop damage alone from the flooding was \$14 million dollars.

**Coshocton County**  
Countywide

27	0435EST 1100EST				0	0			<b>Flash Flood</b>
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Thunderstorm rains forced closure of several roads across the county. A few mudslides were also reported.

**Coshocton County**  
Countywide

27	2000EST				0	0	5M	10M	<b>Flood</b>
30	2359EST								

Several waves of thunderstorms moving across the county created major flooding problems. Evacuations were required near West Lafayette, where Evans Creek came out of its banks. Numerous roads across the county were flooded. The main damage in the county came in the form of crop damage, where around 3000 acres, mostly soybeans and corn, were under water. Roughly 75 out of the 900 total farms in the county were affected by the flood water.

**Monroe County**  
Countywide

27	0900EST 0930EST				0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees across the county.

**Monroe County**  
Cameron

27	0920EST				0	0	3K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed three trees.

**Tuscarawas County**  
Countywide

27	1730EST 1800EST				0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees throughout the county.

**Columbiana County**  
Lisbon

27	1740EST				0	0	3K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down three large trees.

**Coshocton County**  
Roscoe

27	1750EST				0	0			<b>Hail (0.88)</b>
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**Harrison County**  
Deersville

27	1750EST				0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed several trees and power lines.

**Tuscarawas County**  
Uhrichsville

27	1750EST				0	0	150K		<b>Thunderstorm Wind</b>
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A microburst occurred over the town, downing numerous trees and power lines. Several buildings also were damaged. One house suffered extensive damage when a large tree fell onto the roof. Another house received minor damage when a tree fell onto it. One business in town had the roof blown off and one brick wall collapsed.



# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Harrison County**

**Tippecanoe**      27      1809EST                     0      0      5K      **Thunderstorm Wind**  
Thunderstorm winds downed several trees.

#### **Harrison County**

**Cadiz**      27      1815EST                     0      0      5K      **Thunderstorm Wind**  
Thunderstorm winds downed several trees and power lines.

#### **Muskingum County**

**Nashport**      27      1820EST                     0      0           **Thunderstorm Wind (G52)**  
Public report of an estimated 60 MPH wind gust.

#### **Guernsey County**

**Senecaville**      27      1830EST                     0      0           **Hail (1.00)**

#### **Muskingum County**

**Dresden**      27      1830EST                     0      0      5K      **Thunderstorm Wind (G61)**  
Thunderstorm winds estimated at 70 MPH downed several trees and power lines.

#### **Belmont County**

**Lamira**      27      1835EST                     0      0      5K      **Thunderstorm Wind**  
Thunderstorm winds downed several trees.

#### **Muskingum County**

**Philo**      27      1845EST                     0      0      40K      **Thunderstorm Wind**  
Thunderstorm winds blew down a garage, snapped telephone poles, and downed many trees.

#### **Noble County**

**1 E Batesville**      27      1847EST                     0      0           **Hail (1.75)**

#### **Guernsey County**

**Senecaville**      27      1850EST                     0      0           **Hail (1.00)**

#### **Harrison County**

**Tippecanoe**      27      2030EST                     0      0           **Flash Flood**  
28      0300EST  
Creek flooding reported on SR 800.

#### **Muskingum County**

**4 NW Otsego to**      27      1745EST      2.5      150      0      2      250K      **Tornado (F1)**  
**4 SW Otsego**      1750EST  
An F1 tornado touched down along Big Run Road. It travelled to the southeast crossing Ferncliff Road and moved across Edgemoor Road before dissipating. Many trees along the path were toppled or snapped. A mobile home was picked up and pushed westward. It was then rolled over and destroyed. Two people inside the trailer at the time were injured. A double-wide modular home lost its entire roof and was essentially totalled. A two-story frame home was severely damaged, with parts of the roof and walls blown off. As the tornado dissipated, eyewitnesses reported seeing debris in the form of boards, limbs, siding, etc. suddenly start raining from the sky.

#### **Muskingum County**

**2 SE Zanesville to**      27      1830EST      2      100      0      0      20K      **Tornado (F1)**  
**4 SE Zanesville**      1835EST  
A weak F1 tornado with winds estimated at 80 MPH left a path of toppled and snapped trees as it touched down near the radio station WHIZ just southeast of Zanesville and moved to the southeast. The only property damage was to an old wood garage that was completely destroyed.

#### **Guernsey County**

**1.5 NW Walhonding to**      27      1845EST      3.5      100      0      0      50K      **Tornado (F0)**  
**2 SW Walhonding**      1850EST

An F0 tornado with winds estimated at 70 MPH touched down around SR 313 in the Soggy Run area and moved southeast across the town of Walhonding. Many trees were toppled/snapped along with several telephone poles and power lines. The tornado also produced minor damage to roofs and tore away some siding in the town of Walhonding.

#### **Noble County**

**3 W Summerfield to**      27      1905EST      0.3      200      1      1      75K      **Tornado (F2)**  
**2.7 W Summerfield**      1910EST

An F2 tornado with estimated 150 MPH winds demolished a mobile home, killing a 45-year-old woman. Numerous trees along the relatively short path were sheared/downed. F45MH

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Harrison County**

<b>Tippecanoe</b>	27	2030EST 2200EST			0	0			<b>Flash Flood</b>
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Minor flooding reported on SR 800.

#### **Harrison County**

<b>Harrisville</b>	28	0220EST 0300EST			0	0			<b>Flash Flood</b>
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A small portion of SR 250 was closed due to flash flooding.

#### **Harrison County**

<b>Countywide</b>	28 30	1815EST 2359EST			0	0	100K	5M	<b>Flash Flood</b>
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Another round of torrential rains over already saturated ground created flash flooding across the county on the evening of the 28th, continuing through the 30th. Most of the problems in the county were confined to water covering roadways, with the western portion of the county near Freeport and Tippecanoe having the most problems. Several buildings received damage from the flood waters, most of them mobile homes. The county also sustained significant agricultural losses from standing flood water in fields.

#### **Noble County**

<b>Countywide</b>	27 30	2040EST 2359EST			5	0	10M	10M	<b>Flash Flood</b>
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Another round of thunderstorms starting on the evening of the 27th created widespread flash flooding throughout Noble County. These floods caused five deaths during the evening of the 27th and early morning hours of the 28th. In Caldwell, a 90-year-old man and 89-year-old woman were killed as flash flooding from the nearby Duck Creek washed part of their home away. Numerous roadways across the county were closed. However, two fatalities occurred as people tried to drive through water on the roads. Two more deaths occurred in Caldwell as a 71-year-old and 31-year-old man were killed when they tried to drive their cars through high water. In Belle Valley, a 37-year-old man was killed when he attempted to swim in the flood waters of the West Fork of the Duck Creek after being stranded on the roof of a building. Several rescues by boat were required across the county. The hardest hit areas were the Mount Ephriam, Fredericksdale, Belle Valley, and Caldwell area. In addition to flooded private homes, many businesses in towns across the county suffered extensive damage, losing most of their inventory and equipment. M90PH, F89PH, M71VE, M31VE, M37IW

#### **Guernsey County**

<b>Countywide</b>	28	1730EST 1800EST			0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees and power lines throughout the county.

#### **Muskingum County**

<b>Bloomfield</b>	28	1730EST			0	0	10K		<b>Thunderstorm Wind</b>
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A house was damaged by thunderstorm winds.

#### **Muskingum County**

<b>Countywide</b>	28	1730EST 1800EST			0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees and power lines across the county. Some roads were closed due to downed trees.

#### **Tuscarawas County**

<b>Countywide</b>	28	1750EST 1810EST			0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees throughout the county.

#### **Harrison County**

<b>Bowerston</b>	28	1815EST			0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees.

#### **Belmont County**

<b>Florence</b>	28	1830EST			0	0	5K		<b>Thunderstorm Wind</b>
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Several trees were downed by thunderstorm winds.

#### **Noble County**

<b>Batesville</b>	28	1834EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed several trees.

#### **Guernsey County**

<b>5 N Cambridge</b>	28	1835EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed several trees.

#### **Guernsey County**

<b>Salesville</b>	28	1840EST			0	0			<b>Hail (0.88)</b>
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Monroe County**

Countywide	28	1840EST 1900EST			0 0	10K	Thunderstorm Wind
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Numerous trees down countywide.

#### **Belmont County**

Somerton	28	1850EST			1 0		Lightning
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A 16-year-old boy was killed while setting up a tent.  
M16CA

#### **Monroe County**

Countywide	28	2030EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds downed several trees across the county.

#### **Coshocton County**

West Lafayette	28	1855EST			0 0		Hail (0.75)
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#### **Coshocton County**

West Lafayette	28	1855EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds downed several trees.

#### **Noble County**

5 W Batesville	28	1855EST			0 0	10K	Thunderstorm Wind
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Numerous trees were downed by thunderstorm winds.

#### **Tuscarawas County**

Newcomerstown	28	1913EST			0 0	5K	Thunderstorm Wind (G70)
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Thunderstorm winds estimated at 80 MPH downed several trees.

#### **Guernsey County**

Cambridge	28	1930EST			0 0	5K	Thunderstorm Wind (G70)
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Thunderstorm winds estimated at 80 MPH downed several trees.

#### **Noble County**

Countywide	28	2000EST			0 0	10K	Thunderstorm Wind
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Thunderstorm winds downed numerous trees across the county.

#### **Tuscarawas County**

Dover	28	2020EST			0 0		Hail (0.75)
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#### **Jefferson County**

Mingo Jct	28	2005EST			0 0		Flash Flood
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29 0000EST  
Thunderstorm rains forced Georges Run Creek out of its banks, causing several evacuations.

#### **Jefferson County**

Countywide	29	2130EST			0 0	5M	Flash Flood
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30 2359EST  
Several waves of thunderstorms continued to pass over Jefferson County, with major flooding reported across the region. Numerous homes across the county were damaged, with 50-60 homes in the Glen Robbins area receiving severe damage as the Little Short Creek flooded. It was estimated that around 40 vehicles were destroyed from the flash flood waters.

#### **Tuscarawas County**

4 NE Dover	29	1040EST			0 0	2K	Thunderstorm Wind
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Thunderstorm winds downed a large tree.

#### **Tuscarawas County**

New Philadelphia	29	1945EST			0 0	2K	Thunderstorm Wind
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Thunderstorm winds downed a large tree.

#### **Tuscarawas County**

2 W Sugar Creek to 2 E Sugar Creek	29	1945EST 1950EST	4	75	0 0	5K	Tornado (F0)
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A weak F0 tornado with estimated 60 MPH winds passed through the Sugar Creek area. The tornado was witnessed by several people, including the Fire Chief. Limbs were ripped from tree tops, with several trees downed.

#### **Jefferson County**

Dillonvale	29	2130EST			0 0	1K	Thunderstorm Wind
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Thunderstorm winds downed several large tree limbs.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Carroll County**

Countywide	29	2145EST			0	0	50K		Flash Flood
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30 0600EST

Basement flooding reported at several locations across the county.

#### **Columbiana County**

Salem	30	1255EST			0	0			Hail (0.75)
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#### **Carroll County**

1 S Minerva	30	1256EST			0	0	10K		Thunderstorm Wind (G52)
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Thunderstorm winds gusting to an estimated 60 MPH downed a few trees and caused minor damage in the Minerva area.

#### **Columbiana County**

New Garden	30	1311EST			0	0			Hail (1.00)
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#### **Columbiana County**

Summitville	30	1313EST			0	0	5K		Thunderstorm Wind (G52)
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Thunderstorm winds gusting to an estimated 60 MPH downed several trees.

#### **Columbiana County**

Columbiana to Columbia	30	1324EST			0	0	2K		Thunderstorm Wind
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Thunderstorm winds downed a large tree.

#### **Columbiana County**

Lisbon	30	1325EST			0	0			Flash Flood
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Thunderstorm rains produced minor flooding on US Route 30.

#### **Jefferson County**

Stratton	30	1330EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds produced minor damage to a building.

#### **Columbiana County**

East Liverpool	30	1332EST			0	0	25K		Flash Flood
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Thunderstorm rains produced flash flooding in town, with over three feet of water dammed up at some intersections.

#### **Columbiana County**

East Liverpool	30	1332EST			0	0	50K		Thunderstorm Wind
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Thunderstorm winds caused mostly minor damage to several homes from downed trees and power lines. The roof was partially torn from the Nickles Bakery.

#### **Jefferson County**

Steubenville	30	1444EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees across the area.

### OKLAHOMA, Western, Central and Southeast

#### **Bryan County**

Calera	04	1835CST			0	0	0.75K		Thunderstorm Wind
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Telephone poles were blown down.

#### **Bryan County**

Cartwright	04	1835CST			0	0	0.50K		Thunderstorm Wind
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Trees were blown down.

#### **Bryan County**

Calera	04	1850CST			0	0	100K		Thunderstorm Wind
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Significant and widespread wind damage was reported in Calera. A roof was blown off a trailer house on the east side of town, at least three trailer houses were destroyed, and one brick home was damaged by downed trees. Numerous barns and outbuildings were damaged and/or unroofed. Three businesses in an industrial complex at the airport sustained structural damage. Fifteen other businesses received minor damage.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Bryan County**

<b>Durant</b>	04	1855CST			0 0	150K	<b>Thunderstorm Wind (G60)</b>
Severe thunderstorm winds estimated at 70 mph caused major damage in and around Durant. At least 4 businesses in downtown sustained damage. A building was unroofed on Main Street and a nearby clinic was partially unroofed. The roof of a feed store was blown off and then tossed onto a car. The Walmart greenhouse was also blown away. Buildings in an industrial park suffered damage to overhead doors and one building had a corner blown out. Choctaw Bingo reported damage to awnings and the roof. Outbuildings at approximately 6 residences just north of the airport were damaged or destroyed. 1000-gallon tanks were blown over at 21st and Evergreen. Several trees up to 1-foot in diameter were uprooted and numerous fences were blown down. One downed tree landed on the roof of a fire station, causing \$2500 in damage.							

#### **Bryan County**

<b>5.5 SE Durant</b>	04	1855CST			0 0	0.50K	<b>Thunderstorm Wind</b>
Trees up to 2.5 feet in diameter were blown down.							

#### **Bryan County**

<b>Roberta</b>	04	1900CST			0 0	25K	<b>Thunderstorm Wind</b>
A trailer house was destroyed.							

#### **Bryan County**

<b>Bokchito</b>	04	1915CST			0 0	0.50K	<b>Thunderstorm Wind</b>
Severe thunderstorm winds downed large trees. Severe thunderstorms over Bryan County produced widespread wind and hail damage. Hardest-hit was Calera, where 3 mobile homes were destroyed, 2 other mobile homes sustained major damage, and 2 houses were damaged. Durant also reported extensive damage to roofs, outbuildings, and trees.							

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

#### **Harper County**

<b>7 NW Laverne</b>	07	1637CST			0 0		<b>Hail (0.75)</b>
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#### **Harper County**

<b>9 E Selman</b>	07	1720CST			0 0		<b>Hail (1.25)</b>
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#### **Woods County**

<b>1 SW Plainview</b>	07	1730CST			0 0		<b>Hail (0.75)</b>
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#### **Woods County**

<b>13 NW Alva</b>	07	1756CST			0 0		<b>Hail (0.75)</b>
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#### **Marshall County**

<b>Madill</b>	07	2255CST			0 0		<b>Hail (0.75)</b>
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#### **Grady County**

<b>Cox City</b>	08	0600CST			0 0		<b>Hail (1.00)</b>
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#### **McClain County**

<b>Purcell</b>	08	0615CST			0 0	20K	<b>Thunderstorm Wind</b>
Severe thunderstorm winds estimated at 70 to 80 mph downed large trees and power lines in town. One large tree was uprooted and landed on a minivan. Another uprooted tree landed on power lines, cutting power to most of the south part of town.							

#### **Washita County**

<b>3 N Cordell</b>	08	1400CST			0 0		<b>Hail (1.75)</b>
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#### **Washita County**

<b>Cordell</b>	08	1415CST			0 0		<b>Hail (1.00)</b>
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#### **Washita County**

<b>4 ENE Colony</b>	08	1420CST			0 0		<b>Thunderstorm Wind (G52)</b>
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#### **Caddo County**

<b>Hinton</b>	08	1439CST			0 0		<b>Hail (1.75)</b>
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#### **Major County**

<b>Cleo Spgs</b>	08	1440CST			0 0	0.01K	<b>Thunderstorm Wind</b>
Severe thunderstorm winds downed five-inch tree limbs.							

#### **Caddo County**

<b>2 SE Hinton</b>	08	1441CST			0 0		<b>Hail (1.75)</b>
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#### **Caddo County**

<b>2 SE Hinton</b>	08	1441CST			0 0		<b>Thunderstorm Wind (G52)</b>
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# Storm Data and Unusual Weather Phenomena

June 1998

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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Alfalfa County**

3 WSW Helena      08      1449CST      0      0      Hail (0.75)

**Canadian County**

12 SW El Reno      08      1500CST      0      0      Hail (1.25)

**Canadian County**

5 WNW El Reno      08      1505CST      0      0      Thunderstorm Wind (G59)  
Measured by the Oklahoma Mesonet

**Canadian County**

5 S Calumet      08      1510CST      0      0      Hail (1.75)

**Canadian County**

5 S Calumet      08      1510CST      0      0      15K      Thunderstorm Wind  
Severe thunderstorm winds (combined with golf ball sized hail) blew 3 windows out of homes and downed numerous trees, several billboards, and other signs.

**Canadian County**

Yukon      08      1515CST      0      0      1K      Lightning  
Lightning struck a house and blew a hole in the roof.

**Canadian County**

El Reno      08      1520CST      0      0      50K      Thunderstorm Wind  
Severe thunderstorm winds snapped and uprooted trees and large limbs, damaging homes, businesses, and cars.

**Garfield County**

Hillsdale      08      1523CST      0      0      Hail (0.88)

**Garfield County**

Hillsdale      08      1523CST      0      0      Thunderstorm Wind (G52)

**Canadian County**

Yukon      08      1530CST      0      0      Hail (1.75)  
On the north and west sides of town

**Oklahoma County**

Oklahoma City      08      1535CST      0      0      Hail (1.75)  
Reported at NW 63rd and Meridian

**Oklahoma County**

Oklahoma City      08      1535CST      0      0      Hail (0.88)  
Reported at NW 63rd and May.

**Oklahoma County**

Oklahoma City      08      1535CST      0      0      Hail (2.75)  
Reported at NW 63rd and Meridian

**Oklahoma County**

Oklahoma City      08      1537CST      0      0      Hail (1.75)  
Reported at NW 63rd and Portland.

**Grant County**

2 W Salt Fork      08      1540CST      0      0      Hail (1.50)  
Vehicle windows were broken.

**Oklahoma County**

Oklahoma City      08      1545CST      0      0      Hail (1.00)  
Occurred at 39th and McArthur

**Oklahoma County**

Oklahoma City      08      1545CST      0      0      0.50K      Thunderstorm Wind  
Severe thunderstorm winds downed numerous 6 to 10 -inch diameter trees.

**Grant County**

Salt Fork      08      1550CST      0      0      Hail (1.50)

**Garfield County**

2 E Hunter      08      1553CST      0      0      Hail (1.75)

**Caddo County**

8.5 E Anadarko      08      1601CST      0      0      Hail (0.75)

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Kay County**

**Blackwell**      08      1613CST                0      0                **Hail (0.75)**

**Kay County**

**Ponca City**      08      1615CST                0      0                **Hail (1.75)**  
Hail as large as golf balls caused extensive window and roof damage across the northern half of Ponca City. One apartment complex alone lost over 100 windows to the hail.

**Kay County**

**8 S Ponca City**      08      1615CST                0      0                **Hail (0.75)**

**Kay County**

**Blackwell**      08      1617CST                0      0      50K      **Lightning**  
Lightning struck the roof of a funeral home, blowing one 3-foot hole, and 3 grapefruit-sized holes in the roof. The bolt set fire to the attic, causing extensive damage to the structure and its contents.

**Kay County**

**Ponca City**      08      1620CST                0      2                **Hail (2.75)**  
A man and an elderly woman were injured when they were caught outside in the hailstorm. The woman was taken to a local hospital and treated for cuts and bruises from the hail and a fractured hip.

**Grady County**

**5 NW Chickasha**      08      1625CST                0      0                **Hail (0.88)**

**Kay County**

**(Pnc)Ponca City Arpt**      08      1630CST                0      0                **Hail (1.50)**

**Kay County**

**Kildare**      08      1630CST                0      0                **Hail (1.75)**

**Kay County**

**Kildare**      08      1630CST                0      0                **Hail (1.00)**

**Kay County**

**Kaw City**      08      1640CST                0      0                **Hail (1.75)**

**Mcclain County**

**3 W Newcastle**      08      1655CST                0      0                **Hail (1.00)**  
Occurred at the intersection of Highways 130 and 76

**Cleveland County**

**Norman**      08      1700CST  
1745CST                0      0      500K      **Hail (1.75)**

Severe thunderstorm winds and hail as large as golf balls caused widespread damage in Norman, particularly in south-central and southwest parts of town. Hundreds of glass window panes at the University of Oklahoma were broken. Car windows were broken, large tree limbs were downed, and two trees were blown over onto a house. The severe winds also toppled a 140-ton crane (with damage estimated at \$250,000).

**Grady County**

**23 NE Chickasha**      08      1705CST                0      0                **Hail (1.75)**

**Mcclain County**

**Newcastle**      08      1705CST                0      0                **Hail (0.88)**

**Mcclain County**

**5 W Newcastle**      08      1705CST                0      0                **Hail (1.75)**

**Cleveland County**

**Norman**      08      1710CST                0      0                **Hail (1.50)**

**Cleveland County**

**Norman**      08      1710CST                0      0                **Hail (1.75)**  
Occurred on the west side of town

**Cleveland County**

**Norman**      08      1710CST                0      0                **Thunderstorm Wind (G50)**  
Occurred on the west side of town

**Cleveland County**

**Norman**      08      1710CST                0      0                **Thunderstorm Wind (G56)**  
Severe thunderstorm winds up to 65 mph downed large trees.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Oklahoma County**

Oklahoma City	08	1711CST			0	0			Hail (0.88)
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Reported at 89th and Penn.

#### **Cleveland County**

Norman	08	1723CST			0	0			Hail (1.75)
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#### **Logan County**

10 WSW Seward	08	1800CST			0	0			Hail (0.88)
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#### **Pottawatomie County**

1 ESE Tecumseh	08	1804CST			0	0			Hail (0.75)
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#### **Pottawatomie County**

1 ESE Tecumseh	08	1810CST			0	0			Hail (1.75)
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#### **Pottawatomie County**

3.5 WSW Maud to .5 S Maud	08	1811CST 1813CST	2.5	50	0	0			Tornado (F1)
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Surveys revealed that a narrow tornado touched down around 711 pm 3 miles west-southwest of Maud destroyed a barn, then moved east destroying another barn about one-half mile south of Maud as it crossed into Seminole county. It lifted 1/2 mile east of the county line in Seminole County at around 715 pm. The tornado was rated F1.

#### **Seminole County**

12 WSW Wewoka to 11 WSW Wewoka	08	1813CST 1815CST	1	50	0	0			Tornado (F1)
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Surveys revealed that a narrow tornado touched down around 711 pm 3 miles west-southwest of Maud in Pottawatomie County where it destroyed a barn. The tornado then moved east destroying another barn about one-half mile south of Maud as it crossed into Seminole county. It lifted 1/2 mile east of the Seminole County line at around 715 pm. The tornado was rated F1.

#### **Pottawatomie County**

5 E Shawnee	08	1815CST			0	0			Hail (0.88)
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#### **Seminole County**

6 SW Seminole	08	1822CST			0	0			Hail (4.50)
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#### **Pottawatomie County**

2 W Macomb	08	1830CST			0	0	1K		Thunderstorm Wind
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Trees and power lines were blown down.

#### **Seminole County**

2.5 SW Wewoka to 3.5 ESE Wewoka	08	1835CST 1845CST	6	440	0	0			Tornado (F2)
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Surveys showed that at about 735 pm, a tornado touched down about 1/2 mile southwest of the intersection of US-270 and SH-59, or about 2.5 miles southwest of Wewoka. The storm moved east through the south side of Wewoka causing damage in a neighborhood in the southwest side of Wewoka and along state highway 56 in the south part of town. The tornado continued moving east destroying two mobile homes southeast of Wewoka before crossing into Hughes County. It caused minor damage to a couple of homes and unroofed a mobile home near State Highway 48. The tornado then turned northeast and apparently merged with the Yeager tornado (see separate Storm Data entry) just northeast of the intersection of State Highway 48 and county road EW129.

This tornado was on the ground for 8 miles and had a maximum width of 1/3 of a mile. The tornado was rated F2 (winds estimated between 113 and 157 mph) based on damage in southwest Wewoka including a brick house unroofed and the south exterior wall blown in. Eyewitness reports indicate that this was likely a multiple vortex tornado.



# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Hughes County**

5 WSW Yeager to  
3 W Yeager

08	1845CST 1850CST	2	440	0	0				<b>Tornado (F2)</b>
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Surveys showed that at about 735 pm, a tornado touched down about 1/2 mile southwest of the intersection of US-270 and SH-59, or about 2.5 miles southwest of Wewoka. The storm moved east through the south side of Wewoka causing damage in a neighborhood in the southwest side of Wewoka and along state highway 56 in the south part of town. The tornado continued moving east destroying two mobile homes southeast of Wewoka before crossing into Hughes County. It caused minor damage to a couple of homes and unroofed a mobile home near State Highway 48. The tornado then turned northeast and apparently merged with the Yeager tornado (see separate Storm Data entry) just northeast of the intersection of State Highway 48 and county road EW129.

This tornado was on the ground for 8 miles and had a maximum width of 1/3 of a mile. The tornado was rated F2 (winds estimated between 113 and 157 mph) based on damage in southwest Wewoka including a brick house unroofed and the south exterior wall blown in. Eyewitness reports indicate that this was likely a multiple vortex tornado.

#### **Hughes County**

4.5 WSW Yeager to  
4 E Yeager

08	1850CST 1915CST	8	587	0	0				<b>Tornado (F2)</b>
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Surveys revealed that this tornado formed about a mile east of the intersection of State Highway 48 and county road EW129. About one mile after touching down, the Wewoka tornado apparently merged with it. This tornado damaged a house and destroyed numerous pecan trees shortly after the merger. The tornado moved east passing one-half mile south of the town of Yeager, but overturning a mobile home and downing power lines along a railroad just south of town. The tornado then began moving east-northeast as it moved south of Yeager. It completely destroyed a mobile home and toppled an oil pumping jack and storage tank east of Yeager. The last damage was a barn damaged 4 miles east of Yeager and the tornado lifted at 815 pm.

The Yeager tornado was on the ground for 8 miles with a maximum width of four-tenths of a mile. This tornado was rated F2 (winds estimated between 113 and 157 mph) based on the destruction of a mobile home east of Yeager.

#### **Canadian County**

12 WSW El Reno

08	1900CST			0	0				<b>Hail (0.88)</b>
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#### **Canadian County**

El Reno

08	1929CST			0	0				<b>Hail (0.75)</b>
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#### **Canadian County**

El Reno

08	1931CST			0	0				<b>Hail (1.00)</b>
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#### **Oklahoma County**

Oklahoma City

08	2000CST			0	0				<b>Thunderstorm Wind (G56)</b>
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Occurred at 63rd and McArthur

#### **Oklahoma County**

Oklahoma City

08	2005CST			0	0				<b>Hail (0.88)</b>
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Occurred at Northwest Expressway and Rockwell

#### **Lincoln County**

3 SW Wellston

08	2030CST			0	0				<b>Hail (0.88)</b>
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#### **Lincoln County**

3 SW Wellston

08	2030CST			0	0				<b>Thunderstorm Wind (G61)</b>
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Wind gusts were estimated between 60 and 70 mph.

#### **Oklahoma County**

2 NE Choctaw

08	2045CST			0	0				<b>Hail (1.75)</b>
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#### **Lincoln County**

Countywide

08	2050CST 2120CST			0	0	10K			<b>Thunderstorm Wind</b>
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Severe thunderstorm winds caused extensive tree damage across the southern half of Lincoln County. Numerous trees up to 5-feet in diameter were destroyed by the severe winds.

#### **Lincoln County**

6 S Warwick

08	2115CST			0	0	2K			<b>Thunderstorm Wind (G61)</b>
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Severe thunderstorm winds estimated at 60 to 70 mph destroyed a garage under construction.

#### **Marshall County**

Madill

08	2255CST			0	0				<b>Hail (0.75)</b>
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Severe thunderstorms developed and moved across much of Oklahoma during the afternoon and evening of the 8th, producing hail as large as softballs, wind gusts to 70 mph, and 3 tornadoes.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

The tornadoes were spawned by a single storm between 6 and 715 pm CST in Pottawatomie and Seminole Counties. The first tornado (an F1) touched down 3.5 miles west-southwest of Maud in Pottawatomie County, moved east into Seminole County, lifting about 11 miles west-southwest of Wewoka. The second tornado (rated F2) touched down 2.5 miles southwest of Wewoka in Seminole County, moved east through Wewoka, and crossed into Hughes County. Meanwhile, the third tornado (also an F2) developed about 4.5 miles west-southwest of Yeager in Hughes County. These two tornadoes then merged about 3.5 miles southwest of Yeager and continued east until they lifted 4 miles east of Yeager.

This tornadic thunderstorm also produced hail as large as softballs southwest of Seminole in Seminole County. Baseball sized hail was reported with a different storm in Oklahoma City in Oklahoma County. Widespread hail and wind damage occurred in Ponca City in Kay County and in Norman in Cleveland County.

Wind gusts were estimated as high as 70 mph near Wellston and Warwick in Lincoln County. Significant thunderstorm wind damage occurred throughout Lincoln County, in Purcell in McClain County, and near Calumet and El Reno in Canadian County.

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

<b>Cotton County</b> 4 S Randlett	09	1630CST			0	0			Hail (0.75)
<b>Cotton County</b> 5 S Randlett	09	1700CST			0	0			Hail (1.75)
<b>Jefferson County</b> 5 W Waurika	09	1730CST			0	0			Thunderstorm Wind (G61)
<b>Murray County</b> Davis	09	1738CST			0	0			Hail (0.75)
<b>Murray County</b> 2 SE Davis	09	1743CST			0	0	0.01K		Thunderstorm Wind (G52)
Severe thunderstorm winds up to 60 mph downed tree limbs up to 5 inches in diameter.									
<b>Murray County</b> 2 SE Davis	09	1745CST			0	0			Hail (0.88)
<b>Carter County</b> Healdton	09	1758CST 1810CST			0	0			Thunderstorm Wind (G70)
<b>Carter County</b> 3 S Healdton	09	1800CST			0	0	7.5K		Thunderstorm Wind
Severe winds damage a trailer home and a storage building. Large trees were also downed by the severe thunderstorm winds.									
<b>Carter County</b> 6 W Wilson	09	1800CST			0	0	5K		Thunderstorm Wind
Thunderstorm winds destroyed a barn.									
<b>Carter County</b> 3 W Wilson	09	1800CST			0	0	10K		Thunderstorm Wind
A house roof was blown off and 2 trailer homes were destroyed.									
<b>Carter County</b> 2 W Wilson	09	1800CST			0	0	1K		Thunderstorm Wind
A fruit stand roof was blown into a house.									
<b>Carter County</b> 5 SW Wilson	09	1800CST			0	0	40K		Thunderstorm Wind
Severe thunderstorm winds tore the roofs off several houses.									
<b>Jefferson County</b> 3 W Ringling	09	1801CST			0	0			Hail (1.00)
<b>Jefferson County</b> 3 W Ringling	09	1801CST			0	0			Thunderstorm Wind (G74)

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Jefferson County**

**Ringling**      **09 1805CST**      **0 0 30K**      **Thunderstorm Wind (G69)**  
 Severe thunderstorm winds estimated at 70 to 80 mph caused extensive damage in Ringling. One carport and several metal sheds were destroyed. A barn was blown away, leaving the setting hens still sitting (unharmed), but killing 4 turkeys. Another barn suffered major damage. Porches were also torn from homes. One covered porch was torn from the front of a house and blown over the house into the back yard. Numerous large trees were uprooted. Roof damage was extensive, particularly on the south side of town. In one unusual case, an asphalt shingle was torn from a roof and wedged between the door and window glass of a truck. Neither the door or window were damaged.

#### **Jefferson County**

**Ryan**      **09 1805CST**      **0 0 10K**      **Thunderstorm Wind**  
 Severe thunderstorm winds tore awnings from businesses and destroyed signs. Trees were downed and roofs were damaged throughout town. Four 40-foot utility poles were also blown down by the severe winds.

#### **Murray County**

**Sulphur**      **09 1805CST**      **0 0**      **Hail (0.88)**

#### **Carter County**

**Wilson**      **09 1815CST**      **0 0 5K**      **Thunderstorm Wind**  
 Severe thunderstorm winds overturned a mobile home and damaged numerous roofs. Power lines were also blown down in the area.

#### **Love County**

**Marietta**      **09 1825CST**      **0 0 0.50K**      **Thunderstorm Wind**  
 Severe thunderstorm winds downed trees and power lines.

#### **Love County**

**9 W Marietta**      **09 1831CST**      **0 0 0.60K**      **Thunderstorm Wind**  
 Trees and power lines were blown down.

#### **Carter County**

**Lone Grove**      **09 1835CST**      **0 0 0.60K**      **Thunderstorm Wind**  
 Trees and power lines were blown down.

#### **Marshall County**

**Powell**      **09 1854CST**      **0 0**      **Thunderstorm Wind (G52)**

#### **Carter County**

**Wilson**      **09 1900CST**      **0 0 5K**      **Thunderstorm Wind**  
 Severe thunderstorm winds destroyed signs, downed limbs, and damaged roofs in Wilson.

#### **Johnston County**

**Connerville**      **09 1900CST**      **0 0 0.60K**      **Thunderstorm Wind**  
 Several trees and power lines were blown down.

#### **Johnston County**

**Countywide**      **09 1900CST**      **0 0 20K**      **Thunderstorm Wind (G69)**  
 Severe thunderstorm winds were estimated at 70 to 80 mph across northern Johnston County. Trees and power lines were downed throughout the area. A hay barn and mobile home in Connerville lost their roofs, a tree was downed onto a car in Wapanucka, and a storage building was destroyed in Tishomingo.

#### **Marshall County**

**Kingston**      **09 1900CST**      **0 1 12K**      **Thunderstorm Wind**  
 Severe thunderstorm winds downed a large tree onto a mobile home. A woman suffered a broken leg when the tree struck her as she was fleeing the mobile home.

#### **Marshall County**

**Kingston**      **09 1905CST**      **0 0**      **Thunderstorm Wind (G78)**  
 Severe thunderstorm winds estimated at 90 mph downed several trees.

#### **Pontotoc County**

**7 S Fittstown**      **09 1905CST**      **0 0**      **Hail (0.75)**

#### **Pontotoc County**

**7 S Fittstown**      **09 1905CST**      **0 0**      **Thunderstorm Wind (G61)**

#### **Love County**

**2 NE Thackerville**      **09 1915CST**      **0 0 0.01K**      **Thunderstorm Wind**  
 Severe winds downed 2-inch tree limbs.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Atoka County**

Atoka	09	1930CST 2000CST			0	0			Thunderstorm Wind (G64)
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Severe thunderstorm wind gusts were measured at up to 74 mph by local officials. Damage in Atoka was extensive. The severe winds partially unroofed the elementary school gymnasium and scattered debris across a neighboring playground. The roof was also torn off the high school gymnasium. A large tree was uprooted and toppled onto a car and porch roof. Other large trees and power lines were downed throughout town.

#### **Atoka County**

2 W Atoka	09	1936CST			0	0			Hail (0.88)
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#### **Atoka County**

Atoka	09	1936CST			0	0			Thunderstorm Wind (G61)
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Severe thunderstorm winds downed large trees.

#### **Bryan County**

Durant	09	1940CST			0	0			Hail (1.00)
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#### **Bryan County**

Durant	09	1940CST			0	0			Thunderstorm Wind (G70)
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#### **Tillman County**

2 S Tipton	09	1940CST			0	0			Hail (1.00)
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#### **Bryan County**

Achille	09	1945CST			0	0			Thunderstorm Wind (G61)
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Severe thunderstorm winds estimated at 60 to 70 mph tore the roof off a mobile home and damaged numerous other roofs across town. Several large trees were toppled.

#### **Bryan County**

Durant	09	1945CST			0	0			Thunderstorm Wind (G52)
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Severe thunderstorm winds estimated at 60 mph caused extensive roof damage to 2 businesses.

#### **Coal County**

Coalgate	09	1945CST			0	0			Hail (0.88)
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#### **Coal County**

Coalgate	09	1945CST			0	0	0.60K		Thunderstorm Wind
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Severe thunderstorm winds downed trees and power lines.

#### **Tillman County**

Tipton	09	1950CST			0	0			Hail (1.00)
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#### **Atoka County**

Atoka	09	2000CST			0	0			Thunderstorm Wind (G61)
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#### **Atoka County**

Farris	09	2006CST			0	0			Hail (1.75)
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#### **Comanche County**

1 W Chattanooga	09	2015CST			0	0			Hail (0.88)
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#### **Tillman County**

18 E Frederick	09	2015CST			0	0			Hail (0.88)
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#### **Cotton County**

12 N Devol	09	2023CST			0	0			Hail (0.75)
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#### **Comanche County**

Faxon	09	2025CST			0	0			Hail (0.75)
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#### **Cotton County**

6 NW Walters	09	2044CST			0	0			Hail (0.75)
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#### **Cotton County**

6 NW Walters	09	2044CST			0	0			Thunderstorm Wind (G52)
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#### **Cotton County**

1 NW Walters	09	2055CST			0	0			Thunderstorm Wind (G58)
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Measured by the Oklahoma Mesonet

#### **Comanche County**

Lawton	09	2146CST			0	0			Hail (0.75)
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Comanche County**

Lawton 09 2200CST 0 0 Hail (0.88)

#### **Stephens County**

2 NE Duncan 09 2221CST 0 0 Hail (0.88)

#### **Carter County**

Ratliff City 09 2222CST 0 0 Hail (1.75)

#### **Murray County**

3 W Davis 09 2238CST 0 0 Hail (1.00)

#### **Stephens County**

7 SE Marlow 09 2250CST 0 0 Hail (1.25)

#### **Murray County**

2 W Sulphur 09 2254CST 0 0 Hail (1.75)

#### **Pontotoc County**

2 S Roff 09 2256CST 0 0 Hail (1.00)

#### **Pontotoc County**

Roff 09 2303CST 0 0 0.01K Thunderstorm Wind  
Severe winds downed large tree limbs.

#### **Kiowa County**

Mountain View 09 2310CST 0 0 Hail (1.00)

#### **Washita County**

8 S Cowden 09 2315CST 0 0 Hail (1.00)

#### **Washita County**

8 S Cowden 09 2315CST 0 0 Thunderstorm Wind (G52)

#### **Kiowa County**

Mountain View 09 2325CST 0 0 Hail (1.75)

#### **Kiowa County**

Mountain View 09 2325CST 0 0 Thunderstorm Wind (G52)

#### **Coal County**

Countywide 09 2355CST 0 0 80K Thunderstorm Wind (G52)  
10 0010CST

Severe thunderstorm winds estimated at 60 mph caused widespread damage across Coal County. Trees and power poles were downed throughout the county. The most extensive structural damage occurred in Coalgate where several roofs were blown off houses, barns were damaged or destroyed, a restaurant lost its roof, and a lumberyard sustained \$25,000 in damage to its roof. Countless trees and power poles were toppled, including several large trees that landed on buildings. Other structural damage was reported in Lehigh and Centrahoma. In Lehigh a porch was destroyed and the roof was torn off an office building. In Centrahoma an unoccupied mobile home was literally wrapped around a tree and destroyed by the severe winds.

#### **Coal County**

Tupelo 10 0055CST 0 0 Lightning

Lightning struck an oil storage tank, causing it to explode.

Severe thunderstorms moved across southern Oklahoma during the evening of the 9th, lasting into the very early morning hours of the 10th. Although a few reports of large hail were received, severe thunderstorm winds caused by far the most damage. Wind gusts were estimated at 85 mph west of Ringling in Jefferson County and at 90 mph in Kingston in Marshall County. Significant wind damage occurred around Healdton and Wilson in Carter County, in Ringling and Ryan in Jefferson County, and in Atoka in Atoka County. Widespread damage occurred in Johnston, Marshall, and Coal Counties.

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

#### **Johnston County**

3 S Tishomingo 10 1334CST 0 0 Hail (2.00)

#### **Pontotoc County**

Roff 10 1345CST 0 0 10K Thunderstorm Wind

Severe thunderstorm winds unroofed a house.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Pontotoc County**

**Roff**                      10    1350CST                      0    0                      25K                      **Thunderstorm Wind**  
Severe thunderstorm winds tore the roof off a 100-year-old historic bank and partially unroofed the high school gymnasium.

**Murray County**

**Sulphur**                      10    1400CST                      0    0                      2K                      **Thunderstorm Wind**  
Severe thunderstorm winds downed large trees and signs around Sulphur.

**Pontotoc County**

**Ada**                      10    1400CST                      0    0                      0.10K                      **Thunderstorm Wind**  
Severe winds downed trees.

**Seminole County**

**Bowlegs**                      10    1450CST                      0    0                                           **Thunderstorm Wind (G52)**

**Garfield County**

**Enid**                      10    1710CST  
   1720CST                      0    0                                           **Thunderstorm Wind (G61)**  
Severe thunderstorm winds estimated at 70 mph downed numerous trees onto power lines, and at least one tree landed on a house. A shed was also blown into a car.

**Garfield County**

**Enid**                      10    1720CST  
   1740CST                      0    0                                           **Hail (1.00)**

**Garfield County**

**Enid**                      10    1720CST                      0    0                                           **Thunderstorm Wind (G61)**  
Thunderstorm wind gust of 70 mph was reported by a spotter.

**Garfield County**

**Enid**                      10    1720CST  
   1740CST                      0    0                      0.50K                      **Thunderstorm Wind**  
Severe thunderstorm winds wrapped a trampoline around a pole and downed many tree limbs.

**Garfield County**

**Vance Afb**                      10    1723CST                      0    0                                           **Thunderstorm Wind (G50)**

**Garfield County**

**Enid**                      10    1730CST                      0    0                                           **Thunderstorm Wind (G61)**

**Garfield County**

**Kremlin**                      10    1730CST                      0    0                      0.50K                      **Thunderstorm Wind**  
Power lines were blown down.

**Bryan County**

**Achille**                      10    1928CST                      0    0                                           **Thunderstorm Wind (G61)**

**Bryan County**

**Achille**                      10    1930CST                      0    0                      12K                      **Thunderstorm Wind**  
Severe thunderstorm winds ripped the roof off a mobile home and downed power lines and large trees.

**Bryan County**

**Calera**                      10    1930CST                      0    0                      2K                      **Thunderstorm Wind**  
Severe thunderstorm winds blew siding off a house, tore the roof from a fruit stand, and downed many trees.

**Bryan County**

**Durant**                      10    1930CST                      0    0                      10K                      **Thunderstorm Wind**  
Roofs were blown off of downtown buildings.

**Bryan County**

**Achille**                      10    1937CST                      0    0                                           **Thunderstorm Wind (G52)**

**Bryan County**

**3 NE Colbert**                      10    2000CST                      0    0                      10K                      **Thunderstorm Wind**  
A mobile home was blown over.

**Stephens County**

**Duncan**                      10    2128CST                      0    0                                           **Hail (1.00)**

**Stephens County**

**2 NE Duncan to Duncan**                      10    2141CST                      0    0                                           **Hail (0.75)**

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Comanche County**

Cache	11	0030CST			0	0	20K		Lightning
Lightning struck and set fire to 2 buildings at an old amusement park. Both buildings were completely destroyed.									

#### **Jefferson County**

10 E Waurika	11	0030CST			0	0	0.10K		Thunderstorm Wind
Large tree limbs were blown down.									

#### **Mcclain County**

2 W Newcastle	11	0045CST			0	0	0.10K		Thunderstorm Wind
A six to eight foot diameter tree was blown down.									

Severe thunderstorms formed during the afternoon across central and northern Oklahoma, spreading into southern Oklahoma during the evening. Thunderstorm wind damage was widespread, with only a few reports of large hail. Wind gusts were estimated to be 70 mph in Enid in Garfield County and in Achille in Bryan County. Significant wind damage occurred in Roff (Pontotoc County), in Sulphur (Murray County), in Enid (Garfield County), and across much of Bryan County.

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

#### **Love County**

2 E Rubottom	12	1834CST			0	0			Hail (0.75)
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#### **Love County**

5 E Rubottom	12	1835CST			0	0			Hail (1.00)
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#### **Love County**

6 N Burneyville	12	1847CST			0	0			Hail (0.75)
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#### **Garfield County**

4 W Hunter	13	1515CST			0	0			Hail (0.75)
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#### **Dewey County**

4 NW Lenora	13	1525CST			0	0			Hail (0.88)
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#### **Blaine County**

1 W Longdale	13	1545CST	0.1	10	0	1			Tornado (F0)
The Blaine County Sheriff reported a brief tornado. One child was injured with extent of injuries unknown. Several trees were also damaged.									

#### **Blaine County**

Watonga	13	1556CST			0	0			Hail (0.75)
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#### **Garfield County**

6 S Drummond	13	1635CST			0	0			Hail (2.50)
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#### **Kingfisher County**

3 S Kingfisher	13	1638CST			0	0			Hail (1.25)
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#### **Garfield County**

2 N Hillsdale	13	1645CST			0	0			Thunderstorm Wind (G65)
Severe thunderstorm winds estimated at 75 mph downed power lines on Highway 32.									

#### **Garfield County**

Waukomis	13	1645CST			0	0			Hail (2.00)
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#### **Grant County**

4 S Nash	13	1645CST			0	0			Thunderstorm Wind (G65)
Severe thunderstorm winds estimated at 75 mph downed power lines onto Highway 32.									

#### **Kingfisher County**

1 E Kingfisher	13	1646CST			0	0			Hail (1.75)
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#### **Caddo County**

4 S Hydro	13	1735CST			0	0			Hail (0.88)
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#### **Logan County**

3 SW Guthrie	13	1743CST 1746CST	2	50	0	0			Tornado (F1)
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A tornado touched down about 3 miles southwest of Guthrie. Two houses suffered shingle and siding damage. A third house sustained broken windows, a damaged roof, and a broken porch post. A barn was unroofed, an outbuilding was destroyed, numerous fences were broken and a hood was torn off an old pick-up truck. The tornado was rated an F1.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Canadian County**

3 NW Calumet      13      1800CST                0      0                Hail (1.50)

#### **Kingfisher County**

3 N Hennessey      13      1800CST                0      0                Hail (1.00)

#### **Canadian County**

3 NW Calumet      13      1807CST                0      0                Hail (1.75)

#### **Canadian County**

Calumet      13      1814CST                0      0                Hail (2.50)

#### **Canadian County**

5 WNW El Reno      13      1815CST      0.2      10      0      0                Tornado (F0)

A tornado touched down briefly in open country. No damage was reported and the tornado was rated F0.

#### **Canadian County**

2 W El Reno      13      1816CST                0      0                Thunderstorm Wind (G52)

#### **Canadian County**

4 NW El Reno      13      1817CST      0.2      15      0      0                Tornado (F0)

1822CST

A tornado touched down in open country. No damage was reported and the tornado was rated F0.

#### **Garfield County**

10 SW Covington      13      1835CST                0      0                Hail (0.88)

#### **Canadian County**

Oklahoma City      13      1838CST                0      0                Hail (0.88)

Occurred at NW Expressway and County Line Road on the Oklahoma/Canadian County line.

#### **Oklahoma County**

Oklahoma City      13      1838CST                0      0                Hail (0.88)

Reported at NW Expressway and County Line Road on the Canadian/Oklahoma County line.

#### **Oklahoma County**

Oklahoma City      13      1839CST                0      0                Hail (0.88)

Reported at NW Expressway and Rockwell

#### **Garfield County**

6 S Covington      13      1840CST                0      0                Hail (1.00)

#### **Oklahoma County**

Oklahoma City      13      1840CST                0      0                Hail (1.50)

Reported at Wilshire and Council,

#### **Canadian County**

2 WNW Yukon      13      1845CST      0.1      30      0      0                Tornado (F0)

A storm chaser observed a brief tornado touching down in an open field with no known damage.

#### **Kay County**

4 SE Blackwell      13      1850CST                0      0                Thunderstorm Wind (G53)

Recorded by Oklahoma Mesonet.

#### **Kay County**

Ponca City      13      1850CST                0      0                Thunderstorm Wind (G74)

Measured at KPNC observing site.

#### **Kay County**

Ponca City      13      1854CST                0      0                Hail (1.75)

#### **Kay County**

Ponca City      13      1856CST                0      0                Thunderstorm Wind (G99)

Severe thunderstorm winds overturned a trailer house and downed power lines.

#### **Oklahoma County**

Oklahoma City      13      1857CST                0      0                Hail (1.00)

Reported at Memorial and Western.





# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Oklahoma County**

<b>Oklahoma City</b>	<b>13</b>	<b>1912CST 1923CST</b>	<b>5.5</b>	<b>200</b>	<b>0</b>	<b>17</b>	<b>1M</b>	<b>Tornado (F2)</b>
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This tornado was the most intense of the day. The tornado touched down approximately 1/4 mile southwest of the corner of Bryant Avenue and Hefner Road, and moved northeast crossing Interstate 35 at the Frontier City theme park parking lot. The tornado continued northeast along northeast 122nd Street and eventually dissipated 1/4 mile northeast of Interstate 44 at Douglas Blvd. The total path length was approximately 5 1/2 miles. Maximum width was 200 yards east of Interstate 35 and south of Interstate 44. The tornado was rated F2 (At 122nd Street approximately 1-2 miles east of I-35). Seventeen minor injuries (3 transported to hospital) occurred at Frontier City. Along the track, major structural damage occurred to businesses along Interstate 35 from 122nd Street southward for approximately three-quarters of a mile. The Frontier City theme park was among the hardest hit businesses. The tornado passed through the parking lot damaging numerous vehicles before striking a two-story concrete block building at the northeast corner of the park. This building suffered partial failure of external walls and the entire roof was removed. Damage to adjacent areas of the park was mainly due to strong inflow into the tornado.

On the east side of Interstate 35, a Texaco truck stop was severely damaged. Empty semi-tractor trailers located in the east parking lot of the truck stop were over turned and rolled tens of feet. One trailer was briefly airborne and landed on another empty trailer. A small portable building containing a CB radio shop in the parking area was completely swept away into a grove of trees east of the lot. Numerous homes suffered major damage to roofs, windows, and garage doors in the Nottingham and Quail Ridge Run subdivisions located along 122nd Street 1-2 miles east of I35. Several homes suffered major or nearly complete roof failure, though most exterior walls remained intact. These homes were of recent construction and were well built with brick exterior facades (some likely in excess of \$200K). No means of anchoring the roofs to the exterior walls was noted. The tornado may have approached F3 at times in these neighborhoods. The most severely damaged home was located atop a small hill with garage doors on the upwind side of the home. Debris patterns suggest the garage doors failed allowing the wind to lift the roof. Without the roof in place, failure of the external garage walls occurred. The most severe damage to trees occurred in these subdivisions and areas immediately adjacent.

#### **Noble County**

Perry	13	1920CST			0	0		<b>Hail (2.75)</b>
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#### **Grady County**

5 NW Pocasset	13	1930CST			0	0		<b>Hail (0.88)</b>
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#### **McClain County**

3 NW Newcastle	13	1950CST			0	0		<b>Hail (0.75)</b>
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#### **Canadian County**

3 SE Yukon	13	1959CST			0	0		<b>Thunderstorm Wind (G61)</b>
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#### **Oklahoma County**

2 SW Bethany	13	1959CST			0	0		<b>Thunderstorm Wind (G61)</b>
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#### **Oklahoma County**

Oklahoma City	13	2003CST			0	0		<b>Thunderstorm Wind (G55)</b>
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#### **Cleveland County**

4 NW Moore	13	2010CST			0	0		<b>Hail (1.25)</b>
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Reported at 89th and Penn on the Oklahoma and Cleveland County line.

#### **Oklahoma County**

Oklahoma City	13	2010CST			0	0		<b>Hail (1.25)</b>
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Reported at 89th and Penn on the Oklahoma/Cleveland County line.

#### **Oklahoma County**

8 S Choctaw	13	2025CST			0	0		<b>Hail (0.88)</b>
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#### **Pottawatomie**

#### **County**

6 W Shawnee	13	2041CST			0	0		<b>Hail (1.75)</b>
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#### **Seminole County**

2 N Little	13	2115CST			0	0		<b>Hail (0.88)</b>
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During the afternoon and evening four supercell thunderstorms developed near a dryline in western Oklahoma and tracked east into central sections of the state. The most significant storm developed in Washita county at approximately 400 pm CST and intensified as it moved east toward central Oklahoma. This storm produced at least six tornadoes as it tracked from Canadian County across Oklahoma County during the early evening. The most damaging tornado (an F2) touched down in northeast Oklahoma City and crossed Interstate 35 near the Frontier City theme park. Other tornadoes damaged the Oklahoma City Boat Club, portions of The Village and Nichols Hills, the Highland Park neighborhood west of Broadway Extension, and the area near May and Grand Avenues



# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Carter County**

1 W Tatums      18      1839CST           0      0                          Hail (1.00)

**Jefferson County**

1 N Ringling      18      1840CST           0      0                     Thunderstorm Wind (G75)  
Measured by the Oklahoma Mesonet

**Garvin County**

Pernell      18      1845CST           0      0                     Hail (0.88)

**Jefferson County**

Claypool      18      1845CST           0      0           2K           Thunderstorm Wind  
Severe thunderstorm winds destroyed a vacant trailer house and downed power lines.

**Jefferson County**

1 N Ringling      18      1845CST           0      0                     Thunderstorm Wind (G65)  
Measured by the Oklahoma Mesonet

**Carter County**

1 W Healdton      18      1855CST           0      0                     Hail (1.00)

**Jefferson County**

Ringling      18      1905CST           0      0                     Hail (1.75)

**Jefferson County**

Ringling      18      1905CST           0      0                     Thunderstorm Wind (G52)

**Jefferson County**

Ringling      18      1916CST           0      0                     Hail (1.75)

**Carter County**

Lone Grove      18      1926CST           0      0                     Hail (1.00)

**Carter County**

Wilson      18      1934CST           0      0                     Hail (0.75)

**Carter County**

Wilson      18      1934CST           0      0                     Thunderstorm Wind (G52)

**Jefferson County**

Addington      18      1945CST  
2300CST           0      0                     Flash Flood  
Over 3 hours of heavy rain from thunderstorms over Jefferson County caused flash flooding of Cow Creek and Monument Creek. Ranchers measured 10 inches of rain in the area before they witnessed the floods.

**Carter County**

4 S Ardmore      18      2005CST           0      0                     Thunderstorm Wind (G65)

**Jefferson County**

Addington      18      2015CST           0      0                     Hail (0.88)

**Love County**

1.5 E Rubottom      18      2016CST           0      0                     Thunderstorm Wind (G61)

**Carter County**

Wilson      18      2020CST           0      0                     Hail (0.88)

**Love County**

2 SE Burneyville      18      2020CST           0      0                     Thunderstorm Wind (G62)  
Measured by the Oklahoma Mesonet

**Love County**

7 W Overbrook      18      2020CST           0      0                     Hail (0.75)

**Love County**

5 E Overbrook      18      2020CST           0      0           0.50K           Thunderstorm Wind  
Two power poles were blown down.

**Love County**

7 W Overbrook      18      2020CST           0      0                     Thunderstorm Wind (G52)

**Love County**

2 SE Burneyville      18      2025CST           0      0                     Thunderstorm Wind (G55)  
Measured by the Oklahoma Mesonet

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Love County**

2 SE Burneyville      18      2030CST                0      0                **Thunderstorm Wind (G59)**  
Measured by the Oklahoma Mesonet

**Love County**

Burneyville      18      2032CST                0      0                **Thunderstorm Wind (G52)**

**Jefferson County**

1.5 N Addington      18      2045CST                0      0                **Hail (1.75)**

**Love County**

Leon      18      2115CST                0      0      0.25K           **Thunderstorm Wind**  
Severe thunderstorm winds downed trees.

**Jefferson County**

7 E Addington      18      2145CST                0      0                **Hail (0.75)**

**Stephens County**

10 E Duncan      18      2245CST                0      0                **Hail (0.75)**

**Stephens County**

10 E Duncan      18      2300CST                0      0                **Hail (1.00)**

**Stephens County**

3 N Velma      19      0000CST                0      0                **Hail (0.75)**  
Severe thunderstorms developed over southwest Oklahoma during the early evening of the 18th and moved across southern Oklahoma, producing large hail, damaging winds, and flash flooding. Storms were particularly persistent over Jefferson County, lasting for more than 4 hours. Rainfall amounts were reported to be in excess of 10 inches near Addington. Wind gusts measured up to 86 mph, and golf ball sized hail fell during the course of the severe thunderstorms in Jefferson County. Love County sustained tree and power line damage from the storms as they tracked across south-central Oklahoma late in the evening.

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

**Garfield County**

1 W Enid      19      1640CST                0      0                **Hail (1.75)**

**Garfield County**

1 N Enid      19      1652CST                0      0                **Hail (2.75)**

**Tillman County**

9 E Davidson      19      1713CST                0      0                **Hail (0.88)**

**Caddo County**

Binger      19      1731CST                0      0                **Hail (1.75)**

**Comanche County**

Chattanooga      19      1742CST                0      0                **Hail (1.00)**

**Caddo County**

Hinton      19      1800CST                0      0                **Hail (3.50)**  
Hail up to 3.5 inches in diameter broke holes in the roofs of houses and barns. Numerous cars were dented and had their windows broken by the giant hail.

**Comanche County**

1.5 S Lawton      19      1804CST                0      0                **Hail (0.75)**

**Comanche County**

Lawton      19      1810CST                0      0                **Hail (0.75)**

**Comanche County**

Ft Sill Aaf      19      1815CST                0      0                **Hail (0.88)**

**Comanche County**

4 E Lawton      19      1815CST                0      0                **Hail (0.88)**

**Garfield County**

3 NE Breckinridge      19      1830CST                0      0                **Hail (2.75)**

**Comanche County**

Sterling      19      1833CST                0      0                **Hail (0.75)**

**Caddo County**

4 NW Eakly      19      1843CST                0      0                **Hail (1.75)**

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

<b>Garfield County</b>							
Hunter	19	1850CST			0	0	Hail (0.88)
<b>Caddo County</b>							
2 S Cogar	19	1918CST			0	0	Hail (0.88)
<b>Canadian County</b>							
12 WSW El Reno	19	1920CST			0	0	Hail (0.88)
<b>Garfield County</b>							
2 N Enid	19	1928CST			0	0	Hail (1.75)
<b>Garfield County</b>							
Enid	19	1930CST			0	0	Hail (2.25)
<b>Caddo County</b>							
4 S Cogar	19	1935CST			0	0	Hail (1.75)
<b>Caddo County</b>							
2 NE Lookeba	19	1940CST			0	0	Hail (1.00)
<b>Grady County</b>							
6 W Minco	19	1940CST			0	0	Hail (0.75)
<b>Caddo County</b>							
2 NE Lookeba	19	1950CST			0	0	Hail (0.88)
<b>Garfield County</b>							
3 NE Enid	19	2010CST			0	0	Hail (1.75)
<b>Canadian County</b>							
2 E Niles	19	2030CST			0	0	Hail (1.00)
<b>Canadian County</b>							
10 W Calumet	19	2045CST 2056CST			0	0	Hail (1.00)
<b>Blaine County</b>							
Geary	19	2053CST			0	0	Hail (1.00)
<b>Canadian County</b>							
Calumet	19	2108CST			0	0	Hail (1.75)
<b>Canadian County</b>							
8 WSW Okarche	19	2124CST			0	0	Hail (1.75)

Severe thunderstorms affected several areas in the state the evening of the 19th. The largest hail reported was 3.5 inches in Hinton (Caddo County). In north-central Oklahoma, hail as large as baseballs fell in Garfield County; in southwest Oklahoma, Tillman and Comanche Counties reported hail as large as quarters; and in central Oklahoma hail to the size of golf balls fell in Canadian Counties.

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

<b>Blaine County</b>							
Hitchcock	20	1615CST			0	0	Hail (1.75)
<b>Blaine County</b>							
4 E Watonga	20	1635CST			0	0	Hail (1.00)
<b>Garfield County</b>							
6 S Drummond	20	1636CST			0	0	Hail (1.75)
<b>Garfield County</b>							
Drummond	20	1650CST			0	0	Hail (1.80)
<b>Garfield County</b>							
10 S Enid	20	1654CST			0	0	Hail (1.75)
<b>Garfield County</b>							
Drummond	20	1655CST			0	0	Hail (1.75)
<b>Kingfisher County</b>							
15 NW Hennessey	20	1700CST			0	0	Hail (1.50)
<b>Garfield County</b>							
Enid	20	1730CST			0	0	Hail (1.25)

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Comanche County**

8 NNW Indianahoma 20 1745CST 0 0 Hail (0.88)

**Kingfisher County**

Loyal 20 1748CST 0 0 Hail (1.00)

**Caddo County**

Hinton 20 1750CST 0 0 Hail (1.00)

**Garfield County**

2 W Kremlin 20 1750CST 0 0 Hail (1.75)

**Kingfisher County**

3 E Loyal 20 1805CST 0 0 Hail (1.00)

**Comanche County**

Lawton 20 1830CST 0 0 0.75K Thunderstorm Wind  
Severe thunderstorm winds downed 6 utility poles.

**Garfield County**

Enid 20 1830CST 0 0 Hail (1.00)

**Kingfisher County**

1 W Kingfisher 20 1830CST 0 0 Hail (1.00)

**Canadian County**

6 WNW El Reno 20 1855CST 0 0 Hail (0.88)

**Oklahoma County**

Bethany 20 1910CST 0 0 0.50K Thunderstorm Wind  
Severe thunderstorm winds downed power lines.

**Canadian County**

El Reno 20 1912CST 0 0 Hail (0.88)

**Oklahoma County**

Oklahoma City 20 1923CST 0 0 0.50K Thunderstorm Wind  
Severe thunderstorm winds downed power lines in western Oklahoma City.

**Canadian County**

6 NW Yukon 20 1927CST 0 0 Hail (1.00)

**Canadian County**

3 N Yukon 20 1935CST 0 0 Hail (1.00)  
1939CST

**Canadian County**

5 SE Piedmont 20 1940CST 0 0 Hail (2.50)

**Logan County**

2 SW Guthrie 20 1940CST 0 0 Hail (0.88)

**Oklahoma County**

Oklahoma City 20 1940CST 0 0 Hail (1.00)  
Occurred on the northwest side of the city.

**Oklahoma County**

Oklahoma City 20 1952CST 0 0 Hail (1.25)  
Occurred on the northwest side of the city.

**Kay County**

Tonkawa 20 2230CST 0 0 Hail (0.75)

**Grant County**

Medford 20 2240CST 0 0 Hail (1.75)

**Grant County**

Medford 20 2300CST 0 0 Hail (0.88)  
2305CST

**Grant County**

5 NW Renfrow 21 0000CST 0 0 Hail (0.88)

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

#### **Kay County**

<b>Braman</b>	21	0003CST			0	0			<b>Hail (0.75)</b> Severe thunderstorms moved across northern and central Oklahoma during the evening of the 20th. By far the greatest impact of the storms was the large hail. Widespread reports of large hail were received, with the largest hail (as large as tennis balls) reported southeast of Piedmont in Canadian County.
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See preceding individual Storm Data entries for further details and additional reports.

#### **Harmon County**

9 NNE Hollis	21	1750CST			0	0			<b>Hail (0.75)</b>
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#### **Greer County**

Willow	21	1830CST			0	0			<b>Hail (1.00)</b>
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#### **Grant County**

6 SW Manchester	21	1855CST			0	0			<b>Hail (1.00)</b>
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#### **Alfalfa County**

11 E Byron	21	1859CST			0	0			<b>Hail (2.25)</b>
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#### **Grant County**

7 SSW Manchester	21	1859CST			0	0			<b>Hail (2.25)</b>
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#### **Kiowa County**

12 NW Lone Wolf	21	1900CST			0	0			<b>Hail (2.75)</b>
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#### **Washita County**

Sentinel	21	1920CST			0	0			<b>Hail (1.75)</b>
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#### **Grant County**

2 WNW Gibbon	21	1935CST			0	0			<b>Hail (1.00)</b>
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#### **Washita County**

6 SW Dill City	21	1940CST			0	0	<b>25K</b>		<b>Thunderstorm Wind</b> Severe thunderstorm winds destroyed a hay barn and pop-up camper. The neighboring house and outbuildings also sustained roof damage.
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#### **Washita County**

3 S Cordell	21	1942CST			0	0			<b>Hail (1.00)</b>
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#### **Custer County**

Weatherford	21	2007CST			0	0			<b>Hail (0.88)</b>
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#### **Blaine County**

16 WSW Geary	21	2014CST			0	0			<b>Hail (0.75)</b>
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#### **Grant County**

5 SE Renfrow	21	2035CST			0	0			<b>Hail (1.00)</b>
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#### **Tillman County**

4 S Tipton	21	2140CST			0	0			<b>Thunderstorm Wind (G54)</b>
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Measured by the Oklahoma Mesonet  
Evening severe thunderstorms moved across northern and western Oklahoma, producing large hail and damaging thunderstorm winds. The largest hail was reported northwest of Lone Wolf in Kiowa County, where as large as baseballs fell. Thunderstorm wind gusts were measured at 62 mph by the Oklahoma mesonet site south of Tipton in Tillman County. Wind damage was reported southwest of Dill City in Washita County.

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

#### **OKZ025**

#### **Oklahoma**

21	2200CST			1	0				<b>Excessive Heat</b>
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An 81-year old woman was found dead in her Oklahoma City home.  
F81PH

#### **OKZ025**

#### **Oklahoma**

29	1200CST			1	0				<b>Excessive Heat</b>
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A 76-year old man from Del City was found dead in his house.

Excessive heat and drought conditions affected western and central Oklahoma as well as western portions of north Texas from May through early October with the most intense heat and severe drought conditions occurring from mid-June through early September



# Storm Data and Unusual Weather Phenomena

June 1998

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

## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

across central and southern Oklahoma and western portions of north Texas. The heat and drought was less severe across northwest and north central Oklahoma. In total, there were 21 fatalities and at least 5 injuries directly related to the heat. Agricultural losses are estimated at nearly 2 billion dollars for Oklahoma and 2.1 billion dollars for Texas. Sixty of Oklahoma's 77 counties and all of Texas's counties were declared federal disaster areas.

Excessive heat and drought began in May, intensified in July and August, and diminished in September and early October. Oklahoma City experienced it's 6th warmest and 16th driest May on record, while Wichita Falls experienced it's 3rd warmest and 3rd driest May on record. Heat and drought conditions escalated after June 11th, which was the last day of widespread rainfall across western and central Oklahoma and western portions of north Texas until early September. The heat and drought then ended in early October when widespread rain and cooler temperatures returned to the southern plains.

The first fatality directly related to the heat occurred on June 21st , when an 81 year-old woman was found dead in her house in Oklahoma City (Canadian County). A 76 year-old man was then found dead in his Del City home on June 29th. The heat claimed 17 lives in July. The first occurred in Wichita Falls (Wichita County) on July 3rd, when a 75 year-old man was found dead in his home. Four heat related fatalities occurred between the 9th and the 11th. Two persons died on the 9th. A 46 year-old man was found dead in a hotel room in Oklahoma City with no air conditioning. The temperature in the room was 115 degrees. A 73 year-old man was then found dead in his Oklahoma City home. On July 10th , a 79 year-old man was found dead in his mobile home in Mulhall (Logan County). Another heat related fatality occurred on the 11th, when a 51 year-old woman was found dead in her home in Wewoka (Seminole County). The second and last report of a heat related fatality in western portions of north Texas occurred on the 14th, when a 74 year-old man was found dead in his Wichita Falls home.

On July 17th, in Altus (Jackson County, Oklahoma), a 79 year-old man was found dead in his home, while on the 19th, there were 3 heat related deaths reported. The first fatality occurred to a man of unknown age. He was found dead in his vehicle in Oklahoma City. The second fatality occurred in Guthrie (Logan County) when a 55 year-old man was found dead in his house, while the 3rd fatality occurred to a 78 year-old woman when she was found dead in her Oklahoma City apartment. On July 20th, a 78 year-old woman was found dead in her Duncan (Stephens County) home, while on the 21st, another 78 year-old woman was found dead in her home, this time in Guthrie (Logan County). Two persons died in their homes from the heat on the 27th, the first, a 61 year-old man from Oklahoma City, the second, a 67 year-old man found from Cromwell (Seminole County). The last heat related fatality occurred on the 30th, when a 62 year-old woman was found dead in her Oklahoma City home.

Three heat related fatalities were reported in August. The first occurred on the 2nd when a 53 year-old man was found dead inside his Oklahoma City home. The second heat related fatality occurred on the 3rd, when an 82 year-old man was found dead inside his Oklahoma City home. The last heat related fatality in August occurred on the 5th in Gene Autry (Carter County) when a 76 year-old man was found dead inside his home. Only one heat related fatality was reported in September, and occurred on the 4th. A 76 year-old man was found dead outside of a retirement home in Oklahoma City. He was found after he went for a walk and did not return.

Only 5 heat related injuries were reported during the 5 month-long heat and drought. Two persons from Wichita Falls were treated for heat related injuries on June 2nd at United Regional Health Care. Three troop members from Fort Sill (Comanche County) were rushed to a local hospital on July 22nd and treated for heat related injuries as well.

Statistics provided by the Oklahoma State Department of Agriculture indicate economic losses of approximately 2 billion dollars to the state's agriculture business. Figures were not available for individual counties. Hay and cotton crops were particularly hard hit. Hay producers harvested only 30 to 80 percent of the normal yield, a loss of perhaps 80 million dollars. Cotton production was reduced by about 70 percent, a loss of 38 million dollars. Other crops such as grain sorghum, peanuts and soybeans also suffered major losses. In total, crop losses across Oklahoma were near 500 million dollars, but because of the multiplying effect on the overall economy, this figure is more like 2 billion dollars when considering the effect on the state's economy. Agricultural losses across Texas total about 2.1 billion dollars with no specific statistics available on a county-by-county basis, however cotton losses are expected to contribute significantly to the total loss.

The summer of 1998 (June-August) was the 4th hottest and 5th driest in Oklahoma City on record, and the 2nd hottest and 7th driest in Wichita Falls. The drought ended gradually in September and early October, but record warm temperatures continued through September. Oklahoma City recorded an average temperature of 81.2 degrees in September, 2nd hottest September on record. The summer of 1980, considered to be the last major period of heat and drought to affect Oklahoma and western portions of north Texas, still ranks as the hottest summer ever for both Oklahoma City and Wichita Falls, however Oklahoma City did experience a drier summer in 1998 than in 1980. M76PH

**Grant County**  
5 SE Renfrow

30	0835CST	0	0	Hail (0.75)
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### OKLAHOMA, Western, Central and Southeast

**Kay County**

1 N Blackwell      30      0900CST                0      0           **Thunderstorm Wind (G69)**  
Severe thunderstorm winds estimated at 70 to 80 mph downed power lines and blew a car off of Highway 11 east of I-35.

**Payne County**

8 NNW Stillwater      30      1205CST                0      0           **Hail (0.75)**

**Blaine County**

Watonga      30      1440CST                0      0           **Hail (0.75)**

**Blaine County**

7 W Watonga      30      1507CST                0      0           **Hail (1.50)**

**Blaine County**

Watonga      30      1515CST                0      0           **Hail (1.00)**

**Blaine County**

17 SW Watonga      30      1550CST                0      0           **Hail (1.75)**

**Custer County**

7 NW Weatherford      30      1555CST                0      0           **Hail (1.00)**

**Blaine County**

Watonga      30      1600CST                0      0           **Hail (1.00)**  
Quarter size hail covered the ground.

**Custer County**

4 WSW Weatherford      30      1625CST                0      0           **Thunderstorm Wind (G57)**  
Measured by the Oklahoma Mesonet.

**Custer County**

4 WSW Weatherford      30      1705CST                0      0           **Thunderstorm Wind (G64)**  
Measured by the Oklahoma Mesonet.

**Alfalfa County**

Lambert      30      1707CST                0      0           **Hail (0.88)**

**Custer County**

Arapaho      30      1710CST                0      0      0.10K      **Thunderstorm Wind**  
Severe thunderstorm winds downed a large tree.

**Woods County**

Hopeton      30      1740CST                0      0           **Thunderstorm Wind (G52)**

**Woods County**

Dacoma      30      1743CST                0      0           **Hail (0.75)**

**Woods County**

3 SSW Waynoka      30      1830CST                0      0           **Hail (1.00)**

**Woods County**

Waynoka      30      1830CST                0      0           **Hail (0.75)**

**Major County**

19 N Chester      30      1915CST                0      0           **Hail (1.00)**

Severe thunderstorms moved across parts of northwest and western Oklahoma during the daytime hours of the 30th. Hail as large as golf balls fell southwest of Watonga in Blaine County. Thunderstorm winds were measured at speeds of up to 74 mph by the Oklahoma Mesonet near Weatherford in Custer County. Wind damage was reported in Arapaho in Custer County and north of Blackwell in Kay County.

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

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Mercer County**

Sharpville	02	1537EST			0	0			<b>Hail (0.88)</b> Two lines of severe thunderstorms formed ahead of an approaching cold front during the early afternoon and continuing through the late evening hours of June 2nd. These storms produced a total of nine confirmed tornadoes (ranging from F0 to F2) as they swept across southwest Pennsylvania, extreme northern West Virginia and the western panhandle of Maryland. One F1 tornado struck the Mount Washington section of Pittsburgh, producing around \$13 million in damage but only minor injuries. This was the first recorded tornado to pass through the Pittsburgh city limits. Although these storms produced millions of dollars of damage as they moved across the region, no deaths occurred and only 51 injuries were reported (mostly in the highly populated Mount Washington area of Pittsburgh).
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#### **Venango County**

Oil City	02	1605EST			0	0			<b>Hail (0.75)</b>
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#### **Venango County**

Cooperstown	02	1608EST			0	0			<b>Hail (1.00)</b>
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#### **Beaver County**

Shippingport	02	1625EST			0	0	3K		<b>Thunderstorm Wind</b> Thunderstorm winds blew down a few trees.
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#### **Beaver County**

Monaca	02	1625EST			0	0			<b>Hail (0.75)</b>
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#### **Beaver County**

Conway	02	1628EST			0	0			<b>Hail (1.00)</b>
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#### **Beaver County**

Shippingport to 1 W Aliquippa	02	1630EST 1640EST	7	300	0	0	400K		<b>Tornado (F1)</b> Widespread tree and power line damage occurred as the tornado first touched down in Shippingport, where four houses were damaged and one trailer was destroyed. As the tornado moved to the east-southeast through Raccoon Township, 19 houses sustained minor to moderate damage, mostly to siding and roofs.
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#### **Beaver County**

Shippingport	02	1642EST			0	0			<b>Hail (0.75)</b>
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#### **Beaver County**

Monaca	02	1642EST			0	0	1K		<b>Thunderstorm Wind</b> Thunderstorm winds blew a large tree down.
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#### **Allegheny County**

Ingomar	02	1647EST			0	0			<b>Hail (1.00)</b>
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#### **Allegheny County**

Wexford	02	1650EST			0	0			<b>Hail (1.00)</b>
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#### **Allegheny County**

Wildwood	02	1655EST			0	0			<b>Hail (0.75)</b>
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#### **Allegheny County**

5 NW Carnegie to 2 SE East Mc Keesport	02	1655EST 1720EST	26	800	0	50	13M		<b>Tornado (F1)</b>
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#### **Westmoreland**

#### **County**

3 NW Irwin to 3 SE Manor	02	1720EST 1728EST	6	300	0	0			<b>Tornado (F1)</b>
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An F1 tornado touched down 5 miles northwest of Carnegie in Allegheny County and moved east-southeast across the southern and eastern suburbs of Pittsburgh into Westmoreland County. The total path length of this tornado was estimated to be 32 miles, and damage was reported in Mount Washington, Hazelwood, and Rankin in Allegheny County. As the tornado passed over a concrete railroad overpass about 2 miles north of Baldwin, it blew several railroad cars onto their sides. The tornado continued into Westmoreland county, moving through the towns of Irwin and Manor. The Mount Washington area, located just south of downtown Pittsburgh, sustained the majority of damage, along with all of the minor injuries. Property damage in the Mount Washington area included roofs blown off buildings, brick walls torn down, and other major structural damage. Over 1000 structures, mostly in the immediate Pittsburgh area, reported some sort of damage. Other than the damage on Mount Wahington, most of the damage was minor, produced as the result of tree damage from falling trees or tree limbs.

#### **Allegheny County**

Etna	02	1656EST			0	0			<b>Hail (0.75)</b>
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### Washington County

Cecil	02	1700EST			0	0	15K		Thunderstorm Wind
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Thunderstorm winds blew down large trees and power lines.

#### Washington County

Candor	02	1700EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds blew down large trees.

#### Allegheny County

2 W Wilksburg to East Carnegie	02	1705EST			0	0			Hail (0.75)
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#### Westmoreland

#### County

Irwin	02	1710EST			0	0			Hail (0.75)
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#### Allegheny County

Verona	02	1710EST			0	0			Hail (0.75)
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#### Allegheny County

Turtle Creek	02	1715EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### Allegheny County

Pleasant Hills	02	1715EST			0	0			Hail (0.75)
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#### Westmoreland

#### County

Arona	02	1720EST			0	0			Hail (1.00)
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#### Mercer County

Charleston	02	1730EST			0	0			Hail (0.75)
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#### Fayette County

Champion	02	1740EST			0	0			Hail (2.00)
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#### Jefferson County

Worthville	02	1740EST			0	0			Hail (0.75)
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#### Lawrence County

Bessemer	02	1740EST			0	0			Hail (2.00)
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#### Lawrence County

4 SW New Castle	02	1740EST			0	0			Hail (2.00)
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#### Westmoreland

#### County

Trafford	02	1740EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### Westmoreland

#### County

Mt Pleasant	02	1742EST			0	0			Hail (1.75)
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#### Westmoreland

#### County

Norvelt	02	1742EST			0	0			Hail (1.75)
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#### Jefferson County

2 W Ringgold to .7 W Ringgold	02	1745EST 1750EST	1.3	100	0	0	250K		Tornado (F1)
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An F1 tornado touched down briefly over a farming community just west of the town of Ringgold. As this tornado moved to the east it totally destroyed one barn and damaged three others. Several silos were also damaged. As the tornado moved over one farm, it completely drained the water out of a small pond. Several roofs to surrounding houses also sustained minor damage.

#### Lawrence County

Hillsville	02	1745EST			0	0			Hail (0.75)
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#### Westmoreland

#### County

New Stanton	02	1745EST			0	0			Hail (0.75)
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### Westmoreland

#### County

Irwin	02	1746EST			0	0			Hail (1.00)
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#### Westmoreland

#### County

1 NW Donegal to 8 E Donegal	02	1750EST 1810EST	8	200	0	1	200K		Tornado (F1)
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An F1 tornado crossed over the Pennsylvania Turnpike one mile west of Exit 9 at Donegal. As it crossed the Turnpike, it tipped over an eastbound tractor trailer, injuring the driver. One mobile home was overturned. Otherwise, only minor structural damage was noted, mainly limited to shingles blown off of roofs or siding damaged as tree limbs fell against houses. The majority of damage in this heavily wooded area was in the form of uprooted/sheared-off trees.

#### Westmoreland

#### County

Pleasant Vly	02	1750EST			0	0			Hail (1.75)
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#### Westmoreland

#### County

Donegal	02	1752EST			0	0			Hail (1.00)
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#### Fayette County

Champion	02	1754EST			0	0			Hail (1.75)
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#### Allegheny County

Perrysville	02	1755EST			0	0			Hail (0.75)
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#### Jefferson County

Coulter	02	1755EST			0	0			Hail (0.75)
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#### Jefferson County

Brookville	02	1800EST			0	0			Hail (1.00)
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#### Allegheny County

Verona	02	1815EST 2015EST			0	0	150K		Flash Flood
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Water from torrential thunderstorm rains backed up onto Allegheny River Boulevard near Verona. Two people needed to be rescued from their van. Fifteen other vehicles were submerged on Washington Boulevard.

#### Butler County

Zelienople	02	1820EST			0	0			Hail (0.75)
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#### Allegheny County

Wilkinsburg	02	1830EST 1930EST			0	0	100K		Flash Flood
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Street flooding on West Street swamped a police patrol car. Mud and debris filled the basement of an apartment complex.

#### Beaver County

1 S Shippingport	02	1830EST	0.2	25	0	0	10K	40K	Tornado (F0)
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A weak F0 tornado briefly touched down just south of Shippingport, toppling between 50 and 100 cherry trees and damaging a home.

#### Beaver County

Green Garden	02	1830EST 1930EST			0	0			Flash Flood
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Thunderstorm rains flooded Green Garden Road and State Route 18 in Raccoon Township.

#### Beaver County

Monaca	02	1830EST			0	0			Hail (1.75)
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#### Beaver County

Aliquippa	02	1840EST 1940EST			0	0			Flash Flood
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Mudslides and minor street flooding reported in Aliquippa.

#### Beaver County

Green Garden	02	1845EST			0	0			Hail (1.00)
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#### Beaver County

Aliquippa	02	1848EST			0	0			Hail (1.00)
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# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Allegheny County**

Russelton      02      1850EST                     0      0                          **Hail (1.00)**

#### **Allegheny County**

Penn Hills      02      1901EST                     0      0                          **Hail (0.75)**

#### **Washington County**

Washington      02      1920EST                     0      0      5K                **Thunderstorm Wind**  
Thunderstorm winds blew large trees and power lines down.

#### **Westmoreland County**

Delmont      02      1920EST                     0      0                          **Hail (0.75)**

#### **Westmoreland County**

Harrison City      02      1930EST  
2030EST                     0      0                          **Flash Flood**  
Minor flooding on several roads in Penn Township near Harrison City.

#### **Allegheny County**

Greenock to      02      1920EST      0.3      50      0      0      5K                **Tornado (F0)**  
.3 NW Greenock      1922EST

#### **Westmoreland County**

3 SW Irwin to      02      1922EST      0.7      50      0      0      15K                **Tornado (F0)**  
2.5 SW Irwin      1925EST

A weak F0 tornado briefly touched down for approximately 5 minutes over extreme eastern Allegheny/western Westmoreland counties. One roof was blown off a structure. Otherwise, damage from this tornado was limited to downed trees and occurred over a relatively small area.

#### **Westmoreland County**

Irwin      02      1930EST                     0      0                          **Hail (1.25)**

#### **Washington County**

Van Voorhis      02      1945EST                     0      0      15K                **Thunderstorm Wind**  
Thunderstorm winds blew a large tree onto an unoccupied house.

#### **Washington County**

Denbo      02      2000EST                     0      0      5K                **Thunderstorm Wind**  
Thunderstorm winds blew down several large trees.

#### **Fayette County**

4 SE Indian Head to      02      2000EST      0.3      50      0      0      10K                **Tornado (F0)**  
4.3 SE Indian Head      2002EST

A weak F0 tornado touched down in extreme eastern Fayette County. Damage was confined to sheared/uprooted trees.

#### **Westmoreland County**

Lower Burrell      02      2006EST  
2100EST                     0      0      20K                **Flash Flood**  
Street and basement flooding reported in Lower Burrell.

#### **Fayette County**

Wharton Furnace      02      2030EST                     0      0      5K                **Thunderstorm Wind**  
Thunderstorm winds blew down several large trees and power lines.

#### **Fayette County**

1 SW Elliottsville to      02      2035EST      5      300      0      0      3M      2M      **Tornado (F2)**  
Five Forks      2045EST

An F2 tornado passed southeast through southern Fayette County PA, the northeast tip of Preston County WV, and into northwest Garrett County MD. The total length of the tornado as it passed across these three counties was 12 miles. Damage included a completely destroyed dairy barn, two completely destroyed house trailers, and at least 21 other structures heavily damaged, many with roofs partially or completely peeled off. Several cows were killed, with one cow thrown through the air over 100 yards. A clearly visible 300-yard wide, 1-mile long swath of trees which were completely sheared/uprooted was present near the Pennsylvania/West Virginia state border. One Fayette County official estimated at least two million dollars damage in lost timber.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

alone in that county. Despite the damage, interviews with law enforcement officials, paramedics and local residents revealed no injuries occurred.

#### **Lawrence County**

New Castle	12	2145EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew several trees down.

#### **Mercer County**

Mercer	12	2145EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew several large trees down.

#### **Beaver County**

Patterson Hgts	12	2146EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew a few large trees and several limbs down.

#### **Venango County**

Cooperstown	12	2213EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew a few large trees down.

#### **Beaver County**

New Brighton	12	2215EST			0    0	30K	Thunderstorm Wind
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Thunderstorm winds blew a large tree onto three parked vehicles.

#### **Venango County**

Oil City	12	2215EST			0    0	2K	Thunderstorm Wind
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Thunderstorm winds blew a large tree down.

#### **Allegheny County**

Sewickley	12	2220EST			0    0	2K	Thunderstorm Wind
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Thunderstorm winds blew a large tree down onto Ohio River Boulevard.

#### **Mercer County**

Greenville to Greenfield	13	1235EST			0    0		Hail (0.88)
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#### **Beaver County**

Beaver Falls	13	1247EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew several large trees down.

#### **Allegheny County**

Warrendale	13	1335EST			0    0		Hail (0.75)
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#### **Allegheny County**

Gibsonia	13	1340EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew several large trees down in the North Park area.

#### **Butler County**

Cooperstown	13	1340EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew several large trees down.

#### **Allegheny County**

West Elizabeth	13	1400EST			0    0	2K	Thunderstorm Wind
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Thunderstorm winds blew several large tree limbs down onto power lines.

#### **Fayette County**

Vanderbilt	15	1330EST			0    0	20K	Thunderstorm Wind
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Thunderstorm winds blew a house porch and several trees down.

#### **Westmoreland**

##### **County**

Latrobe	15	1810EST 1910EST			0    0	20K	Flash Flood
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2.2 inches of rain in one hour caused minor stream flooding which closed Eaton Road and Hillview Avenue in Latrobe. Several basements also flooded in this area. A mudslide was reported on Beatty Road just southwest of Latrobe.

#### **Washington County**

Canonsburg	16	1520EST			0    0	2K	Thunderstorm Wind
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Thunderstorm winds blew down a large tree.

#### **Greene County**

Oak Forest	16	1540EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several trees.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Beaver County**

<b>Countywide</b>	<b>16</b>	<b>1545EST 1615EST</b>			<b>0 0</b>	<b>25K</b>	<b>Thunderstorm Wind</b>
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Numerous trees and powerlines down across the county.

#### **Fayette County**

<b>Brownsville</b>	<b>16</b>	<b>1545EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees and power lines.

#### **Greene County**

<b>Waynesburg</b>	<b>16</b>	<b>1548EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees.

#### **Greene County**

<b>Graysville</b>	<b>16</b>	<b>1550EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees.

#### **Fayette County**

<b>3 SW Smithfield</b>	<b>16</b>	<b>1555EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees and power lines.

#### **Allegheny County**

<b>Bethel Park</b>	<b>16</b>	<b>1556EST</b>			<b>0 0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large tree limbs.

#### **Allegheny County**

<b>Pittsburgh</b>	<b>16</b>	<b>1559EST</b>			<b>0 0</b>		<b>Thunderstorm Wind (G57)</b>
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Carnegie Science Center recorded a wind gust to 66 MPH.

#### **Fayette County**

<b>Republic</b>	<b>16</b>	<b>1600EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large trees and power lines.

#### **Fayette County**

<b>Uniontown</b>	<b>16</b>	<b>1600EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large trees and power lines.

#### **Greene County**

<b>Carmichaels</b>	<b>16</b>	<b>1600EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large trees and power lines.

#### **Greene County**

<b>2 W Waynesburg</b>	<b>16</b>	<b>1600EST</b>			<b>0 0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large tree limbs down.

#### **Washington County**

<b>Canonsburg</b>	<b>16</b>	<b>1600EST</b>			<b>0 1</b>		<b>Lightning</b>
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An 8-year-old boy was slightly injured when the tree he was playing under was struck by lightning.

#### **Washington County**

<b>Monongahela</b>	<b>16</b>	<b>1600EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large trees. One tree fell onto SR 481, closing it off to traffic.

#### **Washington County**

<b>South Strabane</b>	<b>16</b>	<b>1600EST</b>			<b>0 1</b>	<b>15K</b>	<b>Thunderstorm Wind</b>
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A man was slightly injured when thunderstorm winds blew over a tree onto his pickup truck on Old Trails Road by US Route 40.

#### **Westmoreland**

#### **County**

<b>West Newton</b>	<b>16</b>	<b>1607EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several trees down.

#### **Greene County**

<b>Waynesburg</b>	<b>16</b>	<b>1608EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several trees down.

#### **Westmoreland**

#### **County**

<b>Herminie</b>	<b>16</b>	<b>1609EST</b>			<b>0 0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several trees down.



# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Allegheny County**

<b>Churchill</b>	16	1610EST			0 0	2K	Thunderstorm Wind
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Thunderstorm winds blew a large tree down.

#### **Allegheny County**

<b>Wall</b>	16	1610EST			0 0	50K	Thunderstorm Wind
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Thunderstorm winds blew down/uprooted at least two dozen trees. A few of these trees fell onto houses, causing minor damage. Upper boxes on five railroad piggyback cars tipped over.

#### **Greene County**

<b>Lippincott</b>	16	1610EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Washington County**

<b>Fredericktown</b>	16	1610EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Allegheny County**

<b>Oakmont to Oak Hill</b>	16	1612EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Allegheny County**

<b>Crafton</b>	16	1614EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Fayette County**

<b>Connellsville</b>	16	1615EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Allegheny County**

<b>Pittsburgh</b>	16	1618EST			0 0	2K	Thunderstorm Wind
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A large tree was blown down by thunderstorm winds.

#### **Fayette County**

<b>Edenborn</b>	16	1620EST			0 0	4K	Thunderstorm Wind
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Thunderstorm winds blew down two large trees.

#### **Westmoreland**

##### **County**

<b>Jeanette</b>	16	1620EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Westmoreland**

##### **County**

<b>Greensburg</b>	16	1621EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Westmoreland**

##### **County**

<b>Harrison City</b>	16	1621EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Westmoreland**

##### **County**

<b>New Kensington</b>	16	1623EST			0 0		Thunderstorm Wind (G54)
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A private citizen recorded a 62 MPH thunderstorm gust.

#### **Butler County**

<b>Evans City</b>	16	1625EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### **Westmoreland**

##### **County**

<b>Greensburg</b>	16	1626EST 1628EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### Westmoreland

##### County

Manor	16	1627EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### Allegheny County

Wilksburg	16	1628EST			0	0	1K		Thunderstorm Wind
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Several power lines were blown down by thunderstorm winds.

#### Westmoreland

##### County

2 NW Bagdad	16	1628EST	0.2	50	0	0	10K	30K	Tornado (F0)
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A weak F0 tornado damaged shingles on one house and snapped/uprooted 30 to 40 trees.

#### Allegheny County

Pittsburgh	16	1630EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew down several trees and power lines.

#### Armstrong County

Apollo	16	1630EST			0	0	2K		Thunderstorm Wind
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Thunderstorm winds blew down a few trees.

#### Allegheny County

Munhall	16	1635EST			0	0	2K		Thunderstorm Wind
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Thunderstorm winds blew down a large tree.

#### Indiana County

Countywide	16	1636EST 1700EST			0	0	25K		Thunderstorm Wind
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Thunderstorm winds blew down numerous trees and power lines across the county.

#### Westmoreland

##### County

Stahlstown	16	1638EST			0	0	30K		Thunderstorm Wind
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Thunderstorm winds blew the roof and porch off of a house. Several trees were also blown down.

#### Allegheny County

Glenfield	16	1640EST			0	0	25K		Thunderstorm Wind
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Several buildings received minor damage from thunderstorm winds.

#### Allegheny County

Turtle Creek	16	1640EST			0	0	25K		Thunderstorm Wind
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Thunderstorm winds blew the roof off of a house.

#### Indiana County

Blairsville	16	1640EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds uprooted several trees.

#### Allegheny County

Pittsburgh	16	1641EST			0	0			Thunderstorm Wind (G52)
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Carnegie Science Center recorded a wind gust to 60 MPH.

#### Indiana County

Blairsville	16	1642EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew down several large trees.

#### Butler County

7 SW Butler	16	1645EST			0	0	5K		Thunderstorm Wind
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Thunderstorm winds blew several large trees down.

#### Butler County

Butler	16	1645EST			0	0			Thunderstorm Wind (G52)
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A private citizen reported a 60 MPH wind gust from a thunderstorm.

#### Westmoreland

##### County

Latrobe	16	1645EST			0	2	20K		Thunderstorm Wind
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Thunderstorm winds blew several large trees down. One tree fell onto a car, with the passengers sustaining only minor injuries.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Westmoreland County**

<b>Rector</b>	16	1645EST			0 0	20K	<b>Thunderstorm Wind</b>
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Thunderstorm winds uprooted/downed numerous trees in and around the Rector area in Ligonier Township.

#### **Indiana County** 5 NE Blairsville

16	1650EST			0 0	2K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large tree limbs down.

#### **Allegheny County** Harmerville

16	1653EST			0 0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large trees down.

#### **Indiana County** Blairsville

16	1653EST			0 0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large trees down.

#### **Indiana County** Indiana

16	1700EST			0 0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large trees down.

#### **Westmoreland County**

<b>Jones Mills</b>	19	0235EST			0 0		<b>Hail (0.75)</b>
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#### **Fayette County** Champion

19	0245EST			0 0		<b>Hail (0.88)</b>
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#### **Beaver County** Beaver Falls

19	0345EST			0 0	30K	<b>Thunderstorm Wind (G70)</b>
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A microburst with a width of 350 yards and length of 700 yards occurred in Beaver Falls. Many trees were topped or snapped. One porch was blown off of a house. Maximum wind gust was estimated at 80 MPH.

#### **Beaver County** Beaver Falls to Beaver

19	0520EST			0 0		<b>Hail (1.00)</b>
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#### **Westmoreland County** Latrobe

19	0750EST 1030EST			0 0	50K	<b>Flash Flood</b>
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Many flooded basements were reported across the area. Several roads were closed due to localized flooding, including State Highway 711 and Church Hollow Road. A mudslide occurred just east of Latrobe that forced the closing of US Route 30.

#### **Westmoreland County** Ligonier

19	1040EST 1300EST			0 0	50K	<b>Flash Flood</b>
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Several small creeks, including Mill Creek, flooded from thunderstorm rains. Many basements were flooded across the area. State Highway 711 and Clark Hollow Road were closed due to flooding.

#### **Washington County** 2 S Midway

26	1715EST			0 0		<b>Hail (0.75)</b>
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Severe thunderstorms bringing damaging winds and torrential rains affected much of east-central Ohio, western Pennsylvania and northern West Virginia during the period of June 26-30. These storms caused eight deaths and several injuries, along with millions of dollars of damage across the region. High pressure anchored over the Tennessee Valley contributed to the northward transport of a tropical airmass into eastern Ohio by the afternoon of June 26th. Explosive thunderstorm development on the afternoon of June 26th over northeast Ohio and western Pennsylvania formed a Mesoscale Convective System (MCS) by late afternoon. As this MCS propagated slowly to the southeast during the evening, it left behind a northwest-to-southeast oriented outflow boundary. This boundary remained nearly stationary for over 36 hours and served to focus waves of thunderstorms from the evening of June 26th through the early morning hours of June 28th across eastern Ohio and into western Pennsylvania.

Across western Pennsylvania, although severe thunderstorms passed across the area every day during this period except the 29th, the thunderstorms on the afternoon of the 30th proved to be the most damaging. One microburst over the Pittsburgh area brought 85 MPH winds to the city, causing an estimated \$41 million in damage to the area. Numerous trees were snapped or felled by the winds across the remainder of southwest Pennsylvania. One township in Allegheny County just north of Pittsburgh estimated it would take up to 30 days to clear all of the downed trees. Power was lost to over 100,000 people in the Pittsburgh area alone.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

Thousands of people across the region remained without power for days after the storms.

<b>Washington County</b> Lawrence Hills	26	1716EST			0 0	5K	Thunderstorm Wind
Thunderstorm winds blew several trees and power lines down.							
<b>Washington County</b> Mc Murray	26	1720EST			0 0	5K	Thunderstorm Wind
Thunderstorm winds blew several trees and power lines down.							
<b>Washington County</b> 1 E Canonsburg	26	1730EST			0 0	5K	Thunderstorm Wind
Thunderstorm winds blew several trees and power lines down.							
<b>Washington County</b> 4 NW Amity	26	1855EST			0 0	2K	Thunderstorm Wind
Thunderstorm winds blew two large trees down.							
<b>Washington County</b> Scenery Hill	26	1855EST			0 0	2K	Thunderstorm Wind
Thunderstorm winds blew down a few large trees.							
<b>Washington County</b> 8 SE Washington	26	1930EST 2030EST			0 0	20K	Flash Flood
Thunderstorm rains caused a small creek to overflow onto S. Main Extension. This creek eventually rose to waist-high levels and flooded a parked pickup truck, moving it over 20 feet and lodging it in a creek bed.							
<b>Fayette County</b> Connellsville	27	1254EST			0 0		Flash Flood
Minor street flooding reported in Connellsville.							
<b>Fayette County</b> Brownsville to Brownfield	27	1300EST			0 0	5K	Thunderstorm Wind
Thunderstorm winds downed several large trees.							
<b>Washington County</b> Finleyville	27	1300EST			0 0	5K	Thunderstorm Wind
Thunderstorm winds downed several large trees.							
<b>Washington County</b> North Portion	27	1300EST 1400EST			0 0	100K	Flash Flood
Torrential thunderstorm rains flooded roads and basements across northern portions of the county. Areas most affected include Canonsburg and Finleyville.							
<b>Allegheny County</b> Carnegie	27	1310EST 1400EST			0 0		Flash Flood
Thunderstorm rains forced Cambells Run Creek out of its banks.							
<b>Allegheny County</b> 2 NE Imperial	27	1320EST 1400EST			0 0		Flash Flood
Thunderstorm rains caused minor flooding on McClaren Run Road.							
<b>Allegheny County</b> Mt Lebanon	27	1330EST 1400EST			0 0		Flash Flood
Thunderstorm rains caused minor flooding on McNeilly Road.							
<b>Beaver County</b> 1 SE Shippingport	27	1915EST			0 0	2K	Thunderstorm Wind
Thunderstorm winds downed two trees.							
<b>Greene County</b> Crabapple	27	1920EST			0 0	10K	Thunderstorm Wind
Thunderstorm winds blew the windows out of a mobile home.							

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

<b>Greene County</b>							
Graysville	27	1935EST			0 0	5K	Thunderstorm Wind
Thunderstorm winds downed several trees.							
<b>Greene County</b>							
Countywide	27	1945EST 2000EST			0 0	15K	Thunderstorm Wind
Thunderstorm winds downed numerous trees and powerlines throughout the county.							
<b>Greene County</b>							
1 S Waynesburg	27	2000EST			0 0		Flash Flood
	28	0500EST					
Thunderstorm rains produced flooding on SR 218.							
<b>Greene County</b>							
Nineveh	27	2215EST			0 0	10K	Flash Flood
Basement flooding was reported.							
<b>Washington County</b>							
Centerville	28	2020EST			0 0	1K	Thunderstorm Wind
Thunderstorm winds downed a large tree.							
<b>Greene County</b>							
Countywide	28	2030EST			0 0	10K	Thunderstorm Wind
Thunderstorm winds downed numerous trees and power lines across the county.							
<b>Washington County</b>							
Fredericktown	28	2037EST			0 0	1K	Thunderstorm Wind
Thunderstorm winds downed a large tree.							
<b>Fayette County</b>							
Smithfield	28	2051EST			0 0	2K	Thunderstorm Wind (G52)
Thunderstorm winds estimated at 60 MPH downed a few trees.							
<b>Beaver County</b>							
Beaver Falls	30	1337EST			0 0	50K	Thunderstorm Wind
Thunderstorm winds blew down numerous trees across the area, downing power lines and causing minor damage to homes. Widespread power outages were reported, with power not restored to some area residents for several days.							
<b>Beaver County</b>							
Shippingport	30	1345EST			0 0		Hail (0.75)
<b>Beaver County</b>							
Hookstown	30	1348EST			0 0		Hail (1.00)
<b>Beaver County</b>							
Hookstown	30	1348EST			0 0	3K	Thunderstorm Wind
Thunderstorm winds downed a few trees.							
<b>Allegheny County</b>							
Countywide	30	1354EST 1420EST			0 10	41M	Thunderstorm Wind (G74)
A microburst with winds up to 85 MPH moved diagonally from northwest to southeast across Allegheny County, leaving a wide swath of damage in its wake. These winds produced an estimated \$41 million in damage across the county. Over 125,000 people across the county had their power knocked out by this storm. Across the city of Pittsburgh, the North Hills area reported numerous trees, branches, and power lines down across an area one to two miles wide and nearly five miles in length. Many homes were damaged by falling trees and branches. The Larouche College area was especially hard hit with significant roof and window damage. The roof was torn from a McCandless convent, injuring three nuns.							
<b>Allegheny County</b>							
Pittsburgh Intl Arpt	30	1354EST			0 0		Thunderstorm Wind (G54)
Thunderstorm winds gusting to 62 MPH caused some minor damage at the Pittsburgh International Airport.							
<b>Allegheny County</b>							
Imperial	30	1358EST			0 0		Hail (1.75)
<b>Allegheny County</b>							
Imperial	30	1358EST			0 0		Thunderstorm Wind (G50)
Thunderstorm winds downed several trees and caused minor damage to a few homes.							

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Allegheny County**

**Pittsburgh**      30      1405EST                0      0                **Hail (0.75)**

#### **Allegheny County**

**Pittsburgh**      30      1408EST                0      0                **Thunderstorm Wind (G50)**  
Thunderstorm winds caused some minor damage in the Shadyside area.

#### **Butler County**

**Butler**      30      1408EST                0      0      1K      **Thunderstorm Wind**  
Thunderstorm winds blew a large tree down onto SR 68.

#### **Allegheny County**

**Fox Chapel**      30      1410EST                0      0                **Thunderstorm Wind (G50)**  
Thunderstorm winds downed several trees.

#### **Allegheny County**

**Monroeville**      30      1410EST                0      0                **Thunderstorm Wind (G50)**  
Thunderstorm winds blew the roof off of a house, damaged several other homes, and downed numerous trees.

#### **Westmoreland County**

**Lower Burrell**      30      1410EST                0      0      10K      **Thunderstorm Wind**  
Numerous trees and power lines down.

#### **Westmoreland County**

**New Kensington**      30      1410EST                0      0      5K      **Thunderstorm Wind**  
Thunderstorm winds blew several trees and power lines down onto SR 66.

#### **Allegheny County**

**Oakmont**      30      1413EST                0      0                **Thunderstorm Wind (G50)**  
Thunderstorm winds downed several trees.

#### **Butler County**

**Sarver**      30      1413EST                0      0      2K      **Thunderstorm Wind (G57)**  
Thunderstorm winds estimated at 65 MPH downed several large tree limbs.

#### **Allegheny County**

**Pittsburgh**      30      1415EST                0      0                **Thunderstorm Wind (G50)**  
Thunderstorm winds blew a tree down onto a car, crushing it.

#### **Allegheny County**

**Allison Park**      30      1418EST                0      0                **Thunderstorm Wind (G50)**  
Thunderstorm winds blew a large tree down onto a house.

#### **Allegheny County**

**Penn Hills**      30      1420EST                0      0                **Thunderstorm Wind (G50)**  
Thunderstorm winds downed an estimated 50 trees.

#### **Washington County**

**Bentleyville**      30      1420EST                0      0      5K      **Thunderstorm Wind**  
Thunderstorm winds blew several trees and power lines down.

#### **Washington County**

**Burgettstown**      30      1420EST                0      0      5K      **Thunderstorm Wind**  
Thunderstorm winds blew several large trees and power lines down.

#### **Westmoreland County**

**Murrysville**      30      1425EST                0      0      1M      **Thunderstorm Wind**  
Thunderstorm winds downed numerous trees and power lines. Major damage was reported to around ten homes, with numerous other homes in the area receiving minor damage. A new concrete block was at a car dealership was knocked over.

#### **Butler County**

**Sarver**      30      1426EST                0      0      50K      **Thunderstorm Wind**  
Thunderstorm winds downed several trees. Two houses sustained damage. One car was damaged by a falling tree.

#### **Armstrong County**

**Kittanning**      30      1430EST                0      0      10K      **Thunderstorm Wind**  
Thunderstorm winds downed numerous trees.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Westmoreland County**

New Kensington	30	1430EST			0    0	50K	Thunderstorm Wind
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Thunderstorm winds downed many trees, snapped off several telephone poles and wires. Part of a building's brick wall collapsed.

#### **Allegheny County**

Verona	30	1430EST			0    0		Hail (0.88)
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#### **Beaver County**

Beaver	30	1438EST			0    0		Hail (0.75)
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#### **Beaver County**

Beaver	30	1438EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds produced minor damage to several homes.

#### **Indiana County**

Indiana	30	1438EST			0    0	20K	Thunderstorm Wind
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Thunderstorm winds blew a large tree onto a house.

#### **Westmoreland County**

Latrobe	30	1442EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds downed several trees. A few trees fell onto US Route 30, closing it for a short time.

#### **Indiana County**

Indiana	30	1445EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds downed several trees.

#### **Westmoreland County**

Greensburg	30	1445EST			0    0	20K	Thunderstorm Wind
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Thunderstorm winds blew the roof off of a house.

#### **Westmoreland County**

West Newton	30	1449EST			0    0	5K	Thunderstorm Wind
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Thunderstorm winds downed several trees.

#### **Westmoreland County**

Bolivar	30	1450EST			0    0	5K	Thunderstorm Wind (G65)
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Thunderstorm winds estimated at 75 MPH downed several trees.

#### **Indiana County**

Blairsville	30	1454EST			0    0	15K	Thunderstorm Wind
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Thunderstorm winds blew a tree onto a car.

#### **Fayette County**

Perryopolis	30	1518EST			0    0		Hail (0.75)
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#### **Washington County**

Claysville	30	1530EST 1900EST			0    0	25K	Flash Flood
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Thunderstorm rains produced basement flooding in several homes.

#### **Fayette County**

Hopwood	30	1542EST			0    0		Hail (0.75)
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#### **Fayette County**

Farmington	30	1550EST			0    0		Hail (0.75)
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### TEXAS, Western North

#### **TXZ086**

#### **Wichita**

02	1300CST				0    2		Excessive Heat
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Two people were treated for heat related injuries at United Regional Health Care in Wichita Falls.

Excessive heat and drought conditions affected western and central Oklahoma as well as western portions of north Texas from May through early October with the most intense heat and severe drought conditions occurring from mid-June through early September across central and southern Oklahoma and western portions of north Texas. The heat and drought was less severe across northwest

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### TEXAS, Western North

and north central Oklahoma. In total, there were 21 fatalities and at least 5 injuries directly related to the heat. Agricultural losses are estimated at nearly 2 billion dollars for Oklahoma and 2.1 billion dollars for Texas. Sixty of Oklahoma's 77 counties and all of Texas's counties were declared federal disaster areas.

Excessive heat and drought began in May, intensified in July and August, and diminished in September and early October. Oklahoma City experienced it's 6th warmest and 16th driest May on record, while Wichita Falls experienced it's 3rd warmest and 3rd driest May on record. Heat and drought conditions escalated after June 11th, which was the last day of widespread rainfall across western and central Oklahoma and western portions of north Texas until early September. The heat and drought then ended in early October when widespread rain and cooler temperatures returned to the southern plains.

The first fatality directly related to the heat occurred on June 21st , when an 81 year-old woman was found dead in her house in Oklahoma City (Canadian County). A 76 year-old man was then found dead in his Del City home on June 29th. The heat claimed 17 lives in July. The first occurred in Wichita Falls (Wichita County) on July 3rd, when a 75 year-old man was found dead in his home. Four heat related fatalities occurred between the 9th and the 11th. Two persons died on the 9th. A 46 year-old man was found dead in a hotel room in Oklahoma City with no air conditioning. The temperature in the room was 115 degrees. A 73 year-old man was then found dead in his Oklahoma City home. On July 10th , a 79 year-old man was found dead in his mobile home in Mulhall (Logan County). Another heat related fatality occurred on the 11th, when a 51 year-old woman was found dead in her home in Wewoka (Seminole County). The second and last report of a heat related fatality in western portions of north Texas occurred on the 14th, when a 74 year-old man was found dead in his Wichita Falls home.

On July 17th, in Altus (Jackson County, Oklahoma), a 79 year-old man was found dead in his home, while on the 19th, there were 3 heat related deaths reported. The first fatality occurred to a man of unknown age. He was found dead in his vehicle in Oklahoma City. The second fatality occurred in Guthrie (Logan County) when a 55 year-old man was found dead in his house, while the 3rd fatality occurred to a 78 year-old woman when she was found dead in her Oklahoma City apartment. On July 20th, a 78 year-old woman was found dead in her Duncan (Stephens County) home, while on the 21st, another 78 year-old woman was found dead in her home, this time in Guthrie (Logan County). Two persons died in their homes from the heat on the 27th, the first, a 61 year-old man from Oklahoma City, the second, a 67 year-old man found from Cromwell (Seminole County). The last heat related fatality occurred on the 30th, when a 62 year-old woman was found dead in her Oklahoma City home.

Three heat related fatalities were reported in August. The first occurred on the 2nd when a 53 year-old man was found dead inside his Oklahoma City home. The second heat related fatality occurred on the 3rd, when an 82 year-old man was found dead inside his Oklahoma City home. The last heat related fatality in August occurred on the 5th in Gene Autry (Carter County) when a 76 year-old man was found dead inside his home. Only one heat related fatality was reported in September, and occurred on the 4th. A 76 year-old man was found dead outside of a retirement home in Oklahoma City. He was found after he went for a walk and did not return.

Only 5 heat related injuries were reported during the 5 month-long heat and drought. Two persons from Wichita Falls were treated for heat related injuries on June 2nd at United Regional Health Care. Three troop members from Fort Sill (Comanche County) were rushed to a local hospital on July 22nd and treated for heat related injuries as well.

Statistics provided by the Oklahoma State Department of Agriculture indicate economic losses of approximately 2 billion dollars to the state's agriculture business. Figures were not available for individual counties. Hay and cotton crops were particularly hard hit. Hay producers harvested only 30 to 80 percent of the normal yield, a loss of perhaps 80 million dollars. Cotton production was reduced by about 70 percent, a loss of 38 million dollars. Other crops such as grain sorghum, peanuts and soybeans also suffered major losses. In total, crop losses across Oklahoma were near 500 million dollars, but because of the multiplying effect on the overall economy, this figure is more like 2 billion dollars when considering the effect on the state's economy. Agricultural losses across Texas total about 2.1 billion dollars with no specific statistics available on a county-by-county basis, however cotton losses are expected to contribute significantly to the total loss.

The summer of 1998 (June-August) was the 4th hottest and 5th driest in Oklahoma City on record, and the 2nd hottest and 7th driest in Wichita Falls. The drought ended gradually in September and early October, but record warm temperatures continued through September. Oklahoma City recorded an average temperature of 81.2 degrees in September, 2nd hottest September on record. The summer of 1980, considered to be the last major period of heat and drought to affect Oklahoma and western portions of north Texas, still ranks as the hottest summer ever for both Oklahoma City and Wichita Falls, however Oklahoma City did experience a drier summer in 1998 than in 1980.

**Knox County**  
Truscott

09	1415CST	0	0	Hail (1.75)
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# Storm Data and Unusual Weather Phenomena

June 1998

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

## ADDITIONS/CORRECTIONS

### TEXAS, Western North

<b>Knox County</b>							
Knox City	09	1445CST			0	0	Hail (0.88)
<b>Foard County</b>							
8 SE Crowell	09	1500CST 1530CST			0	0	Hail (1.00)
<b>Knox County</b>							
Gilliland	09	1500CST			0	0	Hail (0.75)
<b>Wichita County</b>							
Electra	09	1523CST			0	0	Hail (1.00)
<b>Wichita County</b>							
Electra	09	1523CST			0	0	Thunderstorm Wind (G52)
<b>Wichita County</b>							
8 N Electra	09	1528CST			0	0	Hail (2.75)
<b>Wichita County</b>							
2 E Electra	09	1530CST			0	0	Hail (1.75)
<b>Baylor County</b>							
Mabelle	09	1535CST			0	0	0.01K Thunderstorm Wind Severe thunderstorm winds downed 2-inch tree limbs.
<b>Wichita County</b>							
Iowa Park	09	1537CST			0	0	Thunderstorm Wind (G61)
<b>Wichita County</b>							
Wichita Falls	09	1558CST			0	0	Hail (0.88) Occurred at I-44 and Missile Road.
<b>Wichita County</b>							
Wichita Falls	09	1558CST			0	0	Thunderstorm Wind (G61) Occurred at I-44 and Missile Road.
<b>Baylor County</b>							
8 N Mabelle	09	1600CST			0	0	Hail (1.00)
<b>Baylor County</b>							
8 N Mabelle	09	1600CST			0	0	0.01K Thunderstorm Wind Severe thunderstorm winds downed 2-inch tree limbs.
<b>Wichita County</b>							
Sheppard Afb	09	1600CST 1615CST			0	2	1M Hail (2.00) Hail larger than golf balls, combined with severe thunderstorm winds up to 79 mph, caused extensive damage and 2 injuries at Sheppard Air Force Base. The 2 injuries occurred when some soldiers were caught outside in the hailstorm. 48 (out of a squadron of 200) T-37 training jets were damaged by 2-inch hail. The winds blew the protective covers from the planes and the hail then knocked holes in the wings and broke the planes' windshields. Over 100 cars on the base were damaged. A window was knocked out of the air traffic control tower. One house sustained heavy damage when all of its west-facing shutters were destroyed and 3 skylights and 2 windows were broken. Numerous trees were snapped by the severe winds.
<b>Wichita County</b>							
Burkburnett	09	1602CST			0	0	Hail (1.75)
<b>Archer County</b>							
Dundee	09	1603CST			0	0	Hail (0.75)
<b>Wichita County</b>							
Wichita Falls	09	1603CST			0	0	Thunderstorm Wind (G65) Measured at the KSPS observing site.
<b>Wichita County</b>							
Wichita Falls	09	1604CST			0	0	Thunderstorm Wind (G68) Measured at the KSPS observing site.
<b>Archer County</b>							
Dundee	09	1605CST			0	0	Hail (2.00)
<b>Archer County</b>							
Dundee	09	1605CST			0	0	Hail (2.00)

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### TEXAS, Western North

<b>Baylor County</b>							
4 N Mabelle	09	1610CST			0	0	Hail (1.75)
<b>Baylor County</b>							
4 N Mabelle	09	1610CST			0	0	Hail (1.75)
<b>Wichita County</b>							
Wichita Falls	09	1610CST			0	0	1K <b>Lightning</b>
Lightning struck a house, setting fire to the attic. The fire was contained and damage was estimated at \$1,000.							
<b>Clay County</b>							
Henrietta	09	1613CST			0	0	Thunderstorm Wind (G52)
<b>Clay County</b>							
3 SW Dean	09	1620CST			0	0	Thunderstorm Wind (G61)
<b>Archer County</b>							
2 S Holliday	09	1646CST			0	0	Hail (3.90)
<b>Archer County</b>							
2 S Holliday	09	1646CST			0	0	Thunderstorm Wind (G78)
<b>Archer County</b>							
5 SE Holliday	09	1701CST			0	0	Hail (1.75)
<b>Clay County</b>							
10 SW Henrietta	09	1701CST			0	0	Thunderstorm Wind (G57)
<b>Clay County</b>							
Henrietta	09	1712CST			0	0	Thunderstorm Wind (G52)
<b>Clay County</b>							
Henrietta	09	1716CST			0	0	7K <b>Thunderstorm Wind</b>
Thunderstorm winds downed trees and power lines and rolled a mobile home in a dealer's parking lot.							
<b>Archer County</b>							
2 N Windthorst	09	1744CST			0	0	Hail (0.88)
<b>Wichita County</b>							
Wichita Falls	09	1750CST			0	0	Flash Flood
Bacon Switch Road was under water.							
<b>Archer County</b>							
4 W Windthorst	09	1800CST			0	0	Hail (0.88)
<b>Clay County</b>							
12 S Henrietta	09	1810CST			0	0	Hail (0.75)
<b>Wilbarger County</b>							
Vernon	09	1816CST			0	0	Hail (0.75)
Severe thunderstorms moved from west Texas into north Texas during the afternoon of the 9th, producing large hail and damaging thunderstorm winds. The largest hail (up to the size of baseballs) was reported north of Electra in Wichita County. The strongest winds were estimated at 90 mph south of Holliday in Archer County. A particularly severe thunderstorm affected Sheppard Air Force Base in Wichita County, causing extensive damage to many of the buildings and an aircraft. Two soldiers were also injured by large hail.							
See preceding individual Storm Data entries for further details and additional reports.							
<b>Clay County</b>							
Byers	11	0000CST			0	0	Thunderstorm Wind (G57)
Numerous large tree limbs were blown down by winds estimated at 65 mph.							
<b>Baylor County</b>							
4 NE Bomarton	12	1822CST			0	0	Hail (1.75)
<b>Clay County</b>							
Henrietta	18	2048CST			0	0	Hail (0.88)
<b>Clay County</b>							
Bluegrove	18	2110CST			0	0	Hail (0.75)
<b>Clay County</b>							
9 S Henrietta	18	2129CST			0	0	Hail (0.75)

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### TEXAS, Western North

#### **Clay County**

9 S Henrietta	18	2131CST			0    0		<b>Hail (1.00)</b>
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#### **Baylor County**

8 N Mabelle	19	1647CST			0    0		<b>Hail (0.75)</b>
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#### **Baylor County**

Lake Kemp	19	1700CST			0    0		<b>Hail (1.00)</b>
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#### **Baylor County**

Lake Kemp	19	1702CST			0    0		<b>Hail (0.75)</b>
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#### **Baylor County**

Lake Kemp	19	1705CST			0    0		<b>Hail (1.00)</b>
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#### **Baylor County**

Lake Kemp	19	1730CST			0    0		<b>Hail (1.75)</b>
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#### **Baylor County**

Lake Kemp	19	1805CST			0    0		<b>Hail (1.75)</b>
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#### **Baylor County**

Mabelle	19	1850CST			0    0		<b>Hail (1.75)</b>
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#### **Archer County**

Windthorst	19	1940CST			0    0	<b>1K</b>	<b>Thunderstorm Wind</b>
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Thunderstorm winds uprooted trees and blew down power lines along Highway 281.

Severe thunderstorms over Baylor County produced hail as large as golf balls. Severe thunderstorm wind damage was also reported in Windthorst in Archer County.

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

#### **Hardeman County**

5 NW Goodlett	21	1745CST			0    0		<b>Hail (1.00)</b>
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### VERMONT, North and Central

#### **Franklin County**

Highgate	04	1530EST 1600EST			0    0		<b>Tstm Wind/Hail</b>
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A surface and upper level low pressure system over eastern Canada Thursday, June 4th resulted in scattered afternoon and evening thunderstorms with gusty winds and small hail across many locations in Vermont. Specifically, small hail was reported in Highgate (Franklin county).

#### **Chittenden County**

Hanksville	04	1610EST			0    0		<b>Tstm Wind/Hail</b>
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A surface and upper level low pressure system over eastern Canada Thursday, June 4th resulted in scattered afternoon and evening thunderstorms with gusty winds and small hail across many locations in Vermont. Specifically, in Hanksville (Chittenden county) 1/4 inch hail was reported with wind gusts to 25 mph.

#### **Caledonia County**

Sutton	04	1630EST 1700EST			0    0		<b>Tstm Wind/Hail</b>
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A surface and upper level low pressure system over eastern Canada Thursday, June 4th resulted in scattered afternoon and evening thunderstorms with gusty winds and small hail across many locations in Vermont. Specifically, in Sutton (Caledonia county) the wind gusted up to 50 mph (43 knots) with a few power outages.

#### **Addison County**

Ripton	04	1710EST			0    0		<b>Tstm Wind/Hail</b>
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A surface and upper level low pressure system over eastern Canada Thursday, June 4th resulted in scattered afternoon and evening thunderstorms with gusty winds and small hail across a number of locations in Vermont. Specifically, in Ripton (Addison county) 1/4 inch size hail was reported.

#### **Essex County**

Bloomfield	17	1415EST 1530EST			0    0	<b>10K</b>	<b>Flash Flood</b>
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A slowly moving broad area of low pressure over the eastern Great Lakes and New York state combined with an unstable atmosphere to result in slow moving thunderstorms across portions of the area. These thunderstorms were accompanied by torrential downpours. Specifically, in the Vermont town of Bloomfield, water was reported across the road.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### VERMONT, North and Central

#### **Addison County**

<b>Hancock</b>	17	1430EST 1630EST			0    0	10K	Flash Flood
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#### **Addison County**

<b>Orwell</b>	17	1430EST 1630EST			0    0	10K	Flash Flood
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A slowly moving broad area of low pressure over the eastern Great Lakes and New York state combined with an unstable atmosphere to result in slow moving thunderstorms across portions of the area. These thunderstorms were accompanied by torrential downpours. Specifically, in the Vermont towns of Hancock and Orwell, roads were flooded.

#### **Windsor County**

<b>Reading</b>	17	1530EST 1630EST			0    0	5K	Flood
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A slowly moving broad area of low pressure over the eastern Great Lakes and New York state combined with an unstable atmosphere to result in slow moving thunderstorms across portions of the area. These thunderstorms were accompanied by torrential downpours. Specifically, in the Vermont town of Reading, roads were flooded.

#### **Orange County**

<b>Tunbridge</b>	17	1600EST 1700EST			0    0	10K	Flash Flood
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A slowly moving broad area of low pressure over the eastern Great Lakes and New York state combined with an unstable atmosphere to result in slow moving thunderstorms across portions of the area. These thunderstorms were accompanied by torrential downpours. Specifically, in the Vermont town of Tunbridge roads were flooded.

#### **Lamoille County**

<b>West Portion</b>	18	0300EST 0800EST			0    0	200K	Flash Flood
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Showers and thunderstorms moved south along the western slopes of the Green Mountains from Franklin county Vermont into western Lamoille and eastern Chittenden counties during the early morning of Thursday, June 18th. Between 2.5 and 3.5 inches of rain fell with locally higher amounts in the mountains resulting in flash flooding of brooks, streams and small rivers. In the Vermont towns of Cambridge, Pleasant Valley and Hyde Park, numerous roads were washed out. A bridge was washed out by the Seymour River in Pleasant Valley.

#### **Chittenden County**

<b>East Portion</b>	18	0430EST 0800EST			0    0	200K	Flash Flood
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Showers and thunderstorms moved south along the western slopes of the Green Mountains from Franklin county Vermont into western Lamoille and eastern Chittenden counties during the early morning of Thursday, June 18th. Between 2.5 and 3.5 inches of rain fell with locally higher amounts in the mountains resulting in flash flooding of brooks, streams and small rivers. In the Vermont towns of Jericho and Underhill, numerous roads were washed out, and a bridge was washed out in Underhill. A number of houses were also flooded.

#### **Grand Isle County**

<b>South Hero</b>	22	1700EST 1800EST			0    0	10K	Lightning
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Lightning struck and damaged a barn in South Hero, Vermont (Grand Isle county).

#### **Chittenden County**

<b>Colchester</b>	22	1800EST 1900EST			0    0	50K	Lightning
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Lightning struck and caused damage to structures in Colchester (Chittenden county) Vermont.

#### **Rutland County**

<b>Benson</b>	25	2110EST			0    0	5K	Thunderstorm Wind
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#### **Rutland County**

<b>Bomoseen</b>	25	2115EST			0    1	500K	Thunderstorm Wind
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#### **Rutland County**

<b>Castleton</b>	25	2118EST			0    0	5K	Thunderstorm Wind
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#### **Rutland County**

<b>Middletown Spgs</b>	25	2125EST			0    0	5K	Thunderstorm Wind
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An area of weak low pressure over New England and New York combined with a moist unstable airmass resulted in evening thunderstorms with strong winds and torrential downpours Thursday, June 25th. Specifically, across Rutland county Vermont, numerous trees and power lines were blown down in the towns of Benson, Bomoseen, Castleton and Middletown Springs. In addition, extensive roof damage to a structure was done by the wind with one injury resulting due to collapsing debris. There were

# Storm Data and Unusual Weather Phenomena

June 1998

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

## ADDITIONS/CORRECTIONS

### VERMONT, North and Central

many reports of frequent cloud to ground lightning.

#### **Washington County** Countywide

27	0100EST 1200EST			0	0	5M	200K	<b>Flash Flood</b>
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An area of low pressure tracked across New York and New England during the late night of Friday (June 26) and morning of Saturday (June 27). Heavy convective rains fell with 3 to 6 inches across the county. Extensive flooding occurred, especially along the Mad River. Most of the damage was concentrated in the Warren and Waitsfield areas. A number of people were without power. A state of emergency was declared with the National Guard assisting with cleanup operations.

Numerous extensive road washouts resulted with a few bridges washed out. A covered bridge in Warren was heavily damaged. Two people were rescued from trees when their mobile home washed away. Flooding also occurred in Moretown where roads and homes were flooded. There were 600 feet of railroad track undermined in and around the town of Roxbury. Elsewhere, the Winooski was high and muddy with field flooding.

Agricultural losses included damage to hay and corn crops and farm equipment.

#### **Addison County** Countywide

27	0115EST 1200EST			0	0	5M	500K	<b>Flash Flood</b>
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An area of low pressure tracked across New York and New England during the late night of Friday (June 26) and morning of Saturday (June 27). Heavy convective rains fell with 3 to 6 inches across the county. Extensive flooding occurred, especially along the New Haven and White Rivers. A number of people were without power. A state of emergency was declared with the National Guard assisting cleanup operations.

In Bristol and Lincoln extensive road washouts resulted with a number of bridges washed out. The New Haven River ripped up trees and moved trailer homes off their foundations. In Bristol up to 10 people had to be rescued with a number of evacuations. In Lincoln, the library flooded with 80 percent of the literary material damaged. In Granville and Hancock where the White River flooded...road damage was extensive.

Extensive agricultural losses included widespread damage to hay and corn crops, damage to farm equipment and 2 pigs drowned.

#### **Windsor County** North Portion

27	0220EST 1800EST			0	0	1M		<b>Flash Flood</b>
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An area of low pressure tracked across New York and New England during the late night of Friday (June 26) and morning of Saturday (June 27). Heavy convective rains fell with 3 to 6 inches across northern portions of the county. Extensive flooding occurred along the White River and its branches.

In the Vermont towns of Rochester and Bethel, extensive flooding resulted in massive road damage and washouts.

#### **Orange County** Countywide

27	0400EST 1200EST			0	0	2M		<b>Flash Flood</b>
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An area of low pressure tracked across New York and New England during the late night of Friday (June 26) and morning of Saturday (June 27). Heavy convective rains fell with 4 to 8 inches across northern portions of the county with extensive flooding. The Waits River and Ayers Brook experienced massive flooding.

Widespread flooding was reported in Randolph. In Braintree 75 percent of the town roads were damaged. In Bradford, 2 feet of water was reported across many roads with road washouts and erosion. Many homes and businesses were flooded with a state of emergency declared. Up to 1000 people were without power. The National Guard assisted with cleanup operations.

#### **Franklin County** Fairfax

29	1655EST			0	0			<b>Hail (0.75)</b>
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A warm front moved across the region during the morning of Monday, June 29th with an increasingly moist atmosphere. A cold front moved into Vermont during the late afternoon and evening of June 29th. Thunderstorms developed along and ahead of this front with locally strong winds and large hail. Specifically, in Fairfax (Franklin county) a thunderstorm resulted in 3/4 inch hail.

#### **Chittenden County** West Milton

29	1655EST			0	0	1K		<b>Thunderstorm Wind</b>
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A warm front moved across the region during the morning of Monday, June 29th with an increasingly moist atmosphere. A cold

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### VERMONT, North and Central

front moved into Vermont during the late afternoon and evening of June 29th. Thunderstorms developed along and ahead of this front with locally strong winds and large hail. Specifically, in west Milton (Chittenden county) strong winds with a thunderstorm blew down trees.

#### Lamoille County

Stowe

29	1733EST				0	0			<b>Hail (0.75)</b>
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#### Lamoille County

Stowe

29	1745EST				0	0	5K		<b>Thunderstorm Wind</b>
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A warm front moved across the region during the morning of Monday, June 29th with an increasingly moist atmosphere. A cold front moved into Vermont during the late afternoon and evening of June 29th. Thunderstorms developed along and ahead of this front with locally strong winds and large hail. Specifically, in Stowe (Lamoille county) a thunderstorm resulted in 3/4 inch hail with strong winds which blew down trees.

#### Washington County

Calais

29	1800EST				0	0	1K		<b>Thunderstorm Wind</b>
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#### Washington County

Marshfield

29	1800EST				0	0	1K		<b>Thunderstorm Wind</b>
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#### Washington County

Plainfield

29	1810EST				0	0	1K		<b>Thunderstorm Wind</b>
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A warm front moved across the region during the morning of Monday, June 29th with an increasingly moist atmosphere. A cold front moved into Vermont during the late afternoon and evening of June 29th. Thunderstorms developed along and ahead of this front with locally strong winds and large hail. Specifically, in the Vermont towns of Marshfield, Calais and Plainfield (all in Washington county) trees and wires were blown down by strong winds from thunderstorms. In addition, 1/2 inch hail was reported in Marshfield at 720 pm EDT (620 PM EST).

#### Caledonia County

Groton

29	1922EST				0	0	5K		<b>Thunderstorm Wind</b>
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A warm front moved across the region during the morning of Monday, June 29th with an increasingly moist atmosphere. A cold front moved into Vermont during the late afternoon and evening of June 29th. Thunderstorms developed along and ahead of this front with locally strong winds and large hail. Specifically, in Groton (Caledonia county) thunderstorm winds blew down trees and power lines.

#### Washington County

Marshfield

29	2030EST 2130EST				0	0	5K		<b>Flash Flood</b>
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A cold front moved into Vermont during the late afternoon and evening of Monday, June 29th. Thunderstorms developed along and ahead of this front with locally heavy rainfall. Flash flooding resulted in road washouts in Marshfield (Washington county).

#### Caledonia County

Ricker Mills

29	2030EST 2130EST				0	0	5K		<b>Flash Flood</b>
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A cold front moved into Vermont during the late afternoon and evening of Monday, June 29th. Thunderstorms developed along and ahead of this front with locally heavy rainfall. Flash flooding resulted in road washouts in and around Ricker Mills. Specifically, road washouts were reported in the Ricker Campgrounds (Caledonia county).

#### Chittenden County

Countywide

30	1205EST 1530EST				0	0	10K		<b>Flash Flood</b>
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A storm system moved across southern Canada during Tuesday, June 30, 1998. Ahead of the associated cold front, a very moist airmass was in place across Vermont. This triggered afternoon thunderstorms with locally torrential rain. Local roads were washed out in portions of Chittenden county. In particular, roads were washed out in the Vermont towns of Underhill and Westford, with road flooding in Colchester, Vermont.

#### Lamoille County

West Portion

30	1300EST 1500EST				0	0	10K		<b>Flash Flood</b>
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A storm system moved across southern Canada during Tuesday, June 30, 1998. Ahead of the associated cold front, a very moist airmass was in place across Vermont. This triggered afternoon thunderstorms with torrential rain. Local roads were washed out in portions of Lamoille county. In particular, roads were washed out in and around Cambridge, Vermont.

#### Franklin County

South Portion

30	1345EST 1500EST				0	0	10K		<b>Flash Flood</b>
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A storm system moved across southern Canada during Tuesday, June 30, 1998. Ahead of the associated cold front, a very moist airmass was in place across Vermont. This triggered afternoon thunderstorms with torrential rain. Local roads were washed out

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### VERMONT, North and Central

across southern portions of Franklin county. In particular, roads were flooded and undermined in and around Fairfax, Vermont.

#### **Washington County**

<b>East Portion</b>	30	1645EST 1900EST			0	0	10K		<b>Flash Flood</b>
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A storm system moved across southern Canada during Tuesday, June 30, 1998. Ahead of the associated cold front, a very moist airmass was in place across Vermont. This triggered afternoon thunderstorms with locally torrential rain. Fields were flooded in the area of Marshfield, Vermont and the Winooski River left its banks.

### WEST VIRGINIA, North

#### **Brooke County**

Colliers	02	1905EST			0	0			<b>Hail (0.75)</b>
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#### **Hancock County**

Weirton	02	1905EST			0	0			<b>Hail (0.75)</b>
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#### **Preston County**

1 NW Glade Farms to 3 SE Glade Farms	02	2045EST 2050EST	4	300	0	0	5M	2M	<b>Tornado (F2)</b>
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An F2 tornado passed southeast through southern Fayette County PA, the northeast tip of Preston County WV, and into northwest Garrett County MD. The total length of the tornado as it passed across these three counties was 12 miles. Damage in Preston County included a completely destroyed dairy barn, two completely destroyed house trailers, and at least 21 other structures heavily damaged, many with roofs partially or completely peeled off. Several cows were killed, with one cow thrown through the air over 100 yards. A clearly visible 300-yard wide, 1-mile long swath of trees which were completely sheared/uprooted was present near the Pennsylvania/West Virginia state border. One Fayette County official estimated at least two million dollars damage in lost timber alone in that county. Despite the damage, interviews with law enforcement officials, paramedics and local residents revealed no injuries occurred.

#### **Marion County**

Mannington	10	0610EST			0	0	2K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew two large trees down.

#### **Marion County**

Everson	10	0630EST			0	0	15K		<b>Thunderstorm Wind</b>
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Thunderstorm winds snapped/uprooted around 20 trees at the Green Hills Country Club golf course in Everson.

#### **Hancock County**

Weirton	12	2145EST			0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large trees down across the Weirton area.

#### **Ohio County**

Wheeling	13	1343EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large trees down.

#### **Marshall County**

Benwood	13	1345EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large trees down.

#### **Marshall County**

Moundsville	16	1458EST			0	0			<b>Hail (1.00)</b>
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#### **Marshall County**

Moundsville	16	1500EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees.

#### **Brooke County**

Weirton	16	1520EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large trees.

#### **Wetzel County**

Smithfield	16	1525EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds blew several large trees and power lines down.

#### **Ohio County**

Wheeling	16	1530EST			0	0	100K		<b>Thunderstorm Wind</b>
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An 80-foot long portion of a cinder block wall was blown in by thunderstorm winds. A large tree was blown onto a house, damaging the porch roof. A large plate glass window of a car dealership was blown in. A portion of a cinder block wall at Wheeling Downs Racetrack was blown over. Several roads in the Wheeling area were closed by fallen trees. Numerous fallen trees were reported throughout the city.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### WEST VIRGINIA, North

#### **Marion County**

<b>Farmington</b>	16	1538EST			0    0	10K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees and power lines. US Route 250 was closed for 45 minutes due to fallen trees on the road.

#### **Marion County**

<b>Katy</b>	16	1538EST			0    0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees and power lines.

#### **Marion County**

<b>Mannington</b>	16	1538EST			0    0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees and power lines.

#### **Marion County**

<b>Boothsville</b>	16	1540EST			0    0	15K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large trees. One tree fell onto a house, causing minor damage.

#### **Monongalia County**

<b>Brookhaven</b>	16	1540EST			0    0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees and power lines.

#### **Monongalia County**

<b>Morgantown</b>	16	1540EST			0    0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several trees and power lines.

#### **Preston County**

<b>Kingwood</b>	16	1600EST			0    0	5K	<b>Thunderstorm Wind</b>
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Several trees blown down onto SR 7 by thunderstorm winds.

#### **Preston County**

<b>Newburg</b>	16	1605EST			0    0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew down several large trees and power lines.

#### **Preston County**

<b>Cranesville</b>	16	1630EST			0    0	2K	<b>Thunderstorm Wind</b>
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Thunderstorm winds blew a large tree down.

#### **Tucker County**

<b>Parsons</b>	19	0345EST			0    0		<b>Hail (1.25)</b>
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#### **Ohio County**

<b>Elm Grove</b>	19	0535EST 0930EST			0    0		<b>Flash Flood</b>
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Thunderstorm rains forced Elm Run Creek out of its banks, with minor flooding reported on Wheeling Road.

#### **Ohio County**

<b>Triadelphia</b>	19	0535EST 0930EST			0    0		<b>Flash Flood</b>
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Thunderstorm rains forced Carters Run Creek out of its banks onto US Route 40, closing it for a few hours.

#### **Ohio County**

<b>Wheeling</b>	19	0535EST 0930EST			0    0	100K	<b>Flash Flood</b>
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Torrential thunderstorm rains forced small creeks and storm sewers to overflow. Several streets in the Wheeling area were closed due to flooding, including US Route 40. Carters Run Creek overflowed, flooding a house and causing it to collapse. No injuries were reported.

#### **Marshall County**

<b>Mt Olivet</b>	19	0540EST 0730EST			0    0		<b>Flash Flood</b>
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Thunderstorm rains produced localized flooding of small creeks.

#### **Tucker County**

<b>Countywide</b>	19	0830EST 0930EST			0    0		<b>Flash Flood</b>
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Several roads across the county were closed due to localized flooding from thunderstorm rains.



# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### WEST VIRGINIA, North

#### **Marion County**

<b>Fairmont</b>	26	1320EST			0 0	50K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew numerous trees down across the city. At Fairmont State College, downed trees fell onto homes, causing minor damage. A tree also fell onto a parked automobile. This episode was the first of several days of severe thunderstorms which brought damaging winds and torrential rains to much of east-central Ohio, western Pennsylvania and northern West Virginia during the period of June 26-30. These storms caused eight deaths and several injuries, along with millions of dollars of damage across the region. High pressure anchored over the Tennessee Valley contributed to the northward transport of a tropical airmass into eastern Ohio by the afternoon of June 26th. Explosive thunderstorm development on the afternoon of June 26th over northeast Ohio and western Pennsylvania formed a Mesoscale Convective System (MCS) by late afternoon. As this MCS propagated slowly to the southeast during the evening, it left behind a northwest-to-southeast oriented outflow boundary. This boundary remained nearly stationary for over 36 hours and served to focus waves of thunderstorms from the evening of June 26th through the early morning hours of June 28th across eastern Ohio, western Pennsylvania, and northern West Virginia. On June 29th and 30th, severe thunderstorms moving rapidly through the area from the northwest brought damaging straight-line winds of up to 85 MPH across the region. The accompanying heavy rainfall with these storms only worsened the flooding conditions across the tri-state area.							

#### **Monongalia County**

<b>Daybrook</b>	26	1322EST			0 0	2K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew several large tree limbs down.							

#### **Monongalia County**

<b>Morgantown</b>	26	1340EST			0 0	2K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew several large tree limbs down.							

#### **Marion County**

<b>Farmington</b>	26	1400EST			0 0	5K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew several large trees down.							

#### **Preston County**

<b>Terra Alta</b>	26	1400EST			0 0	5K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew several large trees down.							

#### **Marshall County**

<b>Glendale</b>	26	1900EST			0 0		<b>Hail (0.88)</b>
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#### **Marshall County**

<b>Moundsville</b>	26	1910EST			0 0	3K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew three large trees down.							

#### **Marshall County**

<b>Moundsville</b>	26	1913EST			0 0		<b>Hail (0.88)</b>
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#### **Preston County**

<b>Kingwood</b>	26	2040EST			0 0	5K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew several trees down, some onto State Route 26.							

#### **Marshall County**

<b>Moundsville</b>	26	1858EST			0 0		<b>Hail (1.00)</b>
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#### **Monongalia County**

<b>Morgantown</b>	27	0209EST			0 0	3K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew three large trees down.							

#### **Marshall County**

<b>Dallas</b>	27	1910EST			0 0	5K	<b>Thunderstorm Wind</b>
Thunderstorm winds downed several trees and power lines.							

#### **Marshall County**

<b>Rocklick</b>	27	1918EST			0 0	30K	<b>Thunderstorm Wind</b>
Thunderstorm winds blew the windows and siding off of a trailer; several trees also down.							

#### **Wetzel County**

<b>Countywide</b>	27	1945EST 2000EST			0 0	20K	<b>Thunderstorm Wind</b>
Thunderstorm winds downed numerous trees across the entire county.							

#### **Monongalia County**

<b>Countywide</b>	27	2000EST 2030EST			0 0	20K	<b>Thunderstorm Wind</b>
Thunderstorm winds downed numerous trees and power lines across the county.							

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### WEST VIRGINIA, North

#### **Wetzel County**

<b>Hundred</b>	27	2030EST 2200EST			0    0		<b>Flash Flood</b>
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Thunderstorm rains produced minor flooding and a few mudslides on US Route 250.

#### **Wetzel County**

<b>New Martinsville</b>	28 29	2100EST 0000EST			0    0		<b>Flash Flood</b>
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Thunderstorms with torrential rainfall caused several mudslides across the New Martinsville area, along with flooding on Fish Creek.

#### **Wetzel County**

<b>Jacksonburg</b>	28 29	2145EST 0000EST			0    0		<b>Flash Flood</b>
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Buffalo Run Creek rose out of its banks and onto local roads. A total of 20 families were evacuated from the area.

#### **Wetzel County**

<b>Countywide</b>	29	1200EST 1700EST			0    0		<b>Flash Flood</b>
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More thunderstorm rains forced North and South Fork Creeks out of their banks. Flooding was reported near Pine Grove along the North Fork. The Jacksonburg and Smithfield areas also reported flooding. A mudslide in Hundred caused part of a house foundation to slide down a hill.

#### **Wetzel County**

<b>Countywide</b>	30	0300EST 1100EST			0    0	10M	<b>Flash Flood</b>
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Another round of thunderstorms caused the North Fork of Fishing Creek to rise out of its banks, causing widespread basement flooding in the Pine Grove area. This was the last in a series of thunderstorm rains that moved across the county from the 27th through the 30th of June. The flash flooding associated with these storms damaged a total of 81 houses across the county, with one house completely destroyed. Flood water also washed 20 county bridges away from their supports. Many county roads were also closed due to the flood waters.

#### **Marshall County**

<b>Moundsville</b>	27	2210EST			0    0	100K	<b>Flash Flood</b>
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Basement flooding reported across Moundsville, along with some minor road flooding. Big Grave Creek rose out of its banks.

#### **Marshall County**

<b>Glendale</b>	29	0730EST 1000EST			0    0	25K	<b>Flash Flood</b>
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Runoff from thunderstorm rains produced flooding along Little Grave Creek.

#### **Marshall County**

<b>5 S Moundsville</b>	30	0100EST 1000EST			0    0		<b>Flash Flood</b>
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Thunderstorm rains forced Grave Creek out of its banks again, with minor flooding reported.

#### **Ohio County**

<b>Countywide</b>	28	1920EST 1950EST			0    0	10K	<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees and power lines across the county.

#### **Preston County**

<b>Terra Alta</b>	28 29	1936EST 0000EST			0    0		<b>Flash Flood</b>
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Thunderstorm rains produced localized flooding on area roads.

#### **Brooke County**

<b>Wellsburg</b>	28	1945EST			0    0	5K	<b>Thunderstorm Wind</b>
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Thunderstorm winds downed several trees.

#### **Monongalia County**

<b>Countywide</b>	28	2100EST 2115EST			0    0	5K	<b>Thunderstorm Wind</b>
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Several trees were downed by thunderstorm winds.

#### **Monongalia County**

<b>Morgantown</b>	28	2100EST			0    0	25K	<b>Thunderstorm Wind</b>
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Thunderstorm winds downed several trees. Minor damage was reported to several trailers and one house.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### WEST VIRGINIA, North

#### **Marion County**

Countywide	28	2115EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds downed several trees.

#### **Monongalia County**

Blacksville	28	2115EST			0 0	10K	Thunderstorm Wind
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Thunderstorm winds blew a large tree onto a moving vehicle. No injuries were reported.

#### **Preston County**

Kingwood	28	2115EST			0 0	2K	Thunderstorm Wind
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Thunderstorm winds downed a large tree.

#### **Tucker County**

Parsons	28	2155EST			0 0	3K	Thunderstorm Wind
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Thunderstorm winds downed a few trees, blocking some local roads.

#### **Brooke County**

2 NE Bethany	28	2200EST			0 0		Flash Flood
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29 0000EST  
Thunderstorm rains forced Castleman's Run out of its banks.

#### **Brooke County**

Wellsburg	28	2200EST			0 0	25K	Flash Flood
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29 0000EST  
Thunderstorm rains flooded several basements in town.

#### **Brooke County**

4 E Wellsburg	28	2200EST			0 0		Flash Flood
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29 2200EST  
Thunderstorm rains forced Pierce's Run Creek out of its banks.

#### **Ohio County**

Wheeling	28	2030EST			0 0	100K	Flash Flood
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29 0000EST  
Torrential thunderstorm rains force Wheeling Creek out its banks. Numerous reports of basement flooding were received across town, especially in the Bethany Pike, North and South Park Street areas. Ponding of water was reported throughout the streets of Wheeling.

#### **Ohio County**

Warwood	28	2135EST			0 0		Flash Flood
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29 0000EST  
Thunderstorm rains created minor flooding and a mudslide.

#### **Marion County**

Countywide	28	2200EST			0 0	5M	Flash Flood
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29 0300EST  
Torrential thunderstorm rains created widespread flash flooding across the county as numerous roads were closed. Several evacuations were required in the city of Bingamon, but the majority of problems were reported in the Mannington area. Flooding damaged 100 homes in Mannington, with around three feet of water reported in some of the city streets.

#### **Marion County**

Four States	30	0100EST			0 0		Flash Flood
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1000EST  
Another wave of thunderstorm rains forced Teverbaugh Creek of of its banks, flooding the Four States area. Basement flooding was reported, with one car flooded in its garage. Water and mud forced several roads across the area to close.

#### **Hancock County**

Chester	30	1315EST			0 0	5K	Thunderstorm Wind
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Thunderstorm winds downed several trees and power lines.

#### **Hancock County**

Weirton	30	1345EST			0 0	5K	Thunderstorm Wind (G70)
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Thunderstorm winds estimated at 80 MPH downed several large trees.

#### **Brooke County**

Bethany	30	1511EST			0 0		Flash Flood
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1900EST  
Minor flooding reported on Hukills Run.

# Storm Data and Unusual Weather Phenomena

June 1998

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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## ADDITIONS/CORRECTIONS

### WEST VIRGINIA, North

#### **Ohio County**

<b>West Liberty</b>	30	1515EST			0	0	2K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed a large tree.

#### **Ohio County**

<b>Wheeling</b>	30	1515EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed several trees.

#### **Preston County**

<b>Gladesville</b>	30	1700EST			0	0	5K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed several trees, telephone poles and power lines.

#### **Preston County**

<b>Newburg</b>	30	1700EST			0	0	10K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees across the area.

### WISCONSIN, Northeast

#### **Brown County**

<b>Suamico</b>	25	0024CST			0	0			<b>Thunderstorm Wind (G61)</b>
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# Storm Data and Unusual Weather Phenomena

July 1998

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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## ADDITIONS/CORRECTIONS

### ARKANSAS, Central and North Central

#### **Sharp County**

Cherokee Vlg	31	0500CST			0	0			<b>Lightning</b> Lightning struck the ground outside of a home, sending a chunk of the concrete driveway through the front door frame and into an interior wall.
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### COLORADO, West

#### **Montezuma County**

8 NE Dolores	16	1430MST			0	0			<b>Wild/Forest Fire</b> Lightning ignited a fire in the San Juan National Forest. Ten acres of Gambel Oak and Ponderosa Pine were burned.
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#### **Montezuma County**

Cortez	16	1435MST 1445MST			0	0			<b>Thunderstorm Wind (G50)</b> A tree was blown against a power line, knocking out power to more than 400 consumers for about 45 minutes.
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#### **Montezuma County**

8 E Cortez	18	1712MST			0	0	2K		<b>Lightning</b> Lightning struck a transformer bank resulting in a power loss to nearly 1500 consumers in the east part of Cortez for about an hour.
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#### **Montezuma County**

1 SE Cortez	19	1300MST 1305MST			0	0			<b>Thunderstorm Wind (G50)</b> Power lines were blown together which knocked out power to 580 consumers for about 1.5 hours.
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#### **Pitkin County**

4 NE Redstone to 5 N Redstone	31	1400MST 1430MST			0	0			<b>Flash Flood</b> A four foot wall of water came roaring down Avalanche Creek and washed out a section of a trail near a campground.
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#### **Montezuma County**

Towaoc	31	1658MST			0	0			<b>Lightning</b> Lightning struck a substation, knocking out power to the entire town of Cortez and Towaoc for about one-half hour.
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### DELAWARE

#### **DEZ001>004**

#### **New Castle - Kent - Inland Sussex - Delaware Beaches**

20	0900EST				0	8			<b>Excessive Heat</b>
24	1700EST								

A heat wave affected Delaware during the work week of July 20th. The hottest day for the heat wave and the summer (in central and southern Delaware) was the 22nd. There were at least eight heat related injuries throughout the state. A weak trough brought in slightly cooler air on the 23rd. A strong cold front that moved through the Delmarva Peninsula early in the day on the 24th brought in a much drier and cooler air mass for the upcoming weekend (July 25th and 26th). The highest temperatures included 100 degrees in Lewes (Sussex County), 99 degrees in Georgetown (Sussex County), 98 degrees in Bridgeville (Sussex County), 96 degrees in Dover (Kent County), 94 degrees in Odessa (New Castle County) and 92 degrees at the New Castle County Airport. For three consecutive days, customers of Delmarva Power and Light set power usage records and reached 3,053 megawatts at 6 p.m. EDT on the 22nd.

#### **New Castle County**

Wilmington	21	1750EST			0	0	0		<b>Thunderstorm Wind</b> A severe thunderstorm knocked down a few trees across New Castle County. The worst damage occurred within Wilmington where downed trees blocked at least one roadway.
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#### **DEZ001>004**

#### **New Castle - Kent - Inland Sussex - Delaware Beaches**

31	2359EST				0	0	0		<b>Unseasonably Dry</b>
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July 1998 started a run of drier than normal weather across much of Delaware. On a county weighted average, rainfall totals for the month of July were between 1.7 and 2.4 inches and averaged about half of normal. The driest conditions occurred across Sussex County. In Sussex County, only 45 percent of the normal July rainfall fell. The monthly rainfall total at the New Castle County Airport was 2.18 inches.

### IDAHO, Southwest

#### **Owyhee County**

Oreana	10	1600MST	0.2	50	0	1	30K		<b>Tornado (F0)</b> During the evening of July 10th a manufactured home was flipped over in the town of Oreana. One man inside the home was slightly injured. A NWS storm survey team determined that the damage was caused by an F0 tornado. The tornado was short lived and did no other significant damage.
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# Storm Data and Unusual Weather Phenomena

July 1998

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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## ADDITIONS/CORRECTIONS

### INDIANA, Southeast

#### **Union County**

Countywide	20	0045EST 0200EST			0 0	5K	Flood
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Heavy rainfall caused several county roads to be covered by water.

A fast moving Mesoscale Convective System with numerous bow echo segments caused wind damage early in the event. However, the thunderstorms began to repeat across the same areas causing flooding.

### MARYLAND, Northeast

#### **MDZ008-012-015-019>020 Cecil - Kent - Queen Annes - Talbot - Caroline**

	20	0900EST 1800EST			0 0		Heat Wave
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A heat wave affected the Maryland Eastern Shore during the work week of July 20th. The hottest day for the heat wave and the summer for most areas was the 22nd. A weak trough brought in slightly cooler air on the 23rd. A strong cold front that moved through the Delmarva Peninsula early in the day on the 24th brought in a much drier and cooler air mass for the upcoming weekend (July 25th and 26th). The highest temperatures included 99 degrees at the Baltimore-Washington International Airport and Salisbury and 98 degrees in Bridgeville (Delaware). The combination of the heat and high ozone concentrations caused about a 30 to 40 percent increase in cardiac and respiratory emergencies in Cecil County. For three consecutive days customers of Delmarva Power and Light set power usage records and reached 3,053 megawatts at 6 p.m. EDT on the 22nd.

#### **Cecil County**

Crystal Beach to Cecilton	30	2105EST 2120EST			0 0		Thunderstorm Wind (G50)
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A severe thunderstorm caused wind damage across southwestern areas of Cecil County from Crystal Beach to Cecilton. A few trees and numerous large limbs were knocked down. Hardest hit was Elkview Shores with moderate damage to three homes. One large tree limb crushed a trailer home. Downed limbs caused roof damage to one home in Crystal Beach. Fallen trees caused damage to one home near Cecilton. A second home near Cecilton was set on fire by a lightning strike. Choptank Electric reported about 1,100 homes lost power for several hours.

#### **MDZ008-012-015-019>020 Cecil - Kent - Queen Annes - Talbot - Caroline**

	31	2359EST			0 0 0		Unseasonably Dry
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July 1998 started a run of drier than normal weather across most of the Maryland Eastern Shore. On a county weighted average, rainfall totals for the month of July were between 1.2 and 2.4 inches and were about half of normal. The driest conditions occurred across Talbot and Caroline Counties. In Talbot County, only 30 percent of the normal July rainfall fell. The lack of rain contributed to two small brush fires along U.S. Route 50 in Easton on July 24th and 25th.

### MISSOURI, Southeast

#### **Perry County**

Perryville	04	0020CST			0 0		Thunderstorm Wind (G52)
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Trees were down in Perryville.

### NEVADA, South

#### **Clark County**

7 SE Nelson	21	1530PST			0 0	15K	Flash Flood
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Flood waters washed out two access roads in the Lake Mead National Recreation Area. Eldorado Canyon and Aztec Wash roads were closed for a few weeks while debris was removed and repairs were made.

### NEW JERSEY, South and Northwest

#### **Somerset County**

5 SE Mt Bethel	17	1920EST			0 0	0 0	Hail (0.75)
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#### **NJZ008>010-012>026 Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Eastern Monmouth - Mercer - Salem - Gloucester - Camden - Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean**

	20	0900EST 1700EST			0 0		Excessive Heat
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A heat wave affected Central and Southern New Jersey from July 20th through the 23rd. This heat wave brought the highest temperatures of the year, mainly across the central and eastern parts of the state. The hottest days of the heat wave were the 21st and 22nd. Cloudiness on the 22nd prevented temperatures from rising even higher around the local Philadelphia area as the center of the hot air mass was over the Middle Atlantic States. A weak trough brought in slightly cooler air on the 23rd. A stronger cold

# Storm Data and Unusual Weather Phenomena

July 1998

Location	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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## ADDITIONS/CORRECTIONS

### NEW JERSEY, South and Northwest

front moved through the region late in the day on the 23rd and brought in a much drier and cooler air mass through the upcoming weekend (July 25th and 26th). Although a few locations still reached 90 degrees on the 24th, humidity levels were very low and tolerable. Atlantic Electric set a new usage record on the 22nd with 2,230 megawatts/hour. The highest temperatures included 98 degrees at the Atlantic City International Airport in Pomona and Pennsauken (Camden County), 97 degrees in Manahawkin and Toms River (Ocean County), and Belle Mead (Somerset County), 96 degrees at the Marina in Atlantic City (a new record for the day) and in Mount Laurel (Burlington County), 96 degrees in New Brunswick (Middlesex County) and Morristown (Morris County), 95 degrees in Millville (Cumberland County) and Freehold and Howell (Monmouth County), 94 degrees in Wertsville (Hunterdon County) and Cape May Courthouse and Dennis Township (Cape May County), 93 degrees in Piney Hollow (Gloucester County) and 92 degrees in Trenton (Mercer County).

#### **Cumberland County**

**Bridgeton**

**23 2145EST 0 0 Thunderstorm Wind (G50)**

A severe thunderstorm pulled down numerous large limbs in and around Bridgeton.

**NJZ001-007>010-012>026**

**Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Eastern Monmouth - Mercer - Salem - Gloucester - Camden - Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean**

**31 2359EST 0 0 0 Unseasonably Dry**

July 1998 started a run of drier than normal weather across New Jersey. On a county weighted average, rainfall totals for the month of July were between 1.5 and 3.0 inches and averaged about half of normal. The driest conditions occurred across Hunterdon, Somerset and Middlesex Counties where only about 30 percent of the normal July rainfall fell. The lack of rain started to stress crops in Central New Jersey. Farmers in Central New Jersey rely more on rainfall than irrigation. The dry weather also forced Chester, Mount Olive and Parsippany in Morris County to impose some water use restrictions. The July monthly rainfall total at the Atlantic City International Airport was 1.40 inches. In nearby Pennsylvania, monthly rainfall totals were only 1.79 inches at the Philadelphia International Airport and 1.18 inches at the Lehigh Valley International Airport.

### NEW YORK, North

#### **Clinton County**

**Countywide**

**01 0650EST 1106EST 0 0 2M Flash Flood**

A storm system tracked across New England with steady rainfall. The previous month was very wet so soil conditions remained saturated. Rivers and streams rose rapidly with many exceeding flood stage. By 6:50 AM EST roads were flooded in Plattsburgh, NY. The Salmon River was flooding by 8:28 AM EST with extensive flooding in Schuyler Falls, NY. Numerous roads were washed out by mid morning in Peru, NY with the Little AuSable River flooding. The Great Chazy River was flooding in places by late morning with many road washouts in Altona, NY. The Saranac River was bankful or out of its banks in places through the morning.

#### **Essex County**

**Countywide**

**01 0830EST 1106EST 0 0 1M Flash Flood**

A storm system tracked across New England with steady rainfall. The previous month was very wet so soil conditions remained saturated. Rivers and streams rose rapidly with many exceeding flood stage. By 8:30 AM EST roads were flooded with numerous washouts in and around Lake Placid, NY. The AuSable River was flooding along portions with road washouts reported.

#### **Franklin County**

**Countywide**

**01 0900EST 1206EST 0 0 500K Flash Flood**

A storm system tracked across New England with steady rainfall. The previous month was very wet so soil conditions remained saturated. Rivers and streams rose rapidly with many at or exceeding flood stage. By 9:00 AM EST roads were flooded in and around the Malone, NY area with road erosion and washouts reported.

#### **Clinton County**

**East Portion**

**01 1106EST 02 0650EST 0 0 500K Flood**

Steady rains during the day resulted in rivers remaining high or flooding into the early morning hours of July 2nd. In particular flooding resulted in road closures and washouts with the towns of Peru, Altona and Schuyler Falls particularly hard hit. The Great Chazy, Little AuSable and Saranac Rivers specifically were in flood stage into the evening before gradually receding. However, the Great Chazy remained in flood until early on July 2nd including the Perry Mills area.

#### **Essex County**

**Countywide**

**01 1106EST 1800EST 0 0 100K Flood**

Earlier steady rains resulted in saturated soil conditions. Rivers and streams remained very high with some flooding along stretches





# Storm Data and Unusual Weather Phenomena

July 1998

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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## ADDITIONS/CORRECTIONS

### NEW YORK, North

New York.

### NORTH CAROLINA, South Coastal

#### **Columbus County**

10 N Whiteville

24 1700EST

0

0

250K

**Lightning**

Severe lightning caused cooling system failure at a Coastal Farms Number 1, a feeder pig operation resulting in the death of hundreds of hogs.

### OHIO, East

#### **Coshocton County**

Countywide

01

0000EST

0

0

**Flood**

14 0800EST

#### **Guernsey County**

Countywide

01

0000EST

0

0

**Flood**

07 0800EST

#### **Noble County**

Countywide

01

0000EST

0

0

**Flood**

14 0800EST

#### **Tuscarawas County**

Countywide

01

0000EST

0

0

**Flood**

03 0800EST

Continued flooding from heavy severe thunderstorm rains in late June continued across parts of east central Ohio. Countywide average rainfalls in East Central Ohio from 7 am EDT June 26th to 7 am EDT June 29th ranged from 2.5 to 6 inches. Point rainfall amounts included, the Cambridge Cooperative Observer report of 9.71 inches from June 26th-29th and 7.76 inches at Derwent in the headwaters of the Wills Creek. Record flooding occurred on Wills Creek at Cambridge, Ohio.

Flooding was also reported on the Tuscarawas River at Uhrichsville, Ohio and on the Muskingum River at Coshocton, Ohio. The Tuscarawas River at Uhrichsville went above flood stage (FS 5 ft) at 1 pm EDT June 28th, crested at 11.10 feet at 9 am EDT June 30th, and went below flood stage at 8 am EDT July 3rd. The Muskingum River at Coshocton rose above flood stage (FS 13 ft) at 5 am EDT June 28th, crested at 15.05 feet at 11 am EDT July 1st and went below flood stage at 7 pm EDT July 5th.

Several roads remained closed well into July in low-lying and flood control areas. Flood waters were especially slow to recede in the Seneca Lake area in Guernsey and Noble counties and near the Mohawk Dam in Coshocton County.

### **OHZ058**

#### **Guernsey**

01 0000EST

0

0

**Flood**

04 1400EST

Over two days of heavy thunderstorm rains in late June across east central Ohio led to record flooding on the Wills Creek at Cambridge, Ohio. The Cambridge Cooperative Observer recorded 9.71 inches of rain from June 26th-29th. Also, 7.76 inches of rain fell in Derwent in the headwaters of Wills Creek.

Wills Creek went above its 15 foot flood stage at 7 am EDT June 28th and crested at 26.92 feet at 6 pm EDT June 29th. This was nearly 2.5 feet above the previous record of 25.41 feet in August 1980. The stage fell below flood stage at 3 pm EDT July 4th.

#### **Muskingum County**

2 SW Hopewell

19 2115EST

0

0

2K

**Thunderstorm Wind**

A few trees were downed by thunderstorm winds.

#### **Coshocton County**

Warsaw

19 2120EST

0

0

2K

**Thunderstorm Wind**

A few trees were downed by thunderstorm winds.

#### **Coshocton County**

Warsaw

19 2120EST

0

0

2K

**Lightning**

Lightning sparked a transformer fire in Warsaw.

#### **Tuscarawas County**

Strasburg

19 2155EST

0

0

3K

**Thunderstorm Wind**

Several trees were downed by thunderstorm winds.

#### **Columbiana**

#### **County**

Salem

21 2100EST

0

0

1K

**Thunderstorm Wind**

Thunderstorm winds downed 2 trees.

# Storm Data and Unusual Weather Phenomena

July 1998

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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## ADDITIONS/CORRECTIONS

### OHIO, East

#### **Columbiana County**

Homeworth	21	2300EST			0    0	10K	Lightning
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Lightning struck a house and sparked a fire in the roof.

#### **Tuscarawas County**

Stone Creek	21	2330EST			0    0	2K	Thunderstorm Wind
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A few trees were downed, including a tree and large branches onto a county road.

#### **Coshocton County**

Coshocton	21	2330EST			0    0	1K	Thunderstorm Wind
-----------	----	---------	--	--	--------	----	-------------------

A tree was downed onto a county road.

#### **Columbiana County**

1 S Columbiana	22	0020EST			0    0	1K	Thunderstorm Wind
----------------	----	---------	--	--	--------	----	-------------------

A large tree and some branches were downed by thunderstorm winds.

#### **Tuscarawas County**

Yorktown	22	0023EST			0    0	2K	Thunderstorm Wind
----------	----	---------	--	--	--------	----	-------------------

Thunderstorm winds downed trees in Gilmore and Yorktown.

#### **Harrison County**

Countywide	22	0025EST 0040EST			0    0	6K	Thunderstorm Wind
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Numerous trees were downed throughout the county, especially in Tippecanoe, Deersville and between Hopedale and Hurford.

#### **Tuscarawas County**

Dover	22	2305EST			0    0	4K	Thunderstorm Wind
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Several trees were downed by thunderstorm winds.

#### **Carroll County**

Malvern	22	2325EST			0    0	4K	Thunderstorm Wind
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Several trees were downed by thunderstorm winds.

#### **Columbiana County**

Salem	22	2330EST			0    0	3K	Thunderstorm Wind
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#### **Columbiana County**

Lisbon	22	2340EST			0    0	3K	Thunderstorm Wind
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Several trees were downed by thunderstorm winds in Salem and Lisbon.

### OHIO, Southwest

#### **Mercer County**

Neptune	04	0310EST 0315EST			0    0	3K	Thunderstorm Wind (G50)
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Trees downed.

### PENNSYLVANIA, East

#### **Montgomery County**

Glenside	17	1415EST			0    0	0    0	Hail (0.75)
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#### **PAZ067>071**

**Chester - Montgomery - Bucks - Delaware - Philadelphia**

20	0900EST				11    75		Excessive Heat
23	1700EST						

M88PH, ??OT, F1OT, M79OT, F51OT, M77OT, F61PH, F84OT, M46OT, M50OT, F76OT

#### **PAZ061**

**Lehigh**

21	0900EST				0    0		Hot Weather
22	1700EST						

A heat wave affected Southeast Pennsylvania from July 20th through the 23rd. Eleven persons died (Eight in Philadelphia and three in Montgomery County.) from the heat. They were usually discovered in homes with closed windows and inadequate ventilation. A 21-month-old Philadelphia baby was inadvertently left in a car overnight and died the next day. When the child was discovered in the car that next day, her body temperature had risen to 109 degrees. There were at least around 75 dispatches for heat related

# Storm Data and Unusual Weather Phenomena

July 1998

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

## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, East

emergencies within the city of Philadelphia. Two firefighters also suffered heat exhaustion after fighting a blaze the afternoon of the 20th. The city of Allentown also issued a hot weather advisory for the 21st and 22nd. While no new energy usage records were set, PECO Energy reported energy usage was 20 percent above normal for July. The hottest days of the heat wave were the 21st and 22nd. Cloudiness on the 22nd prevented temperatures from rising even higher as the center of the hot air mass was over the Middle Atlantic States. A weak trough brought in slightly cooler air on the 23rd. A stronger cold front moved through the region late in the day on the 23rd and brought in a much drier and cooler air mass through the upcoming weekend (July 25th and 26th). The highest temperatures included 95 degrees at the Franklin Institute within Philadelphia, 94 degrees in Crum Creek (Delaware County) and at the Philadelphia International Airport and 93 degrees in Neshaminy Falls (Bucks County) and the Northeast Philadelphia Airport.

**PAZ054>055-  
060>062-067>071**

### **Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia**

31	2359EST				0	0	0		<b>Unseasonably Dry</b>
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July 1998 started a run of drier than normal weather across Southeastern Pennsylvania. On a county weighted average, rainfall totals for the month of July were between 1.7 and 2.8 inches and averaged about half of normal. The driest conditions occurred across Bucks and Lehigh Counties. In Lehigh County, only 40 percent of the normal July rainfall fell. Monthly precipitation totals included 1.79 at the Philadelphia International Airport and 1.18 inches at the Lehigh Valley International Airport. The lack of rain started to stress the corn and hay crops across Southeast Pennsylvania.

### PENNSYLVANIA, West

#### **Westmoreland County**

Greensburg	21	1445EST			0	0	35K		<b>Thunderstorm Wind</b>
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Numerous trees and power lines were downed, especially in the cities Underwood section and along Maple Avenue. A car was damaged by a fallen tree on Maple Avenue. Some homes were damaged by falling trees and large limbs. Power outages affected 9000 residents.

#### **Mercer County 5 N Sharon**

21	2015EST			0	0			<b>Thunderstorm Wind (G52)</b>
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#### **Mercer County Greenville**

21	2020EST			0	0	6K		<b>Thunderstorm Wind (G52)</b>
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Numerous trees and power lines were downed by thunderstorm winds. Wind gusts were estimated up to 60 mph.

#### **Venango County Franklin**

21	2034EST			0	0	2K		<b>Thunderstorm Wind (G52)</b>
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Thunderstorm winds downed large branches and power lines.

#### **Lawrence County Countywide**

21	2050EST 2110EST			0	0	30K		<b>Thunderstorm Wind</b>
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Thunderstorm winds downed numerous trees and power lines throughout the county. The northern part of the county and the northern part of New Castle were particularly hard hit.

#### **Clarion County Countywide**

21	2055EST 2110EST			0	0	5K		<b>Thunderstorm Wind</b>
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Numerous trees were downed throughout the county.

#### **Butler County Slippery Rock**

21	2110EST			0	0	1K		<b>Thunderstorm Wind</b>
----	---------	--	--	---	---	----	--	--------------------------

Thunderstorm winds downed a tree onto Route 108.

#### **Butler County Countywide**

21	2110EST 2115EST			0	0	10K		<b>Thunderstorm Wind</b>
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Numerous trees and large branches were downed by thunderstorm winds across the northern part of the county.

#### **Butler County 1 N Zelienople**

21	2120EST			0	0	1K	0	<b>Thunderstorm Wind</b>
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Thunderstorm winds downed a tree just north of Zelienople.

#### **Armstrong County Countywide**

21	2125EST 2135EST			0	0	6K		<b>Thunderstorm Wind</b>
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Numerous trees were downed, mainly across the northern part of the county. Trees were down onto a road, just north of Kittanning.

# Storm Data and Unusual Weather Phenomena

July 1998

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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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Beaver County**

1 E North Sewickley	21	2130EST			0 0	4K	Thunderstorm Wind
Several trees were downed in Lillyville, just east of North Sewickley.							

#### **Beaver County**

New Brighton	21	2130EST			0 0	2K	Thunderstorm Wind
Power lines were downed by thunderstorm winds.							

#### **Beaver County**

Ohioville	21	2130EST			0 0	3K	Thunderstorm Wind
A few trees were downed by thunderstorm winds, onto Fairview, Brady's Run and Park roads.							

#### **Jefferson County**

Sigel	21	2133EST			0 0	3K	Thunderstorm Wind
Several trees were downed by thunderstorm winds.							

#### **Jefferson County**

Summerville	21	2133EST			0 0	4K	Thunderstorm Wind
Several trees and some lines were downed by thunderstorm winds.							

#### **Jefferson County**

Hazen	21	2139EST			0 0	4K	Thunderstorm Wind
Several trees and wires were downed by thunderstorm winds.							

#### **Forest County**

2 E Tionesta	21	2140EST			0 0	3K	Thunderstorm Wind
Several trees were downed by thunderstorm winds.							

#### **Forest County**

Gultonville	21	2140EST			0 0	3K	Thunderstorm Wind
Several trees were downed by thunderstorm winds.							

#### **Butler County**

Mars	21	2140EST			0 0	2K	Thunderstorm Wind
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#### **Butler County**

Sarver	21	2145EST			0 0	2K	Thunderstorm Wind
Thunderstorm winds downed several trees in and near Mars and Sarver.							

#### **Westmoreland**

##### **County**

Weinel Xrds	21	2210EST			0 0	1K	Thunderstorm Wind
A few trees were downed by thunderstorm winds at Weinel Crossroads.							

#### **Indiana County**

Countywide	21	2210EST 2220EST			0 0	6K	Thunderstorm Wind
Several trees were downed, mainly in the northern half of the county. West Mahoning and North Mahoning Townships were particularly hard hit.							

#### **Allegheny County**

Harmerville	21	2215EST			0 0	3K	Thunderstorm Wind
Power lines and large branches were downed by thunderstorm winds.							

#### **Westmoreland**

##### **County**

Avonmore	21	2300EST			0 0	3K	Thunderstorm Wind
Large branches and wires were downed by thunderstorm winds.							

#### **Mercer County**

Sharon	22	0005EST			0 0	2K	Thunderstorm Wind
A few trees were downed by thunderstorm winds.							

#### **Washington County**

Mc Murray	22	2025EST			0 0	10K	Lightning
Lightning struck a house and sparked a fire in Peters Township.							

#### **Mercer County**

2 E Sharon	23	0000EST			0 0		Thunderstorm Wind (G52)
A wind gust to 60 mph was reported in Hermitage.							

# Storm Data and Unusual Weather Phenomena

July 1998

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## ADDITIONS/CORRECTIONS

### PENNSYLVANIA, West

#### **Lawrence County**

Countywide	23	0020EST 0030EST			0    0	8K	Thunderstorm Wind
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Thunderstorm winds downed numerous trees throughout the county. Parkstown to East Moravia, including the west side of New Castle was particularly hard hit.

#### **Butler County**

Slippery Rock	23	0025EST			0    0	4K	Thunderstorm Wind
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Thunderstorm winds downed power lines and sparked pole fires.

#### **Venango County**

Polk	23	0030EST			0    0	4K	Thunderstorm Wind
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#### **Venango County**

Seneca	23	0040EST			0    0	4K	Thunderstorm Wind
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Thunderstorm winds downed numerous trees and wires in Polk and Seneca.

#### **Clarion County**

New Bethlehem	23	0115EST			0    0		Thunderstorm Wind (G52)
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#### **Washington County**

Stockdale	30	1237EST			0    0	2K	Thunderstorm Wind
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Thunderstorm winds downed a few trees.

### SOUTH CAROLINA, North Coastal

#### **Horry County**

Conway	24	1645EST 1724EST			0    0	75K	Lightning
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Lightning struck the county 911 center, causing damage to electronics. Also, a lightning-caused fire caused heavy damage to a manufactured home on Old Railroad Road.

### TENNESSEE, West

#### **Carroll County**

Mc Kenzie	23	2100CST 2105CST			0    0	10K	Thunderstorm Wind
-----------	----	--------------------	--	--	--------	-----	-------------------

Several large trees were knocked down. One large tree fell on a house.

#### **Lauderdale County**

Ripley	28	0610CST 0615CST			0    0	25K	Lightning
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A building housing a pharmacy, hair salon and child abuse center was destroyed by a fire started by lightning.

#### **Weakley County**

Martin to Gleason	30	1930CST 1935CST			0    0	10K	Thunderstorm Wind
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Several trees and a utility pole were blown down in Martin. Some tree limbs were also blown down between Martin and Gleason.

#### **Henderson County**

Juno	30	2030CST 2035CST			0    0	15K	Thunderstorm Wind
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Some buildings were damaged. A few trees were knocked down.

#### **Tipton County**

Brighton	31	0230CST 0235CST			0    0	1K	Thunderstorm Wind
----------	----	--------------------	--	--	--------	----	-------------------

A couple of cars were damaged by fallen trees.

### VERMONT, North and Central

#### **Chittenden County**

Countywide	01	0730EST 1220EST			0    0	1M	Flash Flood
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A storm system tracked across New England with steady rainfall. The previous month was very wet so soil conditions remained saturated. Many rivers and streams rose rapidly with some exceeding flood stage. By 0730 AM EST water was beginning to bubble up through manholes in the City of Burlington, and flooding of roads was a big problem through the morning in the City of Burlington. Widespread flooding of roads was reported in the Vermont towns of Underhill, Jericho and Williston.

# Storm Data and Unusual Weather Phenomena

July 1998

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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## ADDITIONS/CORRECTIONS

### VERMONT, North and Central

#### **Addison County**

Countywide	01	0900EST 1220EST			0 0	1M	Flash Flood
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A storm system tracked across New England with steady rainfall. The previous month was very wet so soil conditions remained saturated. Rivers and streams rose rapidly with many exceeding flood stage, especially the New Haven River. By 9 AM EST some roads in the Ripton, Vermont area were under water and were washed out by late morning. In the towns of Lincoln and Bristol a number of residents were evacuated due to the flood waters.

#### **Grand Isle County**

South Hero	01	1000EST 1300EST			0 0	50K	Flood
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Heavy rain during the morning resulted in road flooding in South Hero, Vermont. In addition, a few homes were flooded.

#### **Addison County**

Countywide	01	1220EST 1900EST			0 0	1M	Flood
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A storm system tracked across New England with continued periods of rainfall. With saturated soil conditions rivers and streams remained at or above flood stage. Areas along the New Haven River continued to flood, especially in Bristol. A number of roads were washed out in the county. Portions of Rte 12A were flooded in and around East Granville. Local sources of drinking water became contaminated.

#### **Chittenden County**

Countywide	01	1220EST 1900EST			0 0	1M	Flood
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A storm system tracked across New England with periods of rain continuing. Soil conditions remained saturated with streams and rivers at or above flood stage. Many basements of houses were flooded, especially in Shelburne. Storm sewers were flooding in many localities. By afternoon, portions of train tracks in both Burlington and Shelburne suffered extensive damage with erosion of the track bed and actual washouts in places. Some roads remained closed through the afternoon, such as Rte 7 in Colchester, Vt with other roads flooded in Burlington. Some local sources of drinking water became contaminated and several beaches were closed due to pollution from the flood waters.

#### **Washington County**

East Portion	01	1300EST 2300EST			0 0	10K	Flood
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A storm system tracked across New England with periods of steady rainfall. Soil conditions were saturated and many rivers were running high and muddy. The Winooski River was in and out of its banks from time to time during the afternoon and early night of July 1st, especially from the Marshfield to Plainfield areas.

#### **Chittenden County**

Jericho	09	1825EST			0 0		Tstm Wind/Hail
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A thunderstorm moved across the area with a wind gust to 42 mph (36 knots) along with pea size hail in Jericho, Vermont.

#### **Essex County**

Concord to Lunenburg	16	1730EST 1745EST			0 0	15K	Thunderstorm Wind
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A warm and moist airmass was in place across Vermont ahead of a cold front. Late afternoon and evening thunderstorms developed with locally torrential rainfall. Strong winds associated with these thunderstorms resulted in numerous downed tree limbs with power outages between the Vermont towns of Concord and Lunenburg.

#### **Chittenden County**

Hinesburg	16	2015EST 2145EST			0 0	15K	Flash Flood
-----------	----	--------------------	--	--	-----	-----	-------------

A warm and moist unstable airmass was in place across Vermont ahead of a cold front. Thunderstorms developed during the late afternoon and early night hours with locally torrential rainfall. Several roads were washed out in the Vermont town of Hinesburg.

#### **Chittenden County**

Richmond	17	1715EST			0 0		Tstm Wind/Hail
----------	----	---------	--	--	-----	--	----------------

Thunderstorms developed in a warm and moist airmass across Vermont as a cold front moved across the area during the afternoon and evening. A thunderstorm in Richmond, Vermont caused pea sized hail and torrential rainfall.

#### **Chittenden County**

Bolton	17	1730EST 1850EST			0 0	20K	Flash Flood
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#### **Chittenden County**

Hinesburg	17	1730EST 1850EST			0 0	20K	Flash Flood
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# Storm Data and Unusual Weather Phenomena

July 1998

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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## ADDITIONS/CORRECTIONS

### VERMONT, North and Central

A cold front moving across the area triggered afternoon and evening thunderstorms with torrential downpours. Roads were washed out in the towns of Hinesburg and Bolton.

#### **Caledonia County**

##### **Walden**

17	1820EST				0	0			<b>Hail (1.25)</b>
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A warm and moist airmass was in place across Vermont as a cold front moved across the area during the afternoon and evening. Thunderstorms associated with the front resulted in locally large hail and torrential rainfall with half dollar size hail in Walden, Vermont (Caledonia county).

#### **Orleans County**

##### **North Troy to Newport**

17	1930EST				0	0	5K		<b>Hail (1.75)</b>
----	---------	--	--	--	---	---	----	--	--------------------

A warm and moist airmass was in place across Vermont as a cold front moved across the area during the afternoon and evening. Thunderstorms associated with the front resulted in locally large hail and torrential rainfall. In Orleans county between the towns of North Troy and Newport golf ball size hail was reported.

#### **Orleans County**

##### **Newport**

17	1935EST				0	0	10K		<b>Thunderstorm Wind</b>
----	---------	--	--	--	---	---	-----	--	--------------------------

A warm and moist airmass was in place across Vermont as a cold front moved across the area during the afternoon and evening. Thunderstorms associated with the front resulted in locally large hail, strong winds and torrential rainfall. In Newport, Vermont (Orleans county) strong winds blew down numerous trees with power outages reported.

#### **Lamoille County**

##### **Eden**

20	1400EST				0	0			<b>Tstm Wind/Hail</b>
----	---------	--	--	--	---	---	--	--	-----------------------

Pea size hail was reported in Eden, Vermont associated with a thunderstorm.

#### **Essex County**

##### **Lunenburg**

20	1405EST				0	0	5K		<b>Thunderstorm Wind</b>
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A complex area of low pressure and a cold front moved across Vermont with thunderstorms resulting in locally strong winds and torrential rainfall. Strong winds associated with thunderstorms resulted in numerous trees and power lines blown down in Lunenburg, Vermont along with pea sized hail.

#### **Washington County**

##### **Plainfield**

20	1500EST				0	0	5K		<b>Thunderstorm Wind</b>
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A complex area of low pressure and a cold front moved across Vermont with thunderstorms resulting in locally strong winds and torrential rainfall. Strong winds associated with thunderstorms resulted in numerous trees blown down in Plainfield, Vermont. In addition, pea size hail was reported in Plainfield at 3 PM EST and in Marshfield at 305 PM EST.

#### **Windsor County**

##### **Norwich**

20	1510EST				0	0			<b>Tstm Wind/Hail</b>
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Pea size hail was reported in Norwich, Vermont associated with a thunderstorm.

#### **Caledonia County**

##### **Danville**

20	1520EST				0	0			<b>Tstm Wind/Hail</b>
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Pea size hail was reported in Danville, Vermont associated with thunderstorms.

#### **Franklin County**

##### **St Albans**

23	1725EST				0	0	10K		<b>Thunderstorm Wind (G52)</b>
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A cold front which moved across the area triggered afternoon and evening thunderstorms with locally strong winds and small hail. In St Albans, Vermont thunderstorm winds blew down some trees with winds reported as 60 mph or greater (52 knots or greater) along with pea size hail.

#### **Caledonia County**

##### **West Burke**

23	1900EST				0	0	5K		<b>Thunderstorm Wind</b>
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A cold front which moved across the area triggered afternoon and evening thunderstorms with locally strong winds. In West Burke, Vermont (Caledonia county) thunderstorm winds blew down trees.

#### **Chittenden County**

##### **Burlington**

29	0251EST				0	0	90K		<b>Thunderstorm Wind (G60)</b>
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A cold front moved across Vermont during the early morning hours of July 29th. Thunderstorms developed along and ahead of the front with strong winds and heavy rainfall. In Burlington, Vermont (Chittenden county), winds gusted to 69 mph (60 knots) with trees and power lines blown down, and shingles blown off homes. Windows were also damaged. In addition, in the adjoining locality of South Burlington, Vermont a tree was blown down on a house causing structural damage.

## Reference Notes:

### Fatality Location Abbreviations:

<b>BF</b>	<b>Ball Field</b>	<b>MH</b>	<b>Mobile Home</b>
<b>BO</b>	<b>Boating</b>	<b>OT</b>	<b>Other</b>
<b>BU</b>	<b>Business</b>	<b>OU</b>	<b>Outside/Open Areas</b>
<b>CA</b>	<b>Camping</b>	<b>PH</b>	<b>Permanent Home</b>
<b>EQ</b>	<b>Heavy Equipment/Construction</b>	<b>SC</b>	<b>School</b>
<b>GF</b>	<b>Golfing</b>	<b>TE</b>	<b>Telephone</b>
<b>IW</b>	<b>In Water</b>	<b>UT</b>	<b>Under Tree</b>
<b>LS</b>	<b>Long Span Roof</b>	<b>VE</b>	<b>Vehicle</b>

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*



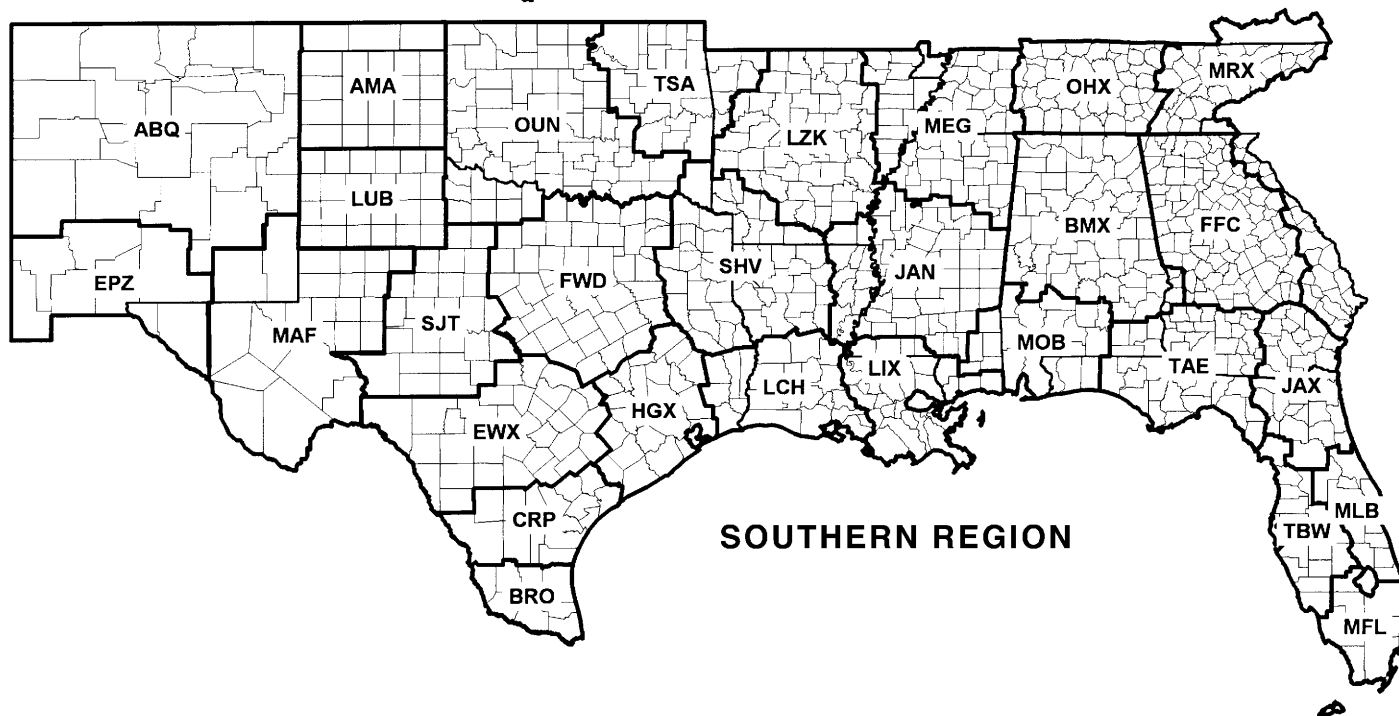
From J. Atmos. Sci., August 1981, p. 1517-1519



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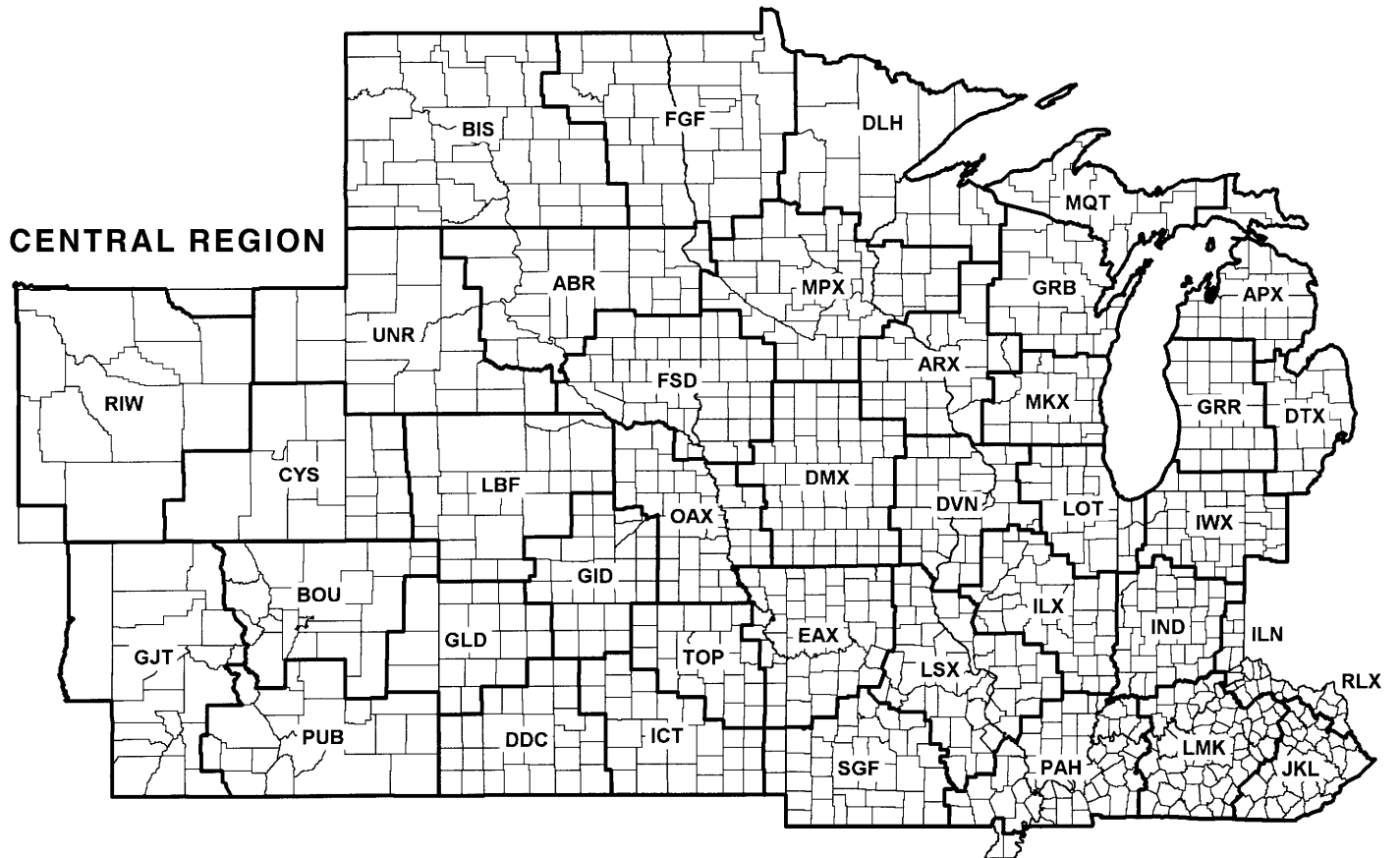
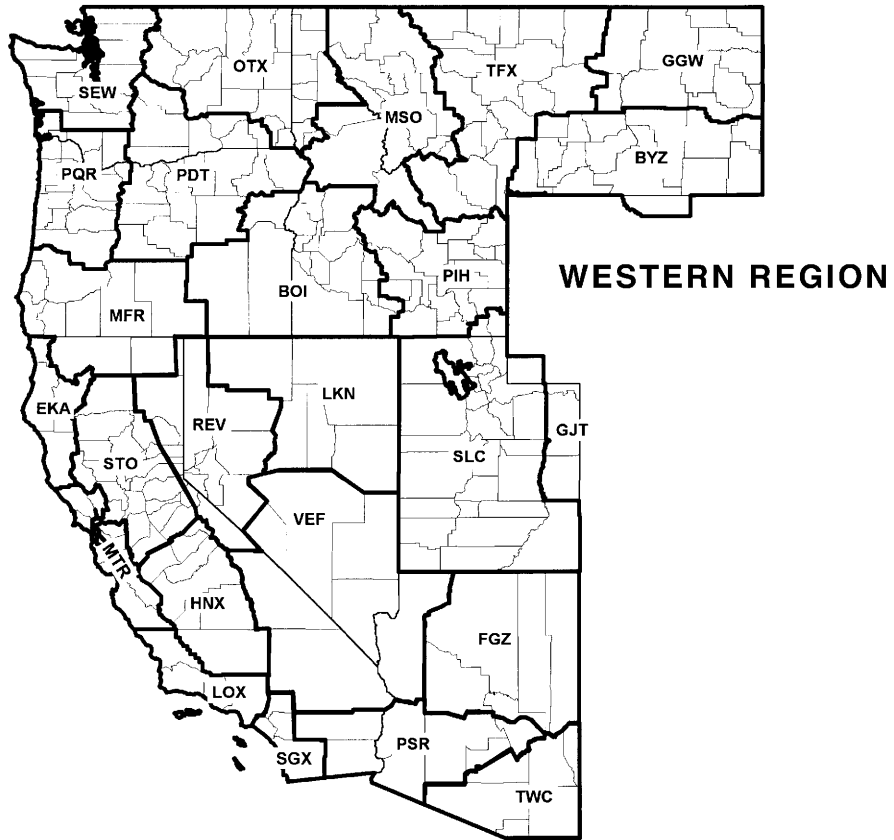


**EASTERN REGION**

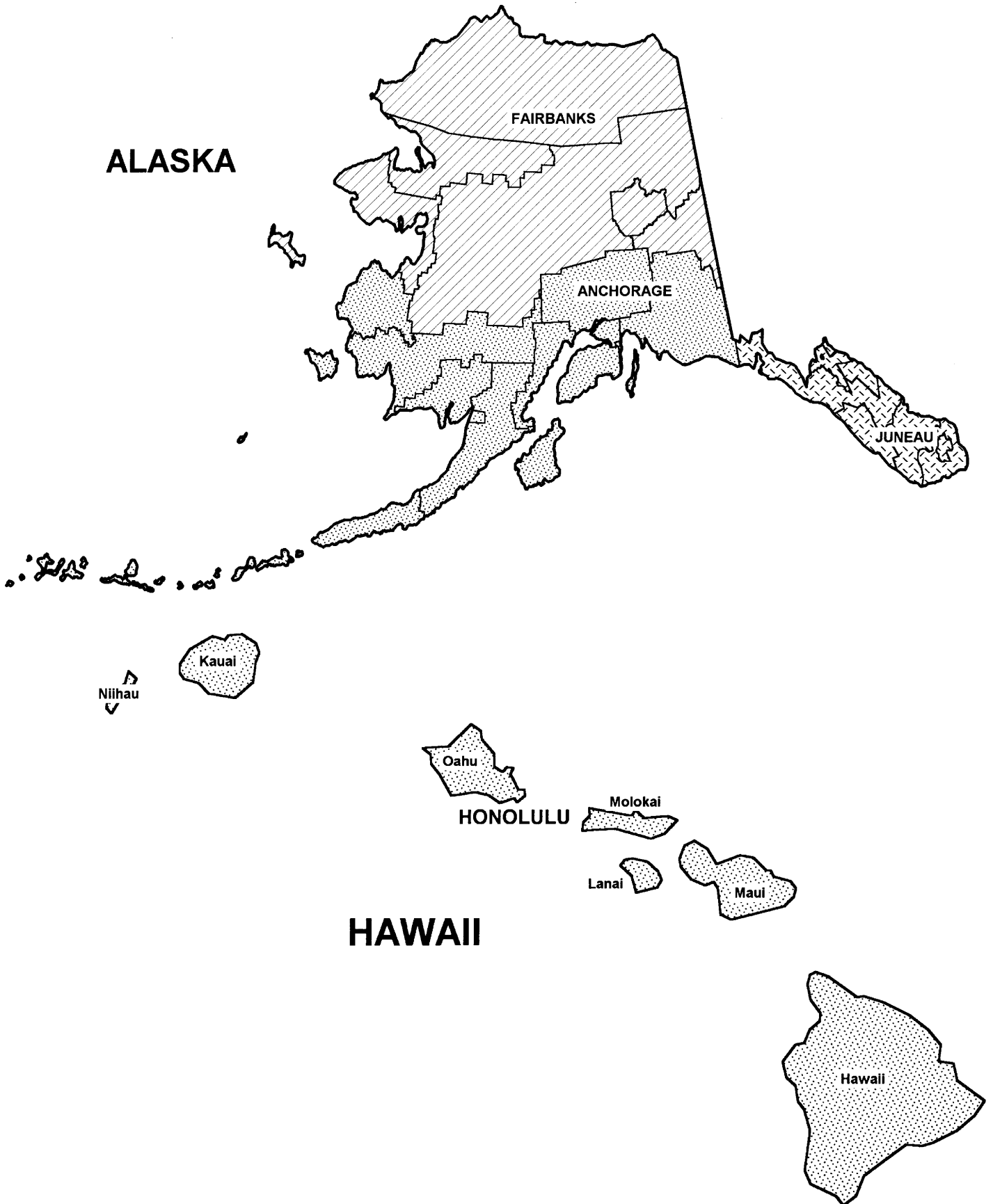


**SOUTHERN REGION**

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# MODERNIZED COUNTY WARNING AREAS



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