

MARCH 1999  
VOLUME 41  
NUMBER 3

# STORM DATA



AND UNUSUAL WEATHER PHENOMENA  
WITH LATE REPORTS AND CORRECTIONS



**noaa** NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE  
DATA, AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER  
ASHEVILLE, N.C.

**Cover:** A storm chaser takes pictures of this tornado near Hodges, Texas on May 13, 1989. The tornado was extensively photographed during its 12-minute lifespan as numerous weather chasers converged on the location. (*Photograph courtesy of Tim Marshall, Dallas, TX*)  
Inset: Picture of the same tornado at a greater distance. (*Photograph courtesy of David Hoadley, Falls Church, VA*)

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### STORM DATA

(ISSN 0039-1972)

National Climatic Data Center  
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**STORM DATA** is prepared, funded, and distributed by the National Oceanic and Atmospheric Administration (NOAA). The Outstanding Storms of the Month section is prepared by the Data Operations Branch of the National Climatic Data Center.

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:

Storm Data  
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.

"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."

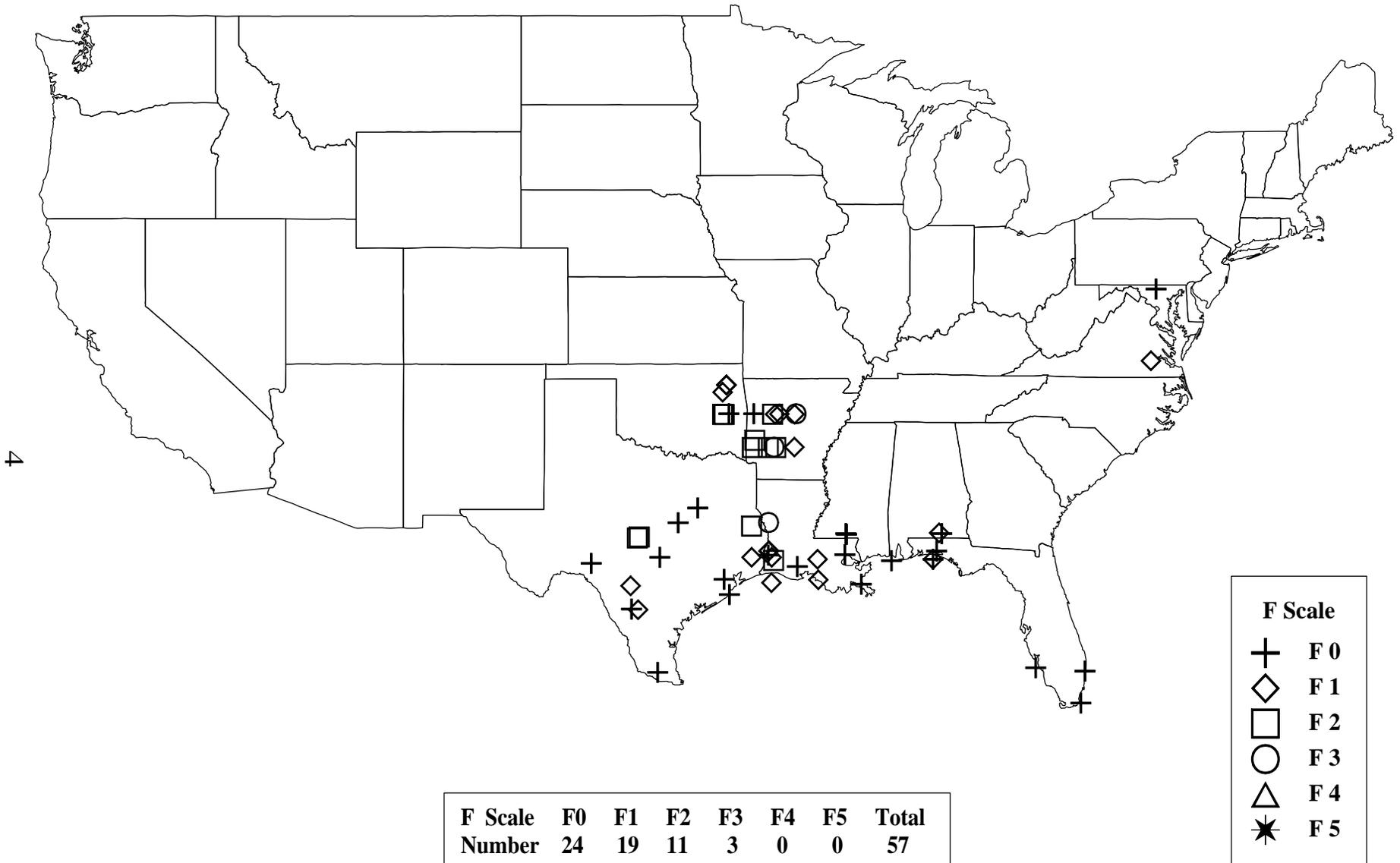


Thomas R. Karl  
Director,  
National Climatic Data Center

The Cyclone Track Map which usually appears on this page is not available for March 1999.

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

# March 1999 Confirmed Tornadoes



## OUTSTANDING STORMS OF THE MONTH

### 1. MARCH ROARED IN LIKE A “LION” IN ARKANSAS.

On March 5th several tornadoes touched down in central Arkansas. Eleven tornadoes swept across western Arkansas during the afternoon and evening hours, causing damage in 8 counties. Most of the tornadoes were rated F1 to F2, with two F3 tornadoes (wind speed 158 to 206 mph) touching down in Pike County, Clark County and also in Van Buren County. Tree destruction was extensive with \$2 million in damage in Clark County. Structural damage was also quite widespread which included chicken houses and mobile homes. There were no reports of fatalities attributed to these storms.



**Above Left:** A house 1 mile southeast of Alpine (Clark County) on Highway 8 is destroyed by a fallen tree.

**Above Right:** A mobile home is destroyed on County Road 6 (Van Buren County).

**Below Left:** Numerous trees snapped 2 miles southeast of Newhope (Pike County).

**Below Right:** A chicken house located 3 to 4 miles southwest of Clarksville on Highway 64 (Johnson County) loses the entire tin roof. Almost 10,000 chickens were destroyed.

*(Photographs courtesy of John Lewis, Meteorologist, NWS, Little Rock, AR)*



# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>ALABAMA, North Central</b>									
<b>Lowndes County</b>									
6 SW Hayneville	03	0111CST			0	0	15K	0	Thunderstorm Wind (G55)
Trees and power lines were knocked down and a few outbuildings were destroyed in the Beechwood Community off CR 21.									
<b>Montgomery County</b>									
Montgomery	03	0111CST			0	0	0	0	Thunderstorm Wind (G64)
Maxwell Air Force Base recorded a wind gust of 74 miles an hour.									
<b>Randolph County</b>									
Omaha	03	0205CST			0	0	5K	0	Thunderstorm Wind (G55)
Wind blew the roof off a barn and also off a chicken house in the Omaha Community.									
<b>Randolph County</b>									
4 S Graham	03	0204CST 0207CST			0	0	25K	0	Thunderstorm Wind (G65)
A house under construction was damaged on CR 455 just north of Sewell. The home had all its windows broken out, the front porch torn off, damage to the siding, and roof damage. A barn on the property was totally destroyed. Just north of the Bethel East Baptist Church on CR 87, a mobile home was pushed off its foundation, several trees were blown down, and one barn destroyed and one heavily damaged.									
<b>Barbour County</b>									
10 W Eufaula	03	0323CST			0	0	0	0	Hail (0.75)
Dime sized hail reported between Clayton and Eufaula.									
<b>Dallas County</b>									
Orrville to Selma	03	0012CST 0020CST			0	0	60K	0	Thunderstorm Wind (G70)
Several trees were reported down between Orrville and Selma. One home in Selma was badly damaged when a tree fell on it. Damage was most concentrated in Orrville where numerous mobile homes were severely damaged or destroyed. The mobile homes were located on CR 95, CR 14, and CR 56. Numerous trees were also knocked down around Orrville.									
<b>Sumter County</b>									
Gainesville	02	2000CST			0	0	0	0	Hail (0.75)
Dime sized hail reported in Gainesville.									
<b>Macon County</b>									
Notasulga	03	0150CST			0	0	2K	0	Thunderstorm Wind (G55)
A grocery store sustained minor damage when its front awning was torn off by wind gusts. Several trees were knocked down around the county.									
<b>Tallapoosa County</b>									
Jacksons Gap	03	0135CST			0	0	10K	0	Thunderstorm Wind (G55)
Several trees were knocked down by wind gusts in Jacksons Gap.									
<b>Chambers County</b>									
Countywide	03	0154CST 0220CST			0	0	65K	0	Thunderstorm Wind (G60)
Numerous trees and power lines were knocked down sporadically in locations across the entire county. Trees were reported down on US 431, SR 77, and CR 147. One mobile home was overturned in Lanett. In Huguley, a few homes and storage buildings were damaged by falling trees and one mobile home was overturned.									
<b>Russell County</b>									
Crawford	03	0230CST			0	0	15K	0	Thunderstorm Wind (G55)
Several trees were blown down, one roof was torn off a home, and a front porch was destroyed in Crawford.									
<b>Franklin County</b>									
Russellville	06	0055CST			0	0	5K	0	Hail (1.00)
Dime to quarter sized hail was reported in Russellville.									
<b>Barbour County</b>									
Blue Spgs	13	2150CST			0	0	5K	0	Thunderstorm Wind (G55)
Numerous trees were knocked down around Blue Springs.									
<b>Montgomery County</b>									
Montgomery	03	0107CST 0115CST			0	0	12K	0	Thunderstorm Wind (G55)
Several trees were knocked down, and a tin roof was blown off one house in Montgomery.									
<b>Autauga County</b>									
12 WNW Autaugaville to 2 SE Marbury	03	0035CST 0110CST			0	2	150K	0	Thunderstorm Wind (G75)
One of two thunderstorms that moved diagonally across Autauga County caused trees to be knocked down from the southwest									



# Storm Data and Unusual Weather Phenomena

March 1999

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

## ALABAMA, Southwest

The tornado touched down several times along its 9 mile path. The most significant structural damage occurred off Highway 331 where four chicken facilities suffered major damage. 400 chickens were killed, a porch was torn off a house, tin was ripped off several out buildings and numerous trees were blown down. An eyewitness said he saw a funnel about 100 feet off the ground after one of his chicken houses was destroyed. A gas station in the same area had its roof blown off. Along County Road 77, just south of County Road 70, several houses suffered roof damage with shingles blown off. A couple of out buildings were blown away and numerous trees were blown down. A church building nearby also suffered damage.

### **Covington County**

<b>Babbie</b>	<b>13</b>	<b>2057CST 2059CST</b>			<b>0</b>	<b>0</b>	<b>5K</b>	<b>Thunderstorm Wind (G58)</b>
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Trees were blown down near the intersection of the railroad tracks and County Road 77.

### **Mobile County**

<b>Mobile</b>	<b>13</b>	<b>1905CST 1930CST</b>			<b>0</b>	<b>0</b>	<b>60K</b>	<b>Thunderstorm Wind (G70)</b>
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A severe thunderstorm moved across the central part of Mobile county from the west to the east. High winds blew down several trees and a trailer was moved off of its foundation in the vicinity of Virginia and Owens Streets. The roof was blown off a cleaners on Florida Street. The city dog pound near Orange Street also suffered some wind damage. A wind gust of 60 mph was reported just west of the Mobile airport.

### **Baldwin County**

<b>Stockton</b>	<b>13</b>	<b>1920CST 1921CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>	<b>Thunderstorm Wind (G58)</b>
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Trees and power lines were blown down, blocking Highway 21, in the front of the Stockton Post Office.

### **Conecuh County**

<b>Paul</b>	<b>13</b>	<b>2145CST 2150CST</b>			<b>0</b>	<b>0</b>	<b>15K</b>	<b>Thunderstorm Wind (G60)</b>
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Several trees were blown down in the community by straight line winds.

### **Washington County**

<b>Fruitdale</b>	<b>20</b>	<b>1835CST 1840CST</b>			<b>0</b>	<b>0</b>		<b>Hail (1.00)</b>
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Dime to quarter size hail was reported in the community.

### **Mobile County**

<b>Mobile</b>	<b>08 09</b>	<b>1900CST 0600CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>	<b>Coastal Flooding</b>
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Persistent southeast winds of 15 to 25 mph caused higher than normal tides along Dauphin Island. The high tides eroded some of the dunes being refurbished on the west end of the island that was devastated by Hurricane Georges in September of 1998. The above normal tides caused several streets along the west end of the Island to be closed for several hours. The tides got to 2.33 feet at the Alabama State Docks, 2.0 feet at Bayou La Batre and 1.8 feet at Dauphin Island.

### **Baldwin County**

<b>Ft Morgan to Orange Beach</b>	<b>13 14</b>	<b>1200CST 0200CST</b>			<b>0</b>	<b>0</b>	<b>5K</b>	<b>Coastal Flooding</b>
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### **Mobile County**

<b>Dauphin Is</b>	<b>13 14</b>	<b>1200CST 0200CST</b>			<b>0</b>	<b>0</b>	<b>5K</b>	<b>Coastal Flooding</b>
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Southeast winds of 20 to 30 mph ahead of a cold front again caused above normal tides across the coastal areas. The west end of Dauphin Island had to close several streets due to high water from above normal tides. The eastbound lanes on the Causeway across mobile Bay were closed for several hours because of high water. The highway (193) leading to the Dauphin Island Bridge had water blowing across it and debris was in the road. Water was also reported over some streets that run along the Gulf of Mexico in Orange Beach and Gulf Shores. Some of the tide readings were Dauphin Island 2.5 feet, Alabama State Docks 3.56 feet, Bayou La Batre 3.6 feet and Point Cadet 4.2 feet.

### **Baldwin County**

<b>Elsanor to Seminole</b>	<b>09</b>	<b>0510CST 0520CST</b>			<b>0</b>	<b>1</b>	<b>70K</b>	<b>Thunderstorm Wind (G70)</b>
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High winds destroyed an older mobile home along County Road 87. Five people were in the home. One person suffered minor injuries when the home was ripped apart. The roof and three sides of the trailer were ripped off. Other minor damage with trees down and sheds blown over covered a broad area along County Road 87. A few trees were also blown over and mobile homes damaged in Seminole as the storm moved east. No one was injured in Seminole but two mobile homes had major damage. Wind speeds were estimated to be around 80 mph.

### **Baldwin County**

<b>Gulf Shrs</b>	<b>09</b>	<b>0555CST 0557CST</b>			<b>0</b>	<b>0</b>	<b>50K</b>	<b>Thunderstorm Wind (G60)</b>
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High winds flipped seven trailers and damaged nine others at Gulf State Park in Gulf Shores. Most of the trailers were owned by people "wintering" over at the state park. No one was injured

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>ALABAMA, Southwest</u></b>									
<b>Wilcox County</b>									
Pine Hill	03	0045CST 0047CST			0	0			Hail (0.75)
Dime size hail was reported near Pine Hill.									
<b>Butler County</b>									
Mc Kenzie	03	0145CST 0147CST			0	0	10K		Thunderstorm Wind (G50)
High winds caused minor damage to some homes and businesses near McKenzie. There were also a few trees blown down in the area. No one was injured.									
<b>Baldwin County</b>									
Perdido	09	0240CST 0241CST			0	0			Hail (1.00)
Quarter size hail was reported near Perdido.									
<b>Escambia County</b>									
Flomaton	09	0255CST 0258CST			0	0	10K		Thunderstorm Wind (G50)
High winds blew trees and power lines down near Flomaton. A shed was also damaged.									
<b>Mobile County</b>									
Central Portion	13	1900CST 2100CST			0	0	5K		Flash Flood
Slow moving thunderstorms dumped three to five inches of rain across the central parts of Mobile county. Many streets from I-65 at Airport east to downtown Mobile were flooded. Several streets had to be closed for a couple of hours due to the high water.									
<b>Washington County</b>									
Millry to Frankville	13	1900CST 2100CST			0	0	3K		Flash Flood
Slow moving thunderstorms dumped three to five inches of rain across the north parts of Washington county. The heavy rains caused several roads to flood between Millry and Frankville. Several of the streets were closed for a couple of hours because of the high water. Some of the dirt roads that run off of County Road 34 east of Millry were washed out by the rain and had to be repaired.									
<b>Baldwin County</b>									
7 NE Seminole	13	2110CST 2112CST			0	0	3K		Thunderstorm Wind (G50)
Several trees were blown down along State Highway 112 just west of the Perdido River.									
<b>Baldwin County</b>									
Loxley	13	2100CST			0	0			Lightning
Lightning hit the broadcast tower of WPMI-TV (Channel 15) in Loxley and knocked their broadcast off the air for several hours.									
<b>Baldwin County</b>									
Loxley	09	0300CST 0305CST			0	0			Lightning
Lightning struck a radio transmission tower in Loxley. The tower housed three different stations and knocked them all off for two days. Someone at the tower reported that they had sixteen lightning hits in just a few minutes.									
<b>Escambia County</b>									
Central Portion	13	2030CST 2130CST			0	0	3K		Flash Flood
Several slow moving thunderstorms tracked across the central portions of the county for a couple of hours. Two to four inches of rainfall were reported across the area. Several roads around the Brewton area had standing water in them. Some of the roads were impassable for about an hour. The water drained after the thunderstorms moved east of the area.									
<b>Baldwin County</b>									
Robertsdale	09	0415CST 0416CST			0	0			Hail (0.75)
Dime size hail was reported in Robertsdale.									
<b><u>ALASKA, Northern</u></b>									
<b>AKZ002 North Slopes Of Brooks Range</b>									
	07	1300AST			0	0			High Wind (G52)
	08	0300AST							
A cold front moved south across the Brooks Range the afternoon of the 7th bringing gusty north winds to Atigun Pass. State of Alaska Department of Transportation camp at Chandalar Shelf just south of the Pass reported gusts to 60 mph, and estimated there were gusts to 70 mph right in the pass.									

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ALASKA, Northern

**AKZ003**

**Lower Kobuk Valley-Northern Seward Peninsula**

11	1900AST			0	0		<b>Extreme Windchill</b>
12	1500AST						

A large low in the Gulf of Alaska produced northwest winds over the area with an existing cold airmass, creating low wind chill values. Lowest readings were:

Buckland -72, Deering -77, Selawik -71, Kotzebue -71.

**AKZ009**

**St. Lawrence Island-Bering Strait Coast**

14	0000AST			0	0		<b>Blizzard</b>
	0400AST						

The remains of a weakening weather system over southwest Alaska moved north over Norton Sound and the Seward Peninsula, causing local blizzard conditions at Tin City on the Bering Strait Coast (conditions were not as severe over Saint Lawrence Island).

**AKZ007**

**Tanana Valley**

18	1745AST			0	0		<b>High Wind (G48)</b>
	1900AST						

A strong storm moved northeast along the Alaska Peninsula causing south winds to briefly become very strong through the western Alaska Range. Winds at Healy were sustained 25 mph with gusts to 55 mph during the period.

**AKZ001**

**Arctic Slope Coastal**

23	1600AST			0	0		<b>Blizzard</b>
25	1600AST						

With strong high pressure covering the Arctic Ocean, and a moderate pressure gradient across the coast...a small low center moved west along the western Brooks Range, resulting in blizzard conditions at Point Lay, Wainwright (one hour only) and Barrow (afternoon and evening of the 24th).

**AKZ004**

**Koyukuk-Upper Kobuk Valleys**

26	0100AST			0	0		<b>High Wind (G56)</b>
	2200AST						

**AKZ003>004**

**Lower Kobuk Valley-Northern Seward Peninsula - Koyukuk-Upper Kobuk Valleys**

26	1400AST			0	0		<b>Extreme Windchill</b>
29	1100AST						

Under a moderate pressure gradient across the northern half of northern Alaska, cold air at low levels moved south from the Arctic ocean across the Brooks Range.

For Zone 4, The Upper Noatak BLM Remote Automated Weather Station (RAWS) reported a maximum wind sustained at 44 mph, gusts 56 mph. Wind Chills there reached -84. The State of Alaska Department of Transportation camp at Chandalar shelf reported gusts to 61 mph Friday morning. Wind Chills at Anaktuvuk Pass reached 82 below. Over far northern Zone 3, Wind Chills at Point Hope reached 76 below.

**AKZ003**

**Lower Kobuk Valley-Northern Seward Peninsula**

26	1400AST			0	0		<b>Blizzard</b>
27	2355AST						

With an existing strong northeast pressure gradient across the zone, a disturbance aloft moved south over the area creating blizzard conditions at Kotzebue for four hours the evening of the 26th, and for longer at Kivalina.

## ALASKA, Southeast

NOT RECEIVED.

## ALASKA, Southern

**AKZ020**

**Aleutian Islands**

01	0000AST			0	0		<b>High Wind (G60)</b>
	2200AST						

Strong southeast winds preceded a vigorous front as it elongated east across the Aleutians. By Monday, winds had diminished in advance of the front...however gusts to 69 mph were still reported around Adak.

**AKZ017**

**Central Gulf Coast**

03	0300AST			0	0		<b>High Wind (G43)</b>
	1100AST						

Wind gusts reached 50 mph at Whittier, as cold air moved northeastward across the area from the Whittier Glacier, just southwest of town.

**AKZ020**

**Aleutian Islands**

03	0000AST			0	0		<b>High Wind (G75)</b>
	1800AST						

A strong front approached the extreme western Aleutians as the day began Wednesday. The front elongated rapidly northwest into the Kamchatka Peninsula and weakened by evening. Strong southeast wind gusts reached 86 mph, as reported by a ship just west of Attu (at the tip of the Aleutian chain) in the early morning.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ALASKA, Southern

**AKZ020>021**

**Aleutian Islands - Pribilof Islands**

<b>04</b>	1200AST			0	0		<b>High Wind (G70)</b>
<b>06</b>	0600AST						

A moderate front, lying northwest-southeast through the eastern Aleutians, moved slowly north through the area Friday and Saturday. The front was preceded by brisk southeast winds. Gusts reached 52 mph across the Pribilofs. Adjusted ASOS gusts at Adak, in the central Aleutians, peaked at 81 mph from the southeast between 7pm and 8 pm Thursday and reached 75 mph between noon and 3pm Friday. Prefrontal gusts reached a reported 78 mph at Dutch Harbor Friday afternoon.

**AKZ011-019>021**

**Kuskokwim Delta - Western Alaska Peninsula - Aleutian Islands - Pribilof Islands**

<b>05</b>	2300AST			0	0		<b>High Wind (G80)</b>
<b>08</b>	0600AST						

A strong front moved northeast through the western Aleutians late Saturday afternoon. The front began to weaken Sunday as it moved further away from the parent low (in the southwest Bering Sea). Strong, southeast, prefrontal winds began to diminish as the front weakened. Wind gusts reached 92 mph in the western and central Aleutians just prior to frontal passage, as reported on both land and sea. Prefrontal gusts of 52 mph were recorded across the Pribilofs. At Cold Bay, ASOS adjusted wind gusts reached 70 mph as the front approached late Friday and early Saturday.

**AKZ017>021**

**Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula - Western Alaska Peninsula - Aleutian Islands - Pribilof Islands**

<b>09</b>	0000AST			0	0		<b>High Wind (G84)</b>
<b>12</b>	2100AST						

**AKZ018**

**Kodiak Island-Eastern Alaska Peninsula**

<b>10</b>	0000AST			0	0		<b>Heavy Snow</b>
	2359AST						

**AKZ011>012-016**

**Kuskokwim Delta - Kuskokwim Valley - Bristol Bay Coastal**

<b>10</b>	1800AST			0	0		<b>Extreme Windchill</b>
<b>12</b>	2200AST						

An intense 968 mb low moved into the central Aleutians as the day began Tuesday. Cold arctic air was in place across the entire mainland. The low was located just south of Adak at 9am Tuesday, continuing on an easterly path to just southeast of Kodiak Island late Wednesday. The low pulled cold arctic air southward in its wake, producing wind chills ranging from 40 to locally 70 below zero.

Strong winds were reported just north and west of the center across the Aleutians Tuesday, gusting upwards of 60 mph. These strong winds followed the low northeastward, diminishing in all but the northwest quadrant of the center by Wednesday. Adjusted ASOS wind gusts on the back side of the low reached 97 mph at Chignik, on the northwest quadrant of the low, just after 3am Friday.

Wind gusts ahead of the low reached 59 mph just south of Prince William Sound Wednesday.

Kodiak recorded 8.4 inches of snow on the 10th, breaking an old record for the day.

**AKZ013>014-017**

**Susitna Valley - Copper River Basin - Central Gulf Coast**

<b>05</b>	0000AST			0	0		<b>High Wind (G61)</b>
<b>07</b>	2300AST						

Moderate low pressure in the northern Gulf of Alaska caused brisk north to northwest winds in many areas. Adjusted ASOS wind gusts reached:

48 mph at Gulkana airport in the Copper River Basin between 3pm and 4pm Saturday.

63 mph at the Palmer airport in the Matanuska Valley Friday morning between 6am and 9am and as high as 67 mph early Saturday morning between 2am and 3am.

70 mph at the Valdez City site between 9am and 3pm Friday.

46 mph at the Whittier Boat Harbor several times Friday morning through Saturday morning. On Sunday glacier induced

gusts around Whittier reached 58 mph accompanied by wind chills of 25 below.

**AKZ015>016-018>021**

**Cook Inlet - Bristol Bay Coastal - Kodiak Island-Eastern Alaska Peninsula - Western Alaska Peninsula - Aleutian Islands - Pribilof Islands**

<b>12</b>	0000AST			0	0		<b>High Wind (G71)</b>
<b>13</b>	2300AST						

**AKZ011**

**Kuskokwim Delta**

<b>13</b>	0600AST			0	0		<b>Extreme Windchill</b>
	2300AST						

An intense storm deepened to 960mbs and curved into the Komandorskiye Islands of Russia Friday afternoon. The storm then turned eastward and raked the Aleutians with strong westerly winds Saturday. The front associated with the storm, elongated east northeast through the Aleutians and extreme southern Bering weakening along a line from just south of Saint Matthew Island to Cape Newenham to near Port Heiden Saturday afternoon.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ALASKA, Southern

Initially, very strong southeast winds preceded the front across the Aleutians and extreme southwest Bering Sea...however as the front elongated out of the storm...winds in advance of the front were less and less potent. Adjusted AWOS/ASOS prefrontal winds reached 56 mph at Adak Friday, 66 mph at Saint George Island Friday evening, 65 mph at Cold Bay Saturday morning and 81 mph at Cape Newenham (where winds are accelerated by terrain). Further east, prefrontal wind gusts of 40 mph were reported around Kodiak Island. Adjusted ASOS wind gusts of 62 mph were reported at the Portage Visitor Center, just east of Turnagain Arm, and 51mph along the Upper Anchorage Hillside at the Rabbit Creek RAWS.

Very strong winds were recorded along the south and west quadrants of the low, with gusts hitting 82 mph at Adak Sunday between 6pm and 7pm.

In addition to the strong winds, wind chills close to 60 below zero were calculated at several stations along the Kuskokwim Delta and extreme southwest corner of the Kuskokwim Valley. Heavy snows were reported in the vicinity of the front all the way from the Aleutians and Pribilofs into portions of Southcentral Alaska. Winds combined with snow and blowing snow to produce blizzards across the Aleutians, Alaska Peninsula and local areas of Cook Inlet around Turnagain Arm.

**AKZ015**

**Cook Inlet**

<b>12</b>	<b>1500AST</b>	<b>0</b>	<b>0</b>	<b>Avalanche</b>
	<b>1700AST</b>			

An avalanche was reported at the Alyeska ski resort at 2:30 pm Friday afternoon. A cornice near the mountain top gave way and sent snow cascading into Prospector chute and into an area adjacent to the high speed chair lift. Two individuals were partially buried, but promptly rescued.

**AKZ015-017**

**Cook Inlet - Central Gulf Coast**

<b>10</b>	<b>1200AST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>12</b>	<b>1200AST</b>			

Prolonged snowfall left areas around Girdwood and Seward, and along the Seward Highway area between the two cities, with 1 to locally 4 feet of snow. Snow piled up quickly in areas around Turnagain Arm. Valdez, and the immediate area into Thompson Pass, recorded 12 - 16 inches of new snow from Wednesday to Thursday morning.

**AKZ015**

**Cook Inlet**

<b>13</b>	<b>1700AST</b>	<b>0</b>	<b>0</b>	<b>Blizzard</b>
	<b>2300AST</b>			

**AKZ015-017**

**Cook Inlet - Central Gulf Coast**

<b>14</b>	<b>1200AST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>16</b>	<b>1200AST</b>			

A moderate front moved steadily into the area from southwest Alaska, producing heavy snows along much of the Seward Highway from the town of Seward through Turnagain Arm. Additionally, gusty southeast winds and snow caused blizzard conditions near Portage from 5pm to 11pm Saturday.

Sunday afternoon, a frontal low moved northward through Resurrection Bay with a 978mb center. The low continued north northwest into the Susitna Valley where it finally began to dissipate Monday. Another low in Bristol Bay early Monday, continued eastward to just south of Resurrection Bay Monday afternoon...continuing snowfall across many areas. This center was associated with much colder air aloft, which contributed to heavy snow showers...rather than the continuous snow of the prior day. Snow continued into Tuesday.

Snowfall during the 36 hour period from Sunday through Monday morning was between 2 and 3 feet around both Seward and Homer. Another 4-6 inches was reported in Seward from Monday morning to Tuesday morning. In Whittier and Cordova, snowfall from late Saturday through Monday ranged from 2 1/2 to in excess of 3 feet.

Around the Anchorage hillside, snowfall from Monday morning to Tuesday morning was reported from 12 to nearly 17 inches, with another 4-6 inches falling from Tuesday morning to Wednesday morning. Another Upper Hillside site recorded a total of 2 feet from late Sunday through Wednesday morning. Totals around lower elevations of Anchorage ranged from 8-13 inches from late Sunday through Tuesday.

Sunday and Monday a total of 20 inches of snow was recorded at the Alyeska Ski Resort Base, however reports around Girdwood recorded only 2 inches as rain mixed in with the snow.

**AKZ011>012-015>018-020>021**

**Kuskokwim Delta - Kuskokwim Valley - Cook Inlet - Bristol Bay Coastal - Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula - Aleutian Islands - Pribilof Islands**

<b>16</b>	<b>1800AST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G100)</b>
<b>19</b>	<b>1500AST</b>			

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ALASKA, Southern

<b>AKZ019&gt;021</b>	<b>Western Alaska Peninsula - Aleutian Islands - Pribilof Islands</b>								
	<b>17</b>	<b>0000AST</b>			<b>0</b>	<b>0</b>			<b>Blizzard</b>
	<b>18</b>	<b>2300AST</b>							
<b>AKZ017</b>	<b>Central Gulf Coast</b>								
	<b>18</b>	<b>0600AST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>19</b>	<b>0700AST</b>							
<b>AKZ021</b>	<b>Pribilof Islands</b>								
	<b>18</b>	<b>1300AST</b>			<b>5</b>	<b>0</b>			<b>Ice Storm</b>
		<b>1532AST</b>							
	M24BO, M49IW, M45BO, M39BO, M0BO								
<b>AKZ017</b>	<b>Central Gulf Coast</b>								
	<b>19</b>	<b>0000AST</b>			<b>0</b>	<b>0</b>			<b>Avalanche</b>
		<b>0700AST</b>							

An extremely intense storm moved up toward the extreme Western Aleutians late Tuesday continuing to just south of Adak as a 946mb center 9pm Wednesday. The low began an eastward turn while starting to very slowly weaken during the next 24 hours...moving to 180 miles south of Cold Bay as a 959mb center at 9 pm Thursday. Thereafter, the low weakened more rapidly, locating about 240 miles south southeast of Kodiak as a 975 mb center at 9pm Friday.

Very strong west and northwest winds were reported on the back side of the low throughout the period, primarily affecting the central and Western Aleutians and the Pribilofs. The F/V Lin-J, a 96 foot crabber, capsized with 5 persons on board Thursday afternoon (1 body found, others presumed dead). Extremely strong southeasterly winds preceded the front, which moved northeastward through the central Aleutians Thursday morning, weakening in a large arc through Kuskokwim Bay to Turnagain Arm into the northeast coast of the Gulf of Alaska at 9am Friday.

Initially, winds in advance of the front reached 80 to over 100 mph across the Aleutians, the Pribilofs and the Alaska Peninsula late Tuesday and Wednesday...causing blizzard conditions in snow and blowing snow across most areas. Blizzard conditions and winds 60 to 75 mph were also reported along the back side of the low across the central and western Aleutians, mostly west of Dutch Harbor, and the Pribilofs.

Further east, wind gusts, channelled by terrain, reached an ASOS adjusted 97 mph at the Portage Visitor Center between 9pm and 11pm Thursday and 81 mph (ASOS adjusted) at Middleton Island early Friday morning as the front approached. Winds at the Cordova Small boat harbor recorded a very strong 115 mph wind gust on Thursday (local conditions) as the front approached.

Significant winds also made it into higher terrain of the Kuskokwim Valley...where AWOS adjusted gusts reached 52 mph at Sparrevohn AFB.

Following are some of the peak winds observed:

Place	Date	Time	Wind (mph)	Remarks
Aleutians (zone 20)				
Adak	3/17	7am - 9am	East southeast 63	Fropa 10:15 am/wind diminished
	3/18	9am & 1pm	Northwest 68	
Shemya	3/17	6am - 9pm	North northeast 104	Strongest wind report
Dutch Harbor	3/17	7pm-8pm	East southeast 82	Blizzard noon - 7:30pm
Pribilofs (zone 21)				
Saint Paul	3/17-18	7pm-1am	East gust 70	Blizzard/gusts finally below 40 mph Friday morning. Boat sinking/5 deaths.
Saint George	3/17	10pm-11pm	East northeast 81	Blizzard
Alaska Peninsula (zone 19)				
Cold Bay	3/17	10pm-11pm	East southeast 81	Winds channelled by terrain
Bristol Bay (zone 16) & Kuskokwim Delta (zone 11)				
Cape Newenham	3/18	12:30am	East southeast 58	
Kuskokwim Valley (zone 12)				
Sparrevohn AFB	3/18	noon	East 45	1500+ feet above sea level
Kodiak Island (zone 18)				
Kodiak	3/18	3pm-4pm	East southeast 58	

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ALASKA, Southern

Cook Inlet (zone 15)									
Portage	3/18	9pm-11pm	East southeast	97			Glacier induced/channelled wind		
Central Gulf Coast (zone 17)									
Middleton Island	3/19	4am-5am	East	81					

Snowfall in advance of the front from Thursday morning through Friday morning reportedly ranged from 8-20 inches at the Silvertip highway camp at milepost 57 of the Seward Highway. Snowfall around Seward was reported from 12-14 inches. Homer received another 8-10 inches of snow during the 24 hour period from Thursday morning to Friday morning. Heavy snow was also reported around Whittier Friday afternoon, with 29 inches of snow received during the prior 24 hours (total of 11 feet on the ground).

An avalanche was reported at mile 37 of the Seward Highway at 5:30pm...resulting in nearly 18 feet of snow on the Seward Highway. Workers managed to clear a single lane by 11am Friday. By 3:30 pm the whole highway was reopened. Additionally, the Department of Highways closed off the Sterling Highway until around noon Friday due to avalanche risk.

## AKZ019>020

### Western Alaska Peninsula - Aleutian Islands

13	1200AST	0	0	High Wind (G74)					
14	2100AST								

Cold air, associated with a vigorous eastward moving low in the southern Bering Sea, produced intense snow squalls. These squalls produced gusty west winds at Adak, reaching 85 mph at 4:58 on the 13th... and 67 mph between 3:30 and 4am on the 14th. At Cold Bay, strong winds developed later, with gusts reaching 61 mph from the southwest between 5:20pm and 6:00 pm Sunday.

## AKZ017

### Central Gulf Coast

26	0000AST	0	0	2K	Avalanche				
	2359AST								

Two avalanches were reported in the Anchorage Daily News Friday...both occurring on the railroad route from Anchorage to Grandview (a popular late winter/spring cross country ski area). Power was out for an hour and a half, as the blast of air from one of the avalanches caused transmission wires to slap together near Canyon Creek, tripping breakers at substations in Anchorage and near Cooper Landing.

## AKZ011-016-019>021

### Kuskokwim Delta - Bristol Bay Coastal - Western Alaska Peninsula - Aleutian Islands - Pribilof Islands

20	1800AST	0	0	25K	High Wind (G106)				
23	0900AST								

An intensifying storm in the northwest Pacific moved quickly northeast across Shemya between 7am and 8 am Sunday. At this remote, western Aleutian ex-air force station, now relegated to 'caretaker' status...winds responded just as in any hurricane...diminishing rapidly to less than 20 mph for an hour or two...then reversing direction and increasing again. The center moved into the southern Bering Sea to a position less than 60 miles south of Saint George Island (Pribilofs) Monday at 9am as a 959mb center. The low then began to curve slightly south of due east...moving to about 30 miles southwest of Cold Bay as a 977mb center just before 3pm Tuesday. The front associated with the storm moved into the central Aleutians at 3am Sunday, elongating east and more slowly north...to a position extending from just north of Saint Matthew Island, across the southern tip of Kodiak Island, into the northeast Pacific Sunday afternoon. By Monday evening, the original low had weakened to a 987mb center near Cold Bay and was no longer producing significant weather.

Strong southeast winds initially preceded the front late Saturday and Sunday...decreasing in strength as the front moved further and further out from the parent low. Extremely strong storm force winds were also observed within 360 miles southwest semicircle of the low...initially gusting in excess of 100 mph. These winds around the 'back side' of the storm were much slower to diminish.

AWOS adjusted prefrontal (pre-low) southeast winds reached 92 mph at Shemya between 10pm and 11pm Saturday. The center moved over the station with barometric pressure readings of 27.63 (estimated at 935.7 millibars). On the back side of the low, winds increased steadily, reaching hurricane force between 1pm and 2pm Sunday. Adjusted AWOS wind gusts at Shemya reached 122 mph from the northwest between 1pm and 2:30 pm Sunday. Minor damage was reported...including bent and/or toppled light posts, one section of roof blown off and 1 garage door blown off its hinges. An anemometer 250 feet off the ground on top of the Shemya radar was blown off, just after recording 110 mph gusts. At Adak, conditions were very similar, with ASOS adjusted southeast, prefrontal gusts reaching at least 73 mph between 3am and 5am Sunday. On the back side of the low, the ASOS adjusted gusts reached 116 mph from the southwest early Sunday afternoon. It wasn't until 4pm Monday before the winds finally decreased to below 40 mph. At Adak damage to metal roofs, to overhead doors and supply piers at the docks was reported. Power was out for 45 minutes and several electrical arcing episodes were reported.

At Dutch Harbor, in the eastern Aleutians, prefrontal gusts only reached 51 mph. However, on the back side of the storm, strong westerly wind gusts as high as 73 mph were reported Tuesday from 1pm to just after 8pm by a contract observer at the airport (using an F420 wind system). Wind gusts over 100 mph were reported by a tug out in Unalaska Bay Monday afternoon.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ALASKA, Southern

Across the Pribilofs, prefrontal wind gusts reached an adjusted 64 mph at the Saint Paul Island ASOS Sunday just before 3pm, with winds diminishing rapidly below 40 mph with the frontal passage some 3 hours later at 6pm. At Saint George, adjusted ASOS wind gusts topped out at 75 mph just after 3pm, with frontal passage occurring at 7pm. At Saint George, however, it wasn't until 3am Monday before winds finally dropped below 40 mph.

Along the Alaska Peninsula, prefrontal, adjusted ASOS gusts reached 69 mph, as reported at Cold Bay, between 5pm and 6pm Sunday.

Strong southeast winds were observed along the western tip of Bristol Bay late Sunday night and Monday. Adjusted speeds of 75 mph were recorded at Cape Newenham, where winds are accelerated by terrain, between midnight and 6am Monday ahead of the front. Winds finally diminished below 40 mph across the zone by 6am Monday morning.

At Mekoryuk, at the southwest end of the Kuskokwim Delta zone, wind gusts reached 67 mph between 11pm Sunday and 3am Monday, finally diminishing below 40 mph at noon Monday.

**AKZ011-015>020**

### **Kuskokwim Delta - Cook Inlet - Bristol Bay Coastal - Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula - Western Alaska Peninsula - Aleutian Islands**

<b>23</b>	<b>0000AST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G84)</b>
<b>26</b>	<b>0400AST</b>			

Another low and front, approaching the western Aleutians from the north Pacific Tuesday, brought strong winds to the Aleutians, Alaska Peninsula and southwest coastal areas. Although pre-frontal wind gusts were not impressive, by Alaskan standards and those set by recent storms, strong westerly winds were again reported in the southwest quadrant of the storm. These strong westerly winds again pummelled the Aleutians. The storm moved just west of Adak late Tuesday and to 150 miles east of Saint Paul Island Wednesday at 3pm.

Adjusted wind gusts reached 78 mph at Shemya between 4:55pm and 5:20pm Tuesday. At Adak, the 'backside' ASOS adjusted winds peaked at 81 mph between 3 and 4am Wednesday. Wind gusts finally diminished below 40 mph at about 3am Friday.

At Cold Bay, along the western tip of the Alaska Peninsula, prefrontal wind gusts reached 67 mph between 6 and 7 pm Tuesday.

Wind gusts at Cape Newenham, along the border of Bristol Bay and the Kuskokwim Delta, reached 61 mph around midday Wednesday.

Winds reached 41 mph at the remote Booth Lake site on Kodiak Island at 11am Wednesday and adjusted ASOS winds at the Kodiak airport reached 52 mph between 1pm and 3pm. Frontal passage and rapidly diminishing winds occurred at Booth Lake close to 5pm Wednesday. Winds at the Kodiak airport diminished under 40 mph at 4pm, as a frontal low formed southeast of the station.

Wind gusts at the Portage ASOS reached 97 mph Wednesday between 11pm and midnight and did not diminish below 40 mph until 9am Thursday. Strong southeast flow aloft also produced another 2 feet of snow on the upper portion of Mount Alyeska, however precipitation was mainly rain near sea level around Turnagain Arm and along the Kenai Peninsula.

East and southeast wind gusts reached an adjusted 58 mph at the Middleton Island AWOS from 9am Thursday to 9am Friday.

**AKZ018**

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

<b>04</b>	<b>0000AST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G44)</b>
	<b>2359AST</b>			

Brisk west wind was reported around Kodiak. The adjusted ASOS gust reached 51 mph at the Coast Guard base airport.

**AKZ018**

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

<b>14</b>	<b>0000AST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G48)</b>
	<b>2359AST</b>			

Brisk westerly wind gusts reached an adjusted ASOS 55 mph at the Kodiak airport, located on the Coast Guard base.

**AKZ020**

### **Aleutian Islands**

<b>27</b>	<b>1500AST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G65)</b>
<b>28</b>	<b>1200AST</b>			

A moderate front, moving through the western Aleutians into the Bering Sea, was preceded by brisk southeast winds. Gusts reached an ASOS adjusted 75 mph at Shemya just prior to the frontal passage just after midnight Sunday morning. Winds rapidly diminished from the south southwest behind the front.

**AKZ021**

### **Pribilof Islands**

<b>29</b>	<b>1200AST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G60)</b>
	<b>2359AST</b>			

Strong easterly winds developed Monday across the Pribilof Islands. The winds were caused by a retreating arctic front and a moderate, northeastward moving polar front. Brisk east winds continued through early Tuesday. Wind gusts reached a peak 69 mph at Saint George Island just before 8 pm Monday. Blizzard conditions were also reported across both islands for up to 9 hours.

# Storm Data and Unusual Weather Phenomena

March 1999

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

**AKZ013-013>018-020>021    Susitna Valley - Copper River Basin - Cook Inlet - Bristol Bay Coastal - Central Gulf Coast - Kodiak Island- Eastern Alaska Peninsula - Aleutian Islands - Pribilof Islands**

<b>30</b>	<b>1800AST</b>			<b>0</b>	<b>0</b>				<b>High Wind (G85)</b>
<b>31</b>	<b>2359AST</b>								

**AKZ014>015-017    Copper River Basin - Cook Inlet - Central Gulf Coast**

<b>31</b>	<b>0000AST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
	<b>2359AST</b>								

A moderate to strong front, associated with a moderate low, moved through the eastern Aleutians Wednesday on its way northeastward into the State. Increasingly strong southeast winds developed ahead of the front...diminishing abruptly as the front passed.

Unofficial reports indicated that winds around the city of Cordova, late Wednesday, channelled through Eyak Lake, may have exceeded 80 mph. In the Cordova Boat Harbor, a houseboat registered a 67 mph gust Wednesday night. Winds at the Middleton Island AWOS, and at the deep water buoys located at the southeast entrance to Prince William Sound, gusted up to 63 mph late Wednesday.

Along the upper Anchorage Hillside, wind gusts reached 78 mph at Glen Alps Wednesday evening. At the Portage Visitor Center, blizzard conditions were reported for most of Wednesday.

Winds were gusty in other areas ahead of the front, gusting between 40 and 50 mph across Kodiak Island from noon to just before midnight Wednesday.

Across the Alaska Peninsula, adjusted ASOS wind gusts topped out at 52 mph Wednesday as reported at Cold Bay.

Adjusted east wind gusts at the Iliamna ASOS reached 61 mph Wednesday.

Peak winds reached 40 mph from the south at the Gulkana airport Wednesday.

Adjusted ASOS winds gusted to 58 mph at the Palmer airport in the Matanuska Valley late Wednesday.

The parent low reached at least as low as 972 mbs about 200 miles south of Segoum Island 3am Wednesday, turning on an eastward track that took it just south of the Alaska Peninsula Wednesday night. Part of the original occlusion, to the north northwest of the center, merged with the arctic front late Wednesday. Cold air, modified across the open waters of the north Pacific and Gulf of Alaska, wrapped around the parent low and caused the arctic front to form south of the low late Wednesday. Brisk west and northwest winds began to develop along the back side of the low and behind the north northwest/south southeast extending arctic front.

Wind gusts reached 60 mph at both Adak and Dutch Harbor Wednesday on the back side of the low.

Brisk north wind gusts were reported across the Pribilofs Wednesday, with speeds reaching 63 mph.

Additionally, heavy snows were reported along the eastern part of the Kenai Peninsula, around Turnagain Arm and Prince William Sound, into the Copper River Basin. Close to a foot of new snow fell Wednesday from Seward into Turnagain Arm (along the Seward Highway). Another foot of new snow was recorded at the Nelchina Highway Camp along the Glenn Highway west of Glennallen. Around Valdez, 2-3 feet of new snow was reported...with just under a foot at the Ernestine DOT Camp at milepost 302 on the Richardson Highway.

**AKZ015**

**Cook Inlet**

<b>21</b>	<b>1200AST</b>			<b>6</b>	<b>0</b>	<b>25K</b>			<b>Avalanche</b>
	<b>1800AST</b>								

A tragic avalanche, adjacent to Turnagain Pass on Saturday, took the lives of 6 people. After days of searching by many volunteers, 5 bodies were recovered. The avalanche was triggered by snowmachiners 'high-marking' on the mountain slope during a warm, sunny day...after heavy snows several days before.

**AKZ014**

M29OU, M28OU, M29OU, M37OU, M26OU, M?OU

**Copper River Basin**

<b>03</b>	<b>1200AST</b>			<b>1</b>	<b>0</b>	<b>5K</b>			<b>Avalanche</b>
<b>04</b>	<b>1800AST</b>								

Odman Schmalzried, 40, of Wasilla was buried by an avalanche in a remote valley in the Chugach Mountains south of Eureka Lodge Saturday afternoon.

M40OU

# Storm Data and Unusual Weather Phenomena

March 1999

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

## AMERICAN SAMOA

<b>ASZ001&gt;004</b>	<b>Swains - Tutuila - Manu'A - Rose</b>								
	29	1700SST			0	0			<b>High Surf</b>
	31	1800SST							

An intense storm low southeast of American Samoa produced surf of 8 to 12 feet along south shores of the islands.

## ARIZONA, Central and Northeast

<b>AZZ012</b>	<b>Little Colorado River Valley In Coconino County</b>								
	31	0958MST 2000MST			0	0	0	0	<b>High Wind (G78)</b>
<b>AZZ013</b>	<b>Little Colorado River Valley In Navajo County</b>								
	31	1200MST 2000MST			2	0	25K	0	<b>High Wind (G81)</b>
		M72OU, ??VE							
<b>AZZ014</b>	<b>Little Colorado River Valley In Apache County</b>								
	31	1400MST 2000MST			0	0	3K	0	<b>High Wind (G90)</b>
<b>AZZ040</b>	<b>Northeast Plateaus And Mesas South Of Highway 264</b>								
	31	1400MST 1700MST			0	17	2K	0	<b>High Wind (G87)</b>

Very strong pre frontal southerly winds wrecked havoc across northern Arizona this afternoon. Early in the event, 90 mph (78kt) winds were measured at the Meteor Crater. Other peak wind gusts include 93 mph (81 kt) at the Winslow Airport, 104 mph (90kt) at the St. Johns Airport, and 60 mph (52 kt) at the Petrified Forest. The long duration of very strong winds induced large areas of blowing dust across the east central sections of the state. Interstate 40 westbound between Winslow and Holbrook and eastbound from Flagstaff to Holbrook was closed for eleven hours due to the cleanup of several car accidents and blown over semi trailers. During the height of the event, visibilities were down to zero on Interstate 40 in the vicinity of Winslow, with one traffic fatality occurring in a ten car pile up. A second fatality occurred 5 miles south of Snowflake when a passenger van was blown across the road and head on into a semi. On Navajo route 15, seventeen students were injured after their school bus went head on into a semi. Winds estimated at 100 mph had reduced visibilities to zero in this accident. There were numerous reports of power lines down and damaged roofs in Winslow, Leupp, and Joseph City.

## ARIZONA, Northwest

NONE REPORTED.

## ARIZONA, South

<b>AZZ035</b>	<b>Cochise County</b>								
	07	1048MST 1300MST			1	3	80K		<b>Dust Storm</b>

Strong winds blowing across a freshly graded area next to Interstate 10 near Benson caused near zero visibility in blowing dust to move across the Interstate. An individual stoped on the freeway when visibilities dropped to zero. This car was rear ended by a semi-tractor truck. The truck was then hit by a van which was hit by another semi-truck. The fatality and injuries occured in the van that was between the two trucks. Two trucks and two vehicles were involved in the crash.

F62VE

## ARIZONA, Southwest

<b>AZZ021</b>	<b>West Central Deserts</b>								
	15	1200MST 1800MST			0	0			<b>High Wind (G45)</b>

Many locations across the southwest deserts saw winds between 30 and 40 mph. A spotter in Ehrenberg estimated winds over 40 mph.. Widespread blowing dust and sand was also reported with the passage of the strong cold front.

## ARKANSAS, Central and North Central

<b>Hot Spring County</b>									
3 NW Lono to 3 NE Lono	05	2034CST 2042CST	5	100	0	0			<b>Tornado (F1)</b>

A weak tornado was spawned in eastern Hot Spring County near the town of Lono. A home was heavily damaged as it was lifted off its foundation and all of its windows were broken. A nearby mobile home was also thrown into a field. Four other homes in the area suffered minor damage. Several trees were downed on power lines. The tornado remained on the ground about 5 miles before moving into Grant County.

<b>Grant County</b>									
7 S Poyen to 6 S Prattsville	05	2042CST 2052CST	7	100	0	0			<b>Tornado (F1)</b>

A weak tornado in eastern Hot Spring County moved into western Grant County. The tornado moved through mostly rural areas. Several trees were downed, but property damage was minor. The tornado was on the ground for roughly 7 miles before

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>ARKANSAS, Central and North Central</b>									
		dissipating.							
<b>Pike County</b>									
2 SW Kirby to 8 SE Glenwood	05	1916CST 1932CST	10	250	0	0			Tornado (F2)
		A strong tornado was spawned in eastern Pike County. The tornado moved through mostly rural areas, so property damage was minimal. However, numerous trees were downed. The tornado was on the ground for around 10 miles before moving into western Clark County.							
<b>Clark County</b>									
4 SW Amity to 5 E Alpine	05	1932CST 1951CST	13	400	0	0	2M		Tornado (F3)
		A strong tornado produced in eastern Pike County moved into western Clark County. The tornado hit the town of Alpine and caused extensive tree and property damage. More than two dozen homes and almost a dozen mobile homes were heavily damaged or destroyed. In nearby Amity, a high school basketball game was cancelled when a Tornado Warning was issued. The tornado continued east of Alpine into a forested area and downed numerous trees. Just south of the tornado, yet another tornado was spawned with both tornadoes causing over 2 million dollars in tree damage across Clark County. The second tornado tracked across much of eastern Clark County. The first tornado was on the ground for about 13 miles before dissipating.							
<b>Clark County</b>									
1 SE Alpine to 7 N Arkadelphia	05	1943CST 2010CST	20	250	0	0			Tornado (F2)
		A strong tornado was spawned in western Clark County just south of yet another tornado that originated in eastern Pike County. The former tornado moved through mostly forested areas and caused extensive tree damage. Some property damage also occurred as the tornado tracked near DeGray Lake. Close to the lake, metal roofs were peeled from several docks and boats were thrown. The tornado was on the ground for 20 miles before moving into western Hot Spring County.							
<b>Hot Spring County</b>									
2 SW Friendship to 2 SE Friendship	05	2010CST 2015CST	3	150	0	0			Tornado (F2)
		A strong tornado moved from eastern Clark County into western Hot Spring County. The tornado tracked through mostly rural areas, with only minor property damage occurring. Several trees were downed. The tornado was on the ground for 3 miles before dissipating.							
<b>Pike County</b>									
3 SW New Hope to 1 SW Daisy	05	1856CST 1910CST	10	200	0	0			Tornado (F2)
		A strong tornado was spawned south of a dissipating tornado in western Pike County. The former tornado tracked mostly through rural areas and caused little in the way of property damage. However, tree damage was extensive...especially just to the southeast of Newhope. The tornado tracked about 10 miles before dissipating.							
<b>Polk County</b>									
3 SW Grannis to 5 SE Grannis	05	1818CST 1829CST	8	200	0	0			Tornado (F2)
		A strong tornado was spawned in southern Polk County. The tornado hit the town of Grannis and caused some property damage. Damage was most extensive at a chicken farm. Two chicken houses were completely destroyed at the farm, with one chicken house thrown into the other house. Roughly 8,000 chickens were lost. Several trees and a few power lines were downed as well. The tornado tracked about 8 miles before moving into Howard County (Shreveport County Warning Area).							
<b>Pike County</b>									
3 NW New Hope to 2 NW New Hope	05	1854CST 1856CST	0.5	100	0	0			Tornado (F2)
		A strong tornado moved out of Howard County (Shreveport County Warning Area) into western Pike County. The tornado was weakening, but still heavily damaged a trailer and knocked down a few trees. The tornado tracked only half a mile into Pike County before dissipating.							
<b>Polk County</b>									
1 SE Acorn to 6 N Cherry Hill	05	1742CST 1759CST	12	200	0	0			Tornado (F2)
		A strong tornado was spawned in northern Polk County. The tornado tracked through rural areas, but caused some property damage. The roof of a home was damaged a couple of miles southeast of Acorn. The tornado caused mostly tree damage, with numerous trees downed or snapped. The tornado tracked 12 miles before dissipating.							
<b>Johnson County</b>									
1 NE Hartman to 1 SW Clarksville	05	1730CST 1741CST	7	200	0	0			Tornado (F2)
		A strong tornado was spawned in southern Johnson County. Toward the town of Hartman, the tornado heavily damaged or destroyed a couple of barns. Farther northeast toward Clarksville, every piece of tin was removed from a chicken house. Chickens were thrown from the house and from nearby houses. Up to 10,000 chickens were lost in the storm. Numerous trees were also downed. The tornado tracked about 7 miles before dissipating just southwest of Clarksville							

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ARKANSAS, Central and North Central

### Johnson County

**2 SE Clarksville to  
3 E Lamar**    **05**    **1746CST  
1758CST**    **7**    **100**    **0**    **0**    **Tornado (F1)**

A weak tornado was spawned in southern Johnson County, or south of a dissipating tornado that affected areas from near Hartman to around Clarksville. The former tornado touched down near Interstate 40 southeast of Clarksville and caused some roof damage to a chicken house. As the tornado tracked northeast toward Lamar, it downed several trees. Some property damage was noted at Lamar, with roof shingles or parts of roofs removed. A two by four was thrown into a home and became lodged in the siding. The tornado was on the ground for about 7 miles before dissipating.

### Pope County

**5 N Dover to  
2 N Hector**    **05**    **1815CST  
1832CST**    **10**    **100**    **0**    **0**    **Tornado (F1)**

A weak tornado was spawned in Pope County about 5 miles north of Dover. The tornado removed a roof from a home and heavily damaged a garage door. As the tornado moved northeast toward Hector, it knocked down several trees. The tornado tracked about 10 miles before dissipating.

### Van Buren County

**6 SW Scotland to  
.5 SW Scotland**    **05**    **1855CST  
1902CST**    **5.5**    **100**    **0**    **0**    **Tornado (F1)**

A weak tornado was spawned in western Van Buren County. As the tornado moved toward Scotland, it damaged the roof of a home and blew some tin from a nearby chicken house. Several trees were also blown down. The tornado tracked about 5.5 miles before dissipating.

### Van Buren County

**2 S Scotland to  
Choctaw**    **05**    **1902CST  
1918CST**    **10**    **350**    **0**    **0**    **Tornado (F3)**

A strong tornado was spawned in southern Van Buren County to the southeast of a dissipating tornado near Scotland. The former tornado moved through Culpepper and toward Choctaw, causing extensive property damage. Perhaps the worst damage was along County Road 6. In all, about a dozen houses and half a dozen mobile homes were heavily damaged or destroyed. There was also extensive tree damage. As the tornado moved northeast, it weakened by the time it reached Choctaw. Mostly roof damage was noted in town. The tornado was on the ground for 10 miles before dissipating.

### Johnson County

**4 NW Clarksville**    **05**    **1744CST**          **0**    **0**    **Hail (1.00)**

### Johnson County

**Clarksville**    **05**    **1745CST**          **0**    **0**    **Hail (1.75)**

### Johnson County

**2 NE Clarksville**    **05**    **1747CST**          **0**    **0**    **Hail (1.75)**

### Johnson County

**Clarksville**    **05**    **1756CST**          **0**    **0**    **Thunderstorm Wind (G50)**  
Thunderstorm winds blew several trees down at Clarksville.

### Pope County

**Augsburg**    **05**    **1810CST**          **0**    **0**    **Thunderstorm Wind (G50)**  
Thunderstorm winds tore a roof from a barn at Augsburg.

### Johnson County

**Clarksville**    **05**    **1830CST**          **0**    **0**    **Hail (1.00)**

### Van Buren County

**3 SW Clinton**    **05**    **1902CST**          **0**    **0**    **Hail (1.00)**

### Van Buren County

**Choctaw**    **05**    **1931CST**          **0**    **0**    **Hail (1.75)**

### Van Buren County

**Scotland**    **05**    **1931CST**          **0**    **0**    **Hail (1.75)**

### Montgomery County

**Mt Ida**    **05**    **1853CST**          **0**    **0**    **Hail (1.75)**

### Pike County

**Daisy**    **05**    **1900CST**          **0**    **0**    **Hail (0.75)**

### Pike County

**Kirby**    **05**    **1920CST**          **0**    **0**    **Hail (1.75)**

### Pike County

**Daisy**    **05**    **1921CST**          **0**    **0**    **Hail (4.50)**

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>ARKANSAS, Central and North Central</b>									
<b>Boone County</b>									
Omaha	05	1920CST			0	0			Hail (0.88)
<b>Cleburne County</b>									
Higden	05	1945CST			0	0			Hail (0.75)
<b>Saline County</b>									
5 N Benton	05	2001CST			0	0			Hail (0.75)
<b>Saline County</b>									
Benton	05	2002CST			0	0			Hail (0.88)
<b>Saline County</b>									
2 NE Benton	05	2003CST			0	0			Hail (0.88)
<b>Clark County</b>									
Amity	05	1937CST			0	0			Hail (0.88)
<b>Hot Spring County</b>									
2 E Donaldson	05	2021CST			0	0			Hail (1.75)
<b>Hot Spring County</b>									
4 NE Bismarck	05	2010CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
Little Rock	05	2012CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds knocked down a few trees in Little Rock.
<b>Pulaski County</b>									
Little Rock	05	2015CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm winds blew down some trees in Little Rock.
<b>Pulaski County</b>									
Little Rock	05	2010CST			0	0			Thunderstorm Wind (G52)
									Thunderstorm winds were estimated at 60 mph in Little Rock.
<b>Pulaski County</b>									
Little Rock	05	2005CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
Little Rock	05	2015CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
Little Rock	05	2007CST			0	0			Hail (0.88)
<b>Pulaski County</b>									
Little Rock	05	2009CST			0	0			Hail (0.88)
<b>Pulaski County</b>									
Cammack Vlg	05	2011CST			0	0			Hail (0.88)
<b>Pulaski County</b>									
Little Rock	05	2013CST			0	0			Thunderstorm Wind (G52)
									Thunderstorm winds were estimated at 60 mph in Little Rock.
<b>Pulaski County</b>									
Little Rock	05	2013CST			0	0			Hail (1.00)
<b>Pulaski County</b>									
North Little Rock	05	2016CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
North Little Rock	05	2022CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
Scott	05	2028CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
Little Rock	05	2022CST			0	0			Hail (0.75)
<b>Faulkner County</b>									
Mayflower	05	2000CST			0	0			Hail (0.75)
<b>Independence County</b>									
Floral	05	2015CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>ARKANSAS, Central and North Central</b>									
<b>Lonoke County</b>									
Scott	05	2032CST			0	0			Hail (1.75)
<b>Lonoke County</b>									
Scott	05	2032CST			0	0			Thunderstorm Wind (G52)
Thunderstorm winds were estimated around 60 mph at Scott.									
<b>Pulaski County</b>									
1 S Jacksonville	05	2024CST			0	0			Hail (1.00)
<b>Grant County</b>									
Prattville	05	2048CST			0	0			Hail (0.75)
<b>Lonoke County</b>									
Lonoke	05	2035CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds damaged a few roofs in Lonoke.									
<b>Lonoke County</b>									
England	05	2035CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds damaged a few roofs in England.									
<b>Grant County</b>									
2 E Sheridan	05	2110CST			0	0			Hail (0.75)
<b>Prairie County</b>									
Biscoe	05	2110CST			0	0			Thunderstorm Wind (G70)
Thunderstorm winds were estimated around 80 mph at Biscoe.									
<b>Hot Spring County</b>									
7 SE Malvern	05	2100CST			0	0			Hail (1.75)
<b>Jefferson County</b>									
Whitehall	05	2129CST			0	0			Hail (0.75)
<b>Cleburne County</b>									
Drasco	05	2155CST			0	0			Hail (0.75)
<b>Arkansas County</b>									
De Witt	05	2230CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds damaged a few roofs at DeWitt.									
<b>Lincoln County</b>									
Varner	05	2245CST			0	0			Hail (0.88)
<b>Arkansas County</b>									
Gillett	05	2305CST			0	0			Hail (1.00)
<b>Drew County</b>									
Monticello	08	2355CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds blew down numerous trees in Monticello. Some of the trees had been around for over a century, including a few 125 year old cedars in front of a local church. Several roofs were also damaged, with a poolside building destroyed.									
<b>Pope County</b>									
Atkins	08	2330CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down a power pole and snapped several power lines in Atkins.									
<b>Pulaski County</b>									
Little Rock	02	1400CST			0	0			Hail (1.00)
<b>Lonoke County</b>									
3 SSE Scott	02	1430CST			0	0			Hail (0.75)
<b>Pulaski County</b>									
4 SW Scott	02	1415CST			0	0			Hail (0.75)
<b>ARZ003&gt;007-012&gt;016</b>									
	14	0200CST 1000CST			0	0			Heavy Snow

A late Winter storm brought heavy snow to much of north central Arkansas. The storm tracked along the Gulf Coast, with snow developing in northern Arkansas during the evening of the 13th. The snow ended before midnight, with two to three inches of accumulation common. Another round of snow developed before sunrise on the 14th as moisture wrapping around the system progressed from eastern Oklahoma into northern Arkansas. The snow continued through the morning hours before tapering off. Total storm accumulations ranged from 4 to 6 inches in most areas. A few spots received as much as 10 inches of snow. Power outages were spotty and roads became snow covered and hazardous. However, ground temperatures were well above freezing

# Storm Data and Unusual Weather Phenomena

March 1999

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>									
with much of the snow melting by the next day.									
<b><u>ARKANSAS, East</u></b>									
<b>Craighead County</b>									
Risher	05	2040CST 2050CST			0	0	5K		Thunderstorm Wind
Several large trees were blown down near a cemetery. One house suffered minor shingle damage.									
<b>Greene County</b>									
Schug	05	2145CST 2150CST			0	0	25K		Thunderstorm Wind
A trailer was destroyed.									
<b><u>ARKANSAS, Northwest</u></b>									
<b>Crawford County</b>									
Uniontown	05	1606CST			0	0			Hail (1.00)
<b>Crawford County</b>									
2 S Cedarville	05	1608CST			0	0			Hail (1.00)
There was a report of quarter-sized hail in Cedarville, and there was another report of quarter-sized hail 2 miles south of Cedarville.									
<b>Crawford County</b>									
2 NE Van Buren	05	1625CST			0	0			Hail (1.75)
Location: near I-40 and I-540									
<b>Crawford County</b>									
1 N Rudy	05	1628CST			0	0	5K		Thunderstorm Wind
A home just north of Rudy near the old 81 loop had its roof lifted off.									
<b>Crawford County</b>									
Alma	05	1635CST			0	1	800K		Hail (4.50)
There were several reports of extremely large hail from Alma. The largest report was of giant softball-sized hail, while there were also reports of quarter and golfball-sized hail just north of Alma.									
Such enormous hail caused widespread damage in Alma. Many cars sustained windshield and body damage. Just one auto body shop reported that it had written estimates from hail damage totaling \$140,000. Many roofs also sustained major damage. At the Eagle Crest Golf Course, the hail left small craters on the greens, closing the course for several days while the crater marks were filled. A photo in the Alma Journal newspaper showed a softball-sized pock mark on the golf greens.									
A child was treated for injuries at a local hospital after being struck by the hail.									
<b>Crawford County</b>									
2 W Alma	05	1636CST	0.5	30	0	0	1K		Tornado (F0)
Spotters reported a tornado touchdown 2 miles west of Alma. Spotters had followed a wall cloud and then a funnel cloud most of the way across Crawford County which then continued on into Franklin County after the tornado touchdown. The tornado blew down several trees.									
<b>Crawford County</b>									
2 N Dyer	05	1641CST			0	0			Hail (1.75)
<b>Crawford County</b>									
Mulberry	05	1645CST			0	0			Hail (2.75)
<b>Benton County</b>									
Maysville	05	1700CST			0	0			Hail (0.75)
<b>Franklin County</b>									
Ozark	05	1705CST			0	0	600K		Hail (2.75)
Just south of Ozark, golfball to baseball-sized hail fell, while quarter to golfball-sized hail fell and covered the ground just north of Ozark.									
There were widespread reports of damage to vehicles and to roofs on homes and other structures.									
<b>Franklin County</b>									
2 N Altus	05	1715CST			0	0			Hail (1.00)
Location: Wiederkehr Winery Restaurant...no damage									
<b>Franklin County</b>									
2 E Altus	05	1716CST			0	0			Funnel Cloud



# Storm Data and Unusual Weather Phenomena

March 1999

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

## ARKANSAS, Southwest

### Howard County

7.5 SW Galena to 5.2 SW Athens    **05**    **1835CST**    **18.7**    **250**    **0**    **0**    **60K**    **Tornado (F2)**

Tornado entered Howard County from Polk County, moved across Howard County, then into Pike County. Damage was largely confined to rural wooded area with little or no population. A mobile home was heavily damaged and scores of trees were toppled along the tornado path.

### Miller County

Doddridge    **02**    **1600CST**                **0**    **0**             **Hail (0.88)**

### Lafayette County

Bradley    **02**    **1620CST**                **0**    **0**             **Hail (0.88)**

### Howard County

6 S Umpire    **05**    **1845CST**                **0**    **0**             **Hail (2.00)**

### Nevada County

2 N Prescott    **13**    **0500CST**                **0**    **0**             **Flash Flood**

0730CST  
High water closed Hwy 278 at Hwy 53.

### Hempstead County

2 E Hope    **13**    **0500CST**                **0**    **0**             **Flash Flood**

0730CST  
Several county roads closed due to flooding.

### Lafayette County

6 N Lewisville    **13**    **0600CST**                **0**    **0**             **Flash Flood**

0730CST  
Hwy 29 flooded from excessive rapid runoff.

### Sevier County

Ben Lomond    **13**    **0600CST**                **0**    **0**             **Flash Flood**

0730CST  
Portions of Hwy 27 washed out.

### Sevier County

2 SE De Queen    **23**    **0310CST**                **0**    **0**             **Hail (0.75)**

### Sevier County

Lockesburg    **23**    **0320CST**                **0**    **0**             **Hail (0.88)**

## CALIFORNIA, Extreme Southeast

NONE REPORTED.

## CALIFORNIA, North Central

### CAZ015

#### Northern Sacramento Valley

**02**    **1555PST**                **0**    **0**             **High Wind (G41)**

2355PST  
Pre-frontal winds approached 50 mph in Redding and exceeded 40 mph in Red Bluff.

### CAZ013>014-

### 063>064-066>069

#### Shasta Lake/North Shasta County - Burney Basin/Eastern Shasta County - Mountains Southwest Shasta County To Northern Lake County - Clear Lake/Southern Lake County - Northeast Foothills/Sacramento Valley - Motherlode/Camptonville To Goverland - Mt Shasta/Western Plumas County - West Slope Northern Sierra Nevada

**08**    **0351PST**                **0**    **0**             **Winter Storm**

**09**    **1213PST**  
Two feet of snow at 5000 feet combined with six inches below 3000 feet temporarily closed Interstate 80 and Highway 50.

### CAZ013-063

#### Shasta Lake/North Shasta County - Mountains Southwest Shasta County To Northern Lake County

**24**    **1803PST**                **0**    **0**             **Heavy Snow**

**25**    **0406PST**  
South winds ahead of a slow moving Pacific system created significant orographic lift across the southern Cascades. More than one foot of snow fell across higher terrain. Local liquid equivalents for the event measured up to three inches.

### CAZ015

#### Northern Sacramento Valley

**30**    **0400PST**                **0**    **0**             **High Wind (G47)**

2100PST  
A cold front and associated low pressure system produced south winds to 55 mph at Redding and 45 mph at Red Bluff. Nearly 1,000 residents temporarily lost electrical power.

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>CALIFORNIA, North Central</b>									
CAZ015	<b>Northern Sacramento Valley</b>								
	08	1218PST 2000PST			0	0			High Wind (G42)
		Pre-frontal winds approaching 50 mph disrupted service for nearly 2,000 PG&E customers.							
<b>CALIFORNIA, Northeast</b>									
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	02	2142PST			0	0	0		High Wind (G53)
		Peak wind gust of 61 mph recorded at Doyle.							
CAZ072	<b>Greater Lake Tahoe Area</b>								
	08	1023PST 2223PST			0	0	0		Heavy Snow
		12 inches of snow in 12 hours atop Donner Summit, elevation 7229 feet.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	08	1800PST			0	0	0		Heavy Snow
	09	0600PST							
		5-6 inches of snow in a 12 hour period in Pittville, elevation 3300 feet.							
CAZ072	<b>Greater Lake Tahoe Area</b>								
	08	0600PST			0	0	0		Heavy Snow
	09	0600PST							
		24 hour snow totals of 14 inches at 6200 feet and 20 inches at 8200 feet at Squaw Valley Ski Resort.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	08	0630PST			0	0	0		Heavy Snow
	09	0630PST							
		4 inches of snow in 12 hours recorded in Janesville, elevation 4236 feet.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	08	0640PST			0	0	0		Heavy Snow
	09	0640PST							
		24 hour snow total of 7 inches at Doyle, elevation 4267 feet.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	08	0800PST			0	0	0		Heavy Snow
	09	0755PST							
		6 inches of snow in 24 hours recorded in Bieber, elevation 4127 feet.							
CAZ072	<b>Greater Lake Tahoe Area</b>								
	08	0800PST			0	0	0		Heavy Snow
	09	0800PST							
		14 inches of snow in a 24 hour period recorded in Tahoe City, elevation 6300 feet.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	08	1000PST			0	0	0		Heavy Snow
	09	1000PST							
		8.5 inches of snow in a 24 hour period recorded in Portola, elevation 4860 feet.							
CAZ073	<b>Mono</b>								
	30	1240PST			0	0	0		High Wind (G51)
		Peak wind gust of 59 mph recorded in Bridgeport.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	30	1912PST 1945PST			0	0	0		Heavy Snow
		4 inches of snow in 33 minutes in Pittville, elevation 3300 feet.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	30	1850PST 2050PST			0	0	0		Heavy Snow
		2 inches of snow in 2 hours in Janesville, elevation 4236 feet.							
CAZ071	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	30	1720PST 2120PST			0	0	0		Heavy Snow
		4.5 inches of snow in just over 4 hours in Portola, elevation 4860.							
CAZ072	<b>Greater Lake Tahoe Area</b>								
	30	1745PST			0	0	0		Heavy Snow
	31	0745PST							
		13 inches of snow in 14 hours at Brockway Summit, approximate elevation 7000 feet.							

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>CALIFORNIA, Northeast</b>									
<b>CAZ071</b>	<b>Lassen/Eastern Plumas/Eastern Sierra</b>								
	30	2100PST			0	0	0		<b>Heavy Snow</b>
	31	0900PST							
	11 inches of snow overnight in Sierraville, elevation 4952 feet.								
<b>CAZ072</b>	<b>Greater Lake Tahoe Area</b>								
	30	2100PST			0	0	0		<b>Heavy Snow</b>
	31	0900PST							
	10 inches of snow in 12 hours in Tahoe City, elevation 6300 feet.								
<b>CALIFORNIA, Northwest</b>									
<b>CAZ003&gt;004-076</b>	<b>North Coast Interior - Upper Trinity River - Mendocino Interior</b>								
	08	0400PST 2100PST			0	0			<b>Heavy Snow</b>
	Above 2500 feet, snowfall ranged from 6 inches to over a foot. Coffee Creek in Trinity County reported 14.5 inches.								
<b>CAZ001</b>	<b>Redwood Coast</b>								
	21	0130PST			0	0			<b>Other</b>
	Three large rogue waves struck Clam Beach, 15 miles north of Eureka. About 30 people stargazing had to flee the waves. No confirmed injuries but property was lost to the waves. Near shore swell at the time was around 20 feet.								
<b>Humboldt County</b>									
<b>Countywide</b>	24	1500PST			0	0			<b>Urban/Sml Stream Fld</b>
	25	1000PST							
<b>Mendocino County</b>									
<b>Countywide</b>	24	1500PST			0	0			<b>Urban/Sml Stream Fld</b>
	25	1000PST							
	Many roads were closed as streams and small rivers spilled their banks.								
<b>CAZ003&gt;004-076</b>	<b>North Coast Interior - Upper Trinity River - Mendocino Interior</b>								
	30	0600PST			0	0			<b>Heavy Snow</b>
	31	0400PST							
	Snowfall above 2500 feet was generally around 6 inches. A spotter near Kneeland reported 16 inches.								
<b>CALIFORNIA, South Central</b>									
<b>Fresno County</b>									
<b>1 W Huron to Huron</b>	15	1530PST 1535PST			0	0			<b>Funnel Cloud</b>
	With thunderstorm activity prevalent this day in Interior California, a funnel cloud was observed just west of the town of Huron in Fresno County.								
<b>CAZ021-024</b>	<b>Southern San Joaquin Valley - Kern County Mountains</b>								
	19	0649PST 1800PST			0	0	50K		<b>High Wind (G48)</b>
	California Highway Patrol estimated winds gusting to 40 MPH knocked over several power poles west of Bakersfield, CA, in the vicinity of Rosedale around sunrise. Gusty wind was present over much of the extreme Southern San Joaquin Valley with fences and trees blown over in the hours starting near dawn into the early afternoon. In the Tehachapi Mountains, winds became gusty from 35 to 40 MPH just after midnight. But a gust of wind occurred to 48 MPH from the southeast at 0951 PST at Tejon and Interstate Highway-5 over the Ridge Route.								
<b>CAZ022&gt;023</b>	<b>Southern Sierra Nevada-Yosemite National Park To Kings Canyon - Tulare County Mountains</b>								
	08	1400PST			0	0			<b>Heavy Snow</b>
	09	0800PST							
	Typical heavy snow period for the Southern Sierra Nevada with 10-12 inches of new snow reported at Fish Camp from 2 PM until 6 AM on 3/9/99. Mammoth Mountain received 8-10 inches of new snow and Tuolumne Meadows got 14 inches of new snow overnight at its high elevation. Oakhurst, at the 2600 foot level, received a couple of inches. Preceding this storm on the 8th, southeast wind was noted in the Oakhurst area at 20 MPH gusting to 46 MPH at 2123 PST. Following the frontal passage, thunderstorms during the day on the 9th in CA Zone 22, Southern Sierra Nevada,								
<b>CAZ022</b>	<b>Southern Sierra Nevada-Yosemite National Park To Kings Canyon</b>								
	31	0100PST 0800PST			0	0			<b>Heavy Snow</b>
	Significant snow amounts occurred with frontal passage through CA Zone 22, the Southern Sierra Nevada, in the early hours of 3/31/99. Tuolumne Meadows reported 11 inches of snow at 9000 feet MSL, 6 inches at Mariposa, and 4 inches of snow at Oakhurst at the 2500 foot level in less than an 8 hour time period.								
<b>CAZ024</b>	<b>Kern County Mountains</b>								
	31	0400PST 1900PST			0	0			<b>High Wind (G54)</b>
	Walker Pass in the Kern Mountains reported a wind of 54 Knots at 0357 PST on 3/31/99; gusts to 42 Knots at Squaw Springs at								

# Storm Data and Unusual Weather Phenomena

March 1999

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

## CALIFORNIA, South Central

1000 PST; and Mojave in the Kern Desert had a wind of 50 knots at 2047 PST.

<b>CAZ023&gt;024</b>	<b>Tulare County Mountains - Kern County Mountains</b>								
	15	0400PST			0	0			<b>Heavy Snow</b>
		2100PST							

Frazier Park received 7 inches of snow, Tehachapi 1 inch, and Lodgepole in the Tulare County Mountains getting 8 inches.

## CALIFORNIA, Southeast

NONE REPORTED.

## CALIFORNIA, Southwest

<b>CAZ043</b>	<b>San Diego County Coasts</b>								
	04	1800PST			1	0	150K		<b>Heavy Surf</b>
	05	1000PST							

A 25 ton, 38 foot tug boat, enroute from Oceanside to Point Loma the afternoon of 03/04/99 was found capsized 200 feet off Point Loma the morning of 3/05/99, shortly after it had been reported overdue. The crew consisted of a 51 year old male. His body was found the following morning, 03/06/99, on Silver Strand Beach in Coronado. Rough Seas are considered to have been a factor in the boat's capsizing. M511W

### **Riverside County**

<b>2.5 NE Wildomar to 3.5 NE Wildomar</b>	14	1235PST			0	0			<b>Wild/Forest Fire</b>
	15	0900PST							

A minor brush fire grew to a 123 acre wild fire due to moderate winds and extremely dry conditions. Firefighters had to respond with massive force: 31 fire engines, 4 water tankers, a helicopter, and 110 fire fighters to keep the fire from spreading to residences in the area. By evening the fire was only 35 percent contained. Rain from a weather system the following morning finally extinguished the fire.

<b>CAZ058</b>	<b>San Diego County Mountains</b>								
	31	1420PST			0	0			<b>High Wind (G52)</b>

Strong west winds and blowing dust and sand were observed between Mount Laguna and Borrego Springs.

<b>CAZ060</b>	<b>Apple And Yucca Valleys</b>								
	31	1240PST			0	0			<b>High Wind (G52)</b>

Strong gusty winds in advance of a cold front peaked at 60 mph.

## CALIFORNIA, Upper

<b>CAZ011-011-011</b>	<b>Siskiyou County</b>								
	02	1445PST			0	0			<b>High Wind (G66)</b>
		1545PST							

Weed RAWS reported southeast winds 44 gusting to 60 mph.

The pacific storm that brought high winds to the coast and Rogue Basin also brought high winds into Northern California. The peak sustained winds and gusts for Weed are reported above. The High Wind Warning for Siskiyou county was issued at 1004 PST on 03/02/99 and cancelled at 2100 PST on 03/02/99.

<b>CAZ011-011-011- 011</b>	<b>Siskiyou County</b>								
	08	0738PST			0	0			<b>Winter Storm</b>
		1716PST							

Spotter near Weed reported south winds 40 mph gusting to 58 mph.

This storm met the criteria for a Winter Storm Warning, but none was issued. A Snow Advisory was issued for Siskiyou County (and later extended to most of southwest Oregon west of the Cascades) at 0344 PST on 03/08/99 and cancelled at 0623 PST on 03/09/99. A Wind Advisory was issued for the Shasta Valley at 0843 PST on 03/08/99.

<b>CAZ011</b>	<b>Siskiyou County</b>								
	24	1630PST			0	0			<b>Winter Storm</b>

A Spotter 6 miles west of Black Butte reported 8 inches of snow from 0400 to 1600 at 4000 feet.

A Winter Storm Warning was issued for Siskiyou County above 4000 feet at 1834 PST on 03/24/99 and cancelled at 2357 PST on 03/24/99. The warning was an upgrade from a Snow Advisory issued at 1400 PST on 03/23/99.

<b>CAZ011</b>	<b>Siskiyou County</b>								
	30	1541PST			0	0			<b>Winter Storm</b>

Spotter SY-39 at 4040 feet near Weed reported 8 inches of snow since noon.

A Winter Storm Warning was issued for the I-5 corridor through Siskiyou County at 1453 PST on 03/30/99 and cancelled at 0320 PST on 03/31/99.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## CALIFORNIA, West South Central

**CAZ034>035 San Luis Obispo County Central Coast - Santa Barbara County Central Coast**

01	0200PST				0	0			
02	1400PST								Heavy Surf

Large northwest swell produced heavy surf along the Central California coast. Widespread surf of 10 to 14 feet was reported.

**CAZ052>054 Santa Barbara County Mountains - Ventura County Mountains - Los Angeles County Mountains Excluding The Santa Monica Range**

15	0100PST				0	0			Heavy Snow
	2200PST								

**CAZ036 Santa Ynez Valley**

15	0930PST				0	0			Snow
	1400PST								

A powerful and cold Pacific storm brought snow to parts of Southern California. Across Ventura and Los Angeles Counties, snow levels fell to around 2000 feet with mountain communities reporting at least 8 to 10 inches of snowfall. In fact, parts of Highway 14 were closed through the mountains of Los Angeles County. In Santa Barbara County, the storm dropped snow levels to around 1000 feet. Spotters reported 7 inches of snowfall across San Marcos Pass which resulted in the closure of Highway 154. With snow levels around 1000 feet, 1 to 3 inches of snow fell across the Santa Ynez Valley.

### **Los Angeles County**

**Long Beach**

15	0810PST				0	0			Urban/Sml Stream Fld
	1030PST								

Moderate rainfall produced local street flooding in the Long Beach area.

**CAZ034>035 San Luis Obispo County Central Coast - Santa Barbara County Central Coast**

20	2100PST				0	0			Heavy Surf
24	0200PST								

Persistent northwest swell produced an extended period of heavy surf along the Central California coast. Widespread surf of 10 to 15 feet was reported.

### **Santa Barbara County**

**Santa Barbara**

25	0845PST				0	0			Urban/Sml Stream Fld
	1400PST								

### **Ventura County**

**Camarillo**

25	0845PST				0	0			Urban/Sml Stream Fld
	1400PST								

Moderate rainfall produced local urban flooding in the communities of Santa Barbara and Camarillo.

**CAZ039-052 Santa Barbara County South Coast - Santa Barbara County Mountains**

26	0400PST				0	0			High Wind (G45)
	2300PST								

Strong northwest to north winds developed across southern Santa Barbara County. Sustained winds of 30 to 40 mph with frequent gusts to 52 mph were reported. No major damage or injuries were reported.

## CALIFORNIA, Western

NONE REPORTED.

## COLORADO, Central and Northeast

**COZ042 Northeastern Weld County**

04	1800MST				0	0	0	0	Heavy Snow
05	0600MST								

Heavy snow fell in portions of northeastern Weld County. A spotter 21 miles north of New Raymer picked up 6.0 inches of snow while Hereford registered 4.5 inches.

**COZ036-038>040 Southern Front Range Foothills/Clear Creek Basin - Eastern Larimer And Northwestern Weld Counties - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area**

12	0600MST				0	0	0	0	Heavy Snow
	1800MST								

Heavy snow fell in and near the Front Range Foothills. Snowfall totals included: 8.5 inches at Genessee, 6 inches, 8 miles northwest of Evergreen, 5.0 inches at Fort Collins, 4.5 inches at Boulder and 4.0 inches at Littleton.

## COLORADO, East Central

**COZ091>092 Kit Carson County - Cheyenne County**

12	0100MST				0	0			Winter Storm
13	0400MST								

One of the biggest snow events of the season hit far eastern Colorado with 5 to 8 inches observed across eastern Cheyenne and Kit Carson Counties. There was also some blowing snow as Interstate 70 near Burlington was closed for a short time.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## COLORADO, East Central

<b>COZ091</b>	<b>Kit Carson County</b>								
	<b>19</b>	<b>0630MST</b>			<b>0</b>	<b>1</b>			<b>Winter Storm</b>
		<b>0700MST</b>							
Icy road conditions due to freezing precipitation and snow caused a few accidents along Interstate 70. One person had to be taken to the hospital.									

## COLORADO, South Central and Southeast

<b>COZ067-072</b>	<b>Teller County/Rampart Range/Pikes Peak - Northern El Paso County/Monument Ridge</b>								
	<b>04</b>	<b>0800MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>05</b>	<b>0300MST</b>							
A surge of cooler, moist air from the north brought a burst of snow to parts of Monument Ridge and Teller county. Monument received 4 to 6 inches of snow and Woodland Park tallied around 3 inches of snow.									

<b>COZ060&gt;061</b>	<b>La Garita Mountains - Eastern San Juan Mountains</b>								
	<b>07</b>	<b>1800MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>08</b>	<b>0200MST</b>							
A quick moving weather disturbance brought several hours of heavy snow to the southwest mountains of Colorado. Up to 5 inches of snow was recorded at the summit of Wolf Creek Pass and Creede, both in Mineral county.									

<b>COZ062-065&gt;066-073&gt;074-076&gt;081</b>	<b>Northern San Luis Valley/Del Norte And Vicinity - Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity - Crowley And Otero Counties/La Junta And Vicinity - Eastern Las Animas County - Kiowa County - Bent County/Las Animas And Vicinity - Prowers County/Lamar And Vicinity - Baca County/Springfield And Vicinity</b>								
	<b>11</b>	<b>1900MST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>13</b>	<b>0800MST</b>							

The center of a major winter storm moved across northern New Mexico into the Texas panhandle from late evening of the 11th through the early morning of the 13th. Snow fell throughout all of southern Colorado, and heavy snow fell in the northern San Luis Valley, Sangre de Cristo mountains, and into the southeast plains. The northern San Luis Valley received 5 to 10 inches of snow, the Sangre de Cristo mountains 6 to 16 inches, and the southeast plains 6 to 12 inches of snow. Some higher amounts were the 10 inches at Saguache in Saguache county, 16 inches at Cuchara in Huerfano county, and 12 inches in the Springfield and Walsh areas of Baca county in far southeast Colorado.

<b>COZ066-070-075&gt;081</b>	<b>Southern Sangre De Cristo Mountains - Wet Mountains - Upper Purgatoire River Basin/Trinidad And Vicinity - Crowley And Otero Counties/La Junta And Vicinity - Eastern Las Animas County - Kiowa County - Bent County/Las Animas And Vicinity - Prowers County/Lamar And Vicinity - Baca County/Springfield And Vicinity</b>								
	<b>18</b>	<b>0800MST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>19</b>	<b>1200MST</b>							

A very slow moving winter storm brought a prolonged period of snow to parts of southeast Colorado. The heaviest snow fell in the southern Sangre de Cristo mountains and in far southeast Colorado. Generally, 2 to 5 inches of snow fell in the area, but 6 to 8 inches were tallied from Kim in eastern Las Animas county to John Martin Dam in Bent county, and 12 to 15 inches in eastern Baca county in the Springfield and Walsh areas.

## COLORADO, West

<b>COZ009&gt;010-012-018&gt;019</b>	<b>Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Northwestern San Juan Mountains - Southwestern San Juan Mountains</b>								
	<b>07</b>	<b>1600MST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>08</b>	<b>1000MST</b>							

A Pacific trough deposited 6 to 8 inches of snow and brought strong winds to many mountain areas of west-central and southwest Colorado. The highest peak wind observed was 82 MPH at the top of Telluride Ski Area.

<b>COZ018</b>	<b>Northwestern San Juan Mountains</b>								
	<b>12</b>	<b>0700MST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>13</b>	<b>0700MST</b>							

A moist northerly flow following a fast moving Pacific trough generally produced 8 to 12 inches of snow in the northwest San Juan Mountains of southwest Colorado. The heaviest reported snow totals included 16 inches on the north side of Red Mountain Pass and 16 inches on Mount Sneffels.

<b>COZ018</b>	<b>Northwestern San Juan Mountains</b>								
	<b>31</b>	<b>1400MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G95)</b>
		<b>2200MST</b>							

A strong southwest flow ahead of a Pacific trough produced wind gusts in excess of 70 MPH in the western San Juan Mountains of southwest Colorado. Reported peak gusts include 109 MPH (95 knots) on Mount Abrams, 84 MPH at Red Mountain Pass, 82 MPH at the top of Telluride Ski Area, and 73 MPH on Prospect Ridge.



# Storm Data and Unusual Weather Phenomena

March 1999

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

## CONNECTICUT, Northeast

Hartford to Middletown. Most of the runoff came from melting snow in the upper reaches of the Connecticut, where mild air quickly ate away at the snowpack that had been built up during the snowstorm the week before. At Hartford, the river crested at 17.4 feet at 4 pm on the 24th, which was a little more than a foot above its flood stage of 16 feet. At Middletown, a crest of 8.7 feet at 7 am on the 25th was about half a foot above the flood stage of 8 feet. Only minor lowland flooding was reported along the river, and there were no reports of damage.

## CONNECTICUT, Northwest

**CTZ001**

**Litchfield**

<b>04</b>	<b>1600EST</b>								
	<b>2300EST</b>			<b>0</b>	<b>0</b>	<b>0</b>			<b>High Wind</b>

A steep pressure gradient between low pressure over southwestern Quebec and high pressure over the northern Great Lakes produced high winds across northwest Connecticut late on March 4. The winds blew down trees in Sherman, Marblehead and New Preston.

**CTZ001**

**Litchfield**

<b>14</b>	<b>1800EST</b>								
	<b>15 0600EST</b>			<b>0</b>	<b>0</b>	<b>10K</b>			<b>Winter Storm</b>

An area of low pressure developed over the southeastern United States on March 14. This low tracked northeast off the eastern seaboard and was off the coast of Cape Cod by the evening of March 15. Wet snow fell over Northwest Connecticut. Across the higher elevations the accumulations were heavy. The hills around Torrington received 10 inches and Bakersville reported 9 inches. The heavy snow knocked down some trees and power lines which resulted in spotty power outages across the region. Wet snow also produced hazardous travelling conditions.

## CONNECTICUT, Southern

**CTZ005>012**

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

<b>15</b>	<b>0330EST</b>								
	<b>0600EST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>

With cold air in place, a low pressure system developed over the Gulf Coast States on Saturday, March 13th. As the low slowly intensified and moved northeast toward the Mid-Atlantic Coast, it spread precipitation northeast across the area. Light rain quickly changed to wet snow during the evening of March 14th. The wet snow became heavy overnight as the low approached the Mid-Atlantic States. Snowfall amounts generally ranged from 7 to 11 inches across Southern Connecticut. Heavy wet snow downed numerous tree limbs and power lines across the region.

In Fairfield County, amounts ranged from 7 inches at Stamford and New Canaan to up to 9 inches at Danbury.

In New Haven County, amounts ranged from 8 to 11 inches at Wolcott and Guilford.

In Middlesex County, amounts ranged from 8 inches at Old Saybrook to 9 inches at Haddam.

In New London County, amounts ranged from 7 inches at Groton to 8 inches at Norwich.

**New Haven County**

**Waterbury**

<b>03</b>	<b>2300EST</b>								
				<b>0</b>	<b>0</b>				<b>Lightning</b>

Lightning struck and ignited a fire that destroyed a three-story garage near Lakewood Park.

**Fairfield County**

**Countywide**

<b>21</b>	<b>1800EST</b>								
	<b>22 0500EST</b>			<b>0</b>	<b>0</b>				<b>Heavy Rain</b>

A low pressure system over the Southeast U.S. quickly intensified as it moved northeast and passed over the Lower Hudson Valley during the early morning on Monday, March 22nd.

This low was preceded by periods of heavy rain and strong southeast winds that gusted from 30 to 40 mph. The axis of heaviest rain fell across the highest terrain from Southeast Orange and Northwest Rockland Counties in New York across Northern and Central Fairfield County in Connecticut. Rainfall amounts generally ranged from 2 to 3 inches. At Danbury, 2.45 inches of rain was measured.

## DELAWARE

**DEZ001>004**

**New Castle - Kent - Inland Sussex - Delaware Beaches**

<b>04</b>	<b>0400EST</b>								
	<b>1800EST</b>			<b>0</b>	<b>0</b>	<b>0</b>			<b>Wind</b>

The circulation around an intensifying low pressure that moved through New York State and northern New England during the day on the 4th produced wind gusts of around 45 mph during the early morning and throughout the day in Delaware. Peak wind gusts included 52 mph in Georgetown, 51 mph at the Baltimore-Washington International Airport, 45 mph at the Dover AFB and 44 mph in both Milford and Wilmington.



# Storm Data and Unusual Weather Phenomena

March 1999

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

## DELAWARE

sometimes dictates the type of precipitation that falls. For example at the New Castle County Airport, snow began around 1120 a.m. EST, it changed to rain about 1210 p.m. EST, went back to snow at 1240 p.m. EST, changed again to rain at 515 p.m. EST, changed back to snow again around 615 p.m. EST and finally changed over to rain for good around 1015 p.m. EST. A second shot of light snow and flurries caused little if any additional accumulations during the morning of the 15th. The heaviest accumulations of around 5 inches occurred in the northwestern part of the county. Accumulations near Wilmington were around 2 inches and accumulations south of the canal were generally an inch or less. No serious accidents were reported. The low pressure system developed along the Gulf Coast States the morning of the 13th. During the morning of the 14th it had moved into Alabama and was located just east of the Delmarva Peninsula around daybreak of the 15th. The storm intensified and moved rapidly offshore on the 15th and reached Nova Scotia the morning of the 16th.

### **DEZ001>004**

#### **New Castle - Kent - Inland Sussex - Delaware Beaches**

<b>18</b>	<b>0900EST</b>								<b>Wind</b>
	<b>1800EST</b>								

A strong cold front moved through the region during the day on the 18th. Strong gusty west to northwest winds buffeted Delaware during the late morning and afternoon with peak gusts of around 45 mph. The peak wind gusts included 47 mph at the New Castle County Airport, 44 mph at the Baltimore-Washington International Airport (MD) and 33 mph in Georgetown.

### **Kent County**

<b>Countywide</b>	<b>21</b>	<b>1400EST</b>							<b>Heavy Rain</b>
	<b>22</b>	<b>0400EST</b>							

### **Sussex County**

<b>Countywide</b>	<b>21</b>	<b>1400EST</b>							<b>Heavy Rain</b>
	<b>22</b>	<b>0400EST</b>							

Heavy rain affected the Delmarva Peninsula from the mid afternoon of the 21st into the early morning of the 22nd. Some poor drainage and roadway flooding was reported, but no serious flooding or damage was reported. Storm totals included 1.68 inches in Milford, 1.63 inches in Dover, 1.45 inches in Georgetown and 1.25 inches in Greenwood. The low pressure system responsible for the heavy rain moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

### **New Castle County**

<b>North Portion</b>	<b>21</b>	<b>2100EST</b>							<b>Flood</b>
	<b>22</b>	<b>0800EST</b>							

Heavy rain affected the Delmarva Peninsula during the late afternoon and evening of the 21st. This caused flooding along the Christina River and significant, but within bankfull rises on some of the other major streams and creeks in New Castle County. The Christina River at Coochs Bridge reached its flood stage of 9 feet at 9 p.m. EST on the 21st, crested at 11.63 feet at 1230 a.m. EST on the 22nd and was back within bankfull at 8 a.m. EST on the 22nd. This was the highest crest at Coochs Bridge on the Christina River since the January 19, 1996 crest of 11.8 feet. Storm totals included 2.20 inches in Newark, 2.03 inches in Wilmington and 1.98 inches at the New Castle County Airport. No serious damage or injuries were reported. The low pressure system responsible for the heavy rain moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

## DISTRICT OF COLUMBIA

### **DCZ001**

#### **District Of Columbia**

<b>09</b>	<b>0500EST</b>								<b>Winter Storm</b>
	<b>2359EST</b>								

An area of low pressure moved from the Ohio Valley to North Carolina from late on the 8th through the evening of the 9th. The storm produced an unusual band of heavy snow that fell directly over the nation's capital and the western suburbs. Snowfall rates were occasionally in excess of 1 1/2 inches per hour during the morning and afternoon of the 9th. By evening, the snow depth reached 11.5 inches on North Capitol Street downtown. Washington Reagan National Airport reported 8.4 inches. The rapid accumulation of snow made travelling treacherous. The Federal Government was forced to shut down at midday. The House of Representatives had to postpone voting because many representatives were unable to get to work. Hundreds of accidents and a handful of injuries occurred on area roads as commuters struggled to get home from work and school. Virginia State Police responded to 250 accidents and towed 200 vehicles in the western suburbs alone. Adding to the travel nightmare, numerous flights were cancelled at Washington Reagan National Airport between 7:00 am and midnight. This storm produced more snow in one 24 hour period than had fallen in Washington D.C. over the last two years.

## FLORIDA, East Central

### **Lake County**

<b>1 S Clermont</b>	<b>14</b>	<b>1454EST</b>			<b>30K</b>				<b>Thunderstorm Wind (G50)</b>
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Winds from a severe thunderstorm blew down two large oak trees destroying a pool screen and damaging the roof of a house.

## FLORIDA, Extreme Southern

NONE REPORTED.

## FLORIDA, Northeastern

### **Marion County**

<b>12 SW Ocala</b>	<b>14</b>	<b>1230EST</b>			<b>5K</b>				<b>Thunderstorm Wind</b>
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Large trees and power lines were blown down.

# Storm Data and Unusual Weather Phenomena

March 1999

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>Clay County</b>									
Countywide	09	1830EST			0	1			Wild/Forest Fire
	10	1830EST							
	One five acre fire on the Putnam/Clay County Line.								
<b>Flagler County</b>									
Countywide	09	1830EST			0	0			Wild/Forest Fire
	One seven acre fire threatened eight homes and one out building, fire was contained. One additional fire reported of unknown acreage, no structures threatened, fire was contained.								
<b>Marion County</b>									
Countywide	09	1830EST			0	0			Wild/Forest Fire
	A six acre fire impacted two structures (one barn and one shed). Fire was under control.								
<b>Nassau County</b>									
Countywide	09	1830EST			0	0			Wild/Forest Fire
	One brush fire (.5 acre), extinguished.								
<b>Marion County</b>									
Anthony	15	1730EST			0	0			Wild/Forest Fire
	One two acre fire near Anthony. No structures threatened.								
<b>Putnam County</b>									
Countywide	15	1730EST			0	0			Wild/Forest Fire
	Three fires, 2 acres near Satsuma, 177 acres South of Palatka, and 1/4 acre near Hawthorne. No structures threatened.								
<b>Marion County</b>									
Countywide	15	1800EST			0	0			Wild/Forest Fire
	22	1800EST							
	Fifteen fires with a total acreage burned of 17.05 acres. Two structures destroyed.								
<b>Nassau County</b>									
Countywide	23	1800EST			0	0			Wild/Forest Fire
	Reported 1.3 acres burned.								
<b>Marion County</b>									
Countywide	24	1800EST			0	1			Wild/Forest Fire
	26	1800EST							
	Eight fires, 15 acres burnt. One firefighter injured on 3/26/99.								
<b><u>FLORIDA, Northwest</u></b>									
<b>Holmes County</b>									
Bonifay	03	0345EST			0	0	14K		Thunderstorm Wind
	Portion of tin roof blown off the Holmes County Agricultural Center and lay scattered across adjacent farm fields.								
<b>Walton County</b>									
De Funiak Spgs	09	0603EST			0	0	1K		Thunderstorm Wind
	Numerous trees down at the intersection of Interstate 10 and Highway 331.								
<b>Walton County</b>									
Santa Rosa Beach	03	0230EST			0	0	25K		Thunderstorm Wind
	Minor roof damage to a tin barn. Damage to some vehicles caused by flying debris.								
<b>Bay County</b>									
5 NE Panama City	03	0335EST			0	0	28K		Thunderstorm Wind
	Five homes sustained minor roof damage at the intersection of Highway 77 and 34th St. in Highland Park.								
<b>Wakulla County</b>									
Sopchoppy	03	0550EST			0	0	15K		Thunderstorm Wind
	Several trees and power lines down. Slight roof damage to a few residences.								
<b>Leon County</b>									
Bradfordville	03	0640EST			0	0	1K		Thunderstorm Wind
	Numerous trees and large limbs down in the Killlearn Lakes subdivision.								
<b>Jefferson County</b>									
9 W Wacissa	03	0715EST			0	0	50K		Thunderstorm Wind
	Few large trees down. A house had its tin roof peeled off and neighboring shed was destroyed.								
<b>Lafayette County</b>									
Buckville	23	1000EST			0	0			Wild/Forest Fire
	24	1700EST							
	A large brush fire consumed more than 2000 acres near Buckville off U.S. Highway 27.								

# Storm Data and Unusual Weather Phenomena

March 1999

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

## FLORIDA, Southern

### Monroe County

**5 SW Marathon 03 1150EST 0 0 0 0 Thunderstorm Wind (G60)**  
 A line of thunderstorms became severe as it moved from the Gulf of Mexico through the lower and middle Keys. Peak wind measurements included 69 mph at Sombrero Key Light, 56 mph at Sand Key Light and 53 mph at Molasses Reef Light. No casualties or damage were reported.

### Dade County

**Naranja 03 1230EST 0.2 10 0 0 10K 0 Tornado (F0)**

### Dade County

**Miami 03 1245EST 1 1 10K 0 Tstm Wind/Hail**  
**1305EST**

A squall line moved from southwest to northeast across south Florida. A "gustnado" formed along the line in Naranja, tearing the roof from a lumber yard structure. Pea-size hail fell at Homestead Air Reserve Base, small palm trees were uprooted in Miami Lakes and several funnel clouds were sighted from Hialeah to Opa Locka. The squall line moved across Biscayne Bay with wind gusts of 45 mph, capsizing a small fishing boat near Stiltsville. One fisherman drowned and another was rescued, but was suffering from hypothermia. M55IW

### Collier County

**Golden Gate 14 1112EST 0 3 350K 0 Wild/Forest Fire**  
**15 1800EST**

A wildfire, most likely set by an arsonist and fanned by 30 mph southerly winds, burned 5000 acres near Golden Gate Estates, east of Naples. Three firefighters were injured. A permanent residence, two mobile homes, 35 vehicles, 8 boats, two motor homes as well as several outbuildings and pieces of lawn equipment were destroyed. An estimated four thousand people were evacuated and a section of Interstate 75 was closed for up to 7 hours..

### Hendry County

**10 SW Clewiston 14 1906EST 0 0 150K 0 Wild/Forest Fire**  
**15 1000EST**

A wildfire consumed more than 1000 acres near Montura. Four homes were destroyed and 70 people were evacuated.

### Dade County

**Redland 30 1812EST 0 0 50K 0 Wild/Forest Fire**  
**31 1800EST**

About a dozen wildfires burned in various locations in south Dade as east winds gusting near 30 mph quickly spread the flames. None of the fires exceeded 100 acres but a nursery was destroyed and several homes were threatened. Smoke caused the closing of the Florida Turnpike Extension and the Don Shula Expressway for several hours.

### Dade County

**Hialeah to Opa Locka 03 1245EST 0 0 0 Funnel Cloud**  
**1300EST**

Thunderstorm produced several funnel clouds over north Dade county and occurrences of small hail.

### Dade County

**3 S Redland 26 1320EST 0 0 Funnel Cloud**

A funnel cloud was sighted about 3 miles south of Tamiami Airport.

### Broward County

**2 E Deerfield Beach 26 1520EST 0 0 Waterspout**

A pilot reported a waterspout in the Atlantic just offshore Deerfield Beach.

### Palm Beach County

**6 W West Palm Beach 26 1900EST 0.1 5 0 0 2K Tornado (F0)**

A brief tornado touchdown in Royal Palm Beach destroyed a shed.

## FLORIDA, West Central

### Sarasota County

**1 SE Venice 14 1330EST 0 0 80K 0 Thunderstorm Wind**  
 Thunderstorm winds downed a 60 to 80 foot tree which fell atop and caused minor to moderate roof and structural damage to a home in the Country Club Estates along U.S. Highway 41, one mile southeast of Venice. Thunderstorm winds also caused minor roof and carport damage to three additional mobile homes in the Country Club Estates.

### Charlotte County

**14 WSW Port Charlotte to 1415EST 0.6 10 0 0 50K 0 Tornado (F0)**  
**13.5 WSW Port Charlotte 1416EST**

A short lived tornado touched down in the Lemon Bay Isles Mobile Home Park along State Road 776 and Blue Heron Road and caused minor roof, screen and carport damage to 18 mobile homes along a narrow southwest to northeast path. The tornado lifted and dissipated between Tern Drive and Marcia in the Lemon Bay Isles Mobile Home Park.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## FLORIDA, West Central

### Citrus County

**1.5 W Lecanto 14 1130EST 0 0 50K 0 Thunderstorm Wind**  
 Thunderstorm winds caused structural damage to a 120-foot-long by 50-foot-wide quonset hut, downed two large metal signs, several large branches and toppled a port-a-potty along State Road 44 near County Road 490.

### Hillsborough County

**10 NW Tampa 14 1254EST 0 0 1K 0 Thunderstorm Wind**  
 Thunderstorm wind downed two 50 foot pine trees on Wood Drift Road and North Bridge Boulevard.

### Hillsborough County

**7 SE Tampa 14 1332EST 0 0 15K 0 Thunderstorm Wind**  
 Thunderstorm winds downed trees and power lines on a vehicle at the intersection of 83rd Street and Progress Boulevard in Progress Village.

### Hillsborough County

**14 SE Tampa 14 1334EST 0 0 50K 0 Thunderstorm Wind**  
 Thunderstorm winds downed several large trees and power lines in the Shadow Run subdivision in Riverview.

### Hillsborough County

**16 ENE Tampa 14 1358EST 0 0 30K 0 Thunderstorm Wind**  
 Thunderstorm winds downed a few large trees and power lines on Fritzsche Road in Thonotosassa.

### Highlands County

**Venus 16 1400EST 0 0 12K 0 Dust Devil**  
 A dust-devil caused minor damage to plants and tarps of a nursery along Old State Road 8 in Venus.

### Manatee County

**Holmes Beach 14 1415EST 0 0 3.5M 0 Lightning**  
 Lightning ignited a fire that caused 3.5 million dollars worth of damage to the three story Playa Encantada Apartment building on the 6000 block of Gulf Drive in Holmes Beach.

### Polk County

**Winter Haven to Lake Alfred 14 1500EST 0 0 25K 0 Thunderstorm Wind**  
 Thunderstorm winds caused minor roof damage to a few mobile homes and commercial buildings along U.S. Highway 98 from Winter Haven to Lake Alfred.

### Polk County

**9 N Haines City 18 0100EST 0 3 100K 0 Wild/Forest Fire**  
**0800EST**  
 Smoke from a reignited controlled burn combined with dense fog which reduced visibility to near zero along Interstate 4 near U.S. Highway 27 in northern Polk county for several hours. Vehicle accidents along with three injuries occurred when motorists attempted to reduce speed while entering the reduced visibility.

### Sarasota County

**Nokomis 01 0800EST 0 0 10K 0 Wild/Forest Fire**  
**1200EST**  
 A wildfire burned nearly 15 acres of brush and caused damage to a residential home in Nokomis.

### Lee County

**Lehigh Acres 21 1400EST 0 0 0 0 Wild/Forest Fire**  
**1600EST**  
 A wildfire burned nearly 200 acres of brush along Richmond Avenue and 15th Street in Lehigh Acres.

### Polk County

**6 E Mulberry 21 1200EST 0 0 0 0 Wild/Forest Fire**  
**1600EST**  
 Sparks from a train's wheels ignited a 60 acre wildfire on commercial property six miles east of Mulberry.

### Lee County

**Cape Coral 23 1130EST 0 0 0 0 Wild/Forest Fire**  
**1900EST**  
 A wildfire ignited and burned nearly 1,500 acres of brush along Burnt Store Road north of Jacaranda Parkway in Cape Coral.

### Lee County

**Cape Coral to Lehigh Acres 27 0900EST 0 0 0 0 Wild/Forest Fire**  
**1800EST**  
 A wildfire ignited and burned nearly 500 acres of brush from Cape Coral to North Ft Myers to Lehigh Acres.

### Hillsborough County

**10 NW Tampa 05 1800EST 0 2 0 0 Wild/Forest Fire**  
 Two firefighters were injured while suppressing an 80 acre wildfire in northwest Hillsborough county.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## FLORIDA, West Central

### Polk County

<b>Lake Wales</b>	<b>08</b>	<b>0044EST</b>			<b>0</b>	<b>0</b>	<b>60K</b>	<b>0</b>	<b>Wild/Forest Fire</b>
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A wildfire consumed nearly five acres of brush and destroyed three mobile homes and a swamp buggy near Lake Wales.

## FLORIDA, West Panhandle

### Escambia County

<b>Cantonment</b>	<b>03</b>	<b>0115CST</b> <b>0120CST</b>			<b>0</b>	<b>0</b>	<b>100K</b>		<b>Thunderstorm Wind (G70)</b>
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High winds damaged several trailers and out buildings near McKenzie Rd, about 4 miles east of US HWY 29. Trees and large limbs were blown down in the area. Winds were estimated at 70 to 80 MPH.

### Escambia County

<b>Pensacola</b>	<b>03</b>	<b>0117CST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
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A wind gust of 58 mph was reported at an elementary school. The school has automatic wind equipment.

### Santa Rosa County

<b>Holley</b>	<b>03</b>	<b>0130CST</b> <b>0140CST</b>	<b>0.5</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>1M</b>		<b>Tornado (F1)</b>
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A weak F1 tornado (winds from 73 to 85 mph) moved through the Country Breeze Estates subdivision along County Rd. 399. The tornado, occurring around 130 AM CST, was about 50 to 75 yards wide with a damage path of approximately one half statute mile. 55 homes sustained some degree of structural damage, mainly with roofs. Of these, 20 suffered major damage.

### Okaloosa County

<b>Blackman</b>	<b>03</b>	<b>0200CST</b> <b>0215CST</b>	<b>7</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>15K</b>		<b>Tornado (F0)</b>
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A F0 tornado (winds 40 to 73 mph on the Fujita Scale) moved from west to east, nearly parallel to State Rd. 2 near the Blackman community. The only major structural damage was to a large chicken facility, west of Blackman. A pump house to one home was overturned. Numerous trees in the tornados path were blown down as well as power lines. Most of the time the circulation was aloft as a funnel cloud, but briefly touched down as a tornado about 7 times during its life span.

### Okaloosa County

<b>Baker</b>	<b>06</b>	<b>0900CST</b>			<b>1</b>	<b>1</b>			<b>Lightning</b>
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A fatal lightning strike occurred while 2 men were on a boat on Hurricane Lake 10 miles Northwest of Baker or 6 miles North of Highway 4 off of Beaver Creek Road. One of the occupants was killed while the other was injured. Upon the approach of a storm, the occupants moved the boat to beneath some trees to escape the rain and were struck.

M37BO

### Escambia County

<b>Gulf Beach</b>	<b>03</b>	<b>0112CST</b>			<b>0</b>	<b>0</b>	<b>50K</b>		<b>Thunderstorm Wind (G65)</b>
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A roof that was shared by two condominium units near Perdido Bay was blown off. The roof landed onto three cars and damaged them.

### Santa Rosa County

<b>Milton</b>	<b>13</b>	<b>2150CST</b> <b>2155CST</b>			<b>0</b>	<b>0</b>	<b>15K</b>		<b>Thunderstorm Wind (G58)</b>
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Several trees and power lines were blown down in the Pine Bluff Community north of Milton.

### Santa Rosa County

<b>Holley</b>	<b>13</b>	<b>2245CST</b> <b>2255CST</b>	<b>0.1</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>30K</b>		<b>Tornado (F0)</b>
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A F0 tornado (winds 40 to 73 mph on the Fujita Scale) with a track of about 150 yards and 50 yards wide, touched down briefly in Holley. The weak tornado twisted several large pine trees which in turn damaged the roof and windows of three homes as they fell. Additional funnel clouds were sighted in the county, but the remainder of storm damage appeared to be from straight line winds.

### Escambia County

<b>Pensacola Beach</b>	<b>03</b>	<b>0500CST</b>			<b>0</b>	<b>0</b>	<b>15K</b>		<b>Lightning</b>
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Lightning struck the toll booth leading to Pensacola Beach. The lightning left a three foot hole in the roof of the toll plaza. No one was injured, but the two toll collectors in the booth dove for cover. They said, "it was like someone taking a picture with a flash camera, right in your face."

### Escambia County

<b>Pensacola Beach</b>	<b>13</b>	<b>1200CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>		<b>Coastal Flooding</b>
	<b>14</b>	<b>0300CST</b>							

### Okaloosa County

<b>Ft Walton Beach to Destin</b>	<b>13</b>	<b>1200CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>		<b>Coastal Flooding</b>
	<b>14</b>	<b>0300CST</b>							

# Storm Data and Unusual Weather Phenomena

March 1999

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

## FLORIDA, West Panhandle

### Santa Rosa County

Navarre	13	1200CST			0	0	2K		
	14	0300CST							Coastal Flooding

Southeast winds of 20 to 30 mph ahead of a cold front caused above normal tides across the Northwest Florida coastal areas. Some minor street flooding took place from Pensacola Beach to Destin. All roads remained open but several roads that run next to and parallel to the Gulf of Mexico had some standing water in them. The standing water remained in the road for several hours until the winds became more westerly on Sunday morning.

### Santa Rosa County

Chumuckla	09	0320CST 0323CST			0	0	25K		Thunderstorm Wind (G60)
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High winds ripped the roofs off of two barns near Chumuckla. The high winds blew the tin roofs off the barns and scattered them in fields and trees nearby. No one was injured.

### Santa Rosa County

Jay	03	0145CST 0147CST			0	0	15K		Thunderstorm Wind (G55)
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High winds damaged several light weight structures near Jay. A couple of barns received roof damage and an old barn fell on a truck parked in it.

### Escambia County

Century	09	0255CST 0258CST			0	0	10K		Thunderstorm Wind (G50)
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Trees and power lines were blown down near Century.

### Santa Rosa County

Bagdad	13	2245CST 2246CST			0	0	5K		Thunderstorm Wind (G50)
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High winds damaged the roof and a porch on a home near Bagdad.

### Santa Rosa County

Floridale	13	2250CST 2252CST			0	0	3K		Thunderstorm Wind (G50)
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A few trees were blown down along I-10 near Floridale (near the Okaloosa County line).

### Okaloosa County

Mary Esther	13	2304CST 2306CST			0	0	5K		Thunderstorm Wind (G50)
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Trees and power lines were blown down just west of Mary Esther.

### Santa Rosa County

Munson	13	2305CST 2307CST			0	0	4K		Thunderstorm Wind (G50)
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Trees were blown down just southeast of Munson.

### Okaloosa County

Holt	13	2225CST 2227CST			0	0	5K		Thunderstorm Wind (G50)
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Trees and power lines were blown down near Holt.

### Escambia County

Pensacola Beach	13	2235CST 2236CST			0	0	5K		Thunderstorm Wind (G50)
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Trees and power lines were blown down on Pensacola Beach.

## GEORGIA, East Central

NONE REPORTED.

## GEORGIA, Lower

NONE REPORTED.

## GEORGIA, North and Central

### Polk County

Aragon	03	0100EST			0	0	0.50K		Thunderstorm Wind
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Polk county 911 reported high winds associated with a thunderstorm knocked some trees down.

### Carroll County

Tyus to 3 E Carrollton	03	0325EST			0	0	50K		Thunderstorm Wind
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Carroll county 911, a spotter and a newspaper reported thunderstorm winds damaged a trailer on Waller Road in Tyus, lifting the

# Storm Data and Unusual Weather Phenomena

March 1999

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

## GEORGIA, North and Central

front porch up and blocking the door. Four people were trapped inside but there were no injuries. The mobile home was actually shifted on its foundation, causing moderate damage. The county EMA and the newspaper also reported a barn was damaged off highway 5 and Barr Road, a chicken house was damaged on Old Columbus Road, and a tractor shed was blown away on Williams Road. Scattered trees were knocked down and there were power outages to up to 1500 homes.

### Heard County

**Waresville**      **03**      **0325EST**      **0**      **0**      **5K**      **Thunderstorm Wind**  
 Heard county 911 reported thunderstorm winds knocked trees down, caused power outages, and blew 2 windows out of a house.

### Troup County

**2 W La Grange**      **03**      **0330EST**      **0**      **0**      **0.50K**      **Thunderstorm Wind**  
 Troup county 911 reported several trees blown down. Tree tops were twisted.

### Coweta County

**5 NE Madras to Sharpsburg**      **03**      **0410EST**      **0**      **0**      **2K**      **Thunderstorm Wind**  
 Coweta county 911 reported trees and power lines down on Highway 29. Power lines were also knocked down near Sharpsburg.

### Harris County

**Ellerslie**      **03**      **0410EST**      **0**      **0**      **Hail (0.75)**

### Bartow County

**2 E Allatoona**      **03**      **0415EST**      **0**      **0**      **2K**      **Thunderstorm Wind**  
 The Kennesaw PD reported 2 trees downed and the skirt around a mobile home blown off by thunderstorm winds.

### Clayton County

**Riverdale**      **03**      **0420EST**      **0**      **0**      **15K**      **Thunderstorm Wind**  
 A newspaper reported thunderstorm wind damage at Williamsburg Park subdivision off Flat Shoals Road. One home was damaged from a falling tree. Trees falling on power lines caused power outages. There was damage to gutters and siding on several other homes in Clayton county.

### Cobb County

**Kennesaw**      **03**      **0425EST**      **0**      **0**      **Hail (1.00)**  
 The Kennesaw Emergency Services reported dime to quarter size hail.

### Fulton County

**Roswell**      **03**      **0430EST**      **0**      **0**      **1K**      **Thunderstorm Wind**  
 North Fulton county 911 reported 3 to 4 trees knocked down by thunderstorm winds.

### Cherokee County

**Woodstock**      **03**      **0432EST**      **0**      **0**      **Hail (0.75)**  
 The public reported dime size hail.

### Cherokee County

**1 E Ball Ground**      **03**      **0445EST**      **0**      **0**      **Hail (0.75)**  
 The Cherokee county Civil Defense director reported dime size hail.

### Forsyth County

**1 E Cumming**      **03**      **0505EST**      **0**      **0**      **1K**      **Thunderstorm Wind**  
 The public reported trees and power lines down and hail of unknown size.  
 A line of severe thunderstorms moved into west Georgia early in the morning of March 3rd. The line produced damaging straight-line winds and a few hail reports. Radar indicated there could have been a brief rotation in the storm in Carroll county where there were reports of trees and a tractor shed blown in different directions. Power was lost to about 10,000 homes throughout the area.

### Fayette County

**Brooks**      **24**      **1800EST**      **0**      **0**      **Hail (1.00)**  
 The public reported quarter size hail.

### Butts County

**Stark**      **24**      **1905EST**      **0**      **0**      **Hail (0.75)**  
 A radio station reported dime size hail on Barnetts Bridge Road near Jackson Lake. The hail damaged a few plants.

### Emanuel County

**Oak Park**      **25**      **1430EST**      **0**      **0**      **Hail (0.75)**  
 A motorist reported slightly larger than 3/4 inch hail.

## GEORGIA, Northeast

### GAZ010-017

**Rabun - Habersham**  
**03**      **1900EST**      **0**      **0**      **20K**      **High Wind**  
**2359EST**

# Storm Data and Unusual Weather Phenomena

March 1999

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

## GEORGIA, Northeast

Gradient high winds just ahead of a cold front gusted between 50 and 70 mph, causing some downed trees and power lines as well as minor damage to mobile homes.

### **GAZ010-017>018 Rabun - Habersham - Stephens**

<b>09</b>	<b>0300EST 0800EST</b>			<b>0</b>	<b>0</b>		<b>Winter Storm</b>
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A winter storm moving north through the Tennessee Valley brought a mix of heavy sleet, snow and freezing rain to extreme northeast Georgia early in the morning. A mixture of sleet and snow accumulated between 2 and 3 inches, with freezing rain accruing to greater than one quarter inch in places.

### **GAZ010**

#### **Rabun**

<b>26</b>	<b>0600EST 1700EST</b>			<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
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A deep cold core upper low brought heavy wet snow, accompanied by thunder to extreme northeast Georgia. Snowfall amounts ranged between 2 and 4 inches.

### **GAZ017>018**

#### **Habersham - Stephens**

<b>26</b>	<b>0800EST 1500EST</b>			<b>0</b>	<b>0</b>		<b>Snow</b>
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A deep cold core upper low moving slowly east across the Southern Appalachians brought a round of light snow, accompanied by heavier bursts of sleet and hail as thunderstorms developed, during the day. Accumulations ranged between 1 and 3 inches.

## GEORGIA, Southeast

### **Candler County**

<b>Metter</b>	<b>25</b>	<b>1440EST 1445EST</b>			<b>0</b>	<b>0</b>		<b>Hail (1.75)</b>
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Hail covered the ground in several areas.

### **Bulloch County**

<b>Statesboro</b>	<b>25</b>	<b>1510EST 1515EST</b>			<b>0</b>	<b>0</b>		<b>Hail (1.00)</b>
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### **Effingham County**

<b>5 SW Shawnee to Shawnee</b>	<b>25</b>	<b>1530EST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.88)</b>
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## GEORGIA, Southwest

NONE REPORTED.

## GEORGIA, West Central

NONE REPORTED.

## HAWAII

### **HIZ002>003**

#### **Oahu - Maui**

<b>20</b>	<b>0705HST</b>			<b>0</b>	<b>0</b>		<b>High Wind (G48)</b>
<b>21</b>	<b>1600HST</b>						

Wind gusts to 55 mph caused power failures and traffic problems in Oahu. There were many reports of downed trees and branches. A tree fell across Likelike Highway, and another tree was blown into power lines near the top of Tantalus Drive leaving about 200 customers without power for more than 10 hours. Two homes, one in Palolo and another in Wailupe, lost portions of their roof, due to high gusts.

On Maui, there were numerous smaller incidents, affecting about a dozen customers at a time, from falling tree limbs, especially upcountry.

### **Hawaii County**

<b>Hawi to Hilo</b>	<b>20</b>	<b>2010HST</b>			<b>0</b>	<b>0</b>		<b>Urban/Sml Stream Fld</b>
	<b>21</b>	<b>0200HST</b>						

Heavy rain was observed in northern and eastern districts of Hawaii, especially over upslope areas. Some streams overflowed, and there was some minor flooding on streets and in residential areas. The rainfall totals for the past 24 hours are as follows:

Honokaa	6.29 in.
Kahua Ranch	2.80 in.
Kamuella Upper	3.94 in.
Kamuella	3.19 in.
Laupahoehoe	2.82 in.
Waiakea Uka	3.61 in.
Mountain View	3.53 in.



# Storm Data and Unusual Weather Phenomena

March 1999

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

## IDAHO, Southwest

reported 5 to 6 inches of new snow. In the Treasure Valley the storm produced 2 to 3 inches of snow with an isolated report of 5 inches at the Boise National Weather Service office.

## ILLINOIS, Central

**ILZ027>031-036>038-040>045-047>048-050>051-053**      **Knox - Stark - Peoria - Marshall - Woodford - Fulton - Tazewell - Mclean - Schuyler - Mason - Logan - De Witt - Piatt - Champaign - Cass - Menard - Morgan - Sangamon - Macon**

<b>08</b>	<b>1200CST</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>Heavy Snow</b>
<b>09</b>	<b>1200CST</b>				

A winter storm developed in the Southern Rockies and moved northeast into Illinois. The heaviest snow fell mainly north of interstate I-72/I-74 from Jacksonville to Danville. Wet snowfall amounts ranged from 6-11 inches in a little over 12 hours, though the snow fell for 24 hours. Light freezing rain was also reported in some locations with the snow. In Galesburg (Knox County), 9 inches of snow was reported and in Bradford (Stark County) 8 inches of snow fell. Some other reports includes 8 inches in Avon (Fulton County), 7.5 inches in Chillicothe (Peoria County), just north of Lacon (Marshall County) 7.5 inches fell, 7.3 inches in Congerville (Woodford County), 9 inches in South Pekin (Tazewell County), 7.5 inches just west of Bloomington (McLean County), 6 inches in Rantoul (Champaign County), 6.5 inches in Clinton (DeWitt County), 7.5 inches in San Jose (Logan County), 11 inches in Havana (Mason County), 9.3 inches in Virginia (Cass County), and 6.3 inches in Springfield (Sangamon County). Snowfall amounts averaged between 2 to 4 inches between I-72 and I-70 with less than 1 inch of snow southeast of I-70 where rain generally fell. Some light freezing rain was also reported south of I-72/I-74 but ice accumulations were less than a quarter inch. Dozens of accidents occurred throughout the area during the event with numerous minor injuries.

## ILLINOIS, Northeast

**ILZ010>014**      **Lee - De Kalb - Kane - Du Page - Cook**

<b>05</b>	<b>1700CST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>06</b>	<b>1200CST</b>			

Snow fell across north central and northeast Illinois. Most of the area received 3 to 6 inches. The heaviest amounts were 8.2 inches at Midway Airport in Chicago, 7 inches at Winfield in DuPage County, 6 inches at Elburn and Elgin in Kane County and 6 inches at Compton and Dixon in Lee County.

**ILZ003-006-008-010>014-019>023-032>033-039**      **Winnebago - Lake - Ogle - Lee - De Kalb - Kane - Du Page - Cook - La Salle - Kendall - Grundy - Will - Kankakee - Livingston - Iroquois - Ford**

<b>08</b>	<b>1700CST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>09</b>	<b>0900CST</b>			

Heavy snow fell across most of north central and northeast Illinois. Snow began in the late afternoon and evening of the 8th and diminished to flurries during the morning of the 9th. Snowfall amounts were generally 5 to 8 inches. Snow amounts were a little less toward the Wisconsin border. Some of snowfall totals include 5.4 inches at Midway Airport Chicago, 6.7 inches O'Hare Airport Chicago, 6.4 inches at NWS Romeoville, 6.1 inches at Lake Villa in Lake County, 7.7 inches at Rockford Airport, 7.1 inches at Dixon in Lee County, 7.0 inches at DeKalb, 7.0 inches at Oregon in Ogle County, 8.0 inches at Morris in Grundy County, 8.2 inches at Bourbonnais in Kankakee County, 6.0 inches at Chatsworth in Livingston County and 7.3 inches at Watseka in Iroquois County. Strong east winds caused blowing and drifting of snow. There were many traffic accidents including a fatal accident near Mendota and another on the Tri-State Tollway near the Hinsdale Oasis. Many schools closed.

## ILLINOIS, Northwest

**ILZ001>002-007-009-015>018-024>026-034>035**      **Jo Daviess - Stephenson - Carroll - Whiteside - Rock Island - Henry - Bureau - Putnam - Mercer - Henderson - Warren - Hancock - McDonough**

<b>05</b>	<b>1500CST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
	<b>2300CST</b>			

An intense storm system raced across Southern Iowa into the Great Lakes and brought several inches of wet, heavy snow to much of Eastern Iowa and Northwest Illinois. Precipitation developed over Northern Missouri and Southern Iowa by early afternoon, and quickly overspread Eastern Iowa and Northwest Illinois by mid to late afternoon. The precipitation began as rain with temperatures just above freezing, however, strong dynamical cooling from the vigorous upper storm system resulted in a rapid changeover to snow within minutes. Lightning and thunder accompanied the snow in a band from near Ottumwa through the Quad Cities to near Sterling-Rock Falls where snowfall totals ranged from 3 to 5 inches with isolated areas receiving 6 inches. Snowfall amounts were a lot less over Southern Iowa and West Central Illinois and were generally around 1 to 2 inches. Snowflakes the size of quarters and intense snowfall rates resulted in poor visibility and rapid accumulation on mainly grassy and elevated surfaces. Roads were reported as slushy with slick spots in many areas. Numerous traffic accidents were reported. One such accident in Davenport involved a school bus which skidded and collided with the rear end of another vehicle at the intersection of Hickory Grove Road and North Fairmount Street. Four children sustained minor injuries and were treated and released from a local hospital. Twenty minor traffic accidents were also reported within a two hour period in Clinton.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ILLINOIS, Northwest

**ILZ001>002-007-009-015>018-024>026-034>035**     **Jo Daviess - Stephenson - Carroll - Whiteside - Rock Island - Henry - Bureau - Putnam - Mercer - Henderson - Warren - Hancock - McDonough**

<b>08</b>	<b>1600CST 2300CST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
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A powerful late season winter storm pulled out of the Rockies and into the Mid Mississippi Valley producing a large swath of significant snowfall throughout Eastern Iowa and Northwest and West Central Illinois. Snowfall amounts generally ranged between 6 and 8 inches. Thunder and lightning accompanied the snow over East Central Iowa and West Central Illinois which enhanced snowfall totals. 9 to 12 inches of snow fell over much of Cedar, Scott, Rock Island, Henry Illinois, Bureau and Putnam counties. Law enforcement agencies were scrambling to deal with accidents ranging from fenderbenders to jackknifed semis, though no serious injuries were reported. The snow forced early closings of many area shopping malls, schools and businesses.

Many remained closed on Tuesday. The University of Iowa and Iowa State University cancelled classes on Monday. It marked the first time the University of Iowa cancelled classes since 1995. Also, flights were delayed and cancelled at The Quad City International Airport. Winds of 20 to 30 mph with gusts to 40 mph created blowing and drifting of snow with visibility near zero at times making snow removal difficult.

## ILLINOIS, South

**ILZ087-091>094**     **Gallatin - Hardin - Alexander - Pulaski - Massac**

<b>09 18</b>	<b>0300CST 2200CST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
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Two organized storm systems moved out of the southern Plains on the 5th and 6th and the 8th and 9th. Total rainfall from these two storms averaged between 1 and 2 inches. Although not excessive, this was enough rainfall to cause minor flooding of the Ohio River at most points on the Illinois shore. At Shawneetown, where flood stage is 33 feet, the crest of 36.5 feet occurred on March 12. Crests at Brookport, Grand Chain, and Cairo were all less than a foot and a half above flood stage. Some agricultural lowland was flooded.

**ILZ084**     **Jackson**

<b>10 22</b>	<b>0200CST 2200CST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
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Two organized storm systems, one on the 5th and 6th and the other on the 8th and 9th, produced a combined rainfall total of 1 to 2 inches. This was sufficient to push the Big Muddy River 1 to 3 feet above flood stage. Flood stage at Murphysboro is 16 feet, and the crest of 18.35 feet occurred on March 19. This resulted in minor flooding of bottomlands. No residences or structures were threatened.

**ILZ075>078-080>086-088>089-092>093**     **Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Union - Johnson - Alexander - Pulaski**

<b>14</b>	<b>0100CST 1200CST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
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A major snowstorm dumped as much as a foot of snow over parts of far southern Illinois. The hardest hit area was the Marion-Carbondale area, where 11 to 12 inches was measured. Because most of the precipitation fell as rain further south, little if any snow occurred from Metropolis to Shawneetown along the Ohio River. There was a sharp division between no snow and heavy snow. For example, in Johnson County (between Metropolis and Carbondale), accumulations ranged from 1 inch in the southeast corner to 7 inches in the northwest corner of the county. The swath of heaviest snow extended from Carbondale to Mount Carmel, where 9 to 12 inches fell. Other totals included 8 inches in Mount Vernon and Du Quoin, and 4 inches between Cairo and Anna. Snowfall rates were 1 to 2 inches per hour for several hours. This overtaxed the ability of most road crews to keep up with removal efforts. Interstate 57 was closed in the vicinity of Interstate 24 for several hours Sunday due to stranded tractor trailer rigs. In Johnson County, at least 30 vehicles slid off roads near Goreville. Drifting snow hampered road crews, forcing them to make several passes through previously cleared roads. Four-wheel drive vehicles and tractors were in high demand as smaller vehicles became stuck. Scattered power outages were reported due to heavy wet snow on power lines. Many schools cancelled classes the day following the storm. Many churches cancelled Sunday morning services. Carbondale's University Mall closed for the day. Numerous accidents occurred on area roadways, including Interstates 57 and 64. Only a few involved injuries. Rapidly warming temperatures began to melt the snow quickly within 48 hours.

## ILLINOIS, Southwest

**ILZ095>097**     **Adams - Brown - Pike**

<b>08</b>	<b>0600CST 2200CST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
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A late winter storm dropped from 4 to 8 inches of snow across west central Illinois. Adams and Brown counties received from 6 to 8 inches while Pike County reported 4 inches.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## ILLINOIS, Southwest

<b>ILZ074-079-101</b>	<b>Washington - Randolph - St. Clair</b>								
	<b>13</b>	<b>2200CST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>14</b>	<b>0600CST</b>							

A late winter snow storm dropped from 2 to 13 inches of snow across parts of southwest Illinois. The band of heavy snow had a rather sharp northern edge. For example, north Monroe County reported 2 inches while the south part of the county picked up 6. Northwest Washington County received 1 inch of snow while the southeast corner picked up 4 inches. Randolph County received the most with amounts ranging from 8 to 13 inches.

## INDIANA, Central

<b>INZ021-028&gt;031-035&gt;042-049</b>	<b>Carroll - Warren - Tippecanoe - Clinton - Howard - Fountain - Montgomery - Boone - Tipton - Hamilton - Madison - Delaware - Randolph - Henry</b>								
	<b>08</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>09</b>	<b>1200EST</b>							

<b>INZ043&gt;048-051&gt;057-062&gt;065-070&gt;072</b>	<b>Vermillion - Parke - Putnam - Hendricks - Marion - Hancock - Vigo - Clay - Owen - Morgan - Johnson - Shelby - Rush - Monroe - Brown - Bartholomew - Decatur - Lawrence - Jackson - Jennings</b>								
	<b>08</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>09</b>	<b>1200EST</b>							

A strong upper level low pressure system aided by a strong southerly flow and copious amounts of moisture led to a prolonged period of wintry precipitation featuring heavy snow across northern counties in the CWA and a mix of snow, freezing rain and sleet in southern zones of the CWA. Snowfall amounts ranged from 5-9 inches across the northern CWA. Roads were very slick and hazardous the entire area. Many schools were closed for the day as a result of the roads.

<b>INZ067&gt;072</b>	<b>Knox - Daviess - Martin - Lawrence - Jackson - Jennings</b>								
	<b>13</b>	<b>1730EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>14</b>	<b>1500EST</b>							

4 to 6 inches of snow fell across southern parts of the CWA in less than 24 hours.

## INDIANA, Northeast

NONE REPORTED.

## INDIANA, Northwest

<b>INZ001&gt;002-010&gt;011-019</b>	<b>Lake - Porter - Newton - Jasper - Benton</b>								
	<b>08</b>	<b>1800EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>09</b>	<b>1000EST</b>							

Heavy snow fell over northwest Indiana. Snow began in the late afternoon/early evening of the 8th and diminished to flurries during the morning of the 9th. Strong east wind caused some blowing and drifting of snow. Snowfall amounts were generally 5 to 8 inches. Some specific snow totals were 8.0 inches at Brook, 6.0 inches at Lake Village, 6.0 inches at Morocco, 7.4 inches at Remington, 8.0 inches at Rensselaer and 6.5 inches at Merrillville.

## INDIANA, South Central

NONE REPORTED.

## INDIANA, Southeast

<b>INZ073&gt;075-080</b>	<b>Ripley - Dearborn - Ohio - Switzerland</b>								
	<b>13</b>	<b>0900EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
		<b>1800EST</b>							

A narrow band of heavy snow pushed into southeastern Indiana. The snow fell at a rate greater than 1 inch an hour at times leaving behind accumulations of 4 to 8 inches.

<b>INZ050-058&gt;059-066-073&gt;075-080</b>	<b>Wayne - Fayette - Union - Franklin - Ripley - Dearborn - Ohio - Switzerland</b>								
	<b>08</b>	<b>2300EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>09</b>	<b>1600EST</b>							

A low pressure system with abundant moisture moved into an arctic air mass producing very heavy snowfall. The snow fell at the rate of 1 to 2 inches an hour at times during the overnight hours and then was much lighter during the daytime. Total accumulation ranged from 4 to 10 inches.

## INDIANA, Southwest

<b>INZ085</b>	<b>Posey</b>								
	<b>11</b>	<b>0400CST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	<b>14</b>	<b>2100CST</b>							

Two storm systems, one on the 5th and 6th and the other on the 8th and 9th, produced a total rainfall of 1 to 2 inches. This was

# Storm Data and Unusual Weather Phenomena

March 1999

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

## INDIANA, Southwest

sufficient to push the Wabash River slightly above flood stage at New Harmony. The river crested less than 6 inches above flood stage, which produced only minor overflow into agricultural bottomlands.

**INZ081>082-085>086**

### **Gibson - Pike - Posey - Vanderburgh**

<b>14</b>	<b>0200CST 1200CST</b>		<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
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Heavy snow, between 4 and 8 inches, fell over parts of southwest Indiana away from the Ohio River. Close to the river, the precipitation fell mainly in the form of rain. There was a sharp division between little snow and heavy snow. Amounts ranged from just an inch or so in the Rockport area of Spencer County to as much as 8 or 9 inches in the Princeton area of Gibson County. In Evansville, amounts were near 4 inches.

## IOWA, Central

**IAZ086-096>097**

### **Wapello - Appanoose - Davis**

<b>05</b>	<b>1300CST 1700CST</b>		<b>0</b>	<b>0</b>	<b>3K</b>	<b>Heavy Snow</b>
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A low pressure system passed to the south of Iowa during the day on the 5th. The north edge of the precipitation stretched into the state in the form of the northern edge of the deformation zone. Rain fell initially, however the system became convective. The combination of the convection and the entrainment of dry air into the state led to a fairly quick change to snow. A narrow band of heavy snow set up across Appanoose, northwest Davis, and Wapello Counties. At the heaviest point, snow fall at the rate of 3 inches per hour. In a band extending from near Centerville to Ottumwa, 6 to 7 inches of snow fall in a three to four hour period. The official snowfall total at the Ottumwa Airport was 7 inches. This was the highest official total, though a few locations picked up a bit more unofficially.

**IAZ005-015>017-023>024-033>037-044>050-057>062-070>075-081>086-092>097**

### **Kossuth - Palo Alto - Hancock - Cerro Gordo - Pocahontas - Humboldt - Sac - Calhoun - Webster - Hamilton - Hardin - Crawford - Carroll - Greene - Boone - Story - Marshall - Tama - Audubon - Guthrie - Dallas - Polk - Jasper - Poweshiek - Cass - Adair - Madison - Warren - Marion - Mahaska - Adams - Union - Clarke - Lucas - Monroe - Wapello - Taylor - Ringgold - Decatur - Wayne - Appanoose - Davis**

<b>08</b>	<b>0000CST 2000CST</b>		<b>0</b>	<b>0</b>	<b>450K</b>	<b>Winter Storm</b>
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A major winter storm swept into the central U.S. during the early morning hours of the 8th. For a March storm, this storm could have certainly been much worse however. It is interesting to note that in 1998 a snowstorm producing 10 to 20 inches of snow occurred on this same date. Arctic high pressure was poised to the northeast of Iowa with surface pressures in the center of the high in excess of 1050 mb over northeast Canada. This high fed cold air into the central U.S. Meanwhile, low pressure moved through the Rockies on the 7th and moved out onto the Plains during the night of the 7th. Initially, the surface low was located over the northern Rockies. At the same time the low was moving southeast, a strong upper level low moved east across the southern Rockies. The two systems phased on the 8th with the main surface low forming over Kansas. From there it continued to move east across southern Missouri, and then eventually toward southern Kentucky. Moisture from the Gulf of Mexico was plentiful and fed into the storm. A very large area of snow broke out northeast of the low during the predawn hours of the 8th. The first wave of snow came as the initial warm air advection took place. Visibility was reduced to under one quarter mile at many areas as a quick one to three inches of snow fall. The second round of snow moved in before dawn on the 8th and produced heavy snow of one to two inches per hour and visibility reductions once again under one quarter mile. During the day on the 8th, the snow area became broad with moderate to occasionally heavy snow reported. Some freezing rain and ice pellets were reported over south central into southeast Iowa. The icing was not severe as the amount of freezing rain was minimal and lasted only about 3 hours. Surface winds increased during the day with 20 to 30 MPH winds reported over the south half of the state, and 25 to 40 MPH winds over the north. These winds caused considerable drifting snow and some whiteout conditions. Reports indicated that snow drifted into drifts in excess of 6 feet in places. The main feature with this storm was the heavy snowfall as conditional symmetric instability resulted in bands of convective snowfall. A large part of Iowa received in excess of 8 inches of snow with most areas south of U.S. Highway 20 reporting in excess of 8 inches. A narrow band of 8 to 10 inch snowfall occurred over north central Iowa. In this band, heavier totals included 11 inches at Mason City and 10.5 inches at Britt. A large area of 10 inch or greater snowfall occurred over west central into Central Iowa, generally north of U.S. Highway 34 and from Interstate 35 west. Two areas of very heavy snow were reported. In the Carroll area, the greatest snow total in the state was reported with 16 inches of new snow. Sixteen inches of snow also fell in the town of Breda. Audubon was close behind with 14 inches. An area of a foot or more covered a large part of Carroll and Audubon Counties as well as the northwest half of Guthrie County. The second area of very heavy snow was over central Iowa. This area covered southwest Polk County, southern Dallas County, and most of Madison and Warren Counties. Snowfall in these counties was in the 12 to 14 inch range. The heaviest official totals came from Des Moines with 13.1 inches and Winterset with 13.0 inches. Travel was hampered with this storm, though most roads did remain open throughout the storm. Numerous accidents were reported around the state as roads became slick due to the very wet nature of the snow. The weight of the snow also presented problems in that it caused some minor damage and spotty power outages as some branches were broken. Many businesses and most schools closed for the day. A few school districts remained closed the 9th as well due to drifted roads.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## IOWA, Central

<b>IAZ004&gt;007- 015&gt;017-023&gt;028- 033&gt;039-044&gt;050</b>	<b>Emmet - Kossuth - Winnebago - Worth - Palo Alto - Hancock - Cerro Gordo - Pocahontas - Humboldt - Wright - Franklin - Butler - Bremer - Sac - Calhoun - Webster - Hamilton - Hardin - Grundy - Black Hawk - Crawford - Carroll - Greene - Boone - Story - Marshall - Tama</b>								
	17	1200CST 1800CST			0	0	890K		<b>High Wind (G50)</b>

A strong low pressure system moved across the northern tier of U.S. states during the night of the 16th through the day of the 17th. The low pressure had considerable support aloft and deepened considerably as it moved across northern Minnesota and the upper Great Lakes. At the same time, Iowa was in the southwest quadrant of the upper low which placed the state in the subsidence area. Gusty winds began in the morning and by noon winds gusts were reaching 45 MPH or more over much of the north half of the state. Through the middle of the afternoon winds were sustained in the 35 to 45 MPH range with frequent gusts in the 50 to 55 MPH range. The highest official wind gust came from Mason City with a 58 MPH wind gust. Spotty damage was reported around the state, including an overturned truck in Story County near Ames. Fortunately, the leaves were not yet on the trees. This fact helped minimize damage around the state.

<b>IAZ083&gt;084- 094&gt;096</b>	<b>Clarke - Lucas - Decatur - Wayne - Appanoose</b>								
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	16	0600CST			0	0	5K		<b>Flood</b>
	17	1500CST							

Only very minor snowmelt flooding was observed within the Des Moines HSA during March. Flooding was confined to only one single location with a crest only about a foot over flood stage. Rapid rises occurred on the 16th and 17th in the Chariton River Basin as a foot of snow melted over a period of a few days in response to a rapid warmup. Damage was very minor with this event.

## IOWA, East Central and Southeast

<b>IAZ040&gt;042- 051&gt;054-063&gt;068- 076&gt;078-087&gt;089- 098&gt;099</b>	<b>Buchanan - Delaware - Dubuque - Benton - Linn - Jones - Jackson - Iowa - Johnson - Cedar - Clinton - Muscatine - Scott - Keokuk - Washington - Louisa - Jefferson - Henry - Des Moines - Van Buren - Lee</b>								
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	05	1300CST 2300CST			0	0			<b>Winter Storm</b>
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An intense storm system raced across Southern Iowa into the Great Lakes and brought several inches of wet, heavy snow to much of Eastern Iowa and Northwest Illinois. Precipitation developed over Northern Missouri and Southern Iowa by early afternoon, and quickly overspread Eastern Iowa and Northwest Illinois by mid to late afternoon. The precipitation began as rain with temperatures just above freezing, however, strong dynamical cooling from the vigorous upper storm system resulted in a rapid changeover to snow within minutes. Lightning and thunder accompanied the snow in a band from near Ottumwa through the Quad Cities to near Sterling-Rock Falls where snowfall totals ranged from 3 to 5 inches with isolated areas receiving 6 inches. Snowfall amounts were a lot less over Southern Iowa and West Central Illinois and were generally around 1 to 2 inches. Snowflakes the size of quarters and intense snowfall rates resulted in poor visibility and rapid accumulation on mainly grassy and elevated surfaces. Roads were reported as slushy with slick spots in many areas. Numerous traffic accidents were reported. One such accident in Davenport involved a school bus which skidded and collided with the rear end of another vehicle at the intersection of Hickory Grove Road and North Fairmount Street. Four children sustained minor injuries and were treated and released from a local hospital. Twenty minor traffic accidents were also reported within a two hour period in Clinton.

<b>IAZ040&gt;042- 051&gt;054-063&gt;068- 076&gt;078-087&gt;089- 098&gt;099</b>	<b>Buchanan - Delaware - Dubuque - Benton - Linn - Jones - Jackson - Iowa - Johnson - Cedar - Clinton - Muscatine - Scott - Keokuk - Washington - Louisa - Jefferson - Henry - Des Moines - Van Buren - Lee</b>								
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	08	1500CST			0	0			<b>Winter Storm</b>
	09	2200CST							

A powerful late season winter storm pulled out of the Rockies and into the Mid Mississippi Valley producing a large swath of significant snowfall throughout Eastern Iowa and Northwest and West Central Illinois. Snowfall amounts generally ranged between 6 and 8 inches. Thunder and lightning accompanied the snow over East Central Iowa and West Central Illinois which enhanced snowfall totals. 9 to 12 inches of snow fell over much of Cedar, Scott, Rock Island, Henry Illinois, Bureau and Putnam counties. Law enforcement agencies were scrambling to deal with accidents ranging from fenderbenders to jackknifed semis, though no serious injuries were reported. The snow forced early closings of many area shopping malls, schools and businesses.

Many remained closed on Tuesday. The University of Iowa and Iowa State University cancelled classes on Monday. It marked the first time the University of Iowa cancelled classes since 1995. Also, flights were delayed and cancelled at The Quad City International Airport. Winds of 20 to 30 mph with gusts to 40 mph created blowing and drifting of snow with visibility near zero at times making snow removal difficult.



# Storm Data and Unusual Weather Phenomena

March 1999

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

## KANSAS, Northeast

NONE REPORTED.

## KANSAS, Northwest

**KSZ001>004-013>016-027>029-041>042**      **Cheyenne - Rawlins - Decatur - Norton - Sherman - Thomas - Sheridan - Graham - Wallace - Logan - Gove - Greeley - Wichita**

	12	0100CST		0	0				
	13	0600CST							<b>Winter Storm</b>

This was the biggest snow event of the season across NW Kansas. Freezing precipitation during the early morning of the 12th quickly turned to snow. Moderate to Heavy snow continued through the early morning hours of the 13th resulting in up to one foot of snow in most areas. Parts of Gove County received 15 inches by the time the storm ended. There were many road closings on the 12th, including Interstate 70 from the KS/CO border to central Kansas. Also, many travelers were stranded for the night.

### **Cheyenne County**

**Bird City Arpt**      27      1740CST      0      0      **Thunderstorm Wind (G62)**  
Large Blue Spruce uprooted and 3 Grain Bins damaged near town.

### **Rawlins County**

**Atwood**      27      1815CST      0      0      **Thunderstorm Wind (G54)**

## KANSAS, Southeast

**KSZ032-047-067-082>083-091>092-096-098>100**      **Russell - Barton - Reno - Kingman - Sedgwick - Harper - Sumner - Neosho - Chautauqua - Montgomery - Labette**

	12	1800CST		0	0	8K			
	13	2359CST							<b>Heavy Snow</b>

A late season winter storm moving from northern New Mexico into northeast Texas spread heavy snow across much of central, south-central and southeast Kansas resulting in accumulations ranging from 6-11 inches. South-central Kansas bore the brunt of the storm where 8-11 inches buried much of this region. The greatest accumulations reported were in Kingman County (11 inches), Harper County (8-10 inches), Southwest Sedgwick County (9 inches) and Sumner County (8 inches). Possessing a high water equivalent, the weight of the snow caused a roof to collapse at a shop in Harper (North-central Harper County) causing an estimated \$5,000 damage. In Attica (West-central Harper County) snow inflicted damage to car awnings and tree limbs.

## KANSAS, Southwest

**KSZ030>031-043>046-061>066-074>081-084>090**      **Trego - Ellis - Scott - Lane - Ness - Rush - Hamilton - Kearny - Finney - Hodgeman - Pawnee - Stafford - Stanton - Grant - Haskell - Gray - Ford - Edwards - Kiowa - Pratt - Morton - Stevens - Seward - Meade - Clark - Comanche - Barber**

	12	0600CST		0	0	170K			
	13	1600CST							<b>Winter Storm</b>

Winter Storm affected the entire CWA producing heavy snow and local blizzard conditions. There were winter weather driving accidents (fender benders) but no injuries. Three structures received damage. One, a greenhouse in Greensburg, received damage as the roof caved in from the weight of the heavy snow. In Pratt county, a machine shed collapsed. The most severe damage occurred in Scott City with the local hardware store was destroyed from the weight of the snow. Snowfall amounts ranged from 7 to 18 inches with 12 to 14 inches common. There was an unofficial amount of 24 inches in Edwards county. Some specific amounts include (in inches): Trego Center 18, Kinsley 18, Ness City 17, St. John 16, Kalvesta 16, Collyer 16, Dighton 15, Scott City 15, Utica 15, Cunningham 14, Montezuma 14, Pratt 14, Dodge City 14, Healy 13, Jetmore 13, Lewis 13, Hugoton 13, Alexander 12, Wakeeney 12, Lakin 12, Garden City 12, Brownell 12, Hays 11, Protection 10, Loretta 10, Ellis, 10 Liberal 10, Cimarron 10, Meade 10, Ulysses 8, Syracuse 8, Johnson 8 and Coldwater 7.

**KSZ061-074-084>085**      **Hamilton - Stanton - Morton - Stevens**

	18	2200CST		0	0				
	19	1400CST							<b>Heavy Snow</b>

Heavy snow produced the following amounts: Stanton county 12 inches, Elkhart in Morton county 10 inches, Hamilton county 6 inches and Stevens county near Hugoton 12 inches.

## KENTUCKY, Central

NONE REPORTED.

## KENTUCKY, Eastern

**KYZ088-113-115-118-120**      **Harlan - Knott - Perry - Letcher - Pike**

	26	0800EST 1600EST		0	0	0	0		
									<b>Heavy Snow</b>

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>KENTUCKY, Eastern</u></b>									
Accumulations of four to seven inches were common across the area.									
<b>KYZ088-118-120</b>			<b>Harlan - Letcher - Pike</b>						
	<b>03</b>	<b>0800EST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
		<b>1900EST</b>							
Four to eight inches of snow fell across the area. Snow drifts measured 22 inches on Big Black Mountain.									
<b>KYZ088-118-120</b>			<b>Harlan - Letcher - Pike</b>						
	<b>14</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>	<b>10K</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>15</b>	<b>0800EST</b>							
Four to ten inches of snow fell across the southeast Kentucky mountains. Numerous power outages occurred due to the heavy snow downing power lines.									
<b><u>KENTUCKY, Northeast</u></b>									
<b>KYZ101&gt;103-105</b>			<b>Greenup - Carter - Boyd - Lawrence</b>						
	<b>01</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>			<b>Monthly Temperature</b>
	<b>31</b>	<b>2300EST</b>							
A prolong cold spell during the first half of the month resulted in the average monthly temperature to be 4 to 5 degrees colder than a normal March. After a mild January and February, the cold weather helped slow the growth of the new spring vegetation.									
<b><u>KENTUCKY, Northern</u></b>									
<b>KYZ089&gt;100</b>			<b>Carroll - Gallatin - Boone - Kenton - Campbell - Owen - Grant - Pendleton - Bracken - Robertson - Mason - Lewis</b>						
	<b>13</b>	<b>0700EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
		<b>1800EST</b>							
A narrow band of heavy snow fell across extreme northern Kentucky. The snow fell at a rate higher than one inch an hour at times leaving behind accumulations of 4 to 8 inches.									
<b>KYZ091&gt;093</b>			<b>Boone - Kenton - Campbell</b>						
	<b>08</b>	<b>2200EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>09</b>	<b>1200EST</b>							
Low pressure brought abundant moisture northward into an arctic air mass producing a mixture of snow and sleet. The precipitation was heavy at times accumulating from 4 to 6 inches before changing to rain before noon.									
<b><u>KENTUCKY, Southwest</u></b>									
<b>Marshall County</b>									
<b>1 E Benton</b>	<b>02</b>	<b>1756CST</b>			<b>0</b>	<b>0</b>			<b>Funnel Cloud</b>
A short-lived funnel cloud was observed.									
<b>Mccracken County</b>									
<b>Paducah</b>	<b>02</b>	<b>1802CST</b>			<b>0</b>	<b>0</b>	<b>20K</b>		<b>Lightning</b>
Lightning started a house fire.									
<b><u>LOUISIANA, Northeast</u></b>									
<b>Morehouse Parish</b>									
<b>Mer Rouge</b>	<b>02</b>	<b>1900CST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
<b>Richland Parish</b>									
<b>Holly Ridge</b>	<b>02</b>	<b>1900CST</b>			<b>0</b>	<b>0</b>	<b>15K</b>		<b>Thunderstorm Wind</b>
Several mobile homes received damage.									
<b>East Carroll Parish</b>									
<b>Sondheimer</b>	<b>02</b>	<b>1915CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
A couple of roofs were damaged.									
<b>Richland Parish</b>									
<b>Delhi</b>	<b>02</b>	<b>1915CST</b>			<b>0</b>	<b>0</b>	<b>30K</b>		<b>Thunderstorm Wind</b>
A few small planes were overturned at the airport.									
<b>West Carroll Parish</b>									
<b>3 S Oak Grove</b>	<b>02</b>	<b>1915CST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
<b>Catahoula Parish</b>									
<b>Harrisonburg</b>	<b>02</b>	<b>1945CST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Hail (1.75)</b>
Golfball size hail caused damage to a few roofs and automobiles.									
<b>Catahoula Parish</b>									
<b>Harrisonburg</b>	<b>02</b>	<b>1945CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>		<b>Thunderstorm Wind</b>
Several trees were blown down.									
<b>Catahoula Parish</b>									
<b>Jonesville</b>	<b>02</b>	<b>1945CST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
A few power lines were blown down.									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>LOUISIANA, Northeast</u></b>									
<b>Franklin Parish</b>									
Countywide	02	1945CST			0	0	10K		Thunderstorm Wind
									Several power lines were blown down throughout the parish.
<b>Concordia Parish</b>									
Ferriday	02	1958CST			0	0	25K		Hail (1.75)
									Golfball size hail caused damage to a few homes and automobiles.
<b>Concordia Parish</b>									
Vidalia	02	2000CST			0	0	30K		Hail (1.75)
									Golfball size hail caused damaged to several homes and automobiles.
<b>Madison Parish</b>									
Tallulah	02	2015CST			0	0			Thunderstorm Wind (G52)
<b>Morehouse Parish</b>									
Bastrop	08	1800CST			0	0			Hail (0.75)
<b>West Carroll Parish</b>									
Oak Grove	08	1830CST			0	0			Hail (0.75)
<b>Richland Parish</b>									
Rayville	08	1840CST			0	0			Hail (0.75)
<b>Richland Parish</b>									
Rayville	08	1840CST			0	0	5K		Thunderstorm Wind
									Several trees were blown down.
<b>Richland Parish</b>									
Rayville	08	1900CST			0	0			Hail (0.75)
<b>East Carroll Parish</b>									
10 SW Transylvania	08	1915CST			0	0	5K		Thunderstorm Wind
									Several trees were blown down.
<b>Tensas Parish</b>									
St Joseph	08	2030CST			0	0			Hail (0.88)
<b>Franklin Parish</b>									
Wisner	08	2130CST			0	0			Hail (0.75)
<b>Concordia Parish</b>									
Spokane	08	2210CST			0	0	40K		Thunderstorm Wind
									Several homes and camps received damage. The roof was blown off of a boat house. Several trees were blown down.
<b>Tensas Parish</b>									
Waterproof	13	0755CST			0	0	20K		Thunderstorm Wind
									Roofs were blown off of two houses.
<b><u>LOUISIANA, Northwest</u></b>									
<b>Caddo Parish</b>									
6 W Shreveport	12	0950CST			0	0			Hail (0.88)
									Hail to 3 inches deep along I-20 from the Greenwood Exit to 1 mile west of Industrial Loop exit.
<b>Caddo Parish</b>									
Shreveport	02	1705CST			0	0			Thunderstorm Wind (G70)
<b>Ouachita Parish</b>									
Monroe	02	1902CST 1912CST			0	2	175K		Thunderstorm Wind (G90)
									A thunderstorm complex blew through Ouachita Parish producing straight line wind damage from a downdraft dominant squall line. Damage path was along a narrow path that started in extreme northeast Monroe along Highway 80 and moved east southeast across Highway 594 ending just north of I-20. One strapped down mobile home was picked up and moved 25 feet off a cinder block foundation. One Texaco station had windows blown out and a storage shed destroyed. A car repair shop next to the station had wooden roof blown off to the east while the north and south cinder block walls collapsed. Nearly 10 cars were damaged at this location as well. The Ouachita Parish High School had the northwest corner of the gym roof removed and several areas of damage to the western portion of the roof occurred. A basketball game was in progress in the gym with 200 people attending. They took shelter in the school hallways. There were 2 injuries. All of the debris was blown from west to northwest to east southeast showing a divergent pattern.
<b>Natchitoches Parish</b>									
Cloutierville	25	0035CST			0	0			Hail (1.00)
									Hail covered the ground completely.

# Storm Data and Unusual Weather Phenomena

March 1999

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>Natchitoches Parish</b>									
6 N Campti	02	1845CST			0	0			Thunderstorm Wind (G60)
		Trees and powerlines toppled.							
<b>Claiborne Parish</b>									
Haynesville	04	1800CST			0	0			Thunderstorm Wind (G60)
		Trees down.							
<b>Caldwell Parish</b>									
Clarks	04	1900CST			0	0			Thunderstorm Wind (G60)
<b>Caldwell Parish</b>									
5 NW Columbia	04	1900CST			0	0			Thunderstorm Wind (G60)
<b>Sabine Parish</b>									
7 S Zwolle	02	1805CST			0	0			Hail (1.75)
<b>Lincoln Parish</b>									
Ruston	02	1810CST			0	0			Thunderstorm Wind (G75)
<b>Jackson Parish</b>									
5 E Jonesboro	02	1840CST			0	0			Thunderstorm Wind (G60)
<b>Jackson Parish</b>									
3 W Chatham	02	1842CST			0	0			Thunderstorm Wind (G60)
<b>Winn Parish</b>									
10 N Winnfield	02	1840CST			0	0			Thunderstorm Wind (G60)
		Trees down across Hwy 84 and Hwy 156.							
<b>Bossier Parish</b>									
2 S Bolinger	02	1630CST			0	0			Hail (2.75)
<b>Bossier Parish</b>									
2 S Bolinger	02	1630CST			0	0			Thunderstorm Wind (G70)
<b>Webster Parish</b>									
Shongaloo	02	1700CST			0	0			Hail (1.75)
<b>Bossier Parish</b>									
1 N Plain Dealing	02	1638CST			0	0			Hail (0.88)
<b>Webster Parish</b>									
Springhill	02	1700CST			0	0			Hail (1.75)
<b>Caddo Parish</b>									
Shreveport Rgnl Arpt	02	1712CST			0	0			Thunderstorm Wind (G59)
<b>Caddo Parish</b>									
Shreveport	02	1715CST			0	0			Hail (0.75)
<b>De Soto Parish</b>									
Carmel	02	1737CST			0	0			Hail (1.75)
<b>Sabine Parish</b>									
15 W Many	02	1755CST			0	0			Hail (0.75)
<b>Grant Parish</b>									
Colfax	02	1915CST			0	0			Thunderstorm Wind (G60)
<b>La Salle Parish</b>									
Jena	02	1928CST			0	0			Hail (0.75)
<b>Bossier Parish</b>									
(Bad)Barksdale Afb	02	1727CST			0	0			Thunderstorm Wind (G75)
<b>Union Parish</b>									
Farmerville	02	1810CST			0	0			Hail (0.75)
		Hail covered the ground.							
<b>Caddo Parish</b>									
Bethany	05	2200CST			0	0			Hail (0.88)
<b>De Soto Parish</b>									
Pelican	05	2330CST			0	0			Hail (0.75)
<b>Ouachita Parish</b>									
5 W Monroe	08	1745CST			0	0			Thunderstorm Wind (G60)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>LOUISIANA, Northwest</u></b>									
<b>Ouachita Parish</b>									
Monroe	08	1810CST			0	0			Thunderstorm Wind (G65)
<b>Grant Parish</b>									
5 S Dry Prong	13	0540CST			0	0			Hail (0.75)
<b>Caddo Parish</b>									
Shreveport	24	2358CST			0	0			Hail (0.75)
<b>De Soto Parish</b>									
Stonewall	25	0025CST			0	0			Hail (0.75)
<b>Caddo Parish</b>									
Vivian	24	2335CST			0	0			Hail (1.75)
<b>Caddo Parish</b>									
Shreveport	25	0020CST			0	0			Hail (0.75)
<b><u>LOUISIANA, Southeast</u></b>									
<b>Jefferson Parish</b>									
Grand Isle	02	2340CST			0	0			Thunderstorm Wind (G53)
		Automated NOAA wind gage recorded a gust of 61 mph.							
<b>St. James Parish</b>									
Convent	02	2225CST			0	0	1.5K		Thunderstorm Wind
		Tin was blown off a roof and a tree was knocked down.							
<b>Terrebonne Parish</b>									
Countywide	02	2250CST			0	0	3K		Thunderstorm Wind
		A few trees were blown down and minor roof damage occurred to buildings scattered across the parish.							
<b>Livingston Parish</b>									
Countywide	02	2215CST			0	0	0.50K		Thunderstorm Wind
		Several trees were blown down in areas scattered across the parish.							
<b>Lafourche Parish</b>									
Thibodaux to Golden Meadow	02	2300CST 2320CST			0	0	20K		Thunderstorm Wind
		Many trees and power lines were blown down and minor roof damage occurred from Thibodaux to Golden Meadow. Significant roof damage occurred to several homes around Raceland.							
<b>Plaquemines Parish</b>									
Empire	03	0010CST			0	0	25K		Thunderstorm Wind
		Thunderstorm winds heavily damaged a mobile home and caused roof damage to several buildings.							
<b>Pointe Coupee Parish</b>									
New Roads	02	2105CST			0	0	2K		Lightning
		Lightning struck a house resulting in a fire.							
<b>Lafourche Parish</b>									
Raceland	02	2320CST			0	0	8K		Thunderstorm Wind
		Thunderstorm winds damaged the roofs of several homes.							
<b>Jefferson Parish</b>									
Metairie	02	2330CST			0	0			Hail (1.00)
		Hail up to one inch in diameter was reported by the public.							
<b>Plaquemines Parish</b>									
Belle Chasse	03	0001CST			0	0	0.50K		Thunderstorm Wind
		Thunderstorm winds blew down several trees.							
<b>West Baton Rouge Parish</b>									
Addis	02	2130CST			0	0	50K		Thunderstorm Wind
		Thunderstorm winds damaged the structure of a building by moving it 3 to 5 feet off of its foundation, blew a third of the roof off of a home, caused minor roof damage to a couple of buildings, and overturned a rental truck.							
<b>Iberville Parish</b>									
Plaquemine	02	2200CST			0	0	20K		Thunderstorm Wind
		Thunderstorm winds partially knocked three mobile homes off of their blocks and partially tore the roofs off three other homes.							
<b>Plaquemines Parish</b>									
.5 N Alliance	13	1538CST	0.1	10	0	0	5K		Tornado (F0)
		A tornado briefly touched one half mile north of Alliance and just north of the British Petroleum Refinery. The tornado lifted a							

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>LOUISIANA, Southeast</b>									
mobile home off of its foundation and set it back down, blew a cinder block through the wall of another mobile home, destroyed a greenhouse, and blew a shed across Highway 23.									
<b>Tangipahoa Parish</b>									
Amite	09	0115CST			0	0			Hail (1.00)
Quarter size hail was reported by the Amite Fire Department.									
<b>Tangipahoa Parish</b>									
.5 E Amite	09	0120CST	0.1	10	0	0			Tornado (F0)
Louisiana State Police reported a brief tornado touchdown that resulted in no damage just east of Amite.									
<b>Tangipahoa Parish</b>									
Wilmer	09	0115CST			0	0			Hail (1.75)
Golfball size hail was reported in Wilmer by the Amite Police Department.									
<b>East Feliciana Parish</b>									
Countywide	13	0800CST 1600CST			0	0	57K		Flash Flood
<b>West Feliciana Parish</b>									
Countywide	13	0800CST 1600CST			0	0	750K		Flash Flood
Heavy rainfall amounts of 4 to 7 inches fell in an eight hour period causing a flash flood that resulted in the damage or destruction of five bridges in West Feliciana and East Feliciana Parishes. The heavy rain caused the Amite River to rise to near flood stage and washed debris into the river which jammed into the support pilings of the Louisiana Highway 10 bridge near Darlington. The middle two spans of the structure collapsed into the river as the pilings eventually fractured under the stress of the debris being pushed into the supports by the rapid flow of the river. A bridge over Polly Creek near Plettenburg also collapsed when the creek turned into a torrent during the heavy rainfall event. Bank erosion damaged the Highland Road bridge over Little Bayou Sara and a low water bridge on Island Road in West Feliciana Parish. A bridge over Thompson Creek in East Feliciana Parish was also washed out.									
<b>LOUISIANA, Southwest</b>									
<b>Jefferson Davis Parish</b>									
Jennings	11	1645CST			0	0	25K		Flood
Jennings Fire Department reported flooding of low-lying areas requiring sandbags to prevent further flooding.									
<b>Calcasieu Parish</b>									
Lake Charles	11	1730CST			0	0	25K		Flood
Lake Charles Police Department reported street flooding across much of city. Cars passing in flooded streets caused flood waters to flow into homes on 10th and 6th Streets.									
<b>St. Martin Parish</b>									
St Martinville	11	1745CST			0	0	25K		Flood
Sheriff Office reported flooding along Highway 347. Baracades were put up to protect motorists.									
<b>Jefferson Davis Parish</b>									
Roanoke	11	1825CST			0	0	10K		Flood
Flooding on Ferguson Road in Roanoke...and east of Highway 22 on Clifton Road and Eugene Road in Grand Marais.									
<b>Lafayette Parish</b>									
Lafayette	11	1830CST			0	0	10K		Flood
Low area flooding reported across much of northern Lafayette, with minor flooding of a home in Carencro.									
<b>Beauregard Parish</b>									
5 N Merryville	02	1843CST			0	0			Hail (1.75)
<b>Rapides Parish</b>									
Boyce	02	1830CST			0	0			Hail (1.75)
<b>Rapides Parish</b>									
Weil	02	1945CST			0	0			Hail (0.88)
<b>Calcasieu Parish</b>									
10 N Sulphur	02	1957CST			0	0			Hail (1.00)
<b>Calcasieu Parish</b>									
Sulphur	02	2008CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>LOUISIANA, Southwest</b>									
<b>Lafayette Parish</b>									
Lafayette	02	2045CST			0	0			Hail (1.75)
<b>St. Mary Parish</b>									
Bayou Sale	03	0010CST			0	0	5K		Thunderstorm Wind
Winds estimated at 65 to 75 mph blew down trees and power lines. Morgan City also received damage.									
<b>Cameron Parish</b>									
Hackberry	02	2040CST			0	0			Hail (0.75)
<b>Vermilion Parish</b>									
Maurice	02	2034CST			0	0			Hail (0.75)
<b>Vernon Parish</b>									
Anacoco	02	1900CST			0	0			Hail (0.75)
<b>Allen Parish</b>									
Oakdale	12	0633CST			0	0			Hail (0.75)
<b>Allen Parish</b>									
Oakdale	12	0622CST			0	0	10K		Flood
Significant street flooding reported across Oakdale.									
<b>Vernon Parish</b>									
Anacoco	13	0122CST			0	0			Hail (1.75)
<b>Beauregard Parish</b>									
Bancroft to 4 W Fields	02	1918CST 1925CST	6	200	0	0	50K		Tornado (F1)
The same storm that hit the Kirbyville and Bleakwood areas in East Texas redeveloped in western Beauregard Parish. Moving southeast at 50 mph, this fast moving tornado damaged the roof to one home in the Bancroft area. Many trees were blown down in this rural section of the parish. Trees were across Highway 389 around 4 miles west of Fields.									
<b>Beauregard Parish</b>									
7 W De Quincy to 8 SW De Quincy	02	1945CST 1955CST	4	100	0	0	25K		Tornado (F1)
A tornado developed when two large thunderstorms merged over southwestern Beauregard Parish. Moving southeast at 20 mph, this tornado missed DeQuincy and dissipated in rural Calcasieu Parish. A large swath of trees were blown down between DeQuincy and Starks, along the Beauregard-Calcasieu parish line.									
<b>Calcasieu Parish</b>									
14 NW Sulphur to 10 NW Sulphur	02	1955CST 2010CST	4	75	0	0	75K		Tornado (F2)
A strong tornado moved into rural Calcasieu Parish between DeQuincy and Starks, tearing up trees in its path. At least one home was destroyed 12 miles northwest of Sulphur.									
<b>St. Landry Parish</b>									
6 S Krotz Spgs	02	2115CST	0.5	20	0	0	100K		Tornado (F1)
A weak tornado developed six miles south of Krotz Springs on Highway 105, damaging four homes. Several vehicles, including a school bus, were damaged.									
<b>Iberia Parish</b>									
1 NW Jeanerette to 1 SE Jeanerette	02	2125CST	2	50	0	2	2M		Tornado (F1)
This tornado travelled on the ground for two miles, slicing through the center of Jeanerette. Over twenty buildings were destroyed and an additional 75 buildings were damaged. The mayor reported one-third of the town was damaged. Two minor injuries occurred when two cars had a head-on collision during the tornado. Over two million dollars worth of damage occurred.									
<b>St. Martin Parish</b>									
St Martinville	02	2305CST			0	0	10K		Thunderstorm Wind
A mobile home had its roof lifted off and trees were blown down during powerful thunderstorms.									
<b>Vermilion Parish</b>									
Abbeville	11 12	1800CST 0000CST			0	0	100K		Flood
Over eight inches of rain fell in a few hours, resulting in severe flooding across Abbeville. More than 50 homes and businesses reported water enter them in Abbeville, Erath, and Kaplan. The water rose as much as two feet in 33 of these homes. Several roads were flooded, including LA 14 in Grosse Isle, LA 82 south of Abbeville, the intersection of 696 and 343 in Meaux, LA 693 near Perry, and dozens of secondary roads and city streets.									
<b>Cameron Parish</b>									
Johnsons Bayou	13	0650CST	0.5	10	0	3	50K		Tornado (F1)
A small tornado hit the Johnson Bayou area, destroying one mobile home. The 3 minor injuries occurred to a man and his two									

# Storm Data and Unusual Weather Phenomena

March 1999

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

## LOUISIANA, Southwest

daughters in the home. Nearby, a communications tower fell on a business, destroying the roof.

### **Vermilion Parish**

<b>Gueydan</b>	13	1145CST	0.5	10	0	0	100K	<b>Tornado (F0)</b>
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A small tornado damaged an airplane between Gueydan and Kaplan, sitting in a hangar.

## MAINE, North

NONE REPORTED.

## MAINE, South

### **MEZ007>030**

**Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington**

04	0500EST 1200EST			0	0			<b>Strong Winds</b>
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A deep low pressure moving north-northeastward through northern New York State caused strong south to southeasterly winds to develop over southern and central parts of the state. Wind gusts in the 40- to 50-mph range were reported throughout the area. The strong winds downed trees and limbs causing scattered power outages. About 10,000 customers were reported to have lost electrical service.

### **MEZ002-004**

**Northeast Aroostook - Northern Piscataquis**

06	1100EST			0	0			<b>Moderate Snowfall</b>
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### **MEZ005>030**

**Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington**

06	1100EST			0	0			<b>Heavy Snow</b>
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A low pressure center that developed rapidly off the New England coast brought a heavy snowfall to all but northwestern Maine. Snowfall amounts generally ranged from 5 to 10 inches along the coast to 10 to 16 inches well inland and in the mountains. Extreme northwestern Maine saw no snow at all from this storm.

### **MEZ001>017-019>022-024>030**

**Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington**

07	1000EST			0	0			<b>Extreme Windchill</b>
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A low pressure center that brought heavy snow to most of Maine as it deepened off the New England coast, caused extreme wind chill temperatures over most of Maine as it moved northeastward. Northern Maine had wind chill temperatures in the extreme range for about 48 hours with the lowest wind chill temperatures in the 35 to 45 degrees below zero range. In parts of southern Maine, wind chill temperatures hit extreme levels briefly on the morning of March 8.

### **MEZ001-003>004-008>010**

**Northwest Aroostook - Northern Somerset - Northern Piscataquis - Northern Franklin - Central Somerset - Southern Piscataquis**

10	1400EST			0	0			<b>Moderate Snowfall</b>
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The circulation around a low pressure center over the Canadian Maritimes (which was drifting slowly westward) forced a warm front to move from east to west across the state. A band of light to moderate snow fell ahead of the approaching front. As the front crossed the state from northeast to southwest, the precipitation gradually changed from snow to light rain. Snowfall amounts across northern and central Maine ranged from 2 to 6 inches with the greatest amounts falling in the mountains.

### **MEZ001-003-007>008**

**Northwest Aroostook - Northern Somerset - Northern Oxford - Northern Franklin**

15	0200EST			0	0			<b>Moderate Snowfall</b>
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# Storm Data and Unusual Weather Phenomena

March 1999

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

## MAINE, South

**MEZ002-004>006-009>030** Northeast Aroostook - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington

15	0200EST								
16	1500EST			0	0				Heavy Snow

A low pressure center intensified as it moved northeastward from the Gulf States on the morning of the 14th to off the Virginia Capes on the 15th, to the Bay of Fundy on the morning of the 16th. The storm deposited a moderate to heavy snowfall across the entire state as it moved northeastward. Snowfall amounts ranged from 4 to 8 inches across the extreme northwestern part of the state to 12 to 17 inches over much of the southeastern half of the state. The storm also brought strong winds to the state as it intensified rapidly.

**MEZ001>030** Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington

16	0500EST								
	1900EST			0	2				Strong Winds

Strong winds downed trees and limbs causing scattered power outages throughout the state. Wind gusts in the 45 to 55 mph range were reported throughout the area. More than 5600 customers lost electrical service. In Old Town, the wind blew out a window at the Post Office, reportedly striking and injuring one employee. The strong winds came at the tail end of a major winter storm and caused whiteout conditions throughout the state. The wind also caused a tractor trailer to jackknife on an icy Rt. 302 near Bridgton, injuring the driver.

**MEZ002** Northeast Aroostook

18	1800EST								
19	0900EST			0	0				Moderate Snowfall

Low pressure moving eastward across central Maine brought a moderate snowfall to northeastern Aroostook County. Snowfall amounts ranged from 2 to 6 inches across the area.

**MEZ007>030** Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington

22	1200EST								
	1600EST			0	1				High Wind (G62)

High winds associated with a strong low pressure system moving north across eastern New York State and western New England downed trees onto wires, causing utility poles to snap. About 57,000 customers lost electrical service during the storm. Several roads throughout the area were temporarily closed until debris could be cleared. A tree fell onto a vehicle on Rt. 11 in Poland, injuring the driver. Peak wind gusts included 72 mph in Cape Elizabeth, 67 mph on Monhegan Island, and 60 mph in Poland.

## **Cumberland County**

<b>Pine Pt to Brunswick</b>	22	1400EST							
		1500EST			0	0			Storm Surge

## **Knox County**

<b>Rockland to Camden</b>	22	1400EST							
		1500EST			0	0			Storm Surge

## **Lincoln County**

<b>Wiscasset to Waldoboro</b>	22	1400EST							
		1500EST			0	0			Storm Surge

## **Sagadahoc County**

<b>Topsham to Woolwich</b>	22	1400EST							
		1500EST			0	0			Storm Surge

## **Waldo County**

<b>Belfast</b>	22	1400EST					63K		
		1500EST			0	0			Storm Surge

## **York County**

<b>Kittery to Old Orchard Beach</b>	22	1400EST							
		1500EST			0	0			Storm Surge

A strong southeasterly wind developed across Maine on the morning of March 22nd as an intensifying low pressure center moved

# Storm Data and Unusual Weather Phenomena

March 1999

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

## MAINE, South

north from the mid-Atlantic states to the Hudson Valley of New York by early morning on the 22nd. Wind gusts as high as 75 mph were recorded at Matinicus Rock and 18-ft seas were recorded at the Portland Weather Buoy near Cape Elizabeth. The high winds pushed a tugboat aground in the Penobscot Bay near Rockland. The high water and large wave also flooded the public landing in Belfast. The seawall was battered, a crib structure was damaged, pilings were ripped from the town pier, and the pavement was scoured off the launch ramp. The lawn in a park area was also eroded.

### **MEZ023>024**

#### **Coastal York - Coastal Cumberland**

<b>01</b>	<b>1000EST 1100EST</b>	<b>0</b>	<b>0</b>	<b>Beach Erosion</b>
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A strong southeasterly flow developed across coastal Maine as low pressure moved from the mid-Atlantic States on the morning of the 1st to central New Hampshire by that afternoon. A wind driven surge (1.4 feet) combined with a high astronomical tide (10.4 feet in Portland) caused tide levels in southwestern Maine to reach the flood level (12.0 feet in Portland). Emergency management officials and newspaper articles reported that minor beach and road erosion occurred near Long Sands Beach in York and Kennebunk Beach in Kennebunk, both in York County.

### **Piscataquis County**

#### **Milo**

<b>04</b>	<b>1200EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
<b>05</b>	<b>1500EST</b>			

Up to 3 inches of rain caused the ice to run on the Pleasant and Sebec Rivers in Milo. Several roads were closed due to flooding.

### **MEZ010**

#### **Southern Piscataquis**

<b>02</b>	<b>0130EST 0530EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
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Up to 3 inches of rain fell in the Piscataquis River Basin causing the ice to run on the Piscataquis River. An ice jam developed in Dover-Foxcroft which caused minor flooding. The river crested at 12.32 feet at 3:30 am., 1.32 feet above the 11-foot flood stage.

### **MEZ012**

#### **Southern Oxford**

<b>04</b>	<b>1500EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
<b>05</b>	<b>0800EST</b>			

Close to 3 inches of rain and snowmelt caused the ice to run on the Androscoggin River. An ice jam formed near Gilead, then reformed downstream near Bethel. Rt. 2 in Bethel and North Road in Gilead were closed.

## MARYLAND, Central

### **Frederick County**

#### **Frederick**

<b>03</b>	<b>1845EST</b>	<b>0</b>	<b>0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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Power lines downed

### **Washington County**

#### **Hagerstown**

<b>03</b>	<b>1855EST</b>	<b>0</b>	<b>0</b>	<b>5K</b>	<b>Thunderstorm Wind</b>
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Trees and power lines downed

### **MDZ002>005**

#### **Allegany - Washington - Frederick - Carroll**

<b>03</b>	<b>1900EST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
<b>04</b>	<b>1200EST</b>			

### **Washington County**

#### **Hancock**

<b>03</b>	<b>1900EST</b>	<b>0</b>	<b>0</b>	<b>1K</b>	<b>Lightning</b>
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Horse struck by lightning

### **Carroll County**

#### **Taneytown**

<b>03</b>	<b>1940EST</b>	<b>0</b>	<b>0</b>	<b>8K</b>	<b>Thunderstorm Wind</b>
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Trees and power lines downed, roof of barn damaged

### **Baltimore County**

#### **Owings Mills**

<b>03</b>	<b>1945EST</b>	<b>0</b>	<b>0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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Power lines downed on Route 140

### **Anne Arundel County**

#### **Arnold**

<b>03</b>	<b>2000EST</b>	<b>0</b>	<b>0</b>	<b>7K</b>	<b>Thunderstorm Wind</b>
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Church facing and shingles blown off, trees and power lines downed

### **MDZ006>007-009**

#### **Northern Baltimore - Harford - Montgomery**

<b>04</b>	<b>0300EST 1200EST</b>	<b>0</b>	<b>0</b>	<b>Winter Weather</b>
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A low pressure system moved from West Virginia to Pennsylvania on the evening of the 3rd. This system produced sustained winds of 25 to 40 mph from the afternoon of the 3rd through the morning of the 4th. The strong wind forced the closure of the Bowie Freeway Airport and required officials to post high wind warning signs on Chesapeake Bay bridges. A cold front associated with the system moved through during the early evening and produced a line of thunderstorms that brought heavy rain, small hail, and wind gusts in excess of 55 mph. Washington County reported downed trees and power lines, and 2,000 power outages. In addition, a horse was struck by lightning near Hancock. Frederick County reported downed power lines and 1,600 power outages. Carroll County reported numerous branches and some trees down near Taneytown. Loose lumber was blown off a

# Storm Data and Unusual Weather Phenomena

March 1999

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

## MARYLAND, Central

deck, sheet metal roof panels on a barn were torn off, and a chimney cap was blown off near Owings Mills in Southern Baltimore County. A church near Glen Burnie in Anne Arundel County reported shingles and facing blown off and a few trees and power lines downed, disrupting power for nearly 1,000 residents. After the cold front passed, temperatures dropped rapidly and rain turned to snow across Western and North Central Maryland. Allegany County received between 2 and 9 inches of snow, Washington County received 5 to 6 inches, Frederick County received 2 to 6 inches, Carroll County received 5 to 6 inches, Northern Baltimore County received 2 to 5 inches, Harford County received 2 to 3 inches, and Montgomery County recorded 1 to 4 inches. The combination of winds and snowfall in excess of one inch per hour across Western Maryland led to nearly blizzard conditions. Several roads had to be closed temporarily, including Interstate 68 from Frostburg to the West Virginia border and Interstate 81 near Hagerstown. The significant snowfall also led to several traffic accidents during the morning of the 4th, including two collisions that closed Route 15 north of Thurmont, a 20 vehicle collision at the intersection of U.S. Route 340 and Maryland Route 17 near Brunswick which closed the road for 2 hours, and an overturned tractor trailer on Interstate 70 near the State Police barracks. In addition, several tractor trailers became disabled on Interstate 68 and 81, and several cars became disabled on Braddock Mountain along Interstate 70.

**MDZ002>003**

**Allegany - Washington**

<b>06</b>	<b>0200EST 1400EST</b>	<b>0</b>	<b>0</b>		<b>Winter Weather</b>
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A fast moving storm system travelled across the Appalachian Mountains and tracked along the Mason-Dixon line on the morning of the 6th. This disturbance produced snow across Western Maryland from early morning to midday. The snow came down at a rate of 1 to 1 1/2 inch an hour around 9:00 am in Western Washington County, and the town of Hancock ended up with almost 5 inches of accumulation. Frostburg and Cumberland reported 3 inches.

**MDZ002>004-  
009>010-013>014-  
016>018**

**Allegany - Washington - Frederick - Montgomery - Howard - Prince Georges - Anne Arundel - Charles - St. Mary'S - Calvert**

<b>09</b>	<b>0200EST 2359EST</b>	<b>0</b>	<b>0</b>		<b>Winter Storm</b>
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**MDZ005>006-011**

**Carroll - Northern Baltimore - Southern Baltimore**

<b>09</b>	<b>0600EST 2359EST</b>	<b>0</b>	<b>0</b>		<b>Winter Weather</b>
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An area of low pressure moved from the Ohio Valley to North Carolina from late on the 8th through the evening of the 9th. Heavy snow fell across Western and Central Maryland as the storm system moved through. Snowfall rates were in excess of 1 1/2 inches per hour in some locations during the storm. By the evening of the 9th, 6 to 10 inches had fallen in Prince Georges, Montgomery, and Allegany County; 4 to 8 inches had fallen across Washington, Southern Frederick, Howard, Anne Arundel, Charles and Calvert County; 2 to 5 inches had fallen across St. Mary's, Northern Frederick, Carroll, and Southern Baltimore County, including Baltimore City; and 2 inches or less had fallen across Northern Baltimore County. Travel was treacherous across the region on the 9th. The Maryland State Police received 70 accident reports between 11:00 am and 3:00 pm. Over 275 accidents occurred in Anne Arundel County during the storm, resulting in 16 injuries. Whiteout conditions were reported on Route 27 in Carroll County. Two buses were in accidents in Frederick County. A motorist was killed in a car accident on Route 107 in Montgomery County. Another motorist was killed on Branch Avenue in Prince Georges County when she was hit by a car while inspecting damage to her car from a separate collision. Charles County reported 120 accidents in 6 hours, including one crash involving a school bus. Calvert County reported 91 crashes with 9 injuries, including a 6 car pileup near Lusby. After the snow ended, one man died from a heart attack in Prince Georges County after shovelling snow, and two others were admitted to hospitals suffering from chest pains.

**MDZ002>007-009-  
011**

**Allegany - Washington - Frederick - Carroll - Northern Baltimore - Harford - Montgomery - Southern Baltimore**

<b>14 15</b>	<b>0500EST 1400EST</b>	<b>0</b>	<b>0</b>		<b>Winter Storm</b>
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**MDZ010-013>014-  
016**

**Howard - Prince Georges - Anne Arundel - Charles**

<b>14 15</b>	<b>0800EST 1400EST</b>	<b>0</b>	<b>0</b>		<b>Winter Weather</b>
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An area of low pressure over the Southeast U.S. produced snow across Western and Central Maryland on the 14th. Snowfall amounts were heaviest near the Pennsylvania border. Rain mixed with snow southeast of a line from Baltimore to Washington, D.C. The low pressure system redeveloped off the coast of North Carolina and moved up the Eastern Seaboard on the morning of the 15th, resulting in another period of snowfall. Total accumulations included 10 to 12 inches in Allegany County, 6 to 15 inches in Washington County, 6 to 12 inches in Frederick County, 5 to 10 inches in Carroll County, 4 inches in Howard County, and 2 to 3 inches in Southern Baltimore County, Northern Anne Arundel County, Prince Georges, and Northern Charles County. The snow was very wet and heavy and accumulations resulted in over 30,000 power outages across North Central Maryland; 15,000 in Baltimore County, 6,300 in Harford County, and 1,600 in Anne Arundel County. Driving was also difficult, especially in Western Maryland. Over 200 travellers were stranded in Washington County on the 14th after a 36 car pileup occurred around 2:00 pm on Interstate 70 near Clear Spring. 18 people were hurt in the accident, and 5 received serious injuries. The westbound lanes of I-70 were closed for 3 1/2 hours and the eastbound lanes were closed for 6 hours. There were several accidents reported on Interstate 68 as well during the storm. The heavy snowfall also closed the airport in Hagerstown.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## MARYLAND, Northeast

**MDZ008-012-015-019>020 Cecil - Kent - Queen Annes - Talbot - Caroline**

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

March continued the trend of above normal precipitation during 1999 across the Maryland Eastern Shore. On a county weighted average, monthly precipitation totals ranged from 3.6 inches in Talbot County to 5.1 inches in Cecil County and was around 1.2 inches above normal. However, more precipitation was needed to overcome the long term water shortages. The drought warning for the state of Maryland remained in effect through March.

**MDZ012**

**Kent**

**03 2020EST 0 0 0 High Wind**

High winds caused isolated wind damage in Kent County during the evening of March 3rd. Just north of Kennedyville, the roof of a produce stand was ripped off. Near Fairlee, a very large oak tree was knocked down. No property damage was reported. The time of the report is estimated.

**MDZ008-012-015-019>020 Cecil - Kent - Queen Annes - Talbot - Caroline**

**04 0400EST 0 0 0 Wind**  
**1800EST**

The circulation around an intensifying low pressure that moved through New York State and northern New England during the day on the 4th produced wind gusts of around 45 mph during the early morning and throughout the day along the Maryland Eastern Shore. Peak wind gusts included 51 mph at the Baltimore-Washington International Airport.

**MDZ008-012-015-019>020 Cecil - Kent - Queen Annes - Talbot - Caroline**

**07 0400EST 0 0 0 Wind**  
**1700EST**

A low pressure system moved from the Southern Plains the morning of the 5th, into northern Ohio the morning of the 6th, cut across northern Pennsylvania during the day on the 6th and reached Cape Cod the morning of the 7th. As the low intensified during the day on the 7th, the pressure difference between it and a high pressure system building into the region from the Great Lakes produced wind gusts of around 40 mph across the Eastern Shore. Peak wind gusts included 38 mph at the Baltimore-Washington International Airport.

**MDZ012**

**Kent**

**09 1100EST 0 0 0 Snow**  
**10 0300EST**

**MDZ015-019>020 Queen Annes - Talbot - Caroline**

**09 1100EST 0 0 0 Heavy Snow**  
**10 0300EST**

A low pressure system that developed in Oklahoma the morning of the 8th, moved northeast into the lower Ohio Valley the morning of the 9th and then moved eastsoutheast exiting the United States mainland along the North Carolina/Virginia border during the early morning of the 10th. The low passed close enough to the Eastern Shore to bring snow to northern areas and heavy snow to southern areas of the Eastern Shore. Accumulations reached six inches in sections of Talbot and Queen Anne's Counties. The heaviest snow fell from the Maryland State Route 213 and U.S. Route 301 intersection in Queen Anne's County south. Accumulations were lighter farther north as little if any snow accumulated across northern Cecil County. Snow began around noon on the 9th and fell heavy at times from the start. The heaviest snow was over during the early morning of the 10th. Lighter snow or flurries persisted through the morning of the 10th. In Queen Anne's County sixteen vehicles slid off roadways, half of them occurred between Queenstown and the Bay Bridge. Most of the accidents and injuries were minor, but there was one major head-on collision. In Talbot County, there were seven accidents in the Easton Area, most were vehicles that slid off United States Route 50.

Accumulations included 6 inches in Stevensville, 5 inches in Easton, 3.5 inches in Centreville and 3.3 inches in Federalsburg. Accumulations ranged from 2 to 3 inches in northern parts of Queen Anne's County to 5 to 6 inches in the southern part. A similar spread occurred in Caroline County as accumulations ranged from around 3.5 inches in the northern part to around 5 inches in the southern part of the county. Accumulations farther north along the Eastern Shore were two inches or less.

**MDZ008**

**Cecil**

**14 1100EST 0 0 0 Heavy Snow**  
**2300EST**

A coastal low pressure system caused heavy snow and rain to fall across Cecil County from around noon on the 14th into the early morning of the 15th. The rain/snow line meandered in the county for most of the 14th. When precipitation became heavier, the rain/snow line dipped south toward Kent County. When precipitation became lighter, the snow changed to rain and the rain/snow line approached the Pennsylvania border. In central Cecil County precipitation started as snow, changed to rain at 5 p.m. EST, went back to snow at 6 p.m. EST and changed over to rain for good after 10 p.m. EST. A second shot of light snow and flurries

# Storm Data and Unusual Weather Phenomena

March 1999

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

## MARYLAND, Northeast

caused little if any additional accumulations during the morning of the 15th. A snow emergency was declared in the county. State police responded to nine accidents between 2 p.m. and 7 p.m. EST. Most were minor, but one person required hospitalization after he lost control of his vehicle on U.S. Route 40 near Perryville. The heaviest accumulations occurred in the northern part of the county and reached 6 inches in Conowingo. Accumulations south of the canal were generally an inch or less. The low pressure system developed along the Gulf Coast States the morning of the 13th. During the morning of the 14th it had moved into Alabama and was located just east of the Delmarva Peninsula around daybreak of the 15th. The storm intensified and moved rapidly offshore on the 15th and reached Nova Scotia the morning of the 16th.

### **MDZ008-012-015-019>020**     **Cecil - Kent - Queen Annes - Talbot - Caroline**

<b>18</b>	<b>0900EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Wind</b>
	<b>1800EST</b>					

A strong cold front moved through the region during the day on the 18th. Strong gusty west to northwest winds buffeted the Eastern Shore during the late morning and afternoon with peak gusts of around 45 mph. The peak wind gust at the Baltimore-Washington International Airport was 44 mph.

#### **Caroline County**

<b>Countywide</b>	<b>21</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0200EST</b>					

#### **Cecil County**

<b>Countywide</b>	<b>21</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0200EST</b>					

#### **Kent County**

<b>Countywide</b>	<b>21</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0200EST</b>					

#### **Queen Anne'S County**

<b>Countywide</b>	<b>21</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0200EST</b>					

#### **Talbot County**

<b>Countywide</b>	<b>21</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0200EST</b>					

Heavy rain affected the Delmarva Peninsula during the late afternoon and evening of the 21st. Some poor drainage and roadway flooding was reported, mainly in Cecil County. No serious flooding or damage though was reported. Storm totals included 1.75 inches in Easton, 1.5 inches in Federalsburg and 1.35 inches in Conowingo. The low pressure system responsible for the heavy rain moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

## MARYLAND, South

### **MDZ021>024**     **Dorchester - Wicomico - Somerset - Inland Worcester**

<b>09</b>	<b>1300EST</b>		<b>0</b>	<b>0</b>		<b>Winter Storm</b>
<b>10</b>	<b>0300EST</b>					

The combination of a weakening storm over the Ohio Valley, and a developing storm off the South Carolina coast produced 2 to 6 inches of snow across portions of the Lower Maryland Eastern Shore Tuesday afternoon into early morning Wednesday. The highest amounts occurred in Dorchester and Wicomico counties. Cambridge in Dorchester county received 5 to 6 inches of snow. Salisbury and Fruitland in Wicomico county received 4 to 6 inches of snow. Princess Anne in Somerset county received 4 inches of snow.

## MARYLAND, West

### **MDZ001**     **Garrett**

<b>01</b>	<b>0600EST</b>		<b>0</b>	<b>0</b>		<b>Winter Storm</b>
<b>02</b>	<b>0300EST</b>					

Strong northwesterly winds behind a deepening area of low pressure brought orographically enhanced heavy snow to the higher terrain of Garrett County. Six to ten inches of snow fell at Oakland and McHenry, with isolated amounts of over a foot reported along the higher ridges of the county.

### **MDZ001**     **Garrett**

<b>03</b>	<b>1900EST</b>		<b>0</b>	<b>0</b>	<b>20K</b>	<b>Winter Storm</b>
<b>04</b>	<b>1100EST</b>					

A deepening area of low pressure moved across northern West Virginia, spreading heavy snowfall and high winds to Garrett County, Maryland. Total snowfall of 14 inches was reported in McHenry, with 12.5 inches in Accident.

To compound problems, high winds gusting to over 60 MPH during the early morning hours of the 4th created blowing and drifting snow, making many secondary roads impassable. The combination of heavy snow and high winds downed numerous trees and power lines, creating power outages across the area.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## MARYLAND, West

### **MDZ001**

#### **Garrett**

**09 0500EST  
2100EST** **0 0** **Heavy Snow**

A winter storm moved quickly across the Ohio Valley, blanketing Garrett County with between 6 and 12 inches of new snow. Some isolated reports of up to 18 inches of snow were received from a few of the higher ridges across the county.

### **MDZ001**

#### **Garrett**

**14 0700EST  
2100EST** **0 0** **Heavy Snow**

Garrett County received a fresh blanket of snow as a late-winter storm moved across the area. Snowfall totals from across the county were in the 8 to 10 inch range.

## MASSACHUSETTS, Central and East

### **Franklin County**

#### **Shelburne Falls**

**03 2100EST  
04 0600EST** **0 0** **Heavy Rain**

### **Hampden County**

#### **Holland**

**03 2100EST  
04 0600EST** **0 0** **Heavy Rain**

### **MAZ002>024**

**Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket**

**04 0100EST  
1400EST** **0 0** **Strong Winds**

### **MAZ016>017-024**

**Eastern Norfolk - Northern Bristol - Nantucket**

**04 0145EST  
1211EST** **0 0** **High Wind (G60)**

Blue Hill Observatory, Milton

Low pressure passing west of New England brought a period of strong south winds to much of Massachusetts. The highest gusts occurred in the eastern part of the state, where winds gusted over 60 mph at several locations. A peak gust of 69 mph was recorded at the Blue Hill Observatory in Milton, and gusts to 61 mph were reported in Taunton and Nantucket. Other strong wind gusts included 56 mph in Milford and Winthrop, 53 mph at Logan International Airport in Boston and Worcester Municipal Airport in Worcester, 51 mph in Provincetown, 49 mph in Beverly, 48 mph in Norwood, 47 mph in Plymouth, and 46 mph in Hyannis and Martha's Vineyard. Other locations in Massachusetts reported wind gusts of 35 to 45 mph. The strong winds only caused minor damage, namely fallen tree limbs and downed wires which resulted in power outages at a few locations.

Heavy rainfall totaled over two inches in parts of western Massachusetts. In less than 12 hours, a total of 2.40 inches of rain fell in Tolland, in Hampden County, and 2.25 inches fell in Shelburne Falls, in Franklin County. There were significant rises on small streams in these counties, but no flooding was reported. Thunder and lightning accompanied some of the heavier downpours.

### **MAZ002>016**

**Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk**

**06 1500EST  
07 1200EST** **0 0** **Heavy Snow**

Low pressure moved eastward from Pennsylvania into the Atlantic, and passed to the south of Cape Cod bringing heavy snow to western, central, and northeast Massachusetts. The snow came in two rounds. Snow began around mid-afternoon on Saturday, March 6th, and accumulated at rates of at least one inch per hour in parts of Worcester, Middlesex, and Essex Counties. By late evening, totals ranged from 6 to 8 inches in these areas.

The second round of snow began early in the morning of Sunday, March 7th, and ended by afternoon. Some of the highest amounts reported, as final storm totals, included 11.5 inches in West Newbury, 11 inches in Gardner, 10 inches in Methuen, Dracut, Woburn, and Pepperell, 9 inches in Harvard, Charlemont, and Chesterfield, 8 inches in Walpole, and 6 inches in East Boston (not Logan Airport). The storm produced poor driving conditions which resulted in several minor accidents. However, since the storm occurred over a weekend, its effects were minimized.

### **MAZ022**

#### **Barnstable**

**08 1200EST  
2359EST** **0 0** **Strong Winds**

Strong north to northwest winds reached peak sustained speeds of 30 to 35 mph, with gusts over 40 mph, across the outer portion of Cape Cod. The area from Truro to Provincetown received the strongest winds. At the Provincetown Airport, wind speeds averaged as high as 33 mph with gusts to 43 mph during the early evening hours. There were no reports of damage.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## **MASSACHUSETTS, Central and East**

**MAZ004>007-010>024**      **Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Eastern Hampshire - Eastern Hampden - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket**

15	0000EST 1400EST	0	0			<b>Heavy Snow</b>
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A strong low pressure system, centered off the coast of Virginia during the early morning hours, moved northeast to a position southeast of Nantucket by early afternoon. This system brought a significant late season snowstorm to much of the state, with the highest snowfall totals reported in eastern and southeastern Massachusetts. Most of the snow fell within a 12 hour period, when snowfall rates exceeded one inch per hour.

The highest totals reported were in southern Bristol County, where amounts approached one foot of snow. Some of the higher totals reported include 11 inches in Fairhaven and at the Blue Hill Observatory in Milton, 10 inches in Westport, Sharon, and Millis, 9 inches in South Plymouth, Brockton, Sagamore Beach, and Falmouth, 8 inches in Hingham and in Tisbury on Martha's Vineyard, and 6 inches on Nantucket. Snowfall totals tapered off to a maximum of 6 to 8 inches in Suffolk, Essex, and Worcester Counties. A few places in Hampshire and Hampden Counties in western Massachusetts reported 6 to 7 inches of snow from the storm.

The heavy snow made travel difficult for the Monday morning commute, and many schools were closed as a result.

**MAZ015>016**      **Suffolk - Eastern Norfolk**

18	1310EST 1322EST	0	0			<b>Record Warmth</b>
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Logan International Airport

Record high temperatures were reported in eastern Massachusetts. At Logan International Airport in Boston, the high temperature of 70 degrees at 110 pm broke the previous record high of 68 degrees, which was set in 1934. At the Blue Hill Observatory in Milton, the high temperature of 68 degrees at 122 pm broke the previous record high for the date of 65 degrees, which was set in 1934 and equaled in 1945 and 1966. A record high temperature of 65 degrees was also set in Worcester.

**MAZ002>024**      **Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket**

22	0000EST 1800EST	0	0	100K		<b>Strong Winds</b>
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**MAZ016**      **Eastern Norfolk**

22	0706EST	0	0			<b>High Wind (G67)</b>
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**Hampden County**

Westfield	22      0924EST 1230EST	0	0			<b>Flood</b>
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West Branch Westfield River

**Hampshire County**

Huntington	22      0924EST 1230EST	0	0			<b>Flood</b>
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West Branch Westfield River

An intensifying low pressure system moving up the Hudson Valley brought strong southerly winds and locally heavy rainfall to Massachusetts. Many places reported wind gusts as high as 50 to 60 mph, and even a couple of hurricane-force gusts were reported in eastern Massachusetts. The peak gust recorded was an unofficial gust of 92 mph at 635 am, on the hurricane barrier at New Bedford, which is at an elevation of 95 feet above mean sea level. About half an hour later, a wind gust of 77 mph was recorded at the Blue Hill Observatory in Milton, which was the highest wind gust to occur at the observatory since November 1, 1997. Other strong wind gusts reported include 57 mph in Carver, 55 mph in Pocasset, 52 mph in Natick and Winthrop, 51 mph in Plymouth, and 50 mph in Acushnet.

The most serious property damage occurred in New Bedford, where 27 windshields were smashed by flying gravel. There were no injuries. In nearby Dartmouth, a window was blown out of a store. Scattered power outages occurred as the strong winds blew down trees and tree limbs onto wires. About 2,100 customers lost power in Duxbury and Marshfield, and up to 2,900 customers lost power in Lowell. Other outages were reported on Cape Cod and the Islands. In Uxbridge, in Worcester County, a large tree fell through the roof of a home. In addition, the strong winds caused delays at Logan International Airport, which lasted up to 90 minutes during the morning.

Minor flooding was reported along the Westfield River and its tributaries in the western part of the state, after 1 to 2 inches of rain combined with rapid snowmelt. The West Branch of the Westfield River at Huntington crested at 9.6 feet at 1045 am, which is about half a foot above its flood stage of 9 feet. A portion of Route 66 in Huntington was closed due to flooding. Minor flooding was reported in Westfield. In Franklin County, several roads and bridges were closed near small streams in Buckland, Ashfield,

# Storm Data and Unusual Weather Phenomena

March 1999

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

and Conway.

## MASSACHUSETTS, West

**MAZ001**

**Berkshire**

<b>04</b>	<b>1700EST</b>								
	<b>2300EST</b>			<b>0</b>	<b>0</b>	<b>1K</b>		<b>Wind</b>	

A steep pressure gradient between low pressure over southwestern Quebec and high pressure over the northern Great Lakes produced winds that gusted to 51 miles an hour at the ASOS reporting station in Pittsfield, Massachusetts. This wind was strong enough to flip a metal fishing boat onto a car near Pittsfield in Berkshire county.

**MAZ001**

**Berkshire**

<b>06</b>	<b>1300EST</b>								
	<b>07 1000EST</b>			<b>0</b>	<b>0</b>	<b>1.5K</b>		<b>Winter Storm</b>	

An area of low pressure developed in the Ohio Valley early on March 6. This low then tracked east, to the south of Interstate 80, across Pennsylvania and intensified as it slipped off the coast of Long Island by early March 7. The storm brought a significant snowfall to the Berkshires. Snowfall amounts included 7 inches at Adams and 10 inches at Peru both in Berkshire County. The snow was powdery but did result in the usual assortment of accidents and vehicles sliding off roadways.

## MICHIGAN, East

**MIZ049-053>054-060>063-068>070-075>076-082>083**

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

<b>05</b>	<b>1800EST</b>								
	<b>06 0800EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>	

A warm front moved north into central Ohio and Indiana on the 5th, then stalled. Low pressure moved east along the front, crossing Indiana and Ohio on the morning of the 6th. Moisture surged northward ahead of the low, and precipitation developed north of the warm front, mainly in the form of snow. The snow was heavy across much of southeast Michigan. In addition, wind gusts to 35 mph caused considerable blowing and drifting, along with wind chills as low as fifteen below zero.

Some snowfall amounts by county:

- Genesee: 9.1" in Flint; 7" in Fenton; 6" in Davison.
- Huron: 7" in Sebawaing.
- Lapeer: 9" near Lapeer; 7" in Dryden.
- Lenawee: 7" in Britton; 6.5" in Hudson and Tecumseh; 6" in Adrian.
- Livingston: 10" in Brighton.
- Macomb: 8.4" in Mt Clemens; 8" in New Baltimore.
- Monroe: 8" in Monroe and Dundee; 6" in Milan.
- Oakland: 11" in Farmington Hills; 10" in Walled Lake and Troy; 8" in West Bloomfield and Holly.
- Saginaw: 6" in Saginaw.
- Sanilac: 7" in Marlette; 6" in Sandusky.
- St Clair: 8" in Port Huron; 7.6" in Avoca; 6.9" in Ruby.
- Shiawassee: 8" in Byron; 7" in Owosso and Corunna.
- Washtenaw: 8" in Saline and Ann Arbor; 7" in Ypsilanti.
- Wayne: 8" in Detroit; 7.5" in Canton; 6.5" in Dearborn.

The combination of snow and blowing snow cancelled 90 flights at Detroit Metropolitan Airport, and a snow emergency was declared in the city of Detroit. Roads across the region remained quite slick through the 6th due to blowing snow.

**MIZ082**

**Lenawee**

<b>09</b>	<b>0200EST</b>								
	<b>1400EST</b>			<b>0</b>	<b>0</b>	<b>50K</b>		<b>Heavy Snow</b>	

Another low pressure system moved up the Ohio Valley on the 9th. An area of snow tried to push north into Michigan as the low approached; however, very dry air was in place over the state, so the snow had limited success. Six and a half inches of snow fell near Adrian, with amounts dwindling quickly to the north and east. Most of Metro Detroit saw only 1 to 3 inches of snow with the system.

With cold, dry air in place, the snow was also very dry. In addition, the area had seen about 6 inches of snow a few days previous. Thus, gusty east winds produced a tremendous amount of blowing and drifting snow, especially in Lenawee County. County officials reported that many of the rural back roads were drifted shut. The weight of accumulated snow caused the roof of a skating rink - damaged after heavy snow in January - to collapse in Adrian.

## MICHIGAN, Extreme Southwest

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## MICHIGAN, North

NONE REPORTED.

## MICHIGAN, Upper

NONE REPORTED.

## MICHIGAN, West

NOT RECEIVED.

## MINNESOTA, Central and South Central

**MNZ041-041>045-045-047>050-050>052-052>053-053>054-054>056-056>057-057>060-060>066-066>068-068>070-070-073>074-074>076-076>078-078-082>083-083>085-091-091>092-092>093-093**

**08 0030CST 0 0 Winter Storm**  
**09 1400CST**

Strong surface low pressure system moved out of the Rockies and into the central Great Plains. The center of this Winter Storm tracked across central Iowa with snow seen as far north as central Minnesota. All counties listed above were subjected to more than 6 inches of snowfall in less than 38 hours...with most of south central and east central Minnesota receiving between 9 inches and 12 inches of snow. The heaviest reports of snowfall were reported in southern Hennepin and northern Hastings counties, where measurements of between 14 and 17 inches were common. No reports of major injuries or deaths related to the storm.

**MNZ041>045-047>070-073>078-082>085-091>093**

**17 1100CST 0 0 High Wind (G55)**  
**1900CST**

Tight pressure gradient behind a strong surface low that tracked across Minnesota and into the northern Great Lakes produced sustained winds across the area between 25 and 35 knots during an eight hour period. The maximum gust reported on this St. Patrick's day was 55 knots, observed in Glenwood. No substantial or even moderate damage was incurred during this wind event.

## MINNESOTA, Northeast

**MNZ012-019>021-026-033>038**

**08 0700CST 0 0 Heavy Snow**  
**09 1200CST**

A strong late season winter storm brought 6 to 12 inches of snow to much of northeastern Minnesota. Later in the event, the snow was primarily lake effect, with the heaviest amounts falling near Lake Superior between Duluth and Tofte. The maximum amount reported was 15.1 inches near Two Harbors. Strong winds also whipped up the snow into near-whiteout conditions at times.

**MNZ010>012**

**Koochiching - Northern St. Louis - Northern Cook / Northern Lake**

**17 0800CST 0 0 Heavy Snow**  
**1530CST**

An intense low pressure system moving across northern Minnesota dropped 6 to 7 inches of snow along the international border. Some of the snow fell in heavy bursts associated with thunderstorms.

**MNZ020-037**

**Southern Lake - Southern St. Louis / Carlton**

**05 1000CST 0 0 Heavy Snow**  
**2100CST**

Heavy lake effect snow accumulations of 6 to 10 inches occurred along the north shore, mainly from Duluth to Two Harbors.



# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>MISSISSIPPI, Central</b>									
<b>Yazoo County</b>									
10 W Yazoo City	02	1445CST			0	0	25K		Hail (2.00)
		A few homes and automobiles received minor damage.							
<b>Yazoo County</b>									
Holly Bluff	02	1448CST			0	0			Hail (0.75)
<b>Yazoo County</b>									
Yazoo City	02	1505CST			0	0			Hail (0.88)
<b>Holmes County</b>									
Tchula	02	1510CST			0	0			Hail (0.75)
<b>Yazoo County</b>									
Renshaw	02	1600CST			0	0	20K		Hail (1.75)
		Golfball size hail caused minor damage to automobiles and homes.							
<b>Carroll County</b>									
Carrollton	02	1610CST			0	0			Hail (0.75)
<b>Montgomery County</b>									
Winona	02	1610CST			0	0			Hail (1.00)
<b>Montgomery County</b>									
Winona	02	1610CST			0	0			Hail (0.75)
<b>Hinds County</b>									
Raymond	02	1620CST			0	0			Hail (0.75)
<b>Yazoo County</b>									
Holly Bluff	02	1630CST			0	0			Hail (1.00)
<b>Issaquena County</b>									
Mayersville	02	1700CST			0	0			Hail (1.00)
<b>Clay County</b>									
Montpelier	02	1820CST			0	0	2K		Thunderstorm Wind
		Several trees were blown down.							
<b>Madison County</b>									
Canton	02	1830CST			0	0			Hail (1.00)
<b>Humphreys County</b>									
Louise	02	1845CST			0	0	30K		Hail (1.75)
		Golfball size hail caused minor damage to automobiles and homes.							
<b>Adams County</b>									
Natchez	02	2010CST			0	0			Thunderstorm Wind (G61)
<b>Adams County</b>									
Washington	02	2015CST			0	0	25K		Hail (1.75)
		Golfball size hail caused damage to a few houses and automobiles.							
<b>Adams County</b>									
Natchez	02	2020CST			0	0	20K		Thunderstorm Wind
		A church roof received major damage. Several car windows were blown out.							
<b>Jefferson County</b>									
Countywide	02	2020CST			0	0	15K		Thunderstorm Wind
		Several trees were blown down across roads throughout the county.							
<b>Adams County</b>									
Countywide	02	2030CST			0	0	30K		Thunderstorm Wind
		Numerous trees were blown down throughout the county.							
<b>Claiborne County</b>									
Port Gibson	02	2030CST			0	0	2K		Thunderstorm Wind
		Several trees were blown down at the middle school in Port Gibson.							
<b>Warren County</b>									
3 N Vicksburg	02	2032CST			0	0	2K		Thunderstorm Wind
		Several trees were blown down.							
<b>Franklin County</b>									
Countywide	02	2035CST			0	0	50K		Thunderstorm Wind
		Numerous trees and power lines were blown down throughout the county.							

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>MISSISSIPPI, Central</b>									
<b>Hinds County</b>									
Raymond	02	2055CST			0	0	75K		Thunderstorm Wind
									A few roofs were damaged and several road signs were blown down. Numerous trees were blown down.
<b>Copiah County</b>									
Countywide	02	2100CST			0	0	20K		Thunderstorm Wind
									Trees were blown down throughout the county.
<b>Hinds County</b>									
Raymond	02	2100CST			0	0	30K		Thunderstorm Wind
									The roof was blown off of a house and two cars received damage.
<b>Lincoln County</b>									
Countywide	02	2100CST			0	0	25K		Thunderstorm Wind
									Trees were blown down across roads throughout the county.
<b>Madison County</b>									
Ridgeland	02	2105CST			0	0			Thunderstorm Wind (G52)
<b>Lincoln County</b>									
3 SSE Brookhaven	02	2107CST			0	0			Hail (1.50)
<b>Hinds County</b>									
Jackson	02	2110CST			0	0	5K		Thunderstorm Wind
									Several trees were blown down.
<b>Hinds County</b>									
Jackson	02	2112CST			0	0			Hail (0.75)
<b>Lincoln County</b>									
7 S Brookhaven to 7 S Bristerville	02	2120CST			0	0			Hail (0.75)
<b>Rankin County</b>									
3 N Florence	02	2120CST			0	0	30K		Hail (1.75)
									Golfball size hail caused damage to a few roofs and automobiles.
<b>Rankin County</b>									
3 S Pearl	02	2128CST			0	0			Thunderstorm Wind (G61)
<b>Madison County</b>									
Sharon	02	2130CST			0	0			Hail (0.75)
<b>Simpson County</b>									
Countywide	02	2130CST			0	0	30K		Thunderstorm Wind
									Trees and power lines were blown down throughout the county.
<b>Rankin County</b>									
Brandon	02	2140CST			0	0	20K		Thunderstorm Wind
									Several trees and signs were blown down near the East Brandon exit of Interstate 20.
<b>Scott County</b>									
Countywide	02	2200CST			0	0	20K		Thunderstorm Wind
									Trees were blown down throughout the county.
<b>Lamar County</b>									
Purvis	02	2215CST			0	0	2K		Thunderstorm Wind
									A few trees were blown down.
<b>Newton County</b>									
Lawrence	02	2220CST			0	0	35K		Thunderstorm Wind
									A utility storage building was destroyed.
<b>Smith County</b>									
Pineville	02	2225CST			0	0	2K		Thunderstorm Wind
									A few trees were blown down across Highway 501.
<b>Newton County</b>									
Newton	02	2240CST			0	0	5K		Thunderstorm Wind
									Trees were blown down.
<b>Claiborne County</b>									
4 S Port Gibson	08	2115CST			0	0	3K		Thunderstorm Wind
									Several trees were blown down.
<b>Hinds County</b>									
Bolton	08	2130CST			0	0			Hail (1.50)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>MISSISSIPPI, Central</b>									
<b>Copiah County</b>									
2 W Wesson	08	2145CST			0	0	12K		Thunderstorm Wind
									Several trees and power lines were blown down.
<b>Hinds County</b>									
Bolton	08	2200CST			0	0	90K		Thunderstorm Wind
									The roof was blown off of the fire department. Two trucks were blown off of Interstate 20. A couple of homes were damaged and several trees were blown down.
<b>Jefferson County</b>									
Church Hill	08	2215CST			0	0	25K		Hail (1.75)
									Golfball size hail caused damaged to a few homes and automobiles.
<b>Rankin County</b>									
Star	08	2223CST			0	0			Hail (0.75)
<b>Neshoba County</b>									
Neshoba	08	2230CST			0	0			Hail (1.50)
<b>Scott County</b>									
2 S Morton	08	2230CST			0	0	2K		Thunderstorm Wind
									Several trees were blown down.
<b>Copiah County</b>									
4 W Georgetown	08	2235CST			0	0	10K		Thunderstorm Wind
									Several trees were blown down with one house sustaining roof damage.
<b>Lincoln County</b>									
Countywide	08	2240CST			0	0	50K		Thunderstorm Wind
									Numerous trees were blown down throughout Lincoln county.
<b>Neshoba County</b>									
Dixon	08	2245CST			0	0	10K		Thunderstorm Wind
									Several power lines were blown down.
<b>Newton County</b>									
Newton	08	2245CST			0	0			Hail (0.75)
<b>Simpson County</b>									
Magee	08	2248CST			0	0			Hail (0.75)
<b>Lauderdale County</b>									
4 SE Meehan	08	2300CST			0	0			Hail (1.00)
<b>Covington County</b>									
Collins	08	2315CST			0	0	50K		Thunderstorm Wind
									Trees and power lines were blown down.
<b>Covington County</b>									
5 N Collins	08	2330CST			0	0	2K		Thunderstorm Wind
									A few trees were blown down.
<b>Jones County</b>									
6 NW Laurel	08	2330CST			0	0	30K		Hail (1.75)
	09	2330CST							Golfball size hail caused damage to several homes and automobiles.
<b>Jones County</b>									
Soso	08	2330CST			0	0	25K		Hail (1.75)
									Golfball size hail caused damage to a few homes and automobiles.
<b>Lawrence County</b>									
10 S Monticello	08	2330CST			0	0			Hail (1.00)
<b>Jasper County</b>									
Bay Spgs	08	2335CST			0	0	10K		Thunderstorm Wind
									Several trees were blown down and a shed was destroyed.
<b>Jones County</b>									
Moselle	08	2345CST			0	0			Hail (1.00)
<b>Jones County</b>									
Countywide	08	2350CST			0	0			Hail (0.75)
<b>Jones County</b>									
Countywide	08	2350CST			0	0	50K		Thunderstorm Wind
									Numerous trees were blown down throughout the county.

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MISSISSIPPI, Central</u></b>									
<b>Lamar County</b>									
Purvis	08	2350CST			0	0	5K		Thunderstorm Wind
		Several trees were blown down.							
<b>Clarke County</b>									
Quitman	09	0000CST			0	0			Hail (1.00)
<b>Forrest County</b>									
Countywide	09	0000CST			0	0	40K		Thunderstorm Wind
		Numerous trees were blown down throughout the county.							
<b>Jones County</b>									
Laurel	09	0005CST			0	0			Hail (1.00)
<b>Forrest County</b>									
3 W Hattiesburg	09	0035CST			0	0	10K		Thunderstorm Wind
		Numerous trees were blown down.							
<b>Forrest County</b>									
7 NW Hattiesburg	09	0035CST			0	0	8K		Thunderstorm Wind
		Trees were blown down along Highway 49.							
<b>Marion County</b>									
Columbia	09	0050CST			0	0	2K		Thunderstorm Wind
		A few trees were blown down.							
<b>Adams County</b>									
Countywide	13	0730CST			0	0	5K		Thunderstorm Wind
		Trees were blown down along the Natchez Trace Parkway.							
<b>Jefferson County</b>									
Countywide	13	0800CST			0	0	10K		Thunderstorm Wind
		Trees were blown down throughout the county.							
<b>Copiah County</b>									
Dentville	13	0854CST			0	0	2K		Thunderstorm Wind
		A few trees were blown down.							
<b>Marion County</b>									
Columbia	13	1215CST			0	0	5K		Thunderstorm Wind
		A few trees were blown down.							
<b>Marion County</b>									
Countywide	13	1335CST 1700CST			0	0			Flash Flood
		Heavy rain from thunderstorms flooded streets and roads and several of them became impassable.							
<b>Forrest County</b>									
Countywide	13	1400CST 1700CST			0	0			Flash Flood
		Heavy rain from thunderstorms flooded roads and streets and many of them became impassable.							
<b>Jones County</b>									
South Portion	13	1400CST 1700CST			0	0	75K		Flash Flood
		Heavy rain from thunderstorms flooded several houses and streets across the southern part of Jones County.							
<b><u>MISSISSIPPI, North</u></b>									
<b>Panola County</b>									
Batesville	02	1343CST 1350CST			0	0	0.01K		Hail (0.75)
<b>Lafayette County</b>									
2 N Oxford	02	1449CST 1455CST			0	0	0.10K		Hail (1.00)
<b>Panola County</b>									
Sardis	02	1455CST 1500CST			0	0	0.05K		Hail (0.88)
<b>Pontotoc County</b>									
Pontotoc	02	1545CST 1550CST			0	0	0.75K		Hail (1.75)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>MISSISSIPPI, North</b>									
<b>Union County</b>									
Ingomar to Pinedale	02	1610CST 1620CST			0	0	1.5K		Hail (1.75)
<b>Lee County</b>									
Salttillo	02	1630CST 1635CST			0	0	0.10K		Hail (1.00)
<b>Lee County</b>									
Tupelo Arpt to Verona	02	1706CST 1715CST			0	0	0.50K		Hail (1.75)
Hail ranged in size from dimes to golfballs.									
<b>Pontotoc County</b>									
Gershorm	02	1708CST 1715CST			0	0	0.75K		Hail (1.75)
<b>Itawamba County</b>									
Fulton	02	1735CST 1750CST			0	0	1.5K		Hail (1.75)
Hail ranged in size from dimes to golfballs.									
<b>Lee County</b>									
Countywide	02	1750CST 2000CST			0	0	1K		Urban/Sml Stream Fld
Several streets were flooded after more than 3 inches of rain fell in about 2 hours time.									
<b>Union County</b>									
Center to New Albany	06	0009CST 0015CST			0	0	0.01K		Hail (0.75)
<b>Tallahatchie County</b>									
Sumner	06	0030CST 0035CST			0	0	0.01K		Hail (0.75)
<b>MISSISSIPPI, South</b>									
<b>Hancock County</b>									
Waveland	02	2315CST			0	0			Hail (0.75)
Dime size hail was reported by Emergency Management.									
<b>Pike County</b>									
Magnolia	02	2110CST			0	0	2K		Thunderstorm Wind
Thunderstorm winds blew the roof off of a mobile home and knocked several trees down.									
<b>Amite County</b>									
Liberty	02	2115CST			0	0	0.75K		Thunderstorm Wind
Thunderstorm winds blew down several trees and power lines.									
<b>Pike County</b>									
Progress	02	2141CST			0	0			Hail (0.75)
Dime size hail was reported by the Pike County Sheriff's Office.									
<b>Pike County</b>									
Mc Comb	02	2121CST			0	0	10K		Thunderstorm Wind
Thunderstorm winds lifted part of a tin roof off of a business and blew two trees down. One tree fell on a car.									
<b>Jackson County</b>									
Helena	03	0010CST			0	0	25K		Thunderstorm Wind
Thunderstorm winds damaged the roof of a church and blew down its steeple, overturned a travel trailer, and knocked down a few trees.. A pickup truck and carport were damaged by a falling tree.									
<b>Amite County</b>									
14 N Gloster	13	0950CST			0	0	0.50K		Thunderstorm Wind
Thunderstorm winds blew several trees down 14 miles north of Gloster.									
<b>Amite County</b>									
4 SW Liberty	13	1030CST			0	0	3K		Thunderstorm Wind
Thunderstorm winds blew a tree down across a mobile home 4 miles southwest of Liberty along Highway 48.									
<b>Jackson County</b>									
1 E Pascagoula	13	1753CST	0.1	10	0	0			Tornado (F0)
A tornado briefly touched down but caused no damage one mile east of Pascagoula south of Interstate 10.									
<b>Walthall County</b>									
Tylertown	13	1130CST			0	0	50K		Thunderstorm Wind
Thunderstorm winds ripped off the metal roof of a business.									

# Storm Data and Unusual Weather Phenomena

March 1999

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, South

### Pearl River County

**Millard**      **06**      **0153CST**                **0**      **0**                **Hail (0.75)**  
Dime size hail was reported by the Pearl River County Sheriff's Department.

### Pike County

**3 E Mc Comb**      **09**      **0018CST**      **0.1**      **10**      **0**      **0**           **Tornado (F0)**  
The Mississippi Highway Patrol reported a brief tornado touchdown three miles east of McComb along Highway 98. The tornado did not cause any damage.

### Pike County

**6 ESE Mc Comb**      **09**      **0020CST**      **0.1**      **10**      **0**      **0**           **Tornado (F0)**  
Pike County Civil Defense reported that a tornado touched down briefly six miles east southeast of McComb near a trailer park. The tornado did not cause any damage.

## MISSISSIPPI, Southeast

### Perry County

**Richton**      **09**      **0025CST**  
**0027CST**                **0**      **0**      **0**           **Hail (1.75)**  
Golfball size hail was reported on HWY42, east of Richton.

### Greene County

**Sand Hill**      **09**      **0030CST**  
**0035CST**                **0**      **0**                **Hail (1.75)**  
Golfball size hail was reported on HWY42, west of Sand Hill.

### Greene County

**Piave**      **09**      **0040CST**  
**0045CST**                **0**      **0**                **Hail (1.75)**  
Golfball size hail was reported in Piave. Windows were broken out of a trailer in the community.

### Stone County

**Countywide**      **02**      **2315CST**  
**2325CST**                **0**      **0**      **10K**           **Thunderstorm Wind (G50)**  
Trees and power lines were blown down throughout the county. High winds also damaged a couple of sheds. Estimated wind speeds were around 60 mph.

### Wayne County

**Waynesboro**      **09**      **0025CST**  
**0026CST**                **0**      **0**                **Hail (1.00)**  
Quarter size hail was reported in Waynesboro.

## MISSOURI, East

### Crawford County

**Steelville**      **05**      **1900CST**                **0**      **0**                **Hail (0.75)**  
Storm spotters reported 3/4 inch hail in Steelville.

### Reynolds County

**Centerville**      **05**      **1935CST**                **0**      **0**                **Hail (0.75)**  
Storm spotters reported 3/4 inch hail in Centerville.

**MOZ009>010-018>019-026>027-034>035**

**Scotland - Clark - Knox - Lewis - Shelby - Marion - Monroe - Ralls**

**08**      **0600CST**  
**2200CST**                **0**      **0**                **Winter Storm**

A late season winter storm hit northeast Missouri dropping from 2 to 8 inches of snow across the area. The heaviest snow fell in the northeast corner of the state with Clark and Lewis counties picking up from 6 to 8 inches.

**MOZ065-072>075-084>085-099**

**Jefferson - Crawford - Washington - St. Francois - Ste. Genevieve - Iron - Madison - Reynolds**

**13**      **2200CST**  
**14**      **0600CST**                **0**      **0**                **Winter Storm**

A late season winter storm struck southeast Missouri dumping from 2 to 14 inches of snow. The heaviest band of snow fell from south central to southeast Missouri. Iron, Madison, St. Francis, Ste. Genevieve, and Reynolds counties received from 6 to 14 inches of snow. The band of snow was rather narrow and had a sharp cut-off on the northern side. For example, north Washington County, MO received 2 inches of snow while the southern quarter received 8 inches.

# Storm Data and Unusual Weather Phenomena

March 1999

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

**MISSOURI, Lower**

NONE REPORTED.

**MISSOURI, Northwest**

**MOZ031-039>040-044-046-054**     **Carroll - Saline - Howard - Johnson - Cooper - Henry**

<b>08</b>	<b>0000CST</b>								
<b>12</b>	<b>2359CST</b>			<b>0</b>	<b>0</b>				<b>Flood</b>

Minor to moderate river flooding occurred across west central Missouri between March 8-11.

South Grand River  
Urich, MO

Flood Stage	24 ft
Above Flood Stage	3/8 to 3/11
Crest	25.7 ft on 3/9

Wakenda Creek  
Carrollton, MO

Flood Stage	20 ft
Above Flood Stage	3/9 to 3/10
Crest	20.8 ft on 3/9

Blackwater River  
Valley City, MO

Flood Stage	22 ft
Above Flood Stage	3/8 to 3/10
Crest	27.0 ft on 3/9

Blue Lick, MO

Flood Stage	24.0 ft
Above Flood Stage	3/8 to 3/12
Crest	27.68 ft on 3/12

Petite Saline Creek  
Boonville, MO

Flood Stage	16 ft
Above Flood Stage	3/8 to 3/9
Crest	19.3 ft on 3/8

Moniteau Creek  
Fayette, MO

Flood Stage	16 ft
Above Flood Stage	3/8 to 3/9
Crest	16.8 ft on 3/8

Lamine River  
Otterville, MO

Flood Stage	15 ft
Above Flood Stage	3/8 to 3/9
Crest	18.08 ft on 3/9

**MISSOURI, Southeast**

**MOZ076-086>087-100-107>111**     **Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott**

<b>13</b>	<b>2300CST</b>								
<b>14</b>	<b>1200CST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>

# Storm Data and Unusual Weather Phenomena

March 1999

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

## MISSOURI, Southeast

A major snowstorm dumped 12 to 15 inches of snow over parts of southeast Missouri. The precipitation fell mainly as rain near the Bootheel, so little if any snow was reported from New Madrid to Charleston. There was a sharp division between heavy snow and no snow at all. Only one county to the northwest of New Madrid, 5 to 7 inches of snow fell from Dexter and Bloomfield to Benton. The jackpot of snow totals extended from Perryville and northern Cape Girardeau County to Greenville in Wayne County. In this area, where the rain changed to snow the soonest, around 14 inches of wet snow fell. Snowfall rates were 1 to 2 inches per hour for several hours. This overtaxed the ability of most road crews to keep up with removal efforts. Relatively few travel problems were reported, mainly because the storm occurred on a Sunday morning, a time of relatively light traffic flow. Those vehicles that were on the roads encountered treacherous conditions. Several accidents occurred in Cape Girardeau. Some vehicles became stuck in drifts in areas that received a foot or more of snow. Many school systems, including Cape Girardeau, were closed the day after the storm. Many businesses were closed. Rapidly warming temperatures melted the snow quickly within 48 hours.

## MISSOURI, Southwest

### **Lawrence County**

**Friestatt**      **05**      **1725CST**           **0**      **0**           **Hail (0.75)**

### **Barry County**

**Purdy**      **05**      **1700CST**           **0**      **0**           **Hail (0.75)**

### **Mcdonald County**

**Goodman**      **05**      **1645CST**           **0**      **0**           **Hail (0.75)**

### **Mcdonald County**

**Anderson**      **05**      **1645CST**           **0**      **0**           **Thunderstorm Wind (G52)**

### **Newton County**

**1 N Seneca**      **05**      **1620CST**           **0**      **0**           **Hail (0.88)**

### **Newton County**

**Neosho**      **05**      **1645CST**           **0**      **0**           **Hail (1.75)**

Nickel to golf ball sized hail was reported in the Neosho area by law enforcement.

### **Stone County**

**1 N Crane**      **05**      **1725CST**           **0**      **0**           **Hail (1.00)**

### **Christian County**

**Billings**      **05**      **1715CST**           **0**      **0**           **Hail (0.75)**

### **Stone County**

**1 NW Crane**      **05**      **1800CST**           **0**      **0**           **Hail (0.75)**

Dime sized hail accumulated to a depth of two inches.

### **Greene County**

**2 NE Republic**      **05**      **1753CST**           **0**      **0**           **Hail (0.75)**

**MOZ077>080-082>083-088>098-101>106**      **Barton - Cedar - Polk - Dallas - Texas - Dent - Jasper - Dade - Greene - Webster - Wright - Newton - Lawrence - Christian - Douglas - Howell - Shannon - Mcdonald - Barry - Stone - Taney - Ozark - Oregon**

**13**      **1500CST**           **0**      **0**      **260K**      **Winter Storm**  
**14**      **1200CST**

A winter storm produced an area of 3 to as much as 16 inches of snow over a portion of southwest and south central Missouri. The hardest hit areas, where 14 to 16 inches of snow was reported, were in an area from Pineville and Neosho to Springfield then east to the Houston and Cabool areas. Unofficial snowfall reports of 23 inches were reported by law enforcement near Cassville and 18 to 22 inches in the Nixa/Ozark area in Christian County. Snow drifts were 3 to 4 feet high in some of the hardest hit areas.

Although there were numerous accidents reported by law enforcement, no serious damage or injuries were reported. Scattered power outages were also reported by local electric cooperatives. Some homes in the hardest hit areas around Cassville and Pineville were without power for over 24 hours.

### **Benton County**

**Countywide**      **08**      **1130CST**  
**1300CST**           **0**      **0**           **Flash Flood**

Thunderstorms produced minor flooding on creeks and low water crossings. Flooding was reported on Highway 83 in southern Benton County.

## MONTANA, Central

### **MTZ009**

### **Rocky Mountain Front**

**30**      **2200MST**           **0**      **0**           **Heavy Snow**

**31**      **1600MST**

MARIAS PASS 12 INCHES...ST MARY 8 INCHES...EAST GLACIER 7 INCHES



# Storm Data and Unusual Weather Phenomena

March 1999

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

## MONTANA, South

Between 4 and 8 inches fell in Yellowstone County with 8 inches of snowfall at the Billings Airport. Heavy snowfall was also common across portions of Golden Valley and Musselshell Counties. Between 6 and 8 inches fell in the Roundup area while 13 to 14 inches fell in the Ryegate area. Lavina received 6 inches of snow from this storm as well. Elsewhere across South Central Montana, between 2 and 5 inches of snowfall was received in portions of Wheatland, Sweet Grass, Stillwater and Carbon Counties.

**MTZ032-035-038**

**Custer - Yellowstone - Big Horn**

<b>16</b>	<b>0930MST 1830MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G62)</b>
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A strong cold front generated northwest winds with gusts as high as 71 mph as it crossed South Central and southeastern Montana. A gust of 70 mph was observed at the National Weather Service Office at 1055 am while the Billings airport recorded a peak wind gust of 63 mph at 1219 pm. Sustained winds of 40 mph were reported 10 miles east of Billings at 1210 pm. In Big Horn County wind gusts as high as 71 mph were observed at Big Horn Mountain at 1136 am, and a 58 mph peak gust was recorded at Badger Peak at 1130 am. Hillside in Custer County had sustained winds of 44 mph at 106 pm.

**MTZ032-035**

**Custer - Yellowstone**

<b>26</b>	<b>1300MST 2000MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G50)</b>
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A strong cold front generated sustained winds of 40 mph at the Billings airport and gusts as high as 58 mph at the Miles City airport as it crosses South Central and southeastern Montana.

## MONTANA, West

NONE REPORTED.

## NEBRASKA, Central

**Hayes County**

<b>3 S Hayes Center</b>	<b>27</b>	<b>1710CST 1715CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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**Hayes County**

<b>6 S Hayes Center</b>	<b>27</b>	<b>1719CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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**Hayes County**

<b>8 NE Hayes Center</b>	<b>27</b>	<b>1720CST</b>			<b>0</b>	<b>0</b>		<b>Hail (1.50)</b>
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**NEZ059**

**Lincoln**

<b>13</b>	<b>0730CST 0800CST</b>			<b>0</b>	<b>1</b>	<b>400K</b>		<b>Fog</b>
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Dense fog about 7:30 AM CST resulted in a chain-reaction accident involving four semi trailer rigs and 26 other vehicles. A nineteen year old Illinois man was hit by a car and was seriously injured when his car slid off the roadway, stopping on the shoulder. The multiple vehicle accident resulted in the closing of Interstate Highway 80 between North Platte and Hershey for 3 1/2 hours while the vehicles were cleared from the road..

## NEBRASKA, East

**NEZ011>012-  
016>017**

**Knox - Cedar - Antelope - Pierce**

<b>08</b>	<b>0800CST 1600CST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
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Although the heaviest snow with this storm was over parts of southeast and east central Nebraska into western Iowa, a secondary band of heavy snow set up from northwest of Norfolk into northeast Cedar county. Eight inches of snow was reported in Brunswick with six inches at Neligh and Osmond with like amounts across the rest of the area.

**NEZ015-033>034-  
043>045-050>053-  
065>068-078**

**Thurston - Cuming - Burt - Colfax - Dodge - Washington - Butler - Saunders - Douglas - Sarpy - Seward -  
Lancaster - Cass - Otoe - Saline**

<b>08</b>	<b>0000CST 1400CST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
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Freezing drizzle and Sleet became widespread from east central Nebraska into western Iowa around midnight before changing over to heavy snow shortly thereafter. Before the storm ended around mid afternoon, snowfall of 6 to 8 inches was common across the area with a band of 8 to 12 inches reported along the Missouri river north of Omaha. The snow was accompanied by east to southeast winds of 15 to 30 mph which created some drifts over 4 feet. Heavier snow amounts in Nebraska included...12 inches in Blair...11 inches at Tekamah...10 inches in Fremont...8 inches in parts of Omaha...at Oakland and in Prague and 7 inches at Valley...Lincoln and Lyons.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEBRASKA, East

**NEZ011>012-015>018-030>034-042>045-050>053-065>068-078-088>093**      **Knox - Cedar - Thurston - Antelope - Pierce - Wayne - Boone - Madison - Stanton - Cuming - Burt - Platte - Colfax - Dodge - Washington - Butler - Saunders - Douglas - Sarpy - Seward - Lancaster - Cass - Otoe - Saline - Jefferson - Gage - Johnson - Nemaha - Pawnee - Richardson**

**30      1100CST      0      0      High Wind (G55)**  
**2000CST**

Strong south winds over-spread eastern Nebraska from late morning on 3/30/99 through early that evening. Sustained winds were 35 to 40 mph with wind gusts of 45 to 55 mph common. These strong winds caused scattered damage reports in eastern Nebraska including...a mobil home roof partially removed in Auburn, a one-half section of a modular home that was being towed was overturned just west of Arlington and a metal roof with wood framing was blown off a building in Osmond. Scattered tree limb damage was also reported.

## NEBRASKA, Extreme Northeast

**NEZ013>014**      **Dixon - Dakota**  
**08      0100CST      0      0      Winter Storm**  
**1500CST**

Snowfall of 4 to 7 inches combined with winds gusting frequently above 30 mph to produce difficult conditions for travel and commerce. Visibility was reduced often to 1/2 mile or less, and drifting snow added to the travel difficulty.

## NEBRASKA, Extreme Southwest

**NEZ079>081**      **Dundy - Hitchcock - Red Willow**  
**12      0100MST      0      0      Winter Storm**  
**13      0500MST**

One of the biggest snow events of the season hit far southwest Nebraska on the morning of the 12th, and continued through the early morning hours of the 13th. Snowfall amounts ranged from 5 to 8 inches by the time the storm ended.

### **Dundy County**

**Benkelman      27      1645MST      0      0      Tstm Wind/Hail**  
**1647MST**

Thunderstorm winds twisted a Metal Storage Building and knocked down fences in town.

### **Hitchcock County**

**Stratton      27      1745CST      0      0      Thunderstorm Wind (G52)**

## NEBRASKA, South Central

**NEZ039>041-046>049-060>064-072>077-082>087**      **Valley - Greeley - Nance - Sherman - Howard - Merrick - Polk - Dawson - Buffalo - Hall - Hamilton - York - Gosper - Phelps - Kearney - Adams - Clay - Fillmore - Furnas - Harlan - Franklin - Webster - Nuckolls - Thayer**  
**08      0400CST      0      0      20K      0      Winter Storm**  
**1500CST**

After a couple of weeks of quiet weather, winter returned to the region with a mixture of snow, sleet, freezing rain and wind. Most of the precipitation fell from early morning to mid-afternoon across south-central Nebraska on the 8th. As the morning wore on, conditions deteriorated quickly as a mixture of sleet and freezing rain changed to all snow. North winds increased and gusted over 30 mph by late morning as heavy snow fell. Schools which hadn't already canceled classes, let students head home early as the snow piled up.

Snow amounts ranged from 3 to 8 inches with the heavier amounts in a 50 mile wide band from near Alma, through Kearney, and then to around Greeley. Loup City and Greeley both reported 7 to 8 inches of snow. Somewhat lighter amounts were noted east and south of Hastings. The combination of snow, ice and wind downed power lines and caused hazardous driving conditions. Some 1,500 people were without electricity in the York area for a time on the 8th.

### **NEZ082**

**Furnas**  
**12      0400CST      0      0      0      0      Heavy Snow**  
**13      1600CST**

Strong low pressure lifting north from the southern plains spread a swath of heavy snow across a small part of south-central Nebraska. Reports of "thundersnow" were noted in the morning hours as the snow came down. Snow amounts by the storms end had totaled 6 inches in some spots.

**NEZ039>041-046>049-060>064-072>077-082>087**      **Valley - Greeley - Nance - Sherman - Howard - Merrick - Polk - Dawson - Buffalo - Hall - Hamilton - York - Gosper - Phelps - Kearney - Adams - Clay - Fillmore - Furnas - Harlan - Franklin - Webster - Nuckolls - Thayer**

**30      0800CST      0      0      10K      0      High Wind (G50)**  
**2000CST**

Intense winds behind strong low pressure gusted over 50 mph for most of the day across south-central Nebraska. Peak wind gusts include 58 mph at Aurora and from 54 to 56 mph at Kearney, Hastings, Grand Island and Holdrege. A large window shattered in

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEBRASKA, South Central

the vestibule of a Kearney retail store under the stress of the wind. An awning was ripped from a Kearney furniture store and another from the front of a law office in York. The wind teamed with recent dry weather to stoke over 15 wildfires in the area the afternoon of the 30th. Sporadic power loss was also noted.

## NEBRASKA, West

**NEZ003**

### **Box Butte**

**10 1400MST 0 1 10K 0 Icy Roads**

A woman lost control of her car on slush covered highway 385, 7 miles northeast of Hemingford. She slid into the opposite lane, where she was struck by another vehicle. The woman dislocated her shoulder and her vehicle was totaled.

**NEZ055**

### **Cheyenne**

**11 2230MST 0 6 35K 0 Icy Roads**  
**12 0830MST**

Three people were injured when the pickup truck in which they were riding went off Interstate 80 and rolled into the ditch. The truck was heading east, about a mile east of Potter when the driver lost control on the ice. The driver reported a foot injury, while two passengers in the vehicle reported back injuries. The accident happened at 1047 pm on the 11th. Another accident occurred at 830 am on the 12th, in which a pickup truck hit ice, slid into the median and then rolled several times. The accident occurred three miles east of Potter on Interstate 80. The driver and a passenger received minor injuries and another passenger reported back injuries.

## NEVADA, North

**NVZ008-012**

### **Southwest And South Central Elko - Lander/Eureka**

**08 2200PST 0 0 Heavy Snow**  
**09 0800PST**

5 inches of new snow was reported overnight at Austin and 4 inches of new snow at Spring Creek.

## NEVADA, South

NONE REPORTED.

## NEVADA, West

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**02 1816PST 0 0 0 High Wind (G50)**

Nevada Dept. of Transportation wind sensor in Washoe Valley recorded sustained winds of 35 knots with gusts to 50 knots.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**02 1930PST 0 0 0 High Wind (G52)**

Peak wind gust of 60 mph recorded in Gardnerville.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**02 2030PST 0 0 0 High Wind (G56)**

Peak wind gust of 64 mph recorded in Gardnerville.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**02 2100PST 0 0 5K High Wind (G60)**

Winds estimated to be near 60 knots blew down a 60 foot elm tree in west Reno. The tree landed on a house. No injuries.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**02 2042PST 0 0 0 High Wind (G65)**

Peak wind gust of 75 mph in south Reno.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**02 2241PST 0 0 0 High Wind (G50)**

Peak wind gust of 58 mph recorded in Cold Springs, 12 miles north of Reno.

**NVZ004**

### **Western Nevada Basin And Range**

**02 2335PST 0 0 0 High Wind (G52)**

Estimated winds of 50-60 mph in Nixon.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**02 2343PST 0 0 0 High Wind (G56)**

Peak wind speed of 56 knots recorded at National Weather Service Office in Reno.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**03 0100PST 0 0 0 High Wind (G76)**

Peak wind gust of 87mph recorded in southwest Reno.

**NVZ003**

### **Greater Reno/Carson City/Minden Area**

**03 0115PST 0 0 0 High Wind (G60)**

Peak wind gust of 69 mph recorded by RAWS wind sensor 10 miles NNE of Reno.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEVADA, West

**NVZ004**      **Western Nevada Basin And Range**  
**03**      **0203PST**      **0**      **0**      **0**      **High Wind (G50)**  
 Peak wind gust of 58 mph recorded by RAWS wind sensor 18 miles southwest of Fallon.

**NVZ002**      **Greater Lake Tahoe Area**  
**30**      **2030PST**      **0**      **0**      **0**      **Heavy Snow**  
**31**      **0830PST**  
 12 inches of snow in 12 hours recorded at Dagget Pass, elevation 7380 feet.

## NEW HAMPSHIRE, North and Central

**NHZ001>010-013>014**      **Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**  
**04**      **0500EST**      **0**      **0**      **Strong Winds**  
**1200EST**  
 A deep low pressure moving north-northeastward through northern New York State caused strong south to southeasterly winds to develop over the state. Wind gusts in the 40- to 50-mph range were reported throughout the area. The strong winds downed trees and limbs causing scattered power outages. Several thousand customers were reported to have lost electrical service.

**NHZ001>010-013>014**      **Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**  
**06**      **0800EST**      **0**      **0**      **Heavy Snow**  
**07**      **1500EST**  
 A low pressure center that developed rapidly off the New England coast brought a heavy snowfall to all of New Hampshire. Snowfall amounts generally ranged from 5 to 10 inches in southern parts of the state to 10 to 16 inches in the northern half of the state.

**NHZ008**      **Merrimack**  
**07**      **1230EST**      **1**      **1**      **Strong Winds**  
 A strong wind gust reportedly blew a compact car off the roadway on Route 3-A in the town of Hill. The single car accident resulted in one fatality and one injury. A peak wind gust of 37 mph was reported in Concord near the time of the accident. M26VE

**NHZ001>005-007-014**      **Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Sullivan - Coastal Rockingham**  
**14**      **2200EST**      **0**      **0**      **Moderate Snowfall**  
**16**      **0300EST**

**NHZ006-008>010-013**      **Southern Carroll - Merrimack - Belknap - Strafford - Interior Rockingham**  
**14**      **2200EST**      **0**      **0**      **Heavy Snow**  
**16**      **0300EST**  
 A low pressure center intensified as it moved northeastward from the Gulf States on the morning of the 14th to off the Virginia Capes on the 15th, to the Bay of Fundy on the morning of the 16th. The storm deposited a moderate to heavy snowfall across the state as it moved northeastward, except in the Connecticut River Valley where snowfall amounts were light. Snowfall amounts ranged from 1 to 2 inches in the Connecticut River Valley to about 10 inches in the east-central part of the state.

**NHZ001>002**      **Northern Coos - Southern Coos**  
**21**      **2200EST**      **0**      **0**      **Moderate Snowfall**  
**22**      **0900EST**  
 Low pressure over the Great Lakes and a low that developed in the mid-Atlantic States and moved northward combined to bring a moderate to heavy snowfall to the higher elevations of Coos County. Snowfall amounts ranged from an inch or less in the Connecticut River Valley to 8 inches in some of the higher elevations.

**NHZ001>010-013>014**      **Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**  
**22**      **0700EST**      **0**      **1**      **Strong Winds**  
**1600EST**  
 Strong winds associated with a strong low pressure system moving north across eastern New York State and western New England downed trees onto wires, causing scattered power outages. About 17,000 customers lost electrical service during the storm. A young girl in Epping was injured when she was struck by a falling tree branch. Peak wind gusts included 49 mph in Whitefield, 47 mph in Portsmouth, and 45 mph in Concord.

**Coos County**  
**Colebrook**      **22**      **1500EST**      **0**      **1**      **Lightning**  
 Lightning struck a building which housed a local newspaper and an internet service in Colebrook. One employee of the newspaper was slightly injured when an electrical surge travelled through a phone handset into her ear and out her left arm. After the incident the reporter's ear was reported to be pink and her arm was reported to be numb and quivering. Two thirds of the phone lines and six computers were struck. The lightning was also reported to have travelled along the ceiling of the news room.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW HAMPSHIRE, North and Central

**NHZ005**

**Southern Grafton**

**04 1800EST**

**0 0**

**Flood**

**05 0630EST**

About 1 to 2 inches of rain combined with snowmelt caused an ice jam to form on the Pemigewasset River just downstream of Plymouth. The river crested at 14.28 feet at 9 pm on the 4th, about 1.28 feet above the 13-ft flood stage. Minor flooding was reported.

## NEW HAMPSHIRE, Southern

**NHZ011>012**

**Cheshire - Hillsborough**

**04 0100EST**

**0 0**

**Strong Winds**

**1400EST**

Low pressure passed to the west of New England, and brought a period of strong southerly winds to Cheshire and Hillsborough Counties. There were reports of gusts as high as 40 to 50 mph, which downed tree limbs, utility poles, and power lines causing scattered power outages. In Nashua, the strong winds caused a tree to crash through the roof of a house. No injuries were reported.

**NHZ011>012**

**Cheshire - Hillsborough**

**06 1500EST**

**0 0**

**Heavy Snow**

**07 1200EST**

A low pressure system over Pennsylvania moved eastward into the Atlantic, and passed south of New England, bringing heavy snow to southern New Hampshire. Totals ranged from 6 to 12 inches in most locations. Some of the totals reported include 12 inches in Franconstown, 11 inches in Greenfield and Jaffrey, 10 inches in Weare and Rindge, 9 inches in Nashua, 7 inches in Manchester, and 6 inches in Keene, Marlow, and Walpole.

The storm began on a Saturday afternoon and ended on Sunday, which limited its effect on area residents, but still caused poor travel conditions throughout the region.

**NHZ011>012**

**Cheshire - Hillsborough**

**15 0000EST**

**0 0**

**Heavy Snow**

**1400EST**

An intensifying low pressure system off the coast of Virginia during the early morning hours moved to a position southeast of Nantucket by early afternoon. This system brought a late season snowstorm to southern New Hampshire, with up to 6 to 8 inches of snow. Since it occurred so late in the season, it only caused a minimum of disruption of travel to area residents. Some of the totals reported include 8 inches in Jaffrey, and 6 inches in Rindge, New Ipswich, and Nashua.

**NHZ011>012**

**Cheshire - Hillsborough**

**22 0300EST**

**0 0**

**Strong Winds**

**1800EST**

An intensifying low pressure system moving up the Hudson Valley brought strong southerly winds to Cheshire and Hillsborough Counties. Wind gusts of 45 to 55 mph were reported in many locations. A peak gust of 53 mph occurred in Manchester, while Nashua reported a peak gust of 46 mph.

In Hillsborough County, the strong winds downed large trees and tree limbs onto houses in Nashua and Hudson. In Merrimack, a tree fell onto a school bus full of children. The bus was damaged but there were no injuries. A strong wind gust flipped a car over, which was traveling northbound on the Everett Turnpike. The driver was not injured. Power outages affected up to 18,000 customers statewide, and one of the more concentrated areas of outages was west of Manchester.

## NEW JERSEY, Northeast

**NJZ002>005-011**

**Western Passaic - Bergen - Eastern Passaic - Essex - Union**

**14 2330EST**

**0 0**

**Heavy Snow**

**15 0400EST**

With cold air in place, a low pressure system developed over the Gulf Coast States on Saturday, March 13th. As the low slowly intensified and moved northeast toward the Mid-Atlantic Coast, it spread precipitation northeast across the area. Light rain quickly changed to wet snow during the afternoon of March 14th. The wet snow became heavy overnight as the low approached the Mid-Atlantic States. Snowfall amounts generally ranged from 6 to 9 inches across the area. Heavy wet snow downed numerous tree limbs and power lines across the region.

In Passaic County, 6 to 9 inches was measured. At Charlotteburg, 9 inches of snow was measured.

In Bergen County, 6 inches was measured in Teterboro.

In Essex County, 6 inches was measured in West Orange.

In Union County, up to 7 inches was measured in Elizabeth.

**NJZ006**

**Hudson**

**04 1100EST**

**1 0**

**Wind**

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW JERSEY, Northeast

A 43 year old construction worker was blown off a scaffold in Jersey City when west winds gusted from 40 to 50 mph. Strong and gusty west winds developed behind a strong cold front.

M43EQ

### Essex County

Countywide	21	1700EST							
	22	0400EST		0	0				Heavy Rain

### Union County

Countywide	21	1700EST							
	22	0400EST		0	0				Heavy Rain

### Bergen County

Countywide	21	1730EST							
	22	0430EST		0	0				Heavy Rain

### Passaic County

Countywide	21	1730EST							
	22	0430EST		0	0				Heavy Rain

A low pressure system over the Southeast U.S. quickly intensified as it moved northeast and passed over Northern New Jersey during the early morning on Monday, March 22nd.

This low was preceded by periods of heavy rain and strong southeast winds that gusted from 40 to 50 mph. The axis of heaviest rain fell across the highest terrain from Northern Essex County northeast across Passaic and Northwest Bergen County. Rainfall amounts generally ranged from 2 to 4 inches.

Here are selected amounts for:

- o Passaic County - from 2.12 inches at Ringwood to 3.47 inches at Wayne.
- o Bergen County - from 2.06 inches at Ridgewood to 3.25 inches at Franklin Lakes.
- o Essex County - from 2.72 inches at Verona to 3.36 inches at Essex Fells.
- o Union County - 2.00 inches was measured at Canoe Brook.

### Union County

Springfield	22	0545EST 0830EST							
				0	0				Urban/Sml Stream Fld

As a low pressure system swept over Northern New Jersey early Monday morning, March 22nd, it produced from 1 1/2 to 2 1/2 inches of rain. Heavy rains caused the Rahway River at Springfield to rise slightly above its' flood stage during the times indicated above. The river crested at 5.61 feet (only 0.11 feet above flood stage) from 6:30 to 7:30 am. Minor flooding occurred at Springfield.

### Bergen County

Mahwah	22	1000EST 0200EST							
	23			0	0				Urban/Sml Stream Fld

As a low pressure system swept over Northern New Jersey early Monday morning, March 22nd, it produced from 2 to around 3 inches of rain. Heavy rains caused the Ramapo River at Mahwah to rise slightly above its' flood stage during the times indicated above. The river crested at 8.35 feet (only 0.35 feet above flood stage) from 5:00 to 7:00 pm. Only minor flooding occurred at Mahwah. However, small stream flooding was more widespread in Oakland's Island Terrace neighborhoods, where some yards were flooded and up to 8 inches of water collected in basements.

### Passaic County

Pompton Lakes	22	1300EST 2000EST							
	23			0	0				Urban/Sml Stream Fld

As a low pressure system swept over Northern New Jersey early Monday morning, March 22nd, it produced from 2 to 4 inches of rain. Heavy rains caused the Ramapo River at Pompton Lakes to rise slightly above its' flood stage during the times indicated above. The river crested at 12.18 feet (only 0.38 feet above flood stage) around 4:00 am on March 23rd. Mainly minor flooding occurred at Pompton Lakes.

## NEW JERSEY, South and Northwest

### Camden County

Cherry Hill	03	2130EST							
				0	0		0		Thunderstorm Wind (G51)

A wind gust of 59 mph was measured during a severe thunderstorm at the Russell Knight School in Cherry Hill.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW JERSEY, South and Northwest

**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**

**04**     **0400EST**     **0**     **0**     **0**     **Wind**  
**1800EST**

The circulation around an intensifying low pressure that moved through New York State and northern New England during the day on the 4th produced wind gusts of around 45 mph during the early morning and throughout the day in New Jersey. Peak wind gusts included 53 mph in Seaside Park (Ocean County), 46 mph in Wildwood (Cape May County), 44 mph in Princeton (Mercer County), 40 mph at the Atlantic City International Airport and 35 mph in Morristown (Morris County).

**NJZ001**     **Sussex**

**04**     **1100EST**     **0**     **0**     **0**     **Snow**  
**1600EST**

A low pressure system moved from the Southern Plains the morning of the 5th, into northern Ohio the morning of the 6th, cut across far northern New Jersey during the day on the 6th and reached Cape Cod the morning of the 7th. Snow spread across Northwest New Jersey during the late morning of the 6th. As the low moved across northern New Jersey, it brought in warmer air and the snow changed to rain (in the valleys first) as precipitation ended toward evening. Accumulations ranged from 2 to 4.5 inches in Sussex County. About an inch of snow fell before the changeover in Warren and Morris Counties near the Sussex County border. Specific accumulations included 4.5 inches in High Point, 3.5 inches in Wantage, 3 inches in Montague and 2 inches in Highland Lakes and Sussex.

**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**

**07**     **0400EST**     **0**     **0**     **0**     **Wind**  
**1700EST**

A low pressure system moved from the Southern Plains the morning of the 5th, into northern Ohio the morning of the 6th, cut across extreme northern New Jersey during the day on the 6th and reached Cape Cod the morning of the 7th. As the low intensified during the day on the 7th, the pressure difference between it and a high pressure system building into the region from the Great Lakes produced wind gusts of around 40 mph across New Jersey. Peak wind gusts included 39 mph at the Atlantic City International Airport, 38 mph in Trenton (Mercer County) and 37 mph in Millville (Cumberland County).

**NJZ023>024**     **Western Cape May - Eastern Cape May**

**09**     **1800EST**     **0**     **0**     **0**     **Snow**  
**10**     **0300EST**

A low pressure system that developed in Oklahoma the morning of the 8th, moved northeast into the lower Ohio Valley the morning of the 9th and then moved eastsoutheast exiting the United States mainland along the North Carolina/Virginia border during the early morning of the 10th. The low passed close enough to New Jersey to bring an accumulating snow to Cape May County. Accumulations ranged from a trace in the northern part of the county to nearly 3 inches (2.8) in Cape May City. Snow began during the late afternoon on the 9th. The heaviest snow fell during the evening. The accumulating snow was over during the early morning of the 10th. Flurries persisted into the morning of the 10th.

Accumulations included 2.8 inches in Cape May City, 1 inch in Swainton and a trace in Ocean City.

**NJZ013>014-024>026**     **Western Monmouth - Eastern Monmouth - Eastern Cape May - Eastern Atlantic - Eastern Ocean**

**15**     **0400EST**     **0**     **0**     **0**     **Tidal Flooding**  
**0900EST**

A coastal low pressure system helped cause widespread minor to locally moderate tidal flooding at the times of high tide the morning of the 15th along coastal New Jersey. The high tide at both Sandy Hook and at the Cape May Ferry Terminal reached 7.6 feet above mean lower low water around 615 a.m. EST. The high tide in North Wildwood crested at 7.8 feet above mean lower low water and in Atlantic City around 7.1 feet above mean lower low water.

In Monmouth County Avon By The Sea reported moderate erosion. In Ocean County in Long Beach Township erosion was reported along 43rd, 53rd and 54th Streets. Erosion elsewhere along the shore was described as minimal. In Monmouth County, tidal flooding was reported on the Shrewsbury River side of Sea Bright. Minor flooding was reported in Ocean County. In Cape May County, tidal flooding was reported along New Jersey State Route 47 entering the Wildwoods and the road was closed.

The low pressure system developed along the Gulf Coast States the morning of the 13th. During the morning of the 14th it had moved into Alabama and was located just east of the Delmarva Peninsula around daybreak of the 15th. The storm intensified as it moved northeast on the 15th, but moved rapidly offshore. It was already over Nova Scotia the morning of the 16th. The rapid movement prevented a protracted and more serious tidal flooding event from occurring.

## **Atlantic County**

**Countywide**     **14**     **1700EST**     **0**     **0**     **0**     **Heavy Rain**  
**15**     **0100EST**

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW JERSEY, South and Northwest

### **Cape May County**

<b>Countywide</b>	<b>14</b>	<b>1700EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>15</b>	<b>0100EST</b>					

### **Cumberland County**

<b>Countywide</b>	<b>14</b>	<b>1700EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>15</b>	<b>0100EST</b>					

### **Ocean County**

<b>Pt Pleasant to Beach Haven Hgts</b>	<b>14</b>	<b>1700EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>15</b>	<b>0100EST</b>					

A coastal low pressure system cause heavy rain to fall throughout the evening of the 14th in Southeast New Jersey. During heavier bursts of precipitation, especially during the late afternoon and early part of the evening, the rain mixed or changed to snow in Atlantic, Cumberland and Ocean Counties. Snow fell in Millville and the Atlantic City International Airport between 4 p.m. and 6 p.m. EST. Little if any snow accumulated. The heavy rain caused the usual poor drainage flooding, but no other serious problems were reported. Storm totals included 2.20 inches in Estell Manor, 1.99 inches in Beach Haven, 1.88 inches at the Marina within Atlantic City, 1.77 inches at the Atlantic City International Airport and 1.63 inches in Millville. The low pressure system developed along the Gulf Coast States the morning of the 13th. During the morning of the 14th it had moved into Alabama and was located just east of the Delmarva Peninsula around daybreak of the 15th. The storm intensified and moved rapidly offshore on the 15th and reached Nova Scotia the morning of the 16th.

**NJZ001-007>010-012>013-015-019>020**

### **Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Mercer - Burlington - Western Ocean**

	<b>14</b>	<b>1300EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>15</b>	<b>0300EST</b>					

**NJZ014-016>018**

### **Eastern Monmouth - Salem - Gloucester - Camden**

	<b>14</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Snow</b>
	<b>15</b>	<b>0000EST</b>					

A coastal low pressure system brought heavy wet snow to most of New Jersey from northern Burlington and Ocean Counties northward. Several inches of heavy wet snow also accumulated in southwest New Jersey before a change to rain occurred near midnight EST on the 14th. The heavy wet snow also brought down tree limbs and wires. About 50,000 homes and businesses lost power in the state, mainly in the central part of the state. Several school districts closed their schools in the northern half of the state on Monday the 15th. Several minor (mainly fender-benders) accidents occurred. Accumulations in southwest New Jersey were mainly between 2 and 4 inches. Farther north accumulations averaged between 4 to 8 inches with some locally higher amounts in Sussex County. This was the heaviest snow to affect many areas of the state simultaneously since 1996.

Precipitation started as snow in the early afternoon on the 14th in the northwest part of the state. Farther south, the air had warmed enough for precipitation to start as rain. But as the intensity increased, the rain changed to snow in all areas between 2 p.m. and 3 p.m. EST. The rain/snow line had a difficult time lifting north from the Salem County/Cumberland County, western Atlantic County, southern Burlington County and the Eastern Ocean County area. Precipitation changed from snow to rain back to snow in Salem County before the rain/snow line advanced for good during the late evening of the 14th. The snow changed to rain in Mount Holly (Burlington County) around Midnight EST and Trenton at 1 a.m. EST on the 15th. Precipitation ended as snow in the northwest part of the state. A second shot of light snow brought little additional accumulations during the morning of the 15th.

The heavy, wet snow started to tear down tree limbs, trees and power lines during the late evening onward. Outages began as far south as the Conectiv service area in Hammonton (Atlantic County) and southeast Camden County. About 8,000 homes and businesses lost power in Public Service Electric and Gas's (PSE&G) service area along the Burlington/Camden County border in Cherry Hill, Maple Shade, Moorestown and Mount Laurel. Central New Jersey was hardest hit by the power outages. There were 15,000 outages in the Princeton (Mercer County) area, 15,000 outages in Monmouth and Ocean Counties and 5,000 outages in the Flemington (Hunterdon County) area. Other areas hit by power outages included Montgomery Township and Bernardsville (Somerset County), Old Bridge (Middlesex County) and East Amwell and Raritan Townships (Hunterdon County). The downed tree limbs and power lines also closed several roads in Mercer and Somerset Counties including U.S. Route 206.

Accumulations included 12 inches in Highland Lakes (Sussex County), 9.5 inches in Wantage and High Point (Sussex County), 8 inches in Boonton, Rockaway Township and Washington Township (all Morris County) and Freehold (Monmouth County), around 7.5 inches in Wertsville (Hunterdon County) and Hillsborough (Somerset County), 7 inches in New Brunswick (Middlesex County), White House Station (Hunterdon County) and Hazlet (Monmouth County), 6.5 inches in Hightstown (Mercer County), 6 inches in Princeton (Mercer County), Blackwells Mills (Somerset County), Newton (Sussex County) and Lakewood (Ocean County), 5 inches in Stewartville (Warren County), East Hanover Township (Morris County), Metuchen (Middlesex County) and Manasquan (Monmouth County), 4.5 inches in Cherry Hill (Camden County), 4 inches in Somerdale (Camden County), Swedesboro (Gloucester County) and Toms River (Ocean County), 3.5 inches in Mount Holly and Moorestown (Burlington County) and 2 inches in Mullica Hill and Glassboro (Gloucester County).

The low pressure system developed along the Gulf Coast States the morning of the 13th. During the morning of the 14th it had

# Storm Data and Unusual Weather Phenomena

March 1999

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

## **NEW JERSEY, South and Northwest**

moved into Alabama and was located just east of the Delmarva Peninsula around daybreak of the 15th. The storm intensified and moved rapidly offshore on the 15th and reached Nova Scotia the morning of the 16th.

**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**

18	1000EST			0	0	0	Wind
	1900EST						

A strong cold front moved through the region during the day on the 18th. Strong gusty west to northwest winds buffeted New Jersey during the late morning and afternoon with peak gusts of around 45 mph. In Hamilton Township (Mercer County), the wind destroyed a 100-year-old barn. Peak wind gusts included 47 mph in Millville, 45 mph at the Atlantic City International Airport, 43 mph in Trenton and 40 mph at the Marina within Atlantic City.

**NJZ014-024>026**     **Eastern Monmouth - Eastern Cape May - Eastern Atlantic - Eastern Ocean**

21	2300EST			0	0	0	Tidal Flooding
	0100EST						

The onshore flow preceding a strong low pressure system that moved north along the Atlantic Seaboard during the evening of the 21st produced pockets of minor flooding along the New Jersey shore. The highest tides and most of the tidal flooding occurred in Monmouth County. The high tides also occurred while heavy rain was falling, slowing the runoff into the bay and ocean. At Sandy Hook, the tide peaked at 7.1 feet above mean lower low water at 1106 p.m. EST on the 21st. At the Cape May Ferry Terminal, the high tide peaked at 6.9 feet above mean lower low water at 1142 p.m. EST. The high tide at Atlantic City peaked below the threshold (6.7 feet above mean lower low water) for minor tidal flooding. The low pressure system moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

### **Atlantic County**

<b>Countywide</b>	21	1400EST		0	0	0	Heavy Rain
	22	0300EST					

### **Camden County**

<b>Countywide</b>	21	1400EST		0	0	0	Heavy Rain
	22	0300EST					

### **Cape May County**

<b>Countywide</b>	21	1400EST		0	0	0	Heavy Rain
	22	0300EST					

### **Salem County**

<b>Countywide</b>	21	1400EST		0	0	0	Heavy Rain
	22	0100EST					

### **Burlington County**

<b>Countywide</b>	21	1500EST		0	0	0	Heavy Rain
	22	0300EST					

### **Cumberland County**

<b>Countywide</b>	21	1500EST		0	0	0	Heavy Rain
	22	0100EST					

### **Gloucester County**

<b>Countywide</b>	21	1500EST		0	0	0	Heavy Rain
	22	0100EST					

### **Ocean County**

<b>Countywide</b>	21	1500EST		0	0	0	Heavy Rain
	22	0300EST					

### **Middlesex County**

<b>Countywide</b>	21	1600EST		0	0	0	Heavy Rain
	22	0400EST					

### **Monmouth County**

<b>Countywide</b>	21	1600EST		0	0	0	Heavy Rain
	22	0400EST					

### **Sussex County**

<b>Countywide</b>	21	1600EST		0	0	0	Heavy Rain
	22	0300EST					

Heavy rain affected New Jersey from the mid afternoon of the 21st into the early morning of the 22nd. Some poor drainage and roadway flooding was reported, but no serious flooding or damage was reported. Stream and river flooding did affect sections of central and northwest New Jersey. Please look at the separate storm data entry for that information. Elsewhere significant, but within bankfull rises occurred. For example, the Cooper River at Haddonfield (Camden County) crested at 2.76 feet. Flood stage is 2.80 feet. Storm totals included 2.38 inches in Lumberton (Burlington County), 2.37 inches in Verga (Gloucester County), 2.30 inches in Pennsauken (Camden County), 2.21 inches in Mount Laurel (Burlington County), 2.20 inches in West Deptford

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW JERSEY, South and Northwest

(Gloucester County), 2.08 inches in Somerdale (Camden County), 2.06 inches in Montague (Sussex County) and Mount Holly (Burlington County), 1.90 inches in Seabrook (Cumberland County), 1.81 inches in Sussex (Sussex County), 1.80 inches in South Plainfield (Middlesex County), 1.73 inches in Wantage (Sussex County), 1.65 inches in New Brunswick (Middlesex County), 1.59 inches in Estell Manor (Atlantic County), 1.55 inches in Hazlet (Monmouth County), 1.54 inches in Freehold (Monmouth County), 1.42 inches in Beach Haven (Ocean County), 1.30 inches at the Atlantic City International Airport, 1.10 inches in Wildwood (Cape May County) and 1.03 inches in Margate (Atlantic County). The low pressure system responsible for the heavy rain moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd. Enough cold air came in around the low to change the precipitation to snow before it ended across western New Jersey. Accumulations were limited to the higher terrain in northwest New Jersey and averaged two inches or less in Hunterdon, Warren, Morris and Sussex Counties.

### **Hunterdon County**

<b>Countywide</b>	22	0300EST 0500EST		0	0	0	<b>Flood</b>
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### **Mercer County**

<b>Countywide</b>	22	0300EST 1000EST		0	0	0	<b>Flood</b>
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### **Warren County**

<b>Countywide</b>	22	0300EST 0500EST		0	0	0	<b>Flood</b>
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### **Morris County**

<b>Countywide</b>	22	0400EST		0	0	0	<b>Flood</b>
	24	0230EST					

### **Somerset County**

<b>Countywide</b>	22	0400EST		0	0	0	<b>Flood</b>
	23	0900EST					

Heavy rain affected all of central and northwest New Jersey. This caused flooding of smaller streams throughout the area and later some of the major creeks and streams including the Rockaway and Raritan Rivers. In addition the heavy rain caused the usual highway and poor drainage flooding throughout the region. Heavy rain began during the late afternoon of the 21st and continued into the early morning of the 22nd. Storm totals exceeded two inches in many locations and this was too much rain to keep streams and rivers within bankfull. The heavy wet snow from the previous weekend left the ground in nearly saturated condition. With much of the flooding starting during the early (Monday) morning of the 22nd, no serious injury or property damage were reported.

In Somerset County, the Millstone River at Blackwells Mills reached its 9 foot flood stage at 10 a.m. EST on the 22nd, crested at 10.5 feet at 7 pm. EST on the 22nd and was back within bankfull at 9 a.m. EST on the 23rd. The Raritan River at Manville was above its 12 foot flood stage from 6 a.m. EST through 11 p.m. EST on the 22nd. It crested at 14.83 feet at 3 p.m. EST on the 22nd. Farther downstream, the Raritan River at Bound Brook crested at 28.36 feet at 630 pm. EST on the 22nd. The river was above its 26 foot flood stage from noon EST on the 22nd through 2 a.m. EST on the 23rd. In Morris County, The Rockaway River flooded both above and below the Boonton Reservoir. Above the reservoir, it was above its 5 foot flood stage from noon EST on the 22nd through midnight EST on the 23rd. It crested at 5.21 feet at 345 p.m. EST on the 22nd. Below the reservoir, it was above its 5 foot flood stage from 11 a.m. EST on the 22nd through 230 a.m. EST on the 24th. It crested at 6.28 feet at 325 a.m. EST on the 23rd. The Passaic River briefly crested at its estimated flood stage of 19 feet in Pine Brook around midnight the night of the 24th. In Mercer County, the Assunpink Creek in Trenton reached its 7 foot flood stage at 3 a.m. EST on the 22nd, crested at 7.60 feet at 7 a.m. EST and was back within bankfull at 10 a.m. EST on the 22nd.

Storm totals included 3.75 inches in Oak Ridge (Morris County), 2.90 inches in Pottersville (Somerset County), 2.85 inches in Lambertville, (Hunterdon County), 2.78 inches in Stewartsville (Warren County), 2.65 inches in Reigelsville (Warren County), 2.64 inches in Somerville and Bridgewater, (Somerset County), 2.62 inches in Boonton (Morris County) and Califon (Hunterdon County), 2.51 inches in Washington's Crossing (Mercer County), 2.48 inches in Blackwells Mills (Somerset County), 2.45 inches in Flemington (Hunterdon County), 2.31 inches in Princeton (Mercer County), 2.02 inches in Long Valley (Morris County) and 1.99 inches in Hightstown (Mercer County). The low pressure system responsible for the heavy rain moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

## NEW MEXICO, Central and North

<b>NMZ002-004&gt;013-017&gt;018-020&gt;021-026</b>		<b>Northwest Mountains Including Jemez - Sangre De Cristo Mountains - Northeast Highlands - Harding - Far Northeast Plains - Westcentral Mountains - Middle Rio Grande Valley - Sandia/Manzano Mountains - Central High Plains/Estancia Valley County - Conchas Lake/Guadalupe - Quay - Capitan/Northern Sacramento Mountains - De Baca - Roosevelt - Curry - Guadalupe Mountains Of Chaves County</b>					
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	17	2200MST		0	0	200K	<b>Winter Storm</b>
	19	0600MST					

A slow moving winter storm dumped heavy snow across much of eastern New Mexico closing both Interstate Highways leading

# Storm Data and Unusual Weather Phenomena

March 1999

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

north and east from Albuquerque for up to 16 hours and causing travel gridlock throughout the eastern counties and the along the east slopes of the central mountains stretching from Ruidoso and Cloudcroft north to the Sandia Mountains east of Albuquerque and continuing along the Sangre de Cristo mountains from Santa Fe to Las Vegas and to Raton. Snow ranged from 10 to 16 inches in the high terrain of the central and northeast areas. Amounts averaged 6 inches on the eastern plains with up to 8 to 10 inches from Santa Rosa and Tucumcari south to Clovis and then southeast over De Baca County into Lincoln County. Heavy wet snow in De Baca County downed 120 utility poles.

**NMZ002-004>005 Northwest Mountains Including Jemez - Sangre De Cristo Mountains - Northeast Highlands**  
**12 0400MST 0 0 Heavy Snow**  
**2000MST**

Heavy snow of 8 to 10 inches developed across the north central mountains from Wolf Canyon in Sandoval County north to Brazos Ridge southeast of Chama and also over the ridges of central Taos County.

**NMZ001>021-026 Northwest Plateau - Northwest Mountains Including Jemez - Upper Rio Grande Valley - Sangre De Cristo Mountains - Northeast Highlands - Harding - Far Northeast Plains - Westcentral Mountains - Middle Rio Grande Valley - Sandia/Manzano Mountains - Central High Plains/Estancia Valley County - Conchas Lake/Guadalupe - Quay - Southwest Mountains/Upper Gila Region - Lower Rio Grande Valley - Lincoln County High Plains/Hondo Valley - Capitan/Northern Sacramento Mountains - De Baca - Chaves County Plains - Roosevelt - Curry - Guadalupe Mountains Of Chaves County**  
**01 0000MST 0 0 Drought**  
**31 2359MST**

Some of the driest conditions in 35 years continued across northern and central New Mexico throughout the month. Only a single winter storm near mid-month provided some much needed moisture for rangelands and forest areas. However, effectiveness of this heavy snow was limited by warm and breezy conditions that quickly returned to the state. With snow pack ranging from non-existent at the middle elevations of 6500 to 8000 feet and 40 percent of normal in the high mountains, a significant fire danger was developing for the state, while prospects were diminishing for a full season of irrigation water.

## NEW MEXICO, South Central and Southwest

**NMZ022-025 Southwest Mountains/Lower Gila Region - Southern Sacramento Mountains**  
**17 1600MST 0 0 Heavy Snow**  
**18 0800MST**

Heavy snow fell in the mountains of southern New Mexico, with 8 inches reported at Mimbres and 14 inches near Cloudcroft.

**Hidalgo County**  
**43 SSE Animas 19 1500MST 0 0 Thunderstorm Wind (G50)**  
**Sierra County**  
**4 S Caballo 26 1619MST 0 0 Thunderstorm Wind (G50)**  
**NMZ023 Sierra County Lakes Region**  
**31 1600MST 0 0 High Wind (G57)**  
**1730MST**

Winds associated with a cold front gusted to 66 mph in Caballo, reducing visibilities with blowing dust.

## NEW MEXICO, Southeast

**Lea County**  
**9 W Hobbs 17 1657MST 0 0 Hail (1.00)**  
**1707MST**

**Lea County**  
**5 N Hobbs 17 1722MST 0 0 Hail (1.00)**  
**1730MST**

A multicell line of severe thunderstorms produced 1 inch hail along State Highway 18.

**Lea County**  
**10 N Hobbs 17 2100MST 0 0 Hail (1.00)**  
**2105MST**

A small multicell cluster of storms produced 1 inch hail between Hobbs and Lovington.

**Lea County**  
**Lovington 17 2110MST 0 0 Hail (1.00)**  
**2118MST**

The first two events occurred in the late afternoon in a relatively dry atmosphere where dew points were in the 30s. In the evening, by the time of the last two events, dew points increased into the 40s and low level winds increased allowing good relative inflow.

**NMZ027>029 Guadalupe Mountains Of Eddy County - Eddy County Plains - Lea**  
**01 0000MST 0 0 Drought**  
**31 2359MST**

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW MEXICO, Southeast

The drought continued into March across Southeast New Mexico, but some beneficial rain was received. Most of the area reported at least a half inch of rain, a few sites had over an inch, and Tatum received 2.26 inches of rain for the month.

## NEW YORK, Central

**NYZ009-036>037-045>046-057 Northern Oneida - Madison - Southern Oneida - Chenango - Otsego - Delaware**

<b>01</b>	<b>0000EST 1000EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
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An intensifying coastal storm system moved from off the New Jersey shoreline during the evening of February 28th to east of Cape Cod, Massachusetts by midday on the 1st of March. The combination of cold air spilling southward from eastern Canada and Atlantic moisture wrapping in from the east produced a swath of locally heavy snow from Oneida county in central New York southward into the Catskills in sections of Delaware county.

Most of the snow fell from late in the evening on the 28th of February through the mid-morning hours on the 1st of March. The greatest accumulations were found across the higher terrain of eastern Delaware county and portions of northern Oneida county. Stamford in Delaware county and Boonville in Oneida county topped the totals list with 9 to 10 inches. Accumulations of 4 to 7 inches were quite common from the Mohawk Valley southward into the Catskills.

The intensity of the snow diminished during the afternoon of the 1st as the storm center pulled further north into the Gulf of Maine.

**NYZ009-015>018-022>025-036>037-044>046-055>056 Northern Oneida - Yates - Seneca - Southern Cayuga - Onondaga - Steuben - Schuyler - Chemung - Tompkins - Madison - Southern Oneida - Cortland - Chenango - Otsego - Tioga - Broome**

<b>06 07</b>	<b>0400EST 1200EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
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A storm system moved out of the Ohio Valley early in the morning on the 6th and crossed the Delmarva region that evening. The system then redeveloped near Long Island early on the 7th and moved slowly through central New England thereafter. Two distinct bouts of heavy snowfall affected central New York during this time frame. The initial shot of snow fell primarily during the day on Saturday the 6th. After a lull that evening, snowfall picked up again overnight and continued into the morning hours of the 7th before tapering off.

On the 6th, snow first developed just prior to daybreak across the Finger Lakes and central southern tier regions. The snow quickly spread eastward to envelope all of central New York by mid-morning. Late in the afternoon, the first shot of snow moved off to the east. Accumulations over central New York during the day generally ranged from 5 to 12 inches. The heaviest band of snow extended west to east from the northern Finger Lakes all the way through the northern Susquehanna and Mohawk Valley regions. Some specific totals were as follows: 13 inches in Stokes Hills in Oneida county, 11 inches in Laurens in Otsego county, and generally from 8 to 10 inches in northern Steuben, Yates, Cortland, Chenango, and Madison counties.

During the overnight hours from the 6th into the 7th, the brief respite from snowfall ended as heavier precipitation once again formed across central New York. By the time the snow wound down by late morning on the 7th, an additional 5 to 10 inches had fallen over many portions of the region, primarily to the north and northeast of Binghamton and Elmira. Storm totals from the two day event approached two feet in portions of northern Oneida county, and reached well over a foot throughout much of the Finger Lakes, northern Susquehanna, and Mohawk Valley regions.

**NYZ062**

**Sullivan**

<b>14 15</b>	<b>1900EST 0900EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
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A strengthening storm system moved from the southern Appalachians northeastward to off the coast of Delaware during the evening of the 14th; then skirted out to sea early on the 15th. This system brought a period of heavy snow to southern sections of Sullivan county from the evening of the 14th through the early morning hours of the 15th.

Snowfall intensities approached two inches per hour at times over southern Sullivan county overnight from the 14th into the 15th. This prompted the closing of portions of route 17 for a time southeast of Monticello. By the time the snow tapered off after daybreak, storm total accumulations of 8 to 12 inches were common over the region. Some specific amounts included 12 inches just south of Rock Hill and 9 inches at Eldred.

**NYZ009-017>018-025-036>037-044>046-055>057 Northern Oneida - Southern Cayuga - Onondaga - Tompkins - Madison - Southern Oneida - Cortland - Chenango - Otsego - Tioga - Broome - Delaware**

<b>21 23</b>	<b>1700EST 0300EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
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A low pressure system developed near the Virginia Capes on the evening of the 21st, then intensified rapidly as it moved slowly northward up the Atlantic seaboard and eventually on to the Gulf of Maine by the morning of the 23rd. Rain or a mixed bag of rain and wet snow began across central New York during the afternoon of the 21st. However, precipitation quickly changed over to all snow by late afternoon as colder air wrapped into the area from the northwest. Heavy wet snow pelted much of central New

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW YORK, Central

York overnight from the 21st into the 22nd. Snow gradually wound down over New York's southern tier during the morning on the 22nd; yet it continued to snow well into the night further north towards Oneida county.

The heavy wet nature of the snowfall created many hazards across the region by the early morning hours on the 22nd. Many trees and power lines weighed down heavily or collapsed altogether. Many area roadways were closed early on the 22nd as crews scrambled to clear both heavy snow and in some cases fallen and/or live wires. Power outages were most widespread from Chenango county northward through the western Mohawk Valley and into northern Oneida county. Once the snow finally ended over all areas by very early in the morning on the 23rd, accumulations generally ranged from 8 to 12 inches across most of the southern tier counties to as much as 20 to 25 inches in northern Oneida county. Some of the more impressive totals were as follows: Boonville in Oneida county - 25 inches, Point Rock in Oneida county - 20 inches, just northeast of Cortland in Cortland county - 17 inches, Conklin Forks (Broome county), Coventry (Chenango county), and Butternuts (Otsego county) - all 14 inches.

## NEW YORK, Coastal

**NYZ067>071-077>081 Orange - Putnam - Rockland - Northern Westchester - Southern Westchester - Nassau - Northwest Suffolk - Northeast Suffolk - Southwest Suffolk - Southeast Suffolk**

<b>14</b>	<b>2300EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>15</b>	<b>0425EST</b>			

With cold air in place, a low pressure system developed over the Gulf Coast States on Saturday, March 13th. As the low slowly intensified and moved northeast toward the Mid-Atlantic Coast, it spread precipitation northeast across the area. Light rain quickly changed to wet snow during the afternoon of March 14th. The wet snow became heavy overnight as the low approached the Mid-Atlantic States. Snowfall amounts generally ranged from 6 to 11 inches across the lower Hudson Valley and Long Island. Heavy wet snow downed many tree limbs and power lines across the region.

In Orange County, 9 inches were measured at Chester and Warwick.

In Putnam County, amounts ranged from 6 to 9 inches.

In Rockland County, 9 inches was measured at South Nyack.

In Nassau County, amounts ranged from 6 inches at Oceanside, Lynbrook, Mineola, and Hicksville to 7 inches at Merrick and East Norwich.

In Suffolk County, amounts ranged from 6 inches at Copiague to 11 inches at Kings Park.

In Westchester County, amounts ranged from 6 inches at White Plains to 10 inches at Yorktown Heights.

## **NYZ072 New York (Manhattan)**

<b>18</b>	<b>1315EST</b>	<b>0</b>	<b>3</b>	<b>Wind</b>
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Northwest winds gusted from 40 to 47 mph behind a strong cold front. These winds caused a 15-foot metal rod to tumble 22 stories from the top of 1 Times Square that injured 3 women.

### **Rockland County**

<b>Countywide</b>	<b>21</b>	<b>1730EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0430EST</b>			

### **Westchester County**

<b>Countywide</b>	<b>21</b>	<b>1730EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0430EST</b>			

### **Orange County**

<b>Countywide</b>	<b>21</b>	<b>1800EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0500EST</b>			

### **Putnam County**

<b>Countywide</b>	<b>21</b>	<b>1800EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
	<b>22</b>	<b>0500EST</b>			

A low pressure system over the Southeast U.S. quickly intensified as it moved northeast and passed over the Lower Hudson Valley during the early morning on Monday, March 22nd.

This low was preceded by periods of heavy rain and strong gusty southeast winds. The axis of heaviest rain fell across the highest terrain from Southeast Orange and Northwest Rockland Counties across Northern Putnam Counties. Rainfall amounts generally ranged from 2 to 3 inches.

o Rockland County - 2.91 inches was measured at Suffern.

o Orange County - 2.88 inches was measured at Sterling Forest.



# Storm Data and Unusual Weather Phenomena

March 1999

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

## NEW YORK, North

A surface low pressure system tracking east from the Ohio Valley moved across southern New England and into the Gulf of Maine. This system brought heavy snow to much of northern New York. Snowfall amounts of 10 to 13 inches were common over the area. Malone, New York in Franklin county reported 18 inches of new snow. Heavy snow fell across much of Vermont with this storm system as well.

**NYZ026>027-029>031-034**

**Northern St. Lawrence - Northern Franklin - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex**

21	2100EST								
22	1800EST								Winter Storm

While the lower elevations of northern New York stayed warm enough for rain to fall, slightly higher elevation locations received heavy, wet snow as a low pressure system moved across the area. There were numerous reports of 7 to 13 inches of snow. Twelve inches of new snow was reported at Newcomb with 13 inches at Tupper Lake. The wet snow also helped to knock down some trees and power lines.

## NEW YORK, West

**NYZ002>006-010>014-019>021**

**Orleans - Monroe - Wayne - Northern Cayuga - Oswego - Erie - Genesee - Wyoming - Livingston - Ontario - Chautauqua - Cattaraugus - Allegany**

04	0640EST								
	1630EST					3.0M			Heavy Snow

**NYZ003>004**

**Monroe - Wayne**

04	1100EST								
						2.5M			Blizzard

Deep low pressure moved from West Virginia north across New York to Quebec, Canada. Heavy rain changed to heavy snow as cold air circulated into the region. Snow fell at the rate of two to three inches per hour. Across Monroe and Wayne counties snowfall amounts were greatest with over two feet falling. Snow fall amounts dropped off both east and west of that area. The strong winds off Lake Ontario resulted in blizzard conditions over Monroe and Wayne counties for nearly six hours. Drifts reached four to five feet in places. The New York State Thruway (I-90) was closed from Depew to Syracuse. Several hundred cars were stranded in the closed section. The Governor declared Monroe, Wayne, Oswego, Wyoming, Livingston, and Cayuga counties State Disaster Areas. Orleans, Ontario, Wyoming, Livingston, Monroe and Wayne counties were also declared Federal Disaster Areas. The National Guard was called on to help remove cars, rescue stranded motorists and deliver food and medical supplies. Schools and businesses were closed throughout the area. Nearly 10,000 customers lost power during the storm. Specific snowfall reports included: Hamlin 28"; Perinton and Fairport 26"; Penfield 25"; Ontario and Rochester Airport 24"; Walworth 23"; Victor 22"; Greece and Webster 20"; Portageville 17"; Palmyra, Canandaigua, Avon and Franklinville 16"; Mt. Morris 15"; Dansville 14"; Oswego, Honeoye, and Angelica 13"; Batavia, Friendship and Albion 12"; Olean, Alfred, Whitesville, and Strykersville 11"; Sodus and Salamanca 10"; Bennington 9"; Wales 8"; and Darien and Arkwright 7".

**NYZ001>008-010>014-019>021**

**Niagara - Orleans - Monroe - Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Erie - Genesee - Wyoming - Livingston - Ontario - Chautauqua - Cattaraugus - Allegany**

06	1300EST								
	1725EST					2.7M			Heavy Snow

A strong storm moved from Ohio to New England and dropped a general six to twelve inches of snow across the entire region. The snow fell just two days after much of the area was recovering from another major winter storm. The heavy snow was blamed for numerous auto accidents--some with injuries. Specific snowfall reports included: Rochester 19"; Fairport, Penfield, Castorland and Ontario 18"; Pittsford and Montague 17"; Webster, Greece and Palmyra 16"; Mt. Morris 15"; Highmarket and Lyndonville 14"; Wales, Albion, Sherman, Victor, Honeoye and Watertown 12"; Lockport, Bennington, Arkwright, and West Monroe 11"; Youngstown, Alden, Perrysburg, Dansville, Avon and Oswego 10"; Niagara Falls, North Tonawanda, Buffalo, Darien, South Dayton, Friendship and Fulton 9"; Elma, Angelica, Franklinville, and Alfred 8".

**NYZ006>008-012-019>020**

**Oswego - Jefferson - Lewis - Wyoming - Chautauqua - Cattaraugus**

22	1640EST								
	2200EST					450K			Heavy Snow

Low pressure developed over Virginia and moved northeast across eastern New York to Quebec, Canada. Rain changed to snow as cold air circulated behind the low. Snowfall amounts east of Lake Ontario ranged from six to twelve inches in most areas, but neared two feet over the higher elevations of the Tug Hill Plateau. East of Lake Erie, the general snows were enhanced by flows off Lake Erie resulting in snowfall amounts up to twelve inches. About 1000 power customers were without electricity east of Lake Ontario as the heavy snow brought down tree limbs onto transmission lines. Numerous auto accidents, several with injuries, were blamed on the heavy snow. Specific snowfall reports included: Montague 31"; North Osceola 18"; Oswego 9"; Arcade and Cassadaga 8"; and Watertown and Little Valley 7".

## NORTH CAROLINA, Central

### Cumberland County

Fayetteville	21	1500EST							
									Hail (0.75)

### Harnett County

Anderson Creek	21	1457EST							
									Hail (0.75)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NORTH CAROLINA, Central</u></b>									
<b>Wake County</b>									
Apex	21	1515EST			0	0			Hail (0.75)
<b>Cumberland County</b>									
Spring Lake	21	1627EST			0	0			Hail (0.75)
<b>Granville County</b>									
Stem	21	1600EST			0	0			Hail (0.88)
<b>Johnston County</b>									
Clayton	21	1628EST			0	0			Thunderstorm Wind (G50)
Several large trees were snapped off in Clayton. Some power outages reported in northern Johnston county.									
<b>Sampson County</b>									
Clinton to Parkersburg	21	1648EST			0	0			Hail (0.75)
<b>Wake County</b>									
Raleigh	21	1556EST			0	0			Hail (0.75)
Dime hail reported Creedmore Road and Glenwood.									
<b>Nash County</b>									
Spring Hope	21	1701EST			0	0			Hail (1.00)
<b>Wayne County</b>									
Goldsboro	21	1710EST			0	0			Hail (0.75)
The general public reported dime sized hail on the east side of Goldsboro.									
<b>Franklin County</b>									
5 E Bunn	21	1657EST			0	0			Hail (0.75)
<b>Nash County</b>									
Middlesex	03	1600EST 1635EST			0	0			Thunderstorm Wind (G50)
<b>Sampson County</b>									
Clinton	03	1600EST			0	0			Thunderstorm Wind (G50)
<b>Wayne County</b>									
Goldsboro	03	1600EST			0	0			Thunderstorm Wind (G50)
<b>Wilson County</b>									
Wilson	03	1600EST			0	0			Thunderstorm Wind (G50)
A line of thunderstorms produced straight-line wind damage across portions of Wilson, Nash, Wayne, and Sampson counties. Numerous trees and powerlines were downed in the city of Wilson, around Middlesex, just east of Goldsboro on Highway 70, and in Clinton. A roof was blown off a building and a mobile home was flipped over just east of Goldsboro.									
<b>Wake County</b>									
Garner	03	1555EST			0	0			Thunderstorm Wind (G50)
<b>Johnston County</b>									
15 SE Benson	03	1605EST			0	0			Thunderstorm Wind (G50)
Straight-line wind damage occurred from near Garner at the intersections of Highways 42 and 50 in southeast Wake county stretching into Johnston county about 15 miles east of Benson. Numerous trees were downed in these areas.									
<b>Cumberland County</b>									
Fayetteville	03	1526EST 1540EST			0	0			Thunderstorm Wind (G55)
<b>Harnett County</b>									
Lillington	03	1530EST 1555EST			0	0			Thunderstorm Wind (G50)
<b>Sampson County</b>									
Newton Grove	03	1540EST 1555EST			0	0			Thunderstorm Wind (G50)
A line of thunderstorms produce straight-line wind damage across several counties between 1525 and 1555 EST. The Fayetteville ASOS reported a 55 knot wind gust at 1526. Several trees were blown down and uprooted in from near Fayetteville to Lillington. A mobile home was overturned near Johnsonville. Trees were also downed north of Clinton.									
<b>Johnston County</b>									
Selma	03	1345EST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down trees on the north and northeast side of Selma.									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NORTH CAROLINA, Central</u></b>									
<b>Franklin County</b>									
Countywide	03	1615EST 1640EST			0	0			Thunderstorm Wind (G50)
<b>Vance County</b>									
Countywide	03	1620EST 1700EST			0	0			Thunderstorm Wind (G50)
<b>Warren County</b>									
Countywide	03	1620EST 1700EST			0	0			Thunderstorm Wind (G50)
<b>Edgecombe County</b>									
Countywide	03	1630EST 1645EST			0	0			Thunderstorm Wind (G50)
<b>Wilson County</b>									
Countywide	03	1640EST 1710EST			0	0			Thunderstorm Wind (G50)
<b>Halifax County</b>									
Countywide	03	1650EST 1730EST			0	0			Thunderstorm Wind (G50)
<p>A line of severe thunderstorms produced straight-line wind damage downing numerous trees and powerlines throughout these counties. A trained spotter clocked a 50 knot wind gust at Youngsville in Franklin county and the Rocky Mount/Wilson (RWI) airport ASOS reported a 65 knot wind gust. In the city of Wilson, a building wall was blown in with no injuries reported. In Halifax county, a tobacco barn was blown and scattered across a rural road.</p>									
<b>Wake County</b>									
Holly Spgs	03	1343EST			0	0			Thunderstorm Wind (G50)
<p>Strong thunderstorm winds blew down trees in the southern part of the county...including Holly Springs and around Lake Wheeler.</p>									
<b>Durham County</b>									
Durham	03	1359EST			0	0			Tstm Wind/Hail
<p>Thunderstorm winds damaged a building on Chapel Hill Road in the southwest part of the city of Durham.</p>									
<b>Forsyth County</b>									
Winston Jct	03	1425EST			0	0			Tstm Wind/Hail
<p>Strong winds damaged road signs in the city. Small hail was also reported.</p>									
<b>Durham County</b>									
Durham	03	1325EST			0	0			Tstm Wind/Hail
<p>A pine tree was blown onto a house in the city of Durham destroying the roof.</p>									
<b>Hoke County</b>									
Raeford	03	1446EST			0	0			Thunderstorm Wind (G50)
<p>Several trees were downed and a funnel cloud was spotted in the north part of Raeford.</p>									
<b>Durham County</b>									
Durham	21	1400EST			0	0	20K		Lightning
<p>Lightning struck a house on Bellmeade Bay Drive in southeast Durham. No one was home at the time and no one was injured. The fire that began in the attic caused mostly smoke damage and was extinguished by local fire fighters.</p>									
<b><u>NORTH CAROLINA, Central Coastal</u></b>									
<b>Lenoir County</b>									
La Grange	03	1335EST			0	0			Hail (0.75)
<p>Dime size hail in La Grange</p>									
<b>Lenoir County</b>									
Deep Run	03	1415EST			0	0			Thunderstorm Wind (G55)
<p>Structural damage to roofs and mobil home in Deep Run.</p>									
<b>Lenoir County</b>									
Hugo	03	1425EST			0	0			Thunderstorm Wind (G58)
<p>Severe roof damage to house in Hugo.</p>									
<b>Duplin County</b>									
Faison	03	1610EST			0	0			Thunderstorm Wind (G50)
<p>Fallen trees in Faison.</p>									
<b>Onslow County</b>									
Haw	03	1620EST			0	0			Thunderstorm Wind (G55)
<p>Large limbs blown off trees near Haw and Padgett.</p>									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NORTH CAROLINA, Central Coastal</u></b>									
<b>Greene County</b>									
Jason to Lizzie	03	1640EST 1650EST			0	0			Thunderstorm Wind (G50)
Roofs blown off and trees blown down in Jason. Roof blown off trailer in Lizzie.									
<b>Lenoir County</b>									
Kinston	03	1645EST			0	0			Thunderstorm Wind (G60)
Tractor trailer flipped over in Kinston.									
<b>Pitt County</b>									
Greenville	03	1645EST			0	0			Thunderstorm Wind (G51)
63 mph thunderstorm gust in Greenville. One foot wide tree fell on house in Greenville. Large tree limb through car windshield at ECU.									
<b>Carteret County</b>									
Newport	03	1648EST			0	0			Thunderstorm Wind (G50)
12 trailers lost skirting on Nine Mile road.									
<b>Jones County</b>									
Wise Fork	03	1710EST			0	0			Thunderstorm Wind (G55)
Pack house roof blown off in Wyse Fork.									
<b>Martin County</b>									
Gold Pt	03	1710EST			0	0			Thunderstorm Wind (G50)
Large limbs broke off trees in Gold Point.									
<b>Beaufort County</b>									
Bath	03	1715EST			0	0			Thunderstorm Wind (G50)
Trees on power lines in Bath and Aurora.									
<b>Craven County</b>									
New Bern	03	1715EST 1730EST			0	0			Thunderstorm Wind (G50)
Trees down on power lines in New Bern.									
<b>Hyde County</b>									
Ocracoke	03	1856EST			0	0			Thunderstorm Wind (G50)
58 mph wind gust at Ocracoke.									
<b>Dare County</b>									
Hatteras to Kill Devil Hills	03	1907EST 1914EST			0	0			Thunderstorm Wind (G57)
57 kt gusts at inlet sensor at Hatteras and 52 kt thunderstorm gust at Kill Devil Hills.									
<b><u>NORTH CAROLINA, Extreme Southwest</u></b>									
NONE REPORTED.									
<b><u>NORTH CAROLINA, North Coastal</u></b>									
<b>Northampton County</b>									
Pendleton	03	1645EST			0	0	2K		Thunderstorm Wind
Several trees down. A few power lines hit by trees on Route 186.									
<b>Northampton County</b>									
5 W Gaston	03	1655EST			0	0	15K		Thunderstorm Wind
Mobile home blown over.									
<b>Northampton County</b>									
Seaboard	03	1720EST			0	0	2K		Thunderstorm Wind
Few trees and a utility pole down.									
<b><u>NORTH CAROLINA, Northwest and North Central</u></b>									
<b>NCZ003 Surry</b>									
	02	1225EST 1230EST			0	0	10K		High Wind
Strong winds in and around Mount Airy toppled a television broadcast tower, downed trees, one blocking a road, and downed power lines.									

# Storm Data and Unusual Weather Phenomena

March 1999

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

## NORTH CAROLINA, Northwest and North Central

<b>NCZ001&gt;002-018</b>	<b>Ashe - Alleghany - Watauga</b>								
	<b>03</b>	<b>1100EST 2230EST</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>Winter Storm</b>
	Rain early in the morning of the 3rd changed to sleet then quickly to snow by late in the morning. Snow accumulations by mid evening ranged from 6 inches to 12 inches. Strong winds caused blowing and drifting snow with visibility at times reduced to near zero, drifts up to 6 feet deep were reported. Numerous vehicles slid off roads, including one into a mobile home in Watauga County, or were involved in collisions.								
<b>NCZ001&gt;002-018</b>	<b>Ashe - Alleghany - Watauga</b>								
	<b>09</b>	<b>0530EST 0900EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	Heavy snow from the pre-dawn hours to mid morning of the 9th accumulated 4 to 6 inches in Ashe County, and 4 to 5 inches in Watauga and Alleghany counties.								
<b>NCZ019</b>	<b>Wilkes</b>								
	<b>09</b>	<b>0615EST 0900EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	Snow developed early in the morning of the 9th and accumulated up to 4 inches above 2000 feet before tapering to very light rain late in the morning.								
<b>NCZ001&gt;002-018</b>	<b>Ashe - Alleghany - Watauga</b>								
	<b>03 04</b>	<b>1230EST 0200EST</b>			<b>0</b>	<b>0</b>	<b>31K</b>		<b>High Wind</b>
	High winds from the afternoon of the 3rd to the early morning of the 4th tore a sunroof off of a home and downed trees onto several automobiles in Ashe County. High winds also downed tree limbs and power lines in Ashe, Watauga, and Alleghany counties, leaving several thousand people without power.								

## NORTH CAROLINA, South Coastal

<b>NCZ087</b>	<b>Robeson</b>								
	<b>03</b>	<b>1450EST 1600EST</b>			<b>0</b>	<b>4</b>	<b>120K</b>		<b>High Wind (G65)</b>
	A cold front crossed the area with powerful wind gusts. In Prospect, a woman was blown off her porch, while in Rennert a mobile home was overturned, injuring 3. Trees were downed onto power lines and a electric power substation was knocked out, with a loss of power to 11,000 customers. Damage occurred to schools, homes and businesses.								
<b>NCZ099</b>	<b>Columbus</b>								
	<b>03</b>	<b>1515EST 1600EST</b>			<b>0</b>	<b>0</b>	<b>150K</b>		<b>High Wind (G65)</b>
	As a strong cold front crossed the area, pressure gradient-induced wind gusts downed trees across the county and blew the roof off a Whiteville car dealership, severely damaging at least 10 cars. Temperature falls were near 25 degrees.								
<b>NCZ096</b>	<b>Bladen</b>								
	<b>03</b>	<b>1530EST 1630EST</b>			<b>0</b>	<b>0</b>	<b>120K</b>		<b>High Wind (G65)</b>
	A strong cold front crossed the area with widespread wind gusts damaging homes and businesses, mainly in Northern Bladen Co in the vicinity of these communities: Tar Heel, Dublin, Center Roads, and Bladenboro. Power outages were also reported in Bladenboro, White Lake, Elizabethtown, and East Arcadia.								
<b>Bladen County</b>									
<b>1 W Dublin to Elizabethtown</b>	<b>03</b>	<b>1535EST</b>			<b>0</b>	<b>0</b>	<b>60K</b>		<b>Thunderstorm Wind (G65)</b>
		<b>1540EST</b>							
	Thunderstorms embedded in a cold front caused wind gusts that downed trees on NC 41 and tore roofs from mobile homes near Dublin and Clarkton.								
<b>Pender County</b>									
<b>Topsail</b>	<b>03</b>	<b>1545EST</b>			<b>0</b>	<b>0</b>	<b>20K</b>		<b>Thunderstorm Wind (G60)</b>
		<b>1550EST</b>							
	Thunderstorm winds damaged power lines and forced closing of schools the following day.								
<b>Columbus County</b>									
<b>2 W Nakina to Old Dock</b>	<b>21</b>	<b>0430EST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.00)</b>
		<b>0445EST</b>							

## NORTH CAROLINA, Southwest

<b>Union County</b>									
<b>Weddington</b>	<b>21</b>	<b>0400EST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>

# Storm Data and Unusual Weather Phenomena

March 1999

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

## **NORTH CAROLINA, Southwest**

A severe thunderstorm generated damaging winds that blew down fences and injured horses that were loosed from their pasture.

**NCZ067**

**Rutherford**

<b>01</b>	<b>0400EST 0700EST</b>		<b>0</b>	<b>0</b>	<b>50K</b>	<b>High Wind (G77)</b>
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Mesoscale gradient high winds occurred in the Lake Lure Area during the pre-dawn hours, blowing down numerous trees and power lines. One tree fell on a home, nearly destroying it. A home anemometer measured a wind gust to 88 mph.

**NCZ033-048>050**

**Avery - Madison - Yancey - Mitchell**

<b>01</b>	<b>0000EST 0800EST</b>		<b>0</b>	<b>0</b>		<b>Snow</b>
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Snow and wind which began on the 28th of February, continued well into the first day of March. Snow accumulated generally between 1 and 3 inches, with a number of locations on highest peaks receiving 4 to 5 inches, before ending around 8 am. Frequent gusts to 40 mph or higher however, continued until the mid-afternoon.

**NCZ033-048>052-058>059**

**Avery - Madison - Yancey - Mitchell - Swain - Haywood - Graham - Northern Jackson**

<b>03</b>	<b>0800EST 1200EST</b>		<b>0</b>	<b>0</b>		<b>Snow</b>
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A moist northwest flow developed behind the passage of a strong cold front, producing light snow during the morning. Accumulations ranged between 1 and 3 inches through noon, before snow became heavier during the afternoon. Some higher amounts occurred at higher elevations.

**NCZ034-053-057-068>070-072**

**Caldwell - Buncombe - Rowan - Cleveland - Lincoln - Gaston - Cabarrus**

<b>03</b>	<b>1100EST 1500EST</b>		<b>0</b>	<b>0</b>	<b>700K</b>	<b>High Wind (G60)</b>
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High winds, gusting between 50 and 70 mph, occurred just ahead of a strong cold front. The winds were mostly gradient, but convectively boosted in some cases. Most of the damage occurred in the piedmont where mobile homes and other structures were damaged. Numerous trees and power lines were downed as well.

**NCZ034-053>054-058>059-062>065**

**Caldwell - Buncombe - McDowell - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania - Henderson**

<b>03</b>	<b>1200EST</b>		<b>0</b>	<b>0</b>		<b>Snow</b>
<b>04</b>	<b>0000EST</b>					

Light snow developed in a cold northwest flow behind a cold front and accumulated between 1 and 3 inches.

**NCZ033-048>052-055**

**Avery - Madison - Yancey - Mitchell - Swain - Haywood - Burke**

<b>03</b>	<b>1200EST</b>		<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
<b>04</b>	<b>0000EST</b>					

Snowfall continued from the morning and became heavy after noon. Snow accumulated up to 5 inches in Newland by mid-afternoon. Heavy accumulations continued through the evening with final totals ranging from 4 to 8 inches. Some of the highest elevations received a foot or more.

**NCZ051-053-062>063**

**Swain - Buncombe - Macon - Southern Jackson**

<b>09</b>	<b>0300EST 0800EST</b>		<b>0</b>	<b>0</b>		<b>Winter Storm</b>
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Strong low pressure moved north through the Mississippi River Valley with associated moisture streaming north across the Southeastern States. Cold, dry air was already in place across western North Carolina and caused a mixture of heavy sleet, snow and freezing rain across much of the mountains. Much of the above counties received 1 to 2 inches of sleet before the precipitation changed to snow and added another couple inches. The Highlands area in Macon county received 4 to 5 inches of snow.

**NCZ033>034-049>050-054>055**

**Avery - Caldwell - Yancey - Mitchell - McDowell - Burke**

<b>09</b>	<b>0300EST 0800EST</b>		<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
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Strong low pressure moved north through the Mississippi River Valley with associated moisture streaming north across the southeastern States. Cold, dry air was already in place across the northern mountains and northern foothills of North Carolina and this allowed precipitation to fall as heavy snow. Accumulations ranged between 4 and 7 inches by mid-morning.

**NCZ035-048-052-056-059-064>070-072**

**Alexander - Madison - Haywood - Catawba - Northern Jackson - Transylvania - Henderson - Polk - Rutherford - Cleveland - Lincoln - Gaston - Cabarrus**

<b>09</b>	<b>0300EST 1200EST</b>		<b>0</b>	<b>0</b>		<b>Snow And Sleet</b>
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Light snow and sleet fell during the morning, associated with a strong low pressure area moving north through the Mississippi River Valley. Accumulations by noon ranged between 1 and 3 inches. Some light freezing rain mixed in from time to time as well.

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NORTH CAROLINA, Southwest</u></b>									
<b>NCZ033-048-055</b>	<b>Avery - Madison - Burke</b>	<b>13</b>	<b>1200EST 1500EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
									Moisture being pulled north by a low pressure system in the Lower Mississippi Valley region encountered cold air in place across western North Carolina. A quick burst of snow during the early afternoon resulted in accumulations of 3 to 5 inches.
<b>NCZ049&gt;050</b>	<b>Yancey - Mitchell</b>	<b>13</b>	<b>1200EST 1500EST</b>		<b>0</b>	<b>0</b>			<b>Snow</b>
									Moisture associated with a low pressure system in the Lower Mississippi Valley region streamed north into the mountains of North Carolina and produced a 1 to 3 inch snow accumulation.
<b>NCZ033-048&gt;052-058</b>	<b>Avery - Madison - Yancey - Mitchell - Swain - Haywood - Graham</b>	<b>15</b>	<b>0000EST 0600EST</b>		<b>0</b>	<b>0</b>			<b>Snow</b>
									Low pressure weakening as it moved east across the mountains brought 1 to 3 inches of snowfall to the region.
<b>NCZ033&gt;034-048&gt;054-058&gt;059-062&gt;067</b>	<b>Avery - Caldwell - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - McDowell - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania - Henderson - Polk - Rutherford</b>	<b>16</b>	<b>1300EST 1900EST</b>		<b>0</b>	<b>0</b>			<b>Gusty Winds</b>
									A tight pressure gradient developed over the mountains as low pressure intensified off the coast. Northwest winds gusted over 40 mph frequently and over 60 mph occasionally. However, no damage was reported.
<b>NCZ048-050&gt;053-058&gt;059-062&gt;064</b>	<b>Madison - Mitchell - Swain - Haywood - Buncombe - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania</b>	<b>26</b>	<b>0600EST 1700EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
									A deep cold core low pressure center in the mid and upper levels of the atmosphere moved slowly across the Southern Appalachians during the day, triggering heavy snow accompanied by thunder at times. Most areas received 2 to 4 inches of heavy wet snow. However, a small area consisting of Swain, northern Jackson, northern Haywood and Madison counties received between 4 and 10 inches of snow. The heavy snow ended for most of the counties around 1 pm. Although Buncombe and Yancey counties continued to experience the heavy snow until around 5 pm.
<b>NCZ033&gt;034-049&gt;050-054&gt;055-065&gt;067</b>	<b>Avery - Caldwell - Yancey - Mitchell - McDowell - Burke - Henderson - Polk - Rutherford</b>	<b>26</b>	<b>1400EST 2200EST</b>		<b>0</b>	<b>0</b>			<b>Snow</b>
									The same deep cold core upper low that brought heavy snow to most of the mountains also brought lighter snow to the rest of the mountains and foothills of North Carolina. Snow accumulated between 1 and 2 inches until around 10 pm.
<b>Lincoln County</b>									
<b>Lincolnton</b>		<b>03</b>	<b>1200EST</b>		<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
									Convection ahead of a cold front produced an isolated occurrence of dime size hail.
<b>NCZ065</b>	<b>Henderson</b>	<b>03</b>	<b>2240EST</b>		<b>1</b>	<b>0</b>	<b>10K</b>		<b>Gusty Wind</b>
									Gusty winds of around 40 mph caused a 95 foot pine tree to fall on a moving vehicle, 7 miles northwest of Hendersonville, killing the occupant. M45VE
<b><u>NORTH DAKOTA, Central and West</u></b>									
<b>NDZ035</b>	<b>Burleigh</b>	<b>20</b>	<b>0900CST</b>		<b>0</b>	<b>0</b>			<b>Flood</b>
									Flooding along Apple Creek near the city of Menoken in Burleigh county due to snow melt and ice jams resulted in washed out roads and flooded fields. Many roads near the river were closed and barricaded. The flood stage on Apple Creek is 15 feet. The river crested at 16.2 feet on duing the evening of the 24th.
<b>NDZ001&gt;002-009&gt;010-017&gt;018-031&gt;033-040&gt;041-043&gt;044</b>	<b>Divide - Burke - Williams - Mountrail - Mckenzie - Dunn - Golden Valley - Billings - Stark - Slope - Hettinger - Bowman - Adams</b>	<b>26</b>	<b>1830CST</b>		<b>0</b>	<b>0</b>			<b>High Wind (G63)</b>
									Strong northwest winds of 45 mph up to 65 mph followed behind a fast moving surface cold front and upper level short wave across western and parts of central North Dakota. The winds subsided shortly after 9 pm cst.

# Storm Data and Unusual Weather Phenomena

March 1999

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>NDZ014-024-026&gt;029</b>	<b>Benson - Eddy - Nelson - Grand Forks - Griggs - Steele</b>								
	<b>04</b>	<b>0800CST 1800CST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	Heavy snow set up along a fairly thin band, as warm, moist air moved across a stationary surface boundary into colder air. 7 inches of snow was reported at both Cooperstown and 11 miles east of New Rockford.								
<b>NDZ008-016-027</b>	<b>Pembina - Walsh - Grand Forks</b>								
	<b>17</b>	<b>0800CST 1400CST</b>			<b>0</b>	<b>0</b>			<b>Blizzard</b>
	A strong area of low pressure along the North and South Dakota border brought an intense pressure gradient across eastern North Dakota. 4.2 inches of snow was reported at the NWS in Grand Forks along with north wind gusts to 48 mph. This created whiteout conditions for several hours. Zero visibility 6 miles south of Buxton caused a 6 vehicle pileup on the northbound lane of Interstate 29, shutting down the Interstate for several hours. Several schools closed for the day.								
<b>NDZ030-039-053</b>	<b>Trail - Cass - Richland</b>								
	<b>17</b>	<b>0800CST 1400CST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G48)</b>
	An area of low pressure along the North and South Dakota border created strong winds along the Red River Valley. The Fargo airport reported a wind gust from the north at 55 mph.								
<b>Ransom County</b>									
Englevale	<b>31</b>	<b>0005CST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.00)</b>
<b><u>OHIO, East</u></b>									
<b>Coshocton County</b>									
Countywide	<b>04 05</b>	<b>2136EST 1000EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
<b>Coshocton County</b>									
Countywide	<b>06 08</b>	<b>1400EST 1000EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	Minor flooding was reported as the combination of snowmelt and rainfall produced a rise to around 13.4 feet on the Muskingum River at Coshocton (flood stage is 13.0 feet). Flooding was confined to a few secondary roads across the county.								
<b>OHZ039&gt;041-048&gt;050-057&gt;059-068&gt;069</b>	<b>Tuscarawas - Carroll - Columbiana - Coshocton - Harrison - Jefferson - Muskingum - Guernsey - Belmont - Noble - Monroe</b>								
	<b>09</b>	<b>0100EST 1700EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	A winter storm moved quickly across the Ohio Valley, producing snowfall totals of between 5 and 7 inches across the majority of east central Ohio. The snowfall and icy roads were responsible for numerous minor accidents on area roadways.								
<b>OHZ068&gt;069</b>	<b>Noble - Monroe</b>								
	<b>14</b>	<b>0600EST 1900EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	Extreme east central Ohio received a fresh blanket of snow as a late-winter storm moved across the area. Some snowfall totals included 6 inches in Farmington, Monroe County and 4 to 6 inches in Dungannon, Noble County.								
<b><u>OHIO, North</u></b>									
<b>OHZ003-007&gt;014-020&gt;023</b>	<b>Lucas - Ottawa - Sandusky - Erie - Lorain - Cuyahoga - Lake - Geauga - Ashtabula - Medina - Summit - Portage - Trumbull</b>								
	<b>05 06</b>	<b>2100EST 1900EST</b>			<b>0</b>	<b>0</b>	<b>300K</b>		<b>Heavy Snow</b>
	Snow mixed with rain at times, especially across north central and northwest Ohio, accumulating five to six inches. Over northeast Ohio, the precipitation was almost all snow, with a total accumulation of six to thirteen inches. North northeast winds caused considerable blowing and drifting of snow. Driving conditions were extremely hazardous and numerous traffic accidents were reported, especially in Lake, Geauga and Ashtabula counties.								
<b>OHZ003-006&gt;008-017&gt;018-020&gt;021-027&gt;032-036&gt;038-047</b>	<b>Lucas - Wood - Ottawa - Sandusky - Hancock - Seneca - Medina - Summit - Wyandot - Crawford - Richland - Ashland - Wayne - Stark - Marion - Morrow - Holmes - Knox</b>								
	<b>09</b>	<b>0015EST 1700EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	Snow started shortly after midnight in northwest Ohio and then spread southeast, accumulating six to eight inches. East winds to 25 mph caused considerable blowing and drifting, especially since most areas already had up to six inches of snow on the ground.								

# Storm Data and Unusual Weather Phenomena

March 1999

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

## OHIO, North

**OHZ011>014-029**

**Cuyahoga - Lake - Geauga - Ashtabula - Richland**

17	1640EST								
18	1500EST			0	0	80K			High Wind (G55)

High winds along the lakeshore and over the higher terrain of north central Ohio downed trees and power lines. A wind speed of 63 miles per hour was reported in Cleveland (Cuyahoga County). Power lines fell on and around a house in the city of Ashtabula (Ashtabula). In Mansfield (Richland), a Kroger sign was blown out of its frame. Two cars were struck and damaged by flying debris.

## OHIO, Northwest

NONE REPORTED.

## OHIO, Southeast

**OHZ066>067-**

**Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs**

**075>076-083>085**

09	0500EST								
	1500EST			0	0				Heavy Snow

Snow accumulations of 3 to 7 inches were common. Perry County had more snow, with 8 inches measured at New Lexington.

**OHZ067-075>076-083>085**

**Morgan - Athens - Washington - Jackson - Vinton - Meigs**

14	0300EST								
	1700EST			0	0				Heavy Snow

A 50 mile wide band of 4 to 10 inches of snow cut across southeast Ohio. The heaviest snow rates were between 1100 and 1500 EST. The communities of Jackson and Carpenter had 10 inches of snow accumulate. McArthur and Salem Center measured 8 inches. Pomeroy and Athens had 6 to 8 inches, while Marietta reported 3 to 5 inches. It was the deepest snow of the winter in much of this region. The northern edge of the heavy snow reached into southern Morgan County.

**OHZ066>067-**

**Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence**

**075>076-083>087**

01	0000EST								
31	2300EST			0	0				Monthly Temperature

A prolong cold spell during the first half of the month resulted in the average monthly temperature to be 3 to 5 degrees colder than a normal March. After a mild January and February, the late season cold helped delay the new spring growth.

## OHIO, Southwest

**OHZ073>074-**

**Ross - Hocking - Hamilton - Clermont - Brown - Highland - Adams - Pike - Scioto**

**077>082-088**

13	0900EST								
	1800EST			0	0				Heavy Snow

A strong low pressure system brought a narrow band of heavy snow into southern Ohio. The snow fell faster than 1 inch an hour at times and thunder and lightning occurred in spots. A general area of 4 to 8 inches fell from Cincinnati northeastward to around Chillicothe. Within that band, parts of Adams and Scioto counties received from 14 to 20 inches.

**OHZ026-034>035-**

**Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark -**

**042>046-051>056-**

**Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler -**

**060>065-070>074-**

**Warren - Clinton - Ross - Hocking - Hamilton - Clermont - Brown - Highland - Adams - Pike - Scioto**

**077>082-088**

09	0000EST								
	1600EST			0	0				Heavy Snow

Low pressure brought abundant moisture northward into an arctic air mass producing very heavy snow. The heaviest snow fell between midnight and 800 am with snowfall rates of 1 to 2 inches an hour at times. The snow continued into the daylight hours but it was generally much lighter. Accumulations ranged from 5 to 10 inches with the highest amounts occurring on a line from Hamilton to Wilmington to Chillicothe.

## OKLAHOMA, Eastern

**Sequoyah County**

Sallisaw	05	1537CST							
				0	0				Hail (0.88)

**Ottawa County**

Afton	05	1550CST							
				0	0				Hail (1.00)

**Sequoyah County**

Liberty	05	1600CST							
				0	0				Hail (0.75)

**Cherokee County**

Park Hill	05	1603CST							
				0	0				Hail (0.88)



# Storm Data and Unusual Weather Phenomena

March 1999

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

## OKLAHOMA, Eastern

Further east, the tornado crossed Interstate 40 near Fountainhead Road (OK Hwy 150). As it crossed the interstate, four 18-wheelers were knocked over, but the drivers escaped injury. After crossing the interstate, the tornado travelled through the Sycamore Bay development, damaging ten to twelve homes. The damage included cracked ceilings, a destroyed garage, and shingles ripped off to the bare wood. One home was moved 30 feet from its foundation, and it took the roof off of another.

The tornado then crossed Lake Eufaula as a waterspout, destroying five boats and several docks at Emerald Bay. Once the tornado came back onshore, it hit Lotawatah Road, where it moved a double-wide mobile home from its foundation. Another home lost its roof, and outbuildings were destroyed. A trucking company was hit, destroying five 60-foot trailers and damaging others. The tornado then crossed Humphrey Road at a racing stable, destroying six of their structures and six corrals. When the tornado reached US Hwy 266, part of a home's roof collapsed, and a horse trailer was thrown on top of a barn, which then collapsed.

Along its entire path, numerous power poles were snapped off at the base. Spotters reported seeing two or three simultaneous tornadoes at times. Fortunately, the tornado lifted just before entering Checotah.

### **Rogers County**

<b>3 NW Foyil to 1 NW Bushyhead</b>	<b>08</b>	<b>1818CST 1821CST</b>	<b>2</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>20K</b>	<b>Tornado (F1)</b>
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A garage was heavily damaged by an F1 tornado. The Oklahoma Highway Patrol reported a tornado 4 miles west of Chelsea near Allen Point. Several mobile homes in the Spencer Creek mobile home park sustained roof and siding damage.

### **Rogers County**

<b>2 NNW Foyil</b>	<b>08</b>	<b>1818CST</b>	<b>0.5</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>5K</b>	<b>Tornado (F1)</b>
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A brief F1-tornado touchdown ripped the roof off of a block house.

### **Muskogee County**

<b>Haskell</b>	<b>08</b>	<b>1820CST</b>			<b>0</b>	<b>0</b>	<b>8K</b>	<b>Thunderstorm Wind</b>
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A large picture window was blown out of the enclosed porch of a home, and an empty chicken house was blown over onto its side.

### **Muskogee County**

<b>Muskogee</b>	<b>08</b>	<b>1824CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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### **Muskogee County**

<b>1 W Warner</b>	<b>08</b>	<b>1824CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.88)</b>
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### **Rogers County**

<b>Inola</b>	<b>08</b>	<b>1825CST</b>			<b>0</b>	<b>0</b>	<b>13K</b>	<b>Thunderstorm Wind</b>
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Strong winds estimated at 60 miles an hour blew a 30-foot section of roof off of a house in downtown Inola. A fence and basketball goal in the back yard were also blown over. Nearby, a church sustained roof damage, a tree was blown onto a house, a shed was blown away, and two power poles were blown over.

### **Wagoner County**

<b>2 NNE Choska</b>	<b>08</b>	<b>1825CST</b>			<b>0</b>	<b>0</b>	<b>1.5K</b>	<b>Thunderstorm Wind</b>
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Three power poles near Stone's Corner were snapped.

### **Muskogee County**

<b>Porum</b>	<b>08</b>	<b>1828CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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### **Cherokee County**

<b>3 W Hulbert</b>	<b>08</b>	<b>1830CST</b>			<b>0</b>	<b>0</b>	<b>0.20K</b>	<b>Thunderstorm Wind</b>
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Numerous large tree limbs were blown down near Fort Gibson Lake.

### **Mayes County**

<b>2 SE Chouteau</b>	<b>08</b>	<b>1830CST</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.

### **Muskogee County**

<b>4 ENE Muskogee</b>	<b>08</b>	<b>1830CST</b>			<b>0</b>	<b>0</b>	<b>30K</b>	<b>Thunderstorm Wind</b>
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The steel frame of a warehouse under construction was destroyed near the Port of Muskogee.

### **Wagoner County**

<b>Porter</b>	<b>08</b>	<b>1830CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.75)</b>
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### **McIntosh County**

<b>2.5 E Shady Grove to 3 E Shady Grove</b>	<b>08</b>	<b>1843CST</b>	<b>0.5</b>	<b>30</b>	<b>0</b>	<b>0</b>		<b>Tornado (F0)</b>
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The same parent thunderstorm that spawned the earlier tornado further west in McIntosh County again spawned a brief tornado touchdown about three miles west of Warner in far eastern McIntosh County. No damage was reported with this touchdown.

### **Nowata County**

<b>1 S Elliot</b>	<b>08</b>	<b>1844CST</b>			<b>0</b>	<b>0</b>		<b>Hail (0.88)</b>
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# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OKLAHOMA, Eastern</b>									
<b>Mayes County</b>									
1 S Pryor	08	1845CST			0	0			Hail (0.88)
<b>Muskogee County</b>									
Braggs	08	1850CST 1852CST			0	0			Hail (0.88)
<b>Sequoyah County</b>									
Gore	08	1859CST			0	0			Hail (0.88)
<b>Cherokee County</b>									
Qualls	08	1900CST			0	0	0.10K		Thunderstorm Wind
Several tree limbs were blown down in Qualls.									
<b>Delaware County</b>									
Zena	08	1915CST			0	0			Hail (1.00)
<b>Adair County</b>									
Christie	08	1920CST			0	0			Hail (0.75)
<b>Delaware County</b>									
1 S Grove	08	1920CST			0	0	0.60K		Thunderstorm Wind
A tree limb and a power line were knocked down by strong winds.									
A band of moderate to heavy rain moved across the area during the morning of March 8 in association with a warm front out in advance of a low pressure center. The rain brought localized nuisance flooding. Once the morning rains passed, warmer air moved into eastern Oklahoma during the afternoon, and an upper level low with lots of cold air aloft moved into the area. Thunderstorms then erupted late in the afternoon along an eastward moving dryline/cold front. Some of these thunderstorms displayed characteristics of low-precipitation supercells which then produced damaging tornadoes, most notably in McIntosh County and at Broken Arrow in Tulsa County. The Broken Arrow tornado occurred miles behind any radar-indicated thunderstorm activity and was possibly the result of a cold-air funnel under the cold upper low which reached the ground.									
<b>Tulsa County</b>									
Tulsa	12	1220CST			0	0	10K		Lightning
A lightning strike caused a house fire in the 4800 block of South Victor Avenue.									
<b>Okmulgee County</b>									
Okmulgee	12	1400CST 1600CST			0	0			Urban/Sml Stream Fld
Heavy rains put several city streets under one or two feet of water.									
<b>OKZ054&gt;056-059</b>									
<b>Osage - Washington - Nowata - Pawnee</b>									
	12	1500CST 2000CST			0	0			Heavy Snow
<b>Adair County</b>									
Countywide	12	1830CST 2030CST			0	0			Flash Flood
About 2 to 3 inches of rain forced the closing of several county roads west of Stilwell. A county road over Caney Creek was closed due to high water.									
A band of heavy rainfall moved across eastern Oklahoma on the afternoon and early evening of March 12 ahead of a powerful upper level storm system, bringing widespread rainfall amounts of one to three inches of rain. At the north end of this band where temperatures were in the mid 30s, heavy snow and sleet fell for a short time in Osage, Pawnee, Washington and Nowata Counties. In northwestern Osage County, three inches of snow and sleet accumulated at Shidler, and two inches accumulated on the ground at Grainola. Cars in Pawhuska were covered with one inch of snow by 745 PM. Roads in Washington County turned slushy. Nowata County had 15 cars slide off of roads into ditches due to the wintry conditions. Later in the evening, snow changed back to rain and most of the snow had melted off by midnight.									
<b>OKZ054&gt;070</b>									
<b>Osage - Washington - Nowata - Craig - Ottawa - Pawnee - Tulsa - Rogers - Mayes - Delaware - Creek - Okfuskee - Okmulgee - Wagoner - Cherokee - Adair - Muskogee</b>									
	13	1500CST			0	0	21K		Heavy Snow
	14	0700CST							
A powerful upper level storm system moving eastward along the Red River valley brought one of the top winter storms on record to the area. After spending much of March 13 in a cold rain, cold air associated with the upper system finally moved firmly enough into the area to cause a gradual changeover to snow around 3 PM. The heaviest snowfall amounts were generally in the northeast corner of Oklahoma, although a snow "burst" associated with thunder and lightning over Creek County caused very high amounts of snow there as well. The snow quickly ended around sunrise of March 14, and even the heaviest snow had melted off by the end of the day on March 15.									
The snow burst in Creek County caused numerous traffic accidents along I-44 through Creek County, and the interstate had to be closed. Several churches in Bristow opened their doors to a total of 450 stranded motorists, while other motorists became stranded in their cars. The weight of the snow caused a carport to collapse in Drumright, damaging a truck underneath.									

# Storm Data and Unusual Weather Phenomena

March 1999

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

## OKLAHOMA, Eastern

The heavy wet snow weighted down and broke numerous trees and tree limbs throughout northeast Oklahoma. Trees falling onto power lines caused scattered power outages throughout the area. Eight thousand electrical customers in Tulsa lost their electricity, while 2,300 power customers around Grove suffered power outages. Vinita was one of the hardest-hit communities in terms of downed trees and power outages.

The following is a list of snowfall amounts from March 13-14: Miami...15", Bristow...14", Vinita...12+", Jay...10-12", Sapulpa...9-10", Pawnee...9", Bartlesville...8", Pawhuska...6-8", Claremore...6-8", Nowata...7", Hominy...6-7", NWS Tulsa (Northeast Tulsa)...6.2", Stilwell...6", Pryor...4-6", Okmulgee...3-5", Wagoner...3-5", Tahlequah...4" and Muskogee...2-3".

<b>Creek County</b>									
Drumright	22	2050CST			0	0			Hail (0.75)
<b>Creek County</b>									
Oilton	22	2050CST			0	0			Hail (0.75)
<b>Creek County</b>									
Mannford	22	2101CST			0	0			Hail (1.75)
<b>Tulsa County</b>									
Tulsa	22	2127CST			0	0			Thunderstorm Wind (G52)
Location: near the Tisdale Expressway and Pine									
<b>Adair County</b>									
Bunch	22	2330CST			0	0			Hail (0.75)
<b>Pittsburg County</b>									
Kiowa	23	0012CST			0	0			Hail (0.88)
<b>Okfuskee County</b>									
Bearden	23	0100CST			0	0			Hail (0.75)
<b>Pushmataha County</b>									
8 W Eubanks	23	0100CST			0	0			Hail (0.75)
<b>Pushmataha County</b>									
4 NNE Finley	23	0109CST			0	0			Hail (1.00)
<b>Le Flore County</b>									
Fanshawe	23	0136CST			0	0			Hail (0.88)
<b>Latimer County</b>									
Gowen	23	0200CST			0	0			Hail (0.75)

On the evening of March 22, a strong cold front pushed southeast out of Kansas. Eventually, a strong cap of warm air in the mid-levels of the atmosphere broke and allowed severe thunderstorms to form along the front over northeast Oklahoma. The first severe thunderstorm developed over Payne County and then moved east through northern Creek County and then into the northern part of the city of Tulsa. As the front moved south into southeast and east central Oklahoma, thunderstorms became less organized with shorter life cycles, creating a more random pattern to the severe weather reports. Except for the first and strongest severe thunderstorm of the night, the remainder of the severe storms contained only marginally severe hail.

<b>OKZ076 Le Flore</b>									
	13	0900CST			0	0			Flood
	15	0500CST							

Following heavy rains, the Poteau River near Panama rose above its flood stage of 29 feet at 9 AM on March 13. The river crested at a level of 31.9 feet on the morning of March 14 before falling back below flood stage early on the morning of March 15.

<b>OKZ066 Okmulgee</b>									
	17	0000CST			0	0			Flood
	20	0800CST							

Following heavy rains and quick upstream snowmelt several days earlier, the Deep Fork River near Beggs rose above its flood stage of 18 feet at the start of March 17. The river then crested at 19.7 feet late on the morning of March 18 before falling back below its flood stage on the morning of March 20.

## OKLAHOMA, Extreme Southeast

<b>Mccurtain County</b>									
Bethel	05	1730CST			0	0			Hail (0.88)
<b>Mccurtain County</b>									
Wright City	23	0218CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

March 1999

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

## OKLAHOMA, Panhandle

### **OKZ001>003 Cimarron - Texas - Beaver**

12	1800CST								
13	0600CST				0	0			Heavy Snow

A strong low pressure system in the upper atmosphere moved from south-central New Mexico into the Texas South Plains. Snowfall amounts ranged from four inches in the western and eastern Oklahoma panhandle to around five to six inches in the central Oklahoma panhandle.

### **OKZ001 Cimarron**

18	0943CST								
	1800CST				0	0			Heavy Snow

A strong, slow moving low pressure system in the upper atmosphere near El Paso tracked northeast towards the Texas panhandle during the afternoon and evening hours. Six inches of snow fell during this time period in the western Oklahoma panhandle.

### **OKZ001>002 Cimarron - Texas**

18	1800CST								
19	0600CST				0	0			Heavy Snow

The strong, slow moving low pressure system in the upper atmosphere produced additional heavy snows across the western and central Oklahoma panhandle. As much as six to ten inches fell in the western Oklahoma panhandle with four inches across the central Oklahoma panhandle.

## OKLAHOMA, Western, Central and Southeast

### **Jackson County**

8 E Altus	11	2235CST							
					0	0			Hail (0.75)

### **Kiowa County**

7 NW Gotebo	11	2315CST							
					0	0			Hail (0.75)

### **Kiowa County**

Mountain View	11	2320CST							
					0	0			Hail (0.75)

### **Harmon County**

Madge	12	0635CST							
					0	0			Hail (0.75)

### **Beckham County**

1 N Delhi	12	0705CST							
					0	0			Hail (0.75)

### **Oklahoma County**

Oklahoma City	22	2020CST							
					0	0			Hail (0.88)

Hail was reported at the intersection of 29th and Western.

### **Payne County**

4 SE Ripley to 5 SE Ripley	22	2025CST							
					0	0			Hail (1.00)

### **Lincoln County**

1 NE Agra to 2 NE Agra	22	2030CST							
					0	0			Hail (1.00)

### **Oklahoma County**

Jones	22	2215CST							
					0	0			Hail (0.75)

### **Canadian County**

4 SE Yukon	22	2229CST							
					0	0			Hail (0.88)

### **Canadian County**

7 NE Piedmont	22	2240CST							
					0	0			Hail (0.75)

Hail was reported near the intersection of County Line Rd. and NW 10th.

### **Kingfisher County**

5 S Cashion	22	2240CST							
					0	0			Hail (0.75)

Hail was reported near the intersection of County Line Rd. and NW 10th.

### **Logan County**

15 S Guthrie	22	2240CST							
					0	0			Hail (0.75)

### **Oklahoma County**

10 NW Edmond	22	2240CST							
					0	0			Hail (0.75)

### **Kingfisher County**

Cashion	22	2243CST							
					0	0			Hail (1.00)

### **Logan County**

Guthrie	22	2250CST							
					0	0			Hail (0.88)

Hail was reported on the south side of Guthrie.

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>OKLAHOMA, Western, Central and Southeast</b>									
<b>Oklahoma County</b>									
Tinker Afb	22	2255CST			0	0			Hail (0.88)
Hail was reported on the east side of Tinker Air Force Base.									
<b>Caddo County</b>									
3 S Hydro	22	2300CST			0	0			Hail (1.75)
<b>Custer County</b>									
4 S Weatherford	22	2300CST			0	0			Hail (1.75)
<b>Kingfisher County</b>									
Cashion	22	2300CST			0	0			Hail (0.75)
<b>Pontotoc County</b>									
Allen	22	2315CST			0	0			Hail (0.88)
<b>Caddo County</b>									
Hinton	22	2320CST			0	0			Hail (0.88)
<b>Canadian County</b>									
Calumet	22	2322CST			0	0			Hail (0.88)
Hail was reported on east side of Calumet.									
<b>Canadian County</b>									
6 N Yukon	22	2325CST			0	0			Hail (0.75)
Hail was reported near the intersection of NW Highway and Highway 4.									
<b>Canadian County</b>									
4 N Yukon	22	2328CST			0	0			Hail (0.88)
<b>Coal County</b>									
Bromide	22	2330CST			0	0			Hail (0.88)
<b>Washita County</b>									
8 N Colony	22	2330CST			0	0			Hail (1.00)
<b>Canadian County</b>									
2 E Niles	22	2345CST			0	0			Hail (0.88)
<b>Seminole County</b>									
2 N Little	22	2345CST			0	0			Hail (0.88)
<b>Caddo County</b>									
Lookeba	22	2350CST			0	0			Hail (0.88)
<b>Seminole County</b>									
Cromwell	23	0025CST			0	0			Hail (1.00)
<b>Atoka County</b>									
Stringtown	23	0030CST			0	0			Hail (1.00)
<b>Payne County</b>									
Stillwater	08	0430CST			0	0	0.50K		Lightning
Lightning struck near a substation knocking out power to portions of southwest Stillwater.									
<b>Bryan County</b>									
Durant	07	2000CST			0	0	0.30K		Lightning
Lightning struck a power line at the Brown Substation in Durant knocking out power to 250 residents for about 1 hour.									
OKZ004>031-033>038-044									Harper - Woods - Alfalfa - Grant - Kay - Ellis - Woodward - Major - Garfield - Noble - Roger Mills - Dewey - Custer - Blaine - Kingfisher - Logan - Payne - Beckham - Washita - Caddo - Canadian - Oklahoma - Lincoln - Grady - McClain - Cleveland - Pottawatomie - Seminole - Harmon - Greer - Kiowa - Jackson - Tillman - Comanche - Cotton
	08	1400CST 2000CST			0	0	16K		High Wind
Wind gusts between 50 and 60 mph affected much of western and central Oklahoma during the afternoon and early evening of the 8th. Sixty mile per hour winds were reported in Rush Springs in Grady County, while a large wood sign was blown down at a church in Wellston in Lincoln County. Also, a large brick wall was blown over in the Windmill Park housing development in Piedmont in Canadian County, and a Walmart greenhouse at 33rd St. and Broadway in Edmond in Oklahoma County was destroyed.									
<b>Jackson County</b>									
Altus	12	0730CST			0	0	0.10K		Lightning
Lightning struck a tree, destroying it.									

# Storm Data and Unusual Weather Phenomena

March 1999

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

## OKLAHOMA, Western, Central and Southeast

### **Murray County**

<b>Dougherty</b>	12	0300CST 0600CST			0	0	30K		<b>Flash Flood</b>
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Between 3 and 5 inches of rain fell between 0300 CST and 0600 CST near Dougherty and Turner Falls Park. Four businesses and 2 homes were flooded in Dougherty, and numerous picnic tables were swept down Honey Creek when a dike broke north of Dougherty School. Falls Creek near Turner Falls Park also overflowed its banks, washing away trash dumpsters and park benches. A few cabins were damaged, and several parked cars were moved by swift water. Kay Starr Rd. was also flooded for most of the 12th and 13th.

### **Payne County**

<b>Yale</b>	12	1200CST			0	0	1.5K		<b>Lightning</b>
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Lightning struck a television antenna on a house on Norfolk Road, starting a fire.

### **OKZ018>020-**

**022>031-033>042-  
044>046-050**

**Kingfisher - Logan - Payne - Washita - Caddo - Canadian - Oklahoma - Lincoln - Grady - McClain -  
Cleveland - Pottawatomie - Seminole - Harmon - Greer - Kiowa - Jackson - Tillman - Comanche - Stephens -  
Garvin - Murray - Pontotoc - Cotton - Jefferson - Carter - Love**

02	1200CST 1800CST			0	0	0		<b>High Wind</b>
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North winds between 25 and 35 mph with gusts over 50 mph affected portions of central and southern Oklahoma during the afternoon of the 2nd. No damage was reported.

### **OKZ004>008-**

**010>013-019>020-  
026**

**Harper - Woods - Alfalfa - Grant - Kay - Woodward - Major - Garfield - Noble - Logan - Payne - Lincoln**

13	0000CST			0	0	100K		<b>Heavy Snow</b>
14	0000CST							

Heavy snow fell across portions of northern Oklahoma on the 13th, resulting in hundreds of closed roads, traffic accidents, stranded motorists and power outages. The heaviest snow fell in a band across north central Oklahoma from near Cherokee, extending east and southeast to near Medford, Pond Creek, Enid, and Perry. Between 10 and 20 inches fell in this area with the heaviest snow falling during the afternoon and evening of the 13th. Locations in Grant County reported the highest snowfall totals: Pond Creek 20 inches, Medford 19 inches, and Jefferson 18 inches. At least 5 people are known to have died across Oklahoma in vehicle accidents during the storm. The most notable traffic accident occurred in central Lincoln County on the Turner Turnpike around 2000 CST, and involved 30 vehicles. Numerous shelters were established during the storm for stranded motorists and residents without power. Chandler National Guard in Lincoln County accommodated 500 people the night of the 13th, while the Chandler Amory accommodated 220. The Perry National Guard in Payne County accommodated 400 people, and 4 churches in Stroud in Lincoln County accommodated a total of 1000 people.

## OREGON, Central and East

### **ORZ016>017-019**

**Lower Columbia Basin - Foothills Of The Blue Mountains - Northeast Oregon**

02	1940PST			0	0			<b>High Wind (G61)</b>
03	0100PST							

A fast moving cold front produced damaging wind as it moved through eastern Oregon. Wind gusts of 50 mph were reported at the McNary Dam on the Columbia River. Sustained wind of 38 mph with gusts to 45 mph were reported at the Hermiston Airport and a nearby weather spotter reported a gust to 50 mph. The Pendleton Airport had sustained wind of 54 mph with gusts to 61 mph. Metal siding was blown off an apartment building in Pendleton. The high wind toppled an old barn, an outhouse, and an old cookhouse about 10 miles northeast of Pendleton. A nearby residence was without power for an hour. Wind gusts to 70 mph were reported in Joseph at an elevation of 4100 feet.

### **ORZ010**

**Eastern Columbia River Gorge**

03	1230PST			0	0			<b>High Wind (G48)</b>
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A 55 mph wind gust blew a roof off a building in The Dalles at 1230 pm.

### **ORZ019**

**Northeast Oregon**

09	0000PST 1100PST			0	0			<b>Heavy Snow</b>
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Two to five inches of snow fell above 4000 feet in northeast Oregon. Interstate 84 near Meacham was closed briefly due to a traffic accident. Five inches of new snow fell in Joseph, 3 inches in Meacham, and 2 inches in Tollgate.

### **ORZ019**

**Northeast Oregon**

15	2000PST			0	0			<b>Heavy Snow</b>
16	0730PST							

Five inches of new snow fell overnight in Meacham and 2 1/2 inches fell in Tollgate.

### **ORZ019**

**Northeast Oregon**

26	2000PST			0	0			<b>Heavy Snow</b>
27	0800PST							

Four to six inches of snow fell in Tollgate at an elevation of 5200 feet.

# Storm Data and Unusual Weather Phenomena

March 1999

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

### **ORZ013>014-019 North Central Oregon - Central Oregon - Northeast Oregon**

<b>30</b>	<b>2000PST</b>			<b>1</b>	<b>0</b>				<b>Winter Storm</b>
<b>31</b>	<b>1000PST</b>								

A late season snow storm moved across eastern Oregon causing treacherous driving conditions. There were more than 60 traffic accident calls received at Deschutes County's 911 dispatch center in just two hours. Several of the call accidents involved multiple cars, but no serious injuries were reported. Some of the snowfall reports in Central and North Central Oregon included: 7 inches in Madras, 4 1/2 inches in Bend, 4 inches in Tumalo, 3 inches at Prineville Reservoir, 2 inches near Redmond and in Condon. Lighter snowfall amounts in Northeast Oregon still caused traffic problems. Several minor traffic accidents were reported on I-84 between Meacham and La Grande. A van travelling on I-84 near Ladd Canyon, east of La Grande, overturned and killed one of the passengers. Other passengers in the van were treated for minor injuries at a hospital in La Grande. F49VE

## OREGON, Northwest

### **ORZ001>002-004>006 Northern Coast - Central Coast - Northern Willamette Valley Including Portland Metro Area - Central Willamette Valley Including Salem - Southern Willamette Valley Including Eugene**

<b>02</b>	<b>1900PST</b>			<b>0</b>	<b>0</b>	<b>13K</b>			<b>High Wind (G104)</b>
<b>03</b>	<b>0400PST</b>								

### **ORZ011 Northern Cascades**

<b>02</b>	<b>2100PST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
<b>03</b>	<b>0800PST</b>								

The strongest Pacific storm of the winter season brought high winds to the coast and Willamette Valley, extremely heavy seas offshore and extremely high surf along beaches, and heavy snow in the Cascades. Along the coast, the highest reported winds included a gust to 120 mph at Depoe Bay in Lincoln county, a gust to 105 mph in Cannon Beach in Clatsop county, 58 mph wind with a gust to 92 mph at Tillamook in Tillamook county, and numerous gusts of 70 to 80 mph all along the coast. The Highway 101 bridge across the mouth of the Columbia River from Astoria to the Washington state side was closed for five hours due to the high winds, which toppled an empty wood chip truck on the bridge.

Highest reported winds in the Willamette Valley included gusts to 77 mph in Sandy in Clackamas county and gusts to 75 mph in Shreridan in Yamhill county. There were numerous reports of downed trees and widespread power outages due to downed trees and limbs on power lines all along the coast and throughout the Willamette Valley. The storms highest winds occurred between 930 pm and 1230 am.

Perhaps the most dramatic effect of this storm was the huge seas and extremely surf beach surf that accompanied it. At 11 pm the Stonewall Bank buoy 15 miles west of Newport reported seas of 46 feet, and at midnight the Columbia River buoy reported 42 foot seas. The most notorious impact of the heavy seas was the severed towline on the bow portion of the ship New Carrissa which was being towed out to sea for burial, which set the hulk free to be swept onshore at Waldport the morning of the 3rd. See the following narrative for details. Extremely heavy surf along beaches resulted in heavy erosion, and large logs were tossed onto roads and into buildings. Large logs were tossed through the first floor windows of the Stephanie Inn at Tolovana Park in Clatsop county, the Proposal Rock Inn in Tillamook county, and a number of residences all along the coast. Arch Cape in Clatsop county was particularly hard hit. The town of Manzanita was evacuated overnight in anticipation of the heavy surf.

The storm also dumped heavy snow in the Cascades, where Santiam Pass and Timberline Lodge reported 19 inches of new snow, Government Camp and Willamette Pass received 17 inches, and Blue Box Pass had a foot of new snow.

#### The New Carrissa Incident

On February 4, the New Carrissa, a 600 foot cargo ship, ran aground on a sand bar at the mouth of Coos Bay, Oregon. The ship was empty of cargo, but contained 130,000 gallons of fuel oil. The ship could not be towed off of the sand bar it came to rest on, and took a pounding in a series of strong storms with accompanying heavy surf. On February 10, a Navy explosives team attempted to burn the remaining fuel. After failing to ignite the fuel, the Navy team set the ship ablaze the next day with napalm. Hours later, the ship broke into two pieces. On March 2, the bow section containing most of the remaining fuel was towed to sea to be sunk well offshore. However, the tug and bow section in tow encountered 35 foot seas and high winds, the towline parted, and the bow section drifted back to shore at Waldport. On March 8 the bow was towed out to sea. On March 11, about 50 miles offshore, explosives were set off in the bow, but did not sink it. The US Navy Destroyer David ray fired 69 rounds from a 5 inch gun into the hulk, but it refused to sink. Finally, a 19 foot torpedo carrying 650 pounds of explosives fired from the nuclear attack submarine USS Bremerton sent the bow section of "the ship that wouldn't go away " under the sea. The cost of the operation up to this point was about \$6 million, and the stern remained in the sand at Coos Bay.

### **ORZ001-004 Northern Coast - Northern Willamette Valley Including Portland Metro Area**

<b>04</b>	<b>0300PST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
	<b>1000PST</b>								

Another Pacific storm dumped 4 inches of new snow at Sunset Summit and 3 inches at Wilson Summit in the Coast Range, and up to 2 inches of new snow at Clarkes in the Willamette valley.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## OREGON, Northwest

**ORZ011**

**Northern Cascades**

26      **2000PST**  
27      **1200PST**

0      0

**Heavy Snow**

A Pacific storm dumped 19 inches of new snow at Santiam Pass, 18 inches at Timberline Lodge, 16 inches at Mt Hood Meadows, and 15 inches at Mt Bachelor.

**ORZ001>002**

**Northern Coast - Central Coast**

28      **1700PST**  
29      **1000PST**

0      0

**High Wind (G60)**

The last strong Pacific storm of the month brought 56 mph winds gusting to 69 mph at Sea Lion Caves in Lincoln county, 45 mph winds with gusts to 67 mph at Cannon Beach in Clatsop county and 60 mph winds gusting to 67 mph at Netarts in Tillamook county.

## OREGON, Southeast

NONE REPORTED.

## OREGON, Southwest

**ORZ003**

**Southern Coast**

01      **0001PST**  
         **0835PST**

0      0

**Flood**

See stage reading below.

A Flood Warning was issued for the Lower Rogue River between Agness and Gold Beach at 0830 PST on 02/28. The warning lasted into March and was cancelled at 0835 PST on 03/01.

Gage readings for Rogue River at Agness (Flood Stage 17.0 ft)

01/0400	17.6 ft.
01/0700	16.72 ft.

**ORZ003**

**Southern Coast**

01      **0000PST**  
02      **1300PST**

0      0

**Flood**

See stage reading below.

A Flood Warning issued for the Coquille River from Coquille to Bandon on 02/28 lasting into March. The warning was cancelled at 1300 on 03/02. Stage readings follow.

Coquille River at Coquille (Flood Stage 21.0 feet)

01/0350	22.15 ft.
01/0745	22.16 ft.
01/1645	21.90 ft.
02/0545	21.03 ft.
02/1145	20.35 ft.

**ORZ003-003-003-003-003**

**Southern Coast**

02      **1458PST**  
03      **0100PST**

0      0

**High Wind (G76)**

Cape Blanco reported south winds 56 gusting to 69 KT.

Yet another strong Pacific storm slammed into the Pacific Northwest this day, bringing high winds to the coast. A High Wind Warning was issued at 0515 PST on 03/02/99 and cancelled at 0345 PST on 03/03/99. The highest sustained and peak winds recorded at coastal stations are listed above.

**ORZ008-008-008**

**Rogue Basin**

02      **1437PST**  
         **2055PST**

0      2

**High Wind (G74)**

Spotter JO21 3 miles w of Grants Pass reported wind gust to 74 mph.

Unlike most Pacific storms, the high winds associated with this one extended inland. A High Wind Warnind was issued for the Rogue Basin zone in Jackson and Josephine counties at 1004 PST on 03/02/99 and cancelled at 2100 PST on 03/02/99.

**ORZ015**

**South Central Oregon**

02      **1737PST**

0      0

**High Wind (G59)**

Spotter LA19 at Summer Lake reported southwest winds 34 gusting to 59 mph.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## OREGON, Southwest

The widespread high wind event this day extended to the east side of the Cascades. A High Wind Warning was issued for South Central Oregon at 1004 PST on 03/02/99 and cancelled at 2100 PST on 03/02/99.

**ORZ003-003-003-003-003**

### **Southern Coast**

<b>28</b>	<b>2100PST 2300PST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G66)</b>
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Cape Arago winds 36KT gusting to 55 KT.

Yet another Pacific storm moved onshore this day. A High Wind Warning for the coastal areas from Florence to Cape Blanco was issued at 1330 PST on 03/28/99 and cancelled at 0600 PST on 03/29/99.

One report meeting High Wind Warning criteria was recieved from Gold Beach...which is south of Cape Blanco.

**ORZ015**

### **South Central Oregon**

<b>28</b>	<b>2358PST</b>	<b>0</b>	<b>0</b>	<b>High Wind (G80)</b>
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Oregon State Police reported gusts to 80 mph in Lake County along Hwy 395 8 miles north of Abert Lake (milepost 64).

In response to the above report, a High Wind Warning was issued for Lake County at 0022 PST 03/29/99 and cancelled at 1000 PST 03/29/99. The strong winds developed ahead of a cold front moving through the area.

## PACIFIC

### **Guam**

**Tamuning**

<b>26</b>	<b>1600SST 1630SST</b>	<b>0</b>	<b>1</b>	<b>Rip Currents</b>
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High Surf was affecting the Marianas Islands on the 26th. A women nearly drowned at Ypao Beach near the Pacific Islands Club. Medic responded to a near drowning shortly after 1600. She received CPR, but remained in critical condition at Guam Memorial Hospital as of the night of the 26th.

## PENNSYLVANIA, Central

### **Franklin County**

**Upper Strasburg**

<b>03</b>	<b>1900EST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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Nickel size hail fell in Upper Strasburg.

### **Franklin County**

**Greencastle**

<b>03</b>	<b>1905EST</b>	<b>0</b>	<b>0</b>	<b>2K</b>	<b>Thunderstorm Wind</b>
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A tree was blown down in Greencastle.

### **Adams County**

**Littlestown**

<b>03</b>	<b>2032EST</b>	<b>0</b>	<b>0</b>	<b>35K</b>	<b>Thunderstorm Wind</b>
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Trees and wires were down in Union Township. A barn roof was blown off and a garage moved off its foundation. Two people in the barn took shelter under a combine.

### **Adams County**

**2 NE Heidlersburg  
to  
7 NE Heidlersburg**

<b>03</b>	<b>2030EST 2035EST</b>	<b>5</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>25K</b>	<b>Tornado (F0)</b>
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A small F0 tornado touched down in the community of Lake Meade northeast of Heidlersburg. Trees were blown down and boats were overturned along the north of Lake Meade. A few houses were damaged by falling trees. The tornado traveled behind the Lake Meade maintenance building and across Lake Meade Road, disappearing into the woods north of the road. A number of trees were damaged or uprooted along Mud Creek.

**PAZ004>006-010>011-017>018-024-037**

### **Warren - Mckean - Potter - Elk - Cameron - Clearfield - Northern Centre - Cambria - Tioga**

<b>04</b>	<b>0000EST 1200EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
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Deep low pressure tracked northeast from Virginia across eastern Pennsylvania into central New York overnight on March 3rd into the morning of March 4th. Heavy snow fell in the cold air to the northwest of the system, while thunderstorms with damaging winds crossed eastern sections. The heaviest snow fell roughly west of a line from Bedford to State College to Mansfield. Across the higher elevations of the Laurel Highlands, 22 inches was reported at Mt. Davis and 17 inches at Laurel Summit. Somerset had 15 inches. Further north, amounts ranged from 6 inches to over a foot across the central and northern mountains. Winds produced considerable blowing and drifting.

**PAZ004>006-010-012-018>019-033-041>042**

### **Warren - Mckean - Potter - Elk - Northern Clinton - Northern Centre - Southern Centre - Somerset - Northern Lycoming - Sullivan**

<b>06</b>	<b>1200EST 2300EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
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Low pressure tracked east from Ohio, crossing Pennsylvania during the afternoon on Saturday, March 6th. Heavy snow fell across the northern counties and across the higher elevations of south central PA. Temperatures were critical for this event and, in most cases, some elevation was needed to have heavy snow accumulation. Up to a foot fell at Laurel Summit in Somerset County.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## PENNSYLVANIA, Central

Across the northern mountains, 6 to 8 inches was typical from Warren east to Coudersport. Some moisture from Lake Erie may have added a couple of inches to totals across the northern mountains late in the storm.

**PAZ033**

**Somerset**

<b>09</b>	<b>1600EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>2300EST</b>						

Low pressure moved east across West Virginia producing snow across Pennsylvania late in the day Tuesday, March 9th. Across most of the state, accumulations were from 1 to 3 inches, with 3 to 5 inches across the central mountains of west central PA. Up to 8 inches were reported at Confluence and on Mt. Davis.

**PAZ018>019-  
024>028-033>036-  
049>053-056>059-  
063>066**

**Northern Centre - Southern Centre - Cambria - Blair - Huntingdon - Mifflin - Juniata - Somerset - Bedford - Fulton - Franklin - Union - Snyder - Montour - Northumberland - Columbia - Perry - Dauphin - Schuylkill - Lebanon - Cumberland - Adams - York - Lancaster**

<b>14</b>	<b>1100EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>2200EST</b>						

Low pressure tracked east across Tennessee and the Carolinas on Sunday, the 14th. An easterly flow of Atlantic moisture north of the system spread heavy snow of 6 inches or more across southern PA roughly south of a line from Ebensburg to State College to Lewisburg and Tamaqua. Snow began in the late morning and early afternoon across the region and quickly became heavy in intensity. The heaviest amounts fell across the southern tier of counties from Somerset east to Harrisburg and Lancaster. Highest reports were from Mt. Davis in Somerset County with a storm total of 20 inches and Bedford with 18 inches. Other locations with more than a foot included Huntingdon, Myersdale, and Somerset. Eight inches fell in the Harrisburg, Hershey area with as much as 9 inches from Gettysburg and York to Lancaster. Temperatures were close to or just above freezing for most of the storm, but even treated roads quickly became slippery, resulting in accidents.

**PAZ041>042**

**Northern Lycoming - Sullivan**

<b>21</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>2359EST</b>						

A cold front tracked east across Pennsylvania merging with low pressure moving northeast from Virginia. A mix of rain and snow fell across the central mountains of Pennsylvania with heavy rains in the southeast. Highways across the higher elevations had numerous traffic accidents as roads iced up late Sunday afternoon and evening. Only the high elevations of Lycoming and Sullivan counties were cool enough to maintain most of the precipitation as snow. Areas northeast of Picture Rocks reported heavy snow with 11 inches at Crystal Lake and 6 inches near Huntersville. Laporte in Sullivan County had a total of 8 inches. As the systems merged, low pressure deepened quickly and moved northeast up the Hudson Valley, bringing gusty northwest winds and cool air into all of Pennsylvania behind the system on Monday.

## PENNSYLVANIA, East

**PAZ054>055-  
060>062-067>071**

**Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia**

<b>01</b>	<b>0000EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Drought</b>
	<b>0900EST</b>						

March continued the trend of above normal precipitation during 1999 across Eastern Pennsylvania. On a county weighted average, monthly precipitation totals ranged from 3.8 inches in Berks County to 5.6 inches in Delaware County and was around 1.1 inches above normal. The wettest conditions occurred across extreme southeast Pennsylvania, while the driest conditions were in western parts of the Poconos, Lehigh Valley and Berks County. On March 15th, the Governor's drought proclamation expired and the state Department of Environmental Protection issued a downgraded drought watch. The Susquehanna River Basin Commission on March 16th also downgraded the counties within its boundaries to a drought watch. The Delaware River Basin Commission had cancelled its drought warning on February 2nd.

**Chester County**

**Upland to  
West Chester**

<b>03</b>	<b>2105EST</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>Thunderstorm Wind (G56)</b>
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A severe thunderstorm tore down wires, tree limbs and several trees in Chester County from West Marlborough Township northeast to West Chester. About 7,000 homes and businesses lost power. A wind gust to 65 mph was measured in West Chester. Fallen limbs damaged a fence in West Marlborough.

**PAZ054>055-  
060>062-067>071**

**Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia**

<b>04</b>	<b>0400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>		<b>Wind</b>
	<b>1800EST</b>						

The circulation around an intensifying low pressure that moved through New York State and northern New England during the day on the 4th produced wind gusts of around 45 mph the early morning and throughout the day in Eastern Pennsylvania. The winds knocked down a tree in Upper Darby (Delaware County) and it damaged a vehicle. The winds also contributed in downing wires in Hilltown (Bucks County). About 1,700 Pennsylvania Power and Light customers lost power for 90 minutes. Peak wind gusts included 47 mph in Tobyhanna (Monroe County), 46 mph at the Philadelphia International Airport, 41 mph in Reading (Berks

# Storm Data and Unusual Weather Phenomena

March 1999

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

## PENNSYLVANIA, East

County) and 39 mph at the Lehigh Valley International Airport.

**PAZ054>055**

**Carbon - Monroe**

<b>06</b>	<b>1000EST</b>		<b>0</b>	<b>0</b>		<b>0</b>	<b>Snow</b>
	<b>1500EST</b>						

A low pressure system moved from the Southern Plains the morning of the 5th, into northern Ohio the morning of the 6th, cut across northern Pennsylvania during the day on the 6th and reached Cape Cod the morning of the 7th. Snow spread across the Poconos during the morning of the 6th. As the low moved across northern Pennsylvania, it brought in warmer air and the snow changed to rain (in the valleys first) as precipitation ended during the late afternoon. Accumulations ranged from 1 to 4 inches and included 4 inches in Long Pond, 3 inches in Mount Pocono, 2 inches in Lehigh Valley and 1 inch in East Stroudsburg.

**PAZ054>055-**

**Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware -**

**060>062-067>071**

**Philadelphia**

<b>07</b>	<b>0400EST</b>		<b>0</b>	<b>0</b>		<b>0</b>	<b>Wind</b>
	<b>1700EST</b>						

A low pressure system moved from the Southern Plains the morning of the 5th, into northern Ohio the morning of the 6th, cut across northern Pennsylvania during the day on the 6th and reached Cape Cod the morning of the 7th. As the low intensified during the day on the 7th, the pressure difference between it and a high pressure system building into the region from the Great Lakes produced wind gusts of around 40 mph across Eastern Pennsylvania. Peak wind gusts included 43 mph at the Philadelphia International Airport and Northeast Philadelphia Airport, 41 mph at the Lehigh Valley International Airport, 39 mph in Reading (Berks County), 38 mph at the Wilkes-Barre/Scranton Airport and 36 mph in Pottstown (Montgomery County).

**PAZ054>055-**

**Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware -**

**060>062-067>071**

**Philadelphia**

<b>14</b>	<b>1100EST</b>		<b>0</b>	<b>0</b>		<b>0</b>	<b>Heavy Snow</b>
<b>15</b>	<b>0700EST</b>						

A coastal low pressure system brought heavy wet snow to most of Eastern Pennsylvania from around noon on the 14th into the early morning of the 15th. The heavy wet snow also tore down trees, tree limbs and wires, especially in the Philadelphia suburbs. About 189,000 PECO customers lost power and ranked as one of the utility's ten worst outages on record. Twice as many customers lost power as did during the Blizzard of 1996. Power was not completely restored until the evening of the 16th. Accumulations were generally between 5 and 10 inches. Lighter amounts accumulated near the Delaware River and in sections of Berks and Carbon Counties. Several districts closed their schools around Philadelphia on the 15th. Numerous accidents occurred, most though were fender benders. Several persons suffered heart attacks from shoveling the heavy, wet snow. At least one man, a 50-year-old from Radnor (Delaware County) died.

Precipitation started as snow around noon on the 14th. The air had warmed enough near Philadelphia for precipitation to start as rain. But as the intensity increased, the rain changed to snow in all areas around 2 p.m. EST. The rain/snow line had a difficult time lifting north from Delaware and Maryland. The heavy precipitation rate kept heavy, wet snow falling. The snow changed to rain in Philadelphia around 11 p.m. EST and the nearby suburbs before precipitation ended during the early morning hours. A second shot of light snow brought little additional accumulations during the morning of the 15th.

Numerous accidents occurred during the afternoon of the 14th in the Philadelphia suburbs. On the Pennsylvania Turnpike, more than 70 accidents and stuck vehicles occurred. In Bucks County, a major accident on the Northeast Extension of the Pennsylvania Turnpike tied up traffic for hours. Numerous accidents also occurred in the county on Pennsylvania State Routes 212, 232 and 611. Accidents with injuries occurred in both Chester and Montgomery Counties. Between 1230 p.m. and 530 p.m. EST emergency personnel responded to 20 calls in Chester County. A 60 passenger Greyhound bus became stuck in the snow in Delaware County. None of the passengers were hurt. Fewer accidents occurred during the (Sunday) evening of the 14th as the traffic volume became lighter. The heavy, wet snow forced both the Hatfield and Lansdale (Montgomery County) police to declare snow emergencies.

The heavy, wet snow started to tear down tree limbs, trees and power lines from 9 p.m. EST on the 14th onward. Before the storm ended, about 189,000 PECO customers lost power. Hardest hit was Chester County with 95,000 customers losing power. There were 43,000 outages in Delaware County, mostly in communities near the Chester County border. There were also 26,000 outages in Montgomery County, 18,600 in Bucks County and 6,400 within Philadelphia. In Delaware County, the Wayne area of Radnor Township had numerous trees down and the whole downtown area was blacked out. Dozens of roads were closed in Marple Township because of the downed trees and wires. About 200 homes in the county also lost phone service. In Montgomery County, the worst problems were reported in the lower half of the county. Numerous outages occurred in Narberth and Lower Merion Township. One tree fell on and damaged a home in Abington. The combination of power outages, blocked roads and the heavy snow forced many school districts to cancel classes on (Monday) the 15th. Heavy, wet snow also took down tree limbs and power lines in the Lehigh Valley, although the outages were not as widespread. About 6,500 Pennsylvania Power and Light customers lost power in the Lehigh Valley and extreme northern sections of Montgomery and Bucks Counties.

Accumulations included 10 inches in Long Pond (Monroe County), Honey Brook (Chester County) and Williams Township (Northampton County), 9.3 inches in Morgantown (Berks County), 9.2 inches in Exton (Chester County), 9 inches in Pocono Summit (Monroe County) and Springtown (Bucks County), 8.5 inches in Perkasie (Bucks County) and Pike Township (Berks County), 8 inches at the F. E. Walter Dam (Carbon County), Fricks (Bucks County), Boyertown (Berks County) and Nazareth

# Storm Data and Unusual Weather Phenomena

March 1999

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

## PENNSYLVANIA, East

(Northampton County), 7 inches in Southampton (Bucks County) and Hatfield and Royersford (Montgomery County), 6 inches in Palm and Hatboro (Montgomery County), 5.5 inches in Reading (Berks County) and Wynnewood (Montgomery County), 5 inches in West Chester (Chester County) and Doylestown (Bucks County), 4.8 inches at the Philadelphia International Airport, 4.2 inches in East Stroudsburg (Monroe County) and 3 inches at the Blue Marsh Dam (Berks County), Lehighon (Carbon County), Center City Philadelphia and Langhorne (Bucks County).

The low pressure system developed along the Gulf Coast States the morning of the 13th. During the morning of the 14th it had moved into Alabama and was located just east of the Delmarva Peninsula around daybreak of the 15th. The storm intensified and moved rapidly offshore on the 15th and reached Nova Scotia the morning of the 16th.

**PAZ054>055-  
060>062-067>071**

### **Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia**

<b>18</b>	<b>0900EST 1800EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Wind</b>
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A strong cold front moved through the region during the day on the 18th. Strong gusty west to northwest winds buffeted Eastern Pennsylvania during the late morning and afternoon with peak gusts of around 45 mph. Peak wind gusts included 46 mph at the Philadelphia International Airport, 45 mph at both the Reading Regional Airport and Northeast Philadelphia Airport, 44 mph at the Lehigh Valley International Airport and 43 mph at the Wilkes-Barre/Scranton Airport.

**PAZ055**

### **Monroe**

<b>22</b>	<b>0000EST 0900EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
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**PAZ054**

### **Carbon**

<b>22</b>	<b>0100EST 0900EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Snow</b>
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A late winter storm brought heavy snow to the higher terrain of Monroe County. Accumulations were lighter elsewhere across the Poconos and little if any snow accumulated in the valleys. Precipitation started as snow and sleet over the higher terrain of the Poconos during the late afternoon of the 21st. Accumulations were an inch or less before the precipitation changed to rain. As the low pressure system moved east of the region, it pulled down colder air and the rain changed back to snow around midnight over the higher terrain of Monroe County and fell heavy at times the rest of the overnight into the morning of the 22nd. Enough warm air remained in the valleys for the precipitation to fall mainly as rain until near the end. Accumulations included 7 inches in Tobyhanna and Pocono Summit, 6 inches in Long Pond and 5 inches in White Haven (Luzerne County). There were no accumulations reported in either Lehighon or East Stroudsburg. Since the heavy snow fell late on a Sunday night/Monday morning, few serious accidents were reported. The low pressure system moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

## **Berks County**

<b>Countywide</b>	<b>21 1400EST 22 0000EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
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## **Lehigh County**

<b>Countywide</b>	<b>21 1500EST 22 0300EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
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Heavy rain affected the Schuylkill and Lehigh Valleys from the late afternoon of the 21st into the early morning of the 22nd. Some poor drainage and roadway flooding was reported, but no serious flooding or damage was reported. Farther east and south in Pennsylvania, heavier rain did cause some creek and stream flooding. Storm totals included 1.65 inches in Morgantown, 1.58 inches in Hamburg, 1.44 inches at both the Lehigh Valley International Airport and the Blue Marsh Dam (Berks County) and 1.38 inches in Reading. The low pressure system responsible for the heavy rain moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

## **Chester County**

<b>Countywide</b>	<b>21 2200EST 22 0800EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
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## **Montgomery County**

<b>Countywide</b>	<b>21 2200EST 22 0900EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
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## **Delaware County**

<b>Countywide</b>	<b>21 2300EST 22 0300EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
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## **Philadelphia County**

<b>Countywide</b>	<b>21 2300EST 22 0800EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
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## **Bucks County**

<b>Countywide</b>	<b>22 0100EST 1200EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
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# Storm Data and Unusual Weather Phenomena

March 1999

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

## PENNSYLVANIA, East

### **Northampton County**

<b>Countywide</b>	<b>22</b>	<b>0200EST 0400EST</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
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Heavy rain affected all of the Lehigh Valley and Southeast Pennsylvania. This caused flooding along some of the major creeks and streams in eastern parts of the Lehigh Valley and throughout Southeast Pennsylvania. In addition the heavy rain caused the usual highway and poor drainage flooding throughout the region. The worst reported flooding was in Montgomery County. Flooding along the East Branch of the Perkiomen Creek caused road closures in both Salford and Franconia Townships. Farther downstream flooding along the Perkiomen Creek caused closures of Pennsylvania State Routes 29 and 73 in Perkiomen Township. Flooding along the Skippack Creek also caused road closures along Pennsylvania State Route 73 in Skippack Township. Heavy rain began during the late afternoon of the 21st and continued into the early morning of the 22nd. Storm totals exceeded two inches in many locations and this was too much rain to keep streams within bankfull. The heavy wet snow from the previous weekend left the ground in nearly saturated condition. No serious injury or property damage were reported.

In Chester County, the East Branch of the Brandywine Creek at Downingtown reached its 7 foot flood stage at 2 a.m. EST on the 22nd, crested at 7.48 feet at 5 a.m. EST and was back within bankfull at 8 a.m. EST on the 22nd. The Valley Creek at Valley Forge crested just 0.03 feet below its estimated flood stage of 7 feet at 11 p.m. EST on the 21st.

In Delaware County, the Crum Creek at Newtown Square crested above flood stage at 5.82 feet at 1 a.m. EST on the 22nd. Its estimated flood stage is 5.5 feet. The Chester Creek near Chester crested at 7.68 feet at 2 a.m. EST on the 22nd. Its flood stage though is 8 feet.

In Philadelphia, the Frankford Creek at Castor Avenue crested at 5.33 feet at 1115 p.m. EST on the 21st. Its flood stage is estimated at 5 feet. The Wissahickon Creek within Fairmount Park (just before its confluence with the Schuylkill River) crested at 5.66 feet at 630 a.m. EST. Its flood stage is estimated at 5 feet.

In Montgomery County, the Perkiomen Creek at Schwenksville crested at 8.33 feet at 630 a.m. EST on the 22nd. Its flood stage is estimated at 7 feet. The Manatawny Creek at Pottstown crested at 4.54 feet at 815 a.m. EST on the 22nd. Its flood stage is estimated at 4.5 feet.

In Bucks County, the Neshaminy Creek at Langhorne crested at 10.38 feet at 930 a.m. EST on the 22nd. It was above its 9 foot flood stage from 3 a.m. through noon EST on the 22nd.

Storm totals included 2.83 inches in Wynnewood (Montgomery County), 2.55 inches in New Hope (Bucks County), 2.50 inches in Norristown (Montgomery County), 2.40 inches in Easton (Northampton County) and Sellersville (Bucks County), 2.34 inches at the Northeast Philadelphia Airport, 2.33 inches in West Chester (Chester County), 2.30 inches in Neshaminy Falls (Bucks County), 2.22 inches at the Willow Grove NAS (Montgomery County), 2.20 inches in Crum Creek (Delaware County), 2.09 inches in Perkasio (Bucks County), 2.02 inches at the Philadelphia International Airport, 2.00 inches in Green Lane (Montgomery County), 1.93 inches in Phoenixville (Chester County) and 1.77 inches in Glenmoore (Chester County). The low pressure system responsible for the heavy rain moved northeast from Atlanta, Georgia the morning of the 21st to Albany, New York the morning of the 22nd.

## PENNSYLVANIA, Northeast

**PAZ038>039**

### **Bradford - Susquehanna**

<b>06</b>	<b>0600EST</b>		<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>07</b>	<b>0900EST</b>				

A storm system moved out of the Ohio Valley early in the morning on the 6th and crossed the Delmarva region that evening. The system then redeveloped near Long Island early on the 7th and moved slowly through central New England thereafter. Two distinct bouts of snowfall affected portions of northern Pennsylvania during this time frame. The initial shot of snow fell primarily during the day on Saturday the 6th. After a lull that evening, snowfall picked up again overnight and continued into the morning hours of the 7th before tapering off.

On the 6th, snow first developed just prior to daybreak and quickly spread eastward. Late in the afternoon, the first shot of snow moved off to the east. Accumulations over the northern tier of Pennsylvania generally ranged from 2 to 4 inches.

During the overnight hours from the 6th into the 7th, the brief respite from snowfall ended as heavier precipitation once again formed over the region. By the time the snow wound down by mid-morning on the 7th, an additional 3 to 5 inches had fallen. Storm totals from the two day event were in the 5 to 8 inch range over most of Bradford and Susquehanna counties with 8 inches reported at Thompson, 7 inches at Montrose, and 5 inches at Sayre.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## PENNSYLVANIA, Northeast

**PAZ040-044-047>048**      **Wayne - Lackawanna - Luzerne - Pike**

<b>14</b>	<b>1800EST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
<b>15</b>	<b>0700EST</b>								

A strengthening storm system moved from the southern Appalachians northeastward to off the coast of Delaware during the evening of the 14th; then skirted out to sea early on the 15th. This system brought a period of heavy snow to sections of northeastern Pennsylvania from the evening of the 14th through the early morning hours of the 15th.

Snowfall intensities approached two inches per hour at times over portions of the Poconos overnight from the 14th into the 15th. By the time the snow tapered off after daybreak, storm total accumulations of 7 to 10 inches were common over the region. Some specific amounts included 10 inches at Ledgeale in Wayne county, 9 inches at Hawley in Wayne county, and 8 inches at Bushkill in Pike county.

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

<b>21</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
<b>22</b>	<b>1200EST</b>								

A low pressure system developed near the Virginia Capes on the evening of the 21st, then intensified rapidly as it moved slowly northward up the Atlantic seaboard and eventually on to the Gulf of Maine by the morning of the 23rd. Rain or a mixed bag of rain and wet snow began across northeastern Pennsylvania during the afternoon of the 21st. However, precipitation changed to all snow by early evening over the northern tier, then towards daybreak in the Poconos as colder air wrapped into the area from the northwest. Heavy wet snow pelted much of northeastern Pennsylvania into the daylight hours on the 22nd. Snow gradually wound down and ended over the region by midday.

The heavy wet nature of the snowfall created many hazards across the region by the early morning hours on the 22nd. Many trees and power lines weighed down heavily or collapsed altogether. Many area roadways were closed early on the 22nd as crews scrambled to clear both heavy snow and in some cases fallen and/or live wires. Once the snow ended over all areas by early afternoon on the 22nd, accumulations generally ranged from 8 to 12 inches across most of the northern tier counties to about 6 inches in the Wilkes-Barre/Scranton area and adjacent portions of the Poconos. Some of the more impressive totals were as follows: Litchfield in Bradford county - 12 inches, Dimock, Quaker Lake, and Thompson in Susquehanna county - 8 inches, and Pleasant Mount in Wayne county - also 8 inches.

## PENNSYLVANIA, Northwest

**PAZ002**      **Southern Erie**

<b>01</b>	<b>0100EST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
	<b>2300EST</b>								

Heavy lake effect snow accumulated an average of six to eight inches.

**PAZ002>003**      **Southern Erie - Crawford**

<b>03</b>	<b>1900EST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
<b>04</b>	<b>0700EST</b>								

Heavy snow accumulated four to seven inches across inland Erie County and northern Crawford County.

**PAZ001>003**      **Northern Erie - Southern Erie - Crawford**

<b>05</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>	<b>60K</b>			<b>Heavy Snow</b>
<b>06</b>	<b>1900EST</b>								

Snow, mixed with some rain at times, accumulated eight to twelve inches. North northeast winds caused considerable blowing and drifting of snow which resulted in numerous traffic accidents.

**PAZ001**      **Northern Erie**

<b>17</b>	<b>1640EST</b>			<b>0</b>	<b>0</b>	<b>10K</b>			<b>High Wind</b>
<b>18</b>	<b>1500EST</b>								

Trees and power lines were downed.

## PENNSYLVANIA, West

**PAZ030-032**      **Westmoreland - Fayette**

<b>01</b>	<b>0600EST</b>			<b>0</b>	<b>0</b>				<b>Heavy Snow</b>
<b>02</b>	<b>0300EST</b>								

Strong northwesterly winds behind a deepening area of low pressure brought orographically enhanced heavy snow to the western ridges of the Laurel Highlands. Snowfall totals across western sections of Fayette and Westmoreland counties generally ranged from 1 to 3 inches, while snowfall on the highest ridges over extreme eastern sections of the counties accumulated up to 6 inches.

**PAZ009-015>016-023-030-032**      **Forest - Clarion - Jefferson - Indiana - Westmoreland - Fayette**

<b>03</b>	<b>1900EST</b>			<b>0</b>	<b>0</b>	<b>50K</b>			<b>Winter Storm</b>
<b>04</b>	<b>1100EST</b>								

A deepening area of low pressure moved across northern West Virginia and into central Pennsylvania, spreading snowfall totals of

# Storm Data and Unusual Weather Phenomena

March 1999

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

## PENNSYLVANIA, West

between 2 and 5 inches across much of western Pennsylvania, with higher snowfall totals reported across the western slopes of the Laurel Highlands. Champion, in the highlands of eastern Westmoreland County, reported a total of 16 inches from the storm. Elsewhere in Westmoreland County, 10 inches fell in Greensburg, 9 inches in New Stanton and 8 inches in both Derry and Rector. In Fayette County, 12 inches of snow fell in Chalk Hill, 9.5 inches in Farmington, and 8 inches in both Everson and Hopwood. Snowfall totals were generally between 6 and 8 inches across the remainder of Clarion, Forest, Indiana and Jefferson Counties.

To compound problems, high winds gusting to over 60 MPH during the early morning hours of the 4th downed numerous trees and disrupted power across portions of Fayette, Indiana and Westmoreland Counties.

**PAZ007>009-015>016**

### **Mercer - Venango - Forest - Clarion - Jefferson**

<b>06</b>	<b>0400EST</b>		<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
<b>07</b>	<b>0400EST</b>				

A winter storm spread snowfall amounts as high as 8 inches over portions of west central Pennsylvania. In Forest County, snowfall reports included 8 inches in West Hickory, 6 to 7 inches in Marienville and 5 to 6 inches in Tionesta. In Venango County, spotters in Oil City reported 8 inches of snow and 5 to 7 inches in Franklin. In the Sigel area of Jefferson County, 7 to 8 inches of snow were reported, with 5 to 7 inches measured across Clarion and Mercer Counties.

**PAZ020>021-029>030**

### **Beaver - Allegheny - Washington - Westmoreland**

<b>09</b>	<b>0500EST</b>		<b>0</b>	<b>2</b>	<b>Heavy Snow</b>
	<b>2100EST</b>				

A winter storm moved quickly across the Ohio Valley, producing snowfall totals of between 4 and 10 inches across southwest Pennsylvania. Some snowfall amounts included 6 inches in Moon Township, Allegheny County; 6 inches in the city of Washington, Washington County; 4 to 7 inches across Beaver County, and around 10 inches of new snow on the higher ridges of eastern Westmoreland County. The snowfall and icy roads were responsible for numerous accidents on roadways across southwest Pennsylvania. Most accidents were of the fender-bender kind, but one collision in eastern Washington County sent two people to the hospital with minor injuries.

**PAZ031>032**

### **Greene - Fayette**

<b>14</b>	<b>0700EST</b>		<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>2100EST</b>				

The extreme southwest corner of Pennsylvania received a fresh blanket of snow as a late-winter storm moved across the area. Some snowfall totals from Fayette County included 13 inches in Farmington and 10 inches in Chalk Hill. Across Greene County, Mount Morris reported 8 inches and Waynesburg 6 inches.

## PUERTO RICO

**San Juan**

<b>San Juan</b>	<b>23</b>	<b>1015AST</b>		<b>0</b>	<b>0</b>	<b>Waterspout</b>
		<b>1030AST</b>				

Federal Flight Service indicated a waterspout just north of Condado area in San Juan.

**San Juan**

<b>San Juan</b>	<b>21</b>	<b>1330AST</b>		<b>0</b>	<b>0</b>	<b>Urban/Sml Stream Fld</b>
		<b>1530AST</b>				

A Weather Broadcaster in his off duty hours indicated street flooding in El Senorial sector in San Juan.

**Arecibo**

<b>Arecibo</b>	<b>11</b>	<b>0600AST</b>		<b>2</b>	<b>0</b>	<b>Rip Currents</b>
		<b>1100AST</b>				

Two men drowned on the Cueva del Indio Beach in Arecibo while fishing. They were swept out to sea by a strong tide surge. M27IW, M40IW

## RHODE ISLAND

**RIZ001>007**

### **Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport**

<b>04</b>	<b>0100EST</b>		<b>0</b>	<b>0</b>	<b>Strong Winds</b>
	<b>1400EST</b>				

Low pressure passed west of New England and brought a period of strong south winds to Rhode Island, gusting over 50 mph at several locations. Some of the higher gusts reported include 51 mph at T.F. Green Airport in Warwick and on Block Island, 50 mph in Providence and Middletown, and 47 mph in Tiverton. There were a few reports of downed tree limbs and power lines.

**RIZ001>007**

### **Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport**

<b>15</b>	<b>0000EST</b>		<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>1400EST</b>				

A strong low pressure system, centered off the coast of Virginia during the early morning hours, moved to a position southeast of Nantucket by early afternoon. This system brought a late season snowstorm to all of Rhode Island, with totals of 7 to 12 inches.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## RHODE ISLAND

At the height of the storm, the snow fell at the rate of one to two inches per hour.

Some of the higher totals reported include 12 inches in West Warwick, 11 inches in Cranston, Charlestown, and Middletown, 10 inches in Providence, Warwick, Burrillville, North Smithfield, Ashaway, and Clayville, 9 inches in Hope Valley, and 6 inches in Portsmouth. The storm produced poor traveling conditions and shut down many schools and businesses across the state.

### **RIZ002-004**

#### **Southeast Providence - Eastern Kent**

**18 1311EST 0 0 Record Warmth**

The high temperature of 71 degrees at T.F. Green State Airport in West Warwick broke the previous record high for the date of 69 degrees, which was set in 1945.

### **RIZ001>007**

#### **Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport**

**22 0000EST 0 0 Strong Winds**  
**1800EST**

### **RIZ007**

#### **Newport**

**22 0700EST 0 0 High Wind (G56)**

Tiverton

An intensifying low pressure system moved up the Hudson Valley, and brought strong southerly winds to Rhode Island. The highest gust reported was 64 mph in Tiverton. Elsewhere, winds gusted to 55 mph in Providence, 54 mph in Middletown, 50 mph in Newport, and 49 mph in Coventry and Smithfield.

The strong winds knocked down tree limbs and power lines, causing scattered power outages which affected 7,000 customers in East Providence, Providence, and Cranston. Also in Cranston, a falling tree limb struck a house which broke a second-floor window.

## SOUTH CAROLINA, Central

### **SCZ015**

#### **Lancaster**

**09 0530EST 0 0 0 0 Ice Storm**  
**0830EST**

A winter storm system produced 1/2 inch of ice over most of Lancaster county taking down some powerlines and tree branches. About a 1/8 to 1/4 inch of ice covered trees, overpasses, and bridges in Chesterfield, northern Kershaw and norther Fairfield counties.

### **Aiken County**

#### **Aiken**

**14 1645EST 0 0 0 0 Hail (0.75)**  
County EPD reported 3/4 inch hail in Aiken.

### **Richland County**

#### **Columbia**

**21 0300EST 0 0 0 0 Hail (1.75)**  
Sheriff reported golfball size hail in Northeast Columbia.

### **Aiken County**

#### **15 ESE Aiken**

**21 1255EST 0 0 0 0 Hail (0.75)**  
Spotter reported dime size hail.

### **Barnwell County**

#### **15 SW Barnwell**

**25 1400EST 0 0 0 0 Hail (0.75)**  
Law Enforcement at the Savannah River Site reported 3/4 inch hail.

### **Barnwell County**

#### **Barnwell**

**25 1433EST 0 0 0 0 Thunderstorm Wind (G50)**  
Sheriff reported trees down.

### **Bamberg County**

#### **Denmark**

**25 1500EST 0 0 0 0 Hail (0.75)**  
City Hall reported 3/4 inch hail.

### **Orangeburg County**

#### **Holly Hill**

**25 1540EST 0 0 0 0 Hail (0.75)**  
Police reported 3/4 inch hail.

### **Orangeburg County**

#### **Eutawville**

**25 1550EST 0 0 0 0 Hail (1.75)**  
County EOC reported golfball size hail.

## SOUTH CAROLINA, North Coastal

### **SCZ032**

#### **Florence**

**03 1415EST 0 0 50K High Wind (G55)**  
**1445EST**

A strong cold front crossed the area and gradient wind gusts downed power lines and ripped the roof from a mobile home in

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>SOUTH CAROLINA, North Coastal</u></b>									
<b>SCZ024</b>	Scranton.								
	<b>Dillon</b>								
	<b>03</b>	<b>1435EST</b>			<b>0</b>	<b>0</b>	<b>100K</b>		<b>High Wind (G65)</b>
		<b>1450EST</b>							
	As a strong cold front crossed the area, gusty gradient winds damaged the Dillon Garden Apartments complex and overturned an unsecured mobile home near Litle Rock.								
<b>Marlboro County</b>									
	<b>Bennettsville</b>								
	<b>21</b>	<b>0630EST</b>			<b>0</b>	<b>0</b>	<b>30K</b>		<b>Lightning</b>
	A morning thunderstorm lightning strike caused a fire to a residence. No injuries.								
<b>Williamsburg County</b>									
	<b>Kingstree</b>								
	<b>21</b>	<b>0400EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
		<b>0410EST</b>							
<b>Horry County</b>									
	<b>Myrtle Beach to North Myrtle Beach</b>								
	<b>21</b>	<b>0345EST</b>			<b>0</b>	<b>2</b>	<b>175K</b>		<b>Thunderstorm Wind (G75)</b>
		<b>0355EST</b>							
	Wind from a severe thunderstorm blew out windows at Wyndham Myrtle Beach Resort and overturned 4 trailers in a Briarcliffe RV park, injuring two people. At a car lot, 29 cars had windows blown out. Hail was marble size. Power outages extended from the Briarcliffe area to North Myrtle Beach.								
<b>Florence County</b>									
	<b>Olanta to Effingham</b>								
	<b>21</b>	<b>1700EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
		<b>1730EST</b>							
<b>Marion County</b>									
	<b>Rains</b>								
	<b>21</b>	<b>1735EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
		<b>1740EST</b>							
<b>Horry County</b>									
	<b>5 S Loris</b>								
	<b>21</b>	<b>1807EST</b>			<b>0</b>	<b>0</b>	<b>20K</b>		<b>Thunderstorm Wind (G60)</b>
		<b>1812EST</b>							
	A thunderstorm wind gust overturned a concession trailer at the Horry County Fairgrounds.								
<b><u>SOUTH CAROLINA, Northwest</u></b>									
<b>Cherokee County</b>									
	<b>2 NW Gaffney</b>								
	<b>21</b>	<b>0325EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
	A severe thunderstorm produced dime size hail.								
<b>SCZ001&gt;007</b>									
	<b>Northern Oconee - Northern Pickens - Northern Greenville - Southern Oconee - Southern Pickens - Southern Greenville - Spartanburg</b>								
	<b>09</b>	<b>0400EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
		<b>0800EST</b>							
	Low pressure moving north through the Tennessee Valley brought a mix of heavy sleet, snow and freezing rain to parts of the Upstate along and north of Interstate 85 early in the morning. Heavy sleet and snow accumulated between 1 and 3 inches, with patches of freezing rain mixed in as well.								
<b>SCZ003</b>									
	<b>Northern Greenville</b>								
	<b>26</b>	<b>0600EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
		<b>1700EST</b>							
	A deep cold core upper low moved slowly east across the Southern Appalachians during the day, bringing heavy wet snow to portions of the mountains of South Carolina. Thunder accompanied the snow as well, as precipitation became convective from time to time. Snowfall ranged from 3 to as much as 5.5 inches, reported on Caesar's Head.								
<b>SCZ001&gt;002</b>									
	<b>Northern Oconee - Northern Pickens</b>								
	<b>26</b>	<b>0800EST</b>			<b>0</b>	<b>0</b>			<b>Snow</b>
		<b>1500EST</b>							
	A deep cold core upper low moving slowly east across the Southern Appalachians brought light snow, accompanied by heavy bursts of sleet and hail as thunderstorms developed, during the day. Accumulations ranged between 1 and 3 inches.								
<b><u>SOUTH CAROLINA, South Coastal</u></b>									
<b>Colleton County</b>									
	<b>Lodge</b>								
	<b>25</b>	<b>1515EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.88)</b>
	Hail covered the ground briefly.								
<b>Colleton County</b>									
	<b>1 E Williams</b>								
	<b>25</b>	<b>1530EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>

# Storm Data and Unusual Weather Phenomena

March 1999

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

## SOUTH CAROLINA, South Coastal

### **Dorchester County**

**1 NE Harleyville**    25    **1600EST**    0    0    **Hail (0.75)**

### **Berkeley County**

**3 N Goose Creek**    25    **1630EST**    0    0    **Thunderstorm Wind (G52)**  
Large tree limbs down.

## SOUTH DAKOTA, Central and North

**SDZ005>008-010>011-018>023**    **Mcpherson - Brown - Marshall - Roberts - Edmunds - Day - Spink - Clark - Codington - Grant - Hamlin - Deuel**

17    **0700CST**    0    0    **High Wind (G55)**  
**1300CST**

High winds of 30 to 50 mph gusting to over 60 mph occurred over much of northeast South Dakota through the morning and into the early afternoon hours. Several homes and businesses sustained some roof damage. In Aberdeen, the high winds tore a large piece of roof off of a bowling alley and also tore a piece of roof off an appliance store. The wind damaged some power lines and connections in Aberdeen and also damaged some traffic lights. In Aberdeen, the power was out for 2500 customers for a few hours in the morning. There was also minor to severe damage to two old farm buildings west of Aberdeen. One barn lost 75 percent of its roof and was unrepairable. The second barn was pushed six inches off of its foundation suffering minor structural damage. The Edmunds County Highway Department Shop under construction east of Ipswich suffered a lot of damage as many rafters came down and the sidewall frame shifted. Finally, many small to medium-sized branches were brought down by the high winds. Some wind gusts across the area included, 58 mph in Aberdeen and 63 mph in Watertown.

**SDZ003>004-009-015>016-033>036-045-048**    **Corson - Campbell - Walworth - Dewey - Potter - Stanley - Sully - Hughes - Hyde - Jones - Lyman**

26    **0500CST**    0    0    **Strong Wind**  
**2000CST**

Strong south winds of 30 to 45 mph with gusts over 50 mph blew from the morning into the evening hours across central and north central South Dakota. As a result, areas of blowing dust reduced visibilities at times to near zero and blocked out the sun at times. Some people who lived in the area in the 30's said this day reminded them of that era. Five miles west of Selby on Highway 12, a four vehicle pileup resulted from low visibility in blowing dust. All vehicles received moderate to extensive damage with only minor injuries to the occupants. An old hotel building in Selby had part of the second and third story front wall blown off. In Fort Pierre, winds to 51 mph reduced traffic to one lane for over half an hour after a light pole blew over and blocked three lanes of traffic. The strong winds also brought down some tree branches across the area.

## SOUTH DAKOTA, Southeast

**SDZ039>040-054>056-060>062-065>071**    **Kingsbury - Brookings - Miner - Lake - Moody - Hanson - Mccook - Minnehaha - Hutchinson - Turner - Lincoln - Bon Homme - Yankton - Clay - Union**

08    **0100CST**    0    0    **Winter Storm**  
**1900CST**

Snowfall of 4 to 9 inches combined with winds frequently gusting above 30 mph to make travel and commerce difficult. Visibilities were frequently reduced to a half mile or less, and drifting snow added to the travel difficulty. The winter storm forced some schools and businesses to close. Light freezing rain or freezing drizzle fell in some areas between two periods of snow accumulation.

**SDZ038>040-054>056**    **Beadle - Kingsbury - Brookings - Miner - Lake - Moody**

17    **0900CST**    0    0    **High Wind (G52)**  
**1400CST**

Sustained winds of 35 to 45 mph with gusts around 60 mph persisted from late morning into early afternoon.

## SOUTH DAKOTA, West

**SDZ013-025>026-028-031**    **Meade Co. Plains - Northern Foot Hills - Central Foot Hills - Central Black Hills - Pennington Plains**

05    **0900MST**    0    0    **Heavy Snow**  
**2200MST**

A strong area of low pressure centered just south of the Black Hills produced heavy snowfall along the foothills. The areas in west Rapid City and the surrounding foothills received the heaviest snow amounts with 10 to 15 inches of snow reported. Most of the region reported between 6 to 12 inches of snowfall. Nearly 200 accidents occurred in the Rapid City area...but no significant injuries were reported.

**SDZ001-012>013-024>026-028>032**    **Harding - Butte - Meade Co. Plains - Northern Black Hills - Northern Foot Hills - Central Foot Hills - Central Black Hills - Southern Black Hills - Custer Plains - Pennington Plains - Haakon**

10    **0000MST**    0    3    **Winter Storm**  
**2300MST**

# Storm Data and Unusual Weather Phenomena

March 1999

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

## SOUTH DAKOTA, West

A surface low pressure system just south of the Black Hills combined with an upper level short wave over southwestern South Dakota created some locally heavy snowfall across the region. Generally, amounts ranged from 6 to 10 inches. The highest amounts were in the foothills near Sturgis, SD where up to 18 inches were reported.

**SDZ001>002-012>014-025>026-030>032-043-049**  
**Harding - Perkins - Butte - Meade Co. Plains - Ziebach - Northern Foot Hills - Central Foot Hills - Custer Plains - Pennington Plains - Haakon - Jackson - Tripp**

16	1500MST 2000MST			0	0				High Wind (G63)
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A surface low pressure system moving along the North and South Dakota border brought a strong cold front across the region. Winds briefly picked up behind the front with gusts to 72 mph. Two three hundred pound water tanks were blown across Highway 85 near Belle Fourche, SD, but no major damage was reported with this frontal passage.

## TENNESSEE, Central

### **Davidson County**

6.4 NW Nashville Metro Arpt	02	1700CST 1701CST			0	0	50K		Thunderstorm Wind
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Straight line thunderstorm winds hit east Nashville. Trees were blown down, and 30 homes were damaged.

## TENNESSEE, East

**TNZ018-040>041-045>047-070-073>074**  
**Johnson - Northwest Cocke - Cocke/Smoky Mountains - Unicoi - Northwest Carter - Southeast Carter - Jefferson - North Sevier - Sevier/Smoky Mountains**

03	0800EST 2000EST			0	0				Winter Storm
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A late season snowfall brought varying amounts of snow to mainly mountain locations. Valley locations received no significant accumulations. 12-14 inches were reported at Newfound Gap (5000 ft.) in Sevier Co. with only 2 inches at the Great Smoky Mountains National Park HQ at 2000 ft. Other snowfall totals were: Johnson Co.-4 to 8 inches with near 10 inches in Shady Valley; Carter Co.-2 to 3 inches in Elizabethton with higher amounts possible on Roan Mtn.; Unicoi Co.-4 to 6 inches in lower elevations, 7 to 8 inches in higher elevations; Cocke Co.-up to 9 inches at Macks Patch; Jefferson Co.-4 inches at Chestnut Hill (elev. 2000 ft.) near the base of English Mtn.

**TNZ012>018-035>047-067>074-081>087-098>102**  
**Scott - Campbell - Claiborne - Hancock - Hawkins - Sullivan - Johnson - Morgan - Anderson - Union - Grainger - Hamblen - Northwest Cocke - Cocke/Smoky Mountains - Northwest Greene - Southeast Greene - Washington - Unicoi - Northwest Carter - Southeast Carter - Roane - Loudon - Knox - Jefferson - Northwest Blount - Blount/Smoky Mountains - North Sevier - Sevier/Smoky Mountains - Sequatchie - Bledsoe - Rhea - Meigs - McMinn - Northwest Monroe - Southeast Monroe - Marion - Hamilton - Bradley - West Polk - East Polk**

13 14	0400EST 2300EST			0	0				Winter Storm
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A very wet weather system brought heavy amounts of rain to East Tennessee. Heavy rain began early Saturday morning, changed to heavy snow in some places during the day Saturday, back to rain Saturday night, then finally to snow Sunday night. There were also isolated reports of freezing rain. The snow was confined to northeast Tennessee, generally northeast of Knoxville. Rainfall amounts across much of East Tennessee was 1-2 inches. Snowfall amounts in northeast Tennessee averaged 1-3 inches.

**TNZ014>016-038>043-070-073>074**  
**Claiborne - Hancock - Hawkins - Grainger - Hamblen - Northwest Cocke - Cocke/Smoky Mountains - Northwest Greene - Southeast Greene - Jefferson - North Sevier - Sevier/Smoky Mountains**

26	0400EST 1500EST			0	0				Winter Storm
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A very early spring snowstorm brought a wide range of snowfall amounts to the central valley counties of East Tennessee. Amounts ranged from 1-3 inches in most locations, to 4-6 inches across Sevier, Cocke and Hamblen counties, with a few isolated reports of 8-12 inches in the foothills and mountains in Sevier County.

## TENNESSEE, West

### **Shelby County**

Memphis	02	1355CST 1400CST			0	0	0.01K		Hail (0.75)
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### **Fayette County**

Piperton	02	1530CST 1535CST			0	0	0.01K		Hail (0.75)
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### **Crockett County**

Countywide	02	1550CST 1555CST			0	0	5K		Thunderstorm Wind
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Several trees were knocked down across the county.

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>TENNESSEE, West</u></b>									
<b>Fayette County</b>									
Somerville	02	1605CST 1610CST			0	0	0.01K		Hail (0.75)
<b>Weakley County</b>									
Palmerston	02	1815CST 1820CST			0	0	25K		Thunderstorm Wind
A house lost part of its roof. Some small buildings were destroyed. Several trees were knocked down.									
<b>Henry County</b>									
6 NW Paris	02	1846CST 1855CST			0	0	10K		Thunderstorm Wind
Several power lines were knocked down.									
<b>Fayette County</b>									
Moscow	05	2321CST 2330CST			0	0	1K		Thunderstorm Wind
One large tree was blown down.									
<b><u>TEXAS, Central</u></b>									
<b>Schleicher County</b>									
Eldorado	12	0520CST			0	0			Hail (0.75)
<b>Sutton County</b>									
2 S Sonora	12	0545CST			0	0			Hail (1.75)
<b>Tom Green County</b>									
Christoval	12	0545CST			0	0			Hail (1.00)
<b>Nolan County</b>									
Nolan	12	0555CST			0	0			Hail (0.75)
<b>Tom Green County</b>									
San Angelo	12	0606CST			0	0			Hail (1.00)
<b>Tom Green County</b>									
2 NE San Angelo	12	0615CST			0	0			Hail (0.75)
<b>Taylor County</b>									
Bradshaw	12	0700CST			0	0			Hail (1.00)
<b>Runnels County</b>									
Wingate	12	0705CST			0	0			Hail (1.75)
<b>Haskell County</b>									
2 N Stamford	12	0710CST			0	0			Hail (0.75)
<b>Jones County</b>									
Hodges	12	0715CST			0	0			Hail (0.75)
<b>Taylor County</b>									
10 SW Abilene	12	0728CST			0	0			Hail (0.75)
<b>Menard County</b>									
8 W Menard	12	0730CST			0	0			Hail (1.75)
<b>Taylor County</b>									
Abilene	12	0735CST			0	0			Hail (1.00)
<b>Taylor County</b>									
Abilene	12	0740CST			0	0			Hail (1.75)
<b>Callahan County</b>									
Baird	12	0755CST			0	0			Hail (1.00)
<b>Callahan County</b>									
Baird	12	0805CST			0	0			Hail (0.88)
<b>Menard County</b>									
Ft Mckavett	12	0820CST			0	0			Flash Flood
Flood waters covered several roadways around Fort McKavett.									
<b>San Saba County</b>									
Cherokee	12	1055CST			0	0			Hail (0.75)
<b>San Saba County</b>									
7 E San Saba	12	1120CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>TEXAS, Central</u></b>									
<b>Mcculloch County</b>									
Doole	12	1340CST			0	0			Hail (0.75)
<b>Mcculloch County</b>									
Brady	12	1355CST			0	0			Hail (0.75)
<b>Mcculloch County</b>									
Brady	12	1400CST			0	0			Hail (1.75)
<b>Mcculloch County</b>									
13 SE Brady to 15 SE Brady	12	1415CST 1425CST	2	75	0	0	100K		Tornado (F2)
A tornado touched down southeast of Brady, heavily damaging a house and a barn.									
<b>San Saba County</b>									
15 SSW Richland Spgs to 15 SSE Richland Spgs	12	1440CST 1500CST	8	100	0	0	300K		Tornado (F2)
The same thunderstorm that spawned a brief touchdown in McCulloch County produced a second tornado south of Richland Springs. A hunting cabin, two trailer homes, 2 barns, and 3 vehicles were destroyed.									
<b>San Saba County</b>									
8 S San Saba	12	1525CST			0	0			Hail (1.75)
Several rounds of thunderstorms developed across West Central Texas on the morning and afternoon of the 12th. The first round of storms brought dime to golf ball size hail to parts of the Northern Edwards Plateau, Concho Valley, and the Heartland. A second round of storms that developed during the early afternoon produced a supercell across the southern Heartland. This storm dropped a tornado south of Brady in Southern McCulloch County, as well as hail up the size of golf balls in the town of Brady itself. As the supercell moved into San Saba County, a second tornado would touch down. This tornado had an 8 mile long path and was 100 yards wide, passing 8 miles south of Richland Springs. Although each tornado would produce damage, no injuries or deaths were reported.									
<b>Crockett County</b>									
Ozona	27	1945CST 2200CST			0	0			Flash Flood
Several low water crossings in and near Ozona became flooded and impassable									
<b><u>TEXAS, Central Southeast</u></b>									
<b>Grimes County</b>									
Carlos	08	1425CST			0	0	15K		Hail (1.75)
<b>Trinity County</b>									
Trinity	12	0155CST			0	0	7K		Hail (0.75)
<b>Houston County</b>									
Weches	12	1105CST			0	0	10K		Hail (1.00)
<b>Burleson County</b>									
Chriesman	12	2140CST			0	0	7K		Hail (0.75)
<b>Burleson County</b>									
Caldwell	12	2200CST			0	0	7K		Hail (0.75)
<b>Brazos County</b>									
Bryan	12	2227CST			0	0	10K		Hail (1.00)
<b>Walker County</b>									
20 W Huntsville	12	2310CST			0	0	7K		Hail (0.75)
Hail report along Hwy. 30 near Grimes Co. line									
<b>Trinity County</b>									
Sebastopol	12	2355CST			0	0	50K		Thunderstorm Wind
Trees down, power poles snapped, barn/porch damage in center of Sebastopol									
<b>Trinity County</b>									
Sebastopol	13	0100CST			0	0	15K		Hail (1.75)
<b>Montgomery County</b>									
Magnolia	13	0140CST			0	0	15K		Thunderstorm Wind
Trees and power lines down									
<b>Harris County</b>									
Tomball	13	0145CST			0	0	15K		Thunderstorm Wind
Trees down									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>TEXAS, Central Southeast</u></b>									
<b>Polk County</b>									
Countywide	13	0225CST			0	0			Flash Flood
Several roads flooded...TX Hwy 146, and interchange of US 59 and FM 393									
<b>Harris County</b>									
Houston	13	0230CST			0	0	25K		Thunderstorm Wind
Roof damage along Rankin Rd.; reports of 50-60 mph winds throughout northern part of city									
<b>Polk County</b>									
Countywide	13	0240CST 0535CST			0	0	100K		Flash Flood
Several county roads washed out east of Livingston									
<b>Liberty County</b>									
Dayton	13	0250CST			0	0	100K		Thunderstorm Wind
Several large diameter trees down; trees fell on trailer home in Dayton Oaks subdivision									
<b>Liberty County</b>									
Ames	13	0340CST			0	0	15K		Thunderstorm Wind
Trees down									
<b>Harris County</b>									
Cypress	19	0425CST			0	0	15K		Hail (1.00)
<b>Harris County</b>									
Cypress	19	0425CST	0.3	25	0	0	25K		Tornado (F0)
Tornado in Cypress. Roof damage, trees uprooted and fences blown down									
<b>Harris County</b>									
Southwest Portion	19	0835CST 1215CST			0	0	300K		Flash Flood
Widespread flooding in southwest Houston. Numerous streets in the Alief and Bellaire areas flooded. Several accessways to US 59, Loop 610, and US 90 as well as the intersection of I-10 and Beltway 8 flooded and impassable. Several cars flooded out. Radar estimates of up to 6.5 inches of rain near intersection of Bellaire Blvd. and Beltway 8.									
<b>Houston County</b>									
Grapeland	24	2324CST			0	0	10K		Hail (1.00)
<b>Houston County</b>									
9 W Crockett	24	2354CST			0	0	15K		Hail (1.75)
Golfball hail in Belot									
<b>Houston County</b>									
.5 N Grapeland	24	2355CST			0	0	10K		Hail (1.00)
<b>Trinity County</b>									
Pennington	25	0040CST			0	0	25K		Thunderstorm Wind
Trees/power lines down in Pennington									
<b>Brazoria County</b>									
8 SE Angleton	28	0435CST	0.3	25	0	0	50K		Tornado (F0)
Tornado between Angleton and Oyster Creek. Barn destroyed in storm.									
<b><u>TEXAS, Extreme West</u></b>									
<b>TXZ055&gt;056 El Paso - Hudspeth</b>									
	07	1900MST 2300MST			0	1			High Wind (G55)
Strong gusty winds accompanied a cold front as it swept across far west Texas, with a 63 mph gust measured at the El Paso International Airport. Power outages were noted in El Paso, and a wind mill blew over near the Hudspeth/El Paso County line. The George Strait Country Music Festival was cut short due to the high winds. One woman needed stitches after being struck in the back of the head with an unknown object.									
<b><u>TEXAS, Mid - South</u></b>									
<b>La Salle County</b>									
12 N Cotulla	12	2220CST			0	0			Hail (1.75)
<b>Duval County</b>									
Freer	13	1235CST			0	0			Hail (0.75)
<b>Kleberg County</b>									
5 E Riviera	28	0010CST			0	0			Thunderstorm Wind (G55)
Sheriff report of numerous large trees uprooted and blown over along with damage to power poles.									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>TEXAS, Mid - South</b>									
<b>Nueces County</b>									
Corpus Christi Nas	28	0051CST			0	0	5.5M		Thunderstorm Wind (G59)
A severe thunderstorm produced an estimated 5.5 million dollars in damage at the Naval Air Station in Corpus Christi. NWS damage survey indicated a narrow band of microburst straight-line wind damage resulting in numerous large uprooted trees, hangar roof damage, downed power poles, several damaged and/or overturned planes. Navy official instrumentation located farther away from the narrow band of damage reported a peak wind of 68 mph.									
<b>Kleberg County</b>									
12 SE Kingsville	28	0103CST			0	0			Flash Flood
<b>TEXAS, North</b>									
<b>Lamar County</b>									
Paris	05	1550CST			0	0			Hail (1.75)
Hail up to golf ball size covered the ground two inches deep.									
<b>Young County</b>									
2 E Olney	08	0550CST			0	0			Hail (0.75)
<b>Palo Pinto County</b>									
Strawn	08	0710CST			0	0			Hail (0.75)
<b>Parker County</b>									
Springtown	08	0802CST			0	0			Hail (0.88)
<b>Wise County</b>									
4 N Rhome	08	0815CST			0	0			Hail (1.00)
<b>Tarrant County</b>									
Ft Worth	08	0900CST			0	0	15K		Thunderstorm Wind
A number of fences were blown down and a 35 foot construction trailer was blown over.									
<b>Tarrant County</b>									
Ft Worth	08	0904CST			0	0			Thunderstorm Wind (G61)
Tree limbs were blown down.									
<b>Johnson County</b>									
Cleburne	08	0915CST			0	0			Flash Flood
Thunderstorms caused street flooding.									
<b>Johnson County</b>									
Alvarado	08	0936CST			0	0			Hail (0.75)
<b>Bosque County</b>									
3 SE Meridian	08	0937CST	0.1	.1	0	0			Tornado (F0)
A tornado briefly touched down on Highway 22. No damage was reported.									
<b>Tarrant County</b>									
Ft Worth	08	0940CST			0	0			Flash Flood
Thunderstorm rains caused major street flooding in east Ft. Worth.									
<b>Ellis County</b>									
Midlothian	08	0945CST			0	0			Hail (0.88)
<b>Tarrant County</b>									
8 SW Ft Worth	08	0945CST			0	0			Flash Flood
Thunderstorm rains drove Sycamore Creek out of its banks. This flooded several back yards.									
<b>Kaufman County</b>									
Kaufman	08	1000CST			0	0	20K		Thunderstorm Wind
Widespread wind damage, about one mile long, occurred on Farm Market 2727, about 3 miles northeast of Kaufman. Several mobile homes were shifted off their blocks with the underpinning gone. A detached garage and some small sheds were destroyed. A porch was destroyed and a power pole was blown down.									
<b>Hill County</b>									
Abbott	08	1010CST			0	0	5K		Thunderstorm Wind
A car wash was destroyed by thunderstorm winds.									
<b>Mclennan County</b>									
Lacy Lakeview	08	1010CST			0	0			Hail (0.88)
<b>Mclennan County</b>									
Lacy Lakeview	08	1010CST			0	0	1K		Thunderstorm Wind
Thunderstorm winds damaged a truck stop in Lacy Lakeview.									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>TEXAS, North</b>									
<b>Hill County</b>									
Mertens	08	1020CST	0.1	.1	0	0			Tornado (F0)
A tornado briefly touched down near Mertens High School. No damaged was reported.									
<b>Ellis County</b>									
Waxahachie	08	1045CST			0	0			Flash Flood
Street flooding was reported in Waxahachie.									
<b>Mclennan County</b>									
Reisel	08	1055CST			0	0	2K		Thunderstorm Wind
Outbuildings were destroyed by thunderstorm winds.									
<b>Falls County</b>									
Perry	08	1105CST			0	0	2K		Thunderstorm Wind
Thunderstorm winds destroyed outbuildings.									
<b>Van Zandt County</b>									
Edgewood	08	1200CST			0	0	5K		Thunderstorm Wind
A barn was destroyed and power lines were downed by thunderstorms.									
<b>Anderson County</b>									
2 N Palestine	08	1250CST			0	0	0.20K		Thunderstorm Wind
Trees were blown down by thunderstorms.									
<b>Anderson County</b>									
Palestine	08	1300CST			0	0	1K		Thunderstorm Wind
Twelve trees were blown down by thunderstorm winds. Several signs were also blown down.									
<b>Parker County</b>									
3 S Reno	11	0645CST 0745CST			0	0			Hail (0.88)
<b>Tarrant County</b>									
Azle	11	0650CST			0	0			Flash Flood
Highway 199 was flooded by thunderstorm rains.									
<b>Tarrant County</b>									
Lake Worth Vlg	11	0700CST			0	0			Hail (0.75)
<b>Dallas County</b>									
Dallas	11	0950CST			0	0			Flash Flood
Thunderstorms created high water and flooding across the city.									
<b>Lampasas County</b>									
Lampasas	12	1119CST			0	0			Hail (0.75)
<b>Lampasas County</b>									
Lometa	12	1130CST			0	0			Hail (0.75)
<b>Bell County</b>									
Gray Afb	12	1249CST			0	0			Hail (0.75)
<b>Bell County</b>									
Killeen	12	1304CST			0	0			Hail (0.88)
<b>Bell County</b>									
Maxdale	12	1310CST			0	0			Hail (1.75)
<b>Bell County</b>									
Killeen	12	1430CST			0	0			Hail (0.75)
<b>Falls County</b>									
Cego	12	1450CST			0	0			Hail (0.75)
<b>Falls County</b>									
8 N Marlin	12	1513CST			0	0			Hail (0.75)
<b>Lampasas County</b>									
Lampasas	12	1630CST			0	0			Hail (2.00)
<b>Lampasas County</b>									
Lampasas	12	1635CST			0	0			Hail (0.75)
<b>Bell County</b>									
Prairie Dell	12	1835CST			0	0			Hail (1.75)
<b>Eastland County</b>									
Ranger	18	1730CST			0	0			Flash Flood
Thunderstorm rains flooded Farm Market 2461 and 570.									

# Storm Data and Unusual Weather Phenomena

March 1999

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>Eastland County</b>									
Ranger	18	1815CST			0	0			Flash Flood
Farm Market 2461 at the Colony Creek was closed. Farm Market 254 in Ranger was also closed.									
<b>Jack County</b>									
Jacksboro	18	2200CST			0	0			Flash Flood
Highway 4 between Jacksboro and Bartons Chapel was flooded by thunderstorm rains.									
<b>Fannin County</b>									
5 E Bonham	24	1957CST			0	0			Hail (1.00)
<b>Freestone County</b>									
Butler	24	2230CST			0	0			Hail (1.00)
<b>Dallas County</b>									
East Dallas	24	2255CST			0	0			Hail (1.00)
Fell at White Rock Lake.									
<b>Freestone County</b>									
5 W Fairfield	27	1745CST			0	1			Lightning
An eight year old girl was injured by lightning.									
<b><u>TEXAS, North Panhandle</u></b>									
<b>TXZ002 Sherman</b>									
	12	1800CST			0	0			Heavy Snow
	13	0600CST							
A strong low pressure system in the upper atmosphere moved from south-central New Mexico across the Texas South Plains producing snowfall amounts of six inches at Stratford in the northwest Texas panhandle.									
<b>TXZ001&gt;002-006-011 Dallam - Sherman - Hartley - Oldham</b>									
	18	0943CST 1800CST			0	0			Heavy Snow
A strong, slow moving low pressure system in the upper atmosphere moved from near El Paso northeast into the Texas panhandle during the afternoon and nighttime hours. Snowfall amounts ranged from four inches in the extreme western Texas panhandle to six inches in the northwest Texas panhandle.									
<b>TXZ002&gt;003-006 Sherman - Hansford - Hartley</b>									
	18	1800CST			0	0			Heavy Snow
	19	0600CST							
The strong, slow moving low pressure system in the upper atmosphere moved northeast across the Texas panhandle during the nighttime hours. Snowfall amounts during this time period were in the four to five inch range.									
<b><u>TEXAS, Northeast</u></b>									
<b>Nacogdoches County</b>									
3 N Martinsville to 1 NNE Martinsville	02	1730CST 1738CST	2.5	150	0	0	250K		Tornado (F2)
The damage was 150 yards wide that began in a rural area, 1/4 mile north of the intersection of Hwy 95 and FM 1878. Damage consisted of a chimney blown down, a large cedar tree snapped in half then blown 20 yards from the stump. A Tyson chicken barn was completely demolished with about 300 chickens killed. Forestry damage consisted of numerous trees fallen. A tin roofing from the chicken barns was tangled in many trees up to 1.2 miles away.									
<b>San Augustine County</b>									
10 NW San Augustine to 9.5 NW San Augustine	02	1742CST 1800CST	5.5	150	0	0	100K		Tornado (F2)
This was a continuation of the Nacogdoches tornado. Damage was mainly forestry consisting of numerous trees fallen and limbs snapped. Three homes had major roof damage and a carport was completely destroyed. Two large bails of rain saturated hay (Approximately 1500 lbs each dry weight) were moved about 25 yards.									
<b>Shelby County</b>									
1 NW Grigsby to .3 SE Grigsby	02	1738CST 1742CST	1.3	150	0	0	15K		Tornado (F2)
This was a segment of a tornado which traversed Nacogdoches and San Augustine Counties. Damage was mainly forestry however a large did crushed a mobile home with moderate damage.									
<b>Cherokee County</b>									
Jacksonville	24	2340CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

March 1999

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>Upshur County</b>									
East Mtn	24	2250CST			0	0			Hail (1.75)
<b>Harrison County</b>									
2 S Waskom	02	1653CST			0	0			Thunderstorm Wind (G60)
<b>Sabine County</b>									
Bronson	02	1835CST			0	0			Hail (0.75)
<b>Sabine County</b>									
Pineland	02	1835CST			0	0			Hail (0.75)
<b>Camp County</b>									
1 NW Pittsburg	02	1518CST			0	0			Hail (1.00)
<b>Wood County</b>									
10 E Quitman	02	1525CST			0	0			Hail (1.75)
<b>Upshur County</b>									
Pritchett	02	1530CST			0	0			Hail (1.75)
<b>Morris County</b>									
Daingerfield	02	1540CST			0	0			Hail (1.75)
<b>Upshur County</b>									
Gilmer	02	1543CST			0	0			Hail (1.75)
<b>Gregg County</b>									
1 W Longview	02	1545CST			0	0			Hail (0.88)
<b>Smith County</b>									
2 NE Lindale	02	1545CST			0	0			Hail (1.75)
<b>Gregg County</b>									
Kilgore	02	1550CST			0	0			Hail (2.75)
<b>Gregg County</b>									
Longview	02	1600CST			0	0			Hail (2.75)
<b>Smith County</b>									
Tyler	02	1610CST			0	0			Hail (0.75)
<b>Panola County</b>									
Beckville	02	1627CST			0	0			Hail (0.75)
<b>Rusk County</b>									
6 W Henderson	02	1638CST			0	0			Hail (0.75)
<b>Panola County</b>									
Carthage	02	1645CST			0	0			Hail (0.75)
<b>Nacogdoches County</b>									
12 E Nacogdoches	02	1715CST			0	0			Hail (1.00)
<b>Nacogdoches County</b>									
1 N Nacogdoches	02	1715CST			0	0			Hail (1.25)
<b>Nacogdoches County</b>									
Garrison	02	1720CST			0	0			Hail (1.25)
<b>Nacogdoches County</b>									
Nacogdoches	02	1724CST			0	0			Hail (2.00)
<b>Franklin County</b>									
1 S Cypress	02	1515CST			0	0			Hail (0.75)
<b>Cass County</b>									
3 S Atlanta	02	1555CST			0	0			Hail (1.00)
<b>Rusk County</b>									
Henderson	02	1610CST			0	0			Hail (1.75)
<b>Harrison County</b>									
Waskom	02	1635CST			0	0			Hail (0.75)
<b>Harrison County</b>									
4 SW Karnack	02	1705CST			0	0			Hail (1.75)
<b>Shelby County</b>									
Center	02	1740CST			0	0			Hail (1.00)

# Storm Data and Unusual Weather Phenomena

March 1999

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>Wood County</b>									
Yantis	05	1820CST			0	0			Hail (0.75)
<b>Wood County</b>									
8 E Quitman	05	1915CST			0	0			Hail (1.00)
<b>Gregg County</b>									
Judson	05	2010CST			0	0			Thunderstorm Wind (G60)
<b>Smith County</b>									
Tyler	05	2020CST			0	0			Thunderstorm Wind (G70)
		Numerous trees and powerlines down.							
<b>Smith County</b>									
5 E Tyler	05	2025CST			0	0			Thunderstorm Wind (G70)
		Numerous trees and powerlines down.							
<b>Smith County</b>									
Tyler	05	2030CST			0	0	8K		Thunderstorm Wind (G70)
		Damage reported to the Carrier plant and the Townhouse motel.							
<b>Harrison County</b>									
5 S Marshall	05	2100CST			0	0			Hail (1.00)
<b>Upshur County</b>									
Gilmer	05	1940CST			0	0			Hail (0.75)
<b>Upshur County</b>									
East Mtn	05	2000CST			0	0	2K		Thunderstorm Wind (G52)
		Several trees downed and the roof was blown off a storage building.							
<b>Harrison County</b>									
Hallsville	05	2035CST			0	0			Hail (1.00)
<b>Panola County</b>									
Deadwood	05	2210CST			0	0	5K		Lightning
		Lightning struck a house causing a minor fire.							
<b>Panola County</b>									
7 E Carthage	05	2210CST			0	0			Thunderstorm Wind (G60)
		Trees toppled.							
<b>Cherokee County</b>									
Jacksonville	08	1305CST			0	0			Hail (0.75)
<b>Cherokee County</b>									
Rusk	08	1315CST			0	0			Thunderstorm Wind (G52)
<b>Cherokee County</b>									
New Summerfield	08	1316CST			0	0			Hail (0.75)
<b>Cherokee County</b>									
Jacksonville	08	1325CST			0	0			Hail (1.00)
<b>Cherokee County</b>									
Jacksonville	08	1325CST			0	0			Thunderstorm Wind (G60)
<b>Wood County</b>									
Quitman	08	1230CST			0	0			Thunderstorm Wind (G60)
<b>Wood County</b>									
Winnsboro	08	1310CST			0	0			Thunderstorm Wind (G60)
		Few trees and powerlines down.							
<b>Cherokee County</b>									
Rusk	12	1145CST			0	0			Hail (0.75)
<b>Camp County</b>									
Pittsburg	24	2215CST			0	0			Hail (0.75)
<b>Bowie County</b>									
Maud	24	2220CST			0	0			Hail (0.75)
<b>Bowie County</b>									
4 W Nash	24	2220CST			0	0			Hail (1.75)
<b>Wood County</b>									
Hawkins	24	2220CST			0	0			Hail (0.75)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>TEXAS, Northeast</u></b>									
<b>Bowie County</b>									
Redwater	24	2230CST			0	0			Hail (1.00)
<b>Upshur County</b>									
Big Sandy	24	2230CST			0	0			Hail (1.00)
<b>Upshur County</b>									
Big Sandy	24	2230CST			0	0			Thunderstorm Wind (G60)
		Several powerlines toppled.							
<b>Upshur County</b>									
Big Sandy	24	2235CST			0	0			Hail (1.50)
<b>Gregg County</b>									
Longview	24	2245CST			0	0			Hail (0.75)
<b>Gregg County</b>									
3 N White Oak	24	2250CST			0	0			Hail (1.00)
<b>Cass County</b>									
Kildare	24	2315CST			0	0			Hail (0.75)
<b>Harrison County</b>									
Marshall	24	2325CST			0	0			Hail (0.75)
<b><u>TEXAS, South</u></b>									
<b>Jim Hogg County</b>									
13 SSW Hebronville	19	0945CST			0	0			Hail (0.75)
<b>Hidalgo County</b>									
Mc Cook	27	1720CST			0	0			Hail (0.75)
<b>Starr County</b>									
2 NE Grulla	27	1820CST			0	0	3K		Thunderstorm Wind
		Roofs blown off two houses.							
<b>Hidalgo County</b>									
Sullivan City	27	1915CST			0	0	5K		Thunderstorm Wind
		Extensive power line damage.							
<b>Hidalgo County</b>									
Mc Cook	27	2020CST			0	0			Thunderstorm Wind (G52)
<b>Hidalgo County</b>									
5 N Edinburg	27	2115CST			0	0			Hail (0.75)
<b>Kenedy County</b>									
24 SW Sarita	27	2115CST			0	0	1K		Thunderstorm Wind
		Extensive tree damage.							
<b>Hidalgo County</b>									
9 N Mc Cook	27	2240CST	0.2	30	0	0			Tornado (F0)
		Observed by sheriff's deputy on unassessable private property. Path is estimated.							
<b><u>TEXAS, South Central</u></b>									
<b>Williamson County</b>									
Liberty Hill	12	1104CST 1110CST			0	0	0	0	Hail (1.50)
<b>Burnet County</b>									
10 W Oakalla	12	1240CST 1245CST			0	0	0	0	Hail (1.00)
<b>Val Verde County</b>									
Loma Alta	12	1400CST 1420CST			0	0	0	0	Hail (1.75)
<b>Val Verde County</b>									
Amistad Res East	12	1510CST 1515CST			0	0	0	0	Hail (0.75)
<b>Llano County</b>									
2 NE Tow	12	1610CST 1615CST			0	0	0	0	Hail (1.75)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>TEXAS, South Central</b>									
<b>Burnet County</b>									
Marble Falls	12	1715CST 1735CST			0	0	0	0	Hail (1.75)
<b>Burnet County</b>									
1 E Marble Falls to 1.5 E Marble Falls	12	1740CST 1742CST	0.5	20	0	0	0	0	Tornado (F0)
<b>Burnet County</b>									
3 W Marble Falls to 2 E Marble Falls	12	1757CST 1805CST			0	0	700K	0	Hail (2.75)
Heavy rain was reported in Marble Falls, followed by large hail just in advance of a small and short-lived tornado. The tornado was observed by an Amateur Radio spotter just east of the town of Marble Falls itself. After the tornado had dissipated, a second severe thunderstorm moved across the Marble Falls area, producing grapefruit-sized hail. The hail damaged over 300 homes and more than 500 cars. Damage totals were estimated to be near \$700,000.									
<b>Uvalde County</b>									
Knippa	12	1730CST 1735CST			0	0	0	0	Hail (1.75)
<b>Uvalde County</b>									
Uvalde	12	1730CST 1735CST			0	0	0	0	Hail (0.75)
<b>Uvalde County</b>									
Concan to 8 NE Concan	12	1800CST 1815CST			0	0	80K	0	Thunderstorm Wind
<b>Uvalde County</b>									
Uvalde	12	1800CST 1810CST			0	0	0	0	Hail (0.88)
<b>Uvalde County</b>									
Montell	12	1845CST 1855CST			0	0	60K	0	Hail (2.75)
<b>Uvalde County</b>									
2 N Uvalde	12	1845CST 1855CST			0	0	0	0	Hail (1.75)
At least two groups of severe thunderstorms produced widespread large hail across the south half of Uvalde County. Numerous reports of damage were received from Department of Public Safety and Sheriff's Deputies. Near the same time, severe winds knocked over large trees and took large limbs out of trees in the northeast part of the County. Wind damage was also reported to homes and outbuildings in the Garner Park area. After the first group of storms moved away, a second group began producing hail as large as grapefruits that damaged homes and automobiles.									
<b>Travis County</b>									
Lago Vista to Sprinkle	12	1802CST 1815CST			0	0	0	0	Hail (1.75)
<b>Williamson County</b>									
Cedar Park	12	1820CST 1825CST			0	0	0	0	Hail (1.50)
<b>Williamson County</b>									
3 SW Cedar Park	12	1825CST 1830CST			0	0	0	0	Hail (1.75)
<b>Williamson County</b>									
Jollyville	12	1830CST 1835CST			0	0	0	0	Hail (1.75)
<b>Travis County</b>									
Pflugerville	12	1832CST 1850CST			0	0	0	0	Hail (1.75)
<b>Williamson County</b>									
Round Rock	12	1845CST 1855CST			0	0	0	0	Hail (0.88)
<b>Zavala County</b>									
Batesville	12	1831CST 1840CST			0	0	0	0	Hail (1.50)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>TEXAS, South Central</b>									
<b>Zavala County</b>									
3 SE Batesville to 3.5 SE Batesville	12	1835CST 1838CST	0.5	100	0	0	0	0	<b>Tornado (F0)</b>
A chaser spotted the tornado as it formed in open country just southeast of Batesville. It was small and lived for only about one minute.									
<b>Frio County</b>									
3 W Pearsall to 1.5 W Pearsall	12	1905CST 1908CST	1.5	250	0	0	0	0	<b>Tornado (F1)</b>
The same chaser who viewed the tornado just southeast of Batesville, observed a second tornado as it developed over open country near Pearsall. This one lived for approximately three minutes, then became rain-wrapped and dissipated.									
<b>Lee County</b>									
5 N Lexington	12	2015CST 2020CST			0	0	0	0	<b>Hail (0.75)</b>
<b>Kinney County</b>									
Brackettville	12	2010CST 2025CST			0	0	0	0	<b>Hail (1.75)</b>
<b>Zavala County</b>									
La Pryor	12	2030CST 2040CST			0	0	30K	0	<b>Hail (1.00)</b>
Hail broke windows in the town of LaPryor.									
<b>Zavala County</b>									
Crystal City	12	2105CST 2115CST			0	0	0	0	<b>Hail (0.88)</b>
<b>Dimmit County</b>									
Carrizo Spgs	12	2250CST 2300CST			0	0	0	0	<b>Hail (0.75)</b>
<b>Gillespie County</b>									
Countywide	18	1000CST 1300CST			0	0	5K	0	<b>Flash Flood</b>
<b>Kerr County</b>									
Countywide	18	1000CST 1200CST			0	0	5K	0	<b>Flash Flood</b>
<b>Llano County</b>									
Countywide	18	1000CST 1500CST			0	0	5K	0	<b>Flash Flood</b>
Thunderstorms moving slowly over Kerr, Gillespie and Llano Counties produced general 3 inch rainfall with isolated totals to near 5 inches. Flooding developed near 10 am CST and ended in the early afternoon. Numerous low water crossings were reported under water through the noon period.									
<b>Williamson County</b>									
5 SE Georgetown	18	1850CST 1855CST			0	0	80K	0	<b>Thunderstorm Wind</b>
Severe thunderstorm winds took roofs off houses and knocked over power lines in the Georgetown area									
<b>Val Verde County</b>									
5 N Juno to 5 NNE Juno	27	1710CST 1712CST	0.2	30	0	0	0	0	<b>Tornado (F0)</b>
A small and short-lived tornado was observed in open country just north of Juno.									
<b>Uvalde County</b>									
7 NE Concan to 8 NE Concan	27	1820CST 1845CST			0	0	20K	0	<b>Thunderstorm Wind</b>
<b>Uvalde County</b>									
6 NE Concan to 7.5 NE Concan	27	1835CST 1839CST	1.5	300	0	0	30K	0	<b>Tornado (F1)</b>
Heavy rain and damaging winds preceded a small and short-lived tornado that knocked down trees and blew over power lines northeast of Concan. The path of the severe winds continued northeastward, knocking over trees in Garner Park.									
<b>Uvalde County</b>									
5 E Knippa	27	1835CST 1840CST			0	0	0	0	<b>Funnel Cloud</b>
A group of four funnels was observed by Uvalde County Sheriff's Deputies.									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>TEXAS, South Central</u></b>									
<b>Real County</b>									
5 S Leakey to 8 SE Leakey	27	1840CST 1850CST			0	0	30K	0	Thunderstorm Wind
			A downburst from severe thunderstorms damaged trees, knocking down large limbs southeast of Leakey. The severe winds also broke windows and damaged roofs of outbuildings.						
<b>Uvalde County</b>									
Utopia to 2 N Utopia	27	1845CST 1855CST			0	0	10K	0	Thunderstorm Wind
			Trees were reported by a spotter to have been blown down in a 4 mile long path from just south of Utopia in Uvalde County into southern Real County.						
<b>Real County</b>									
7 S Leakey to 4 S Leakey	27	1855CST 1905CST			0	0	10K	0	Thunderstorm Wind
			This is the continuation of the report by a spotter of trees blown down in a 4 mile long path from just south of Utopia in Uvalde County into southern Real County.						
<b>Blanco County</b>									
Blanco	27	1920CST 1930CST			0	0	30K	0	Thunderstorm Wind
			Severe thunderstorm winds blew down trees and took the roof off a building.						
<b>Bandera County</b>									
Bandera	27	1930CST 1935CST			0	0	15K	0	Thunderstorm Wind
			Trees were blown down by severe thunderstorm winds..						
<b>Bexar County</b>									
San Antonio	27	2020CST 2030CST			0	0	50K	0	Thunderstorm Wind
			Severe thunderstorm winds knocked over power lines and blew down trees in the area near the intersection of Interstate 10 and Loop 410.						
<b>Kendall County</b>									
Welfare	27	2030CST 2050CST			0	0	15K	0	Thunderstorm Wind
			Trees were blown down by severe thunderstorm winds						
<b>Wilson County</b>									
Sutherland Spgs	27	2035CST 2040CST			0	0	0	0	Hail (0.75)
<b>Guadalupe County</b>									
14 SW Seguin to 7 SW Seguin	27	2104CST 2115CST			0	0	0	0	Hail (0.75)
<b>Wilson County</b>									
3 NW La Vernia to 3 N La Vernia	27	2104CST 2115CST			0	0	0	0	Hail (0.75)
<b><u>TEXAS, South Panhandle</u></b>									
<b>Stonewall County</b>									
Aspermont	11	1938CST			0	0	0	0	Hail (1.75)
			The Stonewall County Sheriff's Office reported up to golfball-sized hail in Aspermont at 1938 CST.						
<b>Stonewall County</b>									
Old Glory	12	0600CST			0	0	0	0	Hail (1.00)
			Elevated convection behind a cold front caused thunderstorms...one of which produced early morning quarter-sized hail in Old Glory.						
<b>Yoakum County</b>									
Denver City	17	1925CST			0	0	0	0	Hail (0.75)
			The Denver City Police Department reported dime-sized hail in Denver City at 1925 CST.						
<b><u>TEXAS, Southeast</u></b>									
<b>Newton County</b>									
7 SW Burkeville	02	1745CST			0	0			Hail (1.50)

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>TEXAS, Southeast</b>									
<b>Newton County</b>									
Newton	02	1930CST			0	0			Hail (0.75)
<b>Newton County</b>									
1 W Burkeville	12	2355CST			0	0	10K		Thunderstorm Wind
									Many trees downed around the Burkeville area during a severe thunderstorm.
<b>Tyler County</b>									
Chester	12	2140CST			0	0			Hail (1.00)
<b>Tyler County</b>									
Woodville	12	2235CST			0	0	10K		Thunderstorm Wind
									Trees and power lines downed in Woodville.
<b>Tyler County</b>									
3 SW Warren to 3 S Warren	12	2210CST 2212CST	3	20	0	0	100K		Tornado (F1)
									Several homes were damaged as a tornado passed nearby, and a barn was destroyed south of Warren on Highway 69.
<b>Jasper County</b>									
Jasper	12	2332CST			0	0			Hail (0.75)
<b>Jasper County</b>									
8 N Jasper	13	0300CST			0	0	10K		Flood
									County Roads 29 and 23 flooded and impassable.
<b>Tyler County</b>									
5 NE Woodville	13	0300CST			0	0	10K		Flood
									US Highway 190 flooded between Woodville and Dam B, making it impassable.
<b>Newton County</b>									
10 NW Newton to 5 NW Newton	02	1752CST 1800CST	5	50	0	0	50K		Tornado (F1)
									A large, rotating thunderstorm moving southeast at 40 mph produced an F1 tornado in northwestern Newton County. At least three homes received roof damage, mainly along Highway 63 about one mile east of the Jasper County line. Hail as large as golfballs were reported to the Newton County Sheriffs Department.
<b>Jasper County</b>									
2 N Kirbyville to 1 E Kirbyville	02	1820CST 1825CST	2	50	0	0	50K		Tornado (F0)
									A weak tornado touched down two miles north of Kirbyville on Highway 96. Moving southeast at 15 mph, the tornado damaged the roofs fo several buildings north of Kirbyville and blew down trees along FM 363 east of town. Several eyewitnesses saw the tornado. This tornado moved into Newton County.
<b>Newton County</b>									
10 SW Bleakwood to 11 SW Bleakwood	02	1825CST 1830CST	1	10	0	0	20K		Tornado (F0)
									The same tornado that touched down near Kirbyville in Jasper County dissipated just over the county line in Newton County. The most significant damage was trees blown down, and a couple of barns that were damaged.
<b>Jasper County</b>									
7 E Jasper to 12 SE Jasper	02	1845CST 1855CST	5	20	0	0	10K		Tornado (F1)
									The same thunderstorm that damaged a marina on Sam Rayburn Lake produced a tornado 7 miles east of Jasper on FM 1738 and Highway 63. Moving southeast at 30 mph, this weak tornado blew down trees in its path. Hail bigger than golfballs pounded the area, stripping some trees of their weaker branches. Eyewitnesses in the Harrisburg area reported this tornado to the Jasper County Sheriff Department.
<b>Jasper County</b>									
1 NW Holly Spgs to 8 SE Holly Spgs	02	1855CST 1905CST	9	500	1	3	500K		Tornado (F3)
									The strongest tornado of the evening developed a mile northwest of Holly Springs. Moving southeast at 50 mph, this fast moving storm damaged or destroyed over 25 homes and a church. The worst damage was done in Holly Springs, where a brick home lost its roof and portions of two walls. This is where the elderly woman was fatally injured. Several vehicles were picked up and rolled over. This storm moved into Newotn County, producing more injuries and damages. F84PH
<b>Newton County</b>									
10 NW Newton to 7 NW Newton	02	1905CST 1910CST	3	500	0	3	250K		Tornado (F3)
									The Holly Springs tornado moved into Newton County, tearing up the Baptist Encampment community. A mobile home was flipped over 100 feet, ejecting three people. One young girl escaped with no injuries after being thrown over 50 feet from the

# Storm Data and Unusual Weather Phenomena

March 1999

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

## TEXAS, Southeast

home. Two trucks were flipped over in their driveways and a car was moved at least 15 feet. One couple sitting on the couch in the TV watched their wood-framed home fall apart around them, and miraculously walk away.

## TEXAS, West

**TXZ045>047-050>052-057>063-067>070-074>075-079>082**

**Gaines - Dawson - Borden - 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**

<b>01</b>	<b>0000CST</b>		<b>0</b>	<b>0</b>	<b>Drought</b>
<b>31</b>	<b>2237CST</b>				

The drought across West Texas continued into March, but some beneficial rain was received. The Midland International Airport reported 1.22 inches of rain for the month, bringing the yearly total to near normal. All stations in the eastern part of the area received more than an inch of rain, with Cope Ranch (northeastern Reagan county) getting a total of 3.7". West of the Davis Mountains, most locations received less than a half inch of rain with Valentine the least at 0.18".

### **Terrell County**

**28 NE Dryden**

<b>24</b>	<b>2237CST</b>		<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
	<b>2246CST</b>				

This storm formed along an east-west frontal boundary in weak winds aloft and moved to the south at 5-10 mph. One inch hail was reported at the Terrell Gas Plant.

## TEXAS, Western North

### **Clay County**

<b>Bluegrove</b>	<b>08</b>	<b>0618CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.75)</b>
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### **Knox County**

<b>Benjamin</b>	<b>11</b>	<b>2038CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.75)</b>
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### **Knox County**

<b>4 W Benjamin</b>	<b>11</b>	<b>2045CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.50)</b>
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### **Foard County**

<b>Rayland</b>	<b>11</b>	<b>2130CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.75)</b>
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### **Hardeman County**

<b>5 S Chillicothe</b>	<b>11</b>	<b>2140CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **Wilbarger County**

<b>6 W Vernon to Fargo</b>	<b>11</b>	<b>2150CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **Wilbarger County**

<b>15 N Vernon</b>	<b>11</b>	<b>2207CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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Hail was reported on highway 283.

### **Knox County**

<b>5 SW Munday</b>	<b>11</b>	<b>2235CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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### **Baylor County**

<b>8 N Seymour</b>	<b>11</b>	<b>2240CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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### **Wichita County**

<b>10 N Valley View</b>	<b>11</b>	<b>2300CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **Wichita County**

<b>1 S Wichita Falls</b>	<b>12</b>	<b>0615CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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### **Wichita County**

<b>4 NW Wichita Falls</b>	<b>12</b>	<b>0620CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **Knox County**

<b>1 NW Benjamin</b>	<b>12</b>	<b>0650CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **Foard County**

<b>10 SW Crowell</b>	<b>12</b>	<b>0655CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.75)</b>
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### **Baylor County**

<b>8 W Seymour</b>	<b>12</b>	<b>0745CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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### **Hardeman County**

<b>6 S Chillicothe</b>	<b>12</b>	<b>0745CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **Baylor County**

<b>1 SW Seymour</b>	<b>12</b>	<b>0800CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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# Storm Data and Unusual Weather Phenomena

March 1999

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

## TEXAS, Western North

### **Baylor County**

8 N Seymour      12      0800CST      0      0      Hail (1.25)

### **Wilbarger County**

10 N Vernon      12      0810CST      0      0      Hail (0.88)

### **TXZ083>090 Hardeman - Foard - Wilbarger - Wichita - Knox - Baylor - Archer - Clay**

08      1400CST      0      0      2K      High Wind  
2000CST

West to northwest winds between 25 and 35 mph with gusts over 50 mph affected western portions of north Texas during the afternoon and early evening of the 8th. Siding was ripped off a building at the corner of Waggoner and Bryan in Electra.

### **TXZ083>090 Hardeman - Foard - Wilbarger - Wichita - Knox - Baylor - Archer - Clay**

02      1200CST      0      0      8K      High Wind  
1800CST

North winds between 25 and 35 mph with gusts near 60 mph affected western north Texas during the afternoon of the 2nd. A roof at the Christ Gospel Church on 23rd St. in Wichita Falls was severely damaged. Large tree limbs and numerous power lines were also downed, resulting in scattered power outages.

## UTAH, North, Central and South

NONE REPORTED.

## UTAH, Northeast

NONE REPORTED.

## VERMONT, North and Central

### **VTZ003>012 Orleans - Essex - Chittenden - Lamoille - Caledonia - Washington - Addison - Orange - Rutland - Windsor**

06      0800EST      0      0      Winter Storm  
07      0800EST

A surface low pressure system tracking east from the Ohio Valley moved across southern New England and then out into the Gulf of Maine. This system brought heavy snow to much of northern and central Vermont. Seven to twelve inches of snow was common with several reports of 13 to 17 inches. Bethel, Vermont reported the highest amount with 20 inches. Heavy snow also fell in northern New York from this storm system.

## VERMONT, South

### **VTZ013>014 Bennington - Windham**

06      1200EST      0      0      4K      Winter Storm  
07      1000EST

An area of low pressure developed in the Ohio Valley early on March 6. This low then tracked east to the south of Interstate 80 across Pennsylvania and intensified as it slipped off the coast of Long Island by early March 7. The storm brought a significant snowfall to extreme southern Vermont. Snowfall amounts included 11 inches at Peru in Bennington County and 10 inches at Wardsboro in Windham County. The snow was powdery but did result in the usual assortment of accidents and vehicles sliding off roadways.

## VIRGIN ISLANDS

### **St. Thomas County**

St. Thomas      08      1300AST      0      0      Waterspout  
1315AST

A pilot reported a waterspout eight miles southwest of St. Thomas.

### **St. John County**

St. John      11      1300AST      0      0      Waterspout  
1315AST

### **St. Thomas County**

St. Thomas      11      1300AST      0      0      Waterspout  
1315AST

Virgin Islands Radio indicated that a boat sighted a waterspout between St. Thomas and St. John moving northwest.

## VIRGINIA, East

### **Brunswick County**

White Plains      03      1640EST      0      0      3K      Thunderstorm Wind  
Utility shed blown over with doors ripped off.

### **Emporia County**

Emporia      03      1730EST      0      0      1K      Thunderstorm Wind  
Flashing of building roof torn off of sheriff's office.

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>VIRGINIA, East</u></b>									
<b>Dinwiddie County</b>									
1 SE Jack	03	1735EST	0.8	125	0	17	150K		<b>Tornado (F1)</b>
Initial damage, mainly to trees, began in the Fort Fisher area. The tornado then proceeded north-northeast into the Chaparral Steel Construction site, where it destroyed 3 construction trailers/mobile homes and damaged 10 to 12 others. In addition, 2 vehicles were overturned, with several others damaged by debris. An empty grain bin was lifted off its foundation and tossed 100 feet into an adjacent pond, about one-quarter mile from the major trailer damage.									
<b>Chesterfield County</b>									
Chester	03	1745EST			0	0	1K		<b>Thunderstorm Wind</b>
Large tree limbs down near Interstate 95.									
<b>Petersburg (C)</b>									
Petersburg	03	1750EST			0	0	1K		<b>Thunderstorm Wind</b>
Large tree limb (15" diameter by 18') broken off by winds.									
<b>Portsmouth (C)</b>									
Portsmouth	03	1830EST			0	0			<b>Thunderstorm Wind (G53)</b>
Wind gust to 61 mph reported at WAVY TV 10.									
<b>Hampton (C)</b>									
Hampton	03	1841EST			0	0			<b>Thunderstorm Wind (G51)</b>
Wind gust to 59 mph reported by spotter.									
<b>Hampton (C)</b>									
Hampton	03	1845EST			0	0	3K		<b>Thunderstorm Wind</b>
Several windows were blown in at a few houses in the Grandview section.									
<b>Henrico County</b>									
Short Pump	03	1845EST			0	0	2K		<b>Thunderstorm Wind</b>
Several trees down.									
<b>Williamsburg (C)</b>									
Williamsburg	03	1850EST			0	0	3K		<b>Thunderstorm Wind</b>
Few large trees down. Also, large tree limb blown into windshield of car at Williamsburg Crossing Shopping Center.									
<b>King And Queen County</b>									
Mascot	03	1853EST			0	0	2K		<b>Thunderstorm Wind</b>
Several trees down on Route 603.									
<b>Mathews County</b>									
Mathews	03	1854EST			0	0	2K		<b>Thunderstorm Wind</b>
Few trees down across Route 198.									
<b>Gloucester County</b>									
Glenns	03	1855EST			0	0	1K		<b>Thunderstorm Wind</b>
Large tree limbs down on Route 33 near Rappahannock Community College.									
<b>Lancaster County</b>									
Lancaster	03	1855EST			0	0	2K		<b>Thunderstorm Wind</b>
Several trees blown onto power lines.									
<b>Middlesex County</b>									
Saluda	03	1855EST			0	0	2K		<b>Thunderstorm Wind</b>
Few trees down on Route 33.									
<b>Richmond County</b>									
Singerly	03	1905EST			0	0	2K		<b>Thunderstorm Wind</b>
Several trees down on Route 638.									
<b>Westmoreland County</b>									
Montross	03	1915EST			0	0	1K		<b>Thunderstorm Wind</b>
Several large tree limbs down.									
<b>VAZ048-063&gt;064-072&gt;075-077</b>									
	09	1300EST			0	0			<b>Winter Storm</b>
	10	0300EST							
The combination of a weakening storm over the Ohio Valley, and a developing storm off the South Carolina coast produced 2 to 5 inches of snow across portions of the Virginia piedmont eastward into the Virginia northern neck Tuesday afternoon into early morning Wednesday. Beaverdam in Hanover county and Hague in Westmoreland county received 5 inches of snow. Ruther Glen in Caroline county and King and Queen in King and Queen county received 4 inches of snow.									

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<b><u>VIRGINIA, Extreme Southwest</u></b>									
<b>VAZ002</b>	<b>Wise</b>								
	<b>03</b>	<b>0800EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
		<b>2000EST</b>							
	A late winter snowfall dropped 2-3 inches of snow in the city of Wise, with possibly heavier amounts in other parts of the county.								
<b>VAZ001&gt;002-005&gt;006-008</b>	<b>Lee - Wise - Scott - Russell - Washington</b>								
	<b>14</b>	<b>0500EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
	<b>15</b>	<b>2300EST</b>							
	A very wet weather system brought heavy amounts of rain to southwest Virginia. Heavy rain began early Saturday morning, changed to heavy snow in some places during the day Saturday, back to rain Saturday night, then finally to snow Sunday night. There were also isolated reports of freezing rain. Rainfall amounts were generally 1-2 inches. Snowfall amounts in averaged 1-2 inches in lower elevations and 3-6 inches in higher elevations.								
<b>VAZ001&gt;002-005</b>	<b>Lee - Wise - Scott</b>								
	<b>26</b>	<b>0400EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
		<b>1500EST</b>							
	A very early spring snowfall dropped 1-2 inches of snow in most locations, with 2-4 inches on average in Lee County.								
<b><u>VIRGINIA, North</u></b>									
<b>Prince William County</b>									
	<b>Haymarket</b>	<b>03</b>	<b>1700EST</b>		<b>0</b>	<b>0</b>	<b>1K</b>		<b>Thunderstorm Wind</b>
									Winshield blown out by wind
<b>Prince William County</b>									
	<b>Dale City</b>	<b>03</b>	<b>1710EST</b>		<b>0</b>	<b>0</b>	<b>1K</b>		<b>Thunderstorm Wind</b>
									Pine trees downed
<b>Greene County</b>									
	<b>Countywide</b>	<b>03</b>	<b>1720EST</b>		<b>0</b>	<b>0</b>	<b>4K</b>		<b>Thunderstorm Wind</b>
			<b>1730EST</b>						Trees and power lines downed
<b>Rappahannock County</b>									
	<b>Countywide</b>	<b>03</b>	<b>1755EST</b>		<b>0</b>	<b>0</b>	<b>2K</b>		<b>Thunderstorm Wind</b>
			<b>1810EST</b>						Trees downed
<b>Shenandoah County</b>									
	<b>Countywide</b>	<b>03</b>	<b>1800EST</b>		<b>0</b>	<b>0</b>	<b>5K</b>		<b>Thunderstorm Wind</b>
									Trees and power lines downed
<b>Shenandoah County</b>									
	<b>Woodstock</b>	<b>03</b>	<b>1800EST</b>		<b>0</b>	<b>0</b>	<b>0.50K</b>		<b>Thunderstorm Wind</b>
									Roof blown off outbuilding
<b>Frederick County</b>									
	<b>Winchester Arpt</b>	<b>03</b>	<b>1810EST</b>		<b>0</b>	<b>0</b>	<b>2K</b>		<b>Thunderstorm Wind</b>
									Trees and signs downed
<b>Frederick County</b>									
	<b>Winchester Arpt</b>	<b>03</b>	<b>1810EST</b>		<b>0</b>	<b>0</b>	<b>20K</b>		<b>Thunderstorm Wind</b>
									Large wall damaged at warehouse
<b>Shenandoah County</b>									
	<b>Strasburg</b>	<b>03</b>	<b>1810EST</b>		<b>0</b>	<b>0</b>	<b>1K</b>		<b>Thunderstorm Wind</b>
									Top of automated teller machine blown off
<b>VAZ028</b>	<b>Frederick</b>								
	<b>04</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
		<b>1000EST</b>							
<b>VAZ031-042</b>	<b>Clarke - Loudoun</b>								
	<b>04</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>			<b>Winter Weather</b>
		<b>1000EST</b>							
	A low pressure system moved from West Virginia to Pennsylvania on the evening of the 3rd. This system produced sustained winds of 25 to 40 mph from the afternoon of the 3rd through the morning of the 4th. A cold front associated with the system moved through during the early evening and produced a line of thunderstorms that brought heavy rain, small hail, and wind gusts in excess of 55 mph. In Shenandoah County, downed trees and power lines were reported across the county. 1,375 customers								

# Storm Data and Unusual Weather Phenomena

March 1999

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

reported power outages. A roof was blown off an outbuilding in Fairview near Woodstock, and the top of an automated teller machine at the Strasburg Shopping Center was also blown off. Frederick County reported substantial damage to a large wall at the Rubbermaid Commercial Products Receiving Warehouse in Winchester. The wind also levelled several trees and signs. 6,000 customers reported power outages. The peak gust at the Winchester Airport was 42 mph. Greene County reported trees down across the county and downed electric poles near Eheart. Albemarle County reported power outages and small creeks and streams reaching bankful around 6:00 pm. Rappahannock County also reported trees down. Prince William County reported the windshield of a vehicle on Interstate 66 was blown out by high wind. In Dale City, several pine trees were also downed. After the cold front passed, temperatures dropped rapidly and rain turned to snow across Northern Virginia. Most locations received an inch or less of snow overnight, however Frederick County received 2 to 5 inches and a location on the Clark and Loudoun County line received 3 inches.

**VAZ026>031-038>042-050>057**     **Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Greene - Madison - Rappahannock - Fauquier - Loudoun - Orange - Culpeper - Prince William - Fairfax - Arlington - Stafford - Spotsylvania - King George**

<b>09</b>	<b>0300EST</b>		<b>0</b>	<b>0</b>	<b>Winter Storm</b>
	<b>2359EST</b>				

**VAZ036>037**     **Nelson - Albemarle**

<b>09</b>	<b>0400EST</b>		<b>0</b>	<b>0</b>	<b>Winter Weather</b>
	<b>2359EST</b>				

An area of low pressure moved from the Ohio Valley to North Carolina from late on the 8th through the evening of the 9th. Heavy snow fell across the Appalachian Mountains and the eastern foothills as the storm system moved through. In addition, the storm produced an unusual band of heavy snow that stretched in a west to east line from Frederick County to Fairfax County. This band was about 50 miles wide from north to south, and storm total snowfall was as high as one foot in this area. Snowfall rates were in excess of 1 1/2 inches per hour in many locations during the storm. By evening on the 9th Frederick, Clarke, Loudoun, Shenandoah, and Fairfax County received between 8 and 12 inches. Warren, Page, Northern Rockingham, Rappahannock, Prince William, and northern Fauquier County received between 6 and 10 inches. Southern Rockingham, Greene, Madison, Culpeper, Southern Fauquier, and Stafford County received between 4 to 8 inches. Highland, Augusta, Albemarle, Spotsylvania, and King George County received between 2 and 6 inches. Travel became treacherous across Northern Virginia on the 9th. Washington Reagan National Airport and Dulles International Airport reported numerous flight cancellations between 7:00 am and midnight. Hundreds of car accidents occurred on area roads. Loudoun County reported 53 vehicle collisions and 18 injuries. 24 school buses became stuck on rural routes. Route 7 near Highway 601 was closed. A fallen tree and power line also closed U.S. Highway 15 north of Leesburg. In Warren County, one person was killed in a car accident on Strasburg Road. The Winchester Airport in Frederick County was closed. In Shenandoah County, an early afternoon accident involving four tractor trailers closed part of Interstate 81 for four hours. Highland County reported several cars slipping off snow covered roads. Greene County reported several accidents on Route 29, including one jackknifed tractor trailer. Fauquier County reported an accident near Midland Road where 5 students and a bus driver were injured. At least 200 cars had to be towed off Interstate 95 and 66 during the storm. King George County reported two school buses in accidents and six others slipping off roadways. The city of Fredericksburg reported over 100 accidents. On Interstate 95 in Spotsylvania County, a woman was killed in a morning car accident. Another man was killed in an accident near Fort Belvoir in Fairfax County. Over 500 disabled vehicles and 30 injuries occurred across the county from 7:00 am to 1:00 pm. Hunter Mill Road was closed after 40 vehicles became disabled in the snow. Virginia State Police responded to 250 accidents and towed 200 vehicles during the storm in the Washington D.C. suburbs.

**VAZ021-025>031-036-042-053**     **Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Nelson - Loudoun - Fairfax**

<b>14</b>	<b>0500EST</b>		<b>0</b>	<b>0</b>	<b>Winter Storm</b>
<b>15</b>	<b>1200EST</b>				

**VAZ037>041-050>052**     **Albemarle - Greene - Madison - Rappahannock - Fauquier - Orange - Culpeper - Prince William**

<b>14</b>	<b>0500EST</b>		<b>0</b>	<b>0</b>	<b>Winter Weather</b>
<b>15</b>	<b>1200EST</b>				

An area of low pressure over the Southeast U.S. produced snow across much of Northern Virginia on the 14th. Snowfall amounts were heaviest near the West Virginia border. Rain mixed with snow southeast of a line from Fairfax to Orange County. The low pressure system redeveloped off the coast of North Carolina and moved up the Eastern Seaboard on the morning of the 15th, resulting in another period of snowfall. Total accumulations included 8 inches in Highland County, 5 to 10 inches in Augusta County, 4 to 10 inches across Nelson County, 9.5 inches in Rockingham County, 7 to 12 inches in Page County, 5 to 10 inches in Shenandoah County, 5 inches in Warren and Clarke County, 5 to 8 inches in Frederick County, 3 to 9 inches in Loudoun County, 2 to 6 inches in Western Fairfax County, 3 to 5 inches in Northern Fauquier County, 2 to 3 inches in Rappahannock County, 2 inches in Madison and Greene County, and less than 2 inches elsewhere. The snowfall led to several car accidents and three deaths in the Washington D.C. suburbs. Two people were killed in a car accident on Route 28 near Dulles Airport in Loudoun County and a motorist was hit by a car while clearing snow from his vehicle in Arlington. Several wrecks were reported on Interstate 81 in Shenandoah County. Over 40 accidents occurred in Augusta County during the storm.

## **Charlottesville (C)**

<b>Charlottesville</b>	<b>03</b>	<b>1715EST</b>	<b>0</b>	<b>0</b>	<b>0.50K</b>	<b>Thunderstorm Wind</b>
		Trees Downed				

# Storm Data and Unusual Weather Phenomena

March 1999

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

## VIRGINIA, North

A thunderstorm that produced damaging winds in excess of 55 mph, marble sized hail, and heavy downpours moved into the city of Charlottesville around 5:15 pm. One tree downed by the storm blocked two lanes of Barracks Road, and another blocked Greenbriar Drive. 230 customers in the city lost power when another fallen tree downed an electric wire. Minor flooding also occurred on Old Ivy Road.

## VIRGINIA, Northwest

**VAZ003>004**

**Dickenson - Buchanan**

<b>03</b>	1100EST								
<b>04</b>	0400EST			0	0				<b>Heavy Snow</b>

A low pressure system strengthened rapidly in central Virginia, in the wake of a strong cold frontal passage. Rain changed to wet snow, then wind blown dry snow after sunset on the 3rd. In the river valleys, snow depths of 3 to 8 inches were recorded. Hurley had 8 inches on the ground. Clintwood measured 7 inches. Above 2500 feet, snow depths of a foot were common with considerable drifting. Schools were closed on the 4th.

**VAZ003**

**Dickenson**

<b>09</b>	0300EST								
	0800EST			0	0				<b>Heavy Snow</b>

Snow accumulations of 2 to 6 inches were deposited before changing to rain and drizzle.

**VAZ003>004**

**Dickenson - Buchanan**

<b>14</b>	2300EST								
<b>15</b>	0600EST			0	0				<b>Heavy Snow</b>

The upper air energy associated with a large storm caused a second round of precipitation. Rain changed to snow. Snow accumulations of 3 to 8 inches were deposited. Breaks Interstate Park had more, with 9 to 10 inches. A few trees were downed in the park, taking out electric and phone lines.

**VAZ003>004**

**Dickenson - Buchanan**

<b>01</b>	0000EST								
<b>31</b>	2300EST			0	0				<b>Monthly Temperature</b>

A cold weather pattern prevailed this month, especially during the first 2 weeks. The average monthly temperature at Clintwood was only 37.5 degrees, or about 4 degrees colder than normal. After the milder than usual January and February, the cold March helped delay the new spring growth.

## VIRGINIA, Southwest

**VAZ007-009-012-015>016**

**Tazewell - Smyth - Wythe - Grayson - Carroll**

<b>03</b>	1230EST								
	2330EST			0	0				<b>Winter Storm</b>

Rain during the morning of the 3rd changed to sleet late in morning and to snow during the early afternoon. Snow accumulated from 5 to 10 inches by late evening with as much as a foot in the higher elevations. Strong winds caused blowing and drifting of the snow with visibility reduced to near zero at times. Motorists were stranded on Interstate Route 77 for several hours. Students on seven school buses were stranded for 5 to 6 hours on I-77 and were not home until 9 pm. Numerous automobile accidents occurred on snow covered roads.

**VAZ010>011-013>014-017**

**Bland - Giles - Pulaski - Montgomery - Floyd**

<b>03</b>	1430EST								
<b>04</b>	0130EST			0	0				<b>Winter Storm</b>

Rain through early afternoon on the 3rd changed to sleet and quickly to snow by mid afternoon. By early morning on the 4th the snow had accumulated from 6 to 12 inches. High winds caused blowing and drifting snow reducing visibility to near zero at times, and drifted snow up to 6 feet. Numerous minor automobile accidents were reported by law enforcement.

**VAZ018>020**

**Craig - Alleghany - Bath**

<b>03</b>	1630EST								
<b>04</b>	0230EST			0	0				<b>Winter Storm</b>

Rain changed to snow during the late afternoon of the 3rd and accumulated from 4 to 6 inches with up to 8 inches in the higher elevations by early morning on the 4th.

**VAZ033**

**Franklin**

<b>03</b>	1830EST								
				0	0	1K			<b>High Wind</b>

High winds during the evening of the 3rd toppled a tree onto a mobile home.

**VAZ032**

**Patrick**

<b>03</b>	1400EST								
	2330EST			0	0				<b>Winter Storm</b>

Rain into the early afternoon on the 3rd changed to sleet then quickly to snow during the mid afternoon. Snow accumulations above 1500 feet reached 6 to 12 inches by late evening.

# Storm Data and Unusual Weather Phenomena

March 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>VIRGINIA, Southwest</u></b>									
<b>VAZ020</b>	<b>Bath</b>	<b>09</b>	<b>0900EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
			<b>2200EST</b>						
			Snow developed during the morning of the 9th and accumulated 5 to 6 inches before ending late in the evening.						
<b>VAZ007-009-012-015&gt;016</b>	<b>Tazewell - Smyth - Wythe - Grayson - Carroll</b>	<b>03</b>	<b>1230EST</b>		<b>0</b>	<b>0</b>	<b>11K</b>		<b>High Wind</b>
		<b>04</b>	<b>0130EST</b>						
			High winds from early afternoon on the 3rd to early morning on the 4th downed numerous trees, tree limbs, and power lines leaving several thousand people without power.						
<b>VAZ032</b>	<b>Patrick</b>	<b>03</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>	<b>2K</b>		<b>High Wind</b>
		<b>04</b>	<b>0130EST</b>						
			High winds from the afternoon of the 3rd to the early morning of the 4th downed trees and power lines leaving several thousand people without power.						
<b>VAZ010&gt;011-013&gt;014-017</b>	<b>Bland - Giles - Pulaski - Montgomery - Floyd</b>	<b>03</b>	<b>1430EST</b>		<b>0</b>	<b>0</b>	<b>10K</b>		<b>High Wind</b>
		<b>04</b>	<b>0200EST</b>						
			High winds from mid afternoon on the 3rd to the early morning of the 4th downed trees, tree limbs, and power lines leaving several thousand people without power.						
<b>VAZ007-009&gt;014-016&gt;017</b>	<b>Tazewell - Smyth - Bland - Giles - Wythe - Pulaski - Montgomery - Carroll - Floyd</b>	<b>15</b>	<b>0100EST</b>		<b>0</b>	<b>0</b>	<b>10K</b>		<b>Winter Storm</b>
			<b>0900EST</b>						
			Rain and sleet changed to wet snow early in the morning of the 15th. Snow accumulated from 4 to 8 inches, with up to 10 inches in the higher elevations, before ending during mid morning. The snow downed small trees and power lines resulting in power outages.						
<b>VAZ018&gt;019-023&gt;024</b>	<b>Craig - Alleghany - Botetourt - Rockbridge</b>	<b>15</b>	<b>0200EST</b>		<b>0</b>	<b>0</b>	<b>11K</b>		<b>Winter Storm</b>
			<b>1000EST</b>						
			Rain and sleet changed to wet snow during the early morning of the 15th. The wet snow accumulated 4 to 8 inches in the valleys, with up to 14 inches in the higher elevations of Alleghany, Botetourt, and Rockbridge counties, before ending late in the morning. The weight of the snow downed trees and power lines resulting in power outages. Downed trees in Covington in Alleghany County blocked a road and damaged a playground, closing the playground for several days.						
<b>VAZ020</b>	<b>Bath</b>	<b>15</b>	<b>0230EST</b>		<b>0</b>	<b>0</b>	<b>1K</b>		<b>Heavy Snow</b>
			<b>1100EST</b>						
			Snow developed early in the morning of the 15th and accumulated 12 to 14 inches before ending late in the morning. The weight of the snow downed trees and power lines resulting in power outages.						
<b><u>WASHINGTON, Northeast</u></b>									
<b>Spokane County</b>									
<b>Dartford</b>	<b>01</b>	<b>0001PST</b>		<b>0</b>	<b>0</b>	<b>200K</b>			<b>Flood</b>
	<b>02</b>	<b>0620PST</b>							
			Heavy rain in addition to snow melt lead to another rise of the Little Spokane River near Dartford where the stage reached 6.9 feet. The area with the most impact was Pine River Park along with several roads in this vicinity which were flooded.						
<b>WAZ031-037&gt;038-042</b>	<b>Northeast Blue Mountains - Northeast Mountains - Okanogan Highlands - East Slopes Northern Cascades</b>	<b>03</b>	<b>1800PST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
		<b>31</b>	<b>1200PST</b>						
			Heavy snow of 4-12 inches each day was reported across the mountainous areas of eastern Washington. Some of the sites included: Mt. Spokane, Republic, Holden Valley, Lake Wenatchee and Plain.						

# Storm Data and Unusual Weather Phenomena

March 1999

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

## WASHINGTON, Northwest

**WAZ001>018-020 San Juan - Western Whatcom - Northern Casade Foothills - Central Casade Foothills - Northwest Interior - Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Admiralty Inlet Area - Hood Canal/Kitsap Peninsula - Southwest Interior - Olympics - Eastern Strait Of Juan De Fuca - Western Strait Of Juan De Fuca - North Coast - Central Coast - West Slopes Northern Cascades And Passes - West Slopes Central Cascades And Passes - Southwest Interior**

<b>02</b>	<b>2100PST</b>			<b>1</b>	<b>0</b>	<b>3M</b>	<b>High Wind (G61)</b>
<b>03</b>	<b>1000PST</b>						

Sustained winds of 35 to 50 mph over all of western Washington knocked out power to 200,000 people. One man died when his car was struck by a fallen tree. Fallen trees also damaged 2 houses and several cars. Ferry services were delayed, the 520 bridge was closed for the first time since 1995 and most schools in Kitsap Co were closed. M36VE

### **Grays Harbor County**

<b>Ocean Shrs</b>	<b>03</b>	<b>0000PST</b>		<b>0</b>	<b>0</b>	<b>1M</b>	<b>Storm Surge</b>
		<b>2300PST</b>					

Tidal overflow due to high winds and heavy surf (to 35 feet) flooded some homes and damaged roads and city utilities.

### **King County**

<b>Countywide</b>	<b>01</b>	<b>0000PST</b>		<b>0</b>	<b>0</b>	<b>5.5M</b>	<b>Heavy Rain</b>
	<b>15</b>	<b>0000PST</b>					

### **Mason County**

<b>Lilliwaup</b>	<b>01</b>	<b>0000PST</b>		<b>0</b>	<b>0</b>	<b>10.2M</b>	<b>Heavy Rain</b>
	<b>15</b>	<b>0000PST</b>					

The heavy rain, which in turn caused flooding and mudslides, over the winter season has caused 18.5 million damage to Washington State roads. The two hardest hit counties were Mason with 10.2 and King with 5.5 million in damage.

### **Mason County**

<b>4 W Hoodspport</b>	<b>25</b>	<b>1915PST</b>		<b>0</b>	<b>0</b>	<b>5M</b>	<b>Heavy Rain</b>
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A mudslide 12 feet deep damaged a powerhouse switch yard at the Lake Cushman dam. The area received nearly 10 feet of rain since September 1998.

### **Thurston County**

<b>Countywide</b>	<b>30</b>	<b>0000PST</b>		<b>0</b>	<b>0</b>	<b>7M</b>	<b>Heavy Rain</b>
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Flooding and mudslides since November 1998 have damaged 75 residences. Some of the homes were not safe to reenter and the people had to relocate. Normal rainfall in the 4 month period from Nov to Feb is 29.7 inches at Olympia. From Nov 98 to Feb 99, they received 56.03 inches.

## WASHINGTON, Southeast

### **WAZ029**

#### **Blue Mountain Foothills**

<b>02</b>	<b>2300PST</b>			<b>0</b>	<b>0</b>		<b>High Wind (G52)</b>
<b>03</b>	<b>0030PST</b>						

A fast moving cold front produced damaging wind as it moved through eastern Washington. At 1020 PM, the Tri-City Airport (at Pasco) had sustained wind of 39 mph with gusts to 45 mph. At 1050 PM, the Walla Walla Airport recorded a wind gust of 60 mph. A barn was levelled a few miles southeast of Waitsburg. There were numerous reports of downed trees and damaged roofs from Walla Walla to Dayton. Close to 3400 customers were without power for about two hours. Some customers were without power until around 5 AM.

### **WAZ025**

#### **East Slopes Southern Cascades**

<b>02</b>	<b>2000PST</b>			<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
<b>03</b>	<b>0900PST</b>						

A late winter storm dropped varying amounts of snow along the east slopes of the Cascades overnight. White Pass (4500 feet elevation) received 6 inches of snow, Snoqualmie Pass (3022 feet elevation) 4 inches, and both Glenwood (1968 feet elevation) and Easton Ridge (2800 feet elevation) received 2 inches.

### **WAZ030**

#### **Northwest Blue Mountains**

<b>15</b>	<b>2000PST</b>			<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
<b>16</b>	<b>0730PST</b>						

Five inches of new snow fell at Ski Bluewood overnight (4500 feet elevation).

### **WAZ030**

#### **Northwest Blue Mountains**

<b>26</b>	<b>2000PST</b>			<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
<b>27</b>	<b>0700PST</b>						

Seven inches of new snow fell overnight at Ski Bluewood (4500 feet elevation).

### **WAZ025-030**

#### **East Slopes Southern Cascades - Northwest Blue Mountains**

<b>28</b>	<b>1800PST</b>			<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
<b>29</b>	<b>1200PST</b>						

# Storm Data and Unusual Weather Phenomena

March 1999

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

## WASHINGTON, Southeast

Heavy snow fell overnight along the east slopes of the Washington Cascades and in the mountains of southeast Washington. Snoqualmie Pass (3022 feet elevation) reported 18 inches of new snow and Glenwood (1968 feet elevation) reported 5 inches. Ski Bluewood (4500 feet elevation) received 9 inches of snow through the night and morning.

### **Walla Walla County**

<b>Walla Walla</b>	<b>30</b>	<b>1322PST</b>			<b>0</b>	<b>0</b>			<b>Funnel Cloud</b>
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A funnel cloud was seen southeast of Walla Walla for a few minutes during the early afternoon. A newspaper's photographer was able to capture the funnel cloud on film.

## WASHINGTON, Southwest

### **WAZ021 South Coast**

<b>02</b>	<b>1900PST</b>			<b>0</b>	<b>0</b>	<b>1K</b>		<b>Flood</b>
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**03 2100PST**

### **WAZ021 South Coast**

<b>02</b>	<b>1900PST</b>			<b>0</b>	<b>0</b>	<b>1.5K</b>		<b>High Wind (G76)</b>
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**03 0400PST**

The strongest Pacific storm of winter season brought high winds, heavy surf, and local flooding to the south Washington coast. The Coast Guard Station at Cape Disappointment reported 81 mph winds with a gust to 88 mph at 943 pm. The strongest winds were between 930 pm and 1230 am. Numerous trees were reported blown down and widespread power outages occurred due the fallen trees and limbs. Heavy surf generated by the storm tossed large logs across roads and into buildings. First Street in downtown Raymond was under one to three feet of water the morning of the 3rd from the heavy surf, high tides, and heavy rain..

## WEST VIRGINIA, East

### **Berkeley County**

<b>Martinsburg</b>	<b>03</b>	<b>1741EST</b>		<b>0</b>	<b>0</b>	<b>10K</b>		<b>Lightning</b>
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Lightning strike disabled Berkeley County 911 Communication Tower

### **Berkeley County**

<b>Tablers</b>	<b>03</b>	<b>1831EST</b>		<b>0</b>	<b>0</b>	<b>5K</b>		<b>Thunderstorm Wind</b>
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Power lines downed on U.S. 11 South near Tablers Station Road

### **Berkeley County**

<b>Martinsburg</b>	<b>03</b>	<b>1835EST</b>		<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind</b>
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Power lines and transformers downed

### **Berkeley County**

<b>Falling Waters</b>	<b>03</b>	<b>1842EST</b>		<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G51)</b>
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### **Jefferson County**

<b>Charles Town</b>	<b>03</b>	<b>1850EST</b>		<b>0</b>	<b>0</b>	<b>3K</b>		<b>Thunderstorm Wind</b>
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Power lines downed and chimney on house blown over

### **WVZ048>049-051>052 Grant - Mineral - Morgan - Berkeley**

<b>03</b>	<b>1900EST</b>			<b>0</b>	<b>0</b>			<b>Winter Storm</b>
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**04 0800EST**

### **WVZ050-053>055 Hampshire - Jefferson - Pendleton - Hardy**

<b>03</b>	<b>1900EST</b>			<b>0</b>	<b>0</b>			<b>Winter Weather</b>
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**04 0800EST**

### **Berkeley County**

<b>Martinsburg</b>	<b>03</b>	<b>1947EST</b>		<b>0</b>	<b>0</b>	<b>5K</b>		<b>Lightning</b>
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Lightning strike ruptured gas line and exposed electrical wires at a home

A low pressure system moved from West Virginia to Pennsylvania on the evening of the 3rd. This system produced sustained winds of 25 to 40 MPH from the afternoon of the 3rd through the morning of the 4th. A cold front associated with the system moved through during the early evening and produced a line of thunderstorms that brought heavy rain, small hail, and wind gusts in excess of 55 mph to the Eastern Panhandle. In Berkeley County, lightning struck the 911 Central Dispatch communication tower in Martinsburg, resulting in a service disruption. A lightning strike also ruptured a gas line and exposed electrical wires at a home east of Martinsburg. Power lines were downed on U.S. Highway 11 South near Tabler Station Road, and 1,200 customers lost power as a result. A wind gust of 59 MPH was recorded in Falling Waters. Jefferson County reported downed power lines and the chimney of a home blown over on South Childs Road. After the cold front passed, temperatures dropped rapidly and rain turned to snow. Pendleton and Jefferson County reported 2 inches of accumulation, Grant County reported 15 inches in the highest elevations to only 1 inch near the Hardy County border, Hardy County reported 1 to 3 inches, Mineral and Morgan County reported 5 inches, and Hampshire County reported 1 inch. The combination of winds and snowfall made travel difficult during the early morning of the 4th.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## WEST VIRGINIA, East

**WVZ048**

**Grant**

**06 0200EST 1200EST 0 0 Winter Weather**

A fast moving storm system travelled across the Appalachian Mountains and tracked along the Mason-Dixon line on the morning of the 6th. This disturbance produced light to moderate snow across the Eastern Panhandle from early morning through midday. The town of Bayard received 3.5 inches of accumulation, and Keyser received 2.2 inches.

**WVZ048>055**

**Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy**

**09 0200EST 2359EST 0 0 Winter Storm**

An area of low pressure moved from the Ohio Valley to North Carolina from late on the 8th through the evening of the 9th. Heavy snow fell across much of the Eastern Panhandle as the storm system moved through. Snowfall rates were occasionally in excess of 1 1/2 inch per hour. By the evening of the 9th, between 8 and 12 inches of snow had accumulated in Mineral, Hampshire, Grant, and Hardy County; 6 to 10 inches fell across Jefferson and Southern Berkeley County; and 4 to 8 inches fell across Morgan, Northern Berkeley, and Pendleton County. Travel was treacherous across the region. Several accidents occurred on Interstate 81 in Berkeley County, including one fatal crash near Falling Waters around noon. Jefferson County reported 5 accidents and difficult driving conditions on Blue Ridge Mountain.

**WVZ048>055**

**Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy**

**14 0500EST 15 1200EST 0 0 Winter Storm**

An area of low pressure over the Southeast U.S. produced snow across the Eastern Panhandle on the 14th. The low pressure system redeveloped off the coast of North Carolina and moved up the Eastern Seaboard on the morning of the 15th, resulting in another period of snowfall. Total accumulations included 12 to 14 inches in Mineral County, 9 to 15 inches in Berkeley County, 9 to 11 inches in Hampshire County, 8 to 11 inches in Grant County, around 8 to 10 inches in Morgan County, 5 to 7 inches in Hardy County, 6 to 8 inches in Pendleton County, and around 6 inches in Jefferson County. The heavy snow made travelling difficult. Seven accidents were reported in rapid succession on Interstate 81 in Berkeley County during a 30 minute period on the 14th. Another accident in Berkeley County on West Virginia Route 9 and Rock Cliff Drive involved six cars and left two injured.

## WEST VIRGINIA, North

**WVZ023-041**

**Preston - Tucker**

**01 0600EST 02 0300EST 0 0 Heavy Snow**

Strong northwesterly winds behind a deepening area of low pressure brought orographically enhanced heavy snow to the higher terrain of extreme northern West Virginia. Across Preston County, 4 to 6 inches of snow were reported at Kingwood, while 8 inches fell at Terra Alta. Reports of over a foot of snow were received from some of the higher ridges in the county. Most schools across the area were forced to cancel classes for two days. Heavy snow also blanketed Tucker County, where Parsons reported a total of 9 to 14 inches of new snow.

**WVZ023-041**

**Preston - Tucker**

**03 1900EST 04 1100EST 0 0 50K Winter Storm**

A deepening area of low pressure moved across northern West Virginia, spreading heavy snowfall and high winds across Preston and Tucker Counties. Snowfall totals of up to 24 inches were reported at Terra Alta in Preston County, while Rowlesburg reported 12 inches and Masontown 11 inches. Across Tucker County, 17 inches of snow fell at Canaan Valley, while Parsons reported 10 inches.

To compound problems, high winds gusting to over 60 MPH during the early morning hours of the 4th created snow drifts of up to 6 feet in Terra Alta. Elsewhere, the blowing and drifting snow brought traffic to a halt along Interstate 68 in Preston County and made many secondary roads impassable. The combination of the heavy snow and high winds also downed trees and power lines, creating numerous power outages across the area.

**WVZ001>004-012-021>023-041**

**Hancock - Brooke - Ohio - Marshall - Wetzel - Marion - Monongalia - Preston - Tucker**

**09 0300EST 2100EST 0 0 Heavy Snow**

A winter storm moved quickly across the Ohio Valley, producing snowfall totals of between 4 and 7 inches across the West Virginia panhandle and 6 to 8 inches across northern sections of West Virginia. Locally higher amounts were reported along the ridges in Preston and Tucker Counties. Terra Alta in Preston County recorded 14 inches of snow, while 10 to 12 inches were reported in both Kingwood (Preston County) and Canaan Valley (Tucker County).

The snowfall and icy roads were responsible for numerous minor accidents on area roadways.

**WVZ012-021>023**

**Wetzel - Marion - Monongalia - Preston**

**14 0700EST 2100EST 0 0 Heavy Snow**

Northern sections of West Virginia received a fresh blanket of snow as a late-winter storm moved across the area. Some snowfall

# Storm Data and Unusual Weather Phenomena

March 1999

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

## WEST VIRGINIA, North

totals from across the region included 12 inches at both Kingwood and Independence in Preston County; 10 inches in Morgantown, Monongalia County; 9 inches in Boothsville, Marion County and 6 inches in Hundred, Wetzel County.

## WEST VIRGINIA, Southeast

### **WVZ044>045 Monroe - Greenbrier**

<b>03</b>	<b>1300EST</b>		<b>0</b>	<b>0</b>			<b>Winter Storm</b>
<b>04</b>	<b>0230EST</b>						

Rain into the mid afternoon of the 3rd changed to snow by late afternoon and accumulated 4 to 6 inches with up to 8 inches in the higher elevations before ending early in the morning of the 4th.

### **WVZ042>043 Mercer - Summers**

<b>03</b>	<b>1330EST</b>		<b>0</b>	<b>0</b>			<b>Winter Storm</b>
<b>04</b>	<b>0100EST</b>						

Rain into the early afternoon changed to sleet and quickly to snow by mid afternoon. By early morning on the 4th snow accumulations ranged from 6 inches to 12 inches with higher amounts in the higher elevations. Strong winds caused blowing and drifting of the snow with drifts up to 3 feet.

### **WVZ043-045 Summers - Greenbrier**

<b>09</b>	<b>0830EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>2100EST</b>						

Snow developed during the morning of the 9th and accumulated 6 to 8 inches before ending in the evening.

### **WVZ042-044 Mercer - Monroe**

<b>15</b>	<b>0130EST</b>		<b>0</b>	<b>0</b>	<b>2K</b>		<b>Heavy Snow</b>
	<b>1000EST</b>						

Wet snow developed early in the morning on the 15th and accumulated from 8 inches in the valleys to 14 inches in the higher elevations before ending late in the morning. The weight of the snow downed trees and power lines resulting in scattered power outages.

### **WVZ043 Summers**

<b>15</b>	<b>0200EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>1000EST</b>						

Wet snow developed early in the morning of the 15th and accumulated from 4 inches in the valleys to 14 inches in some of the higher elevations before ending late in the morning.

### **WVZ045 Greenbrier**

<b>15</b>	<b>0200EST</b>		<b>0</b>	<b>0</b>	<b>2K</b>		<b>Heavy Snow</b>
	<b>1100EST</b>						

Snow developed early in the morning of the 15th and accumulated from 8 to 10 inches with up to 14 inches in the eastern half of the county before ending late in the morning. The weight of the snow downed small trees and power lines with scattered power outages resulting.

## WEST VIRGINIA, West

### **WVZ037>039-046>047 Nicholas - Webster - Upshur - Pocahontas - Randolph**

<b>01</b>	<b>0100EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>1500EST</b>						

A moist and colder northwest flow deposited heavy snow in the upslope mountainous counties. In the lower elevations, snow accumulations of 6 to 9 inches were common. This included the communities of Elkins, Dailey, Webster Springs, Summersville, and Mount Nebo. The snow pack across the river valleys was actually settling and melting from the warmer ground. At elevations above 3000 feet, the total snow accumulations were a foot or more. For example, in the mountains of Randolph County, the snow depth at Kumbrabow State Forest went from 2 inches prior to the storm, to 17 inches by late afternoon on the 1st.

### **WVZ028-030-032>040-046>047 Braxton - Lewis - Taylor - McDowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Upshur - Barbours - Pocahontas - Randolph**

<b>03</b>	<b>1400EST</b>		<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
<b>04</b>	<b>0800EST</b>						

In the wake of a strong cold frontal passage, rain changed to snow from south to north during the mid and late afternoon on Wednesday the 3rd. A low pressure system then strengthened rapidly in central Virginia during the late afternoon, before lifting north during the evening. Route 19 was closed for a time in Braxton County. The fire departments in Randolph County temporarily stopped vehicles from crossing the mountains. Snow accumulations of 6 to 8 inches were common in the valleys, with 10 to 15 inches above 3000 feet. Kumbrabow State Forest reported a 16 inch snowfall, with their total snow depth reaching 21 inches. Other representative snow accumulations were 6 inches at Weston, 8 inches at Buckhannon, Pineville, Sutton, and Valley

# Storm Data and Unusual Weather Phenomena

March 1999

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

## WEST VIRGINIA, West

Head, 9 inches at Grafton and Valley Head, and finally 12 inches at Oak Hill and Elkins. Winds gusts of 30 to 35 mph combined with the snow to cause some power outages. About 3000 customers lost electricity in the Sutton, Webster Springs region, on north toward Weston and Buckhannon. For the Beckley to Oak Hill region, plus the Interstate 79 corridor between Sutton and Weston, it was the deepest snow cover of the winter.

### WVZ034

#### Wyoming

09	0400EST 0900EST			0	0				Heavy Snow
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Snow accumulations of 2 to 6 inches were deposited before changing to rain and drizzle.

### WVZ008>011-016>017-019

#### Jackson - Wood - Pleasants - Tyler - Roane - Wirt - Ritchie

09	0400EST 1700EST			0	0				Heavy Snow
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### WVZ018-020-028>031

#### Calhoun - Doddridge - Braxton - Gilmer - Lewis - Harrison

09	0500EST 2200EST			0	0				Heavy Snow
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### WVZ032-038>040-046>047

#### Taylor - Webster - Upshur - Barbour - Pocahontas - Randolph

09	0500EST			0	0				Heavy Snow
10	0300EST								

Snow accumulations of 3 to 6 inches fell in the Ohio Valley counties, 4 to 8 inches along the Interstate 79 corridor, and finally 8 to 12 inches in the mountains of Randolph and Pocahontas Counties. Elkins snow depth went from a trace to 9 inches. The total snow depth from the 3 early March storms reached 33 inches at the mountain station of Snowshoe on the 10th. That was their deepest snow depth of the winter.

### WVZ046

#### Pocahontas

14	0100EST 0900EST			0	0				Winter Storm
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One to 3 inches of snow fell, before changing to freezing rain. A quarter inch of ice was deposited by the freezing rain.

### WVZ009>011-017-019>020-031>032-039>040-047

#### Wood - Pleasants - Tyler - Wirt - Ritchie - Doddridge - Harrison - Taylor - Upshur - Barbour - Randolph

14	0300EST 1900EST			0	0				Heavy Snow
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Overrunning heavy snow occurred just north of the rain/snow line. Big wet snow flakes came down during the afternoon, causing snow rates of an inch per hour. Snow accumulations of 4 to 8 inches were measured. For example, Clarksburg had 7 inches of snow.

### WVZ033>038-046>047

#### McDowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Pocahontas - Randolph

15	0000EST 0730EST			0	0				Heavy Snow
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The upper air energy associated with a large storm caused a second round of precipitation. Rain changed to wet snow, depositing 4 to 10 inches of snow. Lester in Raleigh County measured 8 inches, while Elkhorn of McDowell County and Marlinton both had 7 inches. Electricity was out to about 5,000 customers in the Beckley service area for a short time. This area was southeast of the region affected by the heavy snow on the 14th.

This was the 4th and final winter storm to affect the central Appalachians in a 2 week period.

### WVZ005>011-013>020-024>040-046>047

#### Wayne - Cabell - Mason - Jackson - Wood - Pleasants - Tyler - Lincoln - Putnam - Kanawha - Roane - Wirt - Calhoun - Ritchie - Doddridge - Mingo - Logan - Boone - Clay - Braxton - Gilmer - Lewis - Harrison - Taylor - McDowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Upshur - Barbour - Pocahontas - Randolph

01	0000EST			0	0				Monthly Temperature
31	2300EST								

A prolonged cold spell during the first half of the month caused the average monthly temperature to be 5 to 8 degrees colder than a normal March. It was the 4th coldest March on record for both Beckley and Elkins. At Elkins, the average monthly temperature was 2 to 3 degrees colder than the previous months of December, January, and February. After the mild January and February, the cold March help delay the emergence of the new spring growth.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## WEST VIRGINIA, West

**WVZ032-037>040-046>047 Taylor - Nicholas - Webster - Upshur - Barbour - Pocahontas - Randolph**

<b>01</b>	<b>0000EST</b>								
<b>31</b>	<b>2300EST</b>								<b>Monthly Snowfall</b>

The monthly snow brought back memories of the record snows during March, 1960. Most of the snow fell in the first 15 days of the month. Since no records were kept at Elkins during 1960, March 1999 ended up the snowiest March on record for that city, with 41.6 inches. Snowshoe had 61 inches of March snowfall, Kumbrabow State Forest had 50 inches, and Gladys measured 48 inches. The monthly snowfall in the upper Greenbrier Valley at Bartow was 36 inches, the observer on the higher terrain around Richwood had 34 inches. Hacker Valley in Webster County measured a total of 30 inches.

## WISCONSIN, Extreme Southwest

NONE REPORTED.

## WISCONSIN, Northeast

**WIZ035-045-050 Wood - Waushara - Manitowoc**

<b>08</b>	<b>1900CST</b>								
<b>09</b>	<b>1800CST</b>								<b>Winter Storm</b>

Low pressure moved through central Illinois on its way to the Ohio Valley, bringing heavy snow and brisk winds to parts of central and east-central Wisconsin. The heaviest snow fell in southern Waushara county and near Lake Michigan in Manitowoc county. Wood county received less snow but brisk east to northeast winds there caused some blowing and drifting snow which made travel and snow removal difficult. According to cooperative observer reports, 8.1 inches of new snow fell 4 miles north of Wautoma and 8.0 inches fell 5 miles north of Neshkoro. Lake enhancement caused higher snow totals in eastern Manitowoc county near Lake Michigan. Early on the morning of the 9th the Manitowoc county DPW director estimated 6 to 8 inches had fallen there.

**WIZ005-005-010>011-013-018>022-030>031-035>040-045-048>050 Vilas - Oneida - Forest - Marinette - Lincoln - Langlade - Menominee - Oconto - Door - Marathon - Shawano - Wood - Portage - Waupaca - Outagamie - Brown - Kewaunee - Waushara - Winnebago - Calumet - Manitowoc**

<b>17</b>	<b>1300CST</b>								
<b>18</b>	<b>0200CST</b>								<b>Strong Wind</b>

Strong west to northwest winds developed across much of Wisconsin as an intense area of low pressure moved from southern Lake Superior to near Lake Huron. The strong winds began in the early afternoon of the 17th and continued until very early on the 18th. Numerous gusts near 50 mph were recorded across central and east-central Wisconsin including 51 mph from a private weather company in Stevens Point, 49 mph at Wisconsin Rapids and 48 mph at Marshfield and Green Bay. Strong winds in Green Bay knocked out electricity to 3,200 homes and downed a large tree limb along a busy street.

**WIZ005-010>013-018>022-030>031-035>040-045-048>050 Vilas - Oneida - Forest - Florence - Marinette - Lincoln - Langlade - Menominee - Oconto - Door - Marathon - Shawano - Wood - Portage - Waupaca - Outagamie - Brown - Kewaunee - Waushara - Winnebago - Calumet - Manitowoc**

<b>01</b>	<b>0001CST</b>								
<b>31</b>	<b>2359CST</b>								<b>Dry</b>

It was a very dry month across northeast Wisconsin with numerous small grass fires. Many locations received less than a quarter inch of precipitation for the month. Green Bay (Brown county) not only had its driest March on record with 0.15 inch, but it was also the 6th driest month of all time. No measurable precipitation was recorded in Green Bay during the last 22 days of the month. Antigo in Langlade county (0.11 inch) and Wisconsin Rapids in Wood county (0.13 inch) recorded even less precipitation than Green Bay. It was the second driest March on record at Oshkosh, in Winnebago county, according to the local newspaper (0.17 inch).

## WISCONSIN, Northwest

**WIZ001-006 Douglas - Burnett**

<b>08</b>	<b>1500CST</b>								
<b>09</b>	<b>1200CST</b>								<b>Heavy Snow</b>

A strong late season winter storm brought heavy snow mainly to adjacent areas of Minnesota, but western portions of Douglas and Burnett counties in Wisconsin also received up to half a foot.

## WISCONSIN, Southeast

**WIZ056-062-067 Sauk - Iowa - Lafayette**

<b>08</b>	<b>1900CST</b>								
	<b>2300CST</b>								<b>Winter Storm</b>

The combination of 4 to 6 inches of snow and strong winds resulted in a winter storm as defined by local criteria. Sustained winds speeds were 20 mph or more with gusts 35 mph. See narrative associated with the March 9, 1999 winter storm that affected southeast Wisconsin from 0200 to 1300CST for additional details.

# Storm Data and Unusual Weather Phenomena

March 1999

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

## WISCONSIN, Southeast

**WIZ046>047-057-063-068>069**     **Marquette - Green Lake - Columbia - Dane - Green - Rock**

**08**     **2100CST**     **0**     **0**     **Winter Storm**  
**2359CST**

The combination of 4 to 6 inches of snow and strong winds resulted in a winter storm as defined by local criteria. Sustained winds speeds were 20 mph or more with gusts 35 mph. See narrative associated with the March 9, 1999 winter storm that affected southeast Wisconsin from 0200 to 1300CST for additional details.

**WIZ051-058>059-064>065-070**     **Fond Du Lac - Dodge - Washington - Jefferson - Waukesha - Walworth**

**09**     **0000CST**     **0**     **0**     **Winter Storm**  
**0700CST**

The combination of 3 to 6 inches of snow and strong winds resulted in a winter storm as defined by local criteria. Sustained winds speeds were 20 mph or more with gusts 35 mph. See narrative associated with the March 9, 1999 winter storm that affected southeast Wisconsin from 0200 to 1300CST for additional details.

**WIZ052-060-066-071>072**     **Sheboygan - Ozaukee - Milwaukee - Racine - Kenosha**

**09**     **0200CST**     **0**     **0**     **Winter Storm**  
**1300CST**

A winter storm affected southcentral and then southeast Wisconsin with a combination of snow, blowing and drifting snow, and poor visibilities. By Wisconsin standards, this storm was a minimal winter storm, but nonetheless resulted in numerous vehicle accidents and many vehicles in roadside ditches. By the time the storm ended, 3 to 6 inches of new snow had fallen over southcentral Wisconsin and 5 to 10.5 inches over southeastern Wisconsin. Sustained east-northeast winds were 17 knots (20 mph) or more, with gusts to 30 knots (35 mph) or more.

The snow began during the mid-afternoon hours on 03/08/99 over southcentral Wisconsin and in the early evening hours over the southeastern counties, however official winter storm conditions developed later once 3 inches of snow had accumulated. Visibilities due to blowing and drifting snow were occasionally down to 1/4 mile, or lower, especially in open areas. Waves built to 5 to 7 feet along the Lake Michigan shoreline where gusts to 35 knots (40 mph) were noted.

It appeared that Lake Michigan moisture enhanced snowfall totals in the higher terrain from western Sheboygan county down to southeastern Washington county, including eastern Fond du Lac county. Terrain in this area, where 9 to 10.5 inches was measured, is roughly 400-600 feet higher than Lake Michigan. The 10.5 inches was reported in Plymouth of western Sheboygan county. Other totals included: Sheboygan (6.0), West Bend (8.8), Port Washington (7.7), Random Lake (7), Milwaukee (7.6), Racine (7.0), Kenosha (8-9), 4SSE Sullivan in Jefferson county (5.0), Madison (5.8), Middleton (6.1), and Janesville-Beloit (4.0).

The responsible low pressure moved from Missouri to central Illinois to northern Kentucky.

**WIZ046-063>064**     **Marquette - Dane - Jefferson**

**17**     **1715CST**     **0**     **0**     **8K**     **High Wind**  
**2030CST**

Synoptic-scale high winds in the wake of a strong low pressure system raked southern Wisconsin. The powerful winds knocked down stop signs around DeForest (Dane Co.), pushed over large trees around Oxford (Marquette Co.) and north of Palmyra (Jefferson Co.). In addition, a businesses siding was peeled off in Oxford. It is estimated that wind gusts reached 60 mph at those locations.

**WIZ062-068**     **Iowa - Green**

**17**     **1615CST**     **0**     **0**     **5K**     **High Wind**  
**1930CST**

Synoptic-scale high winds in the wake of a strong low pressure system raked southcentral Wisconsin. There were scattered reported of pushed over stop signs, trees, and street lights. It is estimated that winds gusts reached 60 mph.

**WIZ051-065**     **Fond Du Lac - Waukesha**

**17**     **1830CST**     **0**     **0**     **4K**     **High Wind**  
**2100CST**

Synoptic-scale high winds in the wake of a strong low pressure system raked southcentral Wisconsin. There were scattered reported of pushed over stop signs, trees, and street lights. It is estimated that winds gusts reached 60 mph. All other locations in southcentral and southeast Wisconsin had wind gusts in the 45 to 55 mph range.

## WISCONSIN, Southwest

**WIZ032>034-054>055-061**     **Buffalo - Trempealeau - Jackson - Crawford - Richland - Grant**

**08**     **0800CST**     **0**     **0**     **Winter Storm**  
**09**     **0400CST**

Parts of west central and southwest Wisconsin received 6 to 10 inches of snow. Strong southeast winds gusting to 40 mph caused considerable blowing and drifting, with drifts in some places 3 to 4 feet high.



# Storm Data and Unusual Weather Phenomena

March 1999

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

### **WYZ054>058      Gillette - South Campbell - Moorcroft - Wyoming Black Hills - Weston**

<b>09</b>	<b>2200MST</b>				<b>0</b>	<b>0</b>			<b>Winter Storm</b>
<b>10</b>	<b>2300MST</b>								

Surface low pressure just south of the Black Hills combined with an upper level short wave to create some areas of heavy snowfall. Snow wrapped around the storm system and left Northeastern Wyoming in a favorable position for upslope precipitation. Up to 10 inches of snow fell in some places across the region. Overall amounts were generally from 4 to 8 inches.

### **WYZ054-056>057      Gillette - Moorcroft - Wyoming Black Hills**

<b>05</b>	<b>1000MST</b>				<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
	<b>1900MST</b>								

A surface low pressure system south of the Black Hills brought wrap around snowfall into northeastern Wyoming. The Gillette area had the most precipitation with up to 12 inches reported. Interstate 90 was closed from Gillette to Sheridan because of the snowfall and the rapid accumulations that occurred at times.

### **WYZ054>055      Gillette - South Campbell**

<b>16</b>	<b>1500MST</b>				<b>0</b>	<b>0</b>			<b>High Wind (G57)</b>
	<b>1700MST</b>								

A strong cold front swept through northeastern Wyoming creating short lived strong winds. Winds gusted up to 65 mph as the front passed through and then they decreased within the next hour.

## WYOMING, Southeast

### **WYZ066-069      Laramie Range - Cheyenne Foothills**

<b>05</b>	<b>0758MST</b>				<b>1</b>	<b>3</b>	<b>50K</b>	<b>0</b>	<b>Icy Roads</b>
	<b>1430MST</b>								

Blowing snow and icy roads caused several accidents on Interstates 25 and 80. An accident occurred at 316 pm west of Cheyenne when a man lost control of his pickup on the ice. The truck flipped over into the ditch. The man, his wife and 3 daughters were not injured in the accident. However, while waiting on the side of the road after the accident, a semi trailer traveling west jack-knifed and hit the 32 year old mother and one of her daughters. The women died instantly and the daughter was taken to the hospital in serious condition.

Two other people were injured in a two vehicle accident, on Interstate 80 west of Cheyenne at 920 am. Interstate 80 west of Cheyenne was closed at 1000 am because of black ice, high winds and the cleanup of a large number of accidents. The Interstate was reopened around 230 pm.

Interstate 25 north and south of Cheyenne was closed around 800 am and was reopened at 1238 pm. F32EQ

### **WYZ061      Southwest Carbon**

<b>27</b>	<b>0715MST</b>				<b>0</b>	<b>2</b>	<b>37K</b>	<b>0</b>	<b>Icy Roads</b>
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Ice on highway 287 caused a collision between two pickup trucks. The driver of one of the pickup trucks was seriously injured and had to be extricated from the vehicle. The accident occurred 6 miles south of Muddy Gap at 730 am. Another accident occurred 30 miles north of Rawlins, in which a person lost control of thier vehicle on the ice. The vehicle slid into the ditch and rolled 3 times. The driver sustained a broken arm. The accident occurred at 715 am.

# 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, Central

#### **Chenango County**

<b>3.5 S New Berlin</b>	<b>26</b>	<b>1810EST 1811EST</b>	<b>0.1</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>1K</b>		<b>Tornado (F0)</b>
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A severe thunderstorm produced a brief tornado around 7:10 p.m EDT which uprooted some trees near the Riverbend golf course along Route 8. The tornado was first spotted, and subsequently photographed, looking east from the Norwich Fairgrounds where several eyewitnesses spotted a funnel cloud during the Bluegrass Festival around 7 p. m. EDT. The apparent tornado was tracked moving east-northeast crossing Routes 23 and 8 to the south of New Berlin. After it's brief touchdown, the tornado gradually lifted as it moved toward Otsego County with no further reports of touchdowns or damage.

# Storm Data and Unusual Weather Phenomena

October 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

### PACIFIC

#### **Guam**

<b>Apra Harbor</b>	<b>10</b>	<b>1700SST 1730SST</b>			<b>0</b>	<b>0</b>			<b>Waterspout</b>
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#### **GUZ002**

#### **Micronesia**

<b>Yap</b>	<b>11</b>	<b>0300SST 1800SST</b>			<b>0</b>	<b>0</b>	<b>50K</b>		<b>Tropical Storm</b>
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#### **GUZ008**

#### **Rota**

<b>11</b>		<b>0400SST 1400SST</b>			<b>0</b>	<b>0</b>			<b>Tropical Storm</b>
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#### **Saipan**

<b>Central Portion</b>	<b>11</b>	<b>1000SST 1500SST</b>			<b>0</b>	<b>2</b>			<b>Rip Currents</b>
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#### **GUZ002**

#### **Micronesia**

<b>Chuuk</b>	<b>26</b>	<b>1320SST 1830SST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>High Wind</b>
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A little less than 10 percent of the banana trees around the east to southeast exposures of the island was damaged

On the 26th strong winds moved across Chuuk State. Winds started picking up at the National Weather Service Office on the island of Weno at around 1320 and died down by 1830. A peak wind of 54 mph occurred at 1632 at the Weather Service Office. Island power went off at 1518 and was restored by 1740. A little less than 10 percent of the banana trees around the east to southeast exposures of the island was damaged. Low level wind convergence aided by upper level divergence helped to produce showers across the region. these showers produced the strong and gusty winds across Chuuk State.

# Storm Data and Unusual Weather Phenomena

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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December 1998

## ADDITIONS/CORRECTIONS

### PACIFIC

#### **Guam**

<b>Ritidian Point</b>	<b>24</b>	<b>1105SST 1330SST</b>			<b>0</b>	<b>0</b>			<b>Rip Currents</b>
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# Storm Data and Unusual Weather Phenomena

January 1999

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

### MAINE, South

**MEZ001>030**

**Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington**

01	1300EST								
02	1900EST								<b>Extreme Windchill Temperatures</b>

Wind chill temperatures dropped to between 30 and 60 degrees below zero across Maine as strong northwesterly winds brought arctic air into the state following the passage of a cold front on New Year's Day. In northern Maine, wind chill temperatures generally dropped to between 50 and 60 degrees below zero, while central and southern Maine had wind chill temperatures between 30 and 50 degrees below zero.

**MEZ001-003>004-008>010-012>013**

**Northwest Aroostook - Northern Somerset - Northern Piscataquis - Northern Franklin - Central Somerset - Southern Piscataquis - Southern Oxford - Southern Franklin**

03	0700EST								
	1300EST								<b>Winter Storm</b>

**MEZ002-005>006-011-014>028**

**Northeast Aroostook - Northern Penobscot - Southeast Aroostook - Central Penobscot - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo**

03	0700EST								
	1300EST								<b>Mixed Precipitation</b>

An area of low pressure moving northeastward from the Mid-Atlantic States brought moderate to heavy snowfall to the mountains and foothills and to the western half of northern Maine. Snowfall amounts ranged up to 7 to 12 inches in the mountains and in the western half of northern Maine, with lesser amounts to the south and east where a significant portion of the precipitation fell as sleet and freezing rain. Ice accretions of almost a half inch were reported along the immediate coast where temperatures eventually warmed to above freezing. The freezing rain caused about 12,000 power outages, mostly along the immediate coast.

### **Knox County**

**Rockland**

03	1600EST								
04	0800EST								<b>Urban/Sml Stream Fld</b>

The combination of over 3 inches of rain in about 5 hours and snowmelt caused Lindsey Brook in Rockland to spill over its banks, flooding homes along Granite and Talbot Streets.

**MEZ001>011-017**

**Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Interior Washington**

08	1700EST								
09	2200EST								<b>Heavy Snow</b>

**MEZ012>016-018>030**

**Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington**

08	1700EST								
09	2200EST								<b>Mixed Precipitation</b>

An area of low pressure moved northeastward from the Mississippi Valley on the morning of the 8th to northern New England on the 9th bringing a mixture of precipitation across the state. Heavy snows fell in the north and mountains where from 6 to 12 inches was reported. Along the coast and in the foothills, snowfall accumulations ranged from about 5 inches in the foothills to a couple inches along the immediate coast. In these areas, the precipitation changed to sleet, freezing rain, and eventually to rain.

**MEZ005>030**

**Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington**

12	0300EST								
	1900EST								<b>Moderate Snowfall</b>

Low pressure moving eastward from the Great Lakes produced moderate snowfall across southern and central Maine. Snowfall amounts generally ranged from 3 to 6 inches.



# Storm Data and Unusual Weather Phenomena

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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January 1999

## ADDITIONS/CORRECTIONS

### MAINE, South

**MEZ001>022**

**Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo**

<b>18</b>	<b>1200EST</b>			<b>0</b>	<b>0</b>		
<b>19</b>	<b>0400EST</b>						<b>Freezing Rain</b>

The southerly flow out ahead of a large area of low pressure that moved northeastward from the western Great Lakes combined with a warm front to the south of the state brought freezing rain to much of the state. While temperatures had warmed to above freezing during the storm, road surfaces in many locations, particularly sheltered locations, remained at or below freezing.

**MEZ012-018>019-023>024**

**Southern Oxford - Interior York - Interior Cumberland - Coastal York - Coastal Cumberland**

<b>28</b>	<b>0700EST</b>			<b>0</b>	<b>0</b>		
<b>29</b>	<b>0800EST</b>						<b>Moderate Snowfall</b>

Low pressure moving through the mid-Atlantic states and a stationary front over New York state combined to produce a moderate snowfall over extreme southwestern Maine. Snowfall amounts ranged from 4 to 6 inches over York County. Amounts tapered off considerably to the east where less than an inch over eastern Cumberland and eastern Oxford Counties.

### NEW HAMPSHIRE, North and Central

**NHZ001>010-013>014**

**Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**

<b>01</b>	<b>1500EST</b>			<b>0</b>	<b>0</b>		
	<b>2100EST</b>						<b>Extreme Windchill Temperatures</b>

Wind chill temperatures dropped to between 30 and 50 degrees below zero across New Hampshire as strong northwesterly winds brought arctic air into the state following the passage of a cold front on New Year's Day. In northern New Hampshire, wind chill temperatures generally dropped to about 50 degrees below zero, while central and southeastern New Hampshire had wind chill temperatures near 35 degrees below zero. Along the immediate coast, where winds remained stronger, extremely cold wind chill temperatures persisted through most of the day on the January 2nd.

**NHZ001>003-005>010-013**

**Northern Coos - Southern Coos - Northern Grafton - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham**

<b>03</b>	<b>0600EST</b>			<b>0</b>	<b>0</b>		
	<b>1700EST</b>						<b>Mixed Precipitation</b>

**NHZ004**

**Northern Carroll**

<b>03</b>	<b>0600EST</b>			<b>0</b>	<b>0</b>		
	<b>1700EST</b>						<b>Winter Storm</b>

An area of low pressure moving northeastward from the Mid-Atlantic States brought moderate to heavy snowfall to parts of northern New Hampshire where up to 7 inches of snow fell before the precipitation changed to sleet and freezing rain. In most areas, a mixture of precipitation fell. In some areas, the freezing rain brought down tree limbs, which caused scattered power outages, leaving about 13,000 customers without power.

**NHZ001-004**

**Northern Coos - Northern Carroll**

<b>08</b>	<b>1700EST</b>			<b>0</b>	<b>0</b>		
<b>09</b>	<b>2000EST</b>						<b>Heavy Snow</b>

**NHZ002>003-005>010-013>014**

**Southern Coos - Northern Grafton - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**

<b>08</b>	<b>1700EST</b>			<b>0</b>	<b>0</b>		
<b>09</b>	<b>2000EST</b>						<b>Mixed Precipitation</b>

An area of low pressure moved northeastward from the Mississippi Valley on the morning of the 8th to northern New England on the 9th bringing a mixture of precipitation across the state. Heavy snows fell in the extreme northern part of the state where up to 15 inches of snow was reported. In other parts of the state, the precipitation changed to sleet, freezing rain, and eventually to rain. Snowfall amounts in these areas were generally in the 2 to 6 inch range.

**NHZ001>010-013>014**

**Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**

<b>12</b>	<b>0100EST</b>			<b>0</b>	<b>0</b>		
	<b>1300EST</b>						<b>Moderate Snowfall</b>

Low pressure moving eastward from the Great Lakes produced moderate snowfall across northern, central, and southeastern New Hampshire. Snowfall amounts generally ranged from 3 to 6 inches.



# Storm Data and Unusual Weather Phenomena

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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January 1999

## ADDITIONS/CORRECTIONS

### NEW HAMPSHIRE, North and Central

snow fall over most of central and northern New Hampshire. Several stations reported heavy snowfall amounts. Snowfall amounts ranged from an inch or so in the extreme north to up to 7 inches in eastern parts of central New Hampshire.

### PACIFIC

#### **Rota**

<b>Central Portion</b>	10	1207SST 1217SST			0	0			<b>Funnel Cloud</b>
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On the 10th funnel clouds were briefly seen by the observer from the Rota Airport.

#### **Saipan**

<b>Saipan Intl Airport</b>	10	1225SST 1227SST			0	0			<b>Funnel Cloud</b>
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On the 10th funnel clouds were briefly seen by the observer from Saipan International Airport.

#### **Guam**

<b>Inarajan to Merizo</b>	14	0600SST 1200SST			0	0			<b>Urban/Sml Stream Fld</b>
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On the morning of the 14th a shear line stretched across the area. Heavy showers developed along the shear line and moved across the southern sections of Guam. This caused brief flooding in this area

#### **Guam**

<b>Agana</b>	15	0600SST 0615SST			0	0	2K		<b>Rip Currents</b>
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During the morning of the 15th a 21 foot fishing boat was exiting the mouth of the Hagatna Boat Basin. It ran into trouble when it encountered rough surf and strong currents. It eventually capsized. At 0612 fire department dispatchers received a call and arrived six minutes later. Two people were aboard and had already been rescued by the crew of the Mamulan, a tourist fishing boat that had been following them.

#### **Guam**

<b>Inarajan to Merizo</b>	21	0000SST 0700SST			0	0			<b>Urban/Sml Stream Fld</b>
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On the morning of the 21st heavy showers moved across the southern sections of Guam between midnight and 0700 causing Urban and Small Stream Flooding in that area. An automated station in Merizo reported 1.03 inches of rain fell between midnight and 0700

#### **Guam**

<b>Asan</b>	21	1230SST 1400SST			0	3			<b>Rip Currents</b>
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On the 21st three people nearly drowned in strong currents in Asan. Pete Michael, 20, Miko Sally, 19 and Jack Jedro, 13 were spear fishing along the beach north of the old Shelton Music Company Store around 1230. An off duty firefighter, Mark Teraje, was driving home and noticed the people in the water. He notified 911. As the brothers swam they drifted into a channel with a strong current in it. After the rescue units arrived, Terlaje and two other firefighters (Matt Quinata and Rafael Mesa) went into the water with ropes tied around their waist while other rescue workers hung onto the rope from the shore. The three were eventually pulled to shore.

An unrelated, but interesting weather event. On the 25th a group of fishing vessels departed Chuuk in the morning. A heavy rain squall and six to eight fodder seas at about 1700 caused one boat to become segregated from the rest. Three men (Isajas Rukono, 30, Eiki Suzuki, 18, and Estanis Reyes, 30) were only on a 19 foot skiff with only a 40 horsepower motor with forty gallons of fuel and enough food and water to last only one day. The three men survived for a few days on just the one days ration. They made it to Tamatam Island on Pulap Atoll around 1030 on the 29th.

The men were weak from hunger, but otherwise in good shape. The ship Micro Trader went to pick up the men and return them to Chuuk.

### TENNESSEE, East

#### **Scott County**

<b>Countywide</b>	17	2325EST			0	0			<b>Hail (0.88)</b>
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#### **Campbell County**

<b>5 SE La Follette</b>	17	2345EST			0	0			<b>Hail (1.25)</b>
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# Storm Data and Unusual Weather Phenomena

January 1999

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

### TENNESSEE, East

<b>Knox County</b>										
4 E Knoxville	18	0030EST			0	0				Hail (1.00)
<b>Blount County</b>										
5 W Maryville	18	0030EST			0	0				Hail (0.75)
<b>Marion County</b>										
Kimball	18	0035CST			0	0				Hail (0.75)
<b>Sequatchie County</b>										
Lone Oak	18	0040CST			0	0				Hail (1.00)
<b>Loudon County</b>										
3 NW Loudon	18	0045EST			0	0				Hail (0.75)
			3/4" hail near Roane County line.							
<b>Jefferson County</b>										
Jefferson City	18	0100EST			0	0				Hail (0.75)
<b>Hamblen County</b>										
Cherokee Lake	18	0100EST			0	0				Hail (0.75)
<b>Jefferson County</b>										
White Pine	18	0130EST			0	0		15K		Thunderstorm Wind
			Trees downed.							
<b>Sevier County</b>										
Kodak	18	0135EST			0	0				Hail (1.75)
<b>Hamilton County</b>										
Signal Mtn	18	0140EST			0	0				Hail (1.00)
<b>Hamblen County</b>										
2 NW Morristown	18	0140EST			0	0				Hail (0.75)
<b>Hawkins County</b>										
4 W Church Hill	18	0145EST			0	0		20K		Thunderstorm Wind
			Trees downed.							
<b>Hamilton County</b>										
Chattanooga	18	0210EST			0	0				Hail (1.25)
<b>Mcminn County</b>										
1 NE Athens	18	0240EST			0	0		20K		Thunderstorm Wind
			Trees and large limbs downed.							
<b>Bradley County</b>										
2 N Cleveland	18	0245EST			0	0				Hail (1.75)



# Storm Data and Unusual Weather Phenomena

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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February 1999

## ADDITIONS/CORRECTIONS

### NEW HAMPSHIRE, North and Central

**NHZ001>010 Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford**

	22	1800EST			0	0			
	06	2200EST							<b>Extreme Windchill Temperatures</b>

Strong winds and extremely cold wind chills developed briefly over northern and central New Hampshire as an area of low pressure moved into the Canadian Maritimes and an area of arctic high pressure built eastward from central Canada. Wind chill temperatures dropped briefly to around 25 degrees below zero in many parts of the state.

### PACIFIC

#### **Guam**

	05	2330SST			1	0			
<b>Tamuning</b>	06	0145SST							<b>Rip Currents</b>

Hazardous surf and strong currents caused by strong northwest swells were present across the Marianas Islands. Daniel Cepeda Mafnas, 34, disappeared while spear fishing in Tumon Bay near the Hilton Hotel side of Ypao beach. Four men, including Mafnas, went into the water around 2330 on the 5th. About an hour and a half later three of the men came out of the water. They could not find Mafnas and called 911

at around 0100 on the 6th. His body was later found near the Fujita Hotel at around 0145. M34IW

#### **Guam**

	07	0920SST			0	2			
<b>Asan</b>		1100SST							<b>Rip Currents</b>

On the 7th the Hazardous surf and strong currents caused by strong northwest swells continued across the Marianas Islands. Rescue units received a call around 0920 that two divers were in distress in the waters just north of the War in the Pacific National Historic Park in Asan. When rescuers arrived at the scene one of the divers had made it to shore. The other man was still caught in the channel. Rescuers pulled him from the water. The two men suffered minor injuries.

#### **Guam**

	07	1325SST			0	0			
<b>Ritidian Point</b>		1400SST							<b>Rip Currents</b>

Hazardous surf caused by the strong northwest swells also caused trouble elsewhere. At 1325 two men were swept over the reef at Ritidian Point. Rescuers pulled them out of the water. Both of the men were not injured. The two men said that they were both swimming inside the reef when the currents swept them over the reef.

The rough seas and currents also caused trouble in the Marianas One Man Canoe Series. Paddlers were supposed to go from Tumon to Hagatna, but big waves on the reef in Tumon wiped out one canoe and forced several paddlers to turn back. Race officials decided to call off the race until the seas calmed.

#### **Guam**

	12	0730SST			0	0			
<b>Countywide</b>	13	0600SST							<b>Urban/Sml Stream Fld</b>

Showers caused by a tropical disturbance southeast of Guam brought heavy rains to the island with 3.37 inches of rain falling on the 12th alone. This caused Urban and Small Stream flooding across the island on the 12th and the morning of the 13th.

#### **Guam**

	14	2000SST			0	0			
<b>Countywide</b>	15	0900SST							<b>Urban/Sml Stream Fld</b>

Showers associated with convergence into Tropical Depression 02W brought heavy rain across Guam. Rainfall totals of 3.60 inches of rain were recorded at the National Weather Service Office in Tiyan on the 14th with an additional 3.49 inches of rain falling on the 15th. This heavy rain caused localized flooding in some areas. 10 people had to be evacuated from their homes at Lemoncito Street in Dededo. No injuries were reported and damage was unknown.

#### **Guam**

	14	2130SST			0	0	100K		
<b>Central Portion</b>									<b>Lightning</b>

A tropical disturbance, which eventually developed into Tropical Depression 02W was near Yap on the 14th. Showers associated with convergence into the tropical depression brought heavy rain across Guam. A lightning strike from a thunderstorm associated with this rain area hit two main power lines in the Nimitz Hill Area. Since this line was a large transmission line its loss caused an

# Storm Data and Unusual Weather Phenomena

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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February 1999

## ADDITIONS/CORRECTIONS

### PACIFIC

island wide power outage. Power was out from 2130 on the 14th until the morning of the 15th.

### **Saipan**

**Saipan Intl Airport**

**15    1216SST  
1228SST**

**0    0**

**Waterspout**

On the 15th a waterspout was seen by the observer at the Saipan International Airport. He reported it southwest of the station from 1216 to 1228.

## Reference Notes:

### Fatality Location Abbreviations:

BF	Ball Field	MH	Mobile Home
BO	Boating	OT	Other
BU	Business	OU	Outside/Open Areas
CA	Camping	PH	Permanent Home
EQ	Heavy Equipment/Construction	SC	School
GF	Golfing	TE	Telephone
IW	In Water	UT	Under Tree
LS	Long Span Roof	VE	Vehicle

### List of Acronyms:

WCM	- Warning Coordination Meteorologist
NWS	- National Weather Service
NOAA	- National Oceanic and Atmospheric Administration

### Other Notes:

When listing wind speed values under “Character of Storm”, ex. High Wind (G81), the G indicates a “Gust” which is a peak 5-second averaged wind speed in Knots (kts). 1 kt. = 1.152 mph.

When listing hail size under “Character of Storm”, ex. Hail (2.25), the hail size is given in inches and hundredths of inches.

When listing property and crop damage, the figures indicated are the best guess made by the NWS from the available sources of information at the time of the printing.

# The Saffir-Simpson Scale

## **Category One Hurricane:**

Winds 74-95 mph (64-82 kt or 119-153 kph). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

## **Category Two Hurricane:**

Winds 96-110 mph (83-95 kt or 154-177 kph). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.

## **Category Three Hurricane:**

Winds 111-130 mph (96-113 kt or 178-209 kph). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Flooding near the coast destroys smaller structures with larger structures damaged by battering of floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.

## **Category Four Hurricane:**

Winds 131-155 mph (114-135 kt or 210-249 kph). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km).

## **Category Five Hurricane:**

Winds greater than 155 mph (135 kt or 249 kph). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required.

# The Fujita Scale

F-Scale	Intensity	Wind Speed (mph)	Typical Damage
F0	Gale Tornado	40 - 72	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.
F1	Moderate	73 - 112	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant	113 - 157	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	Severe	158 - 206	Roof and some walls torn off well constructed houses; trains overturned; most trees in fores uprooted
F4	Devastating	207 - 260	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible	261 - 318	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-inforced concrete structures badly damaged.
F6	Inconceivable	319 - 379	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds.

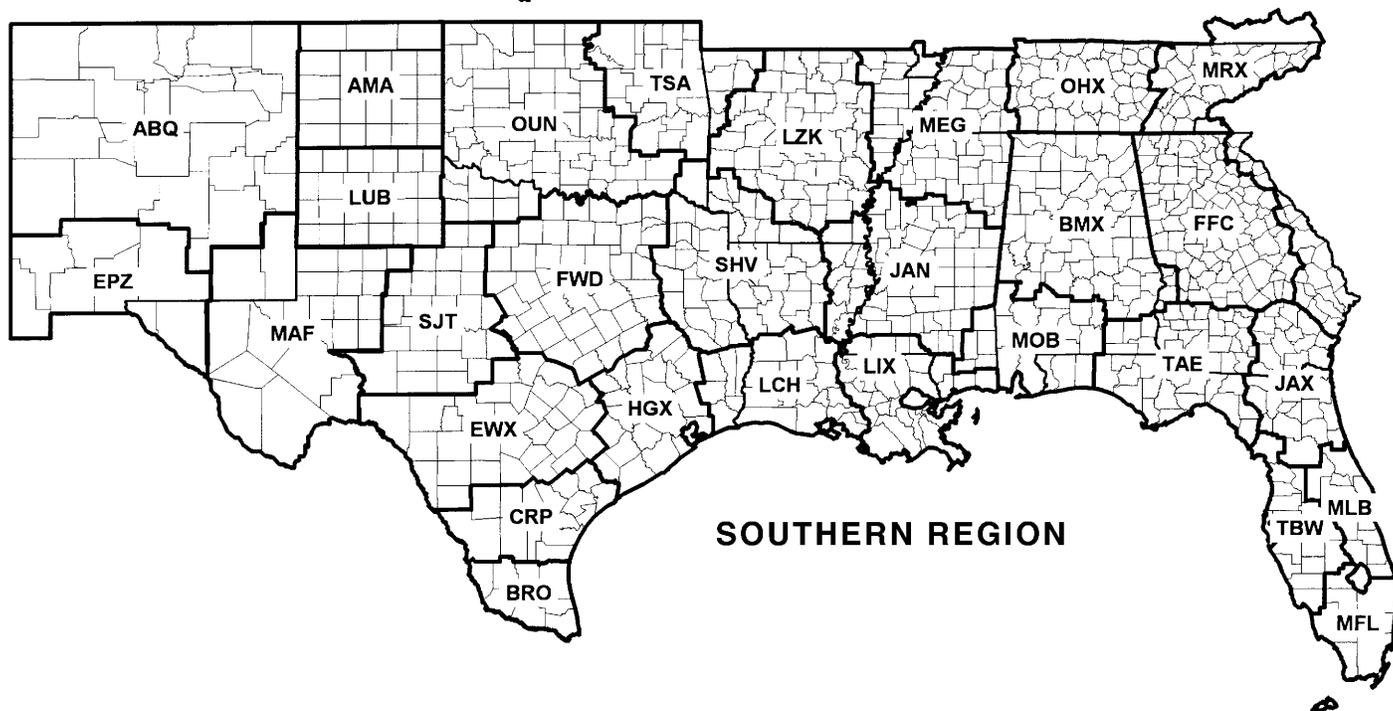


\* From the Journal of Atmospheric Science, August 1981, p. 1517-1519

# COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS

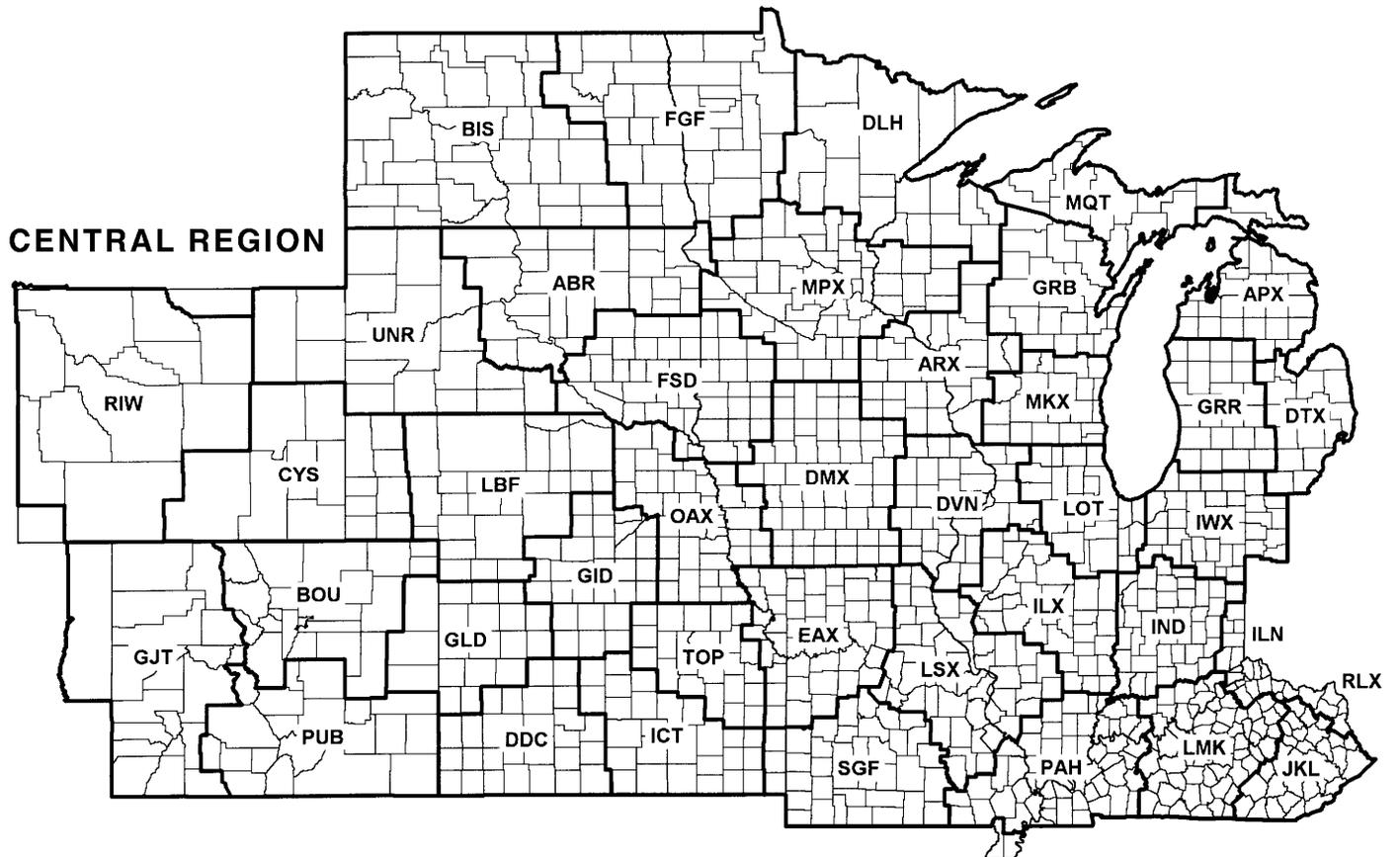
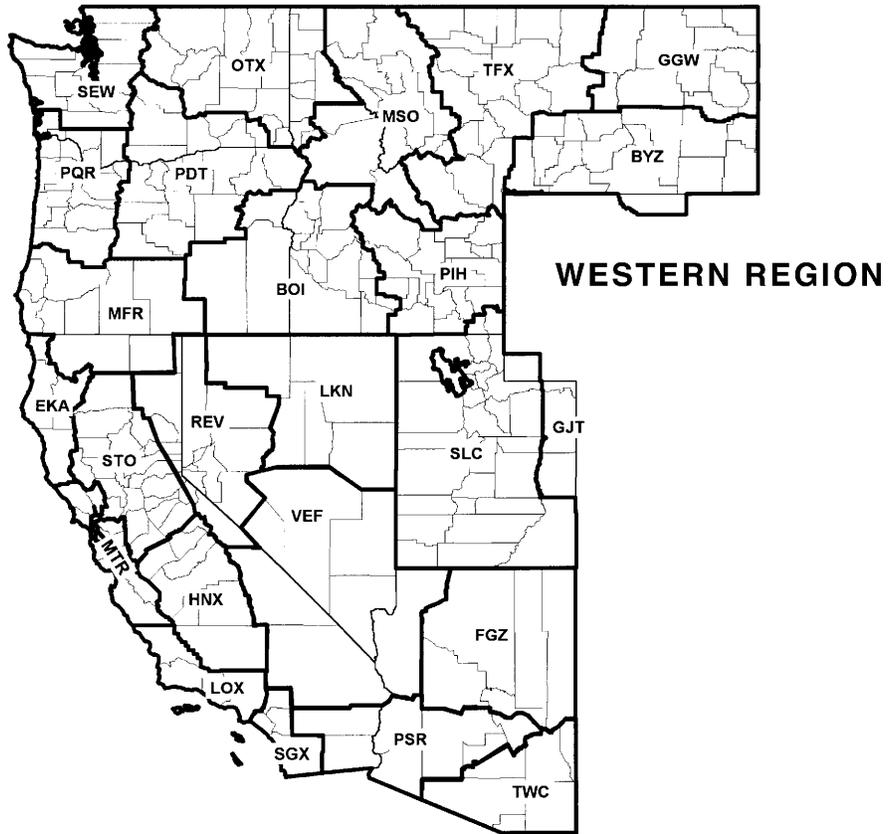


**EASTERN REGION**

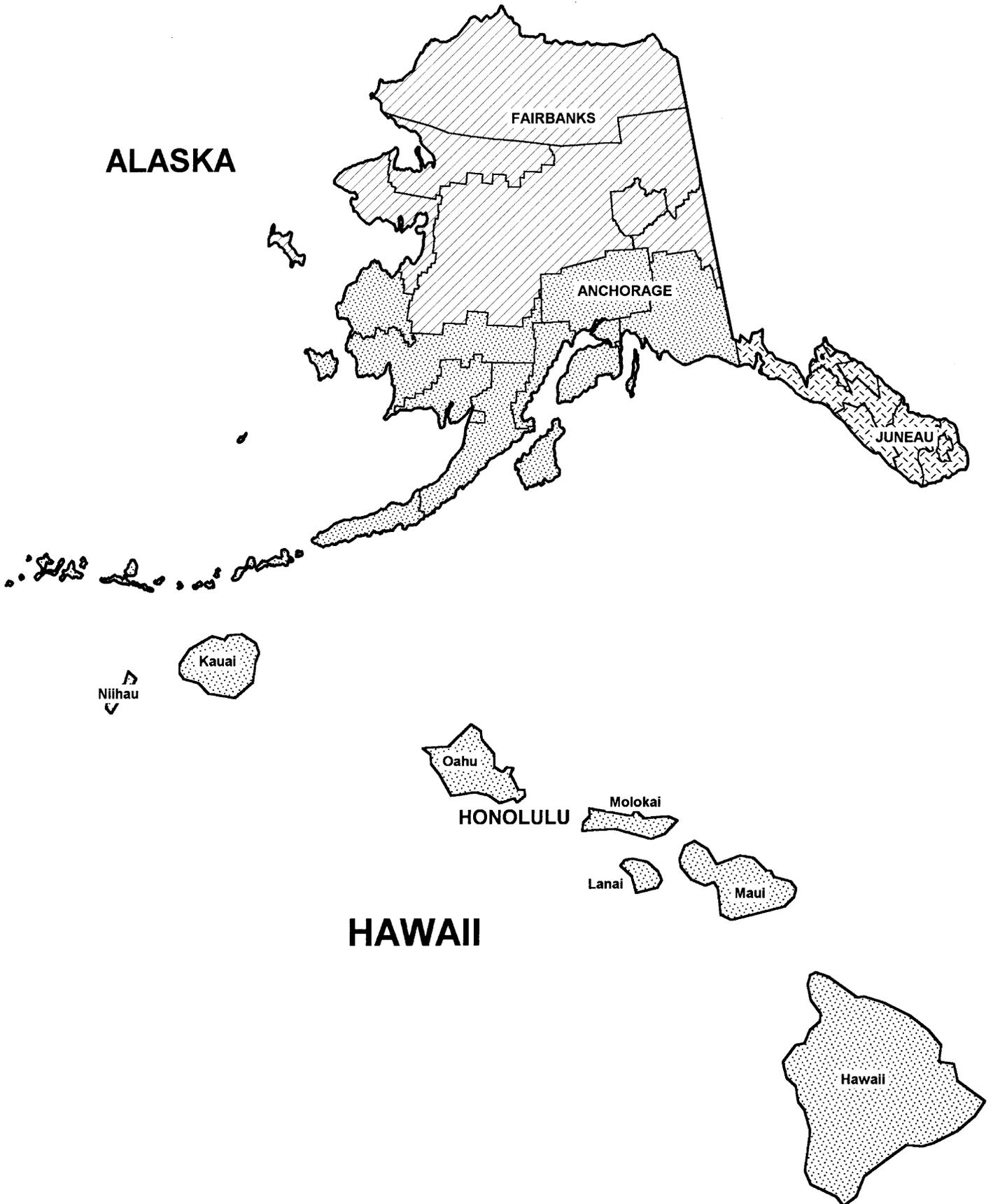


**SOUTHERN REGION**

# COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS



# MODERNIZED COUNTY WARNING AREAS



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