

JANUARY 1999
VOLUME 41
NUMBER 1

STORM DATA



AND UNUSUAL WEATHER PHENOMENA
WITH LATE REPORTS AND CORRECTIONS



noaa NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE
DATA, AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, N.C.

Cover: The remains of a building in Clarksville, Tennessee, after being struck by an F3 tornado on January 22nd, 1999. The tornado struck early in the morning, resulting in only 5 injuries and no fatalities. Several hundred commercial and residential structures were severely damaged or destroyed causing over \$72 Million in property damage. See Page 6 for details. *(Photograph courtesy of Jerry Orchanian, WCM, NWS, Nashville, TN)*

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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:

Stuart Hinson
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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 January 1998.

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

The monthly tornado map which normally appears on page 4 is not available for the month of January.

It will be printed in a subsequent
issue

OUTSTANDING STORMS OF THE MONTH

1. JANUARY TORNADOES CAUSE DAMAGE TO SOUTHEAST US

An episode of severe weather usually associated with the spring and summer months, occurred over the southeastern United States on January 17, and January 22, 1999. On January 17 a strong storm system moves over southwest Missouri. The National Weather Service office in Little Rock AK recognizes there is a potential for severe weather and issues a tornado warning at 2:49 P.M. CST. Other National Weather Service offices follow suit and post tornado warnings for portions of Arkansas and Tennessee. Several tornadoes touch down throughout the afternoon and early evening in both Arkansas and western and central Tennessee. Eight people died, 131 people were injured and property damage exceeded 40 million dollars.

Below: An aerial view of a Jackson-Madison County school bus that was tossed about 300 yards from its bus barn. *(Photograph courtesy of Robert Cohen, The Commercial Appeal, Memphis, TN ©1999 All Rights Reserved)*



Below Left: All that remains of a funeral home in Jackson, TN is the ground floor restrooms. This photograph shows the importance of being in the lowest room in the center of a building during a tornado. *(Photograph courtesy of the National Weather Service, Memphis, TN)*

Below Right: The wall of this church in Halls, TN collapses. *(Photograph courtesy of the National Weather Service, Memphis, TN)*



2. MORE TORNADOES STRIKE TENNESSEE VALLEY

A second round of severe weather affected the same areas on January, 21 - 22. The National Weather Service offices in Little Rock, Memphis and Nashville issued several tornado warnings throughout the day on the 21st and into the morning of the 22nd. Several strong tornadoes touched down in North-Central Arkansas and Western Tennessee in the late afternoon and evening hours of the 21st. Early on the 22nd, an F3 (wind speeds of 158 - 206 mph) touched down in the city of Clarksville, TN. Property damage is estimated at \$72.7 million. Only five injuries were recorded.



Above Left: A generator is used to supply power on South 3rd Street in downtown Clarksville.

Above Right: The remains of a church in Clarksville which sustained a direct hit from the F3 tornado.

Below Left: Another example of the damage caused by the tornado in Clarksville.

Below Right: The Montgomery County Courthouse in Clarksville sustained severe damage.

(All photographs of Clarksville are courtesy of Jerry Orchanian, WCM, National Weather Service, Nashville, TN.)



3. UNUSUAL SNOWFALL FOR SOUTH-CENTRAL CALIFORNIA

An unusual storm event occurs in the San Joaquin Valley - Snow! Snow is a rarity in this area, having only fallen 15 times since 1937. Temperatures reached the upper 20's and lower 30's overnight on the 24th and a coastal storm off the coast of Southern California provided the moisture. Precipitation began to fall overnight and the residents of the San Joaquin Valley woke to several inches of new snow. The record snowfall amount was 1.5 inches at Bakersfield, set in March of 1974. Snowfall of January 25th broke this record with 3 inches measured at the Meadows Field Airport in Bakersfield. This prompted the issuance of snow advisories for the valley floor. Bakersfield received as much as 3 inches of snow across almost all of the city, with 4-6 inches reported in the higher northeast section of the city. Snowfall occurred over much of the south end of the valley. Measurable amounts were recorded in Taft, in western Kern County, and as far north as Visalia, in Tulare County. Snow plows were needed to clear a rare 2-4 inch snowfall from roads around the east valley communities of Tulare and Visalia so that State Highway 99 could remain open. The nearby Tehachapi Mountains received 12-30 inches of snow and along with the South Valley snow, shut down Interstate- 5, the main traffic corridor between Los Angeles and Northern California, and Highway 99 through Kern.

Below: Some residents of Bakersfield, CA enjoying the rare snow event. Note the snow in the tops of the palm trees.

(Photograph courtesy of Henry Barrios. The Californian, Bakersfield, CA. ©1999 All Rights Reserved)



Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Crops	Character of Storm	
					Killed	Injured	Property		
ALABAMA, North Central									
Madison County									
Huntsville	01 31	0000CST 2359CST			0	0	0	0	Heavy Rain
January rainfall of 9.30 inches was the 3rd highest amount ever recorded.									
ALZ006 Madison									
	01 31	0000CST 2359CST			0	0	0	0	Excessive Heat
The average temperature was 46.2 degrees and that was the 5th warmest ever recorded.									
ALZ006 Madison									
	02	1000CST 1300CST			0	0	15K	0	High Wind (G45)
Strong wind estimated around 50 miles an hour downed power lines in the Toney area and also in the Hazel Green area. A few street light poles were knocked over in downtown Huntsville. Over 30 separate power outages were reported in Madison county. Metal trusses were knocked over at the Farley Elementary School construction site. Winds were recorded at 34 miles an hour at the Huntsville International Airport at 1107am.									
Barbour County									
Clio	02	1404CST			0	0	0	0	Hail (0.75)
Dime size hail reported near the city of Clio.									
ALZ001>010-016>018-020-026 Lauderdale - Colbert - Franklin - Lawrence - Limestone - Madison - Morgan - Marshall - Jackson - Dekalb - Cullman - Blount - Etowah - Cherokee - St. Clair									
	06	1200CST 1800CST			0	0	0	0	Winter Storm
A mixture of light rain, freezing rain, and snow fell across the area causing some icing problems. A maximum of two inches of snow was reported along the Alabama-Tennessee border. As temperatures hovered near the freezing mark, icing occurred on some roads but was mainly limited to elevated structures. Interstate 565 in Huntsville was closed and many other roads were iced over and closed. Numerous accidents were reported due to the slick roadways with some injuries. Two construction workers were killed on I-65 in Blount county when a car lost control on the ice and hit them.									
St. Clair County									
7 SSW Springville	09	0130CST 0145CST			0	0	25K	0	Thunderstorm Wind (G60)
Three homes sustained substantial damage from high winds and numerous trees and power lines were blown down in Argo near US 11 and Katy Lane. A few barns and outbuildings also sustained damage..									
Dekalb County									
Henagar	09	0147CST			0	0	10K	0	Thunderstorm Wind (G55)
One building was damaged due to high wind in Henagar.									
Lauderdale County									
Waterloo	17	2048CST			0	0	25K	0	Hail (1.75)
Golfball size hail was reported near Waterloo.									
Limestone County									
Athens	17	2311CST			0	0	0	0	Hail (0.75)
Three-quarter inch hail was reported near Athens.									
Lawrence County									
Hatton	17	2315CST			0	0	0	0	Hail (0.75)
Dime size hail was reported in northwest Lawrence county near Hatton.									
Madison County									
Huntsville	17	2353CST			0	0	0	0	Hail (0.75)
Dime size hail reported at Huntsville.									
Cullman County									
Battleground	18	0044CST			0	0	15K	0	Hail (1.00)
Dime to quarter size hail was reported near Battleground.									
Morgan County									
Falkville	18	0053CST			0	0	0	0	Hail (1.00)
Quarter size hail was reported near Falkville.									
Winston County									
Arley	18	0118CST			0	0	0	0	Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ALABAMA, North Central									
Dime size hail was reported near Arley.									
Dekalb County									
Rainsville	18	0135CST			0	0	0	0	Hail (0.88)
Dime to nickel sized hail was reported in Rainsville.									
Tuscaloosa County									
Tuscaloosa	18	0221CST			0	0	0	0	Hail (0.88)
Nickel size hail was reported in Tuscaloosa.									
Blount County									
4 SW Locust Fork	18	0225CST 0230CST			0	0	10K	0	Thunderstorm Wind (G55)
Numerous trees were down and damage was reported to one house and an out-building 4 miles southwest of Locust Fork.									
Blount County									
Oneonta	18	0231CST			0	0	25K	0	Hail (1.75)
Golfball size hail was reported just west of Oneonta.									
Talladega County									
Lincoln	18	0352CST			0	0	0	0	Hail (0.75)
Dime size hail was reported north of Lincoln along SR 77 near the Calhoun County border.									
ALZ006									
Madison									
	21	1600CST			0	0	0	0	Excessive Heat
The record high temperature of 72 degrees was tied at the Huntsville International Airport.									
ALZ044									
Montgomery									
	21	1600CST			0	0	0	0	Excessive Heat
A new record high temperature of 81 degrees was recorded at Dannelly Field.									
Coosa County									
4 SW Goodwater	21	1612CST			0	0	0	0	Hail (0.75)
Dime size hail was reported in northeastern Coosa County.									
Calhoun County									
Anniston	21	1720CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported in the city of Anniston and also north of Anniston near Saks.									
Pickens County									
Stafford	22	1430CST			0	0	0	0	Hail (0.88)
Nickel size hail was reported in northwest Pickens County.									
Colbert County									
7 W Littleville to 4 N Littleville	22	1515CST			0	0	0	0	Funnel Cloud
Funnel cloud was reported in southern Colbert County near the Franklin County line.									
Marion County									
Winfield	22	1520CST			0	0	0	0	Hail (0.75)
Dime size hail was reported in the city of Winfield.									
Marion County									
5 NE Brilliant	22	1520CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported in eastern Marion County near the Winston County line.									
Sumter County									
Warsaw	22	1525CST			0	0	0	0	Thunderstorm Wind (G55)
Three large trees were blown down and blocked CR 34 near Warsaw.									
Franklin County									
7 NW Russellville	22	1539CST 1540CST	0.3	30	0	0	0	0	Tornado (F0)
A weak tornado briefly touched down in a rural area near Frankfort along CR 49. No damage or personal injury were reported.									
Colbert County									
5 S Muscle Shoals to 4 S Muscle Shoals	22	1543CST 1547CST	1	30	0	0	0	0	Tornado (F0)

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
ALABAMA, North Central									
A tornado briefly touched down 5 miles south of Muscle Shoals with little or no damage. The tornado was also reported on the Muscle Shoals surface observation at 1543 through 1557. Emergency management surveyed the area of the tornado report and could not find any damage in a mostly open area.									
Winston County									
Lynn	22	1545CST			0	0	10K	0	Thunderstorm Wind (G55)
Trees and power lines were downed near the city of Lynn. Small hail of unknown size was also reported.									
Lauderdale County									
Waterloo	22	1550CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported near Waterloo.									
Pickens County									
Pickensville	22	1555CST			0	0	0	0	Hail (0.75)
Dime size hail was reported near Pickensville.									
Winston County									
10 S Double Spgs	22	1605CST			0	0	0	0	Thunderstorm Wind (G60)
High wind knocked a few branches off trees and several trees. Sheriff had his car blown off the road and debris was seen flying through the air.									
Lawrence County									
4 SE Moulton	22	1620CST			0	0	0	0	Hail (0.75)
Dime size hail was reported 4 miles southeast of Moulton.									
Winston County									
Double Spgs	22	1625CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported near US 278 and SR 33.									
Morgan County									
9 W Falkville	22	1643CST 1644CST	0.3	30	0	0	0	0	Tornado (F0)
A weak tornado briefly touched down in a rural area southeast of the Danville-Neel Recreation Area in southwest Morgan County. No damage or injuries were reported.									
Fayette County									
Fayette	22	1647CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported just southeast of Fayette.									
Fayette County									
14.1 NE Fayette to 14.3 NE Fayette	22	1652CST 1653CST	0.2	30	0	0	15K	0	Tornado (F0)
A tornado touched down briefly in northeast Fayette County on CR 44 about 8 tenths of a mile west of SR 13. A house sustained roof damage and a several trees were uprooted.									
Lawrence County									
Hillsboro	22	1700CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported near Hillsboro.									
Walker County									
Jasper	22	1700CST			0	0	5K	0	Thunderstorm Wind (G50)
Trees and power lines were reported down in Jasper.									
Winston County									
Lynn	22	1704CST			0	0	10K	0	Thunderstorm Wind (G60)
A mobile home office was flipped onto it's side by thunderstorm wind. A few trees and large limbs were downed in the area as well.									
Limestone County									
Belle Mina	22	1712CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported near Belle Mina.									
Winston County									
3.8 WNW Double Spgs to 3.5 NW Double Spgs	22	1715CST 1718CST	1.5	75	0	0	85K	0	Tornado (F1)

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
ALABAMA, North Central									
A small tornado began on the south side of US 278 a little more than 3.5 miles west-northwest of Double Springs and moved on a north-northeast track for about a mile and a half. The tornado began in an open field and immediately damaged two buildings and a mobile home at the Mount Carmel Church. The tornado crossed US 278 downing trees and damaging a home on the north side of the highway. The tornado continued across CR 55 damaging two more homes. A large satellite dish was turned inside-out like an umbrella. The tornado continued through a wooded section before ending just after crossing CR 32.									
Limestone County									
11 E Athens	22	1736CST			0	0	15K	0	Thunderstorm Wind (G55)
A wind gust damaged two homes in Capshaw and a few outbuildings were overturned. A few power lines were also downed.									
Walker County									
9 SSE Jasper	22	1737CST			0	0	3K	0	Thunderstorm Wind (G55)
Power lines were reported down between Gorgas and Cordova.									
Madison County									
13 WNW Huntsville to 15 NW Huntsville	22	1740CST 1745CST			0	0	25K	0	Thunderstorm Wind (G55)
Wind damage was reported from northeast of Capshaw in Limestone County to just south of Harvest in Madison County. The downburst knocked down several power lines and some fencing. Several roofs blown off of utility buildings and out-houses.									
Jefferson County									
Ensley	22	1747CST			0	0	3K	0	Thunderstorm Wind (G55)
Trees and power lines reported down in Ensley.									
Lawrence County									
3 N Moulton to 5 N Moulton	22	1758CST 1801CST			0	0	0	0	Hail (0.88)
Nickel size hail was reported 3 to 5 miles north of Moulton.									
Jefferson County									
Graysville	22	1820CST			0	0	8K	0	Hail (1.00)
Quarter size hail was reported in Graysville.									
Limestone County									
5 S Ripley to 10 W Athens	22	1825CST 1840CST			0	0	0	0	Funnel Cloud
A funnel cloud was reported south of Ripley. A funnel cloud and lowering wall cloud was reported 10 W Athens.									
Jefferson County									
16 N Birmingham	22	1840CST			0	0	0	0	Funnel Cloud
A funnel cloud and wall cloud were reported near Morris.									
Jefferson County									
2 N Morris	22	1842CST			0	0	30K	0	Thunderstorm Wind (G65)
Several trees and highway signs blown down, a large billboard platform was demolished, and a car was blown off the road with no injuries. This activity occurred on I-65 at exit 260, two miles north of Morris.									
Lawrence County									
11 E Moulton	22	1900CST			0	0	30K	0	Lightning
Two people were killed when lightning struck a mobile home and it burned to the ground.									
Blount County									
17 W Oneonta	22	1930CST			0	0	15K	0	Thunderstorm Wind (G55)
A few homes were damaged and trees downed on Rock Springs Road near Hayden.									
Marshall County									
Horton to Albertville	22	1937CST 1943CST			0	0	0	0	Thunderstorm Wind (G50)
Wind was estimated at 55 to 60 miles an hour in Horton and in Albertville.									
Franklin County									
Hodges	22	1955CST			0	0	5K	0	Thunderstorm Wind (G55)
Several trees were downed in Hodges.									
Colbert County									
Tuscumbia	22	2005CST			0	0	5K	0	Hail (1.00)
One inch diameter hail was reported in Tuscumbia.									

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
<u>ALABAMA, North Central</u>									
Lauderdale County									
6 N Killen	22	2015CST			0	0	0	0	Hail (0.75)
			Dime size hail was reported 6 miles north of Killen.						
Lawrence County									
Countywide	22	2230CST			0	0	18K	0	Flash Flood
	23	0100CST	Flooding of roads and creeks were reported throughout Lawrence County.						
Lawrence County									
Moulton	22	2230CST 2330CST			0	0	25K	0	Flash Flood
			Several homes in Moulton had to be evacuated due to high water.						
Winston County									
Countywide	22	2255CST 2355CST			0	0	25K	0	Flash Flood
			Several roads were flooded in and around Double Springs including US 278.						
Limestone County									
Countywide	22	2300CST 23			0	0	18K	0	Flash Flood
		0100CST	Flooding of roads and creeks were reported throughout Limestone County						
Montgomery County									
Montgomery	23	0300CST			0	0	0	0	Thunderstorm Wind (G50)
			Several trees were reported to be knocked down by wind gusts near Montgomery.						
ALZ006									
Madison									
	26	1600CST			0	0	0	0	Excessive Heat
			The record high temperature of 70 degrees was tied at the Huntsville International Airport.						
ALZ006									
Madison									
	27	1600CST			0	0	0	0	Excessive Heat
			A new record high temperature of 71 degrees was recorded at the Huntsville International Airport.						
ALZ044									
Montgomery									
	27	1600CST			0	0	0	0	Excessive Heat
			A new record high temperature of 79 degrees was recorded at Dannelly Field.						
ALZ010									
Dekalb									
	31	1000CST 1200CST			0	0	15K	0	High Wind (G60)
			A 60 by 120 foot roof was blown off a building and deposited at least 100 feet away in the town of Ider. Numerous trees were blown down and some blocked roads across the northern part of Dekalb county. A few mobile homes had some roof damage in the town of Sylvania.						
<u>ALABAMA, Southeast</u>									
Houston County									
Dothan	02	0400EST			0	0	5K		Thunderstorm Wind
			Downed trees blew two transformers disrupting power to 30 Dothan residents.						
<u>ALABAMA, Southwest</u>									
Washington County									
Chatom to Wagarville	02	0945CST 1000CST			0	0	10K		Thunderstorm Wind (G55)
			High winds blew several trees down from north of Chatom to north of Wagarville.						
Mobile County									
Wilmer	02	1000CST 1002CST			0	0	5K		Thunderstorm Wind (G50)
			High winds damaged a mobile home near Wilmer.						
Mobile County									
Saraland	02	1020CST 1023CST			0	0	10K		Thunderstorm Wind (G55)
			High winds blew down several trees in Saraland. A home in the same area also had damage to a sun room.						

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
ALABAMA, Southwest									
Baldwin County									
Bay Minette	02	1035CST 1037CST			0	0	3K		Thunderstorm Wind (G55)
High winds blew down large limbs in the community.									
Escambia County									
2 W Mc Cullough	02	1045CST			0	0	5K		Thunderstorm Wind (G50)
Trees were blown down along County Road 1 about two miles west of McCullough.									
Clarke County									
Jackson to Choctaw Bluff	02	1115CST 1117CST			0	0	10K		Thunderstorm Wind (G55)
Several trees were downed over the southern sections of the county, generally between Jackson and Choctaw Bluff.									
Monroe County									
Monroeville	02	1125CST 1130CST			0	0	5K		Thunderstorm Wind (G55)
High winds downed trees from the west end of Monroeville to just east of Monroeville.									
Baldwin County									
Lillian	02	1200CST 1202CST			0	0	5K		Thunderstorm Wind (G55)
High winds blew several boats off a dry dock at a boat storage business.									
Covington County									
Andalusia	02	1200CST 1202CST			0	0	2K		Thunderstorm Wind (G55)
High winds damaged the roof of a shed at the intersection of HWY 84 and Hwy29.									
Covington County									
Libertyville	02	1245CST 1247CST			0	0	5K		Thunderstorm Wind (G55)
High winds damaged a barn along State Highway 55 near Libertyville									
Crenshaw County									
Dozier	02	1330CST 1332CST			0	0			Hail (0.75)
Dime size hail was reported in the community.									
ALZ053									
Clarke									
	05	1000CST			1	0			Extreme Cold
An elderly male was found dead on the floor in a tar paper shack. The temperatures in the Jackson area only reached the mid 30s the day before (January 4) and fell to 13 degrees that night. Many cities across the area had record low temperatures for January 5. It was determined the man died from hypothermia. The heater in his home was never turned on that day. M69PH									
Baldwin County									
Stapleton	09	0450CST 0452CST			0	0			Hail (0.75)
Dime size hail was reported around Stapleton.									
Mobile County									
Mobile	22	1130CST 1132CST			0	0	10K		Thunderstorm Wind (G50)
High winds damaged the roof of a grocery store near downtown Mobile. No one was injured.									
Mobile County									
Dauphin Is	22	2130CST 2330CST			0	0	5K		Coastal Flooding
Strong southerly winds caused high waves along the west end of Dauphin Island. Several streets were closed due to high water. This is the same area that had the protective sand dunes destroyed by Hurricane Georges in September of 1998. Coastal flooding has been occurring more often in this area since the dunes were destroyed.									
Washington County									
Yellow Pine	23	0400CST			0	0	30K		Lightning
Lightning struck a landmark grocery in Washington county. Smith's Grocery was hit by lightning around 400 am and caught fire. The grocery burned to the ground before fire fighters could extinguish the fire.									

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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ALABAMA, Southwest

Covington County

Rose Hill **23** **0418CST** **0** **0** **5K** **Lightning**
 Lightning struck a house near Rose Hill. The lightning caused a fire which was quickly put out. The house suffered minimal damage.

Washington County

North Portion **30** **0040CST**
0500CST **0** **0** **5K** **Flash Flood**
 Heavy rainfall caused several streets across the north part of the county to flood. The roads were closed for about four hours. Several vehicles were caught in rising water and were stalled in intersections. No one was injured. Rainfall estimates across the area were three to four inches.

Choctaw County

North Portion **30** **1200CST**
1700CST **0** **0** **5K** **Flash Flood**
 Heavy rainfall across the north part of the county caused many streets to flood. Several of the roads were closed for about five hours. The main road, State Highway 10, from Butler to Lavaca was closed for several hours. Rainfall totals of three to four inches were estimated across the area.

Clarke County

Countywide **30** **1230CST**
1415CST **0** **0** **5K** **Flash Flood**
 Heavy rainfall caused several streets to flood across the north part of the county and also in the Jackson area. Many of the roads were impassable for about two hours. Rainfall totals were estimated at 2.5 to 3.0 inches.

ALASKA, Northern

AKZ006-010

Southern Seward Peninsula-Eastern Norton Sound - Yukon Delta

08 **0600AST** **0** **0** **High Wind (G68)**
09 **1800AST**

Strong high pressure over the Arctic Ocean moved south to the Arctic Coastal Plain and then southeast to the Northwest Territories of Canada causing the moderate pressure gradient between the high and a low pressure near the Alaska Peninsula to strengthen...and also change orientation so that strong winds occurred in channeled areas of Zone 6. Strongest Winds reorted:
 Zone 6: Unalakleet 58 mph sustained, gust 69 mph. Golovin: 64 mph sustained, gust 78 mph
 Zone 10: Emmonak: gust 60 mph

AKZ003-009

Lower Kobuk Valley-Northern Seward Peninsula - St. Lawrence Island-Bering Strait Coast

12 **1200AST** **0** **0** **Blizzard**
14 **1200AST**

A cold front over the Chukchi Sea moved southeast and stalled over the West Coast of Alaska while low pressure over outer Bristol Bay moved to Southwest Alaska then weakened and moved north to Kotzebue Sound before dissipating. Blizzard conditions reported at Gambell on Saint Lawrence Island and Tin City on the Bering Strait Coast (Zone 9) and Deering on the Northern Seward Peninsula (Zone 3).

AKZ001-003

Arctic Slope Coastal - Lower Kobuk Valley-Northern Seward Peninsula

20 **0500AST** **0** **0** **Extreme Windchill**
21 **0400AST**

Cold High Pressure building over Interior Alaska with Low Pressure well north of the Arctic Coast produced winds of 20 mph over the eastern Arctic Coast in ambient air temperatures in the 30s below. As the high built, a weather front moved north over the Bering Sea causing winds over Zone 3 to increase in ambient air temperatures of 25 to 35 below ...before clouds from the front moved in and warmed temperatures on the 22nd. Lowest Wind Chills: Arctic Slope Coastal (Zone 1): Kuparuk -87, Prudhoe Bay -94; Lower Kobuk Valley to Cape Lisburne (Zone 3): Kotzebue -76, Selawik -82.

AKZ001-003-006-009>010

Arctic Slope Coastal - Lower Kobuk Valley-Northern Seward Peninsula - Southern Seward Peninsula-Eastern Norton Sound - St. Lawrence Island-Bering Strait Coast - Yukon Delta

20 **1700AST** **0** **0** **Blizzard**
24 **1800AST**

AKZ002-007

North Slopes Of Brooks Range - Tanana Valley

22 **0900AST** **0** **0** **High Wind (G54)**
24 **1800AST**

AKZ004>005-008

Koyukuk-Upper Kobuk Valleys - Upper Yukon Valley - Lower Yukon Valley

22 **2100AST** **0** **0** **Heavy Snow**
24 **2100AST**

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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ALASKA, Northern

AKZ003

Lower Kobuk Valley-Northern Seward Peninsula

24	0700AST 2350AST				0	0			Extreme Windchill
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With an already moderate pressure gradient over western Alaska, a strong low pressure center moved from south of the Aleutian chain to Norton Sound the morning of the 23rd; to near Barrow on the Arctic Coast the evening of the 23rd. The associated occluded front moved northeast across Northern Alaska producing Blizzard Conditions over the West and North Coast, strong upslope precipitation over the Southern Slopes of the Brooks Range, and strong winds through passes of the Brooks Range and Alaska Range.

Blizzard conditions occurred at Shishmaref, Deering, Selawik, Buckland, Kotzebue, Kivalina, Buckland (Zone 3), Golovin, Nome, Unalakleet (Zone 6), Gambell, Savoonga, Tin City (Zone 9), Emmonak (Zone 10), Kuparuk, Prudhoe Bay, and Barter Island (Zone 1).

Snow amounts:

Zone 4: Chandalar DOT Camp 7" 23rd, 7" 24th; Wiseman Co-op 28.5" 23rd, 12" 24th; Jim River DOT Camp 8" 23rd; Coldfoot DOT Camp 25" 24th; Bettles 15" 3pm 22nd to 3am 24th.

Zone 5: Chandalar Lake 10.1" 23rd

Zone 8: Nulato Coop 7" 23rd; Ruby Co-op 10.2" 23rd; Kaltag Co-op 12.0" 23rd

Strong Winds:

Zone 7: Healy sustained 32kt, gusts 60 mph, Delta Junction: sustained 45 mph, gusts to 62 mph

Zone 2: Sag River DOT Camp: gusts to 60 mph on both the 23rd and 24th.

Extreme Wind Chill: Deering (Zone 3) -81F (24th)

AKZ003

Lower Kobuk Valley-Northern Seward Peninsula

27	0200AST 1200AST				0	0			Extreme Windchill
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Local north winds around 25 mph at Deering produced wind chills as cold as -74. Other sites over Zone 3 did not have as strong of winds or as low of wind chills. A ridge of high pressure from the Northern Seward Peninsula southwest to the Bering Sea was stationary.

AKZ004>005-007>008

Koyukuk-Upper Kobuk Valleys - Upper Yukon Valley - Tanana Valley - Lower Yukon Valley

29	0000AST				0	0			Extreme Cold
31	2359AST								

While northern Alaska was under a relatively cold airmass already, a large pool of colder air moved from the Russian high Arctic Ocean to the Chukchi Sea coast west of Barrow on Jan. 29th and proceeded southeast to the interior of Alaska through the 31st, where it remained until being slowly warmed February 10-12th. Many locations over Zones 4 and 8 (Western Interior) and western zones 5 and 7 (Central Interior) remained in the 50s below during the period and reached the 60s below one or more times. The lowest recorded temperatures and dates are:

Zone 4: Huslia: -67 31st, Coldfoot DOT: -58 29th

Zone 5: Chandalar Lake -74 29th, Stevens Village: -54 29th and 30th, Eagle: -55 1/30

Zone 7: Delta Dairyaire: -60 30th,

Zone 8: Galena: -64 31st, Grayling: -58 31st, Unofficial: Kaiyuh (20E Kaltag) -69 31st

No deaths or known injuries, however, much disruption of commercial air service to villages as piston engine craft could not fly at temperatures continuously below -40. Reports of some frozen sewer and water mains in a few villages. Overall financial impact of event is unknown. Event continued in February.

AKZ001>003-006>007-010

Arctic Slope Coastal - North Slopes Of Brooks Range - Lower Kobuk Valley-Northern Seward Peninsula - Southern Seward Peninsula-Eastern Norton Sound - Tanana Valley - Yukon Delta

29	0100AST				0	0			Extreme Windchill
31	2359AST								

While a deep cold airmass covered Northern Alaska, a low pressure center tracked east across the Arctic Ocean on the 29th bringing winds of 15 to 25 mph across the Arctic Coast (Zone 1), North Slopes of the Brooks Range (Zone 2) and northwest Alaska (Zone 3). Shortly thereafter, low pressure over the Gulf of Alaska deepened on the 30th and remained strong through the remainder of the period, producing local winds over 15 mph through passes of the Brooks Range (Zone 2) and Alaska Range (Zone 7). Though unverified, these dangerous wind chills likely occurred over other exposed locations of interior Alaska (Zones 4..5..8..remainder of 7) during the same time. Lowest values recorded (sustained wind used):

Storm Data and Unusual Weather Phenomena

January 1999

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ALASKA, Northern

Zone 1: Barrow -89, Nuiqsut -93, Kuparuk -97, Deadhorse -90, Prudhoe Bay -95,
 Zone 2: Anaktuvuk Pass -97
 Zone 3: Point Hope -87, Kivalina -104, Noatak -92, Deering -102, Kotzebue -103, Buckland -92,
 Shishmaref -93, Red Dog Mine -97, Point Hope -87
 Zone 6: Golovin -89
 Zone 7: Healy DOT -80, Trimms DOT -90
 Zone 10: Emmonak -81
 Event continued in February.

ALASKA, Southeast

AKZ026

Frederick Sound-Kupreanof-Wrangell Islands To Ernest South

06	1400AST								
07	0330AST				0	0			Heavy Snow

Petersburg 24 hour snowfall 8.0 inches due widespread overrunning of Gulf of Alaska moisture over arctic air in the central inner channels of Southeast Alaska.

AKZ025

Juneau Borough-Admiralty Island-Icy Strait Area

07	1100AST								
08	0900AST				0	0			Heavy Snow

Juneau airport 24 hour snowfall 16.2 inches.

AKZ022-026

Cape Fairweather To Cape Suckling-Coastal Area - Frederick Sound-Kupreanof-Wrangell Islands To Ernest South

25	1200AST								
26	0800AST				0	0			Heavy Snow

Numerous snow showers. Yakutat snowfall of 11 inches.

AKZ024

Lynn Canal-Glacier Bay

26	0500AST								
	2200AST				0	0			Heavy Snow

Mesoscale heavy snow event in the Haines area. Cold air draining out of the Chilkat Valley with maritime airmass overrunning due to strong southerly flow up Lynn Canal. Haines storm total snowfall more than 12 inches.

AKZ024

Lynn Canal-Glacier Bay

27	0330AST								
	1600AST				0	0			Heavy Snow

Haines police department reported over 4 feet of snow on the ground on 29 January.

AKZ024

Lynn Canal-Glacier Bay

30	1330AST								
	1700AST				0	0			Blizzard

Wind and wind chill advisories upgraded to a blizzard warning for Haines. Peak wind at Haines airport 40 knots, wind chill -50, and visibilities 1/4 mile in snow and blowing snow.

AKZ022

Cape Fairweather To Cape Suckling-Coastal Area

31	0200AST								
	2200AST				0	0			Heavy Snow

Training echoes moving onshore produced 21 inches of snow at Yakutat in 24 hours.

AKZ023

Cape Decision To Cape Fairweather-Coastal Area

31	1200AST								
	2200AST				0	0			Heavy Snow

AKZ025

Juneau Borough-Admiralty Island-Icy Strait Area

31	1200AST								
	2200AST				0	0			Heavy Snow

heavy snow showers along the outer coast of the Panhandle with 13 inches at Sitka. Residential areas north of Juneau reported 6 inches during the afternoon hours.

ALASKA, Southern

AKZ020

Aleutian Islands

04	1800AST								
06	0600AST				0	0			High Wind (G65)

An intense 960 mb low, about 300 miles south of Amchitka Monday afternoon curved northwest toward the southern Kamchatka Peninsula, finally making landfall there and beginning to weaken rapidly Wednesday afternoon. The front associated with this intense storm elongated north and east out of the low, lying from the southwestern Bering Sea through Dutch Harbor, in a much

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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ALASKA, Southern

weakened form, early Wednesday. Strong east to southeast wind preceded the front, with sustained wind of 75 mph at the F/V "Mahimahi" (WHRN) which followed a westward track just north of the Aleutians...just in advance of the front for over 24 hours. Wind gusts reached 65 mph at Adak late Monday and early Tuesday as the front moved into that area. Additionally, strong southeasterly winds were observed along the southeast quadrant of the low...reaching speeds close to 60 mph in gusts.

AKZ020

Aleutian Islands

08	1800AST				0	0			High Wind (G46)
09	1200AST								

A moderate front southeast of the Kamchatka Peninsula brought brisk southeast winds to the far western Aleutians. Wind gusts reached 40 mph a little after 3pm Friday at Shemya and by 10 pm were gusting up to 48 mph from the east. Highest gusts reached 53 mph there just before 2am Saturday.

AKZ015-017

Cook Inlet - Central Gulf Coast

09	1200AST				0	0			High Wind (G36)
10	0300AST								

A moderate front crossing the area brought winds up to 41 mph across the southeastern corner of Prince William Sound and at the Cordova Boat Harbor. Gusts around 40 mph were also reported for a 6 hour period Saturday around the Portage Visitor's Center.

AKZ016-019

Bristol Bay Coastal - Western Alaska Peninsula

10	1000AST				0	0			High Wind (G43)
11	1200AST								

A moderate front approaching the Alaska Peninsula from the northcentral Pacific Saturday, continued to elongate northeastward toward Kodiak Island and into Bristol Bay Monday. The front was preceded by brisk southeast winds. Gusts reached 50 mph at Cold Bay just after noon Sunday...rapidly diminishing as the front passed late Sunday. Along the Bristol Bay area...gusts reached 44 mph at Egegik and 41 mph at Cape Newenham late Monday morning just prior to the frontal passage.

Further to the east, wind gusts began to increase Monday morning, topping out at 51 mph at Middleton Island and 58 mph at the Portage Visitor Center just before 3pm Monday afternoon.

AKZ011-021

Kuskokwim Delta - Pribilof Islands

10	1200AST				0	0			High Wind (G47)
11	1200AST								

Northeast wind gusts reached 46 mph along the western capes of the Kuskokwim Delta Monday...as a deep, 955 mb low moved toward the western tip of the Alaska Peninsula. Strong northeast wind gusts were also reported across the Pribilofs late Sunday and early Monday with speeds up to 54 mph reported by the Saint George ASOS.

AKZ015-017

Cook Inlet - Central Gulf Coast

12	1800AST				0	0			High Wind (G65)
13	0300AST								

Strong east to southeast winds...gusting to 75 mph at the Portage Visitor's Center at the head of Turnagain Arm...and to 68 mph along the Upper Anchorage Hillside at the Glen Alps mesonet site were reported late Tuesday evening through early Wednesday morning. One of the causes was assumed to be a small scale circulation that tracked north northwestward just east of Kodiak Tuesday afternoon and into lower Cook Inlet late Tuesday evening and early Wednesday morning. Another cause was a prefrontal ridge moving into the north Gulf Coast late Tuesday, ahead of a strong front that was approaching the southern Gulf of Alaska late Tuesday. The winds were short lived...and, in the Anchorage area, limited to elevations above the 15 hundred foot level.

AKZ015-017

Cook Inlet - Central Gulf Coast

13	0300AST				0	0			High Wind (G59)
	1900AST								

Easterly winds increased through much of the day Wednesday, as a strong front moved north and northeast across the Gulf of Alaska. Wind gusts of 60 mph were recorded at the Portage Visitor's Center ASOS between 4 and 5am, while gusts reached 68 mph at Middleton Island between 5:15 and 5:35 am Wednesday.

AKZ011-021

Kuskokwim Delta - Pribilof Islands

14	1800AST				0	0			High Wind (G47)
15	1500AST								

An arctic type low developed along the arctic front just west of the Pribilofs late Thursday. At 9 am Friday, the low had begun to weaken and was located about 90 miles south of Nunivak Island with the arctic cold front extending southward through Cold Bay. Cold arctic air aloft, contributed to highly unstable conditions across the Bering in the vicinity of the low and behind it and the cold front...causing very gusty winds in the snow showers that ensued. Pre-frontal southerly winds gusted to 53 mph at Saint Paul Island and 54 mph at Saint George Island between 9 and 11 pm Thursday...with northwesterly gusts reaching 44 mph behind the low a few hours later at Saint Paul and 53 mph at Saint George between 8am and 10 am Friday. Wind gusts finally diminished below 40 mph across the Pribilofs just after 4pm Friday.

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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ALASKA, Southern

Prefrontal winds reached 44 mph at Mekoryuk (on Nunivak Island) shifted to the west and diminished between 6 and 7am Friday...however prefrontal gusts reached 48 mph at Cape Romanzof just after midnight Thursday and 56 mph just prior to frontal passage between 8 and 10 am Friday.

AKZ015

Cook Inlet

15	0600AST								
	0900AST			0	0				High Wind (G43)

A small 970 mb low in southwestern Prince William Sound at 3pm Thursday, rotated back counterclockwise..weakening to 986 mbs just north of Anchorage at 3am Friday. By late Friday morning, the low recurved southward to just west of Turnagain Arm. On the east side of the low, wind gusts reached 50 mph at the Portage Visitor Center on the east end of Turnagain Arm.

AKZ017

Central Gulf Coast

15	1800AST								
	19 2100AST			0	0				High Wind (G45)

Wind gusts frequently reached 52 mph around Whittier as strong and cold high pressure across the Upper Tanana Valley caused cold air to rush seaward through areas adjacent to Prince William Sound.

AKZ011-016

Kuskokwim Delta - Bristol Bay Coastal

20	0600AST								
	21 0900AST			0	0				High Wind (G45)

Wednesday, January 20th, marked the beginning of a major weather change for Alaska and its vast offshore water areas. This event, was just the beginning of a rollercoaster chain of events that were to follow during the next 5 days.

A moderate low, just to the northwest of Attu, deepened slowly...bringing wind gusts of 50 mph to the southwestern Bering Sea. At the same time a strong arctic front, with temperature differences of more than 80 degrees from one airmass to the other, stretched in a southeastward arc from just north of the southwestern Bering low to Sand Point along the Alaska Peninsula. Warmer air aloft, ahead of a complex but major weather system developing in the southwestern Pacific, pushed the arctic front temporarily northeastward toward the southwest Alaskan Coast...causing moderate southeasterly winds to blow along the western capes of both Bristol Bay and Kuskokwim Delta coastal sections. At Cape Newenham (along the border of the two areas, southeast wind gusts reached 48 mph on Wednesday and 52 mph on Thursday. Wind gusts of 43 mph were reported at Mekoryuk on Nunivak Island early Thursday morning. The moderate southeast winds were accompanied by near blizzard conditions in blowing snow and wind chills near 40 below. Winds temporarily diminished Thursday as the arctic front began to reform further southwest.

AKZ011-013>020

Kuskokwim Delta - Susitna Valley - Copper River Basin - Cook Inlet - Bristol Bay Coastal - Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula - Western Alaska Peninsula - Aleutian Islands

21	0000AST								
	23 1500AST			0	7	346K			High Wind (G101)

AKZ012>013

Kuskokwim Valley - Susitna Valley

22	0000AST								
	24 0600AST			0	0				Heavy Snow

Kuskokwim Delta

Akiachak to
Bethel

23	0400AST								
	24 2359AST			0	2	20K			Storm Surge

A major weather change, that began Tuesday, January 19th, gained momentum as the days moved ahead to Thursday, January 21st. A moderate 974mb low curved northeast to its position just south of Shemya at 3am Thursday. The front ahead of the low was preceded by brisk east to southeast winds. Brisk southeast winds spread northeast across the Bering, reaching the Pribilofs Thursday evening. Southeast winds also began to increase along the Alaska Peninsula, eastern Aleutians and southwest Alaska between 6pm and midnight Thursday. The winds were accompanied by brief periods of heavy snow and driving rain. Brief blizzard conditions were reported locally along the southwest Alaskan coast.

By 3 am Friday, a rapidly intensifying 957mb low, which had been racing northeastward close to 50 mph, pulled up just west of Adak, in the central Aleutians, with its front arcing east and south to Umnak Island (western Fox Islands) then south southwest into the north Pacific. This front was preceded by strong southerly winds. Strong winds were also reported up to 360 miles across the south and southeast quadrants of the center. Strong low level west to northwest winds were evident from satellite pictures, in data void areas, near Amchitka. At the same time, very cold arctic air covered nearly the entire mainland and even Southeast Alaska. The arctic front at 3am Friday extended from Nunivak Island to about 60 miles south of King Salmon to Afognak Island and Middleton Island before dipping southeast into the Panhandle of the State. 90 degree temperature contrasts were seen in 3 am surface data plots for the Alaska Region prepared early morning surface map...ranging from a frigid 45 below at Northway (in the arctic air) to a relatively balmy 45 above at Dutch Harbor (in the polar airmass). These reporting stations are separated by a little more than 1500 miles. Brisk east to southeast winds, on the cold side of the arctic front, had spread into the Seward Peninsula and southwest mainland of the State.

The low peaked close to 950 mbs in intensity while continuing north northeast to a position about 60 miles northwest of

Storm Data and Unusual Weather Phenomena

January 1999

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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ALASKA, Southern

The low peaked close to 950 mbs in intensity while continuing north northeast to a position about 60 miles northwest of Nunivak Island just prior to midnight Friday. The frontal system associated with the storm, by this time, stretched in an arc through Savoonga to the northern tip of Norton Bay then south southeast through Iliamna to 300 miles south of Sand Point. Strong southerly prefrontal winds spread through the southwestern 2/3rds of the Alaska mainland... while strong easterly winds on the cold side of the arctic front had spread across all but the northeastern 1/3rd of the mainland. Strong winds (in excess of 60 mph) were also reported around the low greater than about 240 miles from the storm center over the southern semicircle.

By 3am Saturday, the storm was located near Hooper Bay, along the southwest Alaska coast, with its front arcing through Kotzebue Sound to Upper Cook Inlet then south and southwest into the Pacific. The arctic front at this time extended from the Queen Charlotte Islands of Canada to about 60 miles south of Yakutat, through northwest Prince William Sound, and into the northern Seward Peninsula.

At 3pm Saturday, the low had split into two, weakening 972 mb centers. The original began to weaken rapidly near Elim. The second center was located just north of the Red Dog Mine in northwest Alaska, with the front, aloft over the arctic airmass, arcing near Prudhoe Bay to Fairbanks to Glennallen to Cape Saint Elias then south and southwest into the north Pacific. The arctic front had weakened considerably, extending from Hecate Strait to Cape Yakataga to just south of Mount McKinley to near Huslia to the original low near Elim then southwest into the Bering Sea. By this time, much of the strong southeasterly wind in advance of the polar and arctic fronts had diminished.

Peak winds/storm data in:

Aleutians - zone 20

Adak	Friday	8am - 9am	West northwest gusts *80 mph.
Dutch Harbor	Friday	2:15pm - 2:35pm	Southwest gusts 93 mph.

Alaska Peninsula - zone 19

Cold Bay	Friday	11am - noon	South gusts to *88 mph.
Coastal Nomad (55.13N/158.45W)	Fri a.m.		South gusts 81 mph.

Bristol Bay - zone 16

Chignik	Friday	Noon - 1pm	South gust *106 mph.
Naknek	Friday	9:30 am	South southeast gust 77 mph.
King Salmon	Friday	11:11 am	Southeast gust *78 mph.

HF antenna blown down. C206 landed but could not taxi due to high winds.

Togiak	Friday	3:55 - 4:15am	Southeast gust *65 mph.
			Phone lines down.

Cape Newenham	Friday	4:15 am - 4:35 am	Southeast gust *88 mph.
	Saturday	1 am - 1:15 am	South gust *116 mph with frontal passage

Kuskokwim Delta - zone 11

Cape Romanzof	Thu.	12 am -12:15 am	Southeast gust *91 mph.
	Friday	3 - 4am	Southeast gust *74 mph.

Kuskokwim Valley - zone 12

McGrath	Fri. mrg - Sat. ngt.	(36 hrs)	11 inches (6.4" Friday + 4.6" Saturday)
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Susitna Valley - zone 13

Chelatna Lake	Friday and Saturday		28 inches (12" Friday + 16" Saturday)
Palmer airport	Friday	8:31 pm	Southeast *61 mph.
Wasilla	Friday	10 pm	East northeast 55 mph.
Oilwell Road	Fri-Sat		close to 36 inches

Kodiak Island - zone 18

Kodiak	Friday	4 - 5pm	South gust *54 mph.
Booth Lake	Friday	1 - 2 pm	Southeast gust 70 mph.

Cook Inlet - zone 15

Glen Alps	Friday	9:55pm - 10:55pm	East gust 100 mph.
			Road closed at about 6:15 pm.
Upper De Armoun	Fri.	9:55 pm	Gust 78 mph.
Oceanview	Friday		Gust 52 mph.
Eagle River	Friday	9 pm	Gusts 50 - 60 mph.
Lower Hillside	Friday		Gust 77 mph.

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

ALASKA, Southern

Eagle River	Friday	9 pm				Gusts 50 - 60 mph.	
Lower Hillside	Friday					Gust 77 mph.	
Anch. Int. airport	Friday	9:09 pm				Southeast *59 mph.	
Merrill Field	Friday	10:49 pm				East southeast *53 mph.	
Portage ASOS	Friday	11:46 pm				East *84 mph.	
Rabbit Creek	Friday	9pm - 10pm				Southeast 73 mph.	

Central Gulf Coast - zone 17

Cordova	Saturday	2:12 am				East southeast *59 mph.	
Middleton Isl.	Saturday	2:15 - 2:35 am				South gust *63 mph.	
Whittier	Friday	11 - midnight				East northeast 58 mph.	

Copper River Basin - zone 14

Gulkana	Saturday	4:41 am				South gust *56 mph.	
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*Original ASOS/AWOS values multiplied by 1.25 to account for average 5 second interval for peak wind calculation..

Damage/Injuries/Deaths as a result of the storm follow...

(Courtesy of the Seventeenth District Command Center Operations Brief Significant Search and Rescue)

SAR: F/V NOWITNA - TAKING ON WATER, 70NM W OF COLD BAY (later reported vessel sank)

SITUATION: 22/0412 local time - The vessel's initial distress stated they were taking on water, donning survival suits, and were preparing to abandon ship. An HH-60 helo from Kodiak, pre-staged in St Paul for Operation Northern Safeguard, launched and the CGC Mellon, 100nm away, diverted to scene but were unable to launch their HH-65 due to heavy weather and sea state. An HC-130 was also launched from Kodiak to provide cover and de-watering pumps if needed. The F/V Dona Martita tried to assist but the 20ft seas and 45kt winds prevented any attempts at rescue. The HH-60 arrived on scene and finding the vessel's deck awash elected to hoist the crew immediately rather than deploy pumps and attempt to de-water the vessel. After a successful hoist evolution all 6 crewman were safely transported to Cold Bay in good condition. The post rescue plan is to attempt to relocate the vessel tomorrow and provide a position for a commercial salvage operation if the vessel afloat. 222235V case closed. Wx: wind SE 45kts, seas 20ft. 6 lives saved.

SAR: MEDEVAC 49YOM F/V ENDURANCE, 70NM NW OF COLD BAY

SITUATION: 22/0904 local time - The patient was suffering from acute appendicitis and the Flight Surgeon recommend immediate medevac. Despite heavy seas near helo launch limits, the CGC Mellon managed to launch their HH-65 helo. The patient was flown to Cold Bay and was transferred to Lifelight for further transport to Anchorage. 2221200V case closed. Wx: Wind S 50kts, Seas 20ft. 1 life saved.

SAR: MEDEVAC 30YOM F/V KODIAK ENTERPRISE, 75NM W OF COLD BAY

SITUATION: 22/1330 local time - A wave broke over the deck of the vessel and knocked the crewman and assorted gear into the hold of the vessel. The crewman was knocked unconscious and rescued by the crew. The crewman wasn't breathing and had no pulse. The EMT onboard administered CPR for six minutes and revived the patient. The HH-65 helo departed Cold Bay, after completing NPSC 0205, and hoisted the patient and transported him to Cold Bay. An awaiting Lifelight Learjet transported the patient from Cold Bay to Anchorage. 221845V case closed. Wx: Winds S 75kts, Seas 25-30ft, Vis 5nm. 1 life saved.

SAR: MEDICO 29YOM F/V NORSEMAN, 64NM SE OF ST PAUL

SITUATION: 23/0413 local time - 24hrs earlier, a rough wave broke over the 120ft F/V Norseman's deck and knocked the 29YOM crewman into a crab pot. The crab pot's bars hit the crewman across the lower part of his chest and he was experiencing severe chest and left arm pains. The pain was mild as long as the crewman remained still. The duty CG Flight Surgeon recommended 24hrs of bed-rest and apply a cold compress to crewman's affected areas. F/V Norseman was placed on a 4hr commsk while they safely transited to Dutch Harbor. 240100V Case closed.

Across east Anchorage, particularly along the hillside, damage reports received so far indicate minor property damage. Along the Glen Highway, a camper was blown off the road in front of an Alaska Region employee Friday. Downed trees caused several power outages and structural damage to adjacent houses/buildings in their fall paths. Several satellite dishes were sent into other parts of town. A report from a resident at about Huffman and Hillside Drive (beginning of the Upper Anchorage Hillside) reported that the strong wind destroyed two of his large antenna systems...one of which was a 12 foot diameter solid fiberglass dish and the other an array of 12 yagi antennas (which he says he used for Earth-Moon-Earth communications?). The yagis did not present a large wind load.

Blizzard conditions, followed by areas of freezing rain, plagued the southwest coast as the storm hit. Coastal flooding and movement of pack ice toward shore also caused local problems along the southwest coast of the State. Up to 4 feet of coastal storm surge water was reported over the ice near Bethel along the Kuskokwim River.

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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ALASKA, Southern

The forecast of impending hazardous weather prompted the cancellation of the Kuskokwim 500 dog race normally held at this time of year. As a matter of fact, race officials commented on how strange it was to cancel the race...when skies were so clear and conditions so favourable the day before the storm hit. A Kwethluk man died when his snowmachine went into the overflow. Two others with him managed to climb to safety.

Snowfall across much of Southcentral Alaska and the Kuskokwim Valley...still in the arctic air and in advance of the front associated with the storm...ranged from 9 inches to locally close to 3 feet in about a 24 hour period. Heaviest snows were reported just east of the Alaska Range...near and north of the Petersville Road.

AKZ021

Pribilof Islands

23	1500AST								
24	0900AST				0	0			High Wind (G60)

A vigorous 'arctic type' low moved quickly east through the southern Bering Sea, reaching landfall and weakening rapidly near Bethel late Sunday morning. Brisk southwest winds, gusting up to 69 mph, were observed as the low passed to the north of Saint Paul at 1:47 am Sunday. Winds diminished below 40 mph by 9 am Sunday as the low moved off to the east. One death was reported when a 41 year old male fell over the side of the F/V "West Point" while working on the deck in heavy weather at 1:30 am Sunday. The vessel was located 32 nautical miles southeast of Saint Paul Island at the time.

AKZ019>021

Western Alaska Peninsula - Aleutian Islands - Pribilof Islands

24	1200AST								
26	1800AST				0	0			High Wind (G66)

A moderate 980mb low moved northeast to Atka Island very early Monday, continuing east then weakening to 995mbs about 90 miles south of Kodiak Island very early Tuesday. Brisk northwesterly and northerly winds were observed along the back, southwest semicircle of the low. Gusts reached 76 mph at Adak Monday morning as the low passed to the east. At Saint Paul, brief blizzard conditions were observed between 6 and 9 am Monday...with northeast wind gusts reaching 61 mph. At Cold Bay, northwest wind gusts reached 53 mph between 4 and 5 pm Tuesday. The brisk winds were also accompanied by strong pressure rises.

AKZ017

Central Gulf Coast

25	2100AST								
26	1100AST				0	0			High Wind (G71)

A 'triple point' low developed about 90 miles northeast of Kodiak late Monday, moving to 60 miles southeast of Middleton Island late Tuesday morning with a frontal system arcing east and southeast into the extreme eastern Gulf of Alaska. East wind reached 82 mph at Middleton Island at 6:15 am Tuesday as the low moved by.

AMERICAN SAMOA

Manu'A County

Countywide	12	0000SST 2359SST							
			0	0					Heavy Rain

Rose County

Countywide	12	0000SST 2359SST							
			0	0					Heavy Rain

Swains County

Countywide	12	0000SST 2359SST							
			0	0					Heavy Rain

Tutuila County

Countywide	12	0000SST 2359SST							
			0	0					Heavy Rain

A flood advisory was issued by the Weather Service Office, due to heavy showers that were caused by an active trough of low pressure over Samoa. The recorded 24-hour rainfall at WSO-Pago Pago for this event was 2.03 inches. WSO-Pago Pago received a total rainfall of 11.36 inches or 90% of normal for the month of January.

ARIZONA, Central and Northeast

NONE REPORTED.

ARIZONA, Northwest

NONE REPORTED.

ARIZONA, South

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

January 1999

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

NONE REPORTED.

ARKANSAS, Central and North Central

ARZ003>007-012>016-021>025-031>033-039-044>046 **Boone - Marion - Baxter - Fulton - Sharp - Newton - Searcy - Stone - Izard - Independence - Johnson - Pope - Van Buren - Cleburne - Jackson - Conway - Faulkner - White - Perry - Pulaski - Lonoke - Prairie**

01	1200CST				1	0			Ice Storm
02	0300CST								

A major ice storm developed over northern and central Arkansas during the morning of January 1st and lasted through the evening hours. The icing was found mainly north of Clarksville, Perryville, Little Rock and Hazen. Precipitation began developing over southern and western Arkansas and gradually spread eastward. The precipitation was mostly in the form of rain which froze on contact with roadways and exposed surfaces in northern and central sections of the state. In portions of northern Arkansas, more than an inch of ice was reported...with extensive tree and power line damage. At one point during the evening of the January 1st, up to 85 percent of Boone County had lost power. It was estimated that up to 100,000 customers were without power during the event. Numerous traffic accidents occurred, but only minor injuries were reported. However, the ice did claim one life. A man in Baxter County slipped on the ice while carrying a gun, with the gun accidentally firing...killing the man. Warmer air was trying to surge northward during the period, but with slow progress. From 6pm on January 1st to 12am on January 2nd, the surface temperature at Harrison remained at 30 degrees. Meanwhile, the temperature at Pine Bluff had climbed from 43 degrees to 53 degrees. The warmer air would eventually take over, with heavy rain developing across central and southern Arkansas. Twenty-four hour rainfall totals ending at 6am on the 2nd included 2 to 4 inch amounts generally south of Clarksville, Heber Springs and Newport. The storm system producing the rain moved east of the state during the morning hours of the 2nd. Behind the system, colder air changed precipitation to snow in portions of northern Arkansas. 1 to as much as 5 inches of snow was reported in Baxter...Boone...Fulton...Marion...Newton and Searcy Counties. M34PH

Clark County

Amity	08	0220CST			0	0			Hail (1.00)
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Garland County

5 W Hot Spgs	08	0245CST			0	0			Hail (0.88)
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Garland County

3 W Hot Spgs	08	0250CST			0	0			Hail (0.75)
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ARZ016-024>025-032>034-043>046 **Independence - Cleburne - Jackson - Faulkner - White - Woodruff - Saline - Pulaski - Lonoke - Prairie**

08	0400CST				0	0			Ice Storm
	0900CST								

An ice storm developed over central and northeast Arkansas during the morning of January 8th. Showers and thundershowers began forming in southwest sections of the state shortly after 12am on the 8th...and were moving northeast into areas where subfreezing air existed at the surface. Icy conditions developed from Benton, Little Rock and Cabot northeastward into areas mainly along Highway 67/167. At least a tenth of an inch of ice was common, with some areas receiving up to half an inch where thundershowers occurred. Most of the ice was on trees and power lines, with bridges and overpasses also affected.

Cleveland County

Rison	08	1705CST			0	0			Hail (0.88)
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Lincoln County

Star City	08	1720CST			0	0			Hail (1.75)
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Searcy County

Leslie	17	1350CST			0	0			Hail (1.75)
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Stone County

1 N Mountain View	17	1435CST			0	0			Hail (0.75)
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Independence County

4 SSE Oil Trough to 5 E Oil Trough	17	1451CST 1456CST	5	250	0	0			Tornado (F2)
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A strong tornado was spawned in southeast Independence County about 4 miles south-southeast of Oil Trough. As the tornado tracked northeast, it heavily damaged a home in the Macks community...with the roof removed. Several vehicles at the home were damaged by flying debris. Farther northeast, the tornado caused mostly tree and power line damage before it moved into Jackson County.

Independence County

3 SE Oil Trough	17	1451CST			0	0			Hail (1.00)
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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
ARKANSAS, Central and North Central									
Independence County									
5 E Oil Trough	17	1455CST			0	0			Hail (0.75)
Jackson County									
4 SW Jacksonport to 2 WSW Jacksonport	17	1456CST 1501CST	2	250	0	0			Tornado (F2)
A strong tornado in southeast Independence County moved into western Jackson County. The tornado caused mostly tree and power line damage and blew down some highway signs before it dissipated about 2 miles west-southwest of Jacksonport.									
Independence County									
5 E Oil Trough	17	1501CST			0	0			Hail (1.25)
Jackson County									
.5 NE Jacksonport to Diaz	17	1506CST 1509CST	2	100	0	0			Tornado (F1)
A weak tornado was spawned in western Jackson County between Jacksonport and Diaz. The tornado caused mostly tree damage before it dissipated near Diaz.									
Jackson County									
Newport	17	1506CST			0	0			Hail (1.75)
Jackson County									
Diaz	17	1508CST	0.2	50	0	0			Tornado (F0)
A weak tornado was spawned in western Jackson County at Diaz. The tornado was on the ground briefly and caused little if any damage.									
Jackson County									
2.7 SSW Tuckerman to 3.5 SE Swifton	17	1523CST 1537CST	9.2	200	0	1			Tornado (F1)
A weak tornado was spawned in northern Jackson County about 2.7 miles south-southwest of Tuckerman. As the tornado tracked northeast, it damaged a couple of houses in a subdivision south of Tuckerman. Bass boats, lawn tractors and a number of yard items were blown around. At the Tuckerman Sewer Plant, a building was damaged and a fence was blown down. Another home just northeast of Tuckerman suffered considerable damage...with one person injured. Several trees were downed or snapped as well. The tornado finally dissipated about 3.5 miles southeast of Swifton.									
Jackson County									
3.5 NE Tuckerman to 4 NE Tuckerman	17	1528CST 1529CST	0.5	75	0	0			Tornado (F0)
A weak tornado was spawned in northern Jackson County about 4 miles northeast of Tuckerman. The tornado was on the ground briefly and caused only tree damage before it dissipated.									
Jackson County									
3 SW Grubbs to 3 NE Grubbs	17	1528CST 1535CST	5.7	200	0	0			Tornado (F1)
A weak tornado was spawned in eastern Jackson County about 3 miles southwest of Grubbs. The tornado tracked northeast toward Grubbs and damaged about a dozen houses in and near town. A mobile home was overturned and destroyed, with debris from the mobile home damaging the house next door. A few barns were also damaged with trees and fences blown down. The tornado dissipated about 3 miles northeast of town.									
White County									
Albion	17	1535CST			0	0			Hail (1.75)
Jackson County									
1 E Grubbs	17	1535CST			0	0			Hail (2.75)
Jackson County									
3.5 N Grubbs	17	1538CST	0.2	75	0	0			Tornado (F0)
A weak tornado was spawned in eastern Jackson County about 3.5 miles north of Grubbs. The tornado was on the ground briefly and caused only tree damage before it dissipated.									
Woodruff County									
Pumpkin Bend	17	1635CST			0	0			Hail (0.75)
Garland County									
2 NE Hot Spgs	21	1430CST			0	0			Hail (1.00)
Pike County									
Murfreesboro	21	1435CST			0	0			Hail (0.75)

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
ARKANSAS, Central and North Central									
Pike County									
Countywide	21	1450CST			0	0			Hail (1.00)
Large hail was widespread across Pike County, with up to quarter size hail reported.									
Pike County									
Glenwood	21	1450CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down a few trees around Glenwood.									
Saline County									
Paron	21	1450CST			0	0			Hail (1.75)
Hot Spring County									
Bonnerdale	21	1500CST			0	0			Hail (0.88)
Pulaski County									
5 W Roland	21	1505CST			0	0			Hail (1.75)
Faulkner County									
Conway	21	1515CST			0	0			Hail (1.75)
Faulkner County									
Conway	21	1523CST			0	0			Hail (0.75)
Faulkner County									
Conway	21	1527CST			0	0			Hail (1.00)
Faulkner County									
Conway	21	1530CST			0	0			Hail (0.88)
There were several reports of large hail in the Conway area during the afternoon of January 21st.									
Hot Spring County									
2 NW Bismarck	21	1515CST			0	0			Hail (2.00)
Garland County									
1 N Hot Spgs	21	1522CST			0	0			Hail (1.75)
Garland County									
Hot Spgs	21	1525CST			0	0			Hail (1.00)
Garland County									
Hot Spgs	21	1530CST			0	0			Hail (3.50)
Garland County									
20 W Hot Spgs	21	1545CST			0	0			Hail (1.75)
There were several reports of large hail in Garland County during the afternoon of January 21st. Hail covered the ground in some areas.									
Faulkner County									
7 E Conway	21	1541CST			0	0			Hail (1.75)
Faulkner County									
Hamlet	21	1543CST			0	0			Hail (3.00)
Faulkner County									
Conway	21	1555CST			0	0			Hail (1.75)
Faulkner County									
Conway	21	1602CST			0	0			Hail (0.75)
Faulkner County									
Conway	21	1604CST			0	0			Hail (1.00)
Faulkner County									
Hamlet	21	1618CST			0	0			Hail (3.50)
Faulkner County									
Vilonia	21	1625CST			0	0			Hail (3.00)
There were several reports of large hail across southern Faulkner County during the afternoon of January 21st.									

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
ARKANSAS, Central and North Central									
Saline County									
Owensville	21	1545CST			0	0			Hail (3.00)
Lincoln County									
5 NW Star City	21	1545CST			0	0			Hail (1.00)
Faulkner County									
3 SE Naylor to 4 E Naylor	21	1557CST 1600CST	2	250	0	5			Tornado (F2)
A strong tornado was spawned in eastern Faulkner County. The tornado destroyed a couple of manufactured homes southeast of Naylor on or near Bull Mountain Road. Five people were injured in one of the homes. A hay barn was also destroyed before the tornado exited into western White County.									
White County									
3 NW El Paso to 3 E Romance	21	1600CST 1610CST	8	250	0	0			Tornado (F2)
A tornado in eastern Faulkner County moved into western White County, tracking mostly through rural areas. The tornado knocked down several trees, and destroyed a hay barn 4 miles north of El Paso along Highway 5. The tornado also damaged the roof of a church about 3 miles south of Romance. The tornado dissipated between Romance and Floyd just southwest of Highway 31.									
Ouachita County									
Amy	21	1600CST			0	0			Hail (1.00)
Pike County									
Murfreeboro	21	1605CST			0	0			Hail (1.00)
Faulkner County									
Conway	21	1608CST			0	0			Hail (0.88)
Saline County									
3 E Avilla	21	1610CST			0	0			Hail (1.75)
White County									
Rose Bud	21	1611CST			0	0			Hail (0.88)
Cleburne County									
10 SE Heber Spgs	21	1620CST			0	0			Hail (0.88)
Dallas County									
8 NE Holly Spgs to 5 SE Princeton	21	1629CST 1639CST	7	100	0	0			Tornado (F1)
A weak tornado was spawned in eastern Dallas County. The tornado knocked down several trees in a narrow path before it dissipated. This tornado paralleled a stronger tornado about a mile farther north.									
Dallas County									
5 S Princeton to 1 E Bunn	21	1629CST 1644CST	11	500	0	0			Tornado (F3)
A strong tornado was spawned in eastern Dallas County. The tornado tracked through mostly rural areas, but knocked down a lot of trees. An aerial survey confirmed that there was at least one forested area where almost every tree had been blown over in a swath almost a quarter mile wide. The tornado dissipated near the town of Bunn.									
Clark County									
1 SW Amity	21	1630CST			0	0			Hail (1.75)
Clark County									
Amity	21	1630CST			0	0			Hail (1.75)
There were several reports of large hail in Clark County during the afternoon of January 21st.									
Pulaski County									
Maumelle	21	1630CST			0	0			Hail (2.50)
Pulaski County									
Maumelle	21	1635CST			0	0			Hail (2.00)
Pulaski County									
Morgan	21	1637CST			0	0			Hail (2.75)
Pulaski County									
Maumelle	21	1640CST			0	0			Hail (4.50)

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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ARKANSAS, Central and North Central

There were several reports of large hail in northern Pulaski County during the afternoon of January 21st.

Hot Spring County

Bonnerdale	21	1630CST			0	0			Hail (0.88)
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White County

2 SW Sunnydale to 8 NE Sunnydale	21	1638CST 1651CST	10	800	0	0			Tornado (F3)
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A strong tornado was spawned in northern White County. The tornado tracked just west of Sunnydale and destroyed a trailer at the intersection of Highways 124 and 157. As the tornado headed northeast, it damaging or destroyed several homes 2 miles north of Sunnydale in the Holly Springs community. A number of trees were knocked down in the area as well. About 4 miles northeast of Sunnydale, the tornado destroyed a newly constructed home which was built on top of a hill. Just before moving into Independence County, the tornado damaged more homes and farm buildings and downed trees along and near Highway 167 close to the White County/Independence County line.

Faulkner County

Vilonia	21	1645CST			0	0			Hail (1.75)
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White County

1 NE Floyd to 1 NE Center Hill	21	1646CST 1657CST	8	400	2	0			Tornado (F2)
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A tornado was spawned in western White County. The tornado tracked mostly along Highway 305 from near Floyd through Center Hill. Several mobile homes were destroyed near the highway, with trees blown down and telephone poles snapped. Many properties in Center Hill were also heavily damaged. At least two mobile homes thrown and destroyed....claiming two lives. F66MH, M42MH

Faulkner County

1 N Otto	21	1647CST			0	0			Hail (2.25)
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Pulaski County

5 N Macon to 7 NE Macon	21	1649CST 1652CST	2	100	0	0			Tornado (F1)
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A weak tornado was spawned in northeast Pulaski County. The tornado caused minimal damage...with some trees down along its track. The tornado also caused some roof damage to a home along Highway 107 before moving into southeast Faulkner County.

Dallas County

8 NE Holly Spgs	21	1649CST			0	0			Hail (1.25)
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Arkansas County

2 E Stuttgart	21	1650CST			0	0			Hail (1.75)
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Garland County

Hempwallace	21	1650CST			0	0			Hail (1.75)
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Independence County

2 SE Pleasant Plains to 3 SE Rosie	21	1651CST 1703CST	9	600	0	0			Tornado (F3)
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A strong tornado moved out of northern White County into southern Independence County. The tornado tracked across Highway 167 about 2 miles south of Pleasant Plains...damaging or destroying several homes and farm buildings and knocking down trees. Northeast of Pleasant Plains, and near Highway 157...the tornado headed through a forested area. An aerial survey confirmed that in at least one area of the forest...only a few trees were left standing. The tornado began dissipating as it moved between Rosie and Oil Trough. About a mile farther southeast, yet another tornado was developing in southern Independence County.

Faulkner County

4 SE Otto to 5 E Otto	21	1652CST 1654CST	1	100	0	0			Tornado (F1)
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A weak tornado moved out of northeast Pulaski County into southeast Faulkner County. The tornado caused minimal damage...with some trees down along its track. The tornado moved into northwest Lonoke County.

Lonoke County

7 NW Cabot to 8 N Cabot	21	1654CST 1700CST	4	100	0	0			Tornado (F1)
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A weak tornado moved out of southeast Faulkner County into northwest Lonoke County. The tornado caused minimal damage...with some trees down along its track. However, the tornado also damaged a mobile home on Lewisburg Road. The tornado moved into southwest White County.

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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ARKANSAS, Central and North Central

Independence County

7 SW Oil Trough to 2 SE Cord	21	1655CST 1722CST	20	500	0	0			Tornado (F2)
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A strong tornado was spawned in southern Independence County. The tornado formed as another tornado was dissipating about a mile northwest. This new tornado formed about 5 miles southwest of Oil Trough. As the tornado moved northeast, it destroyed a home and a shed along Highway 157 and damaged other homes nearby. Extensive tree damage was also found in the area. From there, the tornado tracked within a mile of Oil Trough...and caused some roof damage to a home just west of the intersection of Highways 14 and 157. In Oil Trough, a trailer was heavily damaged and a cable antenna on top of a water tower was bent. Farther northeast, a barn was damaged at the intersection of Highways 122 and 69. The tornado moved about a mile east of Newark and destroyed some transmission towers near a power plant. The tornado continued through eastern Independence County...causing mostly tree damage. The tornado finally dissipated just southeast of the town of Cord.

White County

4 SE El Paso to 5 SE El Paso	21	1700CST 1701CST	1	75	0	0			Tornado (F1)
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A weak tornado moved out of northwest Lonoke County into southwest White County. The tornado caused minimal damage...with some trees down along its track. The tornado dissipated about 5 miles southeast of El Paso.

Grant County

Grapevine	21	1700CST			0	0			Hail (4.00)
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Monroe County

2 E Clarendon to 4 E Brinkley	21	1702CST 1729CST	20	500	0	0			Tornado (F3)
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A strong tornado was spawned in southern Monroe County. The tornado flipped over a tractor 8 miles south of Brinkley. About 3 miles southeast of Brinkley, the tornado destroyed a home with nothing left but the foundation. As the tornado moved northeast, the tornado damaged some transmission towers. The tornado tracked through much of eastern Monroe County and weakened some before moving into St. Francis County (Memphis County Warning Area) and the Wheatley area.

Faulkner County

Conway	21	1708CST			0	0			Hail (1.00)
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Jefferson County

7 WSW Pine Bluff	21	1709CST			0	0			Hail (2.50)
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Jefferson County

1 NW Whitehall to 1 SW Tucker	21	1711CST 1730CST	14	200	0	0	2M		Tornado (F1)
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A weak tornado was spawned in western Jefferson County. The tornado tracked close to the White Hall area and caused some property damage. A barn was destroyed and the roof of a storage building was damaged. Roof damage was also found at several homes. The tornado then headed into the Pine Bluff Arsenal. The tornado damaged some buildings at the Arsenal, with mostly roof damage noted. The tornado also destroyed several steam pipes and knocked down the awning of the public works gas station. The tornado crossed the Arkansas River about 2 miles south of Pastoria with tree damage on both sides of the river. As the tornado moved northeast, it damaged a few more homes in the Sherrill area. The tornado dissipated just southwest of Tucker...with a new tornado spawned less than a mile farther southeast.

Faulkner County

2 S Conway Muni Arpt	21	1711CST			0	0			Hail (0.75)
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Clark County

Arkadelphia	21	1715CST			0	0			Hail (0.75)
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Monroe County

Brinkley	21	1719CST			0	0			Hail (2.00)
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Van Buren County

Scotland	21	1720CST			0	0			Hail (0.88)
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Monroe County

1 N Brinkley	21	1724CST			0	0			Hail (0.88)
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Conway County

Center Ridge	21	1725CST			0	0			Hail (1.00)
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Jefferson County

1 SE Tucker to 5 NE Tucker	21	1730CST 1738CST	5	200	0	0			Tornado (F1)
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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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ARKANSAS, Central and North Central

A weak tornado was spawned in northeast Jefferson County...or just southeast of a dissipating tornado that moved toward Tucker from the White Hall area. The tornado tracked just southeast of Tucker and near the Arkansas State Penitentiary. A few homes on the penitentiary grounds were damaged...with mostly roof damage noted. Farther north and east, the tornado blew down some trees before moving into southern Lonoke County.

Hot Spring County

2 S Donaldson to 3 SE Donaldson	21	1734CST 1737CST	2	100	0	0			Tornado (F1)
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A weak tornado was spawned in southern Hot Spring County. The tornado caused minimal damage, with mostly tree damage noted. The tornado was on the ground a short time, and dissipated southeast of Donaldson near Highway 51. As the tornado dissipated, a new tornado developed about a mile farther southeast.

Hot Spring County

4 SE Donaldson to 6 E Donaldson	21	1737CST 1742CST	4	100	0	0			Tornado (F1)
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A weak tornado was spawned in southern Hot Spring County...and developed about a mile southeast of a dissipating tornado. The tornado caused minimal damage, with mostly tree damage noted. The tornado tracked mostly through rural areas, and dissipated east of Donaldson about 2 miles north of Highway 222.

Lonoke County

3 SW Coy to 2 NW Seaton	21	1738CST 1751CST	11	150	0	0			Tornado (F1)
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A weak tornado moved from northeast Jefferson County into southern Lonoke County. The tornado caused mostly tree damage, but also damaged a roof as it moved through the Coy area. The tornado continued tracking northeast until it dissipated northwest of Seaton.

White County

2 S Romance to 2 SE Romance	21	1738CST 1740CST	1	100	0	0			Tornado (F1)
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A weak tornado was spawned in western White County. The tornado caused minimal damage, with mostly tree damage noted. The tornado caused some roof damage to homes about 2 miles southeast of Romance on Highway 31. The tornado dissipated just after it crossed Highway 31.

White County

3 SW Joy to 1 W Pickens	21	1747CST 1800CST	10	300	0	0			Tornado (F2)
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A strong tornado was spawned in northwest White County. The tornado caused extensive tree damage, and also some property damage...mainly in the town of Joy. In Joy, a shed was destroyed behind an antique store. The volunteer fire department was also heavily damaged. A recreational vehicle was thrown into some trees. The tornado dissipated just north of Highway 310 between Sidon and Pickens.

Independence County

2 NE Oil Trough to 7 NE Newark	21	1805CST 1816CST	8	400	0	0			Tornado (F3)
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A strong tornado was spawned in eastern Independence County. The tornado tracked mostly through rural areas and caused extensive tree damage. The tree damage was mostly along the Black River east of Newark as seen from an aerial survey. The tornado moved into Jackson County about 7 miles northeast of Newark.

Faulkner County

Conway	21	1805CST			0	0			Hail (1.00)
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Independence County

Oil Trough	21	1805CST			0	0			Hail (1.75)
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Prairie County

4 SW Hazen to 3 NW Hazen	21	1813CST 1822CST	7	250	0	0			Tornado (F2)
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A strong tornado was spawned in western Prairie County. The tornado caused mostly tree and utility pole damage...but also destroyed a home about 2 to 3 miles west of Hazen. Some roof damage was noted about 2 miles northwest of Hazen as well. The tornado dissipated near the intersection of Interstate 40 and Highway 249. As the tornado dissipated, a new tornado formed about a mile to the west.

Jackson County

3 SW Elgin to 5 NW Swifton	21	1816CST 1836CST	15	700	0	0			Tornado (F3)
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A strong tornado moved from eastern Independence County into northwest Jackson County. The tornado headed mostly through rural areas and caused extensive tree damage as it tracked along the Black River. In some forested areas, there were hardly any

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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ARKANSAS, Central and North Central

trees left standing as seen from an aerial survey. The tornado continued northeast into southern Lawrence County (Memphis County Warning Area).

Hot Spring County

7 SE Malvern to 8 E Malvern	21	1818CST 1829CST	8	500	0	0			Tornado (F3)
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A strong tornado was spawned in eastern Hot Spring County. The tornado moved mostly through rural areas and caused extensive tree damage. In one forested area, there were not many trees left standing as observed during an aerial survey. As the tornado neared Highway 270 about 8 miles east of Malvern, the roof of a chicken house was damaged with a few homes narrowly missed. The tornado then moved northeast into western Grant County.

White County

3 N Sunnysdale to 7 NE Sunnysdale	21	1820CST 1827CST	5	400	1	0			Tornado (F2)
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A strong tornado was spawned in northern White County about 3 miles north of Sunnysdale along Highway 157. As the tornado tracked northeast, it caused extensive tree and utility pole damage. A few homes and barns were damaged, with a trailer near the White/Independence County line thrown into Independence County. The occupant of the trailer lost her life. The tornado eventually headed into Independence County toward the town of Pleasant Plains. F87MH

Prairie County

12 SW Des Arc to 5 N Des Arc	21	1821CST 1842CST	17	150	0	0			Tornado (F1)
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A weak tornado was spawned in western Prairie County...or about a mile west of a dissipating tornado near the intersection of Interstate 40 and Highway 249. The new tornado damaged a storage building at the intersection of Highways 249 and 302. As the tornado continued northeast, it caused minimal damage...with mostly tree and utility pole damage noted. About 3 miles north of Des Arc, the tornado destroyed a trailer off of Highway 11. The tornado dissipated a short time later.

Saline County

4 S Vimy Ridge to 3 NE Vimy Ridge	21	1824CST 1833CST	7	400	0	0			Tornado (F3)
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A strong tornado was spawned in eastern Saline County. Where the tornado first touched down, a trailer was damaged and a tree fell on a car about 4 miles south of Vimy Ridge along Styles Road. About 2 miles southeast of Vimy Ridge on Sardis Road, extensive tree damage was found. A mobile home was heavily damaged in the same area with several other homes sustaining roof damage. The tornado strengthened as it moved northeast into Pulaski County.

Independence County

1 SW Pleasant Plains to 5 NE Pleasant Plains	21	1827CST 1835CST	6	300	0	0			Tornado (F2)
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A strong tornado moved from northern White County into southern Independence County...and affected the town of Pleasant Plains. Just south of town, a trailer was flipped over behind a hardware store and a barn was heavily damaged. In the area around Pleasant Plains...at least 25 homes, a couple of businesses and a church sustained at least some damage from this tornado and from a tornado about an hour and a half earlier. Extensive tree damage was also found. The tornado headed northeast and dissipated about 5 miles northeast of town not long after it crossed Highway 157.

Grant County

2 W Poyen to 3 NW Poyen	21	1829CST 1833CST	3	300	0	0			Tornado (F3)
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A strong tornado moved from eastern Hot Spring County into western Grant County. The tornado crossed Highway 270 about 2 miles west of Poyen. Mostly tree damage was noted, with the tornado weakening as it moved northeast. The tornado dissipated northwest of Poyen just before it reached Highway 229.

Pulaski County

10 SW Little Rock to Sherwood	21	1833CST 1853CST	15	700	3	0			Tornado (F3)
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A strong tornado moved from eastern Saline County into southwest Pulaski County. Trees were downed as the tornado entered Pulaski County, with some roof damage to a business along Interstate 30 about 5 miles southwest of Little Rock. The tornado continued northeast into eastern sections of the downtown area...crossing near the intersection of Interstates 30 and 630. In this area, many homes and businesses (at least 235 structures) were heavily damaged or destroyed. It was estimated that around 750 structures sustained at least some damage. This included homes in an historic district which were built at the turn of the century. Trees were also downed throughout the area. One tree fell on a car, taking the life of a woman inside. The Governor's Mansion was not spared, with numerous trees down and one tree damaging a fence around the property. A grocery store was also destroyed at the corner of 17th and Main. One man lost his life at this location. Farther northeast, the tornado weakened as it crossed Interstate 40 just east of Highway 67/167. However, the tornado blew a tree down on a mobile home about 2 miles southeast of Sherwood. A man lost his life as a result. The tornado finally dissipated in Sherwood, with a new tornado forming in southeast Pulaski County. M63MH, M67BU, M34VE

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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ARKANSAS, Central and North Central

White County

1 S Romance to 1 SE Romance	21	1838CST 1840CST	1	75	0	0			Tornado (F1)
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A weak tornado was spawned in western White County. The tornado caused minimal damage, with mostly tree damage noted. The tornado caused some roof damage to homes about 1 mile southeast of Romance on Highway 31. The tornado dissipated just after it crossed Highway 31.

Pulaski County

Little Rock	21	1839CST			0	0			Hail (0.88)
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Pulaski County

7 SE Little Rock to 4 NE Galloway	21	1842CST 1857CST	11	400	0	0			Tornado (F2)
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A strong tornado was spawned in southeast Pulaski County...or southeast of a dissipating tornado that moved through Little Rock. This new tornado developed about 7 miles southeast of the downtown area...and damaged a sprinkler system used for farming near the intersection of Highways 165 and 391. Farther northeast, the tornado destroyed a storage building and blew down some trees along Highway 70 about 1 to 2 miles east of Highway 391. The tornado then knocked at least four 18-wheelers over on Interstate 40 near Galloway before heading into Lonoke County.

White County

Rose Bud	21	1845CST			0	0			Hail (1.00)
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White County

Rose Bud	21	1847CST			0	0			Hail (1.50)
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White County

2 E Sidon to 3 NE Sidon	21	1854CST 1857CST	2	100	0	0			Tornado (F1)
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A weak tornado was spawned in northwest White County. The tornado developed near Highway 310 about 2 miles east of Sidon and caused minimal damage...with mostly tree and minor roof damage noted. The tornado tracked northeast into Cleburne County.

Lonoke County

6 W Furlow to 7 S Cabot	21	1857CST 1902CST	4	400	0	0			Tornado (F2)
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A strong tornado in southeast Pulaski County moved into western Lonoke County. The tornado moved through the South Bend community and caused extensive damage. A shed was destroyed and a house was heavily damaged along or near Meadowlark Lane. Numerous trees were also downed or snapped in the same area. Farther northeast, the tornado damaged a few homes along Highway 294. In one of these homes, the garage was destroyed with extensive roof damage noted. In all, at least 12 homes...11 mobile homes and 10 farm buildings sustained at least some damage. The tornado dissipated about 2 miles northeast of town.

Cleburne County

10 S Wilburn to 8 SE Wilburn	21	1857CST 1901CST	3	100	0	0			Tornado (F1)
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A weak tornado in northwest White County moved into southeast Cleburne County. The tornado headed through mostly rural areas and caused minimal damage...with mostly tree and minor roof damage noted. The tornado tracked northeast and back into White County toward Pangburn.

White County

2 SW Pangburn to 3 NE Pangburn	21	1901CST 1907CST	5	150	0	0			Tornado (F1)
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A weak tornado in southeast Cleburne County moved into northern White County. The tornado moved through the east side of Pangburn...destroying a woodworking plant and damaging a cabinet shop on Highway 16. A utility pole was also snapped in the area. As the tornado tracked northeast, it downed a few trees in a cemetery along Highway 124 about 2 miles east of Pangburn. The tornado dissipated a short time later about 3 miles northeast of town.

Woodruff County

2 W Patterson to 4 NW Mc Crory	21	1902CST 1907CST	4	75	0	0			Tornado (F0)
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A weak tornado was spawned in northern Woodruff County. The tornado developed about 2 miles west of Patterson and headed across Highway 64 about 1 mile west of Highway 17. From there, the tornado headed through mostly rural areas and caused little to no damage before dissipating.

Pulaski County

Macon	21	1902CST			0	0			Hail (0.75)
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Izard County

Pineville	21	1915CST			0	0			Hail (0.75)
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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	Estimated Damage	Character of Storm
					Killed	Injured	Property Crops

ARKANSAS, Central and North Central

Lonoke County

1 SE Ward to 1 NE Ward	21	1918CST 1921CST	2	200	0	0	Tornado (F1)
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A weak tornado was spawned in northern Lonoke County just southeast of Ward. The tornado knocked a single-wide mobile home from its foundation, with one end of the mobile home damaged. A few nearby sheds were damaged or destroyed. A storage building was also damaged with some trees downed in the area. In all, at least 15 homes had at least some damage. The tornado dissipated 1 mile northeast of Ward.

White County

1 SW Beebe to 1 NE Mc Rae	21	1925CST 1936CST	8	1000	2	0	Tornado (F3)
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A strong tornado was spawned in southern White County just southwest of Beebe. The tornado moved through Beebe causing extensive damage to homes and businesses. Of all the tornadoes in this particular outbreak, the tornado at Beebe was the strongest. The tornado heavily damaged the new Beebe Junior High School off of Center Street and destroyed a gym behind the school. The Beebe Fire Department and a church also sustained damage. Two pickup trucks were found upside down on Hickory Street, with many old houses damaged or destroyed on Main Steet. Trees were downed throughout the area. Also, a girls high school basketball game was cancelled at halftime...and a boys game scheduled for later was called off with word of an approaching tornado. The tornado arrived a half hour later and heavily damaged the high school gym. Fortunately, the building was empty...everyone had gone home. In Beebe, the tornado killed two people...an elderly woman and an infant. The tornado tracked northeast out of Beebe toward McRae, with trees down and building debris noted along Highway 367 between Beebe and McRae. In McRae, widespread damage was found. The old fire station lost a wall and the new fire station across the railroad tracks (along Highway 367) was destroyed. Several mobile homes were overturned next to the new fire station and the post office was heavily damaged. A train signal was also destroyed. All natural gas in town was shut off due to leaks. The tornado finally dissipated about a mile northeast of McRae. F65PH, M0PH

Independence County

5 SW Newark to 2 NE Newark	21	1933CST 1943CST	7	400	0	0	Tornado (F2)
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A strong tornado was spawned in eastern Independence County. The tornado developed near the White River about 5 miles southwest of Newark and moved toward town. In Newark, extensive tree damage was found...with numerous trees either downed or snapped. At least 100 homes, three businesses and a church sustained some damage...with mostly roof damage noted. Off of 5th Street, a few trailers were heavily damaged or destroyed. Damage was most extensive along Morgan Street and Hill Street. The tornado continued tracking northeast and dissipated about 2 miles northeast of town.

Pulaski County

Little Rock	21	1939CST			0	0	Hail (1.00)
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Pulaski County

4 E Macon	21	1950CST			0	0	Hail (0.75)
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Pulaski County

Jacksonville	21	2000CST			0	0	Hail (1.00)
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Pulaski County

4 S Jacksonville to 3 SE Jacksonville	21	1959CST 2001CST	1	75	0	0	Tornado (F0)
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A weak tornado was spawned in eastern Pulaski County to the southeast of Jacksonville on Valentine Road. The tornado was on the ground briefly, and caused minimal damage...with very little tree damage noted.

Clark County

Northwest Portion	21	2000CST 2200CST			0	0	Flash Flood
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Cleburne County

Southeast Portion	21 22	2000CST 0100CST			0	0	Flash Flood
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Faulkner County

Countywide	21 22	2000CST 0100CST			0	0	Flash Flood
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Garland County

Countywide	21	2000CST 2200CST			0	0	Flash Flood
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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		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ARKANSAS, Central and North Central									
Hot Spring County									
Countywide	21	2000CST 2200CST			0	0			Flash Flood
Independence County									
Southeast Portion	21 22	2000CST 0100CST			0	0			Flash Flood
Pulaski County									
Countywide	21 22	2000CST 0100CST			0	0			Flash Flood
Saline County									
East Portion	21 22	2000CST 0100CST			0	0			Flash Flood
White County									
West Portion	21 22	2000CST 0100CST			0	0			Flash Flood
Lonoke County									
Northwest Portion	21 22	2230CST 0100CST			0	0			Flash Flood
Strong to severe thunderstorms continually developed from southwest into central and northeast Arkansas during the afternoon and evening of January 21st. The storms moved northeast over the same areas, with flash flooding occurring. There were scattered reports of roads covered by water, with a few roads closed until the water receded. Where flooding occurred, 2 to as much as 4 inches of rain was received.									
Johnson County									
Hunt	21	2000CST			0	0			Hail (2.75)
Johnson County									
5 N Clarksville	21	2010CST			0	0			Hail (1.00)
Lonoke County									
Austin	21	2017CST			0	0			Hail (0.75)
Jackson County									
1 SW Olyphant to Olyphant	21	2020CST 2022CST	1	100	0	0			Tornado (F1)
A weak tornado was spawned in southwest Jackson County. The tornado developed just southwest of Olyphant and moved northeast toward town. The tornado caused minor damage...with mainly some tree damage and minor roof damage noted. The tornado then headed into southeast Independence County.									
Independence County									
5 SE Thida to 5 E Thida	21	2022CST 2025CST	2	100	0	0			Tornado (F1)
A weak tornado in southwest Jackson County moved into southeast Independence County about 5 miles southeast of Thida. The tornado moved through mostly rural areas and caused minor damage...with mainly some tree damage noted. The tornado then headed back into Jackson County.									
Jackson County									
7 SW Newport to 1 W Newport	21	2025CST 2032CST	6	100	0	0			Tornado (F1)
A weak tornado in southeast Independence County moved into western Jackson County about 7 miles southwest of Newport. The tornado moved northeast toward Newport...causing minor damage. Mostly tree and roof damage were noted, with the tornado dissipating on the west side of town.									
Logan County									
Caulksville	21	2030CST			0	0			Hail (1.75)
Pulaski County									
2 N Ferndale	21	2054CST			0	0			Hail (0.75)
Hot Spring County									
Central	21	2122CST			0	0			Hail (1.75)
Hot Spring County									
Social Hill	21	2122CST			0	0			Hail (1.00)

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ARKANSAS, Central and North Central									
Hot Spring County									
3 SW Malvern	21	2124CST			0	0			Hail (1.75)
Hot Spring County									
Malvern	21	2132CST			0	0			Hail (1.75)
Hot Spring County									
4 SE Malvern	21	2135CST			0	0			Hail (1.25)
Large hail occurred in much of eastern Hot Spring County during the evening of January 21st.									
Hot Spring County									
4 SE Malvern	21	2135CST			0	0			Thunderstorm Wind (G70)
Thunderstorm winds of 70 to 80 mph downed trees and power lines.									
Saline County									
3 SW Haskell	21	2140CST			0	0			Hail (0.75)
Saline County									
Benton	21	2144CST			0	0			Hail (2.00)
Saline County									
Benton	21	2147CST			0	0			Hail (1.00)
Saline County									
Benton	21	2148CST			0	0			Hail (1.75)
Saline County									
2 NE Bryant	21	2150CST			0	0			Hail (0.88)
Saline County									
Benton	21	2151CST			0	0			Hail (1.75)
Large hail occurred in much of southeastern Saline County during the evening of January 21st.									
Lonoke County									
Cabot	21	2200CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down several large tree limbs.									
Scott County									
Waldron	21	2241CST			0	0			Hail (0.75)
Scott County									
3 E Waldron	21	2255CST			0	0			Thunderstorm Wind (G70)
Thunderstorm winds destroyed three barns and removed the roof from a house 3 miles east of Waldron.									
Polk County									
Wickes	22	0010CST			0	0			Hail (0.75)
Ouachita County									
Elliott	22	0130CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down trees and power lines at Elliott.									
Ouachita County									
Camden	22	0130CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down trees, power lines and traffic lights at Camden.									
Clark County									
Gurdon	22	0130CST			0	0			Thunderstorm Wind (G52)
Thunderstorm winds gusted to 60 mph at Gurdon.									
Saline County									
Bauxite	22	0210CST			0	0			Thunderstorm Wind (G50)
Thunderstorm winds knocked down a HAM Radio Tower at Bauxite.									
Grant County									
Sheridan	22	0220CST			0	0			Hail (0.88)
Saline County									
Sardis	22	0220CST			0	0			Thunderstorm Wind (G52)
Thunderstorm winds gusted to 60 mph at Sardis.									

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
<u>ARKANSAS, Central and North Central</u>									
Grant County									
1 W Poyen to 3 N Poyen	22	0225CST 0230CST	3	100	0	0			Tornado (F1)
A weak tornado was spawned in western Grant County along a bow echo...or a boomerang shaped line of storms mostly noted for straight-line wind damage. The tornado moved through rural areas mostly north and west of Poyen, and caused minimal damage. Mostly tree damage was noted. The tornado dissipated about 3 miles north of Poyen.									
Saline County									
2 NE Bryant	22	0235CST			0	0			Hail (0.75)
Pulaski County									
Little Rock	22	0236CST			0	0			Hail (0.88)
Arkansas County									
Stuttgart	22	0320CST			0	0			Hail (1.00)
Drew County									
East Portion	29	2145CST			0	0			Flash Flood
Excessive rain caused some high water problems on Highways 277 and 138 east of Monticello.									
Johnson County									
Clarksville	30	1450CST			0	0			Hail (1.00)
<u>ARKANSAS, East</u>									
Lawrence County									
Imboden	17	1520CST 1525CST			0	0	0.10K		Hail (1.00)
Poinsett County									
Uno	17	1535CST 1540CST			0	0	7.5K		Hail (2.75)
Craighead County									
1 S Risher to 2 SE Bono	17	1545CST 1610CST	16	75	0	0	5K		Tornado (F0)
The tornado started near Risher and tracked northeast across mainly rural areas. Some trees and power lines were blown down.									
Randolph County									
Countywide	17	1545CST 1555CST			0	0	0.50K		Hail (1.75)
Hail ranged in size from dime to golfball.									
Randolph County									
1 SW Pocahontas	17	1550CST 1605CST			0	1	50K		Thunderstorm Wind
Several houses had their roofs blown off. One truck was blown off the road injuring the driver. Several trees were knocked down as well.									
Lawrence County									
Walnut Ridge	17	1605CST 1615CST			0	0	30K		Thunderstorm Wind
A building lost part of its roof. A truck was overturned. Several trees were blown down.									
Greene County									
3 E Lafe to 5 NE Marmaduke	17	1630CST 1645CST	8	25	0	0	1K		Tornado (F0)
The tornado started to the east of Lafe and tracked northeast toward the northeast corner of Greene county. A few trees were knocked down.									
Greene County									
1 S Bethel to Schug	17	1635CST 1645CST	5.5	50	0	0	25K		Tornado (F1)
The tornado started just south of Bethel and continued east toward the town of Schug. A roof was blown off of a substance abuse center and several mobile homes were damaged in Schug.									
Cross County									
Tilton	17	1640CST 1645CST			0	0	0.01K		Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ARKANSAS, East									
Clay County									
4 SE Corning	17	1645CST 1650CST			0	0	15K		Thunderstorm Wind
A log cabin and barn were destroyed. A satellite receiver was also demolished. One home sustained damage to shingles on the roof. Several power poles and trees were also knocked down.									
Craighead County									
5 SW Lake City to 5 N Lake City	17	1645CST 1700CST	11	75	0	0	150K		Tornado (F2)
The tornado started just southwest of Lake City and tracked northeast reaching the northwest corner of Lake City and then continued northeast. Two homes were destroyed and five others were damaged in Lake City. An electrical substation was badly damaged. Several trees and power lines were also blown down.									
Poinsett County									
1 W Weiner to 7 NE Weiner	17	1645CST 1655CST	7.8	50	0	0	10K		Tornado (F0)
The tornado started just west of Weiner and tracked northeast staying north of Weiner. Several trees and power poles were knocked down.									
Cross County									
Hickory Ridge	17	1650CST 1655CST			0	0	2K		Hail (1.75)
A few cars were damaged by the hail.									
Mississippi County									
1 N Lennie	17	1655CST 1700CST			0	0	75K		Thunderstorm Wind
Two trailer home were destroyed and another five homes were damaged. Several trees and power lines were also blown down.									
Poinsett County									
Lepanto	17	1655CST 1700CST			0	0	0.10K		Hail (1.00)
Poinsett County									
Rivervale to 5 S Lepanto	17	1655CST 1710CST			0	0	0.10K		Hail (1.00)
Hail ranged in size from dimes near Lepanto to quarters around Rivervale.									
Crittenden County									
Gilmore	17	1710CST 1715CST			0	0	0.10K		Hail (1.00)
Mississippi County									
Manila	17	1710CST 1715CST			0	0	10K		Thunderstorm Wind
Several power lines and power poles were blown down in the south part of Manila.									
Crittenden County									
Turrell	17	1715CST 1720CST			0	0	0.10K		Hail (1.00)
Lawrence County									
Walnut Ridge	21	1605CST 1610CST			0	0	0.01K		Hail (0.75)
Greene County									
1 S Evening Star to 1 N Beech Grove	21	1630CST 1635CST	4	50	0	0	75K		Tornado (F1)
A tornado touched down near Evening Star and continued northeast toward Beech Grove. At least twelve homes were damaged or destroyed. A church was also badly damaged.									
Cross County									
Hickory Ridge	21	1633CST 1638CST	0.1	10	0	0	0.05K		Tornado (F0)
A tornado briefly touched down near Hickory Ridge producing little damage. While the tornado produced little damage, the storm killed hundreds of geese who were killed by the winds and hail accompanying the tornado.									

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
ARKANSAS, East									
Greene County									
Light	21	1635CST 1640CST			0	0	25K		Thunderstorm Wind
	One business lost its roof. Several trees were blown down.								
Clay County									
1 E Knobel to 2 S Mc Dougal	21	1645CST 1705CST	12	50	0	0	5K		Tornado (F0)
	The tornado started east of Knobel and continued northeast. The tornado may have come up and down several times. One home had damage to its roof and porch south of the town of Walnut Grove.								
Clay County									
4 SE Knobel to 3 SE Mc Dougal	21	1705CST 1730CST	16	400	0	0	1M		Tornado (F4)
	The tornado started southeast of Knobel and tracked northeast. The most serious damage occurred early in the life of the tornado. Two homes were destroyed on County Road 238. Several other homes were damaged. Two trailer trucks were rolled over. As the tornado continued east it gradually diminished in intensity. Several trees and power lines were knocked down along the way.								
Craighead County									
Jonesboro	21	1715CST 1720CST			0	0	0.10K		Hail (1.00)
Lee County									
Garret	21	1725CST 1730CST	0.1	10	0	0	0.05K		Tornado (F0)
	A tornado briefly touched down near Garret Grove producing minimal damage.								
St. Francis County									
Goodwin	21	1725CST 1730CST	0.1	10	0	0	0.10K		Tornado (F0)
	A tornado briefly touched down in Goodwin with some damage reported.								
St. Francis County									
2 S Wheatley to 4 W Hawkins	21	1730CST 1750CST	16	200	0	9	500K		Tornado (F2)
	The tornado moved into the extreme southwest corner of St. Francis county from Monroe county. It touched down several times and then lifted back into the air. The most severe damage occurred in and near Wheatley. Thirteen homes were completely demolished and six other homes sustained structural damage. Further along its path, the tornado hit a farm about 4.5 miles northeast of Wheatley. The farmhouse lost part of its roof. Two or three machine sheds were demolished, several other outbuildings were damaged, grain storage bins were flatted and blown several hundreds of feet away and irrigation equipment suffered extensive damage.								
Lawrence County									
1 W Hoxie	21	1800CST 1805CST	0.1	10	0	0	0.05K		Tornado (F0)
	A tornado briefly touched down just west of Hoxie producing little damage.								
Cross County									
Cherry Vly	21	1815CST 1820CST			0	0	0.75K		Hail (1.75)
St. Francis County									
1 W Colt	21	1815CST 1820CST	0.1	10	0	0	0.05K		Tornado (F0)
	A tornado briefly touched down just west of Colt producing minimal damage.								
Poinsett County									
Tyronza	21	1828CST 1835CST			0	0	0.01K		Hail (0.75)
Lawrence County									
4.5 SE Saffell to 1 SW Clover Bend	21	1836CST 1850CST	8	25	0	0	10K		Tornado (F0)
	The tornado moved into Lawrence county from Jackson county. Several trees were knocked down by the tornado.								
Clay County									
1 E Palatka to 2 E Palatka	21	1850CST 1855CST	1	75	0	0	50K		Tornado (F1)

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
ARKANSAS, East									
The tornado started east of Palatka and travelled northeast. Several homes were damaged in the area.									
Crittenden County									
Gilmore	21	1900CST 1905CST			0	0	0.05K		Hail (0.88)
Lawrence County									
1 NW Walnut Ridge	21	1905CST 1910CST	0.1	10	0	0	0.05K		Tornado (F0)
A tornado briefly touched down just northwest of Walnut Ridge producing minimal damage.									
Clay County									
4 E Datto to 3 SW Moark	21	1925CST 1940CST	7	100	0	0	8M		Tornado (F2)
The tornado developed east of Datto and moved northeast. Several homes were badly damaged. Several hangars were destroyed and some planes were destroyed at the Corning airport.									
Randolph County									
Pocahontas	21	2000CST 2130CST			0	0	1K		Urban/Sml Stream Fld
Some street flooding occurred in Pocahontas due to heavy rains.									
Craighead County									
2 S Lanieve to 2 NE Lanieve	21	2010CST 2020CST	5	10	0	0	0.10K		Tornado (F0)
The tornado started south of Lanieve and moved northeast. Little damage occurred with this tornado.									
St. Francis County									
Forrest City	21	2038CST 2045CST			0	0	0.10K		Hail (1.00)
Greene County									
Marmaduke	21	2050CST 2055CST	0.1	10	0	0	5K		Tornado (F0)
A tornado briefly touched down near Marmaduke knocking a few trees and power lines down.									
Craighead County									
4 SW Egypt to 1 N Egypt	21	2055CST 2105CST	5	25	0	0	50K		Tornado (F0)
The tornado started southwest of Egypt and moved northeast into Lawrence county. Two residences were destroyed. An antenna was blown down.									
Lawrence County									
7 SW Sedgwick to 5 SW Sedgwick	21	2105CST 2110CST	2	25	0	1	10K		Tornado (F0)
The tornado that started near Egypt in Craighead county continued to move northeast into Lawrence county. The tornado damaged one home in Lawrence county. A farm shop was destroyed.									
Craighead County									
1 N Jonesboro to 4 N Jonesboro	21	2120CST 2130CST	3	20	0	0	0.10K		Tornado (F0)
The tornado started just north of Jonesboro and moved northeast. The tornado produced little damage.									
Craighead County									
3.5 NW Lake View to 5 N Lake View	21	2140CST 2150CST	2.5	20	0	0	5K		Tornado (F0)
The tornado started in the northeast corner of Craighead county near the town of Dixie and travelled northeast into Greene county. Several trees were knocked down by the tornado.									
Mississippi County									
Wilson	21	2155CST 2200CST	0.1	10	0	0	0.05K		Tornado (F0)
A tornado briefly touched down near Wilson producing little damage.									
Craighead County									
2 SW Bay to 1 N Bay	21	2200CST 2210CST	3	20	0	0	5K		Tornado (F0)
The tornado started just southwest of Bay and tracked northeast missing the town. Several trees were blown down by the tornado.									

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
<u>ARKANSAS, East</u>									
Greene County									
Schug to 3 NE Schug	21	2210CST 2220CST	3	20	0	0	10K		Tornado (F0)
The tornado that started in northeast Craighead county moved into Greene county near the town Schug and continued northeast. a couple of houses suffered structural damage in Schug. Several trees were also knocked down.									
Craighead County									
Bay	22	0300CST 0600CST			0	0	1K		Flash Flood
Heavy rains during the evening hours produced scattered flash flooding in the Bay and Moline areas. Several roads were flooded during the early morning hours.									
Mississippi County									
Manila	22	0300CST 0600CST			0	0	1K		Flash Flood
Heavy rains during the evening hours produced scattered flash flooding across the county. Several roads were flooded during the early morning hours.									
Poinsett County									
Countywide	22	0300CST 0600CST			0	0	1K		Flash Flood
Heavy rains during the evening hours produced scattered flash flooding across the county. Several roads were flooded during the early morning hours.									
St. Francis County									
1 NE Forrest City	22	0345CST 0350CST			0	0	5K		Thunderstorm Wind
A few large trees were knocked down.									
Phillips County									
West Helena	22	0405CST 0410CST			0	0	35K		Thunderstorm Wind
Thirty mobile homes were damaged. An outbuilding was also damaged and a fence was wrapped around a tree. A house under construction had the outer frame blown off. A parked 18-wheeler was blown over.									
Crittenden County									
West Memphis	22	0530CST 0535CST			0	0	1K		Thunderstorm Wind
Several large tree limbs were knocked down.									

ARKANSAS, Northwest

**ARZ001>002-
010>011**

Benton - Carroll - Washington - Madison

01	2000CST	0	0	Winter Storm
02	2000CST			

Summary of winter weather on January 1-2 1999:

A major winter storm was in its infancy as it moved across the south-central part of the nation on January 1. In advance of the developing storm, freezing rain developed over Carroll County on the evening of January 1, with rain changing to freezing rain across other northwest Arkansas counties as temperatures dropped during the early morning of January 2.

Carroll County was especially hard-hit by ice with the NWS Cooperative Observers at Eureka Springs and Berryville both reporting 1/2 inch of ice. The thick ice resulted in the loss of power to several hundred Carroll Electric Cooperative customers in Carroll and Benton Counties. Travel in Carroll County was impossible. There was widely scattered tree damage. The Governor of Arkansas named Carroll County one of six counties across northern Arkansas eligible for disaster relief funds due to damage caused by the icing.

By early morning on January 2, enough cold air moved in behind the strengthening winter storm to cause a changeover from freezing rain to sleet and then to snow. All four of the counties listed in this entry received from one to two inches of snow, causing slick and hazardous driving conditions.

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ARKANSAS, Northwest									
ARZ001>002		Benton - Carroll							
	08	0000CST			0	0			Ice Storm
		2359CST							
	Summary of events for January 8 1999:								
	Following the passage of an arctic cold front late on January 6, warm moist air returned over the top of the dome of shallow cold air. Drizzle then formed across northwest Arkansas on January 7. Where temperatures were below freezing, the drizzle froze upon contact with the ground. By the morning of January 8, roads in Carroll and northeastern Benton Counties had become ice-covered and travel was discouraged.								
Sebastian County									
Hackett	21	1835CST			0	0			Hail (1.75)
	The Sebastian County Sheriffs Office reported quarter-sized hail in Hackett, while the general public reported golfball-sized hail.								
Sebastian County									
1 W Greenwood	21	1853CST			0	0	1K		Hail (1.00)
	Quarter-sized hail covered the ground. Location of this report: off of AR Hwy 10 Spur west of Greenwood. One home just east of Greenwood lost several windows to the large hail.								
Sebastian County									
1 E Greenwood	21	1857CST			0	0			Funnel Cloud
Sebastian County									
Ft Chaffee	21	1905CST			0	0			Funnel Cloud
Sebastian County									
2 W Bloomer	21	1911CST	0.5	50	0	0			Tornado (F0)
		1912CST							
	Several HAM Radio spotters simultaneously reported a tornado touchdown in an open area near the intersection of AR Hwys 22 and 96. Calls to the area revealed no damage.								
Sebastian County									
1 N Bloomer	21	1915CST			0	0			Hail (0.88)
Franklin County									
3 SE Ozark	21	1940CST			0	0			Hail (1.00)
Sebastian County									
Hartford	21	1942CST			0	0			Hail (1.00)
Franklin County									
Altus	21	1945CST			0	0			Hail (1.00)
Sebastian County									
2 SW Greenwood	21	2000CST			0	0	10K		Hail (1.75)
	Nearby at Midland, large hail dented several cars.								
Sebastian County									
Witcherville	21	2015CST			0	0			Hail (1.25)
Sebastian County									
5 SE Greenwood	21	2018CST			0	0	5K		Hail (1.75)
	Hail of unknown size broke out car windows along Milltown Road 5 miles southeast of Greenwood.								
Sebastian County									
Milltown	21	2020CST			0	0			Hail (2.75)
Franklin County									
Charleston	21	2030CST			0	0	1K		Hail (1.75)
	Large hail caused minor roof damage to the Charleston Post Office. Hail covered the ground in Charleston.								
Sebastian County									
Mansfield	21	2200CST			0	0			Hail (0.88)
Sebastian County									
Barling	21	2225CST			0	0	13K		Thunderstorm Wind
	A barn was blown away by thunderstorm winds. Power lines were also blown down.								

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

ARKANSAS, Northwest

Sebastian County

Ft Smith	21	2230CST			0	0			Hail (0.88)
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Summary of events for January 21 1999:

Three rounds of severe thunderstorms moved across west-central Arkansas during the evening of January 21. The first severe thunderstorm moved across southern and eastern Sebastian County, eventually exiting Franklin County just north of Altus from 630 to 745 PM. Along the way, this storm produced golfball-sized hail and a brief tornado touchdown. The second severe storm followed a similar path but just a little further south from 730 to 845 PM. This storm produced hail as large as baseballs at Milltown. The final severe thunderstorm was more like a short line, causing two reports of nickel-sized hail from opposite ends of Sebastian County and a report of strong winds as it passed through from 1000 to 1045 PM.

While severe thunderstorms in January are unusual, the right conditions came together when a dryline moved into very unstable air and then a powerful upper level jet approached the area. The report of baseball-sized hail was the first time that hail that large had ever been reported in the modernized Tulsa County Warning Area during the month of January.

ARZ001>002-010>011

Benton - Carroll - Washington - Madison

23	0000CST				0	0			Heavy Snow
	0700CST								

Summary of events for January 23 1999:

Rain showers developed over northwest Arkansas on the evening of January 22 as a strong upper level low approached the area. As the upper level low and lots of mid and upper level cold air passed overhead, rain quickly changed to a wet snow. Despite temperatures at or above freezing while the snow fell, the snow fell heavily enough to accumulate at least 2 inches in parts of the counties listed here. Snowfall totals include: Eureka Springs...4", and Fayetteville...2". Snowfall amounts varied largely from one place to another. Some locations in the listed counties saw several inches, while other locations saw none at all.

ARZ010

Washington

30	1100CST				0	0	4K		High Wind (G43)
	1200CST								

Strong gradient winds gusting near 50 to 60 mph blew over several trees and power lines in the Fayetteville and Springdale areas. The ASOS at Fayetteville's Drake Field measured a peak wind gust of 43 knots (49 mph) from the east at 1128 AM.

Sebastian County

Greenwood	30	1338CST			0	0			Hail (0.75)
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Summary for January 30 1999:

Low pressure at the surface and in the upper atmosphere over southern Oklahoma caused a conveyor belt of rain and embedded thunderstorms to move from south to north across northwest Arkansas on January 30. One of the embedded thunderstorms produced an isolated report of marginally severe hail. The tight pressure gradient in advance of the low pressure center also caused a brief period of high winds in Washington County.

ARKANSAS, Southeast

Chicot County

Eudora	08	2025CST			0	0	8K		Thunderstorm Wind
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One barn was destroyed. Several trees were blown down.

Chicot County

Eudora	21	1605CST			0	0			Hail (0.88)
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Ashley County

4 SW Wilmot to 6 E Parkdale	21	1924CST 1939CST	10	200	0	0	35K		Tornado (F1)
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This tornado was a continuation of a tornado that touched down in Morehouse Parish Louisiana and continued into Chicot County Arkansas. There was minor damage to mainly trees and power lines.

Chicot County

1 W Empire to 2 N Lake Vlg	21	1939CST 2009CST	20	200	0	0	70K		Tornado (F1)
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This tornado moved out of Ashley and into to Chicot County and caused minor damage to trees and power lines.

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
<u>ARKANSAS, Southeast</u>									
Chicot County									
Lake Vlg	21	1955CST			0	0	30K		Hail (1.75)
Golf ball size hail damaged roofs of houses and damaged automobiles.									
Chicot County									
Lake Vlg	21	2030CST			0	0	100K		Hail (2.75)
Baseball size hail did serious damage to roofs, automobiles and windows.									
Chicot County									
8 S Eudora	22	0823CST	1.5	50	0	0			Tornado (F0)
This tornado passed through an open field and no damage was reported.									
Ashley County									
Countywide	29	0930CST			0	0	100K		Flood
	30	0330CST							
Chicot County									
Countywide	29	0930CST			0	0	100K		Flood
	30	0330CST							
Strong thunderstorms over southeast Arkansas caused flash flooding of small creeks and poor drainage areas, and with prolonged heavy rain, flooding occurred over most of Ashley and Chicot counties. Numerous roads were flooded and had to be closed forcing some schools and businesses to be closed. Several bridges were washed out and water got into several homes.									
<u>ARKANSAS, Southwest</u>									
Howard County									
Nashville	21	1420CST			0	0			Hail (1.00)
Howard County									
Nashville	21	1426CST			0	0			Hail (1.50)
Lafayette County									
6.2 NNE Bradley to 1 SE Lerch	21	1510CST 1533CST	8.8	50	0	0	0		Tornado (F1)
The tornado tracked through wooded area causing no damage other than nuisance road blockages from fallen trees.									
Columbia County									
1.6 W Cornelius to 1.3 NE Cornelius	21	1533CST 1538CST	1.2	30	0	0	0		Tornado (F0)
The tornado tracked through wooded area causing no damage other than nuisance road blockages from fallen trees.									
Lafayette County									
1.5 ENE Lerch to 2.8 NE Lerch	21	1538CST 1541CST	1.1	25	0	0	0		Tornado (F0)
The tornado tracked through wooded area causing no damage other than nuisance road blockages from fallen trees.									
Lafayette County									
Stamps	21	1515CST			0	0			Hail (0.75)
Lafayette County									
Buckner	21	1520CST			0	0			Hail (1.00)
Nevada County									
Falcon	21	1533CST			0	0			Hail (0.75)
Nevada County									
Willisville	21	1535CST			0	0			Hail (1.00)
Miller County									
4 SW Genoa to 1.1 SSE Genoa	21	1545CST 1556CST	4	25	0	0	0		Tornado (F0)
Tornado track was through unpopulated wooded and farmland area.									
Miller County									
8 E Texarkana	21	1600CST			0	0			Hail (0.75)
Reported along the 8 mile marker of Highway 82.									
Hempstead County									
Hope	21	1635CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ARKANSAS, Southwest									
Hempstead County									
Hope	21	1658CST			0	0			Hail (0.75)
Hempstead County									
Hope	21	1705CST			0	0			Hail (0.75)
Nevada County									
Emmet	21	1718CST			0	0			Hail (1.75)
Hempstead County									
5.2 SW Washington to 6.9 NE Blevins	21	2013CST 2055CST	21.1	50	0	0	30K		Tornado (F2)
Large trees uprooted and pushed over. Several large trees fell on homes and residences in Washington. Some structural and roof damage occurred to several homes and businesses. Otherwise this tornado traversed mostly unpopulated wooded regions.									
Miller County									
Ravanna	22	0005CST			0	0	10K		Thunderstorm Wind (G52)
Topped trees and wind damaged three homes.									
Miller County									
5 SW Fouke	22	0010CST			0	0	8K		Thunderstorm Wind (G52)
Two homes suffered minor damage from winds.									
Miller County									
Fouke	22	0015CST			0	0	10K		Thunderstorm Wind (G57)
Two homes suffered minor damage from winds.									
Nevada County									
Rosston	22	0012CST			0	0	30K		Thunderstorm Wind (G57)
Numerous trees downed. Minor damage to one church and two homes.									
Miller County									
2 N Kiblah	22	0015CST			0	0			Thunderstorm Wind (G52)
Numerous trees down across U.S. Hwy 71.									
Miller County									
Fouke	22	0021CST			0	0			Hail (0.75)
Miller County									
Garland	22	0035CST			0	0	10K		Thunderstorm Wind (G52)
Damage to 25 homes varying from roof to carport damage. Numerous powerlines toppled. Ten county roads blocked by toppled trees.									
Miller County									
Texarkana	22	0035CST			0	0			Hail (0.75)
Lafayette County									
2 N Lewisville	22	0040CST			0	0			Thunderstorm Wind (G61)
Numerous trees down across Hwy 29.									
Nevada County									
Cale	22	0100CST			0	0			Thunderstorm Wind (G65)
Union County									
3.2 SW Huttig to 1.1 NE Felsenthal	22	0225CST 0243CST	7	40	0	0	2.5K	0	Tornado (F1)
Tornado tracked across mostly unpopulated and wooded region passing across a few homes in southeast Felsenthal. Only minor roof damage occurred to homes.									
Hempstead County									
Hope	22	1300CST			0	0			Thunderstorm Wind (G57)
Several large oaks toppled.									
Howard County									
Mineral Spgs	22	1800CST			0	0			Hail (0.88)
Howard County									
Dierks	22	1805CST			0	0			Hail (0.88)

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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ARKANSAS, Southwest

Miller County

.7 NW Kiblah to 1.7 E Smithville	22	1935CST 1953CST	3.6	25	0	0			Tornado (F0)
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Tornado tracked across unpopulated wooded and farmland areas.

Miller County

Texarkana	30	0100CST 0330CST			0	0	166K		Flash Flood
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Reports of flooding throughout the city. Two to three feet of water was reported across Hwy 71. Water made its way into numerous homes. Area declared a disaster area by FEMA. Vehicles were reported stalled and flooded along numerous secondary roads.

CALIFORNIA, Extreme Southeast

NONE REPORTED.

CALIFORNIA, North Central

CAZ019

Northern San Joaquin Valley

02	0010PST 1200PST				0	0			Fog
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Dense fog resulted in the implementation of the California Highway Patrol escort program. Fifty foot visibilities were reported along Highway 99 as well as Interstate 5. Escorts were conducted along 20 miles of highway and persisted until midday.

CAZ019

Northern San Joaquin Valley

09	0330PST 1000PST				0	0	50K		Fog
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Dense fog resulted in a 5 car pileup 15 miles Southwest of Stockton on Corral Hollow Road.

CAZ013>014-063-066>069

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

17	2100PST				0	0			Winter Storm
18	1600PST								

Low snow levels led to 4" accumulations across the foothills of the Southern Cascades and Northern Sierra Nevada. Across higher slopes, 1 to 2 feet of snow accumulated. On 01/18/99, snow related accidents closed westbound Interstate 80 near Donner Summit between 1200 PST and 1500 PST.

CAZ013>014-063-068>069

Shasta Lake/North Shasta County - Burney Basin/Eastern Shasta County - Mountains Southwest Shasta County To Northern Lake County - Mt Shasta/Western Plumas County - West Slope Northern Sierra Nevada

19	0400PST				0	0			Winter Storm
20	2200PST								

The second major winter storm in 3 days deposited 2 to 4 feet of snow across the higher elevations of the Northern Sierra Nevada. On 01/19/99, multiple vehicle accidents caused westbound Interstate 80 to close between 1230 PST and 1630 PST. Ski resorts were impacted by high winds as peak gusts over 100 mph closed higher terrain.

CAZ069

West Slope Northern Sierra Nevada

19	0400PST				0	0			Avalanche
20	2200PST								

On 01/19/99 and 01/20/99, portions of Highway 50 were closed in both directions due to multiple avalanches.

Shasta County

Redding	19	1605PST 1700PST			0	0			Hail (0.75)
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Spotter in Redding reported 3/4" hail. Rain and hail were responsible for two vehicle rollovers on Interstate 5. Associated lightning caused isolated power loss for PG&E customers.

CAZ015>016

Northern Sacramento Valley - Central Sacramento Valley

21	1255PST 2200PST				0	0			High Wind (G46)
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Pre-frontal winds exceeded 40 mph at Redding, Red Bluff, and Oroville.

Storm Data and Unusual Weather Phenomena

January 1999

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

CALIFORNIA, North Central

CAZ068>069 Mt Shasta/Western Plumas County - West Slope Northern Sierra Nevada

22	2030PST				0	0		Winter Storm
23	1500PST							

Higher elevations of the Northern Sierra Nevada received up to 3 feet of snow as the third major winter storm in a week moved across the state. On 01/23/99, Highway 50 between Twin Bridges and Meyers, was closed during the late afternoon and evening due to Avalanche patrol.

CALIFORNIA, Northeast

CAZ072 Greater Lake Tahoe Area

18	0700PST				0	0	0	Heavy Snow
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19 0700PST
24 hour snow total of 19 inches atop Donner Summit, elevation 7229 feet.

CAZ072 Greater Lake Tahoe Area

18	0930PST				0	0	0	Heavy Snow
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1230PST
Spotter report of 6 inches of snowfall in a 3 hour period near Truckee, elevation 6500 feet.

CAZ072 Greater Lake Tahoe Area

18	1830PST				0	0	0	Heavy Snow
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19 1830PST
24 hours snow total of 20 inches atop Echo Summit, elevation 7377 feet.

CAZ072 Greater Lake Tahoe Area

18	2345PST				0	0	0	Heavy Snow
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19 2345PST
24 hour snow total of 24 inches near Truckee, elevation 6500 feet.

CAZ072 Greater Lake Tahoe Area

19	0700PST				0	0	0	Heavy Snow
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20 0700PST
24 hour snow total of 16 to 19 inches at Squaw Valley Ski Resort.

CAZ071 Lassen/Eastern Plumas/Eastern Sierra

19	0950PST				0	0	0	Heavy Snow
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20 0950PST
24 hour snow total of 12 inches atop Fredonyer Pass, elevation 5748 feet.

CAZ071 Lassen/Eastern Plumas/Eastern Sierra

19	0950PST				0	0	0	Heavy Snow
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20 0950PST
24 hour snow total of 18 inches atop Yuba Pass, elevation 6708 feet.

CAZ073 Mono

21	0015PST				0	0	1K	High Wind (G61)
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Estimated winds of 60-70 mph blew tractor trailer over on Highway 395 near Crowley Lake. No injuries reported.

CAZ070 Surprise Valley

22	1330PST				0	0	0	Heavy Snow
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23 1330PST
24 inches of new snow reported on Cedar Pass, elevation 6305 feet.

CAZ072 Greater Lake Tahoe Area

23	0400PST				0	0	0	Heavy Snow
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1700PST
10 inches of snow in a 13 hour period in Tahoe City, elevation 6230 feet.

CAZ073 Mono

23	0600PST				0	0	0	Heavy Snow
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24 0600PST
24 hour snow total of 22 inches at Crestview, elevation 7518 feet.

CAZ070 Surprise Valley

23	0630PST				0	0	0	Heavy Snow
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1330PST
6 inches of snow in a 7 hour period in Eagleville, elevation 4640 feet.

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>CALIFORNIA, Northeast</u>									
CAZ070	Surprise Valley								
	23	0630PST 1330PST			0	0	0		Heavy Snow
	8 inches of snow in 7 hours reported in Cedarville, elevation 4630 feet.								
CAZ072	Greater Lake Tahoe Area								
	23	0645PST			0	0	0		Heavy Snow
	24	0645PST							
	24 hour snow total of 24 inches at Sierra at Tahoe Ski Area.								
CAZ071	Lassen/Eastern Plumas/Eastern Sierra								
	23	0700PST 1235PST			0	0	0		Heavy Snow
	10 inches of snowfall recorded in five hours and thirty minutes in Sattley, elevation 4944 feet.								
CAZ072	Greater Lake Tahoe Area								
	23	0800PST 1600PST			0	0	0		Heavy Snow
	12 to 18 inches of snow in an 8 hour period near Truckee, elevation 6500 feet.								
CAZ072	Greater Lake Tahoe Area								
	23	0830PST 1230PST			0	0	0		Heavy Snow
	7.5 inches of snowfall in a 4 hour period near Brockway Pass, elevation 7000 feet.								
CAZ071	Lassen/Eastern Plumas/Eastern Sierra								
	23	0845PST 1345PST			0	0	0		Heavy Snow
	7 inches of snow in a 5 hour period at Doyle, elevation 4267 feet.								
<u>CALIFORNIA, Northwest</u>									
Humboldt County									
	1 W (Acv)Arcata Arpt	18	1615PST		0	0			Funnel Cloud
<u>CALIFORNIA, South Central</u>									
CAZ020>021	Central San Joaquin Valley - Southern San Joaquin Valley								
	01	2230PST			1	0	50K		Fog
	02	1000PST							
	Dense fog developed late in the night of the 1st and persisted until well into the morning of the 2nd. A chain reaction vehicular crash occurred in Merced County involving an ambulance and County Fire Truck along with two other vehicles at 0844 PST on the 2nd. The fatality occurred at 2055 PST on the 1st near Livingston. M35VE								
CAZ020>021	Central San Joaquin Valley - Southern San Joaquin Valley								
	12	2200PST			1	7	130K		Fog
	13	0930PST							
	The period of December 31 1998 through January 14 1999 saw consistently dense fog with black ice at times on the Central and Southern San Joaquin Valley Floor during the late night through mid-morning hours. Accidents, the direct result of dense fog, occurred on the morning of the 6th, 11th, 12th, and 13th, in CA Zones 20 and 21. M24VE								
CAZ022>023	Southern Sierra Nevada-Yosemite National Park To Kings Canyon - Tulare County Mountains								
	20	0500PST			0	0			Heavy Snow
	21	0100PST							
	Over the course of a little less than a 24 hour period 14 inches of snow fell at Lodgepole in the Tulare County Mountains and Tuolumne Meadows in Yosemite National Park. At lower elevations relatively large amounts of rainfall soaked lower mountains to the extent rockslides were noted in the Mariposa area.								
CAZ022	Southern Sierra Nevada-Yosemite National Park To Kings Canyon								
	23	1300PST			0	5	10K		Heavy Snow
	24	0100PST							
	8 inches of snow fell at Fish Camp along with 15 inches at Tuolumne Meadows at the higher elevations.								
CAZ021>024	Southern San Joaquin Valley - Southern Sierra Nevada-Yosemite National Park To Kings Canyon - Tulare County Mountains - Kern County Mountains								
	24	2030PST			0	0			Heavy Snow
	25	1830PST							
	Associated with very cold air aloft and the trapping of lower level cold air, snow occurred over many of the Central California								

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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CALIFORNIA, South Central

zones late in the evening of Sunday of 24th, Monday the 25th; even on the Southern San Joaquin Valley floor! Meadows Field Airport at Bakersfield, CA, (having received measureable snow only one time since 1932) received 3 inches of snow at the airport climatological station but northeast portions of the city received up to 6 inches of snow around dawn. Snow plows were needed to clear 2-4 inches of snow from Highway 99 near Tulare and Visalia in Tulare County. Snow fall ranged from a dusting in the city of Fresno to 2 inches at Sanger and Parlier, on through Tulare County southward through Bakersfield along the eastside of the Valley to Taft and Lost Hills (2 inches) in Western Kern County. Hanford appeared to be the western edge of the snow with 1/2 inch reported. Up to 18,000 customers lost power in Tulare County...and 57,000 customers in Kern County due to weighted tree limbs breaking into power lines. Pine Mountain Club in the Tehachapi Mountains received 19 inches of snow overnight; 10" of snow fell at Fish Camp and 9 inches at Granite Station in the Southern Sierra Nevada. Highways 58 and 166 along with Interstate-5 in the Kern County Mountains were closed by 2055 PST on 1/24/99 due significant amounts of snow on the roadways. (Written up as Storm-of-the-Month).

CAZ024

Kern County Mountains

30	2325PST								
31	0600PST				0	0			High Wind (G50)

One spotter reported gradient wind at 50 Knots from the southeast at Lebec with a subsequent report from the Tehachapi area indicating wind consistent at 40-45 MPH. The wind persisted through the wee hours of the morning but diminished at dawn.

Fresno County

2 SE (Fat) Air
Terminal to
5 SE (Fat) Air
Terminal

31	1415PST								
	1425PST				0	0			Funnel Cloud

Funnel cloud reported also by California Highway Patrol and FAA Fresno Air Terminal ATCT. Pea-size hail was also reported in the vicinity of the funnels.

Merced County

Merced

31	1540PST								
	1545PST				0	0			Funnel Cloud

Funnel cloud near Merced.

Kern County

10 N Bakersfield

31	1550PST								
	1555PST				0	0			Funnel Cloud

Trained spotter reported two funnels at this location.

CALIFORNIA, Southeast

CAZ026-026

Owens Valley

23	1830PST								
25	1800PST				0	0			Heavy Snow

A potent winter storm dumped heavy snow on the east slopes of the southern Sierra and in the Owens Valley. Snow began the evening of Jan. 23 at Aspendell, at the 8,000 foot level in the mountains west of Bishop, and continued until late afternoon on Jan. 25. A total of two feet fell in the mountain community. Snow began to fall in Bishop early in the afternoon on Jan. 24 and lasted for a little more than 24 hours. A total of 10 to 15 inches fell in the Owens Valley over an area extending from Bishop to Olancho. As a result, multiple vehicle accidents occurred, schools were closed on Jan. 25 and travel was restricted on several roads in the region.

CALIFORNIA, Southwest

CAZ057

Santa Ana Mountains And Foothills

01	0830PST								
					0	0			High Wind (G54)

San Bernardino County

3 NW San Bernardino

02	1330PST								
	1630PST				0	0			Wild/Forest Fire

A 25 acre brush fire fanned by 30 mph winds, forced the evacuation of 100 residents.

CAZ048>049-057

San Bernardino County Valley/The Inland Empire - Riverside County Valley/The Inland Empire - Santa Ana Mountains And Foothills

08	1130PST								
	2100PST				0	0			High Wind (G63)

CAZ048

San Bernardino County Valley/The Inland Empire

08	1400PST								
	1415PST				0	0	10K		High Wind (G61)

Storm Data and Unusual Weather Phenomena

January 1999

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

CALIFORNIA, Southwest

Santa Ana winds broke tree branches, downed power lines, and caused blowing dust across freeways.

CAZ057 Santa Ana Mountains And Foothills
09 0000PST 0200PST **0 0** **High Wind (G56)**

CAZ055 San Bernardino County Mountains
20 1056PST 2056PST **0 0** **High Wind (G67)**

CAZ060 Apple And Yucca Valleys
20 2050PST **0 0** **1K** **High Wind (G53)**
 Storm Spotter in Lucerne Valley measured wind gusts to 61 mph (53 kts) and reported a storage shed was blown over.

CAZ061 Coachella Valley
21 1003PST **0 0** **High Wind (G53)**

Riverside County
7.5 ESE Mecca to 8 ESE Mecca **21 1015PST 1900PST** **0 0** **400K** **Wild/Forest Fire**

Strong gusty winds caused palm fronds to brush against electrical power lines and ignite near the intersection of Palm Island Drive and Highway 111. Wind gusts to 80 mph then fanned the flames into a 30 acre wild fire that affected the community of North Shore. One house, a garage, a small office building, a storage shed, two travel trailers, and eight vehicles were destroyed. Several residents were evacuated and one family was left homeless.

CAZ060 Apple And Yucca Valleys
21 1223PST **0 0** **30K** **High Wind (G55)**
 Roof blown off a Parking Garage building in Apple Valley.

CAZ056 Riverside County Mountains
21 1330PST 1800PST **0 0** **20K** **High Wind (G62)**

The Palm Springs Aerial Tramway to Mt. San Jacinto and State Highway 111 between Windy Point and Interstate 10 were closed due to high winds. A dozen power poles were also blown down.

Orange County
1 W Costa Mesa **25 1409PST 1412PST** **0 0** **Funnel Cloud**

CAZ055 San Bernardino County Mountains
26 0700PST 27 0700PST **0 0** **Heavy Snow**

This was the second significant snowfall of the winter season. Eighteen inches of snow was reported in the Angelus Oaks area (5600 feet MSL), and twenty two inches of snow fell between 6200 feet and 7200 feet in the Running Springs, Green Valley, and Arrow Bear areas. Eighty percent of the primary roads and 90 percent of the secondary roads were closed during this event.

CALIFORNIA, Upper

CAZ011 Siskiyou County
22 0915PST **0 0** **High Wind (G60)**

A spotter at Weed reported SSE winds 50-60 mph.

The same storm that caused the high winds on the Oregon coast also brought high winds to the Shasta valley in Siskiyou county.

CALIFORNIA, West South Central

Ventura County
Hollywood By The Sea **03 0830PST** **2 4** **Rip Currents**
 M?IW, M?IW

Los Angeles County
3 N Granada Hills **03 1100PST 1800PST** **0 0** **Wild/Forest Fire**

Gusty Santa Ana winds fueled a brush fire in the San Fernando Valley, north of Granada Hills. Over 600 acres of land was burned, but no injuries or property damage was reported. The Santa Ana winds also produced deadly rip currents across the Southern California coastal waters. In the Channel Islands Harbour, four people were injured and two more were killed when the rip currents flipped over their outrigger canoe.

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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CALIFORNIA, West South Central

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

	18	1100PST			0	0			Heavy Surf
	19	1430PST							

Large northwest swell produced heavy surf along the Central California coast. Widespread surf of 8 to 10 feet was reported.

CAZ038-052>054 Cuyama Valley - Santa Barbara County Mountains - Ventura County Mountains - Los Angeles County Mountains Excluding The Santa Monica Range

	24	1800PST			0	0			Heavy Snow
	25	1000PST							

A very cold Pacific storm brought significant snowfall to Southern California. With the storm, snow levels fell to between 2500 and 3000 feet. In the mountains, snowfall totals ranged from 6 to 24 inches with the highest amounts above 7000 feet. Many mountain roads, including Highway 33 in Ventura county, were closed due to snow. With such low snow levels, snowfall totals from 2 to 4 inches were reported across the Cuyama Valley.

San Luis Obispo County

	31	0200PST 0500PST			0	0			Urban/Sml Stream Fld
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Urban flooding, along Los Osos road, was reported in the city of San Luis Obispo.

CALIFORNIA, Western

NONE REPORTED.

COLORADO, Central and Northeast

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

	04	1600MST			0	0	0		Winter Storm
	05	1600MST							

The first storm system of 1999 dumped up to 20 inches of snow in portions of the northern mountains. Snowfall totals included: 20 inches at Breckenridge, 18 inches at Copper Mountain, 16 inches at the Eisenhower Tunnel, 14 inches at Berthoud Pass and Winter Park, 12 inches at Loveland Ski Area and Silver Creek and 10 inches at Arapahoe Basin.

COZ035-038 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Eastern Larimer And Northwestern Weld Counties

	05	0200MST 1530MST			0	0	0		High Wind (G87)
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Strong downslope winds developed in and near the northeast foothills. Wondervu recorded a peak wind gust to 100 mph (87 kts) while Carter Lake topped out at 70 mph (60 kts).

COZ035>036-040 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Denver Metropolitan Area

	10	2230MST			0	0	0		High Wind (G87)
	11	0800MST							

High winds gusting to 100 mph blasted areas in and near the Front Range Foothills. Peak wind gusts included: 100 mph (87 kts) at Central City, 98 mph (85 kts) at Wondervu, 96 mph (83 kts) at Estes Park, 89 mph (77 kts) 4 miles south of Livermore, 82 mph (71 kts) at Aspen Springs, Golden Gate Canyon and 9 miles west-southwest of Rustic, 81 mph (70 kts) at the NCAR Mesa Lab near Boulder, 2.5 miles south of Estes Park and 3 miles east-northeast of Nederland, 78 mph (68 kts) at Blue Mountain, 72 mph at the Rocky Flats Environmental Test Facility, and 70 mph (61 kts) 1 mile east of Buckhorn Mountain.

COZ034>036-039>040 Summit County/Mosquito Range/Indian Peaks - Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area

	14	0900MST			0	0	0		High Wind (G94)
	15	1700MST							

High winds continued to howl in and near the Front Range Foothills. In Commerce City, strong winds toppled 3 utility poles. The associated power outage affected 600 homes. High wind reports included: 108 mph (94 kts) at Wondervu, 100 mph (87 kts) at the Loveland Ski Area, 81 mph (71 kts) 9 miles west-southwest of Rustic, 80 mph (70 kts) at the Hiwan Golf Course at Evergreen, 76 mph (66 kts) at Aspen Springs, 75 mph (65 kts) at the Jefferson County Airport, 74 mph (64 kts) in Boulder, 72 mph (63 kts) at Red Feather Lakes and 2.5 miles south of Estes Park and 70 mph (61 kts) at Georgetown.

Storm Data and Unusual Weather Phenomena

January 1999

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

COLORADO, Central and Northeast

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

17	0000MST				0	0		0	Winter Storm
	1700MST								

The combination of heavy snow and strong winds caused whiteout conditions to develop in portions of the northern mountains. Snowfall amounts included: 11 inches at the Loveland Ski Area, 10 inches at Copper Mountain, the Eisenhower Tunnel and Keystone, 9 inches at Arapahoe Basin with 8 inches reported near Breckenridge.

COZ035>036-039>040 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area

18	0000MST				0	0		0	High Wind (G87)
	1300MST								

Damaging downslope winds continued to cause problems in and near the Front Range Foothills. Several trees were toppled in Estes Park. At Eldora, the roof was blown off an A-frame house. Peak wind reports included: 100 mph (87 kts) at Central City, 84 mph (73 kts) at Wondervu, 77 mph (67 kts) at Blue Mountain, 75 mph (65 kts) at Golden Gate Canyon, 72 mph (63 kts) at the Rocky Flats Environmental Test Facility, with 70 mph (61 kts) at the NCAR Mesa Lab near Boulder.

COZ033-035>036 Rabbit Ears & Medicine Bow Ranges/Rocky Mountain National Park - Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin

21	1200MST				0	0		0	Heavy Snow
	0800MST								

Heavy snow developed in portions of the northern mountains and Front Range Foothills. Snowfall totals included: 11 inches at Hohnholz Ranch, 10 inches at Roach, 8 inches, 1 mile east of Buckhorn Mountain, Golden Gate Canyon, Intercanyon and Rollinsville, with 7 inches at Allenspark, Aspen Springs, Gross Reservoir, Pine Junction and Willow Creek Pass.

COZ039>041 Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area - Eastern Douglas And Western Elbert Counties/Castle Rock And Vicinity

22	0000MST				0	0		0	Heavy Snow
	1200MST								

Heavy snow developed along portions of the Urban Corridor. Snowfall totals included: 8 inches at Parker, 7 inches, 4 miles northwest of Larkspur and 5 miles south-southeast of Sedalia, 6 inches at Highlands Ranch, with 5 inches at Eaglecrest, Eldorado Springs and Louisville. Elsewhere snow amounts ranged from 2 to 4 inches.

COZ030-038 North Park - Eastern Larimer And Northwestern Weld Counties

24	0600MST				0	0		0	Heavy Snow
	1800MST								

Heavy snow fell in portions of Jackson and Larimer Counties. Snowfall totals included: 10 inches, 2 miles south of Rand, 9 inches at Poudre Park, 8 inches, 12 miles west of Walden, 7 inches at Hourglass Lake and 9 miles west-southwest of Rustic with 6 inches at Fort Collins.

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

24	0600MST				0	0		0	Heavy Snow
	0600MST								

Heavy snow fell in portions of the northern mountains. Snowfall amounts included: 17 inches at Loveland Ski Area, with 11 inches at Arapahoe Basin and Keystone.

COZ035-039>040 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area

26	1500MST				0	0		0	High Wind (G71)
	2300MST								

High winds developed in the near the Front Range Foothills. Peak wind reports included: 82 mph (71 kts) at Boulder and Jefferson County Airport, 79 mph (69 kts) at the Rocky Flats Environmental Test Facility, 72 mph (62 kts) at the NCAR Mesa Lab near Boulder and 70 mph (61 kts), 9 miles west-southwest of Rustic.

COLORADO, East Central

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

02	1200MST				0	0			Extreme Windchill
	1700MST								

A strong Arctic Airmass combined with brisk winds resulted in Wind Chill Readings below -35 degrees across all of far eastern Colorado from 01/02 to 01/03.

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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COLORADO, South Central and Southeast

COZ060>061-065>066 **La Garita Mountains - Eastern San Juan Mountains - Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains**

20	1700MST				0	0			Winter Storm
22	0700MST								

A storm system moved across northern New Mexico, bringing some areas of heavy snow to the southern Colorado mountains. The summit of Wolf Creek Pass picked up 15 inches of new snow, with other higher peaks in Mineral and Saguache counties likely seeing similar amounts. As the storm moved east, 4 to 8 inches of snow fell on the west slopes of the northern Sangre de Cristo mountains. Two to 3 inches of snow occurred on Monument Ridge in El Paso county, 4 inches occurred at Aguilar in Las Animas county and Coaldale in Fremont county, and 5 inches fell at Woodland Park. Six to 8 inches of snow fell from Walsenburg through Rye and Beulah. Heavy accumulations occurred in the southern Sangre de Cristo mountains, with 11 inches 18 miles west of Aguilar and 20 inches in Cuchara.

COZ065>066-070-073>081 **Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Wet Mountains - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity - 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**

26	1300MST				0	1	60K		High Wind (G85)
	1800MST								

A swift moving weather system brought 3 to nearly 8 inches of snow to Mineral county. Creede received the nearly 8 inches of snow. In the southeast part of the area, wind gusts between 60 and 100 mph occurred for several hours in the afternoon. In and around Walsenburg, winds gusted up to 98 mph. Power was off and on in the Walsenburg area for several hours. Some trees were uprooted and power poles were snapped off. Three semi-trailers were tipped over, two on I-25 and one on Highway 160. One driver received minor injuries. One roof was peeled off a house. In Otero county, a roof was ripped off a resident's garage, and roofs were blown off horse stalls at the Arkansas Valley Fairgrounds. County plows were brought out to clear tumbleweed from some roadways. There were also a few small grass fires, but only about 60 acres were scorched. In Baca county, the tin roof of a motel was ripped off and damaged a vehicle in Springfield. Isolated power outages also occurred near the motel when electrical wires were brought down by the tin roof.

COZ080>081 **Prowers County/Lamar And Vicinity - Baca County/Springfield And Vicinity**

28	1700MST				0	0			Heavy Snow
	2300MST								

A strong storm system just nipped southeast Colorado, bringing heavy snow. Four to 8 inches of snow fell in eastern Prowers and Baca counties, including 6 to 7 inches in the Walsh and Holly areas. Campo and Springfield received 5 inches of snow.

COLORADO, West

COZ018 **Northwestern San Juan Mountains**

01	0000MST				0	0			Heavy Snow
	1500MST								

A Pacific trough dropped 6 to 11 inches of snow in the northwest San Juan Mountains.

COZ004>005-010-015 **Elkhead And Park Mountains/Flat Tops/White River Plateau - Upper Yampa River Basin/Steamboat Springs And Vicinity - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - Leadville And Vicinity**

04	0800MST				0	0			Heavy Snow
05	0800MST								

A moist northwest flow produced 8 to 12 inches of snow in most mountain areas of northwest Colorado. This weather pattern also produced 6 to 10 inches of snow in the lower elevations of the Upper Yampa River Basin. The heaviest reported snow total was 15 inches at the Steamboat Ski Area.

COZ004>005-010-012-015 **Elkhead And Park Mountains/Flat Tops/White River Plateau - Upper Yampa River Basin/Steamboat Springs And Vicinity - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Leadville And Vicinity**

16	1200MST				0	0			Winter Storm
17	0500MST								

A moist west to northwest flow produced 6 to 11 inches of snow in the most mountain areas of northwest and west-central Colorado. 5 to 7 inches of snow also fell at lower elevations in the Upper Yampa River Basin. Considerable blowing and drifting of snow accompanied the snowfall. Leadville received a peak gust of 50 MPH.

COZ004-010-012-015 **Elkhead And Park Mountains/Flat Tops/White River Plateau - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Leadville And Vicinity**

18	0000MST				0	0			Winter Storm
19	1400MST								

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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COLORADO, West

A moist west to northwest flow produced 6 to 12 inches of snow in most mountain areas of northwest and west-central Colorado. Some heavier amounts included 18 inches at Crested Butte Ski Area, 15 inches at Monarch Ski Area, and 14 inches at Steamboat Springs Ski Area. Windy conditions caused areas of blowing and drifting snow.

**COZ003>005-
009>010-012-014-
017>019-022>023**

Roan And Tavaputs Plateaus - Elkhead And Park Mountains/Flat Tops/White River Plateau - Upper Yampa River Basin/Steamboat Springs And Vicinity - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Upper Gunnison River Valley/Gunnison And Vicinity - Uncompahgre Plateau - Northwestern San Juan Mountains - Southwestern San Juan Mountains - Animas River Basin/Durango And Vicinity - San Juan River Basin/Pagosa Springs And Vicinity

20	1400MST								
22	1100MST			0	0				Winter Storm

A slow moving upper trough brought 1 to 2 feet of snow in all mountain areas of western Colorado, as well as 6 to 12 inches in some lower valley areas. Blizzard conditions were reported in some mountain areas. The largest reported storm totals include 43 inches at Telluride Ski Area, 28 inches at Crested Butte Ski Area, 26 inches at Steamboat Springs Ski Area, and 25 inches at Monarch Ski Area. The heavy snow resulted in numerous avalanches and a number of closed roads.

COZ010

Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity

23	1530MST								
				1	1				Avalanche

Two men skiing at the 9000 foot level just outside of the Aspen Highlands Ski Area triggered an avalanche which was 75 feet across and 100 feet long. Both men were buried. One person survived. M23OU

COZ012-015

West Elk And Sawatch Mountains/Taylor Park - Leadville And Vicinity

24	2200MST								
25	1200MST			0	0				Winter Storm

A moist southwest flow produced 8 to 12 inches of snow in some west-central mountain areas of western Colorado. The heaviest reported amount was 15 inches at Crested Butte Ski Area. Wind gusts were clocked at 50 to 60 MPH and resulted in areas of blowing and drifting snow.

COZ009-018>019

Grand And Battlement Mesas - Northwestern San Juan Mountains - Southwestern San Juan Mountains

25	0600MST								
26	1900MST			0	0				High Wind (G106)

A strong southwest flow aloft resulted in very strong winds and blizzard-like conditions in the western San Juan Mountains and on the Grand Mesa. Measured peak gusts included 70 MPH (61 knots) at Powderhorn Ski Area, 83 MPH (72 knots) at the top of Telluride Ski Area, 95 MPH (83 knots) on Red Mountain Pass, and 122 MPH (106 knots) on Mount Abrams.

COZ009-017>019

Grand And Battlement Mesas - Uncompahgre Plateau - Northwestern San Juan Mountains - Southwestern San Juan Mountains

26	0300MST								
	1100MST			0	0				Winter Storm

A moist disturbance embedded in a strong southwest flow produced 6 to 10 inches of snow in most mountain areas of southwest Colorado and some mountain areas in west-central Colorado. The largest reported snow total was 14 inches at Telluride. Strong winds resulted in blizzard-like conditions in some areas.

COZ009

Grand And Battlement Mesas

30	2100MST								
				1	0				Avalanche

Nine snowmobilers were traversing the north side of the Grand Mesa at the 10,600 foot level. The snowmobiler who was third in line triggered a small hard-slab avalanche which buried him under 5 feet of snow. Resuscitation efforts were unsuccessful. M43OU

CONNECTICUT, Northeast

CTZ002>004

Hartford - Tolland - Windham

18	1900EST								
	2200EST			0	0				Strong Winds

Strong south winds occurred ahead of an approaching cold front, gusting as high as 55 mph. A peak gust to 56 mph was reported at Bradley International Airport in Windsor Locks. There were no reports of damage.

Hartford County

Southington

24	1815EST								
25	0400EST			0	0				Flood

Quinnipiac River
Rainfall amounts of 2 to 3 inches caused the Quinnipiac River to overflow its banks. The river crested at 4.0 feet at Southington, just over the flood stage of 3.5 feet. There were no reports of flood damage.

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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CONNECTICUT, Northwest

CTZ001

Litchfield

02	1900EST				0	0			Winter Storm
03	2300EST								

A deep low pressure area moved from the Mississippi Valley into the Great Lakes region during the night of January 2 and January 3. With arctic air in place over northwest Connecticut, a wintry mix of sleet and freezing rain resulted in significant ice accumulations across the region with total melted precipitation exceeding an inch.

CTZ001

Litchfield

14	0600EST				0	0	1K		Winter Storm
15	1400EST								

An extremely cold arctic air mass moved into northwestern Connecticut on January 13 and January 14. At the same time an area of low pressure developed over Kentucky. This low moved east to northern Virginia then turned north and moved up the Hudson Valley of New York on January 15. The storm brought a significant amount of snow sleet and freezing rain to the region with total melted precipitation exceeding half an inch in Litchfield County.

CTZ001

Litchfield

19	0300EST				0	0	5K		Flood
21	0100EST								

Mild weather and rain resulted in rapid melting of snow on January 19 and January 20 in Litchfield county. The resultant runoff as well as ice jams breaking up, triggered flooding on the Housatonic and Pomperaug Rivers. An ice jam contributed to flooding in New Milford.

CTZ001

Litchfield

24	1900EST				0	0	7K		Flood
26	1200EST								

Rainfall and very mild temperatures combined to produce rapid snowmelt in Litchfield County between January 24 and January 26. The resultant runoff triggered flooding on the Housatonic River near New Milford.

CONNECTICUT, Southern

NOT RECEIVED.

DELAWARE

DEZ001

New Castle

01	0000EST				0	0	0	0	Drought
31	2359EST								

January 1999 finally broke a string of unseasonably dry months that prevailed throughout the second half of 1998. Conditions did not look promising at the start of the month. On January 5th, the Delaware River Basin Commission (DRBC) issued a conditional drought emergency for the Delaware River Basin north of the Chesapeake and Delaware Canal. Heavy precipitation on the 3rd gave the area a temporary reprieve from going straight into a drought emergency. The DRBC expected that threshold to be reached on January 25th. Subsequent heavy precipitation events on the 15th, 18th and 24th started replenishing reservoir and streamflow levels. By the end of the month, the lifting of the drought warning was only days away. On a statewide average, January monthly precipitation was around 150% to 200% of normal and was around 6.7 inches. The monthly precipitation total of 5.42 inches at the New Castle County Airport was the 7th wettest January in this century.

DEZ001>002

New Castle - Kent

02	2200EST				0	0	0	0	Wintry Mix
03	0400EST								

A very cold and dry air mass built into the Delmarva Peninsula on the 1st and the 2nd. As the high pressure system built into New England and the adjacent coastal waters, the circulation around it and a low pressure system over the Lower Ohio Valley started to bring in warmer air from the Atlantic Ocean. In spite of this, the air was cold enough at the start for precipitation to begin as light freezing rain and sleet during the evening of the 2nd. The change to plain rain occurred quickly in Kent County and took longer in New Castle County (until around 4 a.m. EST on the 3rd). Even there, the ice accretion was generally less than one tenth of an inch. Because this occurred late on a weekend night, the number of reported accidents was not very high.

Sussex County

Countywide

03	0400EST				0	0		0	Heavy Rain
	1200EST								

Kent County

Countywide

03	0530EST				0	0		0	Heavy Rain
	1200EST								

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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DELAWARE

New Castle County

Countywide	03	0700EST 1200EST			0	0	0		Heavy Rain
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. Not only did this second low pressure system increase the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes), but it also brought heavy rain into the region. Heavy rain fell for most of the morning of the 3rd. Storm totals for the entire event included 2.82 inches in Milford (Kent County), 2.70 inches at Dover AFB, 2.68 inches in Greenwood (Sussex County), 1.89 inches in Wilmington (New Castle County), 1.60 inches in Newark (New Castle County) and 1.49 inches at the New Castle County Airport. The usual poor drainage flooding occurred, but no other serious flooding was reported.

DEZ001

New Castle

03	0500EST 0800EST				0	0	0		High Wind (G53)
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DEZ002>004

Kent - Inland Sussex - Delaware Beaches

03	0500EST 0800EST				0	0	0		Wind
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. This second low increased the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes) along and near the coast around daybreak of the 3rd. As the low passed through New Jersey during the morning of the 3rd, winds became lighter. Peak wind gusts in most areas were between 40 and 45 mph. The peak gust reached 61 mph at the New Castle County Airport. Within Wilmington, one car was crushed by a fallen tree.

DEZ004

Delaware Beaches

03	0900EST 1100EST				0	0	0		Coastal Flooding
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. This second low increased the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes) along the coast and increased the onshore flow. The low passed through New Jersey the morning of the 3rd. Gale force winds along coastal areas helped produce minor tidal flooding during the morning of the 3rd. The tidal flooding was exacerbated by heavy rain that was also occurring. The tide reached 7.1 feet above mean lower low water at Lewes at 930 a.m. EST.

DEZ001>004

New Castle - Kent - Inland Sussex - Delaware Beaches

08	0800EST				0	0	0		Wintry Mix
09	1700EST								

A low pressure system developed over Texas during the morning of the 8th. A broad southwest flow of air preceding it overran a frontal boundary over the central Appalachians and spread snow into the region the morning of the 8th. Enough warm air moved aloft to change the snow to sleet and freezing rain. Since the low pressure system tracked across western Pennsylvania, the onshore flow brought in milder air into the peninsula and changed the freezing rain to plain rain from southeast to northwest. This took the quickest (afternoon of the 8th) in Sussex County, but the longest (past midnight) in the northwest hills of New Castle County. Very little snow fell in Sussex County.

Snow reached Delaware in New Castle County first around 8 a.m. EST. Snow spread south into Kent County and precipitation fell as a mixture of snow, sleet and freezing rain in Sussex County by 10 a.m. EST. As warmer air moved in the snow mixed with sleet and then changed over to sleet and freezing rain by the afternoon of the 8th. The change to plain rain worked its way from the Delaware Beaches from around noon on the 8th northwestward. It took until well past midnight for air temperatures to rise above freezing in northwest New Castle County. Accumulations ranged between 1 and 4 inches in Kent and Sussex Counties. Numerous accidents were reported, especially in the northern half of the state. There were over 80 accidents even before the evening rush hour. School districts dismissed the children early, mainly in New Castle County. Accumulations included 4 inches at the New Castle County Airport, 3.2 inches in Wilmington (New Castle County), 1 inch in Greenwood (Sussex County), 0.5 inches in Harrington (Kent County) and a trace in Milford (Sussex County).

DEZ001>002

New Castle - Kent

09	0500EST 1300EST				0	0	0		Fog
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The southeast flow from the Atlantic Ocean passing over the fresh snow pack produced widespread dense fog across northern Delaware during the morning of the 9th. A cold frontal passage shifted the winds to the west and dissipated the fog around noon EST.

DEZ001

New Castle

13	2300EST				0	0	0		Winter Storm
15	0400EST								

Storm Data and Unusual Weather Phenomena

January 1999

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

DELAWARE

DEZ002

Kent

	14	0400EST 1600EST			0	0	0	0	Wintry Mix
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Kent County

	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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New Castle County

	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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Sussex County

	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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A very protracted precipitation event affected the Delmarva Peninsula on the 14th and 15th. The region escaped the worst conditions as enough warm air came in before the heavy rain arrived. Nevertheless about a quarter inch of ice accrued on power lines and limbs in extreme northern New Castle County. About 1,400 homes lost power. Less ice fell farther south. Little if any frozen precipitation fell in Sussex County.

A cold front moved through the peninsula the evening of the 13th. Extremely cold air moved south behind it. Unlike the usual pattern with cold frontal passages, precipitation fell behind the front and slowly worked its way south during the early morning hours of the 14th. A weak low pressure system developed on the cold front in the Tennessee Valley on the 14th, but weakened as it moved east off the Delmarva Peninsula during the evening of the 14th. A very strong high pressure system built into northern New England on the 14th. The high moved offshore the evening of the 14th and the flow across the Middle Atlantic States became more easterly. This permitted warmer air to start moving back quicker into the region during the late afternoon and evening of the 14th just as a second and stronger low pressure system was getting organized over the Tennessee Valley. A secondary low formed near Norfolk during the early morning of the 15th and this not only accelerated the increase of warmer air, but also produced some heavy rain across the peninsula.

A mixture of sleet, snow and freezing rain fell across New Castle County from around midnight on the 14th through the evening of the 14th. Freezing rain prevailed the rest of that night until air temperatures climbed above freezing during the early morning of the 15th. Ice accretions were nearly two tenths of an inch in Wilmington. A shorter version of this occurred in Kent County where only some light freezing rain and sleet fell into the afternoon of the 14th. Heavy rain moved across the region during the morning of the 15th just as all temperatures rose above the freezing mark. Storm total amounts averaged between 1.5 inches for the event, most of which fell during the morning of the 15th. There was some poor drainage flooding, but no serious problems were reported.

The worst affects of this storm were felt in New Castle County. Schools were closed for two days (the 14th and 15th) above the Chesapeake and Delaware Canal. The triple AAA responded to over 150 calls for assistance. About 1,400 homes lost power in the county. Even after temperatures rose above freezing, the problems did not stop. Falling ice shattered four cars' windshields on the Delaware Memorial and Delaware State Route 1 Bridges. Lanes were closed on the bridges until all the ice either melted or fell.

Storm precipitation totals (most of which fell the morning of the 15th) included 1.93 inches in Georgetown, 1.80 inches in Milford, 1.63 inches in Greenwood, 1.42 inches in Wilmington and 1.15 inches at the New Castle County Airport. Snow and sleet accumulations were mostly under half an inch.

DEZ001

New Castle

	18	1610EST 1625EST			0	0	0	0	High Wind
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New Castle County

	18	1630EST			0	0	0	0	Waterspout
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Damaging wind gusts accompanied a cold front and rain showers as they moved through New Castle County a little after 4 p.m. EST on the 18th. A waterspout formed in the Delaware River for about one minute near Fox Point State Park. It dissipated before it reached the New Jersey side. The wind gusted to 61mph at the New Castle County Airport at 4:19 p.m. EST. A sign for the airport was knocked down and a trailer was blown over on U.S. Route 13 near the airport. Elsewhere, the high winds blew the roof off a three story building within Wilmington. The chimney fell and damaged the neighboring building. Residents of the former building could not spend the night there because of the structural damage. Trees were uprooted in Elsmere. About 4,000 Connecticut customers lost power because of the high winds in Delaware and Maryland. All power was restored by the morning of the 19th.

New Castle County

	18	1700EST 2100EST			0	1	0	0	Flood
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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

DELAWARE

The combination of showers and thunderstorms with heavy rain and the already saturated ground caused flooding along some of the river and streams across northern New Castle County. The Christina River at Coochs Bridge was above its 9 foot flood stage from 5 p.m. through 9 p.m. EST on the 18th. It crested at 9.82 feet at 7 p.m. EST. A 45-year-old woman was rescued when her car became stranded in flood waters. Storm totals were not very heavy rain, but this came just a couple of days after another heavy precipitation event. Rainfall totals included 1.2 inches in Newark and 1.19 inches in Wilmington.

DEZ001>004

New Castle - Kent - Inland Sussex - Delaware Beaches

31	2359EST								Unseasonably Wet
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January 1999 finally broke a string of unseasonably dry months that prevailed throughout the second half of 1998 in Delaware. January monthly precipitation was around 150% to 200% of normal and was around 6.7 inches. The monthly precipitation total of 5.42 inches at the New Castle County Airport was the 7th wettest January in this century.

DISTRICT OF COLUMBIA

DCZ001

District Of Columbia

08	0600EST								
09	0400EST								Winter Weather

An area of low pressure over Ohio brought a variety of precipitation to the Washington D.C. area. Precipitation started off as snow around 6 AM on the 8th. By early afternoon warm air moved into the middle levels of the atmosphere turning the precipitation into freezing rain and sleet. The freezing precipitation continued through early morning on the 9th when temperatures finally rose above freezing at the surface. Washington Reagan National Airport received a total of 2.0 inches of snow. A trace of ice accumulation covered the snow. The aftermath of the snow and ice included school closings and multiple car accidents. Over 200 traffic collisions were reported across the Washington D.C. metropolitan area, including 27 injuries. Most metropolitan area schools were closed on the 8th, because of difficult driving conditions.

DCZ001

District Of Columbia

14	0300EST								
15	0900EST					20K			Ice Storm

A strong arctic cold front moved slowly southeast across the Mid-Atlantic region from late on the 13th to midday on the 15th. This front brought a thin layer of sub freezing air to the lowest levels of the atmosphere, but just off the surface warmer air moved in. A low pressure system developed on the 13th over the Tennessee Valley. The low moved into the Mid-Atlantic region over the next few days, spreading precipitation region wide from early on the 14th through midday on the 15th. The precipitation started as snow but melted into rain as it fell through the warm layer of air in the mid levels of the atmosphere. Unfortunately the ground was below freezing during the period so the rain froze on every surface it came in contact with. This created ice accumulations of one half to three quarters of an inch across the District by 9am on the 15th.

The ice this storm left behind had a large impact on the metropolitan area. Hundreds of car accidents, slip and fall injuries, downed trees, and power outages were reported. Four elementary students were treated and released on the morning of the 14th after a school bus and a car collided at the ice intersection of Ridge Road and Eli Street Southeast. One hospital in the Maryland suburbs treated over 250 patients alone with storm related injuries on the 15th. Winds gusted over 40 MPH after the precipitation ended and trees weighted down by the heavy ice accumulations were toppled onto homes, across roads, and onto power lines across the area. Over 12,500 customers in the District lost power from the storm. Power outages also closed the Van Ness Metro rail subway station in Northwest at 3:30 PM, and cancelled departures of the MARC train from 5 to 6 PM on the 15th, causing a commuter nightmare. Also, the Case Memorial Bridge had to be closed for a short time at the height of rush hour on the 15th to be

FLORIDA, East Central

Orange County

Zellwood

03	0015EST								
						5K			Thunderstorm Wind (G50)

Thunderstorm winds blew down trees and power lines in Apopka and Zellwood.

Volusia County

Deltona

03	0035EST								
						10K			Thunderstorm Wind (G50)

Thunderstorm winds blew down trees and power lines in Deltona.

Seminole County

Sanford

03	0040EST								
						50K			Thunderstorm Wind (G50)

Thunderstorm winds blew down trees in the Sanford area. The fallen trees damaged two mobile homes and a house.

Osceola County

St Cloud

03	0050EST								
						70K			Thunderstorm Wind (G50)

Thunderstorm winds blew down trees and power lines near St. Cloud and overturned a motor home.

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
<u>FLORIDA, East Central</u>									
Seminole County									
Geneva	03	0050EST			0	0	30K		Thunderstorm Wind (G50)
Thunderstorm winds overturned a mobile home near Geneva.									
Osceola County									
10 N Deer Park	03	0110EST			0	0			Thunderstorm Wind (G61)
A spotter measured a wind gust of 70 mph with home based equipment.									
Brevard County									
Cocoa	03	0135EST			0	0	20K		Thunderstorm Wind (G50)
Thunderstorm winds blew down trees and power lines in Cocoa.									
Okeechobee County									
Okeechobee	03	0200EST			0	0	10K		Thunderstorm Wind (G50)
Thunderstorm winds blew down a few trees and power lines and a satellite dish in Okeechobee.									
Indian River County									
Vero Beach Muni Arpt	03	0234EST			0	0	5K		Thunderstorm Wind (G50)
Thunderstorm winds damaged doors to the terminal building at the Vero Beach Airport.									
Volusia County									
Port Orange	09	1805EST			0	0	3K		Hail (1.00)
A few mobile homes were damaged by falling trees and quarter size hail in Port Orange.									
<u>FLORIDA, Extreme Southern</u>									
NONE REPORTED.									
<u>FLORIDA, Northeastern</u>									
Putnam County									
Bostwick	02	1145EST			0	0	1.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Nassau County									
Hilliard	02	1730EST			0	0	1.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Duval County									
Jacksonville Beach	02	1730EST			0	0	4.5K		Thunderstorm Wind
One automobile damaged. Large trees and power lines were blown down.									
Suwannee County									
2.5 E Live Oak	02	2115EST			0	0	25K		Thunderstorm Wind
Large trees were blown down. Several homes with roof and siding damage									
Columbia County									
Lake City	02	2130EST 2200EST			0	0	1.5K		Thunderstorm Wind
Large tree limbs were blown down									
Hamilton County									
White Spgs	02	2130EST			0	0	1.5K		Thunderstorm Wind
Large trees were blown down along CR-135.									
Gilchrist County									
8 N Trenton	02	2145EST			0	0	2.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Bradford County									
4 W Starke	02	2222EST			0	0			Hail (1.00)
Putnam County									
Bostwick	02	2230EST			0	0	15K		Thunderstorm Wind
Several homes damaged. Large trees and power lines were blown down.									
Marion County									
Ocala Arpt	02	2245EST			0	0	3K		Thunderstorm Wind
Building damaged.									

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
FLORIDA, Northeastern									
Clay County									
Doctors Lake	02	2300EST			0	0	3K		Thunderstorm Wind
Large trees and power lines were blown down.									
Duval County									
Jacksonville	02	2310EST			0	0			Hail (0.75)
Highlands area.									
Putnam County									
6 SW Bostwick to 5 NE Bostwick	02	2315EST 2330EST	11	10	0	0	35K		Tornado (F0)
Four mobile homes with minor damage, one with major. Tornado was weak, and mainly at tree top level. Continue into St. Johns County.									
St. Johns County									
3 SW Tocoli to 2 NE Tocoli	02	2330EST 2345EST	5	10	0	0	4K		Tornado (F0)
Tornado was weak, and mainly at tree top level. Tornado originated in Putnam County and crossed the St. Johns River.									
Alachua County									
Hawthorne	02	2330EST			0	0	1.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
St. Johns County									
St Augustine	02	2350EST			0	0	15K		Thunderstorm Wind
Damaged a service station roof.									
Flagler County									
1 S Bunnell	03	0035EST			0	0	2.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Suwannee County									
Ellaville	18	1020EST			0	0	2K		Thunderstorm Wind
Mobile home damaged.									
Suwannee County									
Wellborn	18	1045EST			0	0			Hail (0.75)
Hamilton County									
White Spgs	18	1057EST			0	0	2.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Columbia County									
4 W Lake City	18	1055EST			0	0			Hail (0.75)
Baker County									
5 N Glen St Mary	18	1115EST			0	0	3.5K		Thunderstorm Wind
Roof damage at Kuyper Field.									
Gilchrist County									
Trenton	18	1255EST			0	0			Thunderstorm Wind (G75)
Bradford County									
Starke	18	1315EST			0	0	3.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
St. Johns County									
1 W St Augustine	18	1400EST			0	0			Hail (0.75)
Alachua County									
Campville	18	1400EST			0	0	2.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Putnam County									
Interlachen	18	1401EST			0	0	5K		Thunderstorm Wind
Large trees were blown down.									
Flagler County									
Mantanzas	18	1450EST			0	0	2K		Thunderstorm Wind

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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FLORIDA, Northeastern

Large trees and power lines were blown down.

Columbia County

Lake City	23	1345EST			0	0	1.5K		Thunderstorm Wind
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Large trees were blown down.

FLORIDA, Northwest

Bay County

Panama City Beach to 3 NW Panama City	02	1510EST 1515EST	3.8	100	0	7	4M		Tornado (F2)
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A tornado initially struck at Panama City Beach damaging several homes and a few hotels within a four-block area surrounded by Sunset Ave-Thomas and Holiday Dr. The tornado again touched down two miles to the north at the Hathaway Bridge (U.S. Highway 98) where a six-car pileup injured seven. Finally, the tornado lifted over St. Andrews Bay and descended about a mile further north into a residential area surrounded by Big Daddy-Marina Dr. and Bay Circle where numerous homes and businesses were damaged. Scattered power outages affected several thousand customers in West Panama City and Panama City Beach.

Bay County

Youngstown	02	1535EST			0	0	250K		Thunderstorm Wind
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Several roofs and mobile homes damaged.

Washington County

Countywide	02	1540EST 1600EST			0	0	30K		Thunderstorm Wind
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Widespread tree and power line damage.

Jackson County

10 N Marianna	02	1615EST			0	0	2K		Thunderstorm Wind
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Trees and power lines down on FL Highway 2.

Dixie County

Old Town	02	2117EST			0	0	40K		Thunderstorm Wind
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Two houses and a vehicle damaged by downed trees on Spiller Highway.

Gulf County

2 SW Wewahitchka to 1 S Wewahitchka	02	1630EST	1	35	0	0	30K		Tornado (F0)
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A brief tornado ripped the tin roof off a tavern, downed several trees, and damaged a vehicle parked in front of a video store. A residence on West Lake View Drive sustained minor damage to its roof and adjoining sheds.

Walton County

Paxton	09	0730EST			0	0	3K		Thunderstorm Wind
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Wind damage to a residence on Nance Road in Paxton.

Washington County

Countywide	23	0645EST 0700EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds downed several trees. One felled tree damaged a vehicle in Chipley. Tree debris blocked Carter Circle in Greenhead.

FLORIDA, Southern

Palm Beach County

Riviera Beach	02	0530EST 0536EST	3.2	30	0	0	5.9M	0	Tornado (F1)
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A tornado touched down just east of I-95 and north of Blue Heron Blvd. and travelled toward the east southeast for more than three miles before dissipating over the intracoastal waterway near the Port of Palm Beach. A total of 460 buildings suffered damage, including portable classrooms at JFK Middle School. A four block section around 5th Avenue North was hardest hit. In addition, cargo containers at the Port of Palm Beach were ripped open, a tractor trail was overturned, a concrete utility pole was snapped off and more than 13000 electrical customers lost power.

Palm Beach County

Palm Beach Gardens	02	0800EST 1800EST			0	0	1.9M	0	Flash Flood
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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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FLORIDA, Southern

Torrential rainfall from a nearly stationary line of thunderstorms dropped an estimated 10 to 15 inches of rain, most of it falling within a two hour period, in the Highland Pines Subdivision in Palm Beach Gardens. Initially, a South Florida Water Management gage measured 31 inches of rain, but subsequent reanalysis indicated the gage reading was about 50% too high. A total of 136 buildings suffered flood damage as well as numerous vehicles. Streets were closed and I-95 was partially closed by a large sinkhole.

Collier County

Marco	03	0129EST			0	0	10K	0	Thunderstorm Wind (G70)
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A severe thunderstorm wind gust blew down a two story screened pool enclosure.

Palm Beach County

7 W Palm Beach Arpt	03	0400EST			0	0	250K	0	Thunderstorm Wind (G65)
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Thunderstorm wind gusts damaged horse stalls and a pump house and destroyed five large tents at the Winter Equestrian Festival in Wellington.

Dade County

Westchester	03	0418EST			0	0	0	0	Thunderstorm Wind (G60)
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Thunderstorm winds blew down trees in Westchester.

FLZ070

Inland Collier

06	0500EST				0	0	0	100K	Extreme Cold
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Minimum temperatures in the farming areas of Collier County reached 27 to 32 degrees for about four hours causing widely scattered damage to vegetable crops.

Broward County

6 E Deerfield Beach	19	1800EST			0	0	0	0	Waterspout
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A pilot reported a waterspout in the Atlantic six miles offshore Deerfield Beach.

Hendry County

La Belle	24	0600EST	0.5	15	0	0	50K	0	Tornado (F0)
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A tornado touched down on a farm in Port LaBelle, damaging a travel trailer, barn and boat. It blew down several large trees.

FLORIDA, West Central

Hernando County

Pine Is to Bayport	02	2100EST			0	0	75K	0	Storm Surge
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Pasco County

Hudson to New Port Richey	02	2100EST			0	0	1.8M	0	Storm Surge
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Pinellas County

Anclote to St Petersburg Beach	02	2100EST			0	0	200K	0	Storm Surge
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Hillsborough County

Appollo Beach to Tampa	02	2200EST			0	0	0	0	Storm Surge
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Manatee County

Anna Maria to Longbeach	02	2200EST			0	0	200K	0	Storm Surge
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Storm surge, partly enhanced by a fast moving squall-line that extended perpendicular to the West Florida peninsula, produced damage to homes and businesses along the immediate coast.

In Pasco county, storm surge of 5.5 to 6.0 feet above astronomical tides caused flood damage to nearly 300 homes west of the U.S. Highway 19 corridor. The most devastated areas were the Signal Cove and Driftwood Isle subdivisions in Hudsons Beach and at the Manor Beach and Green Key Estates subdivision in New Port Richey. Most homes received four to six inches of floodwaters during the peak of the surge.

In Pinellas county, storm surge of 3.0 to 4.0 feet above astronomical tides caused flood damage to less than 30 homes and three businesses, mainly west of the U.S. Highway 19 corridor. Most of the coastal flooding occurred from Anclote Key south to Clearwater.

In Manatee county, storm surge of 3.0 to 4.0 feet above astronomical tides caused flood damage to less than 50 homes and pushed a few dry-docked boats into coastal streets. Coastal roads along Longboat Key were overtaken by water at a few locations.

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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FLORIDA, West Central

In Hernando county, storm surge of 2.0 to 3.0 feet above astronomical tides caused minor flood damage to homes along the immediate coast. Water breached seawalls at a few locations and a handful of coastal roadways were flooded during the peak of the surge.

In Hillsborough county, storm surge of less than three feet caused no reported flooding of roadways or homes.

Citrus County

4 S Crystal River

02	2215EST				0	0	10K	0	Thunderstorm Wind (G57)
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Thunderstorm wind gusts of up to 65 mph caused minor roof, shed and carport damage four miles south of Crystal River. A few large trees and several branches were downed by the thunderstorm winds along the U.S. Highway 19 corridor south of Crystal River.

Hernando County

9 ENE Spring Hill to
9.5 ENE Spring Hill

02	2226EST	0.5	15		0	0	75K	0	Tornado (F0)
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A short-lived tornado touched down near the intersection of County Road 585 and Highgrove Road, nine miles east northeast of Spring Hill, over rural, semi-wooded countryside of western Hernando county. The tornado sporadically touched down along a half mile path length and caused moderate to severe roof damage to a couple of homes on Nodoc Road. The tornado uprooted or snapped less than a dozen trees along its path length before it lifted and dissipated near Cartwright and Switchback Roads.

Citrus County

Inverness

02	2237EST				0	0	50K	0	Thunderstorm Wind
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Thunderstorm winds downed several trees and power lines in the city of Inverness.

Pasco County

Hudson

02	2237EST				0	0	50K	0	Thunderstorm Wind
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Thunderstorm winds caused minor roof and carport damage to several homes in Hudson. Also, a few large trees were uprooted and several large branches downed by thunderstorm winds in Hudson.

Pinellas County

Largo

02	2252EST				0	0	20K	0	Thunderstorm Wind (G52)
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Thunderstorm winds downed a few trees, power lines and branches in Largo.

Manatee County

Anna Maria to
1 W Bradenton

02	2255EST 2300EST				0	0	100K	0	Thunderstorm Wind
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Thunderstorm winds caused minor roof, carport and lanai damage along State Road 64 from Anna Maria east to Bradenton. A few large trees and several branches were downed by thunderstorm winds in the 400 block of 34th Street West in Bradenton.

Sarasota County

2.5 W Sarasota to
.5 N Sarasota

02	2310EST 2313EST	2.3	20		0	0	250K	0	Tornado (F0)
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A National Weather Service damage survey concluded that a tornado touched down at the Sarasota Sailing Squadron, 2.5 miles west of downtown Sarasota and toppled 34 boats on storage trailers. Ten of the boats sustained mast damage while most others received minor hull damage. The tornado continued across Sarasota Bay as a waterspout and moved east and onshore near the intersection of U.S. Highway 41 and Boulevard of the Arts in Sarasota. The tornado sporadically snapped tree limbs before it lifted and dissipated near the intersection of Seventh Street and Central in Sarasota.

Hernando County

Ridge Manor

02	2310EST				0	0	10K	0	Thunderstorm Wind
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Thunderstorm winds downed several large tree branches which damaged vehicles in Ridge Manor.

Sarasota County

2 W Sarasota to
.5 NW Sarasota

02	2311EST 2313EST				0	0	0	0	Waterspout
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The tornado that touched down at the Sarasota Sailing Squadron continued over Sarasota Bay as a waterspout and moved onshore near the intersection of U.S. Highway 41 and Boulevard of the Arts in Sarasota.

Sumter County

Wildwood to
1 NE Wildwood

02	2315EST				0	0	25K	0	Thunderstorm Wind
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Thunderstorm winds downed trees and power lines along several streets in northeast Wildwood.

Pasco County

Zephyrhills

02	2315EST				0	0	50K	0	Thunderstorm Wind
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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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FLORIDA, West Central

Thunderstorm winds caused minor damage to the roofs, lanais and carports of a few homes in Zephyrhills of eastern Pasco county. Also, a few power lines and large trees were downed by thunderstorm winds along U.S. Highway 301 in Zephyrhills.

Hillsborough County

9 SE Tampa	02	2322EST 2325EST	2.3	10	0	1	150K	0	Tornado (F1)
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A National Weather Service damage survey concluded that a tornado initially touched down along North Street, one half mile south of Symmes Road in Gibsonton, or about nine miles southeast of downtown Tampa. The tornado moved northeast and sporadically touched down across semi-rural, treeless terrain where it damaged several plastic covered fish hatchery quonsets in Gibsonton.

The tornado lifted and touched down along Fern Hill Drive, one half mile south of Gibsonton Drive, where it caused F1 damage to two weathered single wide mobile homes and F0 damage to three weathered single wide mobile homes, downed a few trees and snapped several large branches, before it lifted and dissipated along Cone Grove Road. One person in a mobile home suffered minor injuries from wind blown debris.

Manatee County

4 SW Parrish	02	2330EST			0	0	10K	0	Thunderstorm Wind
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A Skywarn Spotter reported thunderstorm winds of up to 60 mph along U.S. Highway 301, four miles southwest of Parrish. A few large trees and several large branches were downed along U.S. Highway 301 by the thunderstorm winds.

Hillsborough County

Appollo Beach	02	2330EST			0	0	10K	0	Thunderstorm Wind
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Thunderstorm wind gusts destroyed a screened pool enclosure in Apollo Beach.

Hillsborough County

21.5 E Tampa	02	2335EST	0.2	100	0	0	150K	0	Tornado (F1)
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A tornado touched down along County Road 39, approximately 3.5 miles south of State Road 60, over rural, semi-wooded countryside of eastern Hillsborough county. The tornado snapped fourteen electric utility wood power poles nearly halfway up from the base before it lifted and dissipated.

Sarasota County

10.5 ESE Venice to 14.4 ESE Venice	02 03	2358EST 0003EST	3.9	33	0	0	350K	0	Tornado (F0)
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A National Weather Service damage survey, in coordination with Sarasota Emergency Management officials, concluded that a tornado in the high end of the F0 range, first touched down in the Lazy River mobile home park along U.S. Highway 41 and the Myakka River. The tornado continued to move east southeast and sporadically touched down in the Harbor Cove, Lacasa, Harbor Isles and Holiday mobile home parks along and south of U.S. Highway 41 before it lifted and dissipated near the intersection of U.S. Highway 41 and Hikina Drive.

The tornado caused moderate roof and structural damage to three weathered mobile homes and caused minor roof, porch, lanai and carport damage to an additional 300 mobile homes along its path. Also, a few large trees along the tornado path were snapped or toppled.

Charlotte County

Port Charlotte	03	0015EST			0	0	10K	0	Thunderstorm Wind
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Thunderstorm winds damaged a few sheds, carports, lanais and toppled a couple of trees in Port Charlotte.

De Soto County

Arcadia Muni Arprt to Arcadia	03	0027EST			0	0	150K	0	Thunderstorm Wind
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Thunderstorm winds collapsed an airport hanger roof which damaged an aircraft in storage at the Arcadia Municipal Airport. Also, a few mobile homes incurred major roof damage and several trees and power lines were downed in the Forest Pines subdivision of Arcadia.

Polk County

3 S Lakeland	03	0030EST			0	0	15K	0	Thunderstorm Wind
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Thunderstorm winds downed a few power lines and trees along and near State Road 37 three miles south of Lakeland.

Polk County

Bartow to Haines City	03	0037EST 0047EST			0	0	10K	0	Thunderstorm Wind
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Thunderstorm winds damaged roofs and porches of a few homes from Bartow to Haines City.

De Soto County

3 E Arcadia	03	0047EST			0	0	15K	0	Thunderstorm Wind
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Thunderstorm winds tore off the roof of a home along Cherry Road and downed several trees and power lines throughout Arcadia.

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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FLORIDA, West Central

Highlands County

Avon Park to Sebring	03	0055EST 0115EST			0	0	30K	0	Thunderstorm Wind
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Thunderstorm winds caused minor damage to the roofs, porches, lanais and carports of few homes along the U.S. Highway 27 corridor between Avon Park and Sebring.

Polk County

1 N Lake Wales	03	0125EST			0	0	20K	0	Thunderstorm Wind
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Thunderstorm winds caused minor roof and structural damage to a few homes along Alternate U.S. Highway 27 in Lake Wales. Also, a few trees and power lines were downed by thunderstorm winds approximately one mile north of Lake Wales.

Highlands County

Lorida	03	0145EST	0.1	10	0	0	10K	0	Tornado (F0)
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A short-lived tornado touched down along U.S. Highway 98 in Lorida and caused minor damage before it lifted and dissipated. Tornado damage was limited to a few snapped trees, a toppled basketball pole, a water pump pulled from the ground and several uprooted small bushes.

FLZ039-042-048>049-051>052-055>057-061
Levy - Citrus - Hernando - Pasco - Hillsborough - Polk - Manatee - Hardee - Highlands - De Soto

05	1900EST				0	0	200K	475K	Freeze
06	1000EST				0	0	200K	475K	Freeze

Temperatures fell below freezing for up to twelve hours in the winter crop producing counties of Polk, Highlands, Hardee, De Soto, Hillsborough and Manatee caused relatively minor damage. Temperatures dropped into the middle to upper 20's over Highland, De Soto, Hardee, eastern Manatee and eastern Hillsborough counties for less than four hours. The primary crops damaged by the freezing temperatures were tomatoes, squash and strawberries.

FLZ049>051-055
Pasco - Pinellas - Hillsborough - Manatee

16	0100EST 1000EST				0	0	0	0	Fog
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Patchy dense sea fog moved onshore and lowered visibility to less than a quarter mile along coastal areas, mainly west of the Interstate 75 corridor.

FLZ039-042>043-048>052-055>057-060>062-065
Levy - Citrus - Sumter - Hernando - Pasco - Pinellas - Hillsborough - Polk - Manatee - Hardee - Highlands - Sarasota - De Soto - Charlotte - Lee

18	0100EST 0900EST				0	0	0	0	Fog
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Patchy dense fog reduced visibility to less than a quarter mile over parts of West Central and Southwest Florida.

Levy County

Chiefland	18	1230EST			0	0	0	0	Hail (0.75)
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A Skywarn Spotter reported dime sized hail in Chiefland.

FLZ050>052-055>057-060>062-065
Pinellas - Hillsborough - Polk - Manatee - Hardee - Highlands - Sarasota - De Soto - Charlotte - Lee

20	0100EST 1000EST				0	0	0	0	Fog
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Widespread dense fog reduced visibility to less than a quarter mile over most of West Central and Southwest Florida.

FLZ039-042>043-048>052-055>057-060>062-065
Levy - Citrus - Sumter - Hernando - Pasco - Pinellas - Hillsborough - Polk - Manatee - Hardee - Highlands - Sarasota - De Soto - Charlotte - Lee

21	0100EST 1000EST				0	0	0	0	Fog
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Widespread dense fog reduced visibility to less a quarter mile over most of West Central and Southwest Florida.

FLORIDA, West Panhandle

Santa Rosa County

2 S Navarre	02	1035CST 1038CST			0	0			Waterspout
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A waterspout was sighted offshore, south of Navarre Beach. The waterspout lasted for several minutes and dissipated before the thunderstorm moved ashore.

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
FLORIDA, West Panhandle									
Santa Rosa County									
Navarre	02	1045CST 1047CST			0	0			Hail (0.75)
		Dime size hail was reported in the community.							
Santa Rosa County									
Milton	02	1105CST 1107CST			0	0			Hail (0.88)
		Nickel size hail was reported in the community.							
Escambia County									
Walnut Hill	02	1130CST 1132CST			0	0	7K		Thunderstorm Wind (G55)
		Two out buildings sustained some structural damage due to high winds.							
Santa Rosa County									
3 N Harold	02	1140CST 1141CST	0.1	25	0	0			Tornado (F0)
		Law Enforcement saw a tornado briefly touch down near Deaton Bridge in the Blackwater River State Park. No damage was found.							
Escambia County									
Pensacola	02	1200CST 1205CST			0	0	15K		Thunderstorm Wind (G55)
		An apartment complex sustained roof damage while a vehicle sitting in the parking lot of the same complex sustained damage.							
Escambia County									
(Npa)Nas Pensacola	02	1215CST 1216CST			0	0	2K		Thunderstorm Wind (G50)
		High winds turned a vehicle over that was parked near Pensacola Bay on Pensacola Naval Air Station.							
Okaloosa County									
Escambia Farms	02	1220CST 1225CST			0	0	10K		Thunderstorm Wind (G55)
		High winds produced damage to buildings.							
Santa Rosa County									
Milton	02	1245CST 1250CST			0	0	10K		Thunderstorm Wind (G60)
		The only major damage report in the county was that of a roof torn off of a double wide trailer. The trailer, located on Milton's southeast side, was shifted from its foundation due to the damaging wind.							
Okaloosa County									
Crestview	02	1315CST 1320CST			0	0	6K		Thunderstorm Wind (G55)
		A house, at the intersection of Adams and Ridge Lake Road, sustained roof damage due to high winds.							
Okaloosa County									
Crestview	02	1315CST			0	0	4K		Lightning
		Lightning struck the communications system for Okaloosa County in Crestview. The 911 system was knocked off the air for several hours because of the strike.							
Santa Rosa County									
Milton	09	0555CST 0557CST			0	0	5K		Thunderstorm Wind (G55)
		Several trees were blown down around the Santa Rosa County Emergency Management Office.							
Okaloosa County									
Ft Walton Beach	09	0630CST 0632CST			0	0	20K		Thunderstorm Wind (G55)
		Several homes suffered roof damage from high winds around Fort Walton Beach. Some of the roof debris damaged several vehicles in the area. No one was injured.							
Okaloosa County									
Destin	09	0702CST			0	0			Thunderstorm Wind (G50)
		Destin Middle School reported a wind gust of 56 mph from a thunderstorm.							

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>FLORIDA, West Panhandle</u>									
Escambia County									
Molino	13	1632CST 1634CST			0	0			Funnel Cloud
A funnel cloud was observed around Molino. The funnel never touched down and receded back into the cloud.									
Okaloosa County									
10 S Crestview	23	0330CST 0331CST			0	0			Hail (0.75)
Dime size hail was reported along HWY 85 about ten miles south of Crestview.									
<u>GEORGIA, East Central</u>									
NONE REPORTED.									
<u>GEORGIA, Lower</u>									
Clinch County									
2 W Homerville	02	1530EST			0	0	4.5K		Thunderstorm Wind
One home with minor damage. Large trees and power lines were blown down.									
Ware County									
Waycross	02	1600EST 1615EST			0	0	2.2M		Thunderstorm Wind
In the Jamestown Community two residents with minor damage. In an Industrial Park a boat manufacturing company had one building destroyed and moderate damage to one end of their main building. A mobile home manufacturing plant had a 100,000 sq/ft building and shop destroyed, 5 new mobile homes were destroyed and 14 others were damaged, 5 semi-trailers were damaged and a pickup truck.									
Pierce County									
Blackshear	02	1600EST			0	0	4.5K		Thunderstorm Wind
A three block area had large trees and power lines were blown down.									
Pierce County									
6 W Blackshear to 8 NW Blackshear	02	1610EST	2.5	10	0	0	35K		Tornado (F0)
Seven residents with minor roof damage, church steeple damaged and a roof was blown off a silo.									
Clinch County									
Homerville	02	1615EST			0	0	25K		Thunderstorm Wind
Large tree fell on a home.									
Wayne County									
1 W Odum	02	1700EST			0	0	0.50K		Thunderstorm Wind
Large tree limbs were blown down.									
Appling County									
5 SE Baxley	02	1700EST			0	0	2K		Thunderstorm Wind
Large trees and power lines were blown down.									
Brantley County									
Hoboken	02	1730EST			0	0	15K		Thunderstorm Wind
One mobile home destroyed, several homes with minor roof damage.									
Charlton County									
Folkston	02	1740EST			0	0			Hail (0.88)
Camden County									
Woodbine to Harriets Bluff	02	1800EST 1810EST			0	0	2.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Clinch County									
Dupont	02	2130EST			0	0	3.5K		Thunderstorm Wind
Large trees and power lines were blown down.									
Coffee County									
5 SE Douglas	02	2145EST			0	0	1.5K		Thunderstorm Wind
Large trees and power lines were blown down.									

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
<u>GEORGIA, Lower</u>									
Wayne County									
Mt Pleasant	02	2245EST			0	0	2.5K		Thunderstorm Wind
	Large trees and power lines were blown down.								
Charlton County									
Folkston	02	2250EST			0	0	1.5K		Thunderstorm Wind
	Large trees and power lines were blown down.								
Camden County									
1 W Kingsland	02	2315EST			0	0	1.5K		Thunderstorm Wind
	Large trees and power lines were blown down.								
Glynn County									
Everett	02	2359EST			0	0	2K		Thunderstorm Wind
	Large trees and power lines were blown down.								
<u>GEORGIA, North and Central</u>									
GAZ013 Pickens									
	02	1200EST			0	0			Ice Storm
		1630EST							
	Freezing rain produced heavy ice on portions of almost all county roads.								
GAZ014>016-023>024 Dawson - Lumpkin - White - Hall - Banks									
	02	1600EST			0	0	15K		Ice Storm
	03	0000EST							
	Freezing rain accumulated over a quarter of an inch of ice on trees, power lines, bridges, overpasses, cars, and other exposed surfaces. Many trees and limbs were downed in some areas due to the ice. Some power outages were reported due to downed power lines. Temperatures around 30 to 32 degrees produced icy spots on roads.								
GAZ006>009-013-015-021 Fannin - Gilmer - Union - Towns - Pickens - Lumpkin - Cherokee									
	06	0900EST			0	0			Light Snow/Freezing Precip
		2200EST							
	Light snow accumulating from a quarter of an inch up to as much as an inch was followed by a mixture of light freezing drizzle/freezing rain or sleet in the mountains of the extreme north Georgia counties. With temperatures in the upper 20s to low 30s roads became very slick with a covering of the snow and ice mixture.								
Sumter County									
Leslie to 4 E Leslie	17	1825EST			0	0			Hail (0.75)
	The sheriff's office reported nickel size hail.								
Monroe County									
3 E Bolingbroke	17	1940EST			0	0			Hail (0.75)
	The public reported 3/4 inch hail.								
Laurens County									
Rockledge	17	2049EST 2053EST			0	0			Hail (0.75)
	Spotters reported nickel size hail.								
Emanuel County									
Adrian	17	2125EST			0	0			Hail (0.75)
Floyd County									
10 S Rome	18	0506EST			0	0			Hail (0.75)
	A spotter reported dime size hail.								
Gordon County									
5 SE Calhoun	18	0530EST			0	0			Hail (0.75)
	A report from the public indicated "big size" hail hitting the tin roof of her home between Calhoun and Fairmount. The hail was probably at least 3/4 of an inch in diameter.								
Laurens County									
Dexter to 1 SW Dublin	18	0530EST			0	0			Hail (1.75)

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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GEORGIA, North and Central

Laurens county 911 reported nickel to quarter size and the public reported golfball size hail in Dexter. Another public report indicated quarter size hail covered the ground just southwest of Dublin.

Johnson County

Wrightsville	18	0600EST			0	0			Hail (0.75)
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Johnson county 911 reported nickel size hail.

Wilcox County

8 NW Abbeville	18	0610EST			0	0			Thunderstorm Wind (G50)
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The Wilcox county sheriff's office reported large tree limbs were blown down on highway 129 between Abbeville and Hawkinsville.

Pulaski County

Hawkinsville	18	0615EST			0	0			Hail (0.75)
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The Pulaski county sheriff's office reported dime size hail and 1 tree down.

Whitfield County

Dawnville to Beaverdale	21	2132EST 2145EST			0	0			Hail (1.75)
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Three public reports indicated hail ranging from dime to golfball size fell in northeast Whitfield county.

Murray County

5 NW Chatsworth to 5 N Sumach	21	2145EST 2150EST			0	0			Hail (1.00)
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Two public reports indicated dime to quarter size hail in northwest Murray county.

GAZ008>009- 014>016

Union - Towns - Dawson - Lumpkin - White

31	1500EST 2359EST				0	0			Freezing Rain
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Freezing rain and some sleet fell in northeast Georgia at higher elevations, where temperatures were in the upper 20s to lower 30s. There was some accumulation on trees, power lines, and some bridges and overpasses. There was no significant accumulation on roads, because of the warm temperatures the preceding few days. A few trees and power lines were knocked down.

GEORGIA, Northeast

GAZ010-017>018- 026-028

Rabun - Habersham - Stephens - Franklin - Hart

02	1500EST				0	0			Ice Storm
03	0000EST								

Strong arctic high pressure brought a cold and dry airmass to northeast Georgia just ahead of a developing storm system in the southern Plains. As warmer air streamed north over the arctic surface air precipitation fell as freezing rain mixed with a little sleet at onset. By mid-afternoon the freezing rain accumulated to damaging levels, causing numerous trees and power lines to fall through the evening hours. As a result, there were numerous power outages.

GAZ010-017>018-026

Rabun - Habersham - Stephens - Franklin

31	1200EST 2300EST				0	0			Snow And Sleet
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Unusually strong arctic high pressure centered over New England again ushered a very cold and dry airmass into northeast Georgia ahead of a storm system moving east across the Gulf Coast States. The cold air was deep enough this time, allowing precipitation to fall as a mixture of snow and sleet. Accumulations of 1 to 3 inches occurred before the precipitation ended late in the evening.

GEORGIA, Southeast

Tattnall County

Mendes to 5 SW Mendes	02	1755EST			0	0			Thunderstorm Wind (G50)
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Large tree limbs down.

GEORGIA, Southwest

Seminole County

4 NW Donalsonville	02	1700EST			0	0	5K		Thunderstorm Wind
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Trees and power lines down at U.S. Highway 84 and GA Highway 38.

Miller County

Countywide	02	1705EST 1725EST			0	0	150K		Thunderstorm Wind
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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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GEORGIA, Southwest

Straight-line winds damaged several homes, barns, businesses, roads, and farm equipment. Significant damage was sustained near Mayhaw where a barn was scattered over a 50-acre patch and a large irrigation system was overturned. Numerous trees and power lines down.

Terrell County

Dawson	18	0315EST			0	0	8K		Thunderstorm Wind
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A carport and two vehicles damaged at a residence on Crawford Street in Dawson.

Dougherty County

Albany	18	0350EST			0	0			Hail (0.75)
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Dime sized hail.

Miller County

Colquitt	18	0435EST			0	0			Hail (1.50)
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Ping pong ball sized hail.

Thomas County

Thomasville	23	1055EST 1155EST			0	0			Urban/Sml Stream Fld
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Torrential rainfall caused localized street flooding in Thomasville. Hourly Doppler radar estimates of one to two inches were indicated.

Colquitt County

1 NE Moultrie	23	1200EST			0	0	50K		Thunderstorm Wind
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Straight-line winds damaged a double-wide trailer and a wood frame house off GA Highway 35. A large tree was blown onto the wood frame's roof and chimney. A nearby van and adjoining shed also sustained damage.

GEORGIA, West Central

GAZ089

Muscogee	21	1600CST			0	0	0	0	Excessive Heat
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A new record high temperature of 78 degrees was recorded at the Municipal Airport.

GAZ089

Muscogee	22	1600CST			0	0	0	0	Excessive Heat
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A new record high temperature of 76 degrees was recorded at the Municipal Airport.

GAZ089

Muscogee	27	1600CST			0	0	0	0	Excessive Heat
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A new record high temperature of 79 degrees was recorded at the Municipal Airport.

HAWAII

HIZ001>006

Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai

01	0000HST			0	1			High Surf
03	2030HST							

Intense storm low northwest of the Hawaiian Islands produced surf of 15 to 25 feet on the north shores, and 10 to 15 feet on the west shores of all islands on 1 Jan. One veteran surfer broke his leg while surfing at Waimea Bay of Oahu on 1 Jan.

Honolulu County

Hawaii Kai to Aiea	05	1730HST 2330HST			0	0		Urban/Sml Stream Fld
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Heavy rains flooded basements and streets in Waikiki and Kapahulu. A landslide at Aina Haina hillside dismounted a boulder, about 2 1/2 feet in diameter, which rolled down the hillside and damaged the roof of a house. Heavy rain and some ponding were also observed in other areas on the leeward side of Oahu.

There was a report of soaked and damaged merchandise at some stores at Ala Moana Shopping Center, due to leaky roofs.

The total amount of precipitation recorded near the flooded areas for this event is as follows:

Manoa	1.94 in.
Palolo	2.96 in.
Niu Valley	2.18 in.
Aloha Tower	1.10 in.

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
January 1999									
<u>HAWAII</u>									
HIZ002-004			Oahu - Island Of Hawaii						
	07	0000HST 2359HST			0	0			Vog
			The high vog level sent people with respiratory problems to hospital emergency rooms, while outdoor activities were limited until the vog cleared off. The state's Vog Index Hotline measured the vog at six on a scale of 10. The volcanic haze built up from the eruption at Kilauea and the lack of trade winds caused increased smoglike conditions over part of Oahu.						
HIZ001>006			Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai						
	07	0815HST			0	0			High Surf
	11	0800HST							
			A low northwest of the Hawaiian Islands produced surf of 15 to 18 feet along north shores, and 8 to 12 feet along west shores. On Oahu, water was observed near road at North Shore.						
Kauai County									
Kapaa to Wailua	07	1400HST 2000HST			0	0			Urban/Sml Stream Fld
			Heavy rain produced an overflow of water across the bridge at Kahuna Road at Kapa'a. Rainfall from 2:00pm to 8:00 pm was 3.41 inches at Wailua.						
Honolulu County									
Aiea to Honolulu	08	0500HST 0600HST			0	0			Urban/Sml Stream Fld
			Heavy rain over Southern Oahu produced ponded water along roadways.						
HIZ004			Island Of Hawaii						
	09	0500HST 1100HST			0	0			Heavy Snow
			A storm brought about 4 inches of snow to Mauna Kea. The Mauna Kea summit access road was shut down, but was reopened in the afternoon because weather conditions improved. Winds caused snow drifts to form more than 1 foot deep.						
HIZ001>006			Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai						
	14	2030HST			0	0			High Surf
	16	0400HST							
			Storm low northwest of the Hawaiian Islands generated surf of 8 to 12 feet along north shores, and 3 to 6 feet along west shores of the islands.						
HIZ003			Maui						
	15	0800HST 1800HST			0	0			High Wind (G64)
			A spotter from upcountry Maui reported strong winds which knocked down power lines. Average sustained winds from 8 a.m. to 6 p.m. at Haleakala were 40 mph, while a peak wind of 74 mph was recorded at 1:00 p.m.						
HIZ001>006			Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai						
	19	0330HST			0	0			High Surf
	22	0900HST							
			Storm low far northwest of the island chain produced surf of 6 to 10 feet along west shores, and 12 to 18 feet along north shores of all the Hawaiian islands.						
HIZ004			Island Of Hawaii						
	19	2245HST			0	0			High Wind (G52)
	20	1430HST							
			Astronomers reported high winds of 60 mph at the summits.						
Maui County									
Makawao to Kipahulu	22	0000HST 1100HST			0	0			Small Hail
			There were several reports of pea-sized or small marble sized hail on Haleakala at the 3,000 and 4,000 foot level near the Kula area. Hail was also reported in Kokomo and Haliimaile.						
Kauai County									
Hanalei	22	0520HST 1400HST			0	0			Urban/Sml Stream Fld
			At Kauai, water ponded along several roads from Wainiha to Hanalei. Hanalei had a total of 2.93 inches.						
Hawaii County									
Hilo to Pahoa	22	1030HST 1600HST			0	0			Urban/Sml Stream Fld

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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HAWAII

A thunderstorm drenched the Islands, pouring more than two inches of rain in some areas. In Hilo, 2.2 inches fell between 8 a.m. and 2 p.m. , while Mountain View received 3.89 inches.

Honolulu County

**Honolulu to
Waimanalo**

22	1100HST 1800HST				0	0			Urban/Sml Stream Fld
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Heavy showers were making driving difficult and dangerous. Drainage systems were having trouble handling all the runoff, so there had been some ponding along roadways, and visibility along the H-1 was very poor in the afternoon. There were no storm-related incidents except for a flooded basement in a downtown Honolulu jewelry store. In Manoa, 2.33 inches of rain fell from 11 a.m. to 5 p.m. Hawaii Kai received 1.24 inches and Waimanalo had 1.92 inches.

Maui County

**Hana to
Kipahulu**

22	1200HST 1440HST				0	0			Urban/Sml Stream Fld
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Heavy showers were observed at the windward side of Maui, causing ponded water along roadways.

HIZ001>006

Kauai - Oahu - Maui - Island Of Hawaii - Molokai - Lanai

23	1025HST 1200HST				0	0			High Surf
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A large tradewind swell generated surf of 6 to 10 feet along east shores of the islands.

Hawaii County

Hilo

24	1310HST 1320HST				0	0			Thunderstorm Wind (G61)
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Several buildings in Hilo were damaged early in the afternoon by what were described as strong thunderstorm winds. A strong wind uprooted a breadfruit tree and damaged a garage on West Kahaopea Street. Immediately thereafter on Anela Street, winds tore corrugated metal off one home and a poorly constructed roof from a combination garage and storage building on the other side of the street. According to Fire Department officials, the wind was strong enough to carry the 34 foot-long roof about 100 feet through the air where it landed close to a house down the street.

Hawaii County

**Hilo to
Pahoa**

24	1400HST 1600HST				0	0			Urban/Sml Stream Fld
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There was minor street flooding between Hilo and Puna districts.

Hawaii County

**Volcano to
Hilo**

25	2145HST				0	0			Urban/Sml Stream Fld
26	0400HST								

Heavy showers caused local street flooding in the Puna and South Hilo districts.

Maui County

**Hana to
Kahului**

31	0530HST 1615HST				0	0			Urban/Sml Stream Fld
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Heavy showers and thunderstorms produced minor flooding in areas along the entire windward coast, from Hana to Kahakuloa. The five corners intersection at Haiku-Kapakalu was flooded. Landslides occurred near Honomanu, Ke'anae, and Kahakuloa.

Maui County

**Hana to
Kipahulu**

31	0845HST 1500HST				0	0			Flash Flood
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Heavy showers and thunderstorms produced high amounts of rainfall over the south and east flank of Haleakala. Flooding occurred in the vicinity of several streams. The Alelele stream near Kipahulu flooded the area with two feet of water with severe erosion to road surfaces.

Hawaii County

**Hilo to
Pahoa**

31	0855HST 1545HST				0	0			Urban/Sml Stream Fld
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Moist, unstable air mass produced heavy showers with increasing rainfall throughout the day, which caused widespread ponding of water on roadways.

Hawaii County

**Hilo to
Pahoa**

31	1545HST 2030HST				0	0			Flash Flood
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30 homes sustained minor flooding, while high water in a stream along East Palai Street in Hilo required some evacuations. The Hilo Municipal Golf Course was closed, and reports of widespread street flooding in Hilo and runoffs in Waiakea Uka were observed during this event.

Several roads, including East Kawaihine Street, were closed due to flooding and runoffs. Lightning caused power outages of up to

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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HAWAII

an hour and affected about 14,000 homes in Hilo, Puna, and Kona. Hilo received a 24-hour total of 5.69 inches for this event. Other rainfall totals for this event on Hawaii are as follow:

Waiakea Uka	5.14 in.
Piihonua	4.80 in.
Mountain View	5.36 in.
Glenwood	4.60 in.
Pahoa	3.87 in.

IDAHO, Extreme Southeast

NONE REPORTED.

IDAHO, North

IDZ005

Northern Clearwater Mountains

10	0850MST	0	0		Heavy Snow
	2108MST				

Shanghi Summit-10 inches new snow

IDZ005>006

Northern Clearwater Mountains - Southern Clearwater Mountains

14	1515MST	0	0		Heavy Snow
15	2130MST				

Hemlock Butte-16 inches new snow

Lolo Pass-11 inches new snow

IDZ005>006

Northern Clearwater Mountains - Southern Clearwater Mountains

16	1030MST	0	0		Heavy Snow
18	0400MST				

Cool Creek-9 inches new snow

Elk Butte-9 inches new snow

Powell- 13 inches new snow

Lolo Pass-8 inches new snow

IDZ005

Northern Clearwater Mountains

27	1515MST	0	0		Heavy Snow
28	0430MST				

Lookout Pass-11 inches new snow

IDAHO, Northwest

IDZ026

Lewiston Area

02	0400PST	0	0	10K	Fog
	0900PST				

Dense fog in the Lewiston valley lead to icy conditions along Highway 95 and one minor accident with no injuries.

Shoshone County

Kellogg

12	1400PST	0	0	12K	Flood
14	0800PST				

Flooding on the Milo creek caused water to be backed up in a few basements of some homes.

IDZ001-004

Northern Panhandle - Central Panhandle Mountains

16	1700PST	0	0		Heavy Snow
29	1700PST				

Heavy snow of 4-12" of snow each was reported over the Northern and Central Panhandle Mountains of Idaho. Some of the sites include Bonners Ferry, Silver Mountain, Lookout Pass and Porthill.

IDAHO, Southeast

IDZ018>019-031

Sawtooth Mountains - Upper Snake Highlands - Big And Little Wood River Region

14	2000MST	0	0		Heavy Snow
16	1000MST				

A moist Pacific system brought heavy snow to many mountain locations. Sun Valley and the Sawtooth Mountain areas recorded 12 to 20 inches accumulation. The Island Park to the Teton Basin areas recorded 7 to 14 inches accumulation.

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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IDAHO, Southeast

IDZ018>019-031

Sawtooth Mountains - Upper Snake Highlands - Big And Little Wood River Region

19	2100MST				0	0			Heavy Snow
20	0800MST								

The next storm in a persistent moist Pacific flow brought heavy snow to the higher elevations from Sun Valley/Sawtooth Mountains to the Teton Basin and Island Park area. Accumulation of 6 to 12 inches were reported.

IDZ018>020-022>023-031>032

Sawtooth Mountains - Upper Snake Highlands - Upper Snake River Plain - South Central Highlands - Caribou Highlands - Big And Little Wood River Region - Lost River / Pahsimeroi

22	1000MST				0	0			Heavy Snow
23	1800MST								

A more intense winter storm brought widespread snow to Eastern Idaho; with all mountains and higher elevations above 5000 feet receiving notable accumulation. Numerous locations in the area encompassing the Sawtooth Mountains and Sun Valley to Island Park and the Teton Basin reported 8 to 12 inches accumulation. This includes locations at lower elevations such as Craters of the Moon National Monument, Arco and Driggs all reporting 8 inches accumulation. The higher elevations of the Upper Snake Plains reported 4 to 6 inches accumulation, which includes the towns of Rigby and Sage Junction. The Southeast Highlands reported accumulation of 4 to 8 inches, including the towns of Soda Springs and Malad.

IDZ017-021

Eastern Magic Valley - Lower Snake River Plain

26	1400MST				0	0			Heavy Snow
27	0900MST								

An event known as a Snake River convergence zone caused this storm to leave its heaviest snow accumulation over the lowest elevations of the Snake Plains in Eastern Idaho. The cities of Pocatello and Burley and other towns reported 4 to 6 inches accumulation.

IDAHO, Southwest

IDZ011

West Central Mountains

14	1300MST				0	0			Heavy Snow
15	0800MST								

A winter storm dumped heavy snow across the West Central Mountains of Idaho. Brundage ski resort reported 12 new inches of snow, McCall received 6 to 8 inches and 5 inches fell at New Meadows.

Ada County

8 S (Boi)Gowen Fld
Boise to
5 W (Boi)Gowen Fld
Boise

16	0830MST 0920MST				0	0	5K		Thunderstorm Wind (G58)
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During the morning of January 16th a line of strong rain showers and ice pellet showers produced severe wind gusts near Boise. A spotter reported the roof of a small barn was blown off and a tree was uprooted. A second spotter reported a small outbuilding was blown 50 yards and power lines were downed.

IDZ011-013

West Central Mountains - Boise Mountains

17	1800MST				0	0			Heavy Snow
18	0700MST								

A winter storm brought heavy snow to the central mountains of Idaho. In the West Central Mountain zone McCall picked up 10 to 12 inches, Council reported 10 inches, Donnelly and Yellow Pine received 6 inches and Cascade reported 5 to 8 inches. Deadwood received 12 inches. In the Boise Mountains generally lighter amounts fell, but higher elevation stations reported heavy snow with Placerville receiving 6 inches and the Bogus Basin ski resort reporting 8 inches.

IDZ011-013

West Central Mountains - Boise Mountains

20	1900MST				0	0			Heavy Snow
21	1000MST								

A winter storm brought generally 3 to 5 inches of snow to Idaho's central mountains, with a few stations reporting heavy snow. In the West Central Mountains Deadwood received 8 to 9 inches. In the Boise Mountains Idaho City picked up 12 inches and Placerville received 14 inches.

IDZ011-013-028>029

West Central Mountains - Boise Mountains - Camas Prairie - Owyhee Mountains

22	1600MST				0	0			Heavy Snow
23	0900MST								

IDZ015-030

Southwest Highlands - Southern Twin Falls County

22	1800MST				0	0			Winter Storm
23	0900MST								

A winter storm brought widespread heavy snow to the mountains of southwest Idaho. In the West Central Mountains 15 inches fell at Deadwood, 8 inches at Yellow Pine and Council with 6 inches at Smith's Ferry and Cascade. In the Boise Mountains Idaho City

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

ILLINOIS, Northeast

A powerful winter storm developed over the Texas panhandle and moved northeast through the Missouri bootheel, and then north northeast through eastern Illinois and into Michigan. Snow began accumulating in east central Illinois and areas south of Chicago during the early evening hours of New Year's Day and overspread the city and north suburbs by midnight. Snow continued through the night and much of the day Saturday January 2. The heaviest snow fell during the daytime hours Saturday and tapered off by late afternoon or early evening and ended by late evening. Northeast winds were 20 to 30 mph with a few higher gusts during the day Saturday. Winds gusted to over 50 mph along the Lake Michigan shoreline. The strong wind coming off the lake enhanced snowfall totals within about 10 miles of the lake. Snowfall was generally 9 to 15 inches over north central and east central Illinois and in the Chicago suburbs. Snowfall in Chicago and the north suburbs in Lake County was 18 to 22 inches. Winds subsided Saturday evening as the storm center passed over southern Lake Michigan. Then strong northwest winds developed Sunday causing considerable blowing and drifting and hampering clean-up efforts.

The 21.6 inches at O'hare, the official observing site for Chicago, was the second greatest storm total snowfall. The record was 23.0 inches January 26-271967. Of the 21.6 inches, 18.6 fell on January 2, setting a record for the most snowfall on a calendar day. Other snowfall amounts included; Algonquin 14.0, Aurora 14.4, Barrington 18.0, Brookfield 15.1, Bourbonnais 14.0, Channahon 13.0, Chatsworth 17.0, Coal City 13.0, Compton 9.7, Crestwood 14.2, DeKalb 12.4, Dixon 16.4, Earlville 11.3, Fairbury 13.0, Geneva 13.0, Glenwood 16.0, Harvard 9.0, Lake Villa 17.9, LaGrange Park 15.0, Midway Airport 20.6, Mundelein 10.0, Naperville 11.0, Olympia Fields 15.8, Orland Park 13.8, Rochelle 9.6, Rockford 9.0, Streamwood 14.0, Willow Springs 12.0.

The heavy snow and blowing snow caused hazardous travel. Lake Shore Drive was closed down for the first time ever. State, county and local road crews worked around the clock. The City of Chicago Department of Streets and Sanitation spent 12 million dollars on snow removal efforts. Three hundred flights were cancelled at O'Hare and Midway airports.

M58OU

ILZ014

Cook

10	1200CST	1	0			Extreme Cold
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A homeless man died of exposure in the stairwell of a building in Chicago.

M50PH

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

01	0517CST	0	0			Winter Storm
03	0400CST					

A strong winter storm exiting the Southern Rockies pumped warm tropical air from the Gulf of Mexico over cold Arctic air already in place over the upper midwest. As the storm moved toward the Great Lakes it produced heavy snow, strong winds, and a bitterly cold start to the New Year across Eastern Iowa and Northwest Illinois. With snowfall amounts ranging from 14 to 17 inches across West Central Illinois to 8 to 12 inches over Northwest Illinois blowing and drifting was a big problem with roads and highways quickly becoming snowpacked. Several road crews were pulled off the roads at night because of the blinding whiteout conditions. Holiday travellers were stranded at the Quad City Airport after airport crews decided they were unable to keep up with the snow. Many businesses were closed over the weekend and postal service was hindered in many rural locations. Across Illinois school students enjoyed an extended holiday vacation as schools were closed several days to allow snow to be removed from streets, sidewalks, and parking lots. In Geneseo five men were treated for heart attacks related to snow removal. Over all...most counties reported few accidents as motorists heeded earlier advisories that warned of deteriorating travel conditions.

ILZ015>017-024>026

Rock Island - Henry - Bureau - Mercer - Henderson - Warren

18	0405CST	0	0			Winter Storm
	1600CST					

A vigorous storm system over Wisconsin produced very strong winds across Eastern Iowa and Northwest Illinois. Numerous schools and businesses closed early due to the storm, and many accidents were reported as gusty west winds around 45 mph, coupled with blowing snow produced near blizzard conditions. Widespread blowing and drifting was reported along with snow and ice packed roads and visibilities less than one mile.

ILLINOIS, South

ILZ075>078-080>094

Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac

01	1700CST	0	0	150K		Ice Storm
02	0600CST					

Significant ice accumulations caused travel problems across southern Illinois beginning late on New Years Day and continuing through the night. Traffic volume was especially light because it was a holiday weekend. Those who had to be out found roads

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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ILLINOIS, South

extremely difficult to navigate. The hardest hit areas, from Carbondale to Benton and West Frankfort, experienced numerous power outages due to snapped tree limbs and power lines. A rural electric co-op reported slow progress in restoring power because of treacherous roads and fallen trees. Estimates of the number of residences without power were around 10,000, primarily in Franklin and Jackson Counties. Ice accumulations were estimated to be one-half to one inch thick in the area from Carbondale to DuQuoin and Mt. Vernon. Shelters were set up for those without heat, but few people took advantage of them. Local emergency rooms reported a sharp increase in slip-and-fall injuries. Dozens of vehicle accidents or mishaps occurred, including a fatal wreck on Interstate 57 about 4 miles south of Mt. Vernon. The governor of Illinois issued a disaster declaration for the entire state.

ILZ075>078-081>094 Jefferson - Wayne - Edwards - Wabash - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac

08	0600CST				0	0			Ice Storm
	1500CST								

Freezing rain coated surfaces with around a quarter inch of ice in most areas. The exception was in the vicinity of the Ohio River from Massac County to Hardin County, where locally one half inch of ice was observed. Many schools cancelled classes again, only a day after re-opening in the wake of an ice storm on January 2. A semi-trailer overturned on Interstate 57 just south of Marion. A total of 25 ice-related falls were recorded at Union County Hospital. This ice storm was considerably less serious than the ice storm of January 1 and 2, which hit the Carbondale and West Frankfort areas worst.

Johnson County

1.5 W Vienna to 5 S Vienna	17	1802CST			0	0	4K		Thunderstorm Wind (G52)
		1815CST							

Trees were downed across parts of Johnson County, including Route 146 just west of Vienna and U.S. 45 near the Massac County line.

Jackson County

3 N Murphysboro	17	1804CST			0	0	3K		Thunderstorm Wind
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Trees were blown down.

Jackson County

Grand Tower	17	1808CST			0	0	3K		Thunderstorm Wind (G52)
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Trees were blown down.

Alexander County

Miller City	17	1810CST			0	0	50K		Thunderstorm Wind
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A carport and shed were demolished, and a one third of the roof was blown off a house.

Massac County

Metropolis	17	1816CST			0	0			Thunderstorm Wind (G52)
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An off-duty meteorologist estimated gusts to 60 MPH on the east edge of Metropolis.

Franklin County

Sesser	17	1830CST			0	0	30K		Thunderstorm Wind
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A travel trailer was thrown 60 yards.

Jefferson County

Ina	17	1830CST			0	0	30K		Thunderstorm Wind
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A barn was destroyed near Ina on Route 154.

Hardin County

Karbers Ridge	17	1845CST			0	0	10K		Thunderstorm Wind
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A single trailer was blown over.

ILZ075-081-084

Jefferson - Franklin - Jackson

21	1400CST				0	0			Flood
31	2359CST								

Heavy rainfall from a series of March-like storm systems caused the Big Muddy River to overflow its banks. At Murphysboro, where flood stage is 16 feet, the river crested at 29.5 feet on the 26th. The river crested about 5 feet over flood stage at Plumfield. Moderate flooding occurred, with some houses just downstream of Bridge Street in Murphysboro threatened.

Alexander County

.5 E Thebes to 3 ENE Mc Clure	21	1835CST	7	400	0	0	150K		Tornado (F2)
		1847CST							

Union County

2.5 SE Reynoldsville to 3 E Reynoldsville	21	1847CST	1	200	0	0	20K		Tornado (F2)
		1850CST							

Top winds were estimated near 130 MPH. Damage was relatively light due to the track of the tornado over rural portions of those counties. A few sheds and barns were destroyed, and a house sustained moderate damage. A fairly large metal barn, about 100 feet

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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ILLINOIS, South

by 50 feet, was blown into a stand of trees, but remained fully intact in the upper reaches of the trees. Tree damage was complete along some wooded portions of the track. The tornado formed less than a half mile east of Thebes, and then tracked seven miles through the Shawnee National Forest. The damaged structures were near Thebes and Gale.

Union County

.5 NE Anna to .8 NE Anna	21	1913CST 1914CST	0.3	30	0	0	1K	Tornado (F0)
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A state police officer reported a brief touchdown near Anna. Damage was minimal, with just some fencing blown down.

Williamson County

Marion	21	1932CST			0	0		Hail (1.00)
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Jackson County

Countywide	21 22	2000CST 0300CST			0	0	100K	Flash Flood
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A series of supercell thunderstorms formed a procession over southwest Illinois throughout the evening hours of January 21. Rainfall amounts of 4 to 7 inches were quite common across Union and Jackson Counties between 6 P.M. and midnight. Anna reported 6.7 inches and Carbondale had 4.00 inches. Numerous roads were flooded. Damage to bridges and vehicles was reported.

Union County

Countywide	21 22	2000CST 0300CST			0	0	100K	Flash Flood
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Williamson County

Countywide	21 22	2000CST 0300CST			0	0	70K	Flash Flood
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In Jackson County, sheriff's deputies used a johnboat to help evacuate a family whose house became surrounded by water. In Williamson County, several roads were closed by high water, including Old Route 13 near Route 148. About a dozen cars were stranded in flood water in the Marion area and had to be pulled out. Many of them ignored barricades set up to divert traffic from flooded areas.

Franklin County

Countywide	21 22	2000CST 0200CST			0	0	100K	Flash Flood
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Heavy rain from a succession of severe thunderstorms caused flash flooding across the county. A van was swept off a roadway in West Frankfort. The occupants of the van made it to safety. Floodwaters reached the windows of a vehicle in West Frankfort. Streets were barricaded where high water was a threat. City workers were called out to assist West Frankfort residents whose basements filled with water. Although the initial flash flooding was primarily urban, rural road and bridge washouts became more of a problem on the morning of the 22nd.

Franklin County

Benton to West Frankfort	21	2007CST			0	0	50K	Thunderstorm Wind
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In the Benton area, a trailer was moved off its foundation, and a small shed was turned over. Near West Frankfort, a pole barn was heavily damaged.

Alexander County

Countywide	21 22	2130CST 0300CST			0	0	30K	Flash Flood
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Perry County

Countywide	21 22	2130CST 0300CST			0	0		Flash Flood
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Thunderstorms with very heavy rain repeatedly moved over the same counties during the evening. Rainfall amounts from 2 to 4 inches were common. Even though the axis of heaviest rain occurred from Cape Girardeau to Carbondale, areas on either side of this axis received enough rain to flood roadways and small streams.

Williamson County

Herrin	21	2158CST			0	0		Hail (1.00)
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Williamson County

Johnston City	21	2204CST			0	0		Hail (0.88)
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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		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ILLINOIS, South									
Franklin County									
West Frankfort	21	2207CST			0	0			Hail (0.75)
Saline County									
3.5 E Rudement	21	2213CST			0	0	3K		Thunderstorm Wind
			Trees were blown down.						
Hamilton County									
Countywide	21	2330CST			0	0			Flash Flood
	22	0300CST							
Jefferson County									
Countywide	21	2330CST			0	0			Flash Flood
	22	0300CST							
Wayne County									
Countywide	21	2330CST			0	0			Flash Flood
	22	0300CST							
	Thunderstorms produced very heavy rain during the evening of the 21st. The axis of heaviest rain was from around Carbondale and Marion southwest, however, even the Mt. Vernon area received 2 to 4 inches of rain. Flash flooding of roads and small streams resulted.								
Union County									
Anna	22	0040CST			0	0	20K		Thunderstorm Wind
	A large shed was destroyed by thunderstorm winds.								
Johnson County									
Simpson	22	0055CST			0	0	3K		Thunderstorm Wind (G50)
	A few trees and large limbs were blown down.								
Massac County									
3 N Metropolis	22	0100CST			0	1	40K		Thunderstorm Wind
	A mobile home was overturned, injuring an elderly female inside. The victim was trapped inside her home for about 20 minutes until fire officials cut an opening to reach her. She was treated and released from a local hospital with bruises and scratches. The trailer was tied down with anchors. In addition, a shed and home in the nearby area sustained damage. Numerous trees were down. The damage path appeared to cross Interstate 24 midway between Metropolis and Round Knob.								
Pope County									
1 S Rosebud	22	0108CST			0	0	10K		Thunderstorm Wind
	A roof was blown off a barn.								
Pope County									
4 SSW Golconda to 4 S Golconda	22	0115CST 0119CST	1.5	150	0	0	800K		Tornado (F2)
	A tornado with top winds estimated near 125 MPH struck a development of cabins and small summer homes in the Shawnee National Forest, at a place called Ropers Landing. The tornado damaged or destroyed about 30 of these structures and caused extensive tree damage. About six cabins were completely demolished. The homes were unhabited in the middle of winter. Ropers Landing is located at the base of a bluff along the Ohio River. The tornado lifted as it crossed the Ohio River.								
Saline County									
Countywide	22	0200CST 0600CST			0	0	80K		Urban/Sml Stream Fld
	Heavy rains from a succession of thunderstorms produced 2 to 3 inches of rain across much of Saline County, including 2.42 inches at the Harrisburg Sewer Plant. Rural county roads were heavily damaged by the runoff. Several roads had water over them for extended periods of time. A few road washouts and road closures were reported.								
ILZ087-090>094									
Gallatin - Pope - Hardin - Alexander - Pulaski - Massac									
	22	0600CST			0	0			Flood
	31	2359CST							
	Repeated heavy rainfall events from a succession of March-like storm systems caused the Ohio River to rise 5 to 10 feet above flood stage. At Shawneetown, where flood stage is 33 feet, the river crested at 43.5 feet on the 30th. At Brookport, where flood stage is 37 feet, the river crested at 45.9 feet on the 27th. Further downstream, the river crested 8 feet above flood stage at both Grand Chain and Cairo by early on the 28th. At these stages, flooding is minor, but approaches the moderate category.								

Storm Data and Unusual Weather Phenomena

January 1999

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

ILLINOIS, South

Considerable flooding of farmland occurs, and some county roads are closed. Riverside parks become inundated and are closed.

Alexander County

Countywide	22	0600CST 1030CST			0	0	Flash Flood
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Jackson County

Countywide	22	0600CST 1030CST			0	0	Flash Flood
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Union County

Countywide	22	0600CST 1030CST			0	0	Flash Flood
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Williamson County

Countywide	22	0600CST 1030CST			0	0	Flash Flood
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More heavy rain following the thunderstorms the previous evening caused a renewal of flooding problems. In Alexander County, Cairo High School was closed due to flooding problems.

ILZ083

White

22	1300CST				0	0	40K Flood
31	2359CST						

The Little Wabash River rose well above flood stage as a result of several heavy rainfall events due to March-like storm systems. At Carmi, where flood stage is 27 feet, the river crested at 34.8 feet on the 28th. Areas near Route 1 and Route 14 in Carmi were flooded. Businesses just downstream of those roads were threatened by floodwaters.

ILZ076

Wayne

22	1300CST				0	0	30K Flood
25	2200CST						

Heavy rains from a series of March-like storm systems caused the Skillet Fork River to rise well above flood stage. At Wayne City, where flood stage is 15 feet, the river crested at 21.1 feet at 6 P.M. on the 23rd.

Hamilton County

Countywide	31	0745CST 1030CST			0	0	Flash Flood
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Jefferson County

Countywide	31	0745CST 1030CST			0	0	Flash Flood
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Wayne County

Countywide	31	0745CST 1030CST			0	0	Flash Flood
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White County

Countywide	31	0745CST 1030CST			0	0	Flash Flood
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Heavy rain on already moist ground caused some runoff problems. Water was across several roads in these counties.

ILLINOIS, Southwest

ILZ058>060-064>065-098>102

Greene - Macoupin - Montgomery - Bond - Fayette - Calhoun - Jersey - Madison - St. Clair - Monroe

01	1800CST				0	0	Winter Storm
02	1800CST						

The new year started with a vengeance weather wise as a major winter storm hit the area. Snowfall across the area ranged from 6 to 14 inches. To make matters worse, about an inch of freezing rain and sleet fell during the middle of the storm, creating a rock hard layer of ice that was very difficult to move. Transportation across the area came to a stop for much of the holiday weekend. Very cold temperatures after the storm kept conditions icy into next week, keeping most area schools closed through the middle of the week.

ILZ069>070-074-079

Clinton - Marion - Washington - Randolph

01	1800CST				0	0	Winter Storm
02	1800CST						

The new year started with a vengeance weather wise as a major winter storm hit the area. A combination of snow, sleet and

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

ILLINOIS, Southwest

freezing rain left from about 4 inches of frozen precipitation on the ground across the area. Transportation across the area came to a stop for much of the holiday weekend. Very cold temperatures after the storm kept conditions icy into next week, keeping most area schools closed through the middle of the week.

ILZ095>097

Adams - Brown - Pike

01	2000CST				0	0		Heavy Snow
02	1800CST							

The new year came in with a vengeance weather wise as a major winter storm hit the area. Snowfall ranged from 10 to 16 inches across the area. It was somewhat fortunate that the storm hit at the beginning of the 3 day holiday weekend as travel was virtually impossible until Monday of next week. Most area schools remained closed through the middle of next week.

ILZ058>060-064>065-069>070-074-079-098>102

Greene - Macoupin - Montgomery - Bond - Fayette - Clinton - Marion - Washington - Randolph - Calhoun - Jersey - Madison - St. Clair - Monroe

13	0430CST 1530CST				0	0		Ice Storm
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An ice storm struck the area leaving at least a 1/4 inch coating of ice. Some trees and power lines were downed, but overall damage was relatively minor. The major problem was the ice covered roads that made travel difficult to impossible. Area schools were closed through the end of the week.

Washington County

Ashley

21	1515CST				0	0		Hail (0.75)
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Marion County

5 E Salem

21	1915CST				0	0		Hail (0.75)
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INDIANA, Central

INZ021-028>031-035>041-043>049-051>057-060-062>065-071>072

Carroll - Warren - Tippecanoe - Clinton - Howard - Fountain - Montgomery - Boone - Tipton - Hamilton - Madison - Delaware - Vermillion - Parke - Putnam - Hendricks - Marion - Hancock - Henry - Vigo - Clay - Owen - Morgan - Johnson - Shelby - Rush - Sullivan - Monroe - Brown - Bartholomew - Decatur - Jackson - Jennings

01	2000EST				0	0		Winter Storm
03	0700EST							

1999 started off with a bang across Central Indiana as a vigorous low pressure system pivoted from the southern plains into the Ohio Valley and Lower Great Lakes producing widespread heavy snow across all but the extreme southern extent of the Indianapolis CWA. Snowfall totals from New Year's evening to the morning of January 3 ranged from around 6 inches across the extreme southern areas of the CWA to 10 plus inches north of a line from Shelbyville to just north of Terre Haute. Highway travel was made even more difficult or impossible in places as the strong pressure gradient produced significant blowing and drifting of the snow. Also, the morning and afternoon of January 2 saw the snow change over to several hours of freezing rain and/or sleet before changing back to snow later that afternoon and evening. The freezing rain and/or sleet accumulated a significant ice layer on top of the snow. On the night of January 2 into the morning of January 3, in addition to the blowing and drifting snow, an additional light coat of snow fell on top of the ice layer. Many of the counties and/or cities across Central Indiana were under snow emergencies. Numerous motorists were stranded for days especially along Interstate 65 from Lebanon northward.

INZ045>046-053>054

Putnam - Hendricks - Owen - Morgan

17	2300EST				0	0		Flood
19	0700EST							

Flooding occurred along Mill Creek affecting mainly agricultural bottomland. Cataract crested at 13.74 feet (flood stage is 10 feet).

Montgomery County

Countywide

21	1500EST 2300EST				0	0	100K	Flood
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3 to 4 inches of rain fell across the county causing two basements to flood and collapse, while part of State Road 47 was washed away causing a car to be totalled. Several homes also received minor damage with leaky roofs.

INZ039>041-047-053>055-061>062-067>068

Hamilton - Madison - Delaware - Marion - Owen - Morgan - Johnson - Greene - Monroe - Knox - Daviess

21	2300EST				0	0		Flood
31	2359EST							

Heavy rain of up to 5 inches on the 21st and 22nd combined with rapid snow melt upstream causing widespread flooding along the White River from Muncie to East Mount Carmel. Crests ranged from around a foot above flood stage along extreme eastern sections of the White to around 10 feet above flood stage across extreme western sections. Flooding along the river in Hamilton and northern Marion counties were the highest seen since December 1990 and January 1991. Many homes and streets were flooded, and a few rescues took place. The following are various crests along the river: Muncie - 9.62 feet (flood stage is 9 feet);

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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INDIANA, Central

12.8 feet (flood stage is 10 feet); Noblesville - 20.42 feet (flood stage is 14 feet); Nora - 16.67 feet (flood stage is 11 feet); Ravenswood - 10.8 feet (flood stage is 6 feet); Centerton - 16.61 feet (flood stage is 12 feet); Spencer - 22.33 feet (flood stage is 14 feet); Worthington - 26.0 feet (flood stage is 18 feet); Ellisten - 27.62 feet (flood stage is 18 feet); Newberry - 23.66 feet (flood stage is 13 feet); Edwardsport - 24.6 feet (flood stage is 15 feet); Petersburg 24.89 feet (flood sage is 16 feet) and Hazleton - 25.10 feet (flood stage is 16 feet)

INZ045>046-053>054 Putnam - Hendricks - Owen - Morgan

21	2300EST								
25	2100EST								Flood

Rapid snow melt and 2 to 5 inches of rain on the 21st and 22nd led to flooding along MillCreek. The crest at Cataract was 19.42 feet (flood stage is 10 feet).

INZ041>042 Delaware - Randolph

21	2300EST								
25	0900EST								Flood

Rapid snow melt and heavy rain on the 21st and 22nd led to flooding along the Mississinewa River. Ridgeville crested at 13. 93 feet (flood stage is 10 feet).

Johnson County

Greenwood

21	2330EST						75K		Lightning
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Lightning struck a church a caused a fire which inflicted heavy damage on it.

INZ021-029-031 Carroll - Tippecanoe - Howard

22	0100EST								
25	2300EST								Flood

Rapid snowmelt and heavy rain on the 21st and 22nd caused widespread flooding along Wildcat Creek. 120 homes were evacuated on Kokomo's east side.

INZ030 Clinton

22	0100EST								
23	2100EST								Flood

3 feet of water in the Frankfort High School parking lot in addition to many flooded streets closed schools across the county. Local authorities said the high water was a result of run-off from the snow melt and 4-5 inches of rain that fell over the previous 24 hours.

INZ048>049-055>057 Hancock - Henry - Johnson - Shelby - Rush

22	0300EST								
24	1500EST								Flood

Rapid snow melt and 2 to 5 inches of rain on the 21st and 22nd led to flooding along the Big Blue River. The Crest at Carhage was 8.62 feet (flood stage is 7 feet) and 14.70 feet at Shelbyville (flood stage is 11 feet).

INZ037-044>045 Boone - Parke - Putnam

22	0300EST								
23	2300EST								Flood

Rapid snow melt and 2 to 5 inches of rain on the 21st and 22nd caused flooding along Big Racoon Creek. The crest at Fincastle was 14.26 feet (flood stage is 11 feet) and at Coxville was 14.36 feet (flood stage is 14 feet).

INZ045>046 Putnam - Hendricks

22	0300EST								
23	2300EST								Flood

Rapid snow melt and 2 to 5 inches of rain on the 21st and 22nd caused flooding along Big Walnut Creek. The crest at Reelsville was 16.60 feet (flood stage is 12 feet).

INZ060 Sullivan

22	0300EST								
25	0700EST								Flood

Rapid snow melt and 2 to 5 inches of rain on the 21st and 22nd led to flooding along Busseron Creek. The crest was at 17.02 feet (flood stage is 16 feet).

INZ045-052-061 Putnam - Clay - Greene

22	0300EST								
24	1200EST								Flood

Rapid snow melt and 2 to 5 inches of rain on the 21st and 22nd led to flooding along the Eel River. Bowling Green crested at 20.79 feet (flood stage is 17 feet).

Storm Data and Unusual Weather Phenomena

January 1999

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

INDIANA, Central

INZ039>040-047-049 Hamilton - Madison - Marion - Henry

22	0300EST				0	0	
25	2100EST						Flood

Rapid snow melt along with 2 to 5 inches of rain on the 21st and 22nd led to flooding along Fall Creek. The crest at Fortville was 7.7 feet and at Millersville 10.96 feet (flood stage is 7 feet).

INZ071>072 Jackson - Jennings

22	0300EST				0	0	
27	2100EST						Flood

Rapid snow melt and heavy rain on the 21st and 22nd caused flooding along the Muscatatuck River. The crest at Wheeler Hollow was 21.9 feet (flood stage is 16 feet).

INZ021-029 Carroll - Tippecanoe

22	0300EST				0	0	
26	2300EST						Flood

Rapid snow melt and heavy rain on the 21st and 22nd led to flooding along the Tippecanoe River. The crest at Delphi was 9.68 feet (flood stage is 8 feet).

INZ040 Madison

22	0300EST				0	0	
24	0700EST						Flood

Rapid snow melt and heavy rain on the 21st and 22nd led to flooding along Pipe Creek. Frankton crested at 12.97 feet (flood stage is 12 feet).

INZ048-055>056 Hancock - Johnson - Shelby

22	0300EST				0	0	
25	1100EST						Flood

Rapid snow melt and heavy rain on the 21st and 22nd led to flooding along Sugar Creek. Edinburg crested at 14.6 feet (flood stage is 9 feet).

INZ030-036>037-044 Clinton - Montgomery - Boone - Parke

22	0300EST				0	0	
23	0900EST						Flood

Rapid snow melt and heavy rain on the 21st and 22nd led to flooding along Sugar Creek. Crawfordsville crested at 10.93 feet (flood stage is 8 feet).

INZ054 Morgan

22	0300EST				0	0	
23	2100EST						Flood

Rapid snow melt and 2 to 5 inches of rain on the 21st and 22nd caused flooding along White Lick Creek. Mooresville crested at 20.33 feet (flood stage is 15 feet).

Greene County

Newberry	22	0320EST 0322EST			0	0	20K Thunderstorm Wind (G60)
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Martin County

Loogootee	22	0400EST 0402EST			0	0	20K Thunderstorm Wind (G60)
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Lawrence County

Springville	22	0500EST 0502EST			0	0	10K Thunderstorm Wind (G60)
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Bartholomew County

Countywide to Bethany	22	0600EST 0630EST			0	0	Thunderstorm Wind (G50)
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Jackson County

Brownstown	22	0600EST 0602EST			0	0	Thunderstorm Wind (G50)
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Estimated 70 mph thunderstorm winds ripped the roofs off of an agricultural building on State Road 57 just west of Newberry and off the Loogootee West Elementary school. Also, thunderstorm winds picked up a massive 100 year old pine tree and threw it through a mobile home. No injuries were reported, although tree and roof debris was extensive.

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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INDIANA, Central

INZ028>029-035-043>044-051-060-067 **Warren - Tippecanoe - Fountain - Vermillion - Parke - Vigo - Sullivan - Knox**

22	0700EST				0	0			Flood
31	2359EST								

Rapid snow melt and heavy rain on the 21st and 22nd from 2 to 5 inches caused widespread flooding all along the Wabash River from Lafayette to East Mount Carmel. Flooding was the highest since April 1994 as crests were generally around 10 feet above flood stage. As flooding was nearing an end, more rain on the 31st caused the flooding to continue into February. The following are crests for various locations along the Wabash: Lafayette - 21.83 feet (flood stage is 11 feet); Covington - 26.18 feet (flood stage is 16 feet); Montezuma - 26.30 feet (flood stage is 14 feet); Clinton - 25.75 feet (flood stage is 18 feet); Terre Haute - 22.42 feet (flood stage is 14 feet); Riverton - 21.89 feet (flood stage is 15 feet); Vincennes - 24.47 feet (flood stage is 17.5 feet)

INZ037-047

Boone - Marion

22	1100EST				0	0			Flood
23	2300EST								

Rapid snow melt and heavy rain caused flooding along Eagle Creek. Zionsville crested at 10.7 feet (flood stage is 7 feet), while Speedway crested at 11.37 feet (flood stage is 9 feet).

INZ064-069>071

Bartholomew - Martin - Lawrence - Jackson

22	1300EST				0	0			Flood
30	0700EST								

A combination of snowmelt and a heavy rain storm late on the 21st and 22nd caused widespread flood along the East Fork of the White River. Travel was very difficult in Jackson county as bridge construction had closed U.S. Highway 50, the only east-west road in the county that the East Fork does not flood. The East Fork flooded all local roads used as a detour for Highway 50. Columbus crested at 12.64 feet (flood stage is 9 feet), Seymour at 17.47 feet (flood stage is 12 feet), Bedford at 28.15 feet (flood stage is 20 feet), Williams at 10.9 feet (flood stage is 8 feet) and Shoals at 21.16 feet (flood stage is 20 feet).

INDIANA, Northeast

INZ003>009-012>018-020-022>027-032>034 **La Porte - St. Joseph - Elkhart - Lagrange - Steuben - Noble - De Kalb - Starke - Pulaski - Marshall - Fulton - Kosciusko - Whitley - Allen - White - Cass - Miami - Wabash - Huntington - Wells - Adams - Grant - Blackford - Jay**

02	0000EST				0	0			Heavy Snow
03	0000EST								

Synoptic and mesoscale conditions on the 1st of January 1999...

The northern hemispheric longwave pattern began the year in transition as a high zonal index hinted at major changes to the longwave pattern over the New Year's Day weekend. Two potent shortwaves...one associated with the northern branch of the jet stream and the other associated with the southern branch...were progged to phase over the central plains on the 2nd of January. Lee troughing developed during the day on the 1st with the eventual surface low developing across the Texas panhandle that afternoon. Tremendous moisture was advected off the gulf of Mexico during the afternoon as the low deepened. Moderate to heavy snow began to break out across the county warning area by late evening.

On the 2nd of January...intense low pressure was located across northeast Arkansas and slowly moved northeastward into northwest Indiana by late evening. Snowfall rates of 1 to 2 inches per hour were common throughout the day with even heavier snow noted as the system wrapped up and closed off over northern Illinois that evening. Nearly all the snowfall across the county warning area was due to the tremendous warm advection that occurred on the nose of a 60 knot low level jet overtop the shallow cold dome that was in place. Precipitation in areas along and east of a Lafayette Indiana to Defiance Ohio line eventually changed to freezing rain and sleet as 850 millibar temperatures warmed to above freezing. Snowfall amounts were the highest observed since the Blizzard of 1978 in many areas. Several cooperative observer stations reported all-time record 24 hour snowfalls as well. Storm totals ranged from two feet across northwest Indiana and southwest lower Michigan...12 to 18 inches across north central Indiana into south central Michigan and northwest Ohio... 6 to 8 inches across east central Indiana into western Ohio, where significant sleet and freezing rain later fell on top of the heavy snow.

Impacts on the people across the area were significant. Many rural roads remained impassable for several days. Some schools were closed for up to two weeks after the snowstorm. Many buildings... especially manufacturing warehouses and large retail stores in areas that received the heavier snow... reported collapsed roofs due to the weight of the snow. Damage estimates were not known at the time of this report.

INZ020-025-027-032 **White - Huntington - Adams - Grant**

22	2000EST				2	0	2.5K		Flood
31	1200EST								

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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INDIANA, Northeast

During the evening of the 22nd an automobile containing a mother and her 9 year-old son was swept into Grassy Fork Creek in southwestern Grant County. They were not able to escape from the car and drowned.

On the 22nd ice on the Tippecanoe River took skirting from mobile homes in low-lying areas. On the 23rd a man (age unknown) was missing and presumed dead possibly as a result of flooding in Adams County. On the morning of the 24th, an ice jam which swept up a boat, jet ski, and several trees, formed at a bridge on the Tippecanoe River. Basements were flooded in Warren Indiana as a result of flooding on the Salamonie River. F27VE, M9VE

INDIANA, Northwest

**INZ001>002-
010>011-019**

Lake - Porter - Newton - Jasper - Benton

01	1900CST		0	0	Heavy Snow
02	2300CST				

A powerful winter storm developed over the Texas Panhandle and moved northeast through the Missouri Bootheal, and then north northeast through eastern Illinois, southern Lake Michigan and into Michigan. Snow began accumulating in northwest Indiana during the evening hours of New Year's Day and continued through the night and through the next day. Snow was heaviest during the day Saturday January 2. Snow tapered off to flurries by later that evening.

Snowfall totals included 11.0 inches at Monticello, 15.0 inches at Remington and 12.0 inches at Valpariaso.

INDIANA, South Central

Crawford County

Countywide	22	1900EST 2300EST		0	0	Flash Flood
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Dubois County

Countywide	22	1900EST 2300EST		0	1	Flash Flood
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Floyd County

Countywide	22	1900EST 2300EST		0	0	Flash Flood
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Harrison County

Countywide	22	1900EST 2300EST		0	0	Flash Flood
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Orange County

Countywide	22	1900EST 2300EST		0	0	Flash Flood
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Perry County

Countywide	22	1900EST 2300EST		0	0	Flash Flood
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Washington County

Countywide	22	1900EST 2300EST		0	0	Flash Flood
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Clark County

Countywide	22 23	2000EST 0000EST		0	0	Flash Flood
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Jefferson County

Countywide	22 23	2000EST 0000EST		0	0	Flash Flood
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Scott County

Countywide	22 23	2000EST 0000EST		0	0	Flash Flood
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A large area of rain moved across South Central Indiana during the evening hours. This rain fell on top of already saturated ground from previous rains. The result was numerous roads becoming covered with water. Some state highways were closed due to the high water. Rescue attempts were made in Dubois and Washington counties, with one person in Dubois county transported to an area hospital.

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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INDIANA, Southeast

INZ050-058>059-066-073>074 **Wayne - Fayette - Union - Franklin - Ripley - Dearborn**

	01	2200EST			0	0			Winter Storm
	02	2200EST							

A major winter storm affected East-Central and Southeastern Indiana. Snow fell at the rate greater than 1 inch an hour at times leaving accumulations ranging from 4 to 8 inches across the area with some local 10 inch amounts around Richmond. The snow had changed to a mixture of sleet and freezing rain by the afternoon hours with some ice accumulations occurring.

INZ050-058>059-066-074 **Wayne - Fayette - Union - Franklin - Dearborn**

	07	2200EST			0	0			Winter Storm
	09	0600EST							

A weak low pressure system brought wintry precipitation to southeast and east-central Indiana. The precipitation began as a period of snow with accumulations of 2 to 3 inches. After a brief break, freezing rain began with significant ice accumulations occurring.

INZ050-058>059-066 **Wayne - Fayette - Union - Franklin**

	13	0900EST			0	0			Winter Storm
	14	0700EST							

A low pressure system brought abundant moisture into the Ohio Valley. At the same time, a large arctic high pressure system forced cold air in the low levels southward. What began as rain changed to freezing rain, with from one-quarter to one-half inch of ice accumulation occurring. The freezing rain eventually mixed with sleet with up to one-half inch of accumulation occurring.

Wayne County

	Countywide	21	2040EST 2045EST		0	0			Hail (1.75)
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Fayette County

	North Portion	21	2200EST		0	0			Flood
		22	0100EST						

Heavy rainfall caused numerous roads to be damaged or washed out.

Union County

	North Portion	21	2200EST		0	0			Flood
		22	0100EST						

Heavy rain caused numerous roads to be flooded.

Wayne County

	Countywide	22	0038EST 0340EST		0	0			Flood
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Heavy rainfall estimated to be from 3 to 5 inches fell in only a few hours on already saturated ground. Numerous roads were closed and a few were washed out by flood waters. Evacuations of 15 people occurred.

INZ058>059

Fayette - Union

	22	0300EST			2	0			Flood
	23	2000EST							

The West Fork of the Whitewater River at Alpine rose out of its banks reaching a crest of 14.6 feet. Flood stage was 12.0 feet. The flooding was confined to low lying agricultural areas in the southern part of the county.

The East Fork of the Whitewater River also flooded due to heavy rainfall that fell to the north. Two people were killed when they drove their vehicle across a flooded roadway.

F28VE, F2VE

INDIANA, Southwest

INZ081>082-085>088 **Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

	01	1900CST			0	0			Ice Storm
	02	0600CST							

A period of freezing rain coated surfaces with a quarter to a half inch of ice. Roads became icy and dangerous. A few tree limbs were down.

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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INDIANA, Southwest

INZ081>082-085>088 Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer

08	0500CST				0	0			Ice Storm
	1400CST								

Freezing rain coated objects with about a quarter of an inch of ice. Roads were ice or slush covered, but no downed tree limbs or power lines were reported.

Spencer County

Rockport	21	0301CST			0	0			Hail (0.75)
									Dime size hail covered the ground near Rockport.

Pike County

Stendal	22	0300CST			0	0	5K		Thunderstorm Wind
									A shed was blown apart.

Vanderburgh County

Countywide	22	0330CST			0	0			Flash Flood
		0530CST							

Gibson County

Countywide	22	1700CST			0	0			Flash Flood
		2300CST							

Pike County

Countywide	22	1700CST			0	0			Flash Flood
		2300CST							

Posey County

Countywide	22	1700CST			0	0			Flash Flood
		2300CST							

Spencer County

Countywide	22	1700CST			0	0			Flash Flood
	23	0200CST							

Vanderburgh County

Countywide	22	1700CST			0	0			Flash Flood
		2300CST							

Warrick County

Countywide	22	1700CST			0	0			Flash Flood
		2300CST							

Thunderstorms with heavy rain persisted over southwest Indiana for much of the day, causing small streams and creeks to begin flooding late in the day. Three to five inches of rain were common in a 12-hour period. Poseyville reported 3.59 inches, New Harmony measured 4.74 inches, and Evansville 2.53 inches. The Indiana Department of Transportation reported barricading of flooded roads in Evansville.

INZ085-087>088

Posey - Warrick - Spencer

23	0200CST				0	0			Flood
31	2359CST								

Very heavy rains from a succession of March-like storm system caused the Ohio River to rise above flood stage. At Newburgh Lock and Dam, the river crested at 42.6 feet on the 26th. Flood stage there is 38 feet. At Mt. Vernon, where flood stage is 35 feet, the crest occurred on the 30th at 39.9 feet. At these stages, flooding is mainly confined to farmland. Some roads west and southwest of Mount Vernon were threatened.

INZ081-085

Gibson - Posey

23	1300CST				0	0			Flood
31	2359CST								

Repeated heavy rainfall events from a series of March-like storm systems caused the Wabash River to rise above flood stage. At New Harmony, where flood stage is 15 feet, the river crested at 20.2 feet on the 31st. At this stage, New Harmony State Park floods, and northern parts of New Harmony are threatened. Sandbagging becomes necessary.

INZ081

Gibson

29	1400CST				0	0			Flood
31	2359CST								

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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INDIANA, Southwest

Heavy rains from thunderstorms that occurred with a series of March-like storm systems drove the Patoka River above flood stage. The river did not crest at Princeton until early February.

IOWA, Central

**IAZ004>007-
015>017-023>028-
033>039-045>050-
058>062-070>075-
082>086-096>097**

Emmet - Kossuth - Winnebago - Worth - Palo Alto - Hancock - Cerro Gordo - Pocahontas - Humboldt - Wright - Franklin - Butler - Bremer - Sac - Calhoun - Webster - Hamilton - Hardin - Grundy - Black Hawk - Carroll - Greene - Boone - Story - Marshall - Tama - Guthrie - Dallas - Polk - Jasper - Poweshiek - Cass - Adair - Madison - Warren - Marion - Mahaska - Union - Clarke - Lucas - Monroe - Wapello - Appanoose - Davis

01	1500CST				2	0	440K		Winter Storm
02	1400CST								

The seasons first winter storm struck Iowa during the New Years Weekend. A complex weather situation unfolded during the day on the first. The upper level system was broken in two pieces. The southern branch swept to the south of Iowa and produced the actual surface low pressure system. Another significant upper level system moved southeast out of Canada. The two upper air features merged southeast of Iowa, however a binary interaction took place resulting in the southern system being lifted north into the central U.S. A large area of snow developed over Iowa. The heaviest snow fell over the east third of the state with the west edge of this heavier band just brushing the east part of the Des Moines County Warning Area. Snowfall amounts were generally in the six to ten inch range over most of county warning area. A small area of a foot or more of snow was reported in the Waterloo area, extending west toward Eldora. Actually, Mason City had the highest snowfall total with 13.9 inches. Eldora was close behind with a storm total of 13.5 inches. Some of the heavier totals included 12+ inches in the Waterloo area, a band of eight to twelve inches from northwest of Fort Dodge, northeast to the Mason City area. Mason City reported 12 inches from the storm as did Pocahontas. Boone also reported in excess of 8 inches of new snow, with both Story City and Steamboat Rock coming in with 10 inches. Travel was made difficult by the snow as the winds increased on the 2nd with the deepening low to the east of Iowa. Travel was not recommended across the east half of the state by mid day on the 2nd. Northerly winds of 20 to 35 MPH were common, with occasional gusts to over 40 MPH. Visibility was reduced to under one quarter of a mile at times with snow drifts of three to five feet deep reported in some areas. Conditions improved slowly during the evening of the 2nd as the snow tapered off, though considerable drifting continued into the 3rd. Even though there was some improvement in conditions, many roads were blocked by the snow. Church services were cancelled in many areas of the state, which is quite unusual for Iowa. As temperatures fell behind the storm, the winds continued to blow. Wind chill became a problem with most of the state falling to the -30 to 50 degree range. Two deaths occurred due to the storm in the Des Moines County Warning Area. A 95 year old male died in Des Moines when he slipped outside of his house, was unable to get up, and froze to death. In Beaman, in Grundy County, an 87 year old male died when his vehicle became stranded and he froze to death seeking help. M87OU, M95OU

**IAZ004>007-
015>017-023>026-
035>037**

Emmet - Kossuth - Winnebago - Worth - Palo Alto - Hancock - Cerro Gordo - Pocahontas - Humboldt - Wright - Franklin - Webster - Hamilton - Hardin

17	2300CST				0	0	70K		Blizzard
18	0900CST								

Low pressure became organized as it moved northeast of Iowa during the late night of the 17th and early morning of the 18th. By sunrise on the 18th, the low had intensified to a 990 mb low pressure over central Wisconsin. Iowa remained in relatively warm Pacific air through most of the storm's life, however late on the night of the 17th, the low tapped colder air to the north and a band of snow developed in the strengthening gradient. The wrap around snow only amounted to an inch or two, but this snow was whipped by very strong winds. Winds over all of the state were in the 30 to 40 MPH range with occasional gusts to between 50 and 55 MPH. The combination of the strong winds and new snowfall caused blizzard conditions to develop over north central Iowa. Visibility was reduced to near zero for about 6 hours in this area. Southwest of it, visibility was frequently below one half mile, and occasionally to near zero. Interstate 35 was closed due to icing and zero visibility from U.S. Highway 20 north to the Minnesota border. It wasn't until noon that the D.O.T. reopened the Interstate. Numerous multi-car accidents were reported with both U.S. Highways 65 and 20 blocked by cars in Hardin County. Accidents were numerous across a large part of the north two thirds of Iowa and the State D.O.T. recommended no travel into these areas. South of the blizzard area winds were not quite as strong, but did blow at 25 to 35 MPH with occasional gusts over 40 MPH. Due to low visibilities and drifting of snow, numerous school districts over the north half of Iowa were closed Monday morning.

IOWA, East Central and Southeast

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

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

01	0517CST				2	0			Winter Storm
03	0400CST								

A strong winter storm exiting the Southern Rockies pumped warm tropical air from the Gulf of Mexico over cold Arctic air already in place over the upper midwest. As the storm moved toward the Great Lakes it produced heavy snow, strong winds, and a bitterly

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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IOWA, East Central and Southeast

cold start to the New Year across Eastern Iowa and Northwest Illinois. With snowfall amounts ranging from 12 to 15 inches across Southeast Iowa to 9 to 12 inches over East Central Iowa roads and highways quickly became snowpacked causing several businesses to close over the weekend. Most school students enjoyed a longer holiday break as schools were closed several days to allow snow to be removed from streets, sidewalks, and parking lots. Two fatalities were reported. In Burlington a 40 year old man died of a heart attack after shoveling snow, and in Davenport an 11 year old Oklahoma boy was killed when the car in which he was riding was struck by a semi-truck. Over all...most counties reported few accidents as motorists heeded earlier advisories that warned of deteriorating travel conditions. M40PH, M11OT

IAZ052-064>068-078-088>089-099

Linn - Johnson - Cedar - Clinton - Muscatine - Scott - Louisa - Henry - Des Moines - Lee

18	0405CST								
	1600CST			0	0				Winter Storm

A vigorous storm system over Wisconsin produced very strong winds across Eastern Iowa and Northwest Illinois. Numerous schools and businesses closed early due to the storm, and many accidents were reported as gusty west winds around 45 mph, coupled with blowing snow produced near blizzard conditions. Widespread blowing and drifting was reported along with snow and ice packed roads and visibilities less than one mile. In one location along Interstate-380 and Highway 30 near Cedar Rapids an estimated 40 cars slid into ditches between 7 AM and 9 AM. Other accidents also blocked traffic on U.S. 61 near Mediapolis and south of Burlington.

IOWA, Northeast

IAZ008>011-018>019-029>030

Mitchell - Howard - Winneshiek - Allamakee - Floyd - Chickasaw - Fayette - Clayton

01	2200CST								
	03 0700CST			0	0				Winter Storm

Snow accumulations ranging from 8 to nearly 15 inches were common as the first winter storm of the season affected northeast Iowa. Whiteout conditions occurred and many roads became impassable due to 3 to 4 foot drifts. The highest snowfall total of 14.8 inches was reported by a cooperative observer at Strawberry Point (Clayton County).

IOWA, Northwest

IAZ001>003-012>014-020>022-031>032

Lyon - Osceola - Dickinson - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida

01	0900CST								
	02 2200CST			0	0				Winter Storm

A major winter storm brought 5 to 8 inches of snow, with 20 to 40 mph winds which caused blowing and drifting snow and dangerous wind chills. Visibilities were reduced to less than 1/2 mile at times. Actual temperatures dropped to below zero with wind chills as cold as 40 below zero. Travel became difficult and hazardous, and was greatly curtailed. Otherwise major problems were few on the holiday weekend, as most people heeded warnings and did not travel during the storm.

IOWA, Southwest

IAZ043-055>056-069-079>080-090>091

Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page

02	1800CST								
	04 1200CST			0	0				Extreme Windchill

A prolonged Arctic surge of cold air plunged south across western Iowa on January 2 and continued through midday January 4. North winds of 25 to 40 mph accompanied the surge of cold air and when combined with air temperatures which fell below zero, produced wind chill temperatures of 35 to 50 below zero much of the period. In addition to the extremely cold wind chills, a 24 to 48 hour snow event preceded and accompanied the Arctic surge dropping 2 to as much as 7 inches of new snow on much of the area. When combined with the strong winds, blowing and drifting of the freshly fallen snow occasionally reduced visibilities below 1/2 mile, mainly from the evening of 1/2/99 through late afternoon on 1/3/99. The drifting snow also closed some east to west roads, mainly in rural areas.

KANSAS, East

KSZ039>040-054>056-058>059

Shawnee - Douglas - Lyon - Osage - Franklin - Coffey - Anderson

01	0600CST								
	02 0230CST			0	2	2K			Winter Storm

A winter storm spread a mixture of sleet snow and freezing drizzle across much of east central Kansas from the morning of the 1st to the early morning hours of the 2nd. Slick conditions developed on roadways and a number of accidents were reported. Several minor injuries were reported. One accident occurred 7 miles southwest of Lawrence when a patrol car slid off a road injuring a deputy. A three vehicle accident occurred on Interstate 70 in Topeka and resulted in a minor injury to a person. Wind and ice took down a power line in Emporia and resulted in a power outage to about 1100 customers for several hours.

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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KANSAS, East

KSZ008>012-020>024-026-034>040-054>056-058>059 **Republic - Washington - Marshall - Nemaha - Brown - Cloud - Clay - Riley - Pottawatomie - Jackson - Jefferson - Ottawa - Dickinson - Geary - Morris - Wabaunsee - Shawnee - Douglas - Lyon - Osage - Franklin - Coffey - Anderson**

02	0600CST								
03	1800CST				0	0			Extreme Windchill

Strong winds and temperatures in the single digits and teens combined to produce wind chills as cold as 34 degrees below zero in some locations.

KANSAS, Extreme Southeast

NONE REPORTED.

KANSAS, North Central

KSZ005>007-017>019 **Phillips - Smith - Jewell - Rooks - Osborne - Mitchell**

01	0800CST								
03	1400CST				0	0	0	0	Winter Storm

The start of 1999 was ushered in with light snow, ice and very cold weather across north-central Kansas. On New Years Day, light freezing drizzle began late in the morning and continued all day. By evening, a thin layer of ice was noted on roads, trees and power lines. Some brief power outages were reported. During the evening, some areas received 1 to 2 inches of snow which only made travel more treacherous. On the 2nd, strong north winds gusting to 30 mph forced temperatures lower and wind chill readings well below zero. While air temperatures dropped to 5 below zero the morning of the 3rd, chill factors ranged from 25 to 40 below zero through that afternoon.

KSZ006>007-018>019 **Smith - Jewell - Osborne - Mitchell**

21	2100CST								
22	1200CST				0	0	0	0	Winter Storm

An icy mixture of freezing drizzle, freezing rain, and some sleet deposited a layer of ice on trees, power lines, and roads. Numerous power outages were reported due to fallen power lines. Treated roads were passable, but many secondary and untreated roads were very slick and ice covered. The icy mixture changed to snow before ending, dropping up to two inches in some places.

KSZ005>007-017>019 **Phillips - Smith - Jewell - Rooks - Osborne - Mitchell**

30	0400CST								
31	0000CST				0	0	0	0	Winter Storm

Light freezing rain early in the morning on the 30th coated trees and power lines with a thin layer of ice causing sporadic power loss in the area. The light freezing rain changed to rain during the day before returning to freezing rain as temperatures dropped to around 30 degrees in the evening. Some areas reported one-quarter inch ice accumulations on trees, cars, and power poles. Treated primary roads remained wet, but untreated secondary roads were slick and ice covered.

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**

02	1200CST								
03	1800CST				0	0			Extreme Windchill

A strong Arctic Airmass combined with brisk winds resulted in Wind Chill Readings below -35 degrees across all of NW Kansas from 01/02 to 01/03.

KANSAS, Southeast

KSZ070>072-094>096-098 **Greenwood - Woodson - Allen - Elk - Wilson - Neosho - Chautauqua**

01	0900CST 2359CST								
					0	0	1.9M		Winter Storm

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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KANSAS, Southeast

A winter storm crossing the Southern Plains produced widespread sleet and freezing rain across Southeast Kansas resulting in significant ice accumulations of 1/2-1 inch over most of the region. Damage to trees and power lines was extensive, resulting in widespread power outages and making travel extremely dangerous.

KANSAS, Southwest

KSZ045-061>065-074>080-084>088

Ness - Hamilton - Kearny - Finney - Hodgeman - Pawnee - Stanton - Grant - Haskell - Gray - Ford - Edwards - Kiowa - Morton - Stevens - Seward - Meade - Clark

28	1800CST								
29	0400CST								Heavy Snow

Heavy snow accumulated from 4 to 6 inches across most of the area with 8 to 12 inches reported from Hugoton...through Sublette...Cimarron...Kalvesta and Dodge City. Snowfall rates were 1 to 1 1/2 inches per hour where the heavier snow fell.

KENTUCKY, Central

KYZ023>024-027>031-036>037-041-045-047-056>057-062>063-063

Hancock - Breckinridge - Grayson - Hardin - Bullitt - Jefferson - Oldham - Scott - Harrison - Fayette - Nelson - Mercer - Garrard - Madison - Edmonson - Hart

07	2100EST								
08	1400EST								Winter Storm

A mixture of snow, sleet, and freezing rain broke out across central Kentucky late on January 7 and then changed mainly to a mix of freezing rain and sleet during the morning of January 8. The accumulation of ice on roads caused many automobile accidents. At one time, over 100 tractor trailer rigs were stranded on the Western Kentucky Parkway between Caneyville and Leitchfield in Grayson county due to the slick roads. In Hart county a state of emergency was declared that barred all travel on area roads, after 80 to 100 vehicles became stranded. Ice also brought down trees and power lines in some areas. Many areas received a quarter of an inch (0.25) or more accumulation of ice.

Edmonson County

Brownsville

17	2045EST								
	Multiple trees down								Thunderstorm Wind (G50)

Butler County

Morgantown

17	2055EST								
	Several trees down across county								Thunderstorm Wind (G50)

Logan County

Russellville

17	2055EST					8K			
	Roof damage to businesses, mobile homes overturned, and power lines and trees down								Thunderstorm Wind

Ohio County

Hartford

17	2110EST								
	Large trees down across county								Thunderstorm Wind (G50)

Simpson County

Franklin

17	2115EST					3K			
	Porches blown off homes, water tower barn blown down, several trees and power lines down								Thunderstorm Wind

Warren County

Bowling Green

17	2125EST					60K			
	55 homes, 12 barns damaged, trees down, some trees on cars, numerous mobile homes blown over								Thunderstorm Wind

Grayson County

Leitchfield

17	2150EST					8K			
	Mobile homes damaged								Thunderstorm Wind (G54)

Hancock County

Hawesville

17	2159EST					22K			
	Four trees down on a house, mobile home blown off foundation								Thunderstorm Wind

Barren County

Countywide

17	2200EST				0	1	10K		
	Barn destroyed, power lines down, utility poles snapped								Thunderstorm Wind

Hardin County

Countywide

17	2200EST				0	0	20K		
	Trailer destroyed, trees and power lines down								Thunderstorm Wind

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>KENTUCKY, Central</u>									
Hart County									
Horse Cave	17	2200EST			0	1	110K		Thunderstorm Wind
							5 mobile homes destroyed, 20 barns destroyed, 31 homes damaged, roofs blown off warehouses, trees and power lines down		
Adair County									
Columbia	17	2215EST			0	0			Thunderstorm Wind (G50)
			Several trees down across county						
Green County									
Greensburg	17	2215EST			0	0	5K		Thunderstorm Wind
			Trees down. Tree fell on a car in eastern section of county						
Metcalfe County									
Countywide	17	2215EST			0	0	10K		Thunderstorm Wind
			Several barns damaged						
Washington County									
Countywide	17	2232EST			0	0	15K		Thunderstorm Wind
			Trailer split in two						
Mercer County									
Countywide	17	2235EST			0	0	5K		Thunderstorm Wind
			Roof blown off building, trees down						
Taylor County									
Campbellsville	17	2235EST			0	0	8K		Thunderstorm Wind
			Mobile home blown over, several trees down across county						
Cumberland County									
Burkesville	17	2245EST			0	0			Thunderstorm Wind (G50)
			Trees and power lines down across southeast part of county						
Clinton County									
Albany	17	2250EST			0	0			Thunderstorm Wind (G50)
			Trees down across highway 127						
Casey County									
Liberty	17	2258EST			0	0	25K		Thunderstorm Wind
			Trailer destroyed, tree down on home, power lines down						
Clark County									
Countywide	17	2315EST			0	0	5K		Thunderstorm Wind
			Storage building destroyed, window blown out of pharmacy, trees down						
Breckinridge County									
Countywide	22	1900EST 2300EST			0	0			Flash Flood
Butler County									
Countywide	22	1900EST 2300EST			0	0			Flash Flood
Edmonson County									
Countywide	22	1900EST 2300EST			0	0			Flash Flood
Grayson County									
Countywide	22	1900EST 2300EST			0	0			Flash Flood
Hancock County									
Countywide	22	1900EST 2300EST			0	0			Flash Flood
Logan County									
Countywide	22	1900EST 2300EST			0	0			Flash Flood

Storm Data and Unusual Weather Phenomena

January 1999

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

KENTUCKY, Central

Meade County

Countywide	22	1900EST 2300EST			0	0			Flash Flood
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Ohio County

Countywide	22	1900EST 2300EST			0	0			Flash Flood
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Simpson County

Countywide	22	1900EST 2300EST			0	0			Flash Flood
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Warren County

Countywide	22	1900EST 2300EST			0	0			Flash Flood
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A large area of moderate to heavy rain moved across the area during the evening hours. This rain fell on top of already saturated ground from previous rainfall. The result was that many roads became flooded and some were impassable. Some small creeks swelled out of their banks and flooded farmland.

KENTUCKY, Eastern

KYZ044-050>052-058>060-104-106>109-119 **Fleming - Montgomery - Bath - Rowan - Estill - Powell - Menifee - Elliott - Morgan - Johnson - Wolfe - Magoffin - Martin**

07	2200EST				0	0	7K	0	Ice Storm
08	1000EST								

Cold air entrenched at the surface with a warm front moving up from the Tennessee Valley set up an ice storm over portions of Eastern Kentucky beginning the evening of January 7th, 1999 and lasting until late morning on the 8th. Reports from the area indicated that over one quarter of an inch of ice accumulated. This led to limbs and branches falling throughout the warned area which covered locations mainly along and north of the Mountain Parkway. Power lines were also reported down in Menifee, Rowan and Montgomery County.

Powell County

Clay City	09	0130EST 0230EST			0	0	0	0	Flash Flood
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Water blocked roads in and around the Clay City area.

Clay County

Central Portion	09	0700EST 1030EST			0	0	0	0	Flash Flood
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Various roads flooded around the central portion of the county.

Knox County

Central Portion	09	0700EST 1100EST			0	0	0	0	Flash Flood
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Several roads flooded in central part of county.

Whitley County

Rockholds	09	0700EST 1100EST			0	0	0	0	Flash Flood
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Route 26 flooded and impassible.

KYZ114

Owsley

09	1800EST				0	0	0	0	Flood
10	0800EST								

Minor river flooding along South Fork of Kentucky River at Booneville.

KYZ059

Powell

10	1200EST 1400EST				0	0	0	0	Flood
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Low lying river flooding occurred along the Red River near Clay City. The water had covered portions of Pompeii Road.

Wayne County

Parnell	17	2225EST			0	0	10K	0	Thunderstorm Wind
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Trailer blown over.

Wayne County

Monticello	17	2229EST			0	0	3K	0	Thunderstorm Wind
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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		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
KENTUCKY, Eastern									
			Trailer roof blown off.						
Pulaski County									
Somerset	17	2310EST			0	0	1M	0	Thunderstorm Wind
	Thunderstorm winds damaged many homes throughout the southern and central portion of the county. Especially hard hit was the Parkers Mill area where 50 to 70 homes received structural damage according to the Public Safety Officer of the county. Winds were estimated to be 80 to 100 miles an hour. Also trees and power lines were down throughout the county.								
Laurel County									
East Bernstadt	17	2340EST			0	0	0	0	Thunderstorm Wind
	Trees down.								
Whitley County									
Williamsburg	17	2342EST			0	0	0	0	Hail (0.75)
Laurel County									
5 E London	17	2345EST			0	0	0	0	Hail (0.75)
Jackson County									
Gray Hawk	17	2345EST			0	0	5K	0	Thunderstorm Wind
	Small buildings blown over. Windows blown out.								
Jackson County									
Gray Hawk	17	2345EST			0	0	0	0	Hail (0.75)
Clay County									
Manchester	17	2350EST			0	0	0	0	Hail (0.75)
Lee County									
Heidelberg	18	0000EST			0	0	1K	0	Thunderstorm Wind
	Tree fell on house. Several trees uprooted.								
Mccreary County									
Whitley City	18	0000EST			0	0	0	0	Thunderstorm Wind
	Numerous large limbs down.								
Mccreary County									
Greenwood	18	0000EST			0	0	1K	0	Thunderstorm Wind
	Trees down on power lines.								
Knox County									
Barbourville	18	0000EST			0	0	1K	0	Thunderstorm Wind
	Tree fell on house.								
Owsley County									
Booneville	18	0000EST			0	0	2K	0	Thunderstorm Wind
	Three power pole blown down. Trees down throughout county.								
Leslie County									
1.5 W Hyden	18	0010EST			0	0	1K	0	Thunderstorm Wind
	Tin roof partially blown off home.								
Perry County									
Hazard	18	0010EST			0	0	0	0	Thunderstorm Wind
	Trees down across county.								
Breathitt County									
3 NE Jackson	18	0013EST			0	0	0	0	Hail (0.75)
Wolfe County									
Flat	18	0015EST			0	0	0	0	Thunderstorm Wind (G51)
	Limbs down.								
Wolfe County									
Flat	18	0015EST			0	0	0	0	Hail (0.75)
Leslie County									
Thousandsticks	18	0020EST			0	0	0	0	Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999

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

KENTUCKY, Eastern

Harlan County

Harlan	18	0020EST			0	0	0	0	Hail (0.75)
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Johnson County

Paintsville	18	0045EST			0	0	0	0	Thunderstorm Wind
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Trees down.

Magoffin County

1 NW Wonnie	18	0045EST			0	0	0	0	Thunderstorm Wind
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Trees down.

Magoffin County

1 NW Wonnie	18	0045EST			0	0	0	0	Hail (0.75)
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Floyd County

2 W Prestonsburg	18	0045EST			0	0	0	0	Thunderstorm Wind
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Trees down.

Floyd County

Auxier	18	0045EST			0	0	2K	0	Thunderstorm Wind
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Garage blown off.

Magoffin County

Waldo	18	0050EST			0	0	3K	0	Thunderstorm Wind
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Roof torn off home.

Knott County

Topmost	18	0105EST			0	0	0	0	Hail (0.75)
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Hail covered the ground.

Martin County

Inez	18	0130EST			0	0	0	0	Thunderstorm Wind
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Trees down.

Pike County

South Williamson	18	0130EST			0	0	0	0	Hail (0.75)
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Pike County

Belfry	18	0135EST			0	0	0	0	Hail (1.00)
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Letcher County

Ice	18	0210EST			0	0	5K	0	Thunderstorm Wind
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Trailer blown over.

Breathitt County

Taulbee	23	0730EST 1400EST			1	0	1K	0	Urban/Sml Stream Fld
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Around one inch of rain fell between 4 and 11 am. This resulted in stream rises in the county. Streams rose high enough to cover low water bridges. A 54 year old male attempted to drive across a low water bridge near Taulbee. Water was about 2 feet deep and the car was swept off the bridge. The man drowned.
M54VE

KENTUCKY, Northeast

KYZ101>103-105 Greenup - Carter - Boyd - Lawrence

01	0000EST				0	0			
31	2300EST								Monthly Precipitation

The total monthly precipitation was around 5 inches. The normal January amount is 2.5 to 3 inches. Most of the precipitation fell as rain, since the monthly average temperature was 4 to 6 degrees above normal. Yet, no major flooding occurred. The weather had been dry during the late summer and autumn. The January rains replenished the surface water supply.

KYZ102>103-105 Carter - Boyd - Lawrence

08	0200EST 0900EST				0	0			Ice Storm
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A quarter to a half inch of ice accumulated from freezing rain. Over a half inch of water equivalent was measured. Temperatures edged above freezing just after dawn.

Storm Data and Unusual Weather Phenomena

January 1999

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

KENTUCKY, Northeast

Lawrence County

Fallsburg	18	0105EST			0	0	2K	Thunderstorm Wind
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Large branches were blown down, some across roads.

KYZ101>103-105

Greenup - Carter - Boyd - Lawrence

	22	1100EST			0	0		Record Warmth
		1800EST						

Afternoon temperatures soared into the 70s. Grayson recorded 78 degrees, while Ashland had 77degrees.

KENTUCKY, Northern

KYZ091>093

Boone - Kenton - Campbell

	02	0300EST			0	0		Winter Storm
		1000EST						

A major winter storm affected northern Kentucky during the morning hours on the 2nd with the snow falling at the rate of 1 inch an hour at times. By the late morning hours, the snow had accumulated around 4 inches with some locally higher amounts. The snow changed to a light mixture of sleet and freezing rain toward noon.

KENTUCKY, Southwest

KYZ001>008-010>011-013>016-018>020

Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Crittenden - Lyon - Caldwell - Union - Webster - Hopkins - Henderson - Daviess - Mclean

	01	2000CST			0	0		Ice Storm
	02	0600CST						

Freezing rain coated many surfaces with a quarter to half inch of ice. The heaviest icing was nearest the Illinois state line, from Ballard and McCracken Counties to Union County. The ice was not sufficient to bring down trees or power lines in Western Kentucky. Slick roads contributed to at least two accidents involving serious injuries. Both wrecks occurred in Graves County. In Henderson County, a five-vehicle accident on the southbound U.S. 41 bridge over the Ohio River caused traffic to back up past the Interstate 164 junction. Schools in Union, Webster, and Daviess Counties were closed on the 4th due to icy roads.

KYZ001>011-013>016-018>021

Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Caldwell - Union - Webster - Hopkins - Henderson - Daviess - Mclean - Muhlenberg

	08	0500CST			0	0		Ice Storm
		1400CST						

Freezing rain coated surfaces with up to half an inch of ice. The most significant icing was along the Ohio River and extreme western Kentucky from Mayfield and Paducah to Henderson and Owensboro. There was just enough ice to bring down some tree limbs and power lines in those areas. Scattered power outages affected roughly 1500 customers in Union and Webster Counties, and 1000 customers in McCracken and Ballard Counties. The main effect of the ice was on roads and travel conditions. Icy conditions were blamed for numerous falls, sending victims to local hospitals for everything from sprained wrists to multiple broken bones.

Calloway County

Countywide	08	1845CST			0	0	3K	Flash Flood
		2030CST						

Trigg County

Countywide	08	1845CST			0	0		Flash Flood
		2030CST						

Heavy rain up to an inch in 3 hours on partially frozen ground caused some flooding problems. Several roads were flooded in Calloway County, and a creek was out of its banks in Trigg County.

Fulton County

Hickman	17	1800CST			0	0		Thunderstorm Wind (G52)
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Carlisle County

3 SW Bardwell	17	1800CST			0	0	4K	Thunderstorm Wind
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A couple of trees and some power lines were down.

McCracken County

3 W Paducah to Reidland	17	1812CST			0	0	10K	Thunderstorm Wind (G52)
		1820CST						

About 10 trees were down across roadways in McCracken County. In the Reidland area, an outbuilding was down.

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
KENTUCKY, Southwest									
Calloway County									
Murray	17	1825CST			0	0			Hail (1.00)
Henderson County									
Cairo	17	1830CST			0	0	10K		Thunderstorm Wind (G52)
Wind gusts estimated around 60 MPH collapsed a barn.									
Marshall County									
1 E Brewers	17	1835CST			0	0	150K		Thunderstorm Wind (G78)
A National Weather Service damage survey indicated a microburst containing winds estimated near 90 MPH overturned 2 mobile homes and demolished three or four barns.									
Graves County									
Golo to Farmington	17	1837CST			0	0	150K		Thunderstorm Wind (G70)
East of Mayfield, thunderstorm winds destroyed a barn, blew a nearby mobile home off its foundation, and blew windows out of houses. Numerous trees and power lines were down. A tool shed was destroyed. The mobile home was moved about 4 feet off its foundation, and parts of the nearby barn that was destroyed were strewn across the highway and nearby fields. A local road was closed until an outbuilding could be removed from the road.									
Ballard County									
1 W La Center	17	1839CST			0	0	8K		Thunderstorm Wind
A double wide mobile home was moved 5 feet off its foundation.									
Marshall County									
Calvert City	17	1839CST			0	0	3K		Thunderstorm Wind (G70)
An off-duty meteorologist recorded a wind gust to 81 MPH atop a hill near the intersection of Interstate 24 and the Purchase Parkway.									
Marshall County									
2 W Olive	17	1840CST			0	3	150K		Thunderstorm Wind (G78)
A National Weather Service damage survey revealed a microburst with 90 MPH winds demolished numerous barns and moved a mobile home off its foundation. Three persons were injured in the mobile home. The injuries consisted of cuts and a separated shoulder. Numerous trees were blown down. Highway 80 was closed for several hours due to trees and wires across the road. About 10,000 people were without power in southern Marshall and northern Calloway Counties due to the storms.									
Calloway County									
Dexter to Murray	17	1845CST			0	0	30K		Thunderstorm Wind (G61)
A wind gust estimated near 70 MPH blew down an amateur radio tower and numerous trees near Dexter. An insurance company in Murray lost part of its roof.									
Crittenden County									
Mattoon	17	1850CST			0	1	20K		Thunderstorm Wind
A mobile home was blown over, slightly injuring one occupant.									
Lyon County									
Eddyville	17	1850CST			0	0	3K		Thunderstorm Wind (G50)
A tree and a couple of power lines were down.									
Caldwell County									
Princeton	17	1900CST			0	0	4K		Thunderstorm Wind
About a dozen trees were blown down across Caldwell County.									
Trigg County									
Rockcastle	17	1900CST			0	0	3K		Thunderstorm Wind (G50)
Trees and power lines were down in the north and west parts of Trigg County.									
Christian County									
Gracey	17	1910CST			0	0	10K		Thunderstorm Wind
A carport roof was blown off.									
Hopkins County									
Hanson	17	1930CST			0	0	15K		Thunderstorm Wind
An equipment storage shed was blown apart.									

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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KENTUCKY, Southwest

Christian County

Oak Grove	17	1930CST			0	3	250K		Thunderstorm Wind
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A thunderstorm along a squall line produced a microburst at Oak Grove, at and near the Fort Campbell military installation. Several mobile homes were damaged. Numerous trees were down, and the roof was damaged on a church on Kentucky 115. A store at the entrance to Fort Campbell suffered damage to the roof and windows. A van was blown off the road and overturned in the parking lot of the store. A guard shack at the entrance to the post was picked up and moved with guards in it. At least one of the guards was injured. A total of three people were treated for cuts from flying glass. The roof of a 95-room guesthouse on the army base was ripped off, causing the dislocation of its residents.

Todd County

Trenton to Allensville	17	1945CST 2010CST			0	3	1.5M		Thunderstorm Wind (G87)
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A National Weather Service damage survey indicated a macroburst containing winds near 100 MPH caused extensive damage across southern Todd County. Most of the damage was in the Zion, Hermon, Allensville, and Trenton areas. Wind destroyed two trailers, three hog houses, and numerous barns and sheds. The injuries occurred to occupants of a trailer. Two people were trapped in the mobile home for a while, and one was transported to a hospital for minor injuries.

Muhlenberg County

Greenville	17	2000CST			0	0	4K		Thunderstorm Wind
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Trees were blown down over roadways. Power outages were reported.
A squall line crossed western Kentucky at a very rapid speed of around 60 MPH. Although damage was not widespread in terms of aerial coverage, a few pockets of severe damage were observed. A few microbursts across western Kentucky contained wind speeds of at least 80 MPH.

Trigg County

1 S Cadiz	21	0652CST			0	0			Hail (0.88)
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Ballard County

Wickliffe	22	0040CST			0	0			Thunderstorm Wind (G52)
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Ballard County

Gage	22	0052CST			0	0	100K		Thunderstorm Wind
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On a local farm, a horse barn, tobacco barn, corn crib, and a semi were destroyed.

Ballard County

5 ENE Wickliffe to 6 ENE Wickliffe	22	0052CST 0054CST	1	100	0	6	200K		Tornado (F1)
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This tornado was rated on the high end of the F-1 category, with top winds near 105 MPH. A mobile home containing a family of six was demolished. All six occupants escaped with only minor to moderate injuries. One small child was not discovered in the debris for over 30 minutes. Rescue workers had difficulty reaching the home due to fallen trees and barns blown onto roadways.

Ballard County

Kevil	22	0052CST			0	0	10K		Thunderstorm Wind
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A trailer was damaged by severe thunderstorm wind gusts. This storm produced a tornado that formed along the Ballard/McCracken County line just east of Kevil.

Ballard County

3 NW La Center	22	0055CST			0	3	200K		Thunderstorm Wind (G78)
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An intense thunderstorm microburst overturned and destroyed a mobile home. Three occupants were injured. Workers had trouble reaching the residence due to downed trees. The mobile home flipped over several times before coming to a stop on top of a van and truck. One of the injured persons required surgery for a severe cut on the arm. Nearby, a machine shop was destroyed, and a barn with over 20,000 bushels of grain was blown away.

Mccracken County

5 WNW (Pah)Barkley Arpt Pa to 4 NW (Pah)Barkley Arpt Pa	22	0100CST 0103CST	1.3	100	0	2	500K		Tornado (F1)
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The tornado formed near the Ballard/McCracken County line, just east of Kevil. It tracked northeast for about a mile through the Lone Lake subdivision. In the Lone Lake subdivision, three mobile homes were blown off their foundations, and two other mobile homes were severely damaged. Three garages, two cars, and a camper were destroyed. Closer to the beginning of the tornado track along the Ballard County line, two barns were destroyed, and four houses received minor damage. Top winds in this tornado were estimated near 100 MPH.

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
KENTUCKY, Southwest									
Livingston County									
4 N Bayou	22	0121CST			0	0			Thunderstorm Wind (G52)
Trees were down along the Ohio River, across the river from tornado damage in Pope County, Illinois.									
Mccracken County									
Paducah	22	0127CST			0	0	50K		Thunderstorm Wind
A camper was destroyed. A tree fell on a house, causing structural damage.									
Todd County									
Trenton to Guthrie	22	0430CST			0	0	50K		Thunderstorm Wind
A couple of farms were damaged in southern Todd County. At the first farm, siding from a farmhouse was strewn across a neighbor's property. At the second farm, a hog farm, three hog barns were destroyed. As a sidenote, a major tornado occurred at about this time in Clarksville, Tennessee, which is in the county just south of Todd. Several residents in southern Todd County found what were believed to be pieces of debris from Clarksville. In the Trenton area, a couple of landowners found vehicle title application forms and licensing receipts from the Montgomery County, Tennessee Courthouse.									
Christian County									
Gracey	22	0705CST			0	0			Hail (0.75)
Dime size hail occurred in western Christian County.									
Christian County									
Countywide	22	1030CST 1230CST			0	0			Flash Flood
The emergency manager in Christian County reported ditches were overflowing.									
Caldwell County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Calloway County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Crittenden County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Hopkins County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Livingston County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Lyon County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Marshall County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Trigg County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Union County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood
Webster County									
Countywide	22	1330CST 2230CST			0	0			Flash Flood

Heavy rain associated with thunderstorms persisted across much of western Kentucky through the day. Rainfall totals averaged from 3 to 6 inches, with Kentucky Dam reporting one of the highest amounts at 5.88 inches. Some road closures were reported in most western Kentucky counties. A few of the more significant road closures included Kentucky 80 east of Hardin (Marshall

Storm Data and Unusual Weather Phenomena

January 1999

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

KENTUCKY, Southwest

County), Kentucky 453 at mile marker 15 (Livingston County), Kentucky 1943 at mile marker 3 (Lyon County), and Kentucky 126 and 1253 in Trigg County. In Hopkins County near Nortonville, a creek flooded, surrounding trailers and houses with several inches of water. In Webster County, Highway 132 between Dixon and Clay was closed. In Trigg County, the Little River overflowed its banks off Kentucky 139 south of Cadiz.

Ballard County

Countywide	22	1500CST 2200CST			0	0	Flash Flood
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Carlisle County

Countywide	22	1500CST 2200CST			0	0	Flash Flood
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Fulton County

Countywide	22	1500CST 2200CST			0	0	Flash Flood
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Graves County

Countywide	22	1500CST 2200CST			0	0	Flash Flood
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Hickman County

Countywide	22	1500CST 2200CST			0	0	Flash Flood
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Mccracken County

Countywide	22	1500CST 2200CST			0	0	Flash Flood
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Thunderstorms with heavy rain persisted over extreme southwest Kentucky for over 12 hours, beginning around 1 A.M. Rivers, streams, and creeks began to overflow across roads. In Graves County, emergency management personnel reported eleven roads were closed. In the Mississippi River counties, some roads were covered with water, and there were reports of a few homes threatened by rising floodwater. In Graves County, Mayfield Creek flooded, sending water over roads. In McCracken County, flooding of the Clarks River affected some roads and neighborhoods.

Daviess County

Countywide	22 23	1700CST 0300CST			0	0	Flash Flood
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Henderson County

Countywide	22	1700CST 2300CST			0	0	Flash Flood
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Mclean County

Countywide	22	1700CST 2300CST			0	0	Flash Flood
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Thunderstorms with heavy rainfall persisted over northwest Kentucky for most of the day, causing small streams and creeks to rise out of their banks. Rainfall for the event averaged around 4 inches, including 3.89 at Owensboro. Some roads were closed.

Christian County

Countywide	22 23	1700CST 0300CST			0	0	50K	Flash Flood
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Muhlenberg County

Countywide	22 23	1700CST 0300CST			0	0	Flash Flood
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Todd County

Countywide	22 23	1700CST 0300CST			0	0	20K	Flash Flood
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Thunderstorms with heavy rain persisted for much of the day, producing an average of 4 to 5 inches of rain. Hopkinsville measured 4.16 inches. Christian and Todd County schools were dismissed on the 22nd due to the threat of water going over the roads. In Hopkinsville, voluntary evacuations were conducted near the Little River, mainly in the Cherokee Park neighborhood. A Red Cross shelter was set up for evacuees. Twelve roads were barricaded around Christian County.

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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KENTUCKY, Southwest

KYZ020

Mclean

23	1200CST				0	0	25K		Flood
31	2359CST								

Moderate flooding occurred on the Green River, with thousands of acres inundated in the Rumsey, Jewel City, and Island areas. At Calhoun, where flood stage is 23 feet, the river crested at 27.5 feet on the 28th.

KYZ004>005-007-010-014-018>019

Ballard - Mccracken - Livingston - Crittenden - Union - Henderson - Daviess

24	0800CST				0	0	20K		Flood
31	2359CST								

Repeated heavy rains from a succession of March-like storm systems caused the Ohio River to rise above flood stage late in the month. At Smithland, where flood stage is 40 feet, the river crested at 42.7 feet on the morning of the 27th. At Paducah, where flood stage is 39 feet, the river crested at 43.6 feet on the 26th. The flooding was generally minor and primarily confined to farmland and riverside parks and access roads. High water forced the Cave-In-Rock Ferry, linking Kentucky 91 north of Marion, KY, with Illinois 1 in Cave-In-Rock, to close. Water on the Kentucky side of the river rose to cover the road. The ferry shuttles about 500 vehicles across the river each day. The next closest crossings across the Ohio River are bridges at Paducah, KY and Shawneetown, IL.

LOUISIANA, Northeast

Morehouse Parish

2 N Bastrop	08	1520CST	1.5	50	0	0	10K		Tornado (F1)
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One trailer was overturned. A house was moved four feet off of its foundation. A roof was blown off of a cafe.

West Carroll Parish

4 W Oak Grove	08	1538CST	2	50	0	0	5K		Tornado (F0)
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A trained spotter viewed this short-track tornado. Minor structural damage was done to a couple of dwellings.

Morehouse Parish

Bastrop	08	1555CST	1	50	0	0	10K		Tornado (F0)
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A mobile home was rolled.

East Carroll Parish

4 N Lake Providence	08	1600CST	1	50	0	0	3K		Tornado (F0)
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A few trees were blown down by this weak tornado.

Morehouse Parish

4 E Collinston	08	1800CST			0	0	1K		Thunderstorm Wind (G58)
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Numerous large limbs were blown down.

West Carroll Parish

1 W Oak Grove	08	1840CST			0	0	10K		Thunderstorm Wind
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Several barns and sheds were blown over.

Morehouse Parish

Bonita	13	1500CST			0	0	30K		Hail (1.75)
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Several roofs and automobiles were damaged.

West Carroll Parish

Terry	13	1555CST			0	0			Hail (0.88)
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Morehouse Parish

Oak Ridge	13	1626CST			0	0	30K		Hail (1.75)
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Several roofs and automobiles were damaged.

Morehouse Parish

Bastrop	21	1835CST			0	0			Hail (1.00)
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Morehouse Parish

Bonita	21	1914CST			0	0			Hail (1.00)
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Morehouse Parish

3 N Bonita to 5 NE Jones	21	1915CST 1924CST	7	200	0	0	20K		Tornado (F1)
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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
LOUISIANA, Northeast									
This tornado crossed into Ashley County, Arkansas. Roofing was torn off of a house near Jones. Numerous trees and power lines were blown down.									
West Carroll Parish									
2 S Kilbourne	21	1945CST	2	50	0	0	5K		Tornado (F0)
Several trees were blown down.									
Catahoula Parish									
Countywide	21	2030CST			0	0	10K		Thunderstorm Wind
Trees and power lines were blown down across the county.									
East Carroll Parish									
Lake Providence	21	2030CST			0	0	5K		Thunderstorm Wind
Numerous trees and power lines were blown down.									
Catahoula Parish									
1 NE Aimwell	21	2107CST	1	50	0	0			Tornado (F0)
Tornado was spotted by local law enforcement in an open field.									
Franklin Parish									
Gilbert	21	2145CST	1	40	0	0			Tornado (F0)
Catahoula Parish									
Harrisonburg to 9 NNE Sicily Is	21	2200CST 2220CST	18	100	0	0	10K		Tornado (F1)
One house received minor structural damage and one storage shed was damaged. A thirty foot tall antenna was blown down and approximately ten trees were uprooted. The tornado continued into Franklin Parish.									
Tensas Parish									
Newellton	21	2215CST			0	0	5K		Thunderstorm Wind
Numerous trees were blown down.									
Franklin Parish									
4 ESE Wisner to 4 SE Lorelein	21	2220CST 2229CST	8	100	0	0	5K		Tornado (F1)
A few trees and power lines were blown down. This tornado continued into Tensas Parish.									
Tensas Parish									
6 SW New Light to 5 NE Tensas Bluff	21	2229CST 2244CST	14	440	0	0	500K		Tornado (F3)
A combined fifty house trailers and houses were completely destroyed by this tornado. Hundreds of trees were either downed or snapped off. A metal fishing boat was wrapped around a tree. Many cotton hoppers were flipped over several times. Vehicles were thrown 250 to 300 feet, one of which was left suspended in a tree. This tornado continued into Madison Parish.									
Madison Parish									
7 WSW Quimby to 3 E Ashley	21	2244CST 2308CST	22	200	0	0	200K		Tornado (F1)
Eight 18-wheelers and several cars were blown off of Interstate 20 just east of Tallulah. Five power transmission towers were toppled. Many trees were uprooted or split. A large road sign and a television antenna were bent over by winds. Shingles were removed from a motel roof. Part of metal awning was torn off of a gas station roof. This tornado continued into Warren County Mississippi.									
Morehouse Parish									
Bastrop	22	0715CST			0	0			Hail (1.00)
Morehouse Parish									
Mer Rouge	22	0720CST			0	0	5K		Hail (1.75)
Golfball size hail caused minor damage to a couple of roofs and automobiles.									
Catahoula Parish									
Jonesville	22	1215CST			0	0	1K		Thunderstorm Wind
A few trees were blown down.									
Tensas Parish									
12 W St Joseph	22	1300CST			0	0	5K		Hail (1.75)
Golfball size hail caused minor damage to a couple of roofs and automobiles.									
Concordia Parish									
Ferriday	22	1315CST	1	50	0	0			Tornado (F0)

Storm Data and Unusual Weather Phenomena

January 1999

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

LOUISIANA, Northeast

This weak tornado crossed over an open field and no damage was reported.

Madison Parish

12 SE Tallulah	22	1331CST			0	0			Hail (0.88)
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East Carroll Parish

Countywide	29	0930CST			0	0	100K		Flood
	30	0330CST							

Morehouse Parish

Countywide	29	0930CST			0	0	100K		Flood
	30	0330CST							

West Carroll Parish

Countywide	29	0930CST			0	0	100K		Flood
	30	0330CST							

Madison Parish

Countywide	29	1130CST			0	0	100K		Flood
	30	0330CST							

Richland Parish

Countywide	29	1130CST			0	0	100K		Flood
	30	0330CST							

Concordia Parish

Countywide	29	1700CST			0	0	100K		Flood
	30	0130CST							

Franklin Parish

Countywide	29	1700CST			0	0	100K		Flood
	30	0130CST							

Strong thunderstorms moved across northeast Louisiana causing flash flooding of creeks and low lying areas. Prolonged heavy rainfall over these Parishes caused flooding of numerous roads. Many roads had to be closed due to the flooding and several bridges were washed out. Water rose into several houses and businesses. Many schools and businesses had to be closed due to the flooding.

LOUISIANA, Northwest

Sabine Parish

5 SW Belmont	01	1610CST			0	0			Funnel Cloud
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Caddo Parish

Keithville	01	2220CST			0	0			Thunderstorm Wind (G52)
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Numerous trees down.

Caddo Parish

Shreveport	01	2225CST			0	0	50K		Thunderstorm Wind (G61)
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Numerous trees down on Tiffin Court with numerous roofs damaged. Several trees also toppled in the Madison Park area.

Caddo Parish

5.3 SSE Shreveport Rgnl Arpt to 8.5 SE Shreveport Rgnl Arpt	01	2226CST 2234CST	3.2	33	0	1	1M		Tornado (F2)
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Damage path consisted of numerous homes with roofs partially blown off, several structures collapsed, a building with a brick wall blew down, several cars were blown off the road and overturned, and numerous trees snapped or fell. The reported injury was minor and treated on location.

De Soto Parish

Stonewall	01	2230CST			0	0			Thunderstorm Wind (G52)
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Several large trees down.

Bossier Parish

3 SW Sligo to 1.9 WSW Sligo	01	2236CST 2239CST	1.1	31	0	0	15K		Tornado (F1)
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Moderate damage occurred to a storage building as the tornado plowed right through the middle of the shed leaving both ends intact. A tin roof was detached and deposited 1/4 mile away. Several aluminum buildings were also blown apart. Numerous snapped and fallen trees.

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
LOUISIANA, Northwest									
Bossier Parish									
Koran	01	2247CST			0	0			Thunderstorm Wind (G52)
Bossier Parish									
4.5 N Koran to 5 NNE Koran	01	2302CST 2305CST	1.5	40	0	0	60K		Tornado (F2)
Tornado formed along a squall line notch, in the comma head. Damage path consisted of moderate damage to two homes were trees penetrated the roof. One mobile home completely destroyed. Numerous snapped and fallen trees of three to four feet in diameter. This tornado continued into Webster Parish, Louisiana.									
Webster Parish									
3 SW Doyline to 1 WNW Sibley	01	2305CST 2323CST	7.9	50	0	0	88K		Tornado (F2)
Damage consisted of a 20 horse stall and building consisting of iron square tubing being destroyed. One tin feed shed was destroyed. Several modular homes suffered minor damage. Numerous large trees were snapped or uprooted. This tornado is a continuation of the Bossier Parish, Louisiana tornado.									
LAZ001>002									
Caddo - Bossier									
	12	1300CST			0	0			High Wind (G54)
Trees were toppled along Hwy 789 in southwest portion of the Parish.									
Ouachita Parish									
Fairbanks	21	1835CST			0	0			Hail (1.75)
Ouachita Parish									
Fairbanks	21	1840CST			0	0			Thunderstorm Wind (G52)
Several trees down.									
La Salle Parish									
1.2 SW Eden to 2 SW Good Pine	21	2121CST 2128CST	2.7	20	0	0			Tornado (F0)
Tornado occurred over unpopulated swamp and forest area.									
Caddo Parish									
Hosston	22	0019CST			0	0			Thunderstorm Wind (G61)
Trees down across U.S. Hwy 71.									
Caddo Parish									
Oil City	22	0021CST			0	0			Hail (0.75)
Caddo Parish									
Mooringsport	22	0023CST			0	0			Hail (1.75)
Union Parish									
1.5 SW Conway to 1.2 N Sadie	22	0150CST 0225CST	14	40	0	0	0		Tornado (F1)
Tornado crossed only unpopulated wooded area. This tornado continued into Union County, Arkansas.									
Claiborne Parish									
Homer	22	0153CST			0	0			Hail (0.75)
Red River Parish									
3 SE Coushatta	22	0455CST			0	0			Hail (0.75)
Natchitoches Parish									
.8 E King Hill to 2 NE King Hill	22	0502CST 0505CST	1.5	25	0	0			Tornado (F0)
Tornado occurred over unpopulated wooded swampland.									
Red River Parish									
2.2 SE Lake End to 8 SE Coushatta	22	0505CST 0514CST	4.6	25	0	0			Tornado (F0)
Tornado occurred over unpopulated wooded swampland.									
Natchitoches Parish									
2.3 NW Grappes Bluff to 1.4 NW Messick	22	0514CST 0520CST	3	25	0	0			Tornado (F0)
Tornado occurred over unpopulated wooded swampland.									

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
LOUISIANA, Northwest									
Red River Parish									
8 SE Coushatta to 8.3 ESE Coushatta	22	0520CST 0523CST	1.6	25	0	0			Tornado (F0)
			Tornado occurred over unpopulated wooded area.						
De Soto Parish									
Carmel	22	0523CST			0	0			Hail (0.75)
Red River Parish									
12 NW Coushatta	22	0530CST			0	0			Thunderstorm Wind (G52)
			Trees and powerlines toppled.						
Bienville Parish									
1.3 S Cox Crossing to 2 ENE Mt Olive	22	0549CST 0605CST	8.2	50	0	0			Tornado (F1)
			Tornado occurred over an unpopulated wooded area.						
Jackson Parish									
3 E Quitman to .7 S Vernon	22	0605CST 0630CST	12.3	25	0	0			Tornado (F1)
			Tornado occurred over an unpopulated wooded area.						
Jackson Parish									
1.8 SW Walker to 1.2 ESE Eros	22	0552CST 0630CST	19.8	50	0	0			Tornado (F1)
			Tornado occurred over an unpopulated wooded area.						
Ouachita Parish									
4.2 NW Okaloosa to 3.9 NW Okaloosa	22	0630CST 0634CST	2.1	25	0	0			Tornado (F0)
			Tornado occurred over an unpopulated wooded area.						
Lincoln Parish									
5 S Sibley	22	0605CST			0	0			Hail (1.00)
Lincoln Parish									
Ruston	22	0612CST			0	0			Hail (0.75)
Jackson Parish									
Eros	22	0618CST			0	0			Hail (2.75)
Lincoln Parish									
1.6 E Vienna to .5 N Downsville	22	0622CST 0640CST	11.9	40	0	0			Tornado (F1)
			Tornado occurred over an unpopulated wooded area.						
Ouachita Parish									
Calhoun	22	0630CST			0	0			Hail (3.00)
Lincoln Parish									
Sibley	22	0635CST			0	0			Hail (1.75)
Union Parish									
Point	22	0642CST			0	0			Hail (1.75)
Ouachita Parish									
Sterlington	22	0700CST			0	0			Hail (1.50)
Bossier Parish									
3 SE Haughton	22	0755CST 1115CST			0	0			Flash Flood
			One to two feet of water covered Zion road resulting in road closer. High water was also reported on Oliver Road. Numerous secondary roads and streets were flooded and barricaded including Hwy 157 and 526.						
De Soto Parish									
1 N Grand Cane	22	0800CST 1115CST			0	0			Flash Flood
			Hwy 171 was flooded along several locations north of town.						

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
LOUISIANA, Northwest									
Ouachita Parish									
Luna	22	1140CST			0	0			Hail (1.00)
Natchitoches Parish									
Chopin	22	1140CST			0	0			Hail (0.88)
Natchitoches Parish									
2 NW Gorum to 2.2 NW Gorum	22	1209CST 1215CST	3	25	0	0			Tornado (F0)
Tornado occurred over an unpopulated wooded swamp area.									
Grant Parish									
.7 S Aloha to 3.8 NE Aloha	22	1210CST 1217CST	3.8	20	0	0			Tornado (F0)
Tornado occurred over an unpopulated wooded area.									
Caddo Parish									
Shreveport Rgnl Arprt	28 30	0001CST 2359CST			0	0			Heavy Rain
A strong upper level storm system moved slowly across northwest Louisiana resulting in a 72 hour storm rainfall total of 8.75 inches. This combined with rain totals earlier in the month gave the Shreveport area a total rain amount of 12.96 inches. This was the wettest January of record in Shreveport with records dating back to 1871.									
De Soto Parish									
Keatchie	28 29	2020CST 0145CST			0	0			Flash Flood
High water and road closures were reported around La Parish Road 5.									
Webster Parish									
1 W Dixie Inn	28	2020CST 2305CST			0	0			Flash Flood
High water was reported across Hwy 80 closing the road for a short period.									
Caddo Parish									
Shreveport	28	2025CST 2305CST			0	0	140K		Flash Flood
Police Department reported several streets in the Broadmore subdivision flooded due to excessive heavy rainfall. I-49 in south Shreveport was closed from flooding.									
Sabine Parish									
Many	29	0230CST 1755CST			0	0			Flash Flood
Six to eight inches of rain fell across the parish leading to numerous highway and secondary road closures. Some of the roads included Hwy 6, La 191, Hwy 1217, 474, and 171. Many secondary roads were washed out including Recknor road bridge.									
Winn Parish									
Winnfield	29	0600CST 1755CST			0	0			Flash Flood
Flooding led to the closures of La 34, Hwy 167, and parish roads 505 and 471. Numerous secondary roads were also closed from high water.									
Natchitoches Parish									
Natchitoches	29	0600CST 1755CST			0	0	150K		Flash Flood
Widespread six to eight inch rainfall totals included isolated reports of up to 11.25 inches of rain led to numerous reports of flooding in town and throughout the parish. A state of emergency was declared due to the widespread flooding problems. The hardest hit area was the Franklin community where 3 to 4 feet of water rose into nearly 20 homes. A total of 75 families were evacuated. Numerous secondary roads had to be closed in the Robeline and Martheville communities. Some of the highway closures included La-155, La-120 from Hwy 1 to the Flora community, La-119 from Hwy 1 to La-494, La-485 and La-117.									
Ouachita Parish									
Monroe	29	0800CST			0	0			Flash Flood
Six to eight inches of rain fell across most of the parish leading to numerous flooding problems. Several homes were flooded in the Richwood and Tanglewood subdivisions. Several highways and secondary roads were closed including La 134. Schools closed early across the parish from fear of buses having to cross flooded roadways.									

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
LOUISIANA, Northwest									
Caddo Parish									
Shreveport	29	0800CST 1045CST			0	0			Flash Flood
Numerous cars were stalled in high water from Hearn/Midway underpass. The Riding Club Lone Community was flooded with two to three feet of water and several families were evacuated.									
Webster Parish									
Minden	29	0815CST 1110CST			0	0			Flash Flood
Heavy rain closed Hwy 159 near Minden and Hwy 80 was closed just west of town. Reports from law enforcement stated Hwy 79 was also closed off of La 371.									
De Soto Parish									
8 N Mansfield	29	0830CST 1045CST			0	0			Flash Flood
Heavy rain led to numerous flooding problems. Highways and secondary roads were closed included Hwy 175 and I-49 connecting the Kingston and Frierson communities. Several cars were stalled as the drove into high water.									
Bossier Parish									
Bossier City	29	0900CST 1045CST			0	0			Flash Flood
Numerous flooding problems occurred across the parish. The hardest hit area was in the Barron Road Community where three to four feet of water came into several homes. Highways and secondary roads were closed including La 157 and Sligo Road. Several cars stalled while trying to cross flooded roads.									
Bienville Parish									
2 SW Ringgold	29	1000CST 1110CST			0	0			Flash Flood
La Hwy 4 was closed at the Loggy Bayou due to high waters.									
Jackson Parish									
Jonesboro	29	1000CST 1400CST			0	0			Flash Flood
Numerous reports of flooding was received. Highways 167 and 505 were closed in the Clay and Wyatt communities due to high water.									
Claiborne Parish									
Homer	29	1000CST			0	0			Flash Flood
Several secondary roads were closed due to high water including Hwy 15.									
Union Parish									
Spearsville	29	1130CST 1400CST			0	0			Flash Flood
Highway 15 was closed due to rapidly rising waters.									
Caldwell Parish									
Columbia	29	1200CST 1755CST			0	0			Flash Flood
Several highways and secondary roads were closed from rapidly rising water including Hwy 846, 844, and Hwy 850. La 126 was closed 6 miles west of Hwy 165.									
Lincoln Parish									
Ruston	29	1230CST 1400CST			0	0			Flash Flood
Several roads were closed from high water. The Grambling Post Office was also flooded.									
Grant Parish									
Montgomery	29	1330CST 1755CST			0	0			Flash Flood
Over six inches of rain led to numerous reports of flooding. Two to three feet of water flooded local homes with Hwy 71 and Hwy 471 closed in the Verda Community.									
La Salle Parish									
Jena	29	1630CST			0	0			Flash Flood
Hwy 127 was closed from flooding.									

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
LOUISIANA, Northwest									
Bienville Parish									
2 E Jamestown	29	2200CST			0	0			Flash Flood
	30	0135CST							
Numerous roads were closed including La 154.									
Red River Parish									
3 NE Coushatta	29	2215CST			0	0			Flash Flood
	30	0135CST							
Hwy 155 was closed from high water.									
Caddo Parish									
Shreveport	30	0530CST			0	0			Hail (0.75)
LAZ001 Caddo									
	31	0600CST			0	0	300K		Flood
Record flooding developed on Wallace Lake in south Shreveport as the lake crested at 159.7 feet. This resulted in nearly 20 inches of water flowing over the spillway (spillway crest height is 158 feet). Some 125 homes were flooded and evacuated along Kingston road. The previous record crest on Wallace lake was 159.3 feet set April 15 1991.									
LAZ010 De Soto									
	31	0600CST			0	0	150K		Flood
Record flooding developed on Wallace Lake in south Shreveport as the lake crested at 159.7 feet. This resulted in nearly 20 inches of water flowing over the spillway (spillway crest height is 158 feet). Some 125 homes were flooded and evacuated along Kingston road. The previous record crest on Wallace lake was 159.3 feet set April 15 1991.									
LAZ010-017 De Soto - Sabine									
	31	0700CST			0	0	20K		Flood
Heavy rain upstream on the Sabine river in extreme northeast Texas led to river flooding into northwest Louisiana. About 20 homes were flooded from Joaquin, Texas to Logansport, Louisiana as the river crested at 33.2 feet. Toledo Bend rose to 173.60 feet or 8 inches above full pool stage. The high water resulted in the Sabine River Authority having to open the gates completely at the dam with releases of 116,000 cfs. This flooding is mostly due to backwater flooding from very high pool stages on Toledo Bend.									
LOUISIANA, Southeast									
Pointe Coupee Parish									
Lettsworth	02	0438CST			0	0	0.50K		Thunderstorm Wind
The Pointe Coupee Sheriff's Office reported several trees blown down.									
West Feliciana Parish									
St Francisville	02	0505CST			0	0			Hail (0.75)
The West Feliciana Sheriff's Office reported 0.75 inch diameter hail.									
West Feliciana Parish									
St Francisville	02	0505CST			0	0	0.50K		Thunderstorm Wind
The West Feliciana Sheriff's Office reported several trees blown down.									
Assumption Parish									
9 NW Napoleonville	02	0600CST			0	0			Funnel Cloud
The Assumption Parish Sheriff's Office reported the sighting of a funnel cloud near Pierre Part.									
Assumption Parish									
3 N Napoleonville	02	0605CST			0	0	5K		Thunderstorm Wind
Thunderstorm winds uprooted a tree that fell on a house causing damage to the roof and a wall in Bertrandville.									
St. Helena Parish									
Greensburg	02	0610CST			0	0	0.50K		Thunderstorm Wind
The St. Helena Sheriff's Office reported trees and power lines down around Greensburg.									
St. Helena Parish									
6 NE Greensburg	02	0615CST			0	0	0.50K		Thunderstorm Wind
Several trees were reported blown down along Louisiana Highway 440 by a retired National Weather Service employee.									
St. James Parish									
St James	02	0630CST			0	0	1K		Thunderstorm Wind
The St. James Department of Emergency Management reported that thunderstorm winds knocked down trees and blew windows out at a high school.									

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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LOUISIANA, Southeast

St. Charles Parish

Destrehan	02	0700CST			0	0	7K		Thunderstorm Wind
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The St. Charles Department of Emergency Management reported that thunderstorm winds damaged a baseball backstop and scoreboard at a high school and blew down several trees on the property.

St. Charles Parish

Hahnville	02	0700CST			0	0	10K		Thunderstorm Wind
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The St. Charles Department of Emergency Management reported that thunderstorm winds caused minor damage to the roofs of three buildings at a church-school complex.

Terrebonne Parish

Houma	02	0715CST			0	0	350K		Thunderstorm Wind
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Thunderstorm winds tore the roof off the administration building of a vocational- technical high school, damaged the roofs on four other campus buildings, and overturned a delivery truck.

Orleans Parish

Lake Catherine	02	0730CST			0	0	1K		Thunderstorm Wind
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Thunderstorm winds blew down trees and stripped shingles and roofing materials from buildings.

St. Bernard Parish

Delacroix	02	0800CST			0	0	20K		Thunderstorm Wind
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Thunderstorm winds damaged the roofs of several residences and businesses and knocked down numerous trees and power lines on Delacroix Highway.

Terrebonne Parish

Schriever	02	0643CST	1	50	0	0	700K		Tornado (F1)
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Lafourche Parish

2 E Thibodaux	02	0647CST			0	0	10K		Thunderstorm Wind
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Lafourche Parish

Bayou Boeuf	02	0700CST 0705CST	1	50	0	0	275K		Tornado (F1)
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A severe thunderstorm moved from Schriever in northern Terrebonne Parish northeast across Lafourche Parish to Bayou Boeuf just south of Lac des Allemands producing a couple of weak and brief tornadoes along its path. The worst damage was in Schriever where 35 residences were damaged, including 5 brick homes that were severely damaged, when a tornado touched down. A post office building and a car wash in Schriever were also damaged. The storm produced another weak tornado in Bayou Boeuf that caused structural damage to two homes and knocked down trees and power lines. In addition, the severe thunderstorm produced winds that caused minor damage near Thibodaux where a shed at a convenience store was thrown into Bayou Lafourche and a nearby garage was destroyed.

Washington Parish

Mt Hermon	02	0645CST			0	0	0.25K		Thunderstorm Wind
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Thunderstorm winds blew down a few trees.

St. Tammany Parish

Slidell	09	0255CST			0	0			Hail (0.75)
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A thunderstorm produced 0.75 inch diameter hail at the National Weather Service Forecast Office.

LAZ060

St. Charles

14	0756CST 0915CST				0	47			Fog
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Dense fog reduced visibility and contributed to 23 separate collisions involving a total of 90 vehicles on the Interstate Highway 10 bridge near the Bonnet Carre Spillway. No serious injuries or fatalities occurred; however, 30 people were treated on the scene and 17 at area hospitals.

Iberville Parish

Grosse Tete	22	1553CST			0	0			Hail (1.00)
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The Iberville Parish Department of Emergency Management reported 1.0 inch diameter hail.

Iberville Parish

Maringouin	22	1553CST			0	0			Hail (1.75)
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The Iberville Parish Department of Emergency Management reported golfball size hail.

Iberville Parish

Maringouin	22	1553CST			0	0	0.25K		Thunderstorm Wind
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The Iberville Parish Department of Emergency Management reported that a few trees were blown down.

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
<u>LOUISIANA, Southeast</u>									
East Baton Rouge Parish									
Baton Rouge	22	1600CST			0	0			Hail (0.75)
Hail 0.75 inch in diameter was reported at Louisiana State University by the campus police.									
West Baton Rouge Parish									
Brusly	22	1605CST			0	0	0.25K		Thunderstorm Wind
A few trees and power lines were blown down.									
West Baton Rouge Parish									
Erwinville	22	1605CST			0	0	0.50K		Thunderstorm Wind
The West Baton Rouge Parish Sheriff's Office reported that several trees and tree limbs were blown down.									
Livingston Parish									
Watson	22	1627CST			0	0	0.50K		Thunderstorm Wind
The Livingston Parish Sheriff's Office reported that several trees were blown down.									
St. Helena Parish									
Montpelier	22	1633CST			0	0	5K		Thunderstorm Wind
The St. Helena Parish Sheriff's Office reported that several trees were blown down on vehicles on Louisiana Highway 16.									
St. Helena Parish									
Greensburg	22	1645CST			0	0	0.50K		Thunderstorm Wind
The St. Helena Parish Sheriff's Office reported that several trees were blown down on Louisiana Highways 43 and 37.									
St. James Parish									
Gramercy	22	1825CST			0	0	0.25K		Thunderstorm Wind
The St. James Parish Department of Emergency Management reported that a few trees were blown down.									
Tangipahoa Parish									
Ponchatoula	22	1850CST			0	0	0.20K		Thunderstorm Wind
The Ponchatoula Police Department reported a couple of trees blown down.									
Terrebonne Parish									
Dulac	22	1915CST			0	0	5K		Thunderstorm Wind
The Terrebonne Parish Department of Emergency Management reported that approximately 10 structures were damaged by thunderstorm winds. Only one of the structures was occupied. One structure sustained heavy damage.									
<u>LOUISIANA, Southwest</u>									
Vernon Parish									
Pitkin	02	0100CST			0	0	100K		Thunderstorm Wind
A severe thunderstorm damaged several homes and barns in the Pitkin area.									
Calcasieu Parish									
2 NW Sulphur to 3 NE Sulphur	02	0105CST 0110CST	2.5	100	0	0	25K		Tornado (F0)
A small tornado touched down north of Sulphur in the Houston River Road area, blowing down trees and power lines.									
Beauregard Parish									
4 S Ragley to 3 S Ragley	02	0125CST 0130CST	1	100	0	0	50K		Tornado (F2)
A small but strong tornado moved across rural areas south of Ragley. One new mobile home that was in the path was completely destroyed. Debris was scattered for over a mile. The residents had heard the warnings and escaped the home minutes before it was destroyed.									
Calcasieu Parish									
Westlake	02	0140CST			0	0	50K		Hail (0.75)
Large hail and strong winds damaged several homes and businesses in Westlake.									
Calcasieu Parish									
5 SW Sulphur to 4 SE Sulphur	02	0150CST 0155CST	2.5	50	0	0	75K		Tornado (F1)
A small tornado moved across the Carlyss area south of Sulphur, damaging buildings at a gas plant, and several other area wide homes and businesses.									

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
LOUISIANA, Southwest									
Beauregard Parish									
4 S Dry Creek to 2 SE Dry Creek	02	0150CST 0200CST	3	400	0	0	50K		Tornado (F1)
This tornado damaged several homes, including ripping the roof off one house. Numerous trees were ripped up and twisted along the tornado path near Highway 113.									
Beauregard Parish									
4 W Sugartown to 3 N Sugartown	02	0150CST 0155CST	5	400	0	0	50K		Tornado (F2)
This tornado originally touched down 4 miles west of Sugartown, damaging one home. It continued northeast and intersected Highway 113 near the Whiskey Chitto Creek bridge. A large swath of large trees were sheared off and twisted. A few homes in this area received roof damage. A large trampoline was found 20 feet in the air, wrapped around a tree.									
Allen Parish									
8 SW Mittie to 6 S Mittie	02	0220CST 0225CST	2	200	0	0	50K		Tornado (F1)
The same storm that produced the tornado near Dry Creek produced a second tornado, this time in Allen Parish south of Mittie. Numerous trees and power lines were blown down along the track. One barn was totally destroyed. The roof was ripped off of one home.									
Calcasieu Parish									
2 SW Hayes to 2 NE Hayes	02	0230CST 0240CST	4	400	0	2	250K		Tornado (F2)
A strong tornado moved across southern and eastern sections of Hayes, destroying several homes and one farm. A couple was injured slightly when their permanent wood home was completely flattened in the tornado. Another home was lifted in the air and moved 75 yards from its original location. Seven people in the home escaped with no injuries. A large trash can was found struck in a tree 50 feet up in a large oak tree, that had travelled at least one mile from its original position.									
Allen Parish									
Kinder	02	0235CST			0	0	10K		Thunderstorm Wind
Several trees were blown down across rural roads in Kinder.									
Cameron Parish									
Sweet Lake	02	0235CST			0	0			Hail (1.75)
Jefferson Davis Parish									
2 SW Jennings to 1 S Jennings	02	0300CST 0305CST	1	50	0	0	100K		Tornado (F1)
A small tornado touched down in southern sections of Jennings, ripping a portion of a roof off a home and destroying a garage. Tops of the trees nearby were sheared off. Five other homes and several mobile homes reported minor damage.									
Acadia Parish									
2 E Evangeline to 2 NE Iota	02	0310CST 0320CST	10	400	0	0	500K		Tornado (F2)
A long tornado touched down in northern Acadia Parish. The most extensive damage occurred near the Richard community, where one house was nearly destroyed and another 6 received minor damage.									
A small airplane parked on the ground east of Iota was picked up and moved 100 yards. At least 20 homes and businesses received some form of damage along this path.									
Avoyelles Parish									
Marksville	02	0340CST			0	0	25K		Thunderstorm Wind
Several trees and power lines were blown down, and several sheds destroyed in Marksville.									
St. Landry Parish									
Leonville	02	0400CST 0405CST	1	50	0	0	100K		Tornado (F1)
A small tornado touched down in Leonville, damaging several homes and businesses. Frozen chickens from a freezer were reported to be picked up by the tornado and deposited a quarter of a mile away in a neighbors front yard.									
St. Landry Parish									
Opelousas	02	0400CST			0	0			Hail (1.75)
Lafayette Parish									
Scott	02	0430CST			0	0			Hail (0.75)

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
LOUISIANA, Southwest									
Vermilion Parish									
1 W Perry to 2 E Abbeville	02	0432CST 0437CST	2	200	0	0	50K		Tornado (F0)
This tornado originated near the Highway 35/335 intersection, and moved northeast. Several homes along the Vermilion River just north of Perry had minor roof damage, and one convenience store south of Abbeville had portions of its roof blown off.									
Vermilion Parish									
1 N Delcambre to 1 NE Delcambre	02	0442CST 0445CST	1	100	0	0	50K		Tornado (F0)
The same storm that produced the tornado near Perry and Abbeville produced another tornado north of Delcambre. A couple of mobile homes were damaged, and several trees and power lines were downed before the tornado dissipated over Lake Peigneur.									
Iberia Parish									
4 NW New Iberia to 1 SE New Iberia	02	0457CST 0500CST	4	200	0	0	1.5M		Tornado (F1)
A tornado moved across sections of New Iberia, damaging three schools and at least 20 other homes and businesses. One mobile home was flipped over and two other homes were completely destroyed when a large oak tree crashed through them.									
St. Mary Parish									
3 SW Patterson to 1 SW Patterson	02	0540CST 0545CST	2	100	0	1	75K		Tornado (F1)
A tornado touched down southwest of Patterson, destroying one mobile home, several storage buildings, and removing the roof from one home. Three people were inside the mobile home at the time of the tornado, but only one person received minor injuries.									
Calcasieu Parish									
8 SW Lake Charles	06	1630CST	1	10	0	0	0		Tornado (F0)
A small tornado was spotted near the boat docks along Calcasieu Lake. The tornado moved across the marshes, and did no damage.									
Acadia Parish									
Iota to Church Pt	07	0700CST 1600CST			0	0	50K		Flood
Around ten inches of rain fell across northern Acadia Parish in less than 24 hours, resulting in over 11 roads being closed due to high water. Schools were closed in Church Point, Iota, Evangeline, Branch, and Richard. Property in low-lying areas were hardest hit. A potential disaster was averted when a school bus carrying 24 children ran off the road and leaned over in a ditch near Evangeline. Another school bus was nearby and evacuated the children to safety.									
St. Landry Parish									
Opelousas	07	1000CST 1600CST			0	0	50K		Flood
As much as 13 inches of rain fell across portions of St. Landry Parish in less than 24 hours, resulting in over 20 road closures. Sunset, Grand Coteau, and Opelousas were the worst hit areas. In some places, as much as 2 feet of water covered major highways.									
Lafayette Parish									
Carencro	07	1000CST 1600CST			0	0	50K		Flood
Over 5 inches of rain fell over Carencro, resulting in significant flooding in downtown and rural areas northwest of town. At least eight homes received water damage, and fire trucks had to come in to evacuate the residents. Twelve streets had high water on them.									
St. Martin Parish									
Cecelia	07	1000CST 1600CST			0	0	50K		Flood
Several major roads had deep water across them after 10 inches of rain fell in less than 24 hours.									
Evangeline Parish									
Basile	07	1000CST 1600CST			0	0	20K		Flood
Flood waters reached into several homes in Basile due to 10 inches of rain falling in less than 24 hours.									
Jefferson Davis Parish									
Jennings	07	1100CST 1600CST			0	0	20K		Flood
Up to 8 inches of rain fell across the Jennings to Elton areas to Jeff Davis Parish. Several roads were closed due to deep water.									

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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LOUISIANA, Southwest

Vernon Parish

Rosepine	07	1630CST			0	0	25K		Thunderstorm Wind
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Buildings near Highway 3226 received some damage from severe thunderstorm winds.

Rapides Parish

Alexandria	21	2001CST 2005CST	2	400	0	1	1M		Tornado (F2)
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A small, yet powerful tornado moved across southern sections of Alexandria. Touching down southwest of Highway 71, the storm moved through the Mayeau subdivision and the MacArthur-Lee business district.

The one injury occurred when a man driving down the road had a tree land on his vehicle.

Several homes were destroyed, a strip mall lost its entire roof, and at least 30 other homes and businesses received some form of damage. Trees as wide as 15 feet were snapped 20 feet off the ground.

Vernon Parish

Evans	22	1040CST 1042CST	1	10	0	0	25K		Tornado (F0)
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A small tornado touched down in the Boise-Vernon area near Evans, knocking down some trees.

Vernon Parish

5 N Leesville	22	1102CST			0	0			Hail (1.75)
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Rapides Parish

Deville	22	1135CST			0	0			Hail (0.75)
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Acadia Parish

Estherwood	22	1305CST			0	0			Hail (0.75)
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St. Landry Parish

Opelousas	22	1400CST			0	0			Hail (0.75)
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Iberia Parish

New Iberia	22	1459CST			0	0			Hail (0.75)
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Iberia Parish

New Iberia	22	1459CST			0	0	20K		Thunderstorm Wind
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Numerous trees were blown down in New Iberia.

St. Mary Parish

Patterson	22	1735CST			0	0	10K		Thunderstorm Wind
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Several trees were blown down on homes.

Rapides Parish

Ball	29	1340CST			0	1			Lightning
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A person was struck in the leg by lightning, resulting in minor injuries.

Allen Parish

4 SW Elizabeth to 2 SW Elizabeth	29	1430CST 1435CST	2	100	0	0	10K		Tornado (F0)
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A small tornado blew down some trees in rural areas near Elizabeth.

Rapides Parish

2 SE Glenmora to 3 SE Glenmora	29	1455CST 1457CST	1	50	0	0	10K		Tornado (F0)
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A small tornado was reported by SKYWARN spotters. NWS survey showed tree tops sheared off.

Rapides Parish

Glenmora	29	1700CST 2000CST			0	0	10K		Flood
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Several creeks rose rapidly, a result of four inches of rain falling in less than 2 hours. Several side roads were covered with water.

Rapides Parish

Alexandria	30	0700CST 0830CST			0	0	10K		Flash Flood
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Heavy rain from the previous day on top of an additional 3 inches of rain this morning resulted in street flooding.

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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LOUISIANA, Southwest

Avoyelles Parish

Mansura	30	0700CST 0830CST			0	0	10K		Flash Flood
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Heavy rain resulted in street flooding and road closures between Mansura and Hessmer.

MAINE, North

NONE REPORTED.

MAINE, South

NOT RECEIVED.

MARYLAND, Central

MDZ002>005-009>011 **Allegany - Washington - Frederick - Carroll - Montgomery - Howard - Southern Baltimore**

02	1400EST				0	0			Winter Storm
03	0600EST								

MDZ006

Northern Baltimore

02	1400EST				0	0			Winter Weather
03	0600EST								

An area of low pressure moved from the Ohio Valley to the Eastern Great Lakes on the 2nd, spreading precipitation across the Mid-Atlantic region from midday on the 2nd to early morning on the 3rd. High pressure centered over New England brought a shallow layer of sub-freezing air to locations east of the Appalachian Mountains. Across Western Maryland this layer of cold air was deep enough to allow up to 5 inches of snow to fall. East of Hagerstown in Washington County, this layer of cold air was shallower, forcing much of the precipitation to fall in the form of sleet and freezing rain. Shortly after midnight on the 3rd, a warm front from the Atlantic Ocean moved into Central and Northern Maryland. This front rapidly turned all freezing precipitation into rain east of Washington County for the remainder of the morning. Snowfall amounts included 4 to 5 inches in Allegany County, 2 to 4 inches in Washington County, and 1 to 2 inches in Frederick and Carroll County. A trace of snow and sleet fell in Northern Baltimore, Howard, and Montgomery County, in addition to an ice accumulation up to 1/4 inch. The aftermath of this storm included icy roads and dense fog.

MDZ002>007

Allegany - Washington - Frederick - Carroll - Northern Baltimore - Harford

08	0200EST				0	0			Winter Storm
09	0400EST								

MDZ009>011-013>014-016

Montgomery - Howard - Southern Baltimore - Prince Georges - Anne Arundel - Charles

08	0200EST				0	0			Winter Weather
09	0400EST								

An area of low pressure over Ohio brought a variety of precipitation to Central and Western Maryland. Precipitation started off as snow during the early morning hours of the 8th. By early afternoon warm air moved into the middle levels of the atmosphere, turning the precipitation to freezing rain. The freezing rain continued through early morning on the 9th, when temperatures finally rose above freezing at the surface. Snowfall amounts included 5 to 6 inches in Frederick, Washington and Allegany County, and 4 to 5 inches in Montgomery, Carroll, Howard, Harford, and Baltimore County. Two to 4 inches of snow fell in Anne Arundel, Prince Georges, and Charles County. Ice accumulations on top of the snowfall ranged from a trace to 1/3 of an inch.

The aftermath of the snow and ice included school closings and many car accidents. Washington County officials reported a dozen accidents on Interstates 81 and 70 during the storm. Anne Arundel County reported over 50 accidents, including one with a serious injury on the 8th. State Police closed Route 50 between Rowe Boulevard and Route 450 for 90 minutes to clear accidents and attend to 8 injured people. Runways at the Baltimore/Washington International Airport (BWI) in Anne Arundel County had to be closed for plowing from 9:45 AM to 11:15 AM, causing flight delays. The northbound side of Interstate 97 was closed at 10:15 PM to clear several fender benders and the Severn River Bridge was closed due to ice. Maryland Route 140 had to be closed from Finksville east to the Anne Arundel/Baltimore County line because several drivers coming down a hill had lost control on ice around 9:30 AM on the 8th. On Interstate 295 near Baltimore, a bus slipped off the road and six cars hit utility poles. Accidents were also reported on the Vienna, Cambridge E. Tydings Memorial, and Kent Narrows Bridges. Around the Maryland suburbs of Washington D.C., over 100 accidents occurred leading to more than a dozen injuries.

MDZ002>007-009>011-013>014

Allegany - Washington - Frederick - Carroll - Northern Baltimore - Harford - Montgomery - Howard - Southern Baltimore - Prince Georges - Anne Arundel

14	0100EST				0	0	3.1M		Ice Storm
15	1100EST								

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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MARYLAND, Central

MDZ016>018

Charles - St. Mary'S - Calvert

14	0100EST				0	0			Winter Weather
15	1100EST								

A strong arctic cold front moved slowly southeast across the Mid-Atlantic region from late on the 13th to midday on the 15th. This front brought a thick layer of sub freezing air to the lowest levels of the atmosphere, but just off the surface warmer air moved in. A low pressure system developed on the 13th over the Tennessee Valley. The low moved into the Mid Atlantic region over the next few days, spreading precipitation region wide from early on the 13th through midday on the 15th. The precipitation started as snow but melted into rain as it fell through the warm layer of air. Unfortunately west of the cold front the ground was below freezing during the period so the rain froze on every surface it came in contact with. This created ice accumulations of one quarter to one half inch north and west of a line from Montgomery County to Harford County through early afternoon on the 14th. By 9 AM on the 15th, ice accumulations from one quarter to nearly one inch occurred across all of Western and Central Maryland, except Charles, Calvert, and St. Mary's county where a trace to one quarter inch accumulated.

The ice this storm left behind had a large impact on the region. Hundreds of car accidents, slip and fall injuries, downed trees, and power outages were reported. On the morning of the 14th, 30 Montgomery County school buses slipped off the road. Interstate 68 in Allegany County was closed from midnight to 3 AM on the 15th because of several accidents. A 21 year old man was killed in a car crash on Interstate 70 in Western Maryland around 5 PM on the 15th, west of Conococheague Creek, and a tractor trailer jackknifed at 2:30 AM on the 16th near Exit 9. The city of Annapolis in Anne Arundel County reported 37 car accidents with two serious injuries. The icy conditions also led to over 500 pedestrian slip and fall injuries. One hospital in the Washington suburbs treated over 250 patients alone on the 15th with storm related injuries. Winds gusted over 40 MPH after the precipitation ended and trees weighed down by the heavy ice accumulations fell on homes, across roads, and onto power lines across the area. 2000 power lines were reported down in PEPCO's Maryland power service area leading to a loss of power for 230,000 of the utility companies 680,000 customers. This was the worst ice storm in PEPCO's service history. The Governor declared a state of emergency in Howard, Prince Georges, Carroll, Baltimore, Harford, and Montgomery Counties. Montgomery County was the hardest hit location. Nearly 187,000 customers in the county were without power, and some locations did not have power restored until the 19th. Over 200 people were housed in emergency shelters. 1,223 live power lines were downed by the storm. 11 of the 41 power substations were knocked out across the county, in addition to 430 of 700 traffic lights. Also, 34,000 customers in Prince Georges County, 119,000 in Baltimore County, 39,000 in Howard County, 7,600 in Anne Arundel County, and 5,000 customers across Western Maryland were without power after the storm. Power outages also caused a disruption in the public transportation system in the suburbs of Washington D.C., leading to a commuter nightmare. The Red Line of the Metro subway system had to be shut down from the Van Ness to Shady Grove Station in Montgomery County at 3:30 PM on the 15th after rail de-icing equipment failed and a tree fell across the tracks. The MARC train system had to cancel departures from Washington D.C. westward between 5 and 6 PM due to ice and related power outages.

Carroll County

Mt Airy	18	1455EST			0	0	80K		Thunderstorm Wind
									Home under construction destroyed

Carroll County

1 N Taylorsville	18	1505EST			0	0	5K		Thunderstorm Wind
									Barn damaged

Carroll County

Hampstead	18	1515EST			0	0			Thunderstorm Wind (G63)
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Carroll County

Sykesville	18	1515EST			0	0	1K		Thunderstorm Wind
									Trees downed

Anne Arundel County

Countywide	18	1520EST 1535EST			0	0	10K		Thunderstorm Wind
									Trees and power lines downed

Anne Arundel County

Rivera Beach	18	1520EST			0	0	2K		Thunderstorm Wind
									6 trees downed at Richie Highway and Jumpers Hole Road intersection

Anne Arundel County

Glen Burnie	18	1530EST			0	0	5K		Thunderstorm Wind
									A few business buildings minorly damaged

Baltimore County

Dundalk	18	1530EST			0	0	4K		Thunderstorm Wind
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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	January 1999
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MARYLAND, Central

Porch on home damaged

Baltimore County

Towson	18	1530EST			0	0	1K		Thunderstorm Wind
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Tree with two foot plus diameter downed

Baltimore City (C)

Baltimore	18	1530EST			0	0	5K		Thunderstorm Wind
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Several trees fell onto cars

Anne Arundel County

10 E Annapolis	18	1545EST			0	0			Waterspout
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Spotted over Chesapeake Bay moving toward Kent Island

Harford County

Aberdeen	18	1545EST			0	0	6.5K		Thunderstorm Wind
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Shed Destroyed, 2 trees and a telephone pole downed, and tree on home

A vigorous cold front swept across Maryland during mid-afternoon on the 18th, accompanied by thunderstorms that produced damaging wind. The Baltimore/Washington International Airport in Anne Arundel County recorded a wind gust of 53 MPH at 3:25 PM. Around 3:30 PM, a spotter near the Carroll/Northern Baltimore County line reported a wind gust of 72 MPH. Other recorded gusts included 44 MPH at Mount Airy Middle School (Carroll County) at 2:55 PM, 48 MPH in Brooklyn Park (Anne Arundel County) at 3:22 PM, 45 MPH at Rivera Beach (Anne Arundel County) at 3:40 PM, and 50 MPH in Annapolis at 3:35 PM. In Carroll County, the storm left behind damage to a barn, downed trees, and the destruction of a house under construction. The wind blew part of the metal roof off a barn that housed a champion horse on Sams Creek Road, one mile north of Taylorsville. The wind left an extension cord stuck 30 feet high in a tree and bent the metal frame of a glass table around a tree. A large tree toppled by the storm blocked Raincliffe Road at Slacks Road in Sykesville. A home under construction in Mount Airy was destroyed by the severe wind. The structure had a roof and outside walls and was scheduled to have the windows installed on the day it was destroyed. In Baltimore County, the storm left behind downed trees and a damaged porch. Several trees and limbs blew down onto cars around the city of Baltimore. In Towson, a two foot plus diameter tree fell across Greenspring Avenue, taking other trees and a power line down with it. A porch awning was ripped from its mooring at a home on Wareham Road in Dundalk. Anne Arundel County officials reported trees down across the county, with a concentration in the Pasadena area. A few businesses in the Glen Burnie area reported minor damage. Several power lines were blown down across Ritchie Highway at Jumpers Hole Road, shutting down the southbound lanes from 3:30 to 7:10 PM. Downed power lines also blocked Belle Grove Road at Thomas Avenue, and traffic lights were out at Route 32 and 198. In addition, a waterspout was spotted by several mariners over the Chesapeake Bay east of Annapolis at 3:45 PM moving toward Kent Island. It dissipated before reaching land. Harford County also reported damage. Near Swan Creek in Aberdeen the wind toppled two trees, removed the roof of a barn, completely swept away a 100 foot long shed, and pushed a tree onto a house. A bicycle and pieces of a tractor were also strewn across the property. Sheet metal from the shed was found 40 yards away from its original location and 30 feet high in a pine tree, and a telephone pole was snapped in half a few feet away. Several traffic lights in and near Aberdeen were out due to power disruptions. Power outages occurred for 11,750 customers in Baltimore City, 800 in Baltimore County, 6,700 in Anne Arundel County, 4,800 in Carroll County, 6,500 in Harford County, 2,400 in Howard County, and 1,650 in Montgomery County.

MARYLAND, Northeast

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

01	0000EST				0	0	0	0	Drought
31	2359EST								

January 1999 finally broke a string of unseasonably dry months that prevailed during the second half of 1998. On a statewide average, January precipitation was 163% of normal. Along the Eastern Shore, monthly precipitation totals were higher and averaged around 200% of normal. On a county weighted average, monthly precipitation totals ranged from 5.8 inches in Kent County to 6.8 inches in Caroline County and was about 3 inches above normal. In spite of this, a drought warning was still in effect for the state as of January 31st.

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

02	2200EST				0	0	0	0	Wintry Mix
03	0400EST								

A very cold and dry air mass built into the Delmarva Peninsula on the 1st and the 2nd. As the high pressure system built into New England and the adjacent coastal waters, the circulation around it and a low pressure system over the Lower Ohio Valley started to bring in warmer air from the Atlantic Ocean. In spite of this, the air was cold enough at the start for precipitation to begin as light freezing rain and sleet during the evening of the 2nd. The change to plain rain occurred quickly in Talbot and Caroline County and took the longest in Cecil County (until around 4 a.m. EST on the 3rd). Even there, the ice accretion was generally less than one tenth of an inch. Because this occurred late on a weekend night, the number of reported accidents was not very high.

Storm Data and Unusual Weather Phenomena

January 1999

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

MARYLAND, Northeast

Caroline County

Countywide	03	0700EST			0	0	0	0	Heavy Rain
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Cecil County

Countywide	03	0700EST			0	0	0	0	Heavy Rain
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Kent County

Countywide	03	0700EST			0	0	0	0	Heavy Rain
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Queen Anne'S County

Countywide	03	0700EST			0	0	0	0	Heavy Rain
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Talbot County

Countywide	03	0700EST			0	0	0	0	Heavy Rain
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. Not only did this second low pressure system increase the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes), but it also brought heavy rain into the region. Heavy rain fell for most of the morning of the 3rd. Doppler Radar storm total estimates for the entire event averaged between 1.0 and 2.0 inches across the Maryland Eastern Shore. The usual poor drainage flooding occurred, but no other serious flooding was reported.

MDZ008-012-015-019>020

Cecil - Kent - Queen Annes - Talbot - Caroline

	08	0530EST			0	0	0	0	Wintry Mix
	09	0100EST							

A low pressure system developed over Texas during the morning of the 8th. A broad southwest flow of air preceding it overran a frontal boundary over the central Appalachians and spread snow into the region the morning of the 8th. Enough warm air moved aloft to change the snow to sleet and freezing rain. Since the low pressure system tracked across western Pennsylvania, the onshore flow brought in milder air into the peninsula and changed the freezing rain to plain rain from south to north. This took the quickest (afternoon of the 8th) in Talbot and Caroline Counties, but the longest (past midnight) in far northern Cecil County.

Snow reached the Eastern Shore first on Kent Island by 6 a.m. EST on the 8th. It spread across the northern half of the Eastern Shore quickly, but took a couple of hours to move into southern areas. There were school delay openings in Cecil County. The children were also dismissed early. As warmer air moved in the snow mixed with sleet and then changed over to freezing rain by the afternoon of the 8th. The change to plain rain worked its way northward and took the entire evening to work its way through Cecil County. Snow accumulations were lower in the southern counties as the change to plain rain occurred quickly. They ranged from 1 to 4 inches. Many accidents were reported. At least one car slid off the road in Kent County. Accumulations included 4 inches in Chestertown (Kent County), 3 inches in Charlestown (Cecil County), 3 inches in Church Hill (Queen Anne's County), 2 inches in Stevensville (Queen Anne's County), 1.5 inches in Denton (Caroline County) and 1 inch in Easton (Talbot County).

MDZ008-012-015-019>020

Cecil - Kent - Queen Annes - Talbot - Caroline

	09	0500EST 1300EST			0	0	0	0	Fog
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The southeast flow from the Atlantic Ocean passing over the fresh snow pack produced widespread dense fog across the Delmarva Peninsula during the morning of the 9th. A cold frontal passage shifted the winds to the west and dissipated the fog around noon EST.

MDZ008

Cecil

13	2300EST				0	0	0	0	Winter Storm
15	0400EST								

MDZ012-015-019>020

Kent - Queen Annes - Talbot - Caroline

14	0100EST 2200EST				0	0	0	0	Wintry Mix
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Caroline County

Countywide	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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Cecil County

Countywide	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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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		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

MARYLAND, Northeast

Kent County

Countywide	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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Queen Anne'S County

Countywide	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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Talbot County

Countywide	15	0400EST 1000EST			0	0	0	0	Heavy Rain
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A very protracted precipitation event affected the Delmarva Peninsula on the 14th and 15th. The region escaped the worst conditions as enough warm air came in before the heavy rain arrived. Nevertheless about a quarter inch of ice accrued on power lines and limbs in extreme northern Cecil County. Less ice fell farther south.

A cold front moved through the peninsula the evening of the 13th. Extremely cold air moved south behind it. Unlike the usual pattern with cold frontal passages, precipitation occurred behind the front and slowly worked its way south during the early morning of the 14th. A weak low pressure system developed on the cold front in the Tennessee Valley on the 14th, but weakened as it moved east off the Delmarva Peninsula during the evening of the 14th. A very strong high pressure system built into northern New England on the 14th. The high moved offshore the evening of the 14th and the flow across the Middle Atlantic States became more easterly. This permitted warmer air to move back quicker into the region during the late afternoon and evening of the 14th just as a second and stronger low pressure system was getting organized over the Tennessee Valley. A secondary low formed near Norfolk during the early morning of the 15th and this not only accelerated the increase of warmer air, but also produced some heavy rain across the peninsula.

A mixture of sleet, snow and freezing rain fell across Cecil County from around midnight on the 14th through the evening of the 14th. Freezing rain prevailed the rest of that night until air temperatures climbed above freezing during the early morning of the 15th. A shorter version of this scenario occurred farther south across the Maryland Eastern Shore. Only a couple of hours light freezing rain occurred across Talbot and Caroline Counties the morning of the 14th before air temperatures went back above freezing. Heavy rain moved across the region during the morning of the 15th. Storm total amounts averaged between 1.0 and 2.0 inches for the event, most of which fell during the morning of the 15th. There was some poor drainage flooding, but no serious problems were reported. The storm total in Federalsburg was 2.1 inches.

Cecil County

Perryville	18	1450EST			0	0	0	0	Thunderstorm Wind (G50)
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A severe thunderstorm downed several large trees and damaged several homes in Perryville and also in Elk Neck. Damaging winds also accompanied showers as they moved along a cold front that afternoon throughout northern parts of the Maryland and Delaware. Connectiv Energy reported 4,000 homes and businesses lost power in Harford and Cecil Counties in Maryland and New Castle County in Delaware. All power was restored by the morning of the 19th.

MDZ008-012-015-019>020

Cecil - Kent - Queen Annes - Talbot - Caroline

	31	2359EST			0	0	0	0	Unseasonably Wet
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January 1999 finally broke a string of unseasonably dry months that prevailed during the second half of 1998. Along the Eastern Shore, January monthly precipitation totals averaged around 200% of normal. On a county weighted average, precipitation monthly totals ranged from 5.8 inches in Kent County to 6.8 inches in Caroline County and was about 3 inches above normal.

MARYLAND, South

MDZ021>022

Dorchester - Wicomico

08		1030EST			0	0	0	0	Winter Weather
09		0200EST							

Snow, sleet and freezing rain occurred off and on during Friday, January 8th across portions of Dorchester and Wicomico counties on the Lower Maryland Eastern Shore. This precipitation resulted in some snow and ice accumulations on many roads and bridges, and in turn, several accidents were reported.

MARYLAND, West

MDZ001

Garrett

02		0800EST			0	0	5K	0	Winter Storm
03		0400EST							

A strong winter storm approached the region from the south central U.S. bringing a mix of snow, sleet and freezing rain to western Maryland. Snowfall amounts of around 4 to 5 inches were common across Garrett County during the day of the 2nd. More problems came later on the 2nd as the snow turned over to freezing rain. Ice accumulations of approximately 1/4 inch were reported at several locations across the county.

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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MARYLAND, West

MDZ001

Garrett

08	0500EST				0	0	5K		Winter Storm
09	0500EST								

A winter storm spread a mix of snow and freezing rain across western Maryland. By the afternoon of the 8th, snowfall amounts generally ranged from 4 to 5 inches across the area, with higher amounts of over 6 inches reported over some of the higher terrain. The city of Swanton reported a total of 9 inches. By the evening of the 8th the snow had turned over to freezing drizzle across the county, leaving a thin coating of ice on top of the snowfall.

MDZ001

Garrett

13	0800EST				0	0	5K		Winter Storm
15	1200EST								

A powerful winter storm brought another combination of snow and freezing rain to western Maryland. The precipitation began as freezing rain and by the evening hours of the 14th had accumulated to over 1/4 inch. The precipitation turned back to all snow by the late evening of the 14th, accumulating another several inches before ending on the afternoon of the 15th.

MDZ001

Garrett

18	1250EST				0	0	5K		High Wind (G60)
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An intensifying area of low pressure moving across the Great Lakes trailed a strong cold front to the south. This front passed through western Maryland during the early afternoon hours of the 18th. This front was accompanied by high winds estimated at over 60 MPH, along with a mix of rain, sleet and snow, as it passed across the area. These high winds produced some minor damage across the area as several reports of downed trees were received from around the Friendsville area.

MASSACHUSETTS, Central and East

Bristol County

Taunton

03	1200EST				0	0		Heavy Rain
	1900EST							

MAZ002>004-008>012

Western Franklin - Eastern Franklin - Northern Worcester - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden - Southern Worcester

03	1200EST				0	0		Freezing Rain
	1800EST							

Norfolk County

Walpole

03	1200EST				0	0		Heavy Rain
	1900EST							

Plymouth County

Plymouth

03	1200EST				0	0		Heavy Rain
	1900EST							

Suffolk County

Boston

03	1200EST				0	0		Heavy Rain
	1900EST							

MAZ019>024

Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket

03	1300EST				0	0		Strong Winds
	1900EST							

MAZ019-022

Eastern Plymouth - Barnstable

03	1515EST				0	0		High Wind (G62)
	1831EST							

A developing low pressure system moving from the mid Atlantic states into southern New England brought strong southeast winds and more than 2 inches of rain to eastern and southeastern Massachusetts. Freezing rain occurred in the central and western part of the state, especially in the valleys.

Strong winds occurred across all of southeastern Massachusetts, including Cape Cod and the Islands. A peak wind gust to 71 mph was reported at Chatham, and a gust to 65 mph was reported at Onset, where two trees were blown down. In Fairhaven, a gust to 56 mph downed a telephone pole which resulted in a power outage. Other strong wind gusts included 56 mph at West Island, 55 mph at Nantucket and Pocasset, 48 mph at Martha's Vineyard, and 46 mph at Taunton and Plymouth.

Heavy rainfall associated with the storm totaled 1.5 to 2.5 inches in less than 12 hours. As much as 2.25 inches fell in Walpole, 2.05 inches in Dedham and 2.00 inches in Norwood. 1.93 inches of rain fell at the Blue Hill Observatory in Milton, with as much as 0.8 inches in one hour. There were no reports of flooding.

In central and western Massachusetts, temperatures remained below freezing, which resulted in a period of freezing rain. Glaze accumulations of up to one-half inch were reported from Chicopee and Russell in Hampden County, Hubbardston and Leicester in

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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MASSACHUSETTS, Central and East

Worcester County, and from Shutesbury in Franklin County. The accumulation of ice downed branches and wires in West Springfield and Chicopee. Scattered power outages affected about 2,000 customers, including about 1,300 in Ludlow.

MAZ002-005>008-012>019

Western Franklin - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth

14	0000EST								
15	0000EST				0	0			Heavy Snow

A strong high pressure system centered over southeast Canada brought an Arctic airmass into Massachusetts. Northeast winds off the warmer waters of the Atlantic Ocean produced "ocean effect" snow squalls along the eastern coast from Essex County to Plymouth County. During the same time, an intensifying low pressure system over the mid Atlantic states brought a more general snowfall across the state. The highest snowfall totals were found in two areas - in coastal northeast Massachusetts and in Boston's southern suburbs, which both received enhancement from the "ocean effect" snow. Total snowfall in these areas ranged from 10 to 16 inches, with as much as 16.5 inches in South Weymouth. The heavy snow in the Boston area created havoc with the afternoon and evening rush hour. Many drivers abandoned their vehicles on a section of the Southeast Expressway in Quincy, and also along most of Route 128. Portions of both of these roadways had to be closed until snowplows could keep up with the snow, which was falling at the rate of around 2 inches per hour. It took evening commuters as long as 3 to 4 hours just to drive 10 to 15 miles. Schools were closed in Greater Boston for one to two days as a result of this storm.

Those areas which did not receive the enhancement from the ocean, namely western and central Massachusetts, and eastern Massachusetts outside of the Interstate 495 corridor, received somewhat lower amounts. About 6 to 9 inches fell across the remainder of eastern Massachusetts. Only one or two locations in western Massachusetts reported 6 to 8 inches of snow, both of which were in Franklin County.

MAZ002>006

Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Essex

15	0000EST								
	1300EST				0	0			Freezing Rain

Snow changed to freezing rain across northern Massachusetts, from Franklin County to Worcester, Middlesex, and Essex Counties during the early morning hours. Glaze accumulated from one quarter to one half inch. Scattered power outages were reported when the buildup of ice knocked down branches onto power lines. As much as 2,500 customers lost power in Clinton, and another 700 lost power in Lynn. Other outages were reported in Burlington and Sudbury.

Bristol County

Taunton	15	0900EST							
		1700EST			0	0			Heavy Rain

MAZ019>024

Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket

15	0900EST								
		1700EST			0	0			Strong Winds

Middlesex County

Framingham	15	0900EST							
		1700EST			0	0			Heavy Rain

Norfolk County

Norwood	15	0900EST							
		1700EST			0	0			Heavy Rain

Plymouth County

Plymouth	15	0900EST							
		1700EST			0	0			Heavy Rain

Worcester County

Worcester	15	0900EST							
		1700EST			0	0			Heavy Rain

Rainfall of 1 to 2 inches combined with rapid snowmelt to result in considerable urban street flooding and ponding of water in low lying areas. There were also many reports of basement flooding. The problem was aggravated by storm drains which became clogged by snow and ice. Temperatures rose rapidly from the 20's and 30's into the 40's and 50's, which melted much of the 8 to 15 inches of snow which was on the ground. Scattered thunderstorms also accompanied the heavy rain. In southeastern Massachusetts, strong southeast winds of 40 to 50 mph were also reported.

The most severe street flooding occurred in Greater Boston, where many cars were submerged or stalled in low lying areas. In Boston, the Callahan Tunnel flooded, stranding several vehicles. Several cars were submerged in flood waters when underpasses on Route 128 in Dedham and Needham flooded out. No injuries were reported.

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	January 1999
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MASSACHUSETTS, Central and East

MAZ002>003-008>011 **Western Franklin - Eastern Franklin - Western Hampshire - Western Hampden - Eastern Hampshire - Eastern Hampden**

18	0630EST 1500EST				0	0				Freezing Rain
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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**

18	1900EST 2200EST				0	0				Strong Winds
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MAZ005-017-020 **Western Middlesex - Northern Bristol - Southern Bristol**

18	2016EST 2120EST				0	0				High Wind (G54)
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Dukes County

Marthas Vineyard Arp **18** **2104EST** **0** **0** **Thunderstorm Wind (G52)**

Low pressure moving northward into Canada brought a variety of weather to Massachusetts, including freezing rain, high wind, and scattered thunderstorms.

Freezing rain in western Massachusetts caused severe icing of roadways, especially in the valleys of Franklin, Hampshire, and Hampden Counties. Many towns reported states of emergency. Roads were closed in many communities, including Goshen, Northfield, Colrain, Florida, Heath, Cummington, Chester, Gill, Huntington, and Russell. Thunderstorms accompanied the freezing rain during the afternoon.

Strong south winds occurred ahead of an approaching cold front, mainly in the eastern part of the state, but also across the higher elevations of western and central Massachusetts. Gusts as high as 45 to 55 mph were common. A spotter in Tyngsboro reported a peak gust to 63 mph at 920 pm, which occurred just behind the cold front. A gust to 59 mph was reported from West Island on Buzzard's Bay. Other strong wind gusts included 58 mph in Taunton (spotter), 54 mph at the Blue Hill Observatory in Milton, 53 mph in Worcester, 47 mph at Logan International Airport in Boston, and 46 mph in Hyannis. In Dartmouth, in Bristol County, wires were downed by the strong winds. There were many reports of downed branches, some of which caused power outages by falling on wires.

Scattered thunderstorms were reported throughout most of the state, however the strong winds were not directly associated with the thunderstorms. The exception was on Martha's Vineyard, where thunderstorms produced a wind gust to 60 mph at the Martha's Vineyard Airport around 900 pm. In Oak Bluffs on the Vineyard, large tree limbs were downed and a small shed was blown down at the high school. Lightning strikes resulted in several power outages, and in central Massachusetts, lightning started an attic fire in Gardner, causing minor damage to a building.

MAZ007-013>024 **Eastern Essex - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket**

24	0000EST 1500EST				0	0				Strong Winds
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MAZ013 **Western Norfolk**

24	0814EST Blue Hill Observatory				0	0				High Wind (G55)
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MAZ012-015 **Southern Worcester - Suffolk**

24	0843EST 1000EST				0	0				Record Warmth
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Worcester County

Barre **24** **1630EST** **0** **0** **Flood**

25 **0400EST**
Ware River

South winds gusted to as high as 55 mph in advance of a strong cold front. The strongest winds occurred across eastern Massachusetts, and were accompanied by heavy rain showers and mild temperatures.

A peak wind gust to 63 mph was recorded at the Blue Hill Observatory in Milton. Some of the other higher wind gusts reported include 50 mph at Otis Air Force Base in Falmouth, 48 mph in Cohasset, and 47 mph in Plymouth.

Scattered showers produced localized rainfall of 2 to 3 inches in a short period of time. The Ware River in Worcester County

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

MASSACHUSETTS, Central and East

overflowed its banks, and crested at 4.2 feet on the evening of the 24th, just over its flood stage of 4 feet. No flood damage was reported.

Two record high temperatures were also broken. At Worcester Municipal Airport in Worcester, the high temperature of 59 degrees at 843 am broke the previous record high of 56 degrees which was set in 1906.

In Boston, the temperature at Logan International Airport reached 62 degrees at 1000 am, which broke the previous record high of 61 degrees which was set in 1967.

MASSACHUSETTS, West

MAZ001

Berkshire

02	2300EST								
03	1900EST				0	0			Winter Storm

A deep low pressure area moved from the Mississippi Valley into the Great Lakes region during the night of January 2 and January 3. With arctic air in place over Western Massachusetts, a wintry mix of sleet and freezing rain resulted in significant ice accumulations across the region. Total melted precipitation exceeded an inch in portions of the Berkshires.

MAZ001

Berkshire

14	0600EST								
15	1400EST				0	0	1K		Winter Storm

An extremely cold arctic air mass moved into western Massachusetts on January 13 and January 14. At the same time an area of low pressure developed over Kentucky. This low moved east to northern Virginia then turned north and moved up the Hudson Valley of New York on January 15. The storm brought a significant amount of snow sleet and freezing rain to the region with total melted precipitation exceeding half an inch in the Berkshires.

MICHIGAN, East

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

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

02	0900EST								
03	0500EST				0	0	50K		Heavy Snow

Shiawassee - Genesee - Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe

**MIZ060>061-
068>070-075>076-
082>083**

02	1300EST								
	1600EST				0	0			Blizzard

A strong low pressure system moved from the mid Mississippi Valley on the morning of the 2nd, to northern Lake Huron by the afternoon of the 3rd. This low produced very heavy snow across most of the southern Great Lakes, and southeast Michigan was no exception.

Snow developed from south to north across southeast Michigan during the daylight hours of the 2nd. A combination of snow, blowing snow, and wind produced blizzard conditions across the metro Detroit area in the early afternoon. The winds subsided slightly as the snow intensified, but near-blizzard conditions were the rule into the overnight hours. The strong wind throughout the storm made it very difficult to measure snowfall accurately.

With temperatures in the teens across most of the area, the snow was very fluffy and dry - which is unusual for Michigan heavy snow events. An exception occurred late in the evening of the 2nd, as a surge of warmer air struggled into extreme southeast Michigan. Temperatures rose to around freezing for a few hours, and some freezing rain occurred in Monroe County. Thundersnow at the leading edge of warm air surge added to snowfall totals in the far southeast. Cold air returned to this corner of the state soon after midnight.

Snowfall amounts by county:

Bay County: 11" in Essexville; 9" in Linwood and Bay City.

Genesee County: 7 to 10" in the Fenton/Linden area; 9" in Flushing and Flint.

Huron County: 10" near Kinde and Verona; 7" in Bad Axe; 6" in Port Hope.

Lapeer County: 12" in Imlay City; anywhere from 6 to 12" near the city of Lapeer; 9" in Dryden.

Lenawee County: 16" in Tecumseh; 14" in Clinton; 12" in Hudson and Morenci; 10" in Adrian.

Livingston County: 10" in Brighton; 8" in Howell.

Macomb County: 17" near Mt Clemens; 15" in Roseville; 12" in Romeo, Richmond, and St Clair Shores; 11" near New Baltimore.

Midland County: 10" in the city of Midland; 7" in Mount Haley Township.

Monroe County: 14" in Milan Township; 13" in the city of Monroe and Dundee.

Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated	January 1999	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage Property Crops		

MICHIGAN, East

Oakland County: 15" in Royal Oak; 14" in Ferndale; 13" in South Lyon; 12" in Milford, Clarkston, and White Lake; 11" in West Bloomfield; 10" in Rochester Hills, Farmington, and Waterford; 8" in Holly and Oxford.

St Clair County: 13" in Port Huron; 11" in Ruby; 6 to 12" in Yale; 8" in Avoca.

Saginaw County: 10" in Frankenmuth; 9" in St Charles; 8" in the city of Saginaw; 6" in Freeland.

Sanilac County: 9 to 11" in Marlette; 7 to 10" in Sandusky; 9" in Croswell; 7" in Brown City.

Shiawassee County: 9" in Owosso; 6 to 9" in Byron; 7" in Morrice; 6" in Corunna.

Tuscola County: 9 to 11" in Caro; 9" in Cass City; 8" in Akron; 7 to 9" in Vassar; 7" in Millington.

Washtenaw County: 16" in Ann Arbor; 15" in Dexter; 13 to 16" in Saline; 12" in Ypsilanti.

Wayne County: 14" in Plymouth; 12 to 14" in Northville; 13" in Dearborn; 12" in Westland, Harper Woods, Canton, Wyandotte, and Grosse Pointe Farms; 11" in Romulus.

Drifts up to seven feet high were reported in Lenawee, Monroe, and Washtenaw Counties. President Clinton would eventually declare Lenawee, Macomb, Oakland, Washtenaw, and Wayne Counties as federal disaster areas.

All told, this was one of the worst snowstorms of the past 25 years, and the effects were far-reaching. The storm was well advertised, and a run on grocery stores occurred early in the day. Many stores ran out of staples like bread and milk. Most businesses closed their doors early on the 2nd, to allow employees to get home while they still could. After the snow, the run was on snow removal equipment, with snowblowers, shovels, and salt all very hard to find. The weight of the snow tore a gash in the roof of the Pontiac Silverdome. Festivities surrounding the inaugural of Governor John Engler were postponed. Most schools closed the Monday and Tuesday after the storm (the 2nd was a Saturday), and some schools stayed closed for Wednesday as well.

Detroit Metro Airport (DTW) was severely impacted by the storm. DTW remained open on the 2nd, but visibility at DTW, combined with deteriorating conditions at other airports in the region, resulted in few (if any) incoming and outgoing flights from afternoon on. After closing to clean the runways on the morning of the 3rd (a Sunday), DTW reopened to incoming flights. Unfortunately, although the runways were clear, an insufficient number of arrival/departure gates were usable. By the time this was realized, and incoming air traffic halted, close to 50 planes had landed at DTW without a place to disembark. In an incident that received national media attention, some passengers were stranded in their planes for eight hours until they could disembark. Full operations at DTW would not be resumed until the 6th.

The heavy snow also focused media attention on the city of Detroit. According to city policy, residential streets were not plowed after a heavy snow. This resulted in effectively shutting down parts of the city for almost two weeks, as residents could not get out of their neighborhoods and onto the main streets. Schools were closed for days, as students could not safely get to and from school. In the wake of the storm, this snow-removal policy was being reassessed.

**MIZ068>070-
075>076-082>083**

Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe

04	0100EST	3	29	Extreme Cold
05	2300EST			

Arctic air invaded Michigan behind the massive snowstorm. As usual, the Great Lakes offered some protection, as air was warmed as it crossed the lakes. But far southeast Michigan did not receive the benefits of the lakes, as arctic air coming from the northwest curled around the southern tip of Lake Michigan and turned northeast into the southeast corner of the state.

After a high of around 10 degrees on the 4th, temperatures nose-dived that night. The mercury plunged to -10 at Detroit Metro Airport, Adrian, and Ypsilanti, and -13 at Ann Arbor and Tecumseh. It was not until late afternoon on the 5th before temperatures rose to above zero. By midnight, the temperature at Detroit Metro Airport had risen all the way to 6 degrees.

The cold caused three deaths in Oakland County, all on the 4th. In Pontiac, a man froze to death while walking home early in the morning. An elderly woman somehow walked out of a nursing home in Troy early in the morning; she was found dead in the driveway later in the morning. In West Bloomfield, a young adult male was found frozen to death; the exact circumstances of his death were unknown.

The bitter cold caused numerous cases of frostbite. Injuries were reported near Pontiac and in Shelby Township on the 4th. On the 5th, a single hospital in Westland reported that "dozens suffered from exposure and frostbite." The number of injuries listed above is undoubtedly a gross underestimation.

M46OU, F86OU, M27OU

MIZ075>076-082>083 Washtenaw - Wayne - Lenawee - Monroe

11	0100EST	0	0	1.3M	Extreme Cold
	1000EST				

Temperatures plunged below zero in far southeast Michigan during the early morning hours of the 11th. At Detroit Metro Airport, the morning low was -4 degrees. The cold resulted in over 120 water main breaks in the city of Detroit. A very large water main

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

MICHIGAN, East

ruptured in downtown Adrian, causing a water shortage for its 22,000 residents.

MIZ061

Genesee

12	1500EST				0	1			Extreme Cold
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Temperatures were running in single digits in the Flint area, with wind chills below zero. A 5 year old schoolboy wandered around outdoors after school was dismissed, until a local resident took him in. The young boy was hospitalized due to frostbite.

MIZ047>049-053>055-060>063

Midland - Bay - Huron - Saginaw - Tuscola - Sanilac - Shiawassee - Genesee - Lapeer - St. Clair

12	1600EST				0	0			Heavy Snow
13	0700EST								

A stationary front lay just south of Michigan on the afternoon of the 12th. A strong upper level disturbance moved toward the Great Lakes, causing snow to develop north of the front. In southeast Michigan, snowfall amounts were heavy near and north of Interstate 69. The heaviest snow occurred along the Lake Huron shoreline, as northeast winds at the surface allowed the snowfall to be enhanced by moisture off the lake.

Snowfall amounts by county:

- Bay County: 8" in Essexville; 6" in Bay City.
- Genesee County: 10" in Grand Blanc; 7" in Flint.
- Huron County: 11" in Harbor Beach; 9" in Bad Axe; 7" in Sebawaing.
- Lapeer County: 6" in Lapeer.
- Midland County: 8" in Midland.
- St Clair County: 10" in Port Huron.
- Saginaw County: 8" in St Charles; 6.8" in Freeland.
- Sanilac County: 14" in Croswell and Port Sanilac; 12" in Lexington; 10" in Sandusky and Marlette.
- Shiawassee County: 7" in Corunna.
- Tuscola County: 10" in Caro; 8" in Akron; 6" in Cass City.

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

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

12	1700EST				0	3	1.8M		Snow
14	2300EST								

In addition to the big snowstorms of the 2nd and the 12th-13th, several smaller snow events occurred in the first half of January. By the middle of the month, snowfall was nearing historic proportions, with January of 1999 already among one of the snowiest months ever in southeast Michigan. Compounding the problem was a sustained cold spell during the first half of the month, which prevented any of the snow from melting. As the snowpack grew toward two feet deep across southeast Michigan, it became more and more difficult to find places to put additional snowfall. In snowbound Detroit, the postal service took to delivering the mail via the "Good Humor man" method: the postal carrier would drive as close to his customers as he could, then honk his horn. Residents were then to come out and get their mail. Many Detroit residents had not received mail since before the January 2nd blizzard.

Some roofs across the area gave way under the immense weight of the snow. On the 12th, a portion of the roof collapsed at a shopping center in Canton Township (Wayne County); two stores were extensively damaged. The roof of a welding company in Green Oak Township (Livingston County) also collapsed. Additional snowfall that night caused several roof collapses on the 13th: a light industrial firm in Detroit, which damaged a gas line and started a fire; a bowling center in Commerce Township (Oakland County), where three people were injured; a vacant commercial building in Ann Arbor; a former lawn and garden store in Ypsilanti; a light industrial firm in Novi; a wholesale store in Dearborn; a train assembly building in Melvindale; and a pizza parlor in Monroe County. Also on the 13th, the roof of a two story office building in New Baltimore buckled. On the 14th, a roof covering an outdoor pool collapsed in Hudson.

Ice dams on roofs were another widespread problem. Heat escaping from homes melted some of the snow on the roof; as the meltwater ran down to the eaves, it refroze, as the eaves were not heated from underneath. Ice buildup on the eaves of roofs created ice dams; further meltwater had nowhere to go, and found its way through shingles and into ceilings. Tens of thousands of buildings suffered leaks, resulting in a barrage of calls to both roofers and insurance agents. Leakage got into the Clements Library of the University of Michigan in Ann Arbor, damaging or destroying several rare maps and atlases.

MIZ049

Huron

15	0600EST				0	0			Heavy Snow
	1400EST								

A weak area of low pressure formed over central Lake Huron early in the morning of the 15th. This low moved slowly southeast into Ontario during the day. A lake effect snow band was dragged along by the low, just grazing the northeast tip of Michigan's

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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MICHIGAN, East

thumb. While most of Huron County enjoyed a partly to mostly sunny day, Port Hope received 7 to 9 inches of snow.

**MIZ060>063-
068>070-075>076-
082>083**

Shiawassee - Genesee - Lapeer - St. Clair - Livingston - Oakland - Macomb - Washtenaw - Wayne - Lenawee - Monroe

17	1800EST								
18	0200EST				0	0			Thunderstorm

A line of thunderstorms crossed southeast Michigan from west to east after sunset on the 17th. The visual effect of almost continuous cloud-to-ground lightning, at night, reflecting off of a roughly two-foot snowpack, was quite extraordinary. Although no severe weather occurred, the storms still had quite an impact. The thunderstorms produced a half inch of rain, which fell onto the deep snowpack. The heavy rain, runoff, and snowmelt put a lot of water on area roads. That water froze overnight, leaving many highways a solid sheet of ice. Classes were cancelled in numerous school districts due to the icy roads.

MIZ076

Wayne

23	0400EST								
25	0900EST				0	0			Flood

Runoff from rainfall and rapid snowmelt of January 21st through 23rd caused some rivers in extreme southeast Michigan to exceed flood stage. Up to two inches of rain fell in this time period, and temperatures rose into the lower 50s. These combined to almost completely melt a snowpack that was initially around 18 inches deep across most of the area.

The Lower Rouge River at Inkster exceeded flood stage of 10.0 feet at 4 am on the 23rd. The river crested at 11.0 feet at 10 pm on the 24th, then fell below flood stage at 9 am on the 25th.

MIZ082>083

Lenawee - Monroe

24	0000EST								
28	1300EST				0	0	25K		Flood

The River Raisin exceeded flood stage along virtually its entire length.

At Adrian, the River Raisin rose above flood stage of 13.0 feet at 5 am on the 25th. The river crested at 13.8 feet at 2 pm, then fell below flood stage at 7 am on the 26th.

At Blissfield, the River Raisin rose above flood stage of 683.0 feet at noon on the 24th. The river crested at 684.0 feet at 5 pm on the 25th, then fell below flood stage at 10 am on the 27th.

At Dundee, the River Raisin rose above flood stage of 650.0 feet at 10 am on the 26th. The river crested at 650.5 feet at 1 am on the 27th, then fell below flood stage at 4 pm.

An ice jam near Hellenberg Field in the city of Monroe, just downstream of the river gage, contributed to flooding there. At Monroe, the River Raisin rose above flood stage of 9.0 feet just after midnight early on the 24th. The river crested at 11.5 feet at 10 pm on the 25th, then fell below flood stage at 1 pm on the 28th. Seven people had to evacuate as flood waters inundated two homes along East Front Street. Parts of Elm Avenue, as well as Front Street, were closed.

MIZ061-068>069

Genesee - Livingston - Oakland

24	2300EST								
25	0700EST				0	0			Heavy Snow

A stationary front stretched across central lower Michigan from west to east, ahead of an advancing cold front. Snow developed late in the evening of the 24th as moisture surged into the area from the south. Most of southeast lower Michigan received anywhere from 1 to 4 inches of snow with the system; however, 6 inches of snow fell in Linden, Fenton, Howell, White Lake, and Clarkston.

Ann Arbor received 4.6 inches of snow, bringing the monthly total to 36 inches. This made January of 1999 the snowiest month ever in Ann Arbor (records date back to 1889).

MICHIGAN, Extreme Southwest

MIZ077>081

Berrien - Cass - St. Joseph - Branch - Hillsdale

02	0000EST								
03	0000EST				0	0			Heavy Snow

Synoptic and mesoscale conditions on the 1st of January 1999...

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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MICHIGAN, Extreme Southwest

The northern hemispheric longwave pattern began in transition as a high zonal index hinted at major changes to the longwave pattern over the New Year's Day weekend. Two potent shortwaves...one associated with the northern branch of the jet stream and the other associated with the southern branch...were progged to phase over the central plains on the 2nd of January. Lee troughing developed during the day on the 1st with the eventual surface low developing across the Texas panhandle that afternoon. Tremendous moisture was advected off the gulf of Mexico during the afternoon as the low deepened. Moderate to heavy snow began to break out across the county warning area by late evening.

On the 2nd of January...intense low pressure was located across northeast Arkansas and slowly moved northeastward into northwest Indiana by late evening. Snowfall rates of 1 to 2 inches per hour were common throughout the day with even heavier snow noted as the system wrapped up and closed off over northern Illinois that evening. Nearly all the snowfall across the county warning area was due to the tremendous warm advection that occurred on the nose of a 60 knot low level jet overtop the shallow cold dome that was in place. Precipitation in areas along and east of a Lafayette Indiana to Defiance Ohio line eventually changed to freezing rain and sleet as 850 millibar temperatures warmed to above freezing. Snowfall amounts were the highest observed since the Blizzard of 1978 in many areas. Several cooperative observer stations reported all-time record 24 hour snowfalls as well. Storm totals ranged from two feet across northwest Indiana and southwest lower Michigan...12 to 18 inches across north central Indiana into south central Michigan and northwest Ohio... 6 to 8 inches across east central Indiana into western Ohio, where significant sleet and freezing rain later fell on top of the heavy snow.

Impacts on the people across the area were significant. Many rural roads remained impassable for several days. Some schools were closed for up to two weeks after the snowstorm. Many buildings... especially manufacturing warehouses and large retail stores in areas that received the heavier snow... reported collapsed roofs due to the weight of the snow. Damage estimates were not known at the time of this report.

MICHIGAN, North

MIZ008-015>036-041>042

Chippewa - Mackinac - Emmet - Cheboygan - Presque Isle - Charlevoix - Leelanau - Antrim - Otsego - Montmorency - Alpena - Benzie - Grand Traverse - Kalkaska - Crawford - Oscoda - Alcona - Manistee - Wexford - Missaukee - Roscommon - Ogemaw - Iosco - Gladwin - Arenac

02	1400EST	0	0	Blizzard
03	0800EST			

An intense winter storm which developed over the southern plains lifted northeastward across lower Michigan from the evening of the 2nd through the morning of the 3rd producing blizzard conditions across the region. Winds increased steadily during Saturday the 2nd...with heavy snows starting to lift across northern lower Michigan during the afternoon and early evening hours. The snow reached eastern upper Michigan overnight. System snows tapered off during the morning of the 3rd.

Snowfall totals generally ranged from 8 to 14 inches across Chippewa and Mackinac counties of eastern upper Michigan. Across northern lower Michigan...snowfall totals generally ranged from 10 to 18 inches...with localized totals around 20 inches. Wind gusts of around 35 mph were common during the peak of the storm...with some gusts of 40 to 50 mph reported along the Lake Huron shoreline where winds were onshore. The strong winds caused extensive blowing and drifting of the snow and greatly limited visibilities. Drifts as high as 6 to 8 feet were reported across portions of the region.

The heavy snow...reduced visibilities and widespread blowing and drifting caused very hazardous driving conditions. Many sideroads remained impassable into the 4th.

MIZ008-019>022-025>028-031>033

Chippewa - Charlevoix - Leelanau - Antrim - Otsego - Benzie - Grand Traverse - Kalkaska - Crawford - Manistee - Wexford - Missaukee

03	1600EST	0	0	Heavy Snow
04	1600EST			

Cold air drawn across the region in the wake of the blizzard triggered locally heavy lake effect snows. These snows produced localized additional accumulations of 6 to 12 inches on top of the previous snow from the blizzard.

MIZ015>016-019>021-025

Mackinac - Emmet - Charlevoix - Leelanau - Antrim - Benzie

05	1500EST	0	0	Heavy Snow
06	1000EST			

A southwest flow lake effect event in advance of an approaching system produced locally heavy lake effect snows across the region. Localized snowfall totals across the most favored areas ranged from 6 to 10 inches.

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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MICHIGAN, North

MIZ021-027>028 Antrim - Kalkaska - Crawford

06	0800EST				0	0			Heavy Snow
	2200EST								

Locally heavy lake effect snows produced 6 to 8 inches of accumulation in the most favored areas.

MIZ016-019>021-025>027-031 Emmet - Charlevoix - Leelanau - Antrim - Benzie - Grand Traverse - Kalkaska - Manistee

08	1400EST				0	0			Heavy Snow
09	1400EST								

Locally heavy lake effect snows produced up to 5 to 10 inches of accumulation in the most favored areas.

MIZ016 Emmet

09	1700EST				0	0			Heavy Snow
10	1100EST								

Locally heavy lake effect snows produced up to 8 inches of accumulation across the county.

MIZ008-019>022-027 Chippewa - Charlevoix - Leelanau - Antrim - Otsego - Kalkaska

10	1500EST				0	0			Heavy Snow
11	0200EST								

Locally heavy lake effect snows produced up to 6 to 8 inches of accumulation in the most favored areas.

MIZ024 Alpena

14	1800EST				0	0			Heavy Snow
15	0600EST								

An isolated band of heavy lake effect snow originating over Lake Huron produced localized accumulations of up to 12 inches across the county. However...most areas received 5 to 8 inches.

MIZ008-015 Chippewa - Mackinac

22	1400EST				0	0			Ice Storm
23	1000EST								

A mix of snow...sleet and freezing rain developed in advance of a low lifting toward the region. Around 1/2 inch of ice accumulated on trees and powerlines producing many broken branches and contributing to several power outages. The ice also created hazardous driving conditions and was a contributing factor to many traffic accidents. Several inches of heavy wet snow also fell in spots...further contributing to the hazardous conditions and power outages.

MICHIGAN, Upper

MIZ001>007-009-012>014 Keweenaw - Ontonagon - Houghton - Baraga - Marquette - Alger - Luce - Gogebic - Menominee - Delta - Schoolcraft

02	1700EST				0	0			Winter Storm
04	2200EST								

An intense winter storm that tracked through lower Michigan brought considerable amounts of low level moisture, cold temperatures, and strong northeast winds to Michigan's Upper Peninsula. Significant synoptic system snow was enhanced by lake effect snow as well. Near blizzard conditions developed in snow and blowing snow with the strong northeast winds. Reported snowfall totals from the storm included: Marquette 15.9, Marquette County Arpt 30.8, Bruce Crossing 13.0, Champion 14.0, Houghton County Arpt 17.6, Two Heart 16.0, Newberry Airport 9.4, Newberry School 8.3, Shingleton 13.6, Silver City 13.8, Wetmore 14.1, and Watton 12.7 inches.

MIZ006 Alger

06	2300EST				0	0			Heavy Snow
07	1700EST								

Arctic air behind a passing cold front along with strong northwest winds set up lake effect snow bands over northeast Alger County. Grand Marais reported 12.0 inches of snow and Melstrand received 10.5 inches. The combination of cold air and strong winds pushed wind chill readings down to 30 to 40 below zero.

MIZ006>007-014 Alger - Luce - Schoolcraft

09	1700EST				0	0			Heavy Snow
11	1100EST								

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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MICHIGAN, Upper

A low pressure system that tracked over eastern Lake Superior produced heavy lake effect snow as cold air flowed over the warmer waters of the lake. Snowfall amounts over the snowbelt of Alger, Luce and northern Schoolcraft counties included reports of 10 inches at Melstrand, 10 inches in northeast Schoolcraft county and 10 inches in northern Luce county.

MIZ001-003

Keweenaw - Houghton

18	0200EST 1100EST				0	0			Heavy Snow
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An area of low pressure tracked from Minnesota northeast across central Upper Michigan, spreading mixed precipitation across the Upper Peninsula. Rain turned to sleet and then to snow as the storm center passed. The snow was enhanced by Lake Superior over the Keweenaw Peninsula, doubling or tripling the amounts of snow received elsewhere across the Upper Peninsula. Snowfall totals over the Keweenaw included 14.5 inches at Phoenix and 12.4 inches at the Houghton County Airport.

MIZ006>007-014

Alger - Luce - Schoolcraft

23	0500EST 2300EST				0	0			Ice Storm
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A winter storm tracked from southern Illinois across lower Michigan, bringing a mix of winter weather to the Upper Peninsula. Rain and freezing rain quickly turned to sleet and then snow over most of the Upper Peninsula, but freezing rain continued over Alger, Luce and Schoolcraft counties, coating most surfaces with 1/4 to 1/2 inch of ice.

MICHIGAN, West

**MIZ037>040-
043>046-050>052-
056>059-064>067-
071>074**

Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Muskegon - Montcalm - Gratiot - Ottawa - Kent - Ionia - Clinton - Allegan - Barry - Eaton - Ingham - Van Buren - Kalamazoo - Calhoun - Jackson

02	0700EST 2359EST				0	0			Blizzard
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Blizzard conditions developed across lower Michigan the morning of January 2nd, and continued through the afternoon, out ahead of an intensifying low pressure area over the western Tennessee Valley. East to southeast winds ahead of the system increased through the morning hours, and by noon winds had gusted up to 65 mph in Muskegon in Muskegon County. Wind gusts of 45 to 60 mph were common across all of southern lower Michigan through the afternoon hours, causing blowing and drifting snow and whiteout conditions at times.

By the late evening hours of the 2nd, 6 to 12 inches of snow had already fallen across all of southwest and west central lower Michigan.

**MIZ037>040-
043>046-051>052-
057>059-065>067-072**

Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Montcalm - Gratiot - Kent - Ionia - Clinton - Barry - Eaton - Ingham - Kalamazoo

03	0000EST 2359EST				0	0			Heavy Snow
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MIZ073>074

Calhoun - Jackson

03	0000EST 2359EST				0	0			Snow
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As the intensifying low pressure continued to move to the north into northern lower Michigan, strong west to northwest winds developed behind it, causing lake effect snow to break out during the early morning hours. The snow was further enhanced by an upper level low that moved slowly east over the Great Lakes region.

MIZ050-056-064-071

Muskegon - Ottawa - Allegan - Van Buren

03	0000EST				0	0			Heavy Snow
05	0500EST								

Bands of heavy lake effect snow, enhanced by an upper level low that moved into the Great Lakes region, developed during the early morning hours of the 3rd and continued until the early morning hours of the 5th, when the lake effect snow showers finally tapered to flurries. The snow was accompanied by very gusty west to northwest winds of 25 to 40 mph, with a few higher gusts along the lakeshore, mainly on the 3rd.

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	January 1999
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MICHIGAN, West

**MIZ037>040-
043>046-051>052-
057>059-065>067-
072>074**

Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Montcalm - Gratiot - Kent - Ionia - Clinton - Barry - Eaton - Ingham - Kalamazoo - Calhoun - Jackson

04	0000EST 2000EST									Snow
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Widely scattered lake effect snow showers continued through the day, accompanied by continued blowing and drifting of snow. However, snow was not nearly as heavy as on the 2nd and 3rd, and most of the heavy snow on the 4th occurred across the lakeshore counties.

Overall, this winter storm ended up being one of the strongest to affect western lower Michigan in 2 decades, and came to be known as the "Blizzard of '99".

Several areas of low pressure began to consolidate just to the northwest of Amarillo, Texas, on the morning of January 1st. By the early morning hours of January 2nd, the low had intensified and moved to the western Tennessee Valley. Snow and very strong east to southeast winds preceded the system across lower Michigan. A deep upper level trough was carved out over the nations mid section, and an upper level low was centered over the Plains states.

All of southern lower Michigan was affected by blizzard conditions at times on January 2nd. Snow began in the morning and continued through the afternoon, making travel difficult to impossible. Wind gusts of 45 to as high as 65 mph in Muskegon (Muskegon County) produced sporadic power outages, mainly along the lakeshore, and occasional whiteout conditions.

By the evening hours of the 2nd, 6 to 12 inches of snow had already fallen across southwest and west central lower Michigan, with both Van Buren and Kalamazoo counties reporting up to a foot of new snow by 10 pm.

The surface low pressure system continued to intensify and move to the north northeast over Indiana, and on up into Michigan, and was centered near Gaylord, in northern lower Michigan, by the morning of the 3rd. The upper level low deepened as well, and drifted very slowly to the east over Wisconsin. Thus began the second phase of the snowstorm across western lower Michigan, marked by bands of heavy lake effect snow, and continued blowing and drifting. The snow continued through the 3rd and 4th, and even lingered into the early morning hours of the 5th before finally tapering to flurries.

Travel through the period ranged from difficult to impossible, due to all the blowing and drifting of snow, and occasional whiteout conditions. Some snow drifts measured to 5 to 6 feet in open rural areas. Roads became impassable and many highways and rural roads were closed through the 4th. There were several car accidents through the period. Most schools were closed, some for over a week in rural areas. Most colleges and universities, as well as quite a few area businesses, were closed on the 4th and 5th as well.

The following is a list of final snow storm total snowfalls for the 2nd through the 5th:

35 inches in Grand Haven (Ottawa County), 28 inches in Holland (Allegan County), 25 inches in Bloomingdale (Van Buren County), 25 inches in Glenn (Allegan County), 24 inches at the Kalamazoo Nature Center (Kalamazoo County), 23 inches in Grandville (Kent County), 22 inches in Grand Rapids (Kent County), 22 inches in Wayland (Allegan County), 19 inches in Hastings (Barry County), 18 inches in Sparta (Kent County), 18 inches at Gull Lake (Kalamazoo County), 16 inches at Watervliet (Van Buren County), 16 inches in Jackson (Jackson County), 16 inches in Ionia (Ionia County), 16 inches in Newaygo (Newaygo County), 16 inches at Hesperia (Oceana/Newaygo County), 16 inches in Ludington (Mason County), 14 inches at the Kalamazoo/Battle Creek International Airport (Kalamazoo County), 14 inches in Big Rapids (Mecosta County), 14 inches across Osceola County, 13 inches in St. Johns (Clinton County), 13 inches in Battle Creek (Calhoun County), 13 inches in Pentwater (Oceana County), 13 inches across Lake County, 12 inches in Eaton Rapids (Eaton County), 12 inches in Lansing (Ingham County), 12 inches in Vestaburg (Montcalm/Gratiot County), and 12 inches across Clare and Isabella Counties.

**MIZ037>038-
043>044-050-
056>057-064>065-
071>072**

Mason - Lake - Oceana - Newaygo - Muskegon - Ottawa - Kent - Allegan - Barry - Van Buren - Kalamazoo

05	2100EST									
06	2300EST									Lake Effect Snow

An Alberta Clipper moved through the Great Lakes region on the 5th through the 6th, producing a band of light snow with the system along and ahead of it, followed by lake effect snow behind it.

Snow developed over western lower Michigan, mainly west of US-131, during the late evening hours of the 5th in southwest flow out ahead of the Alberta Clipper. The system moved through western lower Michigan during the early morning hours of the 6th, bringing an end to the light snow out ahead of it.

However, behind the system, lake effect snow quickly developed as winds became west to northwest, ushering in much colder air over the relatively warm Lake Michigan waters.

The hardest hit areas were along the lakeshore, from South Haven (Van Buren County) up to Ludington (Mason County), where anywhere from 6 to as much as 9 inches of snow had fallen by the time snow ended late on the 6th. 2 to 9 inch snowfall amounts

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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MICHIGAN, West

were common from US-131 west. East of US-131, only an inch or two of snow fell as a result of the moisture associated out ahead of the Alberta Clipper, but no lake effect snow occurred.

The following is a list of specific snowfall totals for late on the 5th through the 6th:

9 inches in Muskegon (Muskegon County), 8 inches in Plainwell (Allegan County), 7 inches in Allegan (Allegan County), 6 inches in Grand Haven (Ottawa County), 6 inches in Grandville (Kent County), 6 inches in Kalamazoo (Kalamazoo County), 5 inches in Grand Rapids (Kent County).

MIZ037-043-050-056-064-071

Mason - Oceana - Muskegon - Ottawa - Allegan - Van Buren

08	0800EST								
09	1700EST				0	0			Lake Effect Snow

A low pressure system tracked northeast from the lower Mississippi Valley on the 8th into the New England region on the 9th. Well to the north and northwest of the track of this system, very light snow and flurries developed across western lower Michigan on the 8th. However, northwest winds in the wake of the system late on the 8th and on the 9th ushered in colder air across the relatively warm waters of Lake Michigan. As a result, lake effect snow developed across all the lakeshore counties of western lower Michigan.

The most snow for the event fell from near Covert (Van Buren County) on up to Zeeland (Ottawa County), where there was a very narrow band of 6 to 7 inches of snow. There was also a very narrow band of 6 to 7 inches of snow across western Mason and Oceana counties, including the city of Ludington (Mason County). 7 inches of snow also fell in Holland (Allegan County). 3 to 4 inches of snow fell across Muskegon County.

MIZ037-043-050-056>057-064>065-071>072

Mason - Oceana - Muskegon - Ottawa - Kent - Allegan - Barry - Van Buren - Kalamazoo

10	0400EST								
11	0400EST				0	0			Winter Storm

MIZ038-044

Lake - Newaygo

10	0400EST								
11	0400EST				0	0			Lake Effect Snow

An Alberta Clipper moved through the Great Lakes region during the morning hours of the 10th. Snow developed across western lower Michigan during the early morning hours in advance of the system, and was further enhanced by Lake Michigan, with lake effect snow developing behind it and continuing into the early morning hours of the 11th.

The most snow for the period fell from US-131 west to the lakeshore, with as much as 10 inches of snow falling in Allegan (Allegan County). 7 to 8 inches of snow fell across Mason, Oceana, and Muskegon counties. 8 to 10 inches of snow fell across Ottawa and Allegan counties, and 6 inches of snow fell across northwestern Van Buren County. Across Kent, Barry, and Kalamazoo counties, there was a very large variation in the amount of snow that fell. There were reports as high as 8 inches across far western portions of those counties, to just an inch or two across eastern portions of those counties, and also just an inch or two across most of central lower Michigan.

MIZ037-043-050-056>057-064>065-071>074

Mason - Oceana - Muskegon - Ottawa - Kent - Allegan - Barry - Van Buren - Kalamazoo - Calhoun - Jackson

11	0400EST								
	1900EST				0	0			Snow

Lake effect snow continued across the lakeshore counties of southwest Michigan during the early morning hours. Later in the day, snow became enhanced by a warm front that lifted up into the lower Great Lakes region, and by a weak low pressure area that moved in.

As much as 6 inches of snow fell in Holland (Allegan County), Hart (Oceana County), and Ludington (Mason County). 5 to 6 inches of snow fell across Mason, Oceana, Muskegon, Ottawa and Allegan counties. 3 to 5 inches of snow fell across Van Buren and Kalamazoo counties. 2 to 4 inches of snow fell across Calhoun and Jackson counties. 2 to 3 inches of snow fell across Barry and Kent counties.

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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MICHIGAN, West

MIZ056>059-064>067-071>074 **Ottawa - Kent - Ionia - Clinton - Allegan - Barry - Eaton - Ingham - Van Buren - Kalamazoo - Calhoun - Jackson**

	20	0500EST 0900EST			0	0			Fog
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Dense fog developed across southern lower Michigan as a result of snow on the ground, winds that went calm overnight, and considerable low level moisture that was in place. Visibilities across the area were reduced to a quarter of a mile or less during the early morning hours. The fog quickly burned off during the mid morning hours.

MIZ057

Kent

	30	0900EST 1700EST			0	0			Flood
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A minor ice jam occurred on the Grand River at Comstock Park, just north of downtown Grand Rapids, on Saturday morning, January 30th. Only minor flooding occurred as a result of this ice jam and no property damage was reported.

MINNESOTA, Central and South Central

MNZ047>049-054>058-060-064>070-073>078-082>085-091>093 **Stevens - Pope - Stearns - Lac Qui Parle - Swift - Chippewa - Kandiyohi - Meeker - Hennepin - Yellow Medicine - Renville - Mcleod - Sibley - Carver - Scott - Dakota - Redwood - Brown - Nicollet - Le Sueur - Rice - Goodhue - Watonwan - Blue Earth - Waseca - Steele - Martin - Faribault - Freeborn**

	01	1100CST			0	0			Heavy Snow
	02	1400CST							

Heavy snow fell across the southern third of Minnesota generally in the 5 to 8 inch range. Some snow fall totals of note include: 7.0 inches at Willmar, 7.5 inches at New London , and 8.0 inches both at Fairmont and Dawson. The highest report of snow came from Albert Lea (extreme south central Minnesota) , which received 9.5 inches at the conclusion of the event. The heavy snow was suspected of causing a train derailment during the morning of the second in the city of Waseca in the county of Waseca.

MNZ047-054>057-064>065-073>075-082>085-091>093 **Stevens - Lac Qui Parle - Swift - Chippewa - Kandiyohi - Yellow Medicine - Renville - Redwood - Brown - Nicollet - Watonwan - Blue Earth - Waseca - Steele - Martin - Faribault - Freeborn**

	17	2100CST			0	0			Winter Storm
	18	1100CST							

Between 12 am and 7 am winds across southwest and south central Minnesota were sustained between 25 and 40 mph with gusts as high as 56 mph in Fairmont. Visibilities restricted by snow were mostly one quarter of a mile to near zero. Total snowfall amounts in the counties listed above were between two and four inches. Public schools were cancelled in Freeborn, Olivia and Stevens counties.

MNZ077>078-084>085-093 **Rice - Goodhue - Waseca - Steele - Freeborn**

	22	0100CST 2100CST			0	0			Winter Storm
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Strong surface low pressure tracked across Nebraska and Iowa and brought a belt of mixed precipitation to east and south central Minnesota. Total snow amounts between three and five inches fell in the above counties. Freezing rain glazed over roads in Freeborn County. Up to one quarter of an inch of Freezing rain was reported in Freeborn County.

MINNESOTA, Northeast

NONE REPORTED.

MINNESOTA, Northwest

MNZ001>002-007-013>017-022>024 **West Polk - Norman - West Marshall - Pennington - Red Lake - East Polk - North Clearwater - South Beltrami - Mahnomen - South Clearwater - Hubbard**

	13	1100CST			0	0			Winter Storm
	14	0200CST							

Four to six inches of snow fell across northwest Minnesota. The wind gusted up to 30 mph, producing winds chills down to 55 below. Halstad, Minnesota received the most snow, reporting 5.5 inches. Many schools let out early in the afternoon, as the visibility in open country dropped to less than a half mile.

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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MINNESOTA, Northwest

MNZ001-005-007>008-013>014 **West Polk - Roseau - West Marshall - East Marshall - Pennington - Red Lake**

17	0900CST 1800CST			0	0				Heavy Snow
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A low pressure system tracked from western South Dakota to near Fergus Falls, Minnesota, producing a band of heavy snow from east central North Dakota to the Lake of the Woods area of northwest Minnesota. Roseau received 6 inches of new snow, Warroad received 5.8 inches, and Thief River Falls received 5.5 inches.

MINNESOTA, Southeast

MNZ088-095>096 **Winona - Fillmore - Houston**

01	2200CST			0	0				Winter Storm
03	0700CST								

Snow accumulations of 8 to 10 inches accompanied the first winter storm of the season for southeast Minnesota. Strong northeast winds gusting to 40 mph produced considerable blowing snow along with drifts 2 to 4 feet high.

MNZ088-096 **Winona - Houston**

24	1200CST 1900CST			0	0				Heavy Snow
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A heavy snow band set up near the Mississippi River from Winona to La Crescent with accumulations around 6 inches. The heavy snow extended on east into west central Wisconsin through the La Crosse and Tomah areas.

MINNESOTA, Southwest

MNZ071>072-080>081-089>090-097>098 **Lincoln - Lyon - Murray - Cottonwood - Nobles - Jackson - Pipestone - Rock**

01	0800CST			0	0				Winter Storm
02	2100CST								

A Major winter storm brought 6 to 12 inches of new snow, along with 20 to 40 mph winds which caused blowing and drifting snow and dangerous wind chills. Visibilities were reduced to less than 1/2 mile at times. Actual temperatures dropped to as low as 20 below zero with wind chills as cold as 55 below zero. Travel was difficult, hazardous, and greatly curtailed. Otherwise major problems were few on the holiday weekend, as most people heeded warnings and did not travel during the storm.

MINNESOTA, West

NONE REPORTED.

MINNESOTA, West Central

MNZ039-046 **Traverse - Big Stone**

01	1600CST			0	0				Winter Storm
02	0400CST								

Heavy snow of 6 to 8 inches fell from the late afternoon hours of the 1st to the early morning hours of the 2nd across most of Big Stone and Traverse counties. Strong north to northeast winds of 15 to 30 mph combined with temperatures in the single digits above zero to generate wind chills of 25 to 40 below and visibilities to less than 1/4 of a mile at times. As a result, holiday travel was significantly disrupted. Some snowfall amounts include, 6 inches at Artichoke Lake, 7 inches at Browns Valley, and 8 inches at Wheaton.

MISSISSIPPI, Central

Franklin County

8 E Bude	02 0530CST			0	0	8K		Thunderstorm Wind
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A barn was unroofed and a few trees were blown down.

Lincoln County

12 S Brookhaven	02 0600CST			0	0	25K		Thunderstorm Wind
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Numerous trees and power lines were blown down.

Simpson County

1 W Magee	02 0630CST			0	0	5K		Thunderstorm Wind
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Numerous trees were blown down.

Smith County

2 N Mize	02 0650CST			0	0	2K		Thunderstorm Wind
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Several trees were blown down.

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MISSISSIPPI, Central									
Rankin County									
Puckett	02	0700CST			0	0	2K		Thunderstorm Wind
									Several trees were blown down.
Scott County									
Pulaski	02	0705CST			0	0	2K		Thunderstorm Wind
									Several trees were blown down.
Forrest County									
Dixie Pine	02	0820CST			0	0	10K		Thunderstorm Wind
									One barn was destroyed and several trees were blown down.
Washington County									
Glen Allan	08	1615CST			0	0			Hail (1.00)
Sharkey County									
6 N Anguilla	08	1625CST			0	0			Hail (0.88)
Issaquena County									
Grace	08	1635CST			0	0			Hail (0.75)
Humphreys County									
Silver City	08	1715CST	1	50	0	0			Tornado (F0)
									This tornado briefly touched down in an open area and no damage occurred.
Bolivar County									
Rosedale	08	1830CST			0	0	15K		Thunderstorm Wind
									Several dwellings received minor structural damage and a few power poles were blown down.
Carroll County									
Vaiden	08	1830CST			0	0	3K		Thunderstorm Wind
									Several trees and numerous large trees were blown down.
Washington County									
Hollandale	08	2100CST			0	0			Hail (0.75)
Leflore County									
Money	17	2210CST			0	0			Hail (0.75)
Sunflower County									
Moorhead	17	2210CST			0	0	30K		Hail (1.75)
									Several roofs and automobiles received damage.
Grenada County									
Countywide	17	2230CST			0	0			Hail (0.75)
Leflore County									
Greenwood	17	2240CST			0	0			Hail (1.00)
Carroll County									
3 S Avalon	17	2255CST			0	0			Hail (0.75)
Leflore County									
8 NE Greenwood	17	2255CST			0	0			Hail (0.75)
Holmes County									
Lexington	17	2330CST			0	0			Hail (0.75)
Montgomery County									
Duck Hill	17	2335CST			0	0			Hail (0.75)
Choctaw County									
6 N Ackerman	18	0010CST			0	0	30K		Hail (1.75)
									Several roofs and automobiles received damage.
Bolivar County									
2 E Malvina	21	1510CST	2	100	0	0	30K		Tornado (F1)
									Two mobile homes were destroyed and several other houses had minor damage.

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
MISSISSIPPI, Central									
Bolivar County									
Cleveland	21	1516CST	2	75	0	0	25K		Tornado (F1)
One mobile home was over-turned and a roof was torn off of a shop. A tractor was also flipped over.									
Washington County									
Metcalf	21	2020CST			0	0	30K		Hail (1.75)
Several roofs of homes and automobiles were damaged.									
Washington County									
2 SE Hollandale to 3 ENE Hollandale	21	2233CST 2238CST	3	50	0	0	20K		Tornado (F1)
Minor damage was done to a large wood structured house, a pool house, and a manufactured home. The tornado also downed power lines and two power poles.									
Washington County									
2 SE Greenville	21	2240CST	1	50	0	0			Tornado (F0)
This tornado touched down briefly in an open field and no damage occurred.									
Humphreys County									
3 SW Belzoni to 1 E Belzoni	21	2245CST 2250CST	3	50	0	0			Tornado (F0)
This tornado brought only minor tree damage.									
Sunflower County									
3 NE Indianola to 2 NE Doddsville	21	2302CST 2320CST	15	100	0	0	100K		Tornado (F2)
This tornado touched down in open field and moved northeast towards Blaine. A few trees and power lines were blown down until it reached Blaine. At Blaine, the storm did substantial damage to four wood structured houses and one brick structured house. One mobile home was destroyed and another received heavy damage. Two automobiles were also damaged by the debris. Further northeast along the track, the tornado destroyed two wood framed churches near Doddsville. Also a pivot irrigation system was over-turned and several power lines and power poles were blown down.									
Bolivar County									
2 S Boyle to 4 ENE Boyle	21	2315CST 2325CST	5	100	0	0			Tornado (F0)
This tornado crossed open field and no damage was reported.									
Leflore County									
5 NNW Itta Bena	21	2315CST	2	700	0	0			Tornado (F0)
This large tornado was filmed by a storm chase team. The tornado moved a short distance across open fields and dissipated before doing any damage.									
Warren County									
Vicksburg	21	2315CST			0	0			Thunderstorm Wind (G52)
Sunflower County									
6 W Ruleville to Drew	21	2325CST 2339CST	10	100	0	0			Tornado (F0)
This tornado crossed open field and no damage was reported.									
Bolivar County									
Shaw to 1 NE Shaw	21	2134CST 2135CST	1	50	0	0			Tornado (F0)
Sunflower County									
6 NNW Fairview to 7 N Fairview	21	2135CST 2137CST	1.5	50	0	0			Tornado (F0)
Bolivar County									
6 S Boyle to 5 SE Boyle	21	2137CST 2142CST	5	50	0	0			Tornado (F0)
Sunflower County									
2 W Linn to Ruleville	21	2142CST 2150CST	8	50	0	0			Tornado (F0)
This weak tornado was tracked by emergency management officials across Bolivar and Sunflower Counties. The tornado moved across open areas and no damage was reported.									

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MISSISSIPPI, Central									
Warren County									
7 SW Eagle Bend to 1 S Eagle Bend	21	2308CST 2315CST	6	50	0	0	5K		Tornado (F0)
Several trees were blown down. This tornado moved out of Madison Parish, Louisiana.									
Washington County									
Greenville	22	0830CST			0	0			Hail (0.88)
Sunflower County									
2 E Indianola	22	0900CST			0	0	20K		Hail (2.00)
Tennisball size hail caused damage to a few roofs and automobiles.									
Jefferson County									
6 NW Fayette	22	0925CST	1	50	0	0	3K		Tornado (F0)
Several trees were blown down along Natchez Trace Parkway.									
Leflore County									
Schlater	22	0936CST			0	0	30K		Hail (1.75)
Golfball size hail damaged the roofs of several houses and damaged several automobiles.									
Hinds County									
5 N Utica	22	1015CST	1	50	0	0	3K		Tornado (F0)
Several trees were blown down along Natchez Trace Parkway.									
Holmes County									
Lexington	22	1020CST	1	50	0	0	3K		Tornado (F0)
Several power lines were blown down.									
Montgomery County									
Winona	22	1057CST			0	0			Thunderstorm Wind (G52)
Hinds County									
Raymond	22	1058CST			0	0			Hail (0.75)
Hinds County									
Raymond Williams Arp	22	1058CST	1	50	0	0			Tornado (F0)
This tornado touched down briefly in open area of airport and no damage was reported.									
Grenada County									
Grenada	22	1100CST			0	0	2K		Thunderstorm Wind
Several power lines were blown down.									
Madison County									
Flora	22	1200CST			0	0			Hail (0.75)
Neshoba County									
8 NW Philadelphia	22	1225CST			0	0			Hail (0.88)
Yazoo County									
Benton	22	1225CST			0	0			Hail (0.75)
Leake County									
Carthage	22	1230CST			0	0	150K		Thunderstorm Wind
There were numerous trees and power lines blown down. Several houses had roof damage and one barn was destroyed. Several chicken houses had major damage. Signs were blown down.									
Winston County									
Noxapater	22	1230CST			0	0			Hail (0.75)
Noxubee County									
Macon	22	1330CST			0	0			Hail (0.75)
Oktober County									
Sessums	22	1330CST			0	0	75K		Thunderstorm Wind
Several mobile homes were either destroyed or heavily damaged. Several trees were blown down.									
Warren County									
Vicksburg	22	1342CST			0	0			Hail (0.88)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MISSISSIPPI, Central									
Warren County									
Vicksburg	22	1359CST			0	0			Hail (1.00)
Adams County									
Washington	22	1403CST			0	0			Hail (1.50)
Noxubee County									
Macon	22	1415CST			0	0	10K		Thunderstorm Wind
Several trees and power lines were blown down and several roofs were damaged.									
Carroll County									
Vaiden	22	1432CST	1	50	0	0			Tornado (F0)
Mississippi Highway Patrol sighted the brief touchdown of this tornado.									
Hinds County									
Clinton	22	1440CST			0	0	500K		Thunderstorm Wind
Numerous trees and power lines and poles were blown down in Clinton. Many homes were damaged either by wind or by fallen trees. The damage was widespread across Clinton.									
Warren County									
4 ESE Vicksburg to 6 ENE Vicksburg	22	1440CST 1446CST	4	50	0	0	3K		Tornado (F0)
Several trees were blown down by this weak tornado.									
Holmes County									
4 W Lexington	22	1500CST	1	50	0	0			Tornado (F0)
This tornado crossed an open field and no damage was reported.									
Yazoo County									
15 ESE Yazoo City	22	1500CST			0	0	1K		Thunderstorm Wind
Several trees and numerous large limbs were blown down.									
Rankin County									
3 SE Brandon	22	1537CST			0	0			Hail (1.50)
Hinds County									
4 W Byram	22	1545CST			0	0	30K		Hail (1.75)
Golfball size hail damaged several house roofs and several automobiles.									
Hinds County									
Clinton	22	1550CST			0	0	30K		Hail (1.75)
Golfball size hail damaged several house roofs and several automobiles.									
Hinds County									
Clinton	22	1600CST			0	0	50K		Thunderstorm Wind
A roof was blown off of a commercial building.									
Madison County									
5 SW Canton	22	1606CST			0	0			Hail (1.00)
Madison County									
4 NW Madison	22	1615CST			0	0	200K		Hail (2.75)
Baseball size hail caused significant roof and automobile damage in the Lake Caroline community.									
Copiah County									
Crystal Spgs	22	1630CST			0	0			Hail (0.75)
Copiah County									
4 NNW Hazlehurst	22	1630CST			0	0			Hail (0.88)
Attala County									
Kosciusko	22	1650CST			0	0			Hail (0.88)
Rankin County									
Florence	22	1715CST			0	0			Hail (0.75)
Lawrence County									
Jayess	22	1735CST			0	0			Hail (1.00)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Number of Persons	Estimated Damage Property Crops	Character of Storm
MISSISSIPPI, Central									
Simpson County									
Countywide	22	1735CST			0	0		2K	Thunderstorm Wind
Several trees were blown down throughout the county.									
Lawrence County									
4 SW Topeka	22	1745CST	1	75	0	0		5K	Tornado (F0)
Several trees were blown down by this tornado.									
Smith County									
5 N Raleigh	22	1830CST			0	0			Hail (0.75)
Oktober County									
Starkville	22	1838CST			0	0			Hail (0.75)
Covington County									
Countywide	22	1850CST			0	0		2K	Thunderstorm Wind
Several trees were blown down throughout the county.									
Neshoba County									
Philadelphia	22	1850CST			0	0			Hail (0.75)
Lowndes County									
5 N Columbus	22	1900CST			0	0		2K	Thunderstorm Wind
Several power lines were blown down.									
Neshoba County									
7 NE Philadelphia	22	1900CST			0	0			Hail (1.75)
Golfball size hail caused minor roof and automobile damage.									
Clarke County									
Countywide	22	1915CST			0	0		20K	Thunderstorm Wind
Numerous trees were blown down throughout county.									
Lawrence County									
Countywide	22	1915CST 2100CST			0	0			Flash Flood
Widespread flooding of roads occurred throughout county.									
Marion County									
Columbia	22	1943CST			0	0		5K	Thunderstorm Wind (G62)
Several trees were blown down.									
Smith County									
Raleigh	22	1945CST 2100CST			0	0			Flash Flood
Numerous roads were flooded.									
Lamar County									
3 SW Purvis	22	2017CST			0	0		10K	Thunderstorm Wind
A roof was torn off of a building.									
Forrest County									
Countywide	22	2030CST			0	0		25K	Thunderstorm Wind
Numerous trees were blown down throughout the county.									
Clarke County									
5 E Quitman	22	2045CST			0	0		3K	Thunderstorm Wind
Several trees were blown down.									
Jones County									
Countywide	22	2045CST			0	0		25K	Thunderstorm Wind
Trees and power lines were blown down throughout county.									
Lauderdale County									
Meridian	22	2059CST			0	0			Hail (0.88)
Newton County									
Newton	22	2130CST 2215CST			0	0			Flash Flood

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
					Killed	Injured	Property		
MISSISSIPPI, Central									
Numerous roads were flooded.									
Claiborne County									
1 E Port Gibson	22	0945CST	1	50	0	0	3K		Tornado (F0)
Several trees were blown down along the Natchez Trace Parkway.									
Bolivar County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Carroll County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Grenada County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Holmes County									
Countywide	29 30	1430CST 1930CST			0	0	50K		Flood
Humphreys County									
Countywide	29 30	1430CST 1930CST			0	0	50K		Flood
Issaquena County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Leflore County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Sharkey County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Sunflower County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Washington County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Yazoo County									
Countywide	29	1430CST 1930CST			0	0	50K		Flood
Attala County									
Countywide	29	1630CST 1930CST			0	0	50K		Flood
Strong thunderstorms moved across western and central Mississippi causing flooding of creeks and low lying areas. Many roads flooded and some of them were closed. Several bridges were washed out and a few homes were flooded as well.									
Adams County									
Countywide	29 30	1700CST 0130CST			0	0	50K		Flood
Jefferson County									
Countywide	29 30	1700CST 0130CST			0	0	50K		Flood
Many roads were flooded throughout Adams and Jefferson counties and water got into several buildings and homes. A couple of bridges were damaged.									
Lincoln County									
Brookhaven	29	1800CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Character of Storm
					Killed	Injured	Property Crops
MISSISSIPPI, Central							
Lamar County							
Countywide	29	2150CST			0	0	10K
			Numerous trees were blown down across the county.				Thunderstorm Wind
Forrest County							
Hattiesburg	29	2212CST			0	0	Hail (0.75)
Clarke County							
Countywide	29	2300CST			0	0	50K
	30	0300CST					Flood
Jones County							
Countywide	29	2300CST			0	0	50K
	30	0030CST					Flash Flood
Forrest County							
Countywide	29	2330CST			1	0	500K
	30	0330CST					Flood
			F37VE				
Lamar County							
Countywide	29	2330CST			0	0	200K
	30	0330CST					Flood
Marion County							
Countywide	29	2330CST			0	0	50K
	30	0330CST					Flood
			Strong thunderstorms moved across southern Mississippi flooding numerous roads and homes. A few roads were closed and a few bridges were washed out. Several businesses were flooded as well. In Hattiesburg, nearly ten inches of rain fell flooding places that have never been flooded before. Homes had to be evacuated in Hattiesburg. Forrest and Lamar Counties received most of the flood related damage. One person died when their vehicle was swept off of a bridge into a flood swollen creek. The driver of the vehicle could not swim to safety and rescue attempts failed.				
Hinds County							
Countywide	30	0900CST			0	0	Flash Flood
		1030CST					
			Several streets were flooded in Jackson, Utica, and Byram.				
Madison County							
Countywide	30	0900CST			0	0	Flash Flood
		1030CST					
			Several county roads were flooded.				
Rankin County							
Pearl	30	0900CST			0	0	Flash Flood
		1300CST					
			Several streets were flooded in Pearl.				
Claiborne County							
Port Gibson	30	0930CST			0	0	Flash Flood
		1030CST					
			Numerous streets were flooded in Port Gibson.				
Neshoba County							
Countywide	30	1130CST			0	0	20K
		1300CST					Flash Flood
			Several roads were flooded and a couple of driveways washed out.				
Newton County							
Countywide	30	1130CST			0	0	Flash Flood
		1300CST					
			Several county roads were flooded.				
Simpson County							
East Central Portion	30	1130CST			0	0	Flash Flood
		1300CST					
			Several roads were flooded and water covered a bridge in the Goshen community.				

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
<u>MISSISSIPPI, Central</u>									
Smith County									
West Central Portion	30	1130CST 1300CST			0	0			Flash Flood
	Several roads were flooded in the White Oak community.								
Jones County									
Laurel	30	1645CST			0	0			Hail (0.75)
Jones County									
1 NE Laurel to Laurel	30	1705CST			0	0	25K		Hail (1.75)
	Several roofs and automobiles received minor damage.								
Newton County									
Chunky	30	1710CST			0	0			Hail (1.50)
Jasper County									
Heidelberg	30	1725CST			0	0	25K		Hail (1.75)
	Several roofs and automobiles received minor damage.								
Lauderdale County									
5 N Meehan	30	1730CST			0	0			Hail (0.75)
<u>MISSISSIPPI, North</u>									
Marshall County									
Slayden	17	1845CST 1850CST	0.5	50	0	2	50K		Tornado (F0)
	A tornado touched down near Slayden. Two mobile homes were destroyed. A new house under construction was levelled. A parked 18-wheeler was overturned. A few trees were blown down with one tree falling on a house.								
Alcorn County									
Corinth	17	2005CST 2010CST			0	0	0.10K		Hail (0.88)
Benton County									
Ashland	17	2010CST 2015CST			0	0	5K		Thunderstorm Wind
	Several trees were knocked down.								
Panola County									
Tocowa to Batesville	17	2048CST 2105CST			0	0	0.06K		Hail (0.88)
	Hail ranged in sized from dimes near Tocowa to nickles near Batesville.								
Tallahatchie County									
Sumner	17	2110CST 2115CST			0	0	0.01K		Hail (0.75)
Yalobusha County									
Water Vly	17	2145CST 2150CST			0	0	0.01K		Hail (0.75)
Union County									
Enterprise	17	2147CST 2155CST			0	0	0.75K		Hail (1.75)
Prentiss County									
Blackland	17	2152CST 2200CST			0	0	0.01K		Hail (0.75)
Union County									
Myrtle to New Albany	17	2158CST 2215CST			0	0	0.05K		Hail (0.75)
	Dime size hail fell between Myrtle and New Albany.								
Pontotoc County									
Countywide	17	2215CST 2240CST			0	0	0.10K		Hail (0.75)

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
MISSISSIPPI, North								
Dime size hail fell across much of county.								
Lee County								
Tupelo	17	2255CST 2300CST			0	0	0.01K	Hail (0.75)
Lee County								
Nettleton	17	2320CST 2325CST			0	0	0.01K	Hail (0.75)
Chickasaw County								
Okolona	17	2325CST 2330CST			0	0	0.01K	Hail (0.75)
Monroe County								
Amory	18	0005CST 0010CST			0	0	0.01K	Hail (0.75)
Panola County								
Curtis Station to Pleasant Grove	21	2245CST 2255CST	8	25	0	0	10K	Tornado (F0)
The tornado started near Curtis Station and moved northeast. One trailer home was moved off its foundation.								
Tate County								
Senatobia	21	2259CST 2305CST			0	0	0.01K	Hail (0.75)
Tate County								
Senatobia to 4 N Looxahoma	21	2259CST 2315CST	7	25	0	0	0.05K	Tornado (F0)
The tornado started near Senatobia and travelled northeast. The tornado produced little damage.								
De Soto County								
Olive Branch	21	2330CST 2335CST			0	0	10K	Thunderstorm Wind
A carport awning was blown over. At least one home suffered roof damage.								
Tate County								
Senatobia	22	0040CST 0045CST			0	0	0.01K	Hail (0.75)
Marshall County								
Victoria	22	0126CST 0135CST			0	0	1K	Thunderstorm Wind (G54)
Wind gusts near 60 miles per hour knocked an 18 wheeler off the road.								
Tate County								
Looxahoma to Barr	22	0150CST 0200CST			0	0	0.02K	Hail (0.75)
Tate County								
Senatobia	22	0155CST 0200CST			0	0	5K	Thunderstorm Wind
A steel carport was blown over. A trailer sustained roof damage.								
De Soto County								
Horn Lake	22	0510CST 0520CST	2	25	0	0	50K	Tornado (F0)
A tornado touched down in Horn Lake. Five homes suffered serious structural damage while 100 other homes had lesser damage.								
Tallahatchie County								
Enid	22	0815CST 0820CST			0	0	0.01K	Hail (0.75)
Panola County								
Pope	22	0822CST 0830CST			0	0	0.01K	Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
					Killed	Injured	Property		
MISSISSIPPI, North									
Yalobusha County									
Oakland	22	0825CST 0830CST			0	0	0.01K		Hail (0.75)
Lafayette County									
Oxford	22	0900CST 0905CST			0	0	5K		Thunderstorm Wind
A few trees were knocked down near the campus of the University of Mississippi.									
Lafayette County									
Splinter	22	0905CST 0910CST			0	0	0.75K		Hail (1.75)
Lee County									
Tupelo Arpt	22	1230CST 1235CST			0	0	0.06K		Hail (0.88)
Hail ranged in size from dimes to nickles.									
Alcorn County									
Corinth	22	1235CST 1250CST	5	50	0	0	75K		Tornado (F1)
The tornado started on the south side of Corinth and moved northeast. Thirty-one business and several homes were damaged. A metal building was heavily damaged. Some large trees were knocked down.									
Prentiss County									
3 NE Hazeldell	22	1315CST 1320CST			0	0	5K		Thunderstorm Wind
Several trees were blown down.									
Tishomingo County									
6 W Belmont	22	1320CST 1325CST			0	0	5K		Thunderstorm Wind
At least five trees were knocked down.									
Calhoun County									
Pittsboro	22	1355CST 1400CST			0	0	0.75K		Hail (1.75)
Monroe County									
Quincy	22	1410CST 1415CST			0	0	10K		Thunderstorm Wind
Several homes suffered roof damage. A few trees were blown down.									
Prentiss County									
Booneville	22	1515CST 1520CST	0.2	20	0	0	5K		Tornado (F0)
A tornado touched down near Booneville. Several trees were blown down.									
Prentiss County									
New Site	22	1515CST 1520CST			0	0	5K		Thunderstorm Wind
Several trees were blown down.									
Tishomingo County									
3 S Tishomingo	22	1545CST 1550CST			0	0	10K		Thunderstorm Wind
Several barns had their doors blown off. A few trees were also knocked down.									
Alcorn County									
Corinth	22	1600CST 2200CST			0	0	1K		Urban/Sml Stream Fld
Several streets were closed by flooding due to heavy rainfall.									
Chickasaw County									
Thorn	22	1620CST 1625CST			0	0	0.05K		Hail (0.88)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>MISSISSIPPI, North</u>									
Pontotoc County									
Troy	22	1637CST 1645CST			0	0	0.01K		Hail (0.75)
Lee County									
Tupelo	22	1645CST 1650CST			0	0	0.85K		Hail (1.75)
Hail ranged in size from quarter to golfball.									
Lee County									
Baldwyn	22	1710CST 1715CST			0	0	0.10K		Hail (1.00)
Lee County									
Baldwyn	22	1710CST 1715CST	0.1	10	0	0	0.10K		Tornado (F0)
A tornado briefly touched down near Baldwyn producing little damage.									
Prentiss County									
Wheeler	22	1720CST 1725CST			0	0	0.01K		Hail (0.75)
Prentiss County									
Wheeler	22	1720CST 1725CST	0.1	10	0	0	0.10K		Tornado (F0)
A tornado briefly touched down near Wheeler producing little damage.									
Itawamba County									
Dorsey	22	1722CST 1730CST			0	0	0.01K		Hail (0.75)
Tishomingo County									
Iuka	22	1750CST 1755CST			0	0	0.01K		Hail (0.75)
Benton County									
Ashland	22	2000CST 2300CST			0	0	10K		Flash Flood
One section of a road was washed out due to the flash flooding.									
Tishomingo County									
Countywide	22	2000CST 2300CST			1	0	1K		Flash Flood
A number of roads were washed out across the county. One man was killed when he tried to cross a flooded road in his vehicle. M27VE									
Chickasaw County									
Houston	30	1632CST 1640CST			0	0	0.10K		Hail (1.00)
Lee County									
Shannon to Belden	30	1700CST 1710CST			0	0	0.25K		Hail (1.00)
Hail ranged in size from dimes to quarters.									
Lee County									
Shannon	30	1715CST 1720CST			0	0	5K		Thunderstorm Wind
Several pine trees were blown down.									
<u>MISSISSIPPI, South</u>									
Amite County									
Countywide	02	0600CST 0700CST			0	0	0.50K		Thunderstorm Wind
Thunderstorm winds blew down several trees around the county.									
Walthall County									
Lexie	02	0700CST			0	0	2K		Thunderstorm Wind

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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MISSISSIPPI, South

Thunderstorm winds caused damage to roofs and knocked down trees around the community of Lexie.

Amite County

Gloster

02	0745CST				0	0	5K		Lightning
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Lightning hit a house starting a fire that destroyed the kitchen.

Amite County

Gillisburg

22	1650CST				0	0	10K		Thunderstorm Wind
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Thunderstorm winds destroyed storage barns and tore the roof off of a dairy barn at a local dairy farm. The storm also downed numerous trees around the area.

Amite County

6 W Liberty

22	1650CST				0	0			Hail (1.75)
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The Amite County Sheriff's Department reported golfball size hail west of Liberty.

Amite County

6 W Liberty

22	1650CST				0	0	0.25K		Thunderstorm Wind
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The Amite County Sheriff's Department reported trees blown down west of Liberty.

Pike County

1 W Osyka

22	1715CST	0.1	20		0	0	5K		Tornado (F0)
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The Pike County Civil Defense reported a brief tornado touchdown just west of Osyka that blew the roof of a house off.

Pike County

Mc Comb

22	1725CST				0	0	1K		Thunderstorm Wind
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A storm spotter reported that thunderstorm winds blew a tree down on a house.

Pike County

Summit to
Magnolia

22	1725CST				0	0	0.50K		Thunderstorm Wind
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The Pike County Civil Defense reported trees blown down from Summit to Magnolia.

Walthall County

Tylertown

22	1735CST				0	0			Hail (0.75)
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A storm spotter reported dime size hail.

Walthall County

Tylertown

22	1735CST				0	0	0.25K		Thunderstorm Wind
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A storm spotter reported shingles blown off a roof of a house.

Pike County

Countywide

29	1900CST 2300CST				0	0			Flash Flood
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Thunderstorms produced rainfall amounts from three to nearly six inches across the county resulting in several roadways being flooded around the McComb and Magnolia areas. Two wooden bridges on rural roads near Magnolia were washed out.

Pike County

Osyka

29	2030CST				0	0	0.50K		Thunderstorm Wind
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Thunderstorm winds blew down several trees.

MISSISSIPPI, Southeast

Wayne County

State Line

02	0915CST 0917CST				0	0	5K		Strong Winds
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Trees were reported down in the community.

Stone County

4 SE Wiggins to
5 SE Wiggins

02	0915CST 0917CST				0	0	5K		Thunderstorm Wind (G55)
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Trees were reported down in eastern sections of the county, generally near Big Level.

Greene County

Leakesville

02	0930CST 0932CST				0	0	5K		Thunderstorm Wind (G55)
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Trees were reported down along HWY 63 near Leakesville.

George County

Agricola

02	0930CST 0932CST				0	0	5K		Thunderstorm Wind (G50)
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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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MISSISSIPPI, Southeast

High winds blew trees down near Agricola.

Wayne County

Mulberry	09	2155CST 2157CST			0	0	5K		Thunderstorm Wind (G55)
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Numerous trees were blown down near Mulberry.

Wayne County

Whistler	22	1835CST 1836CST			0	0	5K		Thunderstorm Wind (G55)
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High winds ripped an awning off a service station along HWY 84 near Whistler. No one was injured.

Wayne County

Waynesboro	29 30	2300CST 0200CST			0	0	2K		Flash Flood
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Heavy rainfall caused several roads across the central part of the county to flood. The roads were closed for about three hours with most flooding occurring in and around Waynesboro. Rainfall totals of four to six inches were estimated across the area.

MISSOURI, East

MOZ072>075-084>085-099

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

01	1600CST				0	0			Winter Storm
02	1800CST								

The new year started with a vengeance weather wise as a major winter storm hit the area. A combination of snow, sleet and freezing rain left from from 2 to 8 inches of frozen precipitation on the ground across the area. Transportation came to a stop for much of the holiday weekend. Very cold temperatures after the storm kept conditions icy into next week, keeping most area schools closed through the middle of the week.

MOZ041>042-047>052-059>065

Boone - Audrain - Moniteau - Cole - Osage - Callaway - Montgomery - Lincoln - Gasconade - Warren - St. Charles - Franklin - St. Louis - St. Louis (C) - Jefferson

01	1800CST				0	0			Winter Storm
02	1800CST								

The new year started with a vengeance weather wise as a major winter storm hit the area. Snowfall across the area ranged from 6 to 10 inches. To make matters worse, about an inch of freezing rain and sleet fell during the middle of the storm, creating a rock hard layer of ice that was very difficult to move. Transportation across the area came to a stop for much of the holiday weekend. Very cold temperatures after the storm kept conditions icy into the next week, keeping most area schools closed.

MOZ009>010-018>019-026>027-034>036

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

01	2000CST				0	0			Heavy Snow
02	1800CST								

The new year came in with a vengeance weather wise as a major winter storm hit the area. Snowfall across the area ranged from 9 to 16 inches. It was somewhat fortunate that the storm hit on a 3 day holiday weekend, since travel was virtually impossible until Monday. Many area schools remained closed the first couple days of next week as well.

MOZ052-060>065-072>075-084>085-099

Lincoln - Warren - St. Charles - Franklin - St. Louis - St. Louis (C) - Jefferson - Crawford - Washington - St. Francois - Ste. Genevieve - Iron - Madison - Reynolds

13	0430CST 1530CST				0	0			Ice Storm
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An ice storm struck primarily during the early morning hours of the 13th. A 1/4 to 1/2 inch layer of ice eventually covered the area. Some trees and power lines were downed, but overall damage was relatively minor. The major problem was the ice covered roads that made travel difficult to impossible. Area schools were closed through the end of the week. Some schools had not been able to open since the first of the year due to the January 1st storm and a freezing drizzle event that occurred on the 7th and 8th.

Moniteau County

Clarksburg	21	1105CST			0	0			Hail (1.00)
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The County Sheriff reported 1 inch hail.

Boone County

2 N Columbia	21	1143CST			0	0			Hail (0.88)
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Boone County

Hallsville	21	1155CST			0	0			Hail (1.00)
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The County EOC reported nickel size hail just north of Columbia and a storm spotter reported 1 inch hail in Hallsville.

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
MISSOURI, East									
Lincoln County									
Silex	21	1150CST			0	0			Hail (1.00)
A weather spotter reported 3/4 to 1 inch hail covering the ground.									
Boone County									
Hallsville	21	1255CST			0	0			Hail (1.00)
Boone County									
Sturgeon	21	1257CST			0	0			Hail (1.75)
Boone County									
2 NE Sturgeon	21	1300CST			0	0			Hail (1.75)
The county EOC reported 1 to 1.75 inch hail in Hallsville and Sturgeon. A spotter reported 1.75 inch hail just northeast of Sturgeon. This was the second hail producing storm to pass through this area from about 1145 am to 100 pm.									
Madison County									
5 W Marquand	21	1330CST			0	0			Hail (0.75)
The County Sheriff reported 3/4 inch hail west of Marquand.									
Boone County									
Midway	21	1840CST			0	0			Hail (0.75)
Boone County									
1 N Columbia	21	1855CST			0	0			Hail (0.75)
The County EOC reported 3/4 inch hail at Midway and just north of Columbia.									
Monroe County									
Florida	21	1919CST			0	0			Hail (0.75)
A storm spotter reported 3/4 inch hail near Mark Twain Lake.									
MISSOURI, Lower									
Dunklin County									
5 N Campbell to 1 S Kennett	17	1647CST 1715CST			0	0	30K		Thunderstorm Wind
An anchored mobile home was blown over near Campbell. A tractor trailer was blown over and an outbuilding was damaged near Kennett.									
Pemiscot County									
Steele	17	1715CST 1720CST			0	0	0.01K		Hail (0.75)
Dunklin County									
3 NW Cardwell	21	1805CST 1810CST	0.1	10	0	0	0.05K		Tornado (F0)
A tornado briefly touched down near Cardwell producing little damage.									
Dunklin County									
Kennett	21	1855CST 1900CST			0	0	0.75K		Hail (1.75)
Dunklin County									
Senath	21	1930CST 1935CST			0	0	0.10K		Hail (1.00)
Pemiscot County									
Steele	21	1938CST 1945CST			0	0	0.01K		Hail (0.75)
Dunklin County									
1 NW Kennett	21	2115CST 2120CST	0.1	10	0	0	0.05K		Tornado (F0)
A tornado briefly touched down near Kennett producing very little damage.									
Pemiscot County									
Steele	21	2210CST 2215CST	0.1	10	0	0	0.05K		Tornado (F0)
A tornado briefly touched down near Steele producing little damage.									

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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MISSOURI, Lower

Pemiscot County

Countywide	22	0300CST 0630CST			0	0	15K		Flash Flood
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Between five and seven inches of rain fell across the county producing flash flooding. Several buildings including a church were flooded. Many roads were closed because of the flooding.

Dunklin County

Hornersville	22	0400CST 0630CST			0	0	1K		Flash Flood
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Flash flooding caused water to go over several roads in Hornersville.

MISSOURI, Northwest

Henry County

Shawnee Mound	21	1045CST			0	0			Hail (0.75)
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Dime-size hail at Shawnee Mound.

Johnson County

1 N Knob Noster to 2 E Knob Noster	21	1124CST 1127CST			0	0			Hail (1.75)
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Golfball-size hail a mile north of Knob Noster, one inch hail 2 miles east of Knob Noster.

Pettis County

La Monte to 8 W La Monte	21	1124CST 1133CST			0	0			Hail (1.00)
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One inch hail 8 miles west of Sedalia and 3 miles east of La Monte.

Saline County

Marshall	21	1214CST			0	0			Hail (0.75)
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Dime-size hail in Marshall

MOZ039>040-046

Saline - Howard - Cooper

22	0000CST			0	0			Flood
23	2359CST							

Thunderstorms produced locally heavy rain on January 21st which resulted in minor river flooding over west central Missouri on January 22-23. The Blackwater River at Blue Lick, MO, Petite Saline at Boonville, MO and Moniteau Creek at Fayette, MO all exceeded flood stage on January 22.

MOZ029-031-039- 044-046-054

Clay - Carroll - Saline - Johnson - Cooper - Henry

31	0000CST 2359CST			0	0			Flood
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A steady, all day rainfall of 1 to 3 inches fell across much of western Missouri on January 30th. This rainfall resulted in minor to moderate river flooding along several streams in western Missouri. The Big Creek at Blairstown, MO, South Grand River at Urich, MO, Wakenda Creek at Carrollton, Petite Saline at Boonville, MO, Little Platte River at Smithville, MO and Lamine River at Otterville, MO all exceeded flood stage on January 31st. The Blackwater River at Valley City and Blue Lick, also went into flood on January 31st.

MISSOURI, Southeast

MOZ076-086>087- 100-107>112-114

Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid

01	1100CST			0	0	150K		Ice Storm
02	0600CST							

Significant ice accumulations occurred over most of southeast Missouri late on New Years Day and continuing through New Years night. The heaviest coatings of ice were north and west of Cape Girardeau, especially in Carter, Wayne, Bollinger and Perry Counties, where trees and power lines were brought down. In Butler County, half an inch of ice accumulation was observed in Poplar Bluff. Slick roads kept the Missouri State Highway Patrol busy, giving troopers a total of 58 accidents during a 12-hour period. A fatal accident near Puxico was blamed on icy road conditions. In a separate incident, Highway 51 just south of Puxico in Stoddard County was closed due to a tractor-trailer that jackknifed. Even the Poplar Bluff Street Department pulled its trucks off the road after one of its trucks slid into a utility pole. A blast of cold air in the wake of the storm rendered road salt very ineffective for ice removal. Prior to the storm, checkout lines at local grocery stores were up to an hour long, and most stores sold out of bread well before the evening of the 1st. Numerous towns cancelled school due to poor road conditions on the 4th.

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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MISSOURI, Southeast

MOZ087-108>112-114 Cape Girardeau - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid

08	0500CST 1400CST			0	0		Ice Storm
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Freezing rain coated surfaces with around one quarter inch of ice. This icing event was considerably less serious than the ice storm on January 1 and 2. Roads were slippery, and trees were glazed. There were no reports of any downed tree limbs or power lines.

Wayne County

**4 E Greenville to
6 E Greenville**

17	1632CST 1640CST			0	0	115K	Thunderstorm Wind
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Thunderstorm winds caused extensive damage to a house 4 miles east of Greenville. Another house about 6 miles east of Greenville was damaged. Numerous trees and power lines were down in eastern Wayne County. A National Weather Service damage survey indicated the damage was caused by microburst winds near 100 MPH. At the first residence, a modular home was nearly destroyed, with just the bathrooms left standing. An outbuilding 26 by 30 was also destroyed. At the second residence, a very old home was destroyed and two old outbuildings were heavily damaged.

Stoddard County

Dexter

17	1655CST			0	0	75K	Thunderstorm Wind
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Very strong thunderstorm winds blew outbuildings over, destroyed a mobile home, and blew windows out of a service station. Trees were down, including some on houses. At a gas station on Highway AD, the station's canopy was destroyed and the front glass door was blown out. An empty fuel storage tank was overturned. Debris from the station damaged several houses just north of the service station.

Butler County

Poplar Bluff

17	1655CST			0	0	100K	Thunderstorm Wind
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Thunderstorm winds destroyed 7 trailers in a trailer park. Three houses were partially unroofed.

Bollinger County

Arab

17	1705CST			0	0	150K	Thunderstorm Wind (G82)
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Thunderstorm winds estimated near 95 MPH overturned a vehicle. A house along Highway 51 was heavily damaged and pushed off its foundation. In the same area, a small shed and a large truck shed were destroyed. Along Highway C, a church lost part of its roof, and a small front porch was torn off and deposited behind the building.

Cape Girardeau County

Gordonville

17	1712CST 1726CST			0	0	25K	Thunderstorm Wind
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Thunderstorm winds were estimated near 70 MPH at Gordonville. Elsewhere in Cape Girardeau County, a roof was blown off a house at the intersection of County Road 473 and 472. Numerous trees and power lines were down on County Roads 206, 203, and 214.

New Madrid County

Parma

17	1732CST			0	0	10K	Thunderstorm Wind (G60)
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Numerous trees and power lines were down.

Mississippi County

**2 W Charleston to
Charleston**

17	1740CST			0	3	100K	Thunderstorm Wind
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Thunderstorm winds overturned a mobile home and blew down a barn. The roof was removed from the Farm Bureau building in Charleston. At the Charleston Inn, windows were blown out and the roof was damaged. A large sign was snapped off, and a steel light post was snapped. Lots of trees were down in Charleston. The three occupants of the overturned mobile home were transported to a hospital.

Mississippi County

Bertrand

17	1750CST			0	0	30K	Lightning
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Lightning struck a residence, setting it on fire. The house was destroyed.

Scott County

**.5 W Sikeston to
.5 N Sikeston**

21	1650CST 1653CST	0.8	40	0	0		Tornado (F0)
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A brief tornado touchdown was reported, with no damage.

Butler County

Qulin

21	1732CST			0	0		Hail (1.75)
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Golf ball size hail fell near Qulin.

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MISSOURI, Southeast									
Butler County									
Fagus	21	1732CST 1733CST	0.3	30	0	0			Tornado (F0)
									A brief tornado touchdown was observed, with no damage.
New Madrid County									
.3 S Morehouse to .3 SE Morehouse	21	1750CST 1751CST	0.3	30	0	0			Tornado (F0)
									A brief tornado touchdown was reported, with no damage.
Perry County									
Perryville	21	1754CST			0	0			Hail (0.75)
Stoddard County									
4 E Essex to 4.2 E Essex	21	1800CST 1801CST	0.2	30	0	0			Tornado (F0)
									A brief tornado touchdown occurred, with no damage reported.
Scott County									
Oran	21	1813CST			0	0			Hail (0.75)
Scott County									
1.5 S Benton to 1 E Benton	21	1815CST 1818CST	0.8	40	0	0	50K		Tornado (F1)
									A brief tornado touchdown occurred, with winds estimated near 80 MPH. A mobile home was overturned, and sheds were unroofed. The damage was mainly on County Highway 333.
Butler County									
Poplar Bluff	21	1830CST			0	0	20K		Thunderstorm Wind
									The roof of a flower shop blew off.
Stoddard County									
Dudley	21	2000CST			0	0			Hail (1.00)
Cape Girardeau County									
Countywide	21 22	2000CST 0300CST			0	0	20K		Flash Flood
Scott County									
Countywide	21 22	2000CST 0300CST			0	0	20K		Flash Flood
Stoddard County									
Countywide	21 22	2000CST 0300CST			0	0	20K		Flash Flood
									A series of supercell thunderstorms with very heavy rain formed a procession across Scott, Stoddard, and Cape Girardeau Counties. Some places, such as Cape Girardeau, received over 6 inches of rain during the evening hours of January 21. This resulted in a rather serious flash flood event, with many roads under water. A few bridges were washed out in Scott County. A 3.5 mile section of Route W near Oran in Scott County was closed due to high water. Considerable street flooding occurred in Cape Girardeau, and a few motorists became stranded.
Bollinger County									
Countywide	21 22	2130CST 0300CST			0	0			Flash Flood
Butler County									
Countywide	21 22	2130CST 0300CST			0	0	70K		Flash Flood
Perry County									
Countywide	21 22	2130CST 0300CST			0	0			Flash Flood
Ripley County									
Countywide	21 22	2130CST 0300CST			0	0			Flash Flood

Storm Data and Unusual Weather Phenomena

January 1999

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

MISSOURI, Southeast

Wayne County

Countywide	21	2130CST			0	0			Flash Flood
	22	0300CST							

Thunderstorms with very heavy rain repeatedly moved over the same areas during the evening. The axis of heaviest rain occurred closer to the Mississippi River, where Cape Girardeau received 6 to 7 inches of rain. Even so, two to four inches of rain from Doniphan to Perryville caused flash flooding of some roads and small streams. In Poplar Bluff, the street department supervisor reported more standing water than any time since 1982. Numerous vehicles were stranded on flooded roads. Butler County firefighters rescued four passengers from a pickup truck on County Road 459 after an overflowing creek rose across the road and trapped them in the vehicle. Another water rescue had to be performed on County Road 368 when a truck attempted to cross the rising waters of Little Black River.

Scott County

1 W Sikeston	21	2155CST			0	0			Hail (0.75)
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New Madrid County

1 NE Morehouse to 2 NE Morehouse	21	2207CST 2209CST	1	100	0	0	10K		Tornado (F1)
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Scott County

1 SW Sikeston to .5 W Sikeston	21	2209CST 2210CST	0.7	50	0	0			Tornado (F1)
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The tornado contained top estimated winds of 75 MPH. Numerous trees were down in the Morehouse area.

Stoddard County

4 NW Dexter to 5 NW Dexter	21	2240CST 2243CST	0.5	80	0	0	50K		Tornado (F1)
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The brief tornado touchdown overturned a mobile home, causing extensive damage. A tool shed was blown away, utility poles were down, and trees were uprooted. Top winds were estimated near 80 MPH.

Scott County

Perkins to .2 N Perkins	21	2300CST 2301CST	0.2	30	0	0			Tornado (F0)
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A weak tornado briefly touched down near Perkins. No damage was discovered.

Scott County

3 W Morley to 2.5 W Morley	21	2305CST 2308CST	0.5	30	0	0	150K		Tornado (F1)
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A brief tornado on State Highway 91 overturned a mobile home, demolished a barn and shed, and blew down a grain bin. Farm equipment was damaged. Siding was blown off a house.

New Madrid County

2 E Matthews	21	2315CST			0	0	50K		Thunderstorm Wind
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A gas station near the intersection of Interstate 55 and Highway 80 was demolished. A shed was blown into a field, and a farming irrigation system was damaged.

Scott County

Oran to Morley	21	2318CST			0	0			Hail (0.88)
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Dime to nickel size hail occurred at Morley and Oran.

Scott County

Sikeston	21	2345CST			0	0	20K		Thunderstorm Wind (G52)
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A restaurant sustained roof damage.

Mississippi County

Dogwood to 2 ENE Dogwood	22	0045CST 0048CST			0	0	100K		Thunderstorm Wind
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A large metal machine shop was destroyed in the community of Dogwood. Debris from the shop was scattered across a field east of Highway B. The roof of a nearby house received some damage. At the Dogwood Cemetery, a section of heavy chain-link fence was blown down, and 83 tombstones were blown over. Five to six utility poles were down along Highway 105 east of Dogwood. Much of the town of East Prairie was without power until early afternoon on the 22nd. A building was damaged and irrigation equipment was flipped over just north of Charleston.

Storm Data and Unusual Weather Phenomena

January 1999

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

MISSOURI, Southeast

MOZ109

Butler

22	0200CST				0	0		Flood
23	1400CST							

Thunderstorms with very heavy rain during the evening of the 21st soaked southeast Missouri with 4 to 6 inches of rain. Poplar Bluff received 3.9 inches of rain. At Poplar Bluff, where flood stage is 16 feet, the Black River crested at 16.4 feet around 1:30 P.M. on the 22nd.

Butler County

Countywide

22	0530CST				0	0		Flash Flood
	1100CST							

Cape Girardeau County

Countywide

22	0530CST				0	0		Flash Flood
	1100CST							

Scott County

Countywide

22	0530CST				0	0		Flash Flood
	1100CST							

Stoddard County

Countywide

22	0530CST				0	0		Flash Flood
	1100CST							

More heavy rain in the wake of severe thunderstorms the previous evening renewed flooding problems.

MOZ114

New Madrid

26	0900CST				0	0		Flood
31	2359CST							

Heavy rainfall from a series of March-like storms caused the Mississippi River to rise to near bankful by the end of the month. Downstream from the confluence of the swollen Ohio River, the Mississippi River went above flood stage. At New Madrid, where flood stage is 34 feet, the river crested at 35.5 feet on the 29th. This resulted in minor flooding of agricultural bottomland.

MISSOURI, Southwest

MOZ055>058-066>071-077>083-088>098-102>106

Benton - Morgan - Miller - Maries - Vernon - St. Clair - Hickory - Camden - Pulaski - Phelps - Barton - Cedar - Polk - Dallas - Laclede - Texas - Dent - Jasper - Dade - Greene - Webster - Wright - Newton - Lawrence - Christian - Douglas - Howell - Shannon - Barry - Stone - Taney - Ozark - Oregon

01	0500CST				0	0	2.8M	Winter Storm
02	1600CST							

Winter Storm Highlights:

* At one point late on the 1st and early on the 2nd, the Barton County Electrical Cooperative lost power to 4500 members out of a 5800 member system. Numerous wires, power lines, and trees were downed due to a heavy ice accumulation.

* In south central Missouri, the Howell-Oregon Electric Cooperative lost power to 16,000 of it's 21,000 members due to downed power lines and trees from a heavy ice accumulation. Some customers were without power for 6 days. Ice accumulated to 2 inches in some locations in south central Missouri.

* In central Missouri on January 2nd, The Empire Electric Cooperative said that power had been interrupted to 35,000 of it's customers due to downed power lines from a heavy ice accumulation.

* On January 1st, one person killed and one was injured when their car struck a bridge railing and overturned into a creek in Pulaski County.

* A band of snow and sleet (in addition to the ice) fell from southwest to central Missouri. Three to six inch amounts occurred in southwest Missouri in the Springfield, Galena, Ozark, and Buffalo areas. Heavier amounts of 5 to 10 inches occurred in central Missouri near the Lake of the Ozarks. The heaviest 8 to 10 inches of snow occurred in Morgan and northern Miller Counties.

* In some rural areas, schools remained closed for nearly two weeks after the Christmas/New Year holiday period.

Ozark County

Brixey

17	1329CST				0	0		Hail (1.50)
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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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MISSOURI, Southwest

Howell County

6 SW West Plains	17	1410CST			0	0	15K		Thunderstorm Wind
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Thunderstorm winds blew down a large metal barn and caused minor damage to several houses and other outbuildings.

Howell County

West Plains	17	1420CST			0	0	115K		Thunderstorm Wind
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Thunderstorm winds blew the roof off a building adjacent to the Southern Hills Shopping Center. This building houses 4 businesses and is located in the southwest portion of the city. On top of the building, an air conditioner unit weighing an estimated 400 pounds fell on three cars causing major vehicle damage. In a nearby lot, numerous car windows were broken by flying debris.

Howell County

Mountain View	17	1440CST			0	0	0		Tstm Wind/Hail
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Thunderstorms downed a few large tree limbs and dropped dime sized hail.

Shannon County

3 S Winona	17	1515CST			0	0	0		Thunderstorm Wind
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Thunderstorm winds downed a few trees.

Miller County

Tuscumbia	21	0820CST			0	0			Hail (1.00)
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Miller County

Iberia	21	0945CST			0	0			Hail (1.00)
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Morgan County

Versailles to 1 E Versailles	21	1035CST 1042CST			0	0			Hail (1.00)
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Benton County

Lincoln	21	1631CST			0	0			Hail (1.00)
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MOZ079>081-090>091-095-103

Polk - Dallas - Laclede - Greene - Webster - Christian - Stone	23	0400CST 0900CST			0	0			Winter Storm
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A winter storm dropped a small area of 3 to 5 inches of snow in southwest Missouri. No serious or widespread damage was reported. The highest snowfall totals were in the Springfield and Buffalo areas where 5 inches fell.

MONTANA, Central

MTZ009

Rocky Mountain Front	01	0100MST 1800MST			0	0			Winter Storm
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11 INCHES EAST GLACIER...10 INCHES ST MARY

MTZ013

Fergus / Judith Basin	01	0200MST 1800MST			0	0			Winter Storm
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RAYNESFORD 2NNW 9 INCHES...HOBSON 7 INCHES

MTZ009

Rocky Mountain Front	10	2330MST			0	0			High Wind (G80)
	11	2330MST							

18 SSW CHOTEAU

MTZ012

Cascade / Eastern Teton	11	0558MST			0	0			High Wind (G58)
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2 NW RAYNESFORD

MTZ011

Blaine / Chouteau / Hill	13	0100MST			0	0			High Wind (G58)
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FT BELKNAP...CHINOOK 11S G57KT

MTZ013

Fergus / Judith Basin	13	0619MST			0	0			High Wind (G55)
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2NW WINDHAM...SUFFOLK G53KT 1416 MST

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
<u>MONTANA, Central</u>									
MTZ009			Rocky Mountain Front						
	14	0230MST			0	0	25K		High Wind (G79)
	BABB...EAST GLACIER G76KT AT 0214MST...PART OF ROOF OF BROWNING HIGH SCHOOL ROOLED BACK...15 POWER POLES SNAPPED OFF...SEMI TRUCK BLOWN OFF ROAD.								
MTZ010			Eastern Glacier / Eastern Pondera / Toole / Liberty						
	14	0300MST			0	0			High Wind (G59)
		1600MST							
	CTB AWOS...SWEETGRASS G56 AT 1500 MST								
MTZ011			Blaine / Chouteau / Hill						
	14	0730MST			0	0			High Wind (G53)
	CHINOOK 11S...FT BELKNAP G51KT AT 0200 MST								
MTZ013			Fergus / Judith Basin						
	14	0908MST			0	0			High Wind (G53)
	6S GARNEILL...G50 KT AT 3NE MOORE AT 0518 MST								
MTZ012			Cascade / Eastern Teton						
	14	0930MST			0	0			High Wind (G53)
	FAIRFIELD 6NNE								
MTZ014			Broadwater / Jefferson / Meagher / Central And Southern Lewis And Clark						
	23	0100MST			0	0			Heavy Snow
		1200MST							
	6 INCHES AROUND HELENA...8 INCHES AT AUSTIN 1W								
MTZ009			Rocky Mountain Front						
	23	0430MST			0	0			Heavy Snow
		1700MST							
	6 INCHES AT BOWMANS CORNER AND AUGUSTA								
MTZ009			Rocky Mountain Front						
	28	1700MST			0	0			Winter Storm
	29	0500MST							
	6 TO 9 INCHES IN FOOTHILLS								
MTZ009			Rocky Mountain Front						
	29	0940MST			0	0			High Wind (G65)
	EAST GLACIER 6SW								
<u>MONTANA, East</u>									
	NONE REPORTED.								
<u>MONTANA, South</u>									
MTZ037			Carter						
	01	1600MST			0	0			Blizzard
		1900MST							
	A steady snowfall combined with winds of 35 to 40 mph to reduce visibilities to zero in Ekalaka during the late afternoon hours of New Years Day. The blizzard conditions only lasted for about three hours.								
MTZ030>033-036>037			Treasure - Rosebud - Custer - Fallon - Powder River - Carter						
	10	1930MST			0	0			Ice Storm
	11	0900MST							
	A warm front produced a widespread area of freezing rain over southeastern Montana as it slowly moved east. Numerous roads had to be closed across southeastern Montana for several hours including interstate 94 between Lockwood and Terry. The freezing rain also caused several minor auto accidents.								
MTZ028			Wheatland						
	14	0300MST			0	0			High Wind (G64)
	15	0400MST							
	The combination of a strong high pressure area over the great basin, an upper low which tracked east across Southern Canada and a fast westerly flow aloft produced southwest winds sustained as high as 58 mph with gusts as high as 73 mph across the Upper Yellowstone Valley.								

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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MONTANA, South

MTZ028

Wheatland

23	0100MST				0	0			Heavy Snow
	1500MST								

A strong Arctic cold front dropped south across Southern Montana while a low pressure system containing Pacific moisture was tracking east across Wyoming. The result was an area of moderate to heavy snowfall across South Central Montana. A spotter 10 miles east of Livingston picked up 14 inches of new snow in 14 hours while the Livingston airport picked up 8 inches in the same time period. Cooke City received 10 inches of snow. Several other locations across South Central Montana received 2 to 5 inches of snowfall, and several minor auto accidents were reported.

MTZ028

Wheatland

28	0500MST				0	0			High Wind (G56)
	1200MST								

The Department of Transportation sensor 5 miles East of Livingston reported sustained winds as high as 53 mph with gusts up to 65 mph as a strong pressure gradient produced high winds across the Upper Yellowstone Valley.

MONTANA, West

MTZ001>002-004-043

Kootenai/Cabinet Region - West Glacier Region - Lower Clark Fork Region - Blackfoot Region

10	1000MST				0	0			Heavy Snow
	0330MST								

Stahl Peak-10 inches new snow
Poorman Creek-15 inches new snow
Kraft Creek-12 inches new snow

MTZ004

Lower Clark Fork Region

14	1515MST				0	0			Heavy Snow
	2130MST								

Lookout Pass-11 inches new snow

MTZ004

Lower Clark Fork Region

16	1030MST				0	0			Heavy Snow
	0400MST								

Lookout Pass-8 inches new snow

MTZ002>006-043

West Glacier Region - Flathead/Mission Valleys - Lower Clark Fork Region - Missoula / Bitterroot Valleys - Bitterroot / Sapphire Mountains - Blackfoot Region

22	1515MST				0	0			Heavy Snow
	1425MST								

Foys Lake-8 inches new snow
Superior-12 inches new snow
Petty Creek-8 inches new snow
5 W Corvallis-15 inches new snow
3 SW Victor-9 inches new snow
Avon-12 inches new snow
Grave Creek-8 inches new snow
Twelvemile-8 inches new snow

MTZ001>002-004

Kootenai/Cabinet Region - West Glacier Region - Lower Clark Fork Region

27	1615MST				0	0			Heavy Snow
	0500MST								

Polebridge-8 inches new snow
Haugan-12 to 14 inches new snow
Banfield Mountain-14 inches new snow
Stahl Peak-23 inches new snow
Poorman Creek-18 inches new snow
Flattop Mountain-21 inches new snow
Lookout-15 inches new snow
Yaak 1W-13 inches new snow
Grave Creek-9 inches new snow
Hoodoo Basin-9 inches new snow
Hawkins Lake-14 inches new snow

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

NEBRASKA, Central

NOT RECEIVED.

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**

02	1800CST								
04	1200CST			0	0				Extreme Windchill

A prolonged surge of Arctic air plunged south across eastern Nebraska on January 2 and continued through midday January 4. Temperatures slowly fell through the period, eventually ending up 5 below to 15 below zero during the morning hours January 4. These cold temperatures were accompanied by north winds of 25 to 40 mph which produced dangerously low wind chills of 35 to 50 below zero throughout much of the period. Some of the colder wind chills included...49 below in Fremont at 1000 am 1/3/99, 48 below at Norfolk at 900 am 1/4/99, 47 below at Omaha at 400 am 1/4/99, 47 below at Columbus at 500 am 1/3/99 and 40 below at Lincoln at 600 am 1/3/99. In addition to the extreme cold, a 24 to 48 hour snow event occurred from 1/1/99 into the evening hours 1/3/99 dropping 2 to 6 inches of snow on much of the area. When combined with the strong winds, blowing and drifting of the freshly fallen snow occasionally reduced visibilities to 1/2 mile or less, mainly from the afternoon of 1/2/99 into the early evening hours of 1/3/99. The blowing snow also closed some east to west roads, mainly in rural areas.

NEBRASKA, Extreme Northeast

NEZ013>014 **Dixon - Dakota**

01	0900CST								
02	1900CST			0	0				Winter Storm

A winter storm brought 4 to 6 inches of new snow, with 20 to 40 mph winds which caused blowing and drifting snow and dangerous wind chills. Visibilities were reduced to less than 1/2 mile at times. Actual temperatures dropped to below zero with wind chills as cold as 40 below zero. Travel became difficult and hazardous, and was greatly curtailed. Otherwise major problems were few on the holiday weekend, as most people heeded warnings and did not travel during the storm.

NEBRASKA, Extreme Southwest

NEZ079>081 **Dundy - Hitchcock - Red Willow**

02	1200MST								
03	1800MST			0	0				Extreme Windchill

A strong Arctic Airmass combined with brisk winds resulted in Wind Chill Readings below -35 degrees across all of extreme southwest Nebraska from 01/02 to 01/03.

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**

01	0800CST								
03	1400CST			3	6	0	0		Winter Storm

The start of 1999 was ushered in with snow, ice, and very cold weather across central and south-central Nebraska. On New Years Day, a steady snowfall along and north of Interstate 80 dumped from 1 to 5 inches of snow. Most of the 5 inch reports were along Highway 92 from Loup City to Osceola, but also in parts of northeast Dawson county. By late morning, freezing drizzle developed southeast of Hastings and eventually coated area roads with a layer of ice. Light snow later that evening made travel even more treacherous. A five vehicle pile-up on the Interstate that involved two semi-trailers killed one man and injured 3 others. This accident was caused when one of the semi-trailers lost control on the slick roadway, crossed the median and collided with the other semi and other cars. The traffic from the Interstate was redirected to Highway 30 where another accident occurred involving two vehicles. This accident killed a 15 year boy and injured 3 others. Several other minor accidents were reported in the same area during the day of the first.

Once the ice and snow ended, arctic air spilled across the area aboard 20 to 30 mph north winds. Blowing and drifting of the fallen snow caused very poor visibilities for a time on the 2nd. Temperatures fell to 5 to 15 below zero through midday the 3rd. On January 3, a 55 year old Cairo man died from hypothermia after being exposed to the sub zero temperatures. The man had attended his son's wedding the previous evening and died from exposure as he walked home late that night. M52VE, M15VE, M55OU

Storm Data and Unusual Weather Phenomena

January 1999

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

NEBRASKA, South Central

NEZ060-072-074-084>087 **Dawson - Gosper - Kearney - Franklin - Webster - Nuckolls - Thayer**

06	1800CST				0	0	0	0	Winter Storm
07	0700CST								

Snowfall from a quick moving weather system dropped a narrow swath of 2 to 5 inches of snow. The most snow fell in Lexington and Elwood where 5 inches was reported. Snowfall of 3 to 4 inches was noted just north of the Kansas border along Highway 136 from Franklin to Hebron.

NEZ040>041-047>049-063>064-075>077-085>087 **Greeley - Nance - Howard - Merrick - Polk - Hamilton - York - Adams - Clay - Fillmore - Webster - Nuckolls - Thayer**

22	0000CST				0	0	0	0	Winter Storm
	1200CST								

A mixture of freezing drizzle, freezing rain, and sleet formed a coat of ice across parts of south-central Nebraska, especially south and east of Hastings. The icy mixture eventually turned to snow early in the morning and 1 to 5 inches of snow was reported in the area. 4 to 5 inches of snow was reported in parts of Clay county and several high school basketball games were canceled that evening. Some schools were dismissed early due to the weather.

NEZ084>087 **Franklin - Webster - Nuckolls - Thayer**

30	0400CST				0	0	0	0	Winter Storm
31	0000CST								

Light freezing rain early in the morning on the 30th coated trees and power lines with a thin layer of ice causing sporadic power loss in the area. The light freezing rain changed to rain during the day before returning to freezing rain as temperatures dropped to around 30 degrees in the evening. Some areas reported one-quarter inch ice accumulations on trees, cars, and power poles. Treated primary roads remained wet, but untreated secondary roads were slick and ice covered.

NEBRASKA, West

NEZ055

Cheyenne

01	0455MST				0	2	22.5K	0	Icy Roads
	0915MST								

At 0455, an accident occurred a few miles east of Potter on Interstate 80 that injured 2 people. A driver of a car was westbound, when he lost control on the ice and went into a ditch and rolled. The driver then attempted to flag down a passing motorist, who swerved to miss him and ended up hitting on embankment. At 812 am, a driver lost control of his car on the ice, near Sidney on Interstate 80. The driver was not injured. At 820 am, a motorist lost control of her vehicle, 3 mile east of Sidney. The vehicle left the roadway and landed on its side. There were no injuries. At 915 am, an accident was reported 11 miles east of Sidney. A driver lost control of her vehicle on the ice and rolled. No injuries were reported in this accident.

NEVADA, North

NVZ007-007

Northern Elko

19	2000PST				0	0			Heavy Snow
20	0930PST								

A winter storm dropped locally heavy snow over parts of Northern Elko County. 12 hour snowfall totals included 7 inches at both Mountain City and Jarbidge.

NVZ007-010

Northern Elko - Ruby Mountains/East Humboldt Range

20	1800PST				0	0			Heavy Snow
21	0600PST								

The second winter storm in as many days dropped heavy snow over parts of Northeast Nevada and the Ruby Mountains/East Humboldt Range. 12 hour snowfall totals included 8 inches at Wildhorse Reservoir, 12 inches at Lamoille Canyon (7500 foot level), and 10 inches at Dorsey Basin(8100 feet).

NVZ006>008-008>009-011>012-012-012

Humboldt - Northern Elko - Southwest And South Central Elko - Southeast Elko - White Pine - Lander/Eureka

23	0800PST				0	0			Heavy Snow
24	2100PST								

A slow moving, strong winter storm pounded much of Northern and East Central Nevada with heavy over a two day period. The storm first hit Northwest and Northeast Nevada on Saturday and then moved south over East Central Nevada, dropping more heavy snow. 12 hour snowfall amounts were as follows: 14 inches in Diamond Valley, 10 inches in Kingston, 9 inches at both the Gibbs Ranch (40 NE of Elko) and Eureka, 8 inches at Austin, 7 inches at Elko, Wells and Spring Creek, 6 inches at Ely, Sheldon Antelope Refuge (90 NW of Winnemucca), 5 inches at Beowawe, and 4 inches at Battle Mountain.

Storm Data and Unusual Weather Phenomena

January 1999

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

NEVADA, South

NVZ013

Northern Nye

23	1830PST				0	0		
24	1840PST							Heavy Snow

Heavy snow fell on northern Nye County during a 24 hour period leaving up to 13 inches of snow on elevations below 7,000 feet.

NVZ014

Esmeraldo/Central Nye

23	2200PST				0	0		
25	0200PST							Heavy Snow

The Esmeralda County Sheriff reported 12 inches of snowfall over a large part of the county. The snow began to fall the evening of Jan. 23 and ended during the early morning hours of Jan. 25.

NVZ019

Spring Mountains

25	1300PST				0	0		
26	2000PST							Heavy Snow

The Spring Mountains received between 8 and 12 inches of snow above the 7,000 foot level.

NVZ015

Lincoln County Except The Sheep Range

26	0600PST				0	0		
27	0100PST							Heavy Snow

Snow blanketed much of Lincoln County in a 24 hour period. Pioche received 12 inches of new snow.

NEVADA, West

NVZ003

Greater Reno/Carson City/Minden Area

17	1215PST				0	0	0	
Peak wind gust of 66 mph with sustained winds ranging from 40-48 mph recorded in Washoe Valley.								

NVZ002

Greater Lake Tahoe Area

20	0615PST				0	0	0	
	1615PST							Heavy Snow

12 inches of snow in 10 hours near Kingsbury Grade.

NVZ003

Greater Reno/Carson City/Minden Area

20	1445PST				0	0	0	
Peak wind gust of 67 mph recorded at Minden.								

NVZ003

Greater Reno/Carson City/Minden Area

20	1520PST				0	0	0	
Peak wind gust of 58 mph recorded five miles east of Gardnerville.								

NVZ003

Greater Reno/Carson City/Minden Area

22	1558PST				0	0	0	
Peak wind speed of 138 mph recorded by NWS wind sensor atop Virginia Peak.								

NVZ003

Greater Reno/Carson City/Minden Area

22	1715PST				0	0	0	
Peak wind gust of 72 mph with sustained winds ranging from 20-40 mph recorded in southwest Reno.								

NVZ002

Greater Lake Tahoe Area

23	0210PST				0	0	0	
	0910PST							Heavy Snow

8-10 inches of snowfall in a 7 hour period near Incline Village, elevation 7000 feet.

NVZ002

Greater Lake Tahoe Area

23	0530PST				0	0	0	
24	0530PST							Heavy Snow

24 hour snow total of 24 inches at Mt. Rose Ski Area.

NEW HAMPSHIRE, North and Central

NOT RECEIVED.

NEW HAMPSHIRE, Southern

NHZ011>012

Cheshire - Hillsborough

14	0000EST				0	0		
15	0600EST							Heavy Snow

A developing low pressure system over the mid Atlantic states brought heavy snow to parts of southwest New Hampshire. Totals of 6 to 8 inches were common, especially along the Massachusetts border. Spotters reported 8 inches of snow in Jaffrey, 7 inches

Storm Data and Unusual Weather Phenomena

January 1999

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

NEW HAMPSHIRE, Southern

in New Ipswich, and 6 inches in Keene and Rindge. The storm caused numerous skidding accidents, and closed schools and some businesses.

NEW JERSEY, Northeast

NOT RECEIVED.

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**

01	0000EST 2359EST	0	0	0	0	Drought
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January 1999 finally broke a string of unseasonably dry months that prevailed throughout the second half of 1998. Conditions did not look promising at the start of the month. On January 5th, the Delaware River Basin Commission (DRBC) issued a conditional drought emergency. Heavy precipitation on the 3rd gave the area a temporary reprieve from going straight into a drought emergency. The DRBC expected that threshold to be reached on January 25th. Streamflow on the Delaware River was only 50 percent of normal. In Hunterdon County in Readington Township a level two water emergency remained in effect due to low well water levels. Subsequent heavy precipitation events on the 15th, 18th and 24th started replenishing reservoir and streamflow levels. At month's end, the lifting of the drought warning was only days away. On a county weighted average, January precipitation was around 200% to 250% of normal. It ranged from 6.5 inches in Sussex County to 9.0 inches in Ocean County. January 1999 was the third wettest January on record (dating back to 1895) for the state of New Jersey. January 1999 was the 8th wettest January on record at both the Marina within Atlantic City (6.4 inches) and at the Atlantic City International Airport (5.78 inches) in Pomona. Monthly precipitation totals were 5.42 inches at the Lehigh Valley International Airport and 4.89 inches at the Philadelphia International Airport.

NJZ007>010-012-015>019-021 **Warren - Morris - Hunterdon - Somerset - Middlesex - Mercer - Salem - Gloucester - Camden - Burlington - Cumberland**

02	2200EST	0	0	0	Wintry Mix
03	0800EST				

NJZ001 **Sussex**

02	2300EST	0	0	0	Winter Storm
03	1100EST				

Wintry precipitation affected New Jersey the late evening of the 2nd and morning of the 3rd. It lasted the longest in Sussex County, where ice accretions approached one inch in the far northwest tip of the county.

A very cold and dry air mass built into New Jersey on the 1st and the 2nd. As the high pressure system built into New England and the adjacent coastal waters, the circulation around it and a low pressure system over the Lower Ohio Valley started to bring in warmer air from the Atlantic Ocean. During the evening of the 2nd the air near the ground was cold enough for precipitation to start as light freezing rain and sleet in central and southern New Jersey. In northwest New Jersey precipitation started as snow and sleet. Precipitation intensity was light for the first several hours of this event. This permitted temperatures to rise above freezing before the onset of heavy rain. The only places this did not occur were in the valleys of Sussex County. It took four hours (from 7 a.m. EST to 11 a.m. on the 3rd) for temperatures to rise above the freezing mark from southeastern to northwestern Sussex County. Water equivalents of ice and sleet in central and southern New Jersey were only a few hundredths of an inch. This increased to one to two tenths of an inch in northern Hunterdon and Somerset Counties and in Morris and Warren counties. Water equivalents reached close to one inch around High Point in northwestern Sussex County.

Because this occurred late on a weekend night, the number of reported vehicular accidents was not very high. But at the onset of the freezing rain in Ocean County, between 11 p.m. EST and Midnight, several nasty accidents occurred. A 13-year-old boy was critically injured during one accident near Mile Marker 82 on the Garden State Parkway. Eight other accidents occurred on the same stretch of the Parkway. In Dover Township (Ocean County) a tour bus skidded on a patch of ice and slid 600 feet into a light pole. In Somerset County, four persons were injured when the vehicle they were in struck the Exit 41 sign on Interstate 78 in Watchung Borough. Minor accidents were also reported throughout Monmouth County.

NJZ013>014-016>019-021>025 **Western Monmouth - Eastern Monmouth - Salem - Gloucester - Camden - Burlington - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic**

03	0500EST 1100EST	0	0	0	Wind
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NJZ026 **Eastern Ocean**

03	0700EST 1000EST	0	0	0	High Wind (G52)
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its

Storm Data and Unusual Weather Phenomena

January 1999

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

NEW JERSEY, South and Northwest

frontal boundary along the coastal plains of the South Atlantic States. This second low increased the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes) along and near the coast and increased the onshore flow. The strongest winds occurred during the morning of the 3rd and diminished as the low pressure system passed through New Jersey. The highest reported wind gusts were 60 mph in Seaside Park and 57 mph in Belmar. Most other peak wind gusts were between 40 and 45 mph. The strong wind caused problems for fire fighters battling a blaze in Berkeley Township, Ocean County. The strong winds spread flames from one house fire onto another.

Burlington County

Countywide	03	0600EST 1300EST			0	0	0		Heavy Rain
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Camden County

Countywide	03	0600EST 1200EST			0	0	0		Heavy Rain
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Cape May County

Countywide	03	0600EST 1300EST			0	0	0		Heavy Rain
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Cumberland County

Countywide	03	0600EST 1200EST			0	0	0		Heavy Rain
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Gloucester County

Countywide	03	0600EST 1200EST			0	0	0		Heavy Rain
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Mercer County

Countywide	03	0600EST 1300EST			0	0	0		Heavy Rain
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Monmouth County

Countywide	03	0600EST 1300EST			0	0	0		Heavy Rain
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Salem County

Countywide	03	0600EST 1200EST			0	0	0		Heavy Rain
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Atlantic County

Countywide	03	0700EST 1400EST			0	0	0		Heavy Rain
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Hunterdon County

Countywide	03	0700EST 1300EST			0	0	0		Heavy Rain
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Middlesex County

Countywide	03	0700EST 1300EST			0	0	0		Heavy Rain
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Ocean County

Countywide	03	0700EST 1300EST			0	0	0		Heavy Rain
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Somerset County

Countywide	03	0700EST 1300EST			0	0	0		Heavy Rain
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Morris County

Countywide	03	0800EST 1400EST			0	0	0		Heavy Rain
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Sussex County

Countywide	03	0800EST 1200EST			0	0	0		Heavy Rain
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Warren County

Countywide	03	0800EST 1300EST			0	0	0		Heavy Rain
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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	Estimated Damage	Character of Storm
					Killed	Injured	Property Crops

NEW JERSEY, South and Northwest

Atlantic County

West Portion	03	0900EST 1330EST			0	0	0	Flood
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Camden County

South Portion	03	1000EST 1330EST			0	0	0	Flood
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Monmouth County

Northeast Portion	03	1030EST 1430EST			0	2	0	Flood
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Heavy rain fell during the morning of the 3rd across New Jersey. There was still some freezing rain in Sussex County. The heaviest rain fell across eastern New Jersey where rainfall rates of an inch per hour lasted for two to three hours. This caused flooding of some streams in Monmouth, Camden and Atlantic Counties and precipitated a mud slide that destroyed one unit of a condominium complex in Highlands (Monmouth County). The occupants of the unit suffered natural gas inhalation, but were otherwise unharmed. Doppler Radar storm total estimates indicated a band of very heavy rain fell diagonally across the state from Millville northeast through western Atlantic County, southern Burlington County, western Ocean County and most of Monmouth County.

On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. Not only did this second low pressure system increase the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes), but it also brought heavy rain into the state. Urban and poor drainage flooding occurred. This was exacerbated near the coast (the rain was also heavier) by coinciding with the morning high tide. In Highlands, a 20 foot by 5 foot section of South Linden Avenue caved in and sent wet earth and trees into a retention wall behind the Highland Shore Condominium Complex. The mud and debris traveled over the retention wall and punched a 20 foot hole in the rear of the building. The debris crashed through the floor and exited the building through the front garage. The debris also ruptured the natural gas line (injured the two occupants) and forced the temporary evacuation of residents in the complex. The end unit was destroyed, the adjoining unit had some structural damage; the rest were not damaged. Elsewhere within the borough, the heavy rain and high tides forced the closure of several roads including New Jersey State Route 36. The borough declared a state of emergency. Water was knee deep in the downtown area. Most roads were reopened around 130 p.m. EST. Elsewhere in Monmouth County, kayaks were used as the means of transportation on flooded Carmel Way in Eatontown.

In Atlantic County, the combination of flooding along Hammonton Creek and debris clogged drains forced the closure of New Jersey State Route 54 (where water was four feet deep in spots) and five streets near the creek. In Camden County the White Horse Pike (United States Route 30) was closed in Winslow Township. U. S. Route 130 was also closed near the Collingswood Circle in Collingswood Borough. There were numerous reports of poor drainage flooding in Middlesex County. In Hunterdon County, field and basement flooding occurred.

Storm totals for the entire event included 4.23 inches in Ocean Grove (Monmouth County), 3.74 inches in Red Bank (Monmouth County), 3.60 inches in Estell Manor (Atlantic County), 3.52 inches in both Chatham (Morris County) and Toms River (Ocean County), 3.40 inches in Morris Plains (Morris County), 3.26 inches in Freehold (Monmouth County), 3.20 inches in Fords (Middlesex County), 3.07 inches in Millville (Cumberland County), 2.91 inches in Belmar (Monmouth County), 2.87 inches at the McGuire AFB (Burlington County), 2.86 inches in Somerville (Somerset County) and Atsion (Burlington County), 2.85 inches in Wertsville (Hunterdon County), 2.74 inches in Pottersville (Somerset County), 2.72 inches in Piney Hollow (Gloucester County), 2.60 inches in Belle Mead (Somerset County), 2.50 inches in Hammonton (Atlantic County), 2.42 inches in Boonton (Morris County), 2.37 inches in New Brunswick (Middlesex County), 2.25 inches in Washington Crossing (Mercer County), 2.20 inches in Sparta (Sussex County), 2.19 inches in Princeton (Mercer County), 2.13 inches in Mount Holly (Burlington County), 2.09 inches in Stewartville (Warren County), 1.92 inches in Somerdale (Camden County), 1.85 inches in Stow Creek (Cumberland County), 1.80 inches in West Deptford (Gloucester County), 1.62 inches in Pennsauken (Camden County), 1.56 inches in Andover (Sussex County), 1.38 inches at the Marina within Atlantic City, 1.37 inches in Hainesville (Sussex County)

NJZ014-024>026

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

03	0700EST 1200EST				0	0	0	Coastal Flooding
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. This second low increased the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes) along the coast and increased the onshore flow. The low passed through New Jersey the morning of the 3rd. Gale force winds along coastal areas helped produce minor to locally moderate tidal flooding during the morning of the 3rd. The tidal flooding was exacerbated by heavy rain that was also occurring. This was especially true on the Sandy Hook Bay side of Monmouth County. Minor tidal flooding was also reported on the end streets attached to Long Beach Boulevard on Long Beach Island. The high tide reached 7.5 feet above mean lower low water at Sandy Hook at 9 a.m. EST on the 3rd and 8.0 feet above mean lower low water at the Cape May Ferry Terminal at 930

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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NEW JERSEY, South and Northwest

a.m. EST.

NJZ017>019

Gloucester - Camden - Burlington

03	1300EST				0	0	0		Tidal Flooding
	1700EST								

The combination of runoff from the heavy rain and higher than normal tides caused by the strong onshore flow in Delaware Bay caused minor flooding along the Delaware River and tidal sections of its tributaries in southwest New Jersey. In Gloucester County, New Jersey State Route 47 near the Big Timber Creek was closed. In Philadelphia, the tide peaked at 9.1 feet above mean lower low water at 130 p.m. EST.

NJZ007>010-012>023-026

Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Eastern Monmouth - Mercer - Salem - Gloucester - Camden - Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Ocean

08	0700EST				0	0	0		Wintry Mix
09	0700EST								

NJZ001

Sussex

08	1000EST				0	0	0		Winter Storm
09	0700EST								

A low pressure system developed over Texas during the morning of the 8th. A broad southwest flow of air preceding it overran a frontal boundary over the central Appalachians and spread snow into the region the morning of the 8th. Enough warm air moved in aloft to start changing the snow to sleet and freezing rain. Since the low pressure system tracked across western Pennsylvania, the onshore flow brought in milder air into New Jersey and changed the freezing rain to plain rain. The freezing rain lasted the longest in the valleys of northwest New Jersey. Little if any freezing or frozen precipitation fell along the southern coastal areas. The change to plain rain occurred during the late afternoon and early evening in interior southeast New Jersey and spread slowly northwest through the evening and overnight. All locations were above freezing by 9 a.m. EST on the 9th.

Snow began around 7 a.m. EST on the 8th in southwest New Jersey, spread northeast and reached Staten Island by 11 a.m. EST. In interior southern New Jersey sleet started to mix in with the snow around 1 pm. EST and precipitation changed over to sleet and freezing rain around 4 p.m. EST. The mixing with sleet and changing to freezing rain took longer farther north. At the same time warmer air moving in from the Atlantic Ocean raised temperatures above freezing. But this was a slow process. It took until 4 p.m. EST for plain rain to be falling in Atlantic and Monmouth Counties, around Midnight for Burlington County, around 2 a.m. EST on the 9th for Mercer County and not until around daybreak on the 9th for the valleys in northwest New Jersey. Accumulations averaged between 2 and 5 inches. There was little difference in accumulations from Cumberland County northward. Ice accretions were generally one-tenth of an inch or less, except they reached between one quarter and half an inch in the valleys of northwestern Sussex County.

The wintry precipitation occurred on a Friday day and resulted in numerous accidents. In Warren County on the night of the 8th a truck driver was seriously injured after the truck crashed through a guardrail heading west on the Interstate 78 bridge over the Delaware River and plunged over 100 feet. In Monmouth County in Freehold, a school bus skidded off the road. In Ocean County, there were 28 minor accidents alone in Dover Township between 1030 a.m. EST and 230 p.m. EST. A handful of vehicles drove off the roads in southern Ocean County. In Mercer County, school districts dismissed the children early. One of the worst accidents closed the northbound lanes and resulted in a fatality on Interstate 295 near the scenic overlook at 1030 p.m. EST. In Burlington County, a speeding Greyhound bus slid off the New Jersey Turnpike in Springfield Township. Six persons were injured.

Accumulations included 5 inches in Lambertville (Hunterdon County), Boonton (Morris County), Sussex (Sussex County) and Seabrook (Cumberland County), 4.5 inches in Tabernacle (Burlington County) and Princeton (Mercer County), 4 inches in Hamilton Township (Atlantic County), in almost every location in Monmouth County, in Moorestown (Burlington County), Verga and Swedesboro (Gloucester County), Toms River (Ocean County) and Hillsborough (Somerset County), 3.5 inches in Franklin (Sussex County), 3.3 inches in Somerdale (Camden County) and Mount Laurel (Burlington County), 3.2 inches in Wertsville (Hunterdon County) and Hightstown (Mercer County), 3.1 inches in New Brunswick (Middlesex County) and 2.5 inches in Stewartsville (Warren County).

NJZ009>010-012>013-015>020

Hunterdon - Somerset - Middlesex - Western Monmouth - Mercer - Salem - Gloucester - Camden - Burlington - Western Ocean

09	0500EST				0	0	0		Fog
	1300EST								

The southeast flow from the Atlantic Ocean passing over the fresh snow pack produced widespread dense fog across most of central and southern New Jersey during the morning of the 9th. Visibilities were a quarter of a mile or less and caused several accidents. A cold frontal passage shifted the winds to the west and dissipated the fog around noon EST.

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

NEW JERSEY, South and Northwest

NJZ001-007>010-012-015-019 **Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Mercer - Burlington**

	13	1500EST			0	25		0	Winter Storm
	15	1300EST							

NJZ013>014-016>018-020>022-026 **Western Monmouth - Eastern Monmouth - Salem - Gloucester - Camden - Western Ocean - Cumberland - Western Atlantic - Eastern Ocean**

	13	1900EST			0	0		0	Wintry Mix
	15	0500EST							

Atlantic County

Countywide	15	0000EST 1000EST			0	0		0	Heavy Rain
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Cape May County

Countywide	15	0000EST 1000EST			0	0		0	Heavy Rain
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Cumberland County

Countywide	15	0200EST 1000EST			0	0		0	Heavy Rain
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Burlington County

Countywide	15	0400EST 0900EST			0	0		0	Heavy Rain
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Camden County

Countywide	15	0400EST 0900EST			0	0		0	Heavy Rain
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Gloucester County

Countywide	15	0400EST 0900EST			0	0		0	Heavy Rain
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Ocean County

Countywide	15	0400EST 1000EST			0	0		0	Heavy Rain
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Salem County

Countywide	15	0400EST 0900EST			0	0		0	Heavy Rain
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Monmouth County

Countywide	15	0500EST 1000EST			0	0		0	Heavy Rain
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Mercer County

Countywide	15	0600EST 0900EST			0	0		0	Heavy Rain
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Middlesex County

Countywide	15	0600EST 0900EST			0	0		0	Heavy Rain
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A very protracted winter storm affected most of New Jersey from the 13th through the 15th. A combination of snow, sleet and heavy freezing rain fell across the region. Heavy rain fell across central and southern New Jersey the morning of the 15th as heavy freezing rain fell farther north. The heavy freezing rain knocked down tree limbs and power lines and caused 109,000 homes and businesses to lose power in the state. The water equivalent of frozen precipitation (snow, sleet and/or freezing rain) was between one inch and one inch and a half. The highest accrual of ice of nearly one inch occurred in northwest New Jersey. Most of central and southern New Jersey east of the New Jersey Turnpike escaped most of the damage as the temperatures rose freezing just as the heavy rain moved in.

A cold front moved through the state the afternoon and evening of the 13th. Extremely cold air moved south behind it. Unlike the usual pattern with cold frontal passages, precipitation occurred behind the front and slowly worked its way south from the late afternoon on the 13th into the very early morning of the 14th. Precipitation started as sleet and snow in northwest New Jersey, but started as either freezing rain or sleet farther south. Amounts through daybreak on the 14th were very light, generally just a few hundredths of an inch. A weak low pressure system developed on the cold front in the Tennessee Valley on the 14th, but weakened as it moved east off the Delmarva Peninsula during the evening of the 14th. A very strong high pressure system built

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	January 1999
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NEW JERSEY, South and Northwest

into northern New England on the 14th. The high moved offshore the evening of the 14th and the flow across the Middle Atlantic States became more easterly. This permitted warmer air to move back quicker into the region during the late afternoon and evening of the 14th just as a second and stronger low pressure system was getting organized over the Tennessee Valley. A secondary low formed near Norfolk during the early morning of the 15th and this not only accelerated the increase of warmer air, but also produced heavy precipitation.

During the day on the 14th, the cold air became deep enough for precipitation to fall as primarily snow and sleet across central and northern New Jersey. While sleet was mixed in with the rain across southeast New Jersey, temperatures remained above the freezing mark. During the afternoon and evening of the 14th, the transition back to freezing rain started, first in the Philadelphia suburbs and Ocean and Monmouth Counties around 4 p.m. EST and spread northwest throughout the state by midnight. Enough warm air moved in to change the freezing rain to rain in southwest and east central New Jersey between 1 a.m. and 4 a.m. EST on the 15th, just as the heavy precipitation moved in. The change to plain rain occurred around 6 a.m. EST in the Trenton area and between 7 a.m. EST and 9 a.m. EST across most of Northwest New Jersey. Precipitation changed back to snow as it ended in Sussex County. Snow and sleet accumulations were around 5 inches in Sussex County, 2 to 4 inches in Warren and Morris Counties and about an inch or two from Somerset and Hunterdon Counties southward. Ice accretions reached nearly one inch in northwest New Jersey, around half an inch in Mercer and Middlesex Counties and up to one quarter of an inch in Burlington County. Less than a quarter of an inch accrued in the rest of southwest New Jersey and in interior Ocean and Monmouth Counties. Storm total amounts averaged around 1.25 inches, most fell during the morning of the 15th. Where precipitation fell as mainly rain, there was some poor drainage flooding, but no serious problems were reported.

Many schools were closed on the 14th. Many schools were closed in northwest New Jersey on the 15th also. Numerous vehicular accidents occurred. In Sussex County, many roads had to be cleared of debris (downed limbs and wires). In Morris County, many roads were closed because of accidents and/or downed wires. One of the worst accidents occurred in Parsippany the morning of the 15th when a sliding automobile initiated a 10 car pile-up on an icy ramp leading from Interstate 287 to Interstate 80. Twenty minutes later, a similar 5 vehicle accident occurred on another ramp. In Middlesex County on the 15th three tractor trailers collided at 630 a.m. EST on the New Jersey Turnpike near Woodbridge. In Mercer County, a fatal accident claimed the life of a 67-year-old woman in Princeton. In Hunterdon County, motorists were having a hard time on ramps off the major roadways including New Jersey State Routes 12, 29 and 31 as well as U.S. Route 202. There were also dozens of "slip and fall" pedestrian accidents. About 109,000 residents in New Jersey lost power. In the four northwestern New Jersey counties, 14,500 GPU customers lost power. About 85,000 Public Service Electric and Gas customers lost power in the corridor from Mercer to Bergen Counties. Hardest hit in central New Jersey were with Middlesex and Somerset Counties with 17,000 outages.

Once temperatures went above freezing, the problems did not stop. The Commodore Barry (between Gloucester and Delaware Counties) and Walt Whitman (between Camden and Philadelphia Counties) Bridges were both closed during the morning and early afternoon (respectively) of the 15th because of ice falling from overhead cables and beams. A similar occurrence happened on the Delaware Memorial Bridge connecting Salem County New Jersey and New Castle County Delaware. Several vehicles suffered cracked windshields and/or dents. The two outside lanes of the Ben Franklin Bridge were also closed. Driving conditions deteriorated in parts of west central and northwest New Jersey the evening of the 15th after the rain and above freezing temperatures had washed away the salt. Temperatures dropped below freezing and standing water turned to black ice. Numerous accidents and problems were reported in Hunterdon County.

Snow and sleet accumulations for the entire event included 5.3 inches in Montague (Sussex County), 4.9 inches in Wantage (Sussex County), 4.2 inches in Sussex (Sussex County), 4.0 inches in Boonton (Morris County), 2 inches in Long Valley (Morris County), 2 inches in Hackettstown and Belvidere (Warren County), Washington's Crossing (Mercer County) and Somerville (Somerset County) and 1 inch in Wertsville (Hunterdon County). Event total water equivalents included 2.09 inches in Atsion (Burlington County), 1.87 inches in Estell Manor (Atlantic County), 1.85 inches in Millville (Cumberland County), 1.71 inches in Margate (Atlantic County), 1.68 inches in Princeton (Mercer County), 1.67 inches at the McGuire AFB (Burlington County), 1.66 inches at both the Marina and the Atlantic City International Airport, 1.59 inches in Flemington (Hunterdon County), 1.58 inches in Somerdale (Camden County) and Wantage (Sussex County), 1.53 inches in Belvidere (Warren County), 1.37 inches in Toms River (Ocean County), 1.32 inches in New Brunswick (Middlesex County) and Pottersville (Somerset County) and 1.09 inches in West Deptford.

NJZ013>014

Western Monmouth - Eastern Monmouth

15	0500EST	0	0	0	Coastal Flooding
	0900EST				

The onshore flow between the strong high pressure system over the Canadian Maritimes and the secondary low pressure system moving up the coast produced minor tidal flooding at the times of high tide the morning of the 15th. Heavy rain also was also in progress. Minor flooding was reported along the Shrewsbury River in Monmouth Beach and Sea Bright, along the Shark River in Neptune and along New Jersey State Route 36 in Long Branch. Minor flooding also occurred in Union Beach and was exacerbated by clogged drains. Very minor beach erosion also occurred. The high tide reached 6.7 feet above mean lower low water at Sandy Hook at around 6 a.m. EST. The high tide reached 6.8 feet above mean lower low water at Cape May, but no tidal flooding problems were reported south of Monmouth County.

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

NEW JERSEY, South and Northwest

knocked down in Milltown, Sayreville and South Amboy. A road sign was knocked down onto the northbound lanes of Interstate 287. The heavy rain associated with the rain showers was believed to contribute to a transformer fire that forced the evacuation of the Midstate Mall in East Brunswick. Public Service Electric and Gas reported 6,500 customers throughout the state lost power including central New Jersey. GPU Energy also reported about 7,000 of their customers also lost power in central and coastal New Jersey. At least 20 trains were detained for about two hours when the power was lost on Amtrak's Northeast Corridor Line. The outage affected Amtrak, New Jersey Transit and SEPTA regional trains.

NJZ015

Mercer

18	1655EST								
19	1715EST			0	0	750K	0		High Wind (G61)

Damaging winds up to about 70 mph accompanied a cold front and rain showers as they moved through Mercer County around 5 p.m. EST. The worst damage occurred in the Windsor Industrial Park in Washington Township. Ten of the twenty buildings within in the industrial park suffered roofing wind damage. Eight vehicles in the parking lot were damaged by flying debris. The high winds peeled back several sections of the buildings' corrugated roofs. Interior damage to the buildings was caused by both the rain and the debris. The masonry wall of one building was severely damaged. Two buildings were deemed unsafe for occupancy. Damage to the buildings themselves was estimated at \$500,000 and the inventory damage was estimated at \$250,000. No injuries were reported. Elsewhere in the county wires were pulled down in East Windsor Township. Public Service Electric and Gas reported 4,500 homes and businesses lost power in the Camden to Mercer County corridor. All power was restored by 1030 p.m. EST. The peak wind gust at Mercer County Airport with the cold frontal passage was 46 mph at 457 p.m. EST.

NJZ018

Camden

18	1700EST								
				0	1		0		High Wind (G50)

Damaging winds accompanied a cold front and rain showers as they moved through Camden County around 5 p.m. EST. An eight-year-old girl was injured when the wind partially blew off the roof at the Garden State Discovery Museum in Cherry Hill. The girl had welts and bruises to her neck and shoulder. There were 150 persons inside the building. The partial loss of the roof caused the collapse of a 20 foot by 60 foot wall on the north side of the building. Numerous wires were knocked down in the northern part of the county. Public Service Electric and Gas reported 4,500 homes and businesses lost power in the Camden to Mercer County corridor. All power was restored by 1030 p.m. EST.

NJZ013>014-020-026

Western Monmouth - Eastern Monmouth - Western Ocean - Eastern Ocean

18	1710EST								
	1800EST			0	0		0		High Wind (G50)

A powerful cold front accompanied by rain showers and high winds produced wind gusts of around 55 mph in Monmouth and Ocean Counties. Several trees and wires were knocked down throughout each county. GPU Energy reported about 7,000 homes and businesses lost power in central and coastal New Jersey. At least 20 trains were detained for about two hours when the power was lost on Amtrak's Northeast Corridor Line. The outage affected Amtrak, New Jersey Transit and SEPTA regional train lines. A peak wind gust of 49 mph occurred in Belmar at 555 p.m. EST.

NJZ010

Somerset

19	0000EST								
	0700EST			0	0		0		Flood

The combination of showers and thunderstorms with heavy rain and the already saturated ground caused flooding along sections of the Raritan River in Somerset County. The Raritan River at Manville was above its 12 foot flood stage from midnight through 7 a.m. EST on the 19th. It crested at 12.99 feet at 4 a.m. EST. Some low lying area flooding was also reported along the Millstone River. The Griggstown Causeway was closed. The river came within a few yards of a couple of homes in Millstone Borough. Storm totals were not very heavy rain, but this event came within a couple of days of another heavy precipitation event. Rainfall totals included 1.40 inches in Pottersville, 1.10 inches in South Plainfield and Wertsville (Hunterdon County), 1.08 inches in Somerville and 1.00 inch in Bound Brook.

NJZ001-007>010-012>026

Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Eastern Monmouth - Mercer - Salem - Gloucester - Camden - Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean

31	2359EST								
				0	0		0		Unseasonably Wet

January 1999 finally broke a string of unseasonably dry months that prevailed throughout the second half of 1998 in New Jersey. On a county weighted average, January monthly precipitation was around 200% to 250% of normal. It ranged from 6.5 inches in Sussex County to 9.0 inches in Ocean County. On a statewide level, January 1999 was the third wettest January on record (dating back to 1895). January 1999 was the 8th wettest January on record at both the Marina within Atlantic City (6.4 inches) and at the Atlantic City International Airport (5.78 inches) in Pomona. Monthly precipitation totals were 5.42 inches at the Lehigh Valley International Airport and 4.89 inches at the Philadelphia International Airport.

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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NEW MEXICO, Central and North

NMZ010>011-016>017-019-026 **Sandia/Manzano Mountains - Central High Plains/Estancia Valley County - Lincoln County High Plains/Hondo Valley - Capitan/Northern Sacramento Mountains - Chaves County Plains - Guadalupe Mountains Of Chaves County**

21	1300MST				0	0			High Wind (G46)
	1600MST								

High winds gusting 50 to 55 mph developed for several hours mainly over the high terrain of central and southeast New Mexico.

NMZ004>005 **Sangre De Cristo Mountains - Northeast Highlands**

21	1700MST				0	0			Heavy Snow
	0800MST								

Ski areas in northern New Mexico reported heavy snow of 18-20 inches on their highest peaks above 10,000 feet. Locations between 7,000 and 10,000 feet reported only 2-4 inches.

NMZ017 **Capitan/Northern Sacramento Mountains**

26	1130MST				0	0	200K		High Wind (G51)
	1250MST								

A rare lee-side downslope high wind event developed on the east side of Sierra Blanca Peak (elev. 12,000 ft) as an upper level trough moved rapidly over the region. The tops of several hundred pine trees were snapped off at Benito Lake as winds gusted briefly to an estimated 75-80 mph. Tree tops also fell on cars and several homes and business on the north side of Ruidoso. Sierra Blanca Airport recorded a peak gust of only 60 mph with gusty winds lasting less than one hour.

NMZ006>007-011-016>017-019>020-026 **Harding - Far Northeast Plains - Central High Plains/Estancia Valley County - Lincoln County High Plains/Hondo Valley - Capitan/Northern Sacramento Mountains - Chaves County Plains - Roosevelt - Guadalupe Mountains Of Chaves County**

29	0300MST				0	0			Heavy Snow
	1800MST								

NMZ013-018-021 **Quay - De Baca - Curry**

29	0300MST				0	0			Winter Storm
	2300MST								

Heavy snow averaging 5 to 7 inches developed across the south central mountains and sections of the eastern plains as an upper level storm moved west to east just to the south of the state early Friday through Friday evening. Locally heavier snow totals of 8 to 14 inches combined with increasing northeast winds Friday afternoon and evening to produce near blizzard conditions in the far east from Tucumcari south to Clovis-Portales and west to Fort Sumner. Drifts of 4 to 6 feet closed many roads over Quay and Curry Counties and also east into Texas throughout Friday night and Saturday.

NEW MEXICO, South Central and Southwest

NMZ022>025-030>032 **Southwest Mountains/Lower Gila Region - Sierra County Lakes Region - Tularosa Basin/Southern Desert - Southern Sacramento Mountains - Southwest Desert/Boothill - Southwest Desert Mimbres Basin - Southern Desert**

21	1100MST				0	0			High Wind (G68)
	1800MST								

High winds associated with a strong coldfront moving through the area caused widespread but mostly minor damage.

NEW MEXICO, Southeast

NMZ027>029 **Guadalupe Mountains Of Eddy County - Eddy County Plains - Lea**

01	0001MST				0	0			Drought
	2359MST								

The drought continued across Southeast New Mexico with those stations that received precipitation measuring less than 1/2 inch. Some parts of the area did not measure any precipitation at all. Agricultural losses from the preceding year were still being calculated and will be included when reasonable estimates can be determined.

NMZ028 **Eddy County Plains**

28	2100MST				0	0			Heavy Snow
	2330MST								

A winter storm system swept into southeast New Mexico during the late evening hours bringing snow amounts up to 5 inches at Hope.

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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NEW YORK, Central

A series of low pressure systems tracked eastward from the Ohio Valley across southern Pennsylvania and eventually off the New Jersey coast from the afternoon of the 13th through late in the day on the 15th. A consistent stream of moisture flowed northward during this time frame into a very cold arctic air mass in place over central New York. The end result was heavy snowfall for most areas, as well as periods of sleet and freezing rain.

Snow began falling late in the evening on the 13th in central New York, then continued through much of the day on the 14th. Steady and heavy snow at times affected the region during the morning and early afternoon hours of the 14th. Snowfall rates of 1 to 2 inches per hour were observed on occasion, especially across New York's southern tier. In addition, temperatures were unusually cold for such a significant snowfall in this part of the country. Around daybreak on the 14th, temperatures were below zero in many areas. As snow fell heavily during the day, readings only warmed up into the single digits.

Snow tapered off to flurries, very light sleet, or freezing drizzle for a time during the late afternoon and evening of the 14th, mainly over the southern tier counties. After midnight and lasting well into the morning on the 15th, precipitation intensity picked up once again. Precipitation type was a mixed bag of sleet, freezing rain, and snow. Primarily freezing rain and sleet fell across southern sections along the New York/Pennsylvania border and into the Catskills. A coating of ice formed on top of already fallen snow in these areas, adding to the travel hazards and causing scattered power outages. Further north through the Finger Lakes and Mohawk Valley areas, additional snow fell. Icy precipitation did go back to snow for a period later in the morning on the 15th over the southern tier.

Storm total snow accumulations generally ranged from 6 to 12 inches across central New York. There appeared to be two narrow bands of heavier amounts. One stretched from the central southern tier eastward to just north of Binghamton. In this band, Avoca, Newark Valley, Berkshire, and the Binghamton Regional Airport all picked up 10 to 12 inches of snow. Another axis of higher amounts stretched from the western Finger Lakes into Oneida county. Here, the Syracuse Airport, Tully, and Forestport received 10 to 13 inches of fresh snow.

Snow finally tapered off and ended by early to mid-afternoon on the 15th.

Steuben County

Savona	23	2100EST		0	0		Flash Flood
	24	0200EST					

The combination of locally heavy rainfall and ice jamming along a portion of the Cohocton River caused minor flooding from late in the evening on the 23rd into the early morning hours of the 24th. Water covered Savona-Campbell Road for a time, but no homes were threatened.

Waters began to recede back within their banks well after midnight and Savona-Campbell Road was reopened.

**NYZ044>046-
055>056**

Cortland - Chenango - Otsego - Tioga - Broome

	24	0400EST		0	0		Flood
	27	0500EST					

The combination of locally heavy rainfall and snowmelt caused minor flooding to take place throughout the Susquehanna River Basin in central New York.

Flooding was first observed along the Chenango and Tioughnioga Rivers in Chenango and Cortland counties during the pre-dawn hours on the 24th. Minor lowland flooding was generally experienced in these areas. Some temporary road closures were also needed along the Tioughnioga in Cortland.

Along the main stem portion of the Susquehanna River, minor flooding also occurred from the headwater areas along the Unadilla River downstream through Bainbridge, Conklin, Vestal, Binghamton, and Waverly. In both Conklin and Waverly, adjacent yards and basements were flooded near the time of crest late in the evening on the 26th. An off-ramp of Interstate 88 also had to be closed for a short time earlier in the day on the 26th near Bainbridge. Otherwise, only minor lowland and flood plain impacts were noted.

Waters gradually receded back under flood stage throughout the Susquehanna Basin from the evening of the 26th through the early morning hours of the 27th.

NYZ057

Delaware

	24	1100EST 2200EST		0	0		Flood
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The combination of locally heavy rain and snowmelt caused rapid rises on the Beaver Kill Creek at Cooks Falls within the Delaware Basin. The creek at Cooks Falls first rose above the 10 foot flood stage prior to daybreak on the 24th. Only minor lowland flooding was observed for much of the day into the early evening hours as a crest of just over 11 feet was recorded.

The water levels dropped back below flood stage before midnight.

NEW YORK, Coastal

NOT RECEIVED.

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

NEW YORK, East

NYZ032>033-038>043-047>052-052>054-058>061-063>066 **Northern Herkimer - Hamilton - Southern Herkimer - Fulton - Montgomery - Northern Saratoga - Warren - Washington - Schoharie - Western Schenectady - Eastern Schenectady - Southern Saratoga - Western Albany - Eastern Albany - Western Rensselaer - Eastern Rensselaer - Western Greene - Eastern Greene - Western Columbia - Eastern Columbia - Western Ulster - Eastern Ulster - Western Dutchess - Eastern Dutchess**

02	2300EST								
03	1900EST				0	0	51K		Winter Storm

A deep area of low pressure moved from the Mississippi Valley into the central Great Lakes Region during the night of January 2 and January 3. With arctic air in place over New York State, a wintry mix of heavy sleet and freezing rain resulted. This mix of precipitation resulted in significant accumulations of ice across the region. Total melted precipitation exceeded an inch across the Mid Hudson Valley.

The storm resulted in hundreds of vehicular accidents or vehicles sliding off roadways. Two highways in Greene County (Route 23 and route 23A) were temporarily closed due to very slick conditions. Ice buildup downed power lines which caused 2,500 residents to be without power in the Mid Hudson Valley and an additional 1200 customers without power in the Saratoga region. There were several flight delays or cancellations at the Albany International Airport.

NYZ032>033-038>039-041>043 **Northern Herkimer - Hamilton - Southern Herkimer - Fulton - Northern Saratoga - Warren - Washington**

08	0600EST								
09	0600EST				0	0	9.9K		Winter Storm

A low pressure area moved from the Ohio Valley to the Saint Lawrence valley of New York during January 8 and January 9. This storm brought a mixture of heavy snow sleet and freezing rain to the Lake George Saratoga region. West mountain in Saratoga County had 7 inches of snowfall and Piseco Lake in Hamilton county had 7.7 inches. In addition, significant icing was reported after the snow changed over to sleet and freezing rain.

NYZ032>033-038>043-047>054-058>061-063>066 **Northern Herkimer - Hamilton - Southern Herkimer - Fulton - Montgomery - Northern Saratoga - Warren - Washington - Schoharie - Western Schenectady - Eastern Schenectady - Southern Saratoga - Western Albany - Eastern Albany - Western Rensselaer - Eastern Rensselaer - Western Greene - Eastern Greene - Western Columbia - Eastern Columbia - Western Ulster - Eastern Ulster - Western Dutchess - Eastern Dutchess**

14	0600EST								
15	1400EST				0	0	174.4K		Winter Storm

Extremely cold arctic air moved into Eastern New York on January 13 and January 14. At the same time an area of low pressure formed in Kentucky. This low tracked east into northern Virginia then turned north and moved through the Hudson Valley late on January 14 through January 15. The storm dumped heavy snow on the region followed by an extended period of sleet and freezing rain. The onset of the snow was accompanied by dangerously cold conditions with temperatures as low as 9 below zero. Snowfall amounts included 11 inches at both the Albany International Airport and Little Falls in Herkimer County. 15 inches of snow fell at Gloversville in Fulton County. In addition to the usual traffic disruptions, the weight of the snow and ice caused a roof to cave in at a bowling alley in Rotterdam in Schenectady county. A roof also collapsed at a farm in Mayfield Fulton county which killed a cow and injured several others. The Adirondack Northway was closed between Exits 17 and 23 from 10AM through 7PM on Friday the 15th due to very icy conditions. There were also numerous flight delays or cancellations at the Albany National Airport.

NYZ039-042>043-047>050 **Fulton - Warren - Washington - Schoharie - Western Schenectady - Eastern Schenectady - Southern Saratoga**

18	0800EST								
	1400EST				0	0	7K		Freezing Rain

A warm front over the Mid Atlantic region, touched off light rain early on January 18. Since the ground was still very cold the rain froze on most surfaces just north and west of the Capital District. This light freezing rain produced a treacherous coating of thin ice that resulted in numerous traffic accidents and forced the closure of a 90 mile stretch of the Adirondack Northway from exit 8 to exit 30. In addition Interstate 88 was closed near Richmondville in Schoharie County. Also Washington Warren and Saratoga counties each declared states of emergency for about six hours.

NYZ066 **Eastern Dutchess**

18	2239EST								
19	1000EST				0	0	10K		Flood/Flash/Flood

Mild weather and rain resulted in Wassaic Creek overflowing its banks from January 18 to January 19. County Route 81 was inundated with water resulting in several homes having to be evacuated.

NYZ060 **Western Columbia**

19	0130EST								
21	0015EST				0	0	5K		Flood

Mild weather along with rainfall produced rapid snowmelt in Columbia county. The resulting runoff brought the Kinderhook Creek out of its banks. The water inundated several roads in New Lebanon.

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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NEW YORK, East

NYZ054

Eastern Rensselaer

19	0130EST				0	0	6K		Flood
21	1000EST								

Mild temperatures and rain resulted in rapid melting of snow in Rensselaer county on January 19. The resultant runoff and breaking up of ice jams on the Hoosic River produced flooding near Buskirk.

NYZ032-043

Northern Herkimer - Washington

24	0800EST				0	0	1.6K		Flood
26	2100EST								

Rensselaer County

Countywide

24	1630EST				0	0	75K		Flood
26	2100EST								

Saratoga County

Stillwater

25	0900EST				0	0	40K		Flood
26	2100EST								

An area of low pressure moved into the western Ohio Valley late January 24 and reached the eastern Great Lakes region by early on January 26. This low brought up to an inch of rain over portions of eastern New York. The rainfall combined with very mild temperatures lead to rapid snowmelt. The runoff caused some small creeks and small rivers to come out of their banks. Also drainage systems clogged with ice and snow allowed water to build up on city streets. Finally, ice jams exacerbated the flooding. In Ulster county the Esopus Creek flooded onto adjoining roads in the extreme southern portions of the county. In Herkimer county there was flooding on the Moose River. In Saratoga County, Route 103 was closed due to water on the road. Portions of Route 9P were also under water between route 423 and Brown Water road. Five people had to be evacuated from their homes at Quaker Springs as Saratoga Lake flooded. Rensselaer county was the hardest hit area. Serious flooding took place near Buskirk on the Hoosic River and near Pittstown on the Sunkauissia. Several dozen people were evacuated from their homes in Buskirk as well as Pittstown.

Rensselaer County

Pleasantdale

24	2148EST 2230EST				0	0	30K		Flash Flood
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Heavy rainfall and rapid snowmelt lead to a culvert breaking in Rensselaer county during the evening of January 24. Nearly 1,000,000 gallons of water was released into the town of Pleasantdale.

NEW YORK, North

NYZ026>027- 029>030

Northern St. Lawrence - Northern Franklin - Southern St. Lawrence - Southern Franklin

03	0100EST 1400EST				0	0	20K		Winter Storm
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A complex storm system moved through the Great Lakes region during Sunday, January 3rd, and then into Canada Monday, January 4th. A weak secondary low pressure system moved north along the New England coast Sunday night and early Monday.

Snow overspread the area early Sunday (January 3) and then mixed with or changed to sleet and freezing rain during the morning and afternoon. Some areas received between 3 and 5 inches of snow before significant accumulations of sleet and ice occurred.

NYZ026-029

Northern St. Lawrence - Southern St. Lawrence

04	0300EST 1800EST				0	0	10K		Heavy Snow
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An area of low pressure in Canada resulted in a westerly flow across Lake Ontario with heavy lake effect snow across St Lawrence county with the exception of the northeast portion of the county. Blowing and drifting snow resulted in whiteout conditions and difficult travel conditions. Many schools were closed. A few of the heaviest snowfalls included:

Gouverneur.....12 1/2 inches
 Edwards.....10 inches
 Richville.....9 inches
 Potsdam.....9 inches

NYZ026-029

Northern St. Lawrence - Southern St. Lawrence

05	1800EST				0	0	10K		Lake Effect Snow
06	0400EST								

Lake effect snow resulted in 3 to 6 inches of snow across St Lawrence county of New York. In the New York town of Edwards, 5 inches of snow accumulated.

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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NEW YORK, North

**NYZ026>031-
034>035**

Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

08	1600EST								
09	1400EST				0	0	40K		Winter Storm

An area of low pressure over the Ohio Valley during Friday afternoon (January 8th) moved northeast across New England during Saturday (January 9th). Snow overspread the region with accumulations generally between 8 and 12 inches. A few representative snowfall reports were:

Wanakena (St Lawrence county).....9.5 inches.
 Tupper Lake (Franklin county).....9 inches
 Harkness (Clinton county).....9 inches
 Wilmington (Essex county).....8 inches

**NYZ026>031-
034>035**

Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

13	0100EST								
	1000EST				0	0	40K		Light Snow

An area of low pressure moved from the Tennessee Valley Tuesday afternoon (January 12) into southern New England Wednesday (January 13). Light snow accumulating to between 3 and 6 inches and colder air accompanied this system. A few snowfall reports were:

Lake Placid (Essex county).....6 inches
 Peru (Clinton county).....5.4 inches

**NYZ026>031-
034>035**

Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

14	1600EST								
15	1600EST				0	0	40K		Winter Storm

An area of low pressure over the Ohio Valley region Thursday (January 14th) moved to the Delmarva area Thursday night and across eastern New England Friday (January 15th). Snow developed across the area late Thursday and continued into Friday afternoon. The snow mixed with or changed to sleet and freezing rain for periods of time Friday. Snow accumulations were generally between 6 and 10 inches across the area. A few snowfall reports included:

Gouverneur (St Lawrence county).....9 inches
 Lake Placid (Essex county).....8 inches
 Malone (Franklin county).....7 inches
 Ellenburg Depot (Clinton county).....6 inches

NYZ026>029

Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence

22	1300EST								
	2100EST				0	0	17K		Mixed Precipitation

A mixture of light freezing rain and sleet fell across portions of far northern New York during the afternoon and evening of Friday, January 22nd. Slippery roads with a few minor traffic accidents occurred in St Lawrence county with schools closed early. In Peru, NY (Clinton county) about an inch of snow and sleet accumulated with slippery roads.

Essex County

Countywide

24	1100EST								
	2000EST				0	0	10K		Flood

A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in many rivers reaching or exceeding their banks during Sunday. In particular, flooding was reported along the Au Sable River in and around Au Sable Forks and Keeseville, NY. The Boquet River also exceeded its banks. In western portions of the county, local roads were flooded in the Lake Placid area.

Clinton County

Countywide

24	1500EST								
	2000EST				0	0	10K		Flood

A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in many rivers reaching or exceeding their banks during Sunday. In particular, some flooding was reported along the Great Chazy River Sunday afternoon.

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	January 1999
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NEW YORK, North

St. Lawrence County

South Portion	25	0600EST 1000EST			0	0	5K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in runoff with the Oswegatchie River and its tributaries flooding fields and streets in and around Harrisville, Richville and Rossie NY Monday morning (January 25).

**NYZ026>031-
034>035**

Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

	27	2000EST			0	0	40K		Light Snow
	29	0900EST							

During the period from late Wednesday (1/27/99) through early Friday (1/29/99) a series of low pressure systems moved to the south of New England. During this extended period of several episodes of snowfall, accumulations ultimately ranged from as little as 4 inches in northern areas up to around 10 inches in the Adirondacks. A few specific accumulations were:

Tupper Lake (Franklin county).....10.0 inches
 Newcomb (Essex county).....5.5 inches
 Canton (St Lawrence county).....5.0 inches
 Ellenburg Depot (Clinton county).....4.5 inches

NEW YORK, West

**NYZ006>008-010-
012-019>020**

Oswego - Jefferson - Lewis - Erie - Wyoming - Chautauqua - Cattaraugus

	01	0400EST 0850EST			0	0	100K		Heavy Snow
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Lake effect snows which began on New Years Eve continued into the New Year. Off Lake Erie, the snows continued south of metro Buffalo, across the traditional ski areas. Off Lake Ontario, the intense band was dropping snow at the rate of 2 to 3 inches per hour. Specific reports included: North Osceola 24"; Adams 20"; South Dayton 14"; Arcade 12"; Redfield 11"; Cassadaga 10" and Springville 9".

**NYZ001>008-
010>014-019>021**

Niagara - Orleans - Monroe - Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Erie - Genesee - Wyoming - Livingston - Ontario - Chautauqua - Cattaraugus - Allegany

	02	1925EST			0	0	330K		Winter Storm
	03	0800EST							

An intensifying storm over the Southern Plains moved northeast spreading a mix of snow, sleet and freezing rain across the area. Several inches of snow were followed by sleet and freezing rain. In some areas, especially east of Lake Ontario, an unprecedented four to five inches of sleet fell. The wintry precipitation stalled traffic and forced schools to extend the holiday break a few more days. Numerous automobile accidents, several with injuries, were blamed on the storm.

**NYZ001>002-
006>008-010-010-010-
010>012-012-019>020**

Niagara - Orleans - Oswego - Jefferson - Lewis - Erie - Genesee - Wyoming - Chautauqua - Cattaraugus

	04	0515EST			0	0	270K		Heavy Snow
	05	2000EST							

Heavy lake effect snow squalls began on the evening of the 3rd. Off Lake Erie, the band slowly drifted south over the Niagara Frontier and Western Southern Tier during the next two days. Total snowfall from the 48 hour event was fairly consistent across the region due to the slow southerly drift of the snowband. The entire region had over a foot of snow with slightly higher amounts over the northern and southern suburbs of Buffalo where the band stalled somewhat. In Buffalo, amounts ranged from 13" downtown to 17" north and 20" south. Other reports included 17" in Amherst and 23" in West Seneca. Off Lake Ontario, intense snowbands developed over the St. Lawrence Valley during the predawn Monday the 4th and dropped 6-10" before moving south. Totals in the area ranged from 12-18" over much of Jefferson and Oswego counties and 6-12" over Lewis County.

**NYZ001>002-
007>008-010>012**

Niagara - Orleans - Jefferson - Lewis - Erie - Genesee - Wyoming

	06	1800EST			0	0	105K		Winter Storm
	07	0100EST							

**NYZ001-005>007-
007>008-008-019**

Niagara - Northern Cayuga - Oswego - Jefferson - Lewis - Chautauqua

	06	1900EST			0	0	135K		Heavy Snow
	08	0700EST							

Low pressure moving northeast across the region brought heavy snow and zero visibilities to the region. The synoptic snow was enhanced by moisture from the Great Lakes ahead of a cold front. Once the front moved through the region the cold air crossing Lakes Erie and Ontario produced lake effect snow squalls. Numerous automobile accidents, several with injuries, were blamed on

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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NEW YORK, West

the heavy snow and reduced visibilities. It was the fourth significant lake effect event in two weeks. Some snowfall amounts included: Ripley and Montague 11"; Southwest Oswego 10", North Tonawanda 9"; Fair Haven and Mannsville 7".

NYZ001>008-010>011

Niagara - Orleans - Monroe - Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Erie - Genesee

09	0900EST 2000EST				0	0	190K		Heavy Snow
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NYZ012>014-019>021

Wyoming - Livingston - Ontario - Chautauqua - Cattaraugus - Allegany

09	1230EST 1800EST				0	0	95K		Winter Storm
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A general snowfall fell across the region as a result of a large weather system over the Ohio Valley. Most of the Niagara Frontier received six to nine inches of new snow. Across parts of the Genesee Valley and Finger Lakes, snowfall amounts were somewhat lower...a result of a brief changeover to freezing rain. To the east of Lake Ontario, snowfall amounts ranged from six to ten inches. Specific reports included: Springville 10"; Corfu 9"; Alden and Highmarket 8"; and Cassadaga 7".

NYZ006>007-010-019>020

Oswego - Jefferson - Erie - Chautauqua - Cattaraugus

11	0100EST 1305EST				0	0	70K		Heavy Snow
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The fifth lake effect episode in three weeks began as a cold front approaching western New York. A general one to three inch snowfall was enhanced by flow of Lakes Erie and Ontario. Five to seven inches of snow fell across Niagara county before the activity consolidated into a squall-like band that settled across the Buffalo area. The band shifted south dropping up to 10" over Perrysburg. Specific snowfall amounts reported: Watertown 12"; Fulton 10", Boston 8" and Ripley 7".

NYZ003

Monroe

13	1705EST				0	0	5K		Heavy Snow
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Isolated heavy lake snows developed in a weak northeast flow across Lake Ontario. The heaviest snows fell within a few miles of the lakeshore from Rochester to Oakville, Ontario. Five to seven inches was reported from Ontario, Webster and Greece. Four to six inches fell over Orleans and Niagara counties.

Wyoming County

Bliss	15	0545EST			0	0	150K		Excessive Snow
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Livingston County

Avon	15	1150EST			0	0	75K		Excessive Snow
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Livingston County

Lakeville	15	1200EST			0	1	100K		Excessive Snow
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Chautauqua County

Forestville	15	1400EST			0	0	100K		Excessive Snow
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Orleans County

Gaines	16	0400EST			0	0	100K		Excessive Snow
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Wayne County

Alton	16	0850EST			0	0	50K		Excessive Snow
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Cattaraugus County

Olean	16	0900EST			0	0	150K		Excessive Snow
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Niagara County

North Tonawanda	16	1200EST			0	0	50K		Excessive Snow
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Niagara County

Royalton Center	16	1200EST			0	0	75K		Excessive Snow
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Ontario County

Naples	16	1200EST			0	0	75K		Excessive Snow
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Cattaraugus County

Conewango	16	1400EST			0	0	35K		Excessive Snow
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Cattaraugus County

Ellicottville	16	1830EST			0	0	35K		Excessive Snow
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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
NEW YORK, West									
Niagara County									
Lockport	17	0300EST			0	0	40K		Excessive Snow
Niagara County									
Lockport	17	0700EST			0	0	75K		Excessive Snow
Niagara County									
Hartland	17	0750EST			0	0	100K		Excessive Snow
Niagara County									
Royalton Center	17	1000EST			0	0	65K		Excessive Snow
Chautauqua County									
Dunkirk	17	1200EST			0	0	150K		Excessive Snow
Chautauqua County									
Panama	17	1700EST			0	0	25K		Excessive Snow
Erie County									
Orchard Park	17	1900EST			0	1	35K		Excessive Snow
Wayne County									
Sodus	18	0500EST			0	0	150K		Excessive Snow
Niagara County									
Lewiston	18	0700EST			0	0	40K		Excessive Snow
Niagara County									
North Tonawanda	18	1200EST			0	0	100K		Excessive Snow
Erie County									
Depew	19	0700EST			0	0	100K		Excessive Snow
Orleans County									
Medina	19	1200EST			0	0	10K		Excessive Snow
Erie County									
Holland	25	1200EST			0	0	50K		Excessive Snow

Near record snowfalls of four to six feet across the region during the last part of December and first half of January put a strain on area buildings. Roof collapses and entire structure failures were numerous across the area. Some specific examples of damage: In Forestville, the St. Rose of Lima Church Hall was a total loss after the entire structure collapsed under the weight of the snow. At the Eldridge Bicycle Club in North Tonawanda the ceiling beams snapped and the roof caved in. A portion of the roof of Frontier Bowling Lanes in Lewiston caved in. A builders supply warehouse caved in Olean. Widmer Wines in Naples experienced a roof collapse. In Gaines, the roof of the Highway garage collapsed, damaging some snow removal equipment. A hanger at the Williamson/Sodus airport collapsed. Four planes were destroyed and another was damaged. Numerous barns across the region collapsed under the excessive weight of the snow, in several dairy cows were injured and killed. Several garages collapsed damaging the automobiles and machinery inside them. In Orchard Park, a man was injured when a garage collapsed on top of him. In Lakeville, a woman was trapped for two hours under a collapsed carport. She was rescued by contractors she had called earlier in the day to remove the snow from the top of the carport. The structure failures aided in the decision by the State and FEMA to declare disaster areas and make assistance available to the counties.

NYZ001>008-010>014-019>021

Niagara - Orleans - Monroe - Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Erie - Genesee - Wyoming - Livingston - Ontario - Chautauqua - Cattaraugus - Allegany

15	0710EST	0	0	290K	Winter Storm
	1100EST				

Low pressure moved to the south of the area and produced a general heavy snowfall across the region. The heavy, wet snow combined with freezing rain across the Southern Tier. The heavy snows again resulted in traffic tie-ups and school closings. Visibilities were reduced and roads became treacherous from the ice mix of snow and sleet. A general snowfall of six to nine inches fell across the entire area. This latest bout only added to the harsh winter conditions across the region. Several counties in the area were declared disaster areas by the State and Federal government.

NYZ006-008

Oswego - Lewis

15	2300EST	0	0	15K	Heavy Snow
16	0200EST				

A westerly flow across Lake Ontario produced a lake effect snow band which only lasted for about six to eight hours. Snowfall amounts included 8" at Highmarket and 11" at Redfield.

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
NEW YORK, West									
NYZ008-010-010-010-010-010>011									
Lewis - Erie - Genesee									
	23	1200EST			0	0	460K		Flood
	28	0900EST							
Erie County									
Buffalo	23	1400EST			0	0	10K		Flash Flood
	24	0200EST							
Erie County									
Lancaster	23	1400EST			0	0	15K		Flash Flood
		1800EST							
Erie County									
West Seneca	23	1400EST			0	0	10K		Flash Flood
		1500EST							
Erie County									
West Seneca	23	1500EST			0	0	15K		Flash Flood
	24	1000EST							
Chautauqua County									
Kiantone	23	1504EST			0	0	15K		Flash Flood
		2200EST							
Niagara County									
Royalton Center	23	1530EST			0	0	15K		Flash Flood
		2200EST							
Erie County									
Angola	23	1600EST			0	0	55K		Flash Flood
		2200EST							
Monroe County									
Chili Center	23	1600EST			0	0	25K		Flash Flood
		2200EST							
Genesee County									
Corfu	23	1633EST			0	0	15K		Flash Flood
		2200EST							
Livingston County									
Groveland	23	1700EST			0	0	10K		Flash Flood
		2200EST							
Cattaraugus County									
Yorkshire	23	2000EST			0	0	15K		Flash Flood
		2200EST							
Cattaraugus County									
Yorkshire	23	2200EST			0	0	10K		Flash Flood
	24	0800EST							
Chautauqua County									
Kiantone	23	2200EST			0	0	25K		Flash Flood
	24	0800EST							
Erie County									
Angola	23	2200EST			0	0	135K		Flash Flood
	24	0800EST							
Genesee County									
Corfu	23	2200EST			0	0	80K		Flash Flood
	24	0800EST							
Livingston County									
Groveland	23	2200EST			0	0	15K		Flash Flood
	24	0800EST							

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
NEW YORK, West									
Monroe County									
Chili Center	23	2200EST			0	0	55K		Flash Flood
	24	0800EST							
Niagara County									
Royalton Center	23	2200EST			0	0	35K		Flash Flood
	24	0800EST							
Cattaraugus County									
Yorkshire	24	0800EST 1200EST			0	0	10K		Flash Flood
Chautauqua County									
Kiantone	24	0805EST 1200EST			0	0	10K		Flash Flood
Erie County									
Angola	24	0805EST 1500EST			0	0	40K		Flash Flood
Genesee County									
Corfu	24	0805EST 1500EST			0	0	25K		Flash Flood
Livingston County									
Groveland	24	0805EST 1300EST			0	0	10K		Flash Flood
Monroe County									
Chili Center	24	0805EST 1200EST			0	0	25K		Flash Flood
Niagara County									
Royalton Center	24	0805EST 1400EST			0	0	15K		Flash Flood

Warm temperatures melted the snowpack from record snowfall in late December and early January. Nearly two feet of ripe snowpack dissolved to just a few inches remaining. The runoff caused flooding in poor drainage and low lying regions across the area with roads closed in some locations for a couple of days. Some of the hardest hit areas included Lancaster and Williamsville in Erie County, Royalton in Niagara County, Batavia and Corfu in Genesee County and Chili in Monroe County. Evacuations occurred in Angola, Chili and Lancaster.

In addition, ice jam flooding began on area Buffalo area creeks on the 23rd and 24th with Cayuga Creek the most serious. Some evacuations were necessary and roads were closed in the vicinity of south Cheektowaga. Conditions improved on the 25th as the jams loosened and moved downstream. Cayuga Creek was above flood stage from 12:00 PM on the 23rd to 8:00 AM on the 24th. The slower rising Ellicott and Tonawanda Creeks than rose above flood stage. Ellicott Creek was over flood stage from 3:00 PM on the 24th to 12:00 PM on the 25th, cresting overnight. Flooding was reported in Bowmansville. The slower Tonawanda rose above flood stage at Batavia at 11:00 AM on the 24th and remained so for 24 hours. The creek did not crest in Rapids until the 27th, but was above flood stage from 2:00 PM on the 26th to 9:00 AM on the 28th. Cazenovia Creek briefly rose above flood stage from 2:00 AM to 5:00 AM on the 24th.

East of Lake Ontario, flooding was reported in Lewis County along the Moose River due to a massive jam.

NORTH CAROLINA, Central

NCZ007-021>023-038>039

Person - Forsyth - Guilford - Alamance - Davidson - Randolph

02	1600EST	0	0	Ice Storm
03	1200EST			

Freezing rain overspread western portions of central North Carolina during the afternoon of 01/02/99. The freezing rain began as sleet over the Winston-Salem and Greensboro areas but changed to freezing rain by evening. The sleet did accumulate up to 2 inches in western and northern Forsyth county before the change to glaze occurred. Elsewhere, glaze accumulated to between 1/4 and 1/2 inch. The eastern extent of the freezing rain extended from near Badin Lake to Burlington to Roxboro. East of this line...some light freezing rain fell before quickly changing to rain as warmer air spread northwest from the Atlantic Ocean.

There was quite a temperature gradient with this storm. As warm Atlantic air was pulled into the storm, temperatures warmed from the lower 30s at Raleigh at 2 pm on the 2nd into the lower 60s overnight on the 3rd. This shrunk the freezing rain coverage over central North Carolina to the far western counties of the Piedmont-Triad. In the freezing rain area, the

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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NORTH CAROLINA, Central

temperatures warmed from the lower 20s to the lower 30s during the same time. This kept the ice storm going from mid afternoon on the 2nd through the early morning hours on the 3rd.

There were numerous reports of downed tree limbs and power lines which caused significant power outages in the western Piedmont. There were also hundreds of accidents reported throughout the Piedmont.

Alamance County

Snow Camp	24	1500EST 2200EST			0	0			Urban/Sml Stream Fld
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Sampson County

Clinton	24	1800EST 2300EST			0	0			Urban/Sml Stream Fld
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Wayne County

Mt Olive	24	1800EST 2300EST			0	0			Urban/Sml Stream Fld
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Urban and small stream flooding occurred over southern Alamance county where 12 hour rainfall amounts approached 3 inches. The Haw River crested at flood stage during the rain event. In Wayne and Sampson counties, localized heavy rain caused some rural roads to be closed due to high water. Mount Olive measured nearly 3 inches of rain on the 24th. Kelly Springs road had 1 to 2 feet of water covering the road in Mount Olive on the afternoon of the 24th.

NORTH CAROLINA, Central Coastal

NONE REPORTED.

NORTH CAROLINA, Extreme Southwest

NONE REPORTED.

NORTH CAROLINA, North Coastal

NONE REPORTED.

NORTH CAROLINA, Northwest and North Central

NCZ001>002-018	Ashe - Alleghany - Watauga				0	0			
	02	1400EST							Winter Storm
	03	0600EST							

Sleet mixed at times with freezing rain fell across the northwest mountains of North Carolina from the early afternoon hours on the 2nd to the morning hours on the 3rd. Sleet accumulated from 4 to 6 inches in many areas which resulted in scattered power outages. Hazardous road conditions resulted in numerous traffic accidents.

Surry County

5 W Mt Airy	23	1430EST			0	0	0		Thunderstorm Wind
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Surry County

Mt Airy	23	1430EST			0	0	25K		Thunderstorm Wind
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Thunderstorm winds on the 23rd knocked down trees and power lines 5 miles west of Mount Airy and knocked down trees and power lines and damaged a building in Mount Airy.

NORTH CAROLINA, South Coastal

Brunswick County

Southport to Leland	03	0330EST 0400EST			0	0			Thunderstorm Wind (G60)
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A thunderstorm moved ashore in Southeast Brunswick County, causing power outages in Southport and a wind gust of 57 mph in Leland.

NORTH CAROLINA, Southwest

NCZ034>035-037-050-053>056-065>067	Caldwell - Alexander - Davie - Mitchell - Buncombe - McDowell - Burke - Catawba - Henderson - Polk - Rutherford				0	0			
	02	1500EST 2359EST							Ice Storm

A strong winter storm moved from the southern Plains into the Tennessee Valley and collided with strong arctic high pressure nosing south into the western Carolinas. Sleet and freezing rain were the main precipitation types during the afternoon and evening on the 2nd. Sleet became very heavy along and north of Interstate 40 where 4 to 6 inches accumulated. Sleet accumulated to

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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NORTH CAROLINA, Southwest

between 1 and 2 inches south of Interstate 40 before changing to freezing rain. Numerous traffic accidents occurred across western North Carolina and there was one fatality (indirect) on Interstate 26 in Polk county. A boat house in Alexander county collapsed under the weight of the sleet. A cooperative observer in Rutherford county estimated damage in his area to be \$55K, but official damage estimates for the entire region were not available at the time of this writing.

NCZ036-068>070

Iredell - Cleveland - Lincoln - Gaston

02	1800EST 2359EST				0	0			Ice Storm
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As moisture from a strong storm system in the Tennessee Valley moved north and encountered a shallow, arctic airmass over the piedmont of western North Carolina, freezing rain fell. The freezing rain became heavy at times during the evening of the 2nd and accumulated to damaging levels. Trees and power lines fell causing much damage to homes and widespread power outages. An area from near Shelby into northwest Gaston county was especially hard hit and locals said it was the worst ice storm in 45 years.

Union County

Monroe

03	0015EST				0	0			Thunderstorm Wind (G50)
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A fast moving low-topped thunderstorm moved through Union county North Carolina along a boundary separating remnants of an arctic airmass and warm moist air from the Atlantic Ocean. The storm became severe, producing a southwest to northeast path of damage across central Union county. Trees were downed and there was damage to a home and picnic table.

NCZ058

Graham

23	0200EST				0	0			High Wind (G50)
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Strong gradient winds associated with an overnight cold front passage blew a roof off a building and downed trees.

Macon County

Highlands

23	0915EST				0	0	10K		Thunderstorm Wind (G58)
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Transylvania County

Brevard

23	1000EST				0	0	25K		Thunderstorm Wind (G50)
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Henderson County

Mills River

23	1030EST 1040EST				0	0	25K		Thunderstorm Wind (G60)
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Buncombe County

Skyland

23	1050EST				0	0			Thunderstorm Wind (G50)
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Buncombe County

8 E Asheville

23	1100EST				0	0	15K		Thunderstorm Wind (G68)
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Mecklenburg County

Charlotte

23	1430EST 1730EST				1	0			Flash Flood
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M39IW

Rowan County

Salisbury

23	1600EST				0	0	85K		Lightning
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Union County

Monroe

23	1600EST 1800EST				0	0			Flash Flood
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Unseasonably warm, moist air and strong winds through a deep layer of the atmosphere combined to produce a line of thunderstorms along a cold front advancing east across North Carolina. Some of these storms became severe, bringing damaging wind speeds to the surface in some of the southern and central mountain counties. Wind speeds were reported in the 60 to 70 mph range with a measured gust recorded on Flat Top Mountain (elev . 4320 ft) to 78 mph. A 9 mile long damage path through Mills River and northern Henderson county was initially 100 yards wide, then narrowed to between 25 and 50 yards. Numerous trees and power lines were downed. Light structural damage occurred in Macon county. A tree fell on a home in Brevard causing substantial damage, and a roof was blown off a building in eastern Buncombe county. Extensive power outages occurred in the Skyland vicinity as well.

Training thunderstorms in the Charlotte metro area dumped up to 1.5 inches of rain in a half hour during the afternoon. This caused severe urban flooding in low-lying paved areas. A man stepped into a storm drain, then was swept into a creek and drown. A few roads were flooded and underwater and a few small streams came out of their banks briefly.

Lightning caused a house fire in Salisbury, burning all it's contents. The lightning was reported to have come in through a phone line.

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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NORTH CAROLINA, Southwest

NCZ033-048>052-058-066>067 **Avery - Madison - Yancey - Mitchell - Swain - Haywood - Graham - Polk - Rutherford**

31	1200EST 2359EST				0	0			Snow And Sleet
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Unusually strong arctic high pressure centered over New England sent cold, dry air south into western North Carolina overnight and early on the 31st. Moisture associated with a low pressure system moving east across the Gulf Coast States encountered the cold air, resulting in a 1 to 3 inch snowfall, mixed with sleet at times, through the afternoon and evening.

NCZ053-059-062>063-065 **Buncombe - Northern Jackson - Macon - Southern Jackson - Henderson**

31	1500EST 2359EST				0	0			Heavy Snow
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Portions of the central and southern mountains received a more prolonged period of moderate to heavy wet snow, mixed at times with sleet and freezing rain, which accumulated to between 4 and 6 inches by early evening. Light snow continued in some places until midnight.

NORTH DAKOTA, Central and West

NDZ001>005-009>013-017>023-025-031>037-040>042-044>048-050>051 **Divide - Burke - Renville - Bottineau - Rolette - Williams - Mountrail - Ward - Mchenry - Pierce - Mckenzie - Dunn - Mercer - Oliver - Mclean - Sheridan - Wells - Foster - Golden Valley - Billings - Stark - Morton - Burleigh - Kidder - Stutsman - Slope - Hettinger - Grant - Adams - Sioux - Emmons - Logan - La Moure - McIntosh - Dickey**

01	0300CST				2	0			Winter Storm
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A trough of low pressure extended from the northern plains into an area of intense low pressure system over the central plains. A strong upper level short wave accompanied the surface trough as it moved through the northern plains on New Years day. Heavy snow fell along and east of the surface trough with 6 to 8 inches of snowfall during the day. Northwest winds to 40 mph brought bitter cold wind chills to 65 below zero and low visibilities in blowing snow west of the surface trough. Two fatalities were contributed to the storm. In southcentral North Dakota at Bismarck a man (age unknown) died from a heart attack while shovelling snow. In northcentral North Dakota near Rolette poor visibility stranded a vehicle which an elderly women left to seek help and died from exposure to the cold. She came within 75 feet of a farm house but was unable to see it. M?PH, F75OU

NDZ001>004-009>010-017 **Divide - Burke - Renville - Bottineau - Williams - Mountrail - Mckenzie**

21	0600CST				0	0			Heavy Snow
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A low pressure system over south central Montana moved northeast and intensified before moving into southern Canada. An area of heavy snow fell over northwest and portions of northcentral North Dakota during the morning and early afternoon hours. A band of 8 to 12 inches fell in the northwest with 6 to 8 inches over portions of northcentral North Dakota.

NDZ019>023-025-031>037-040>048-050>051 **Mercer - Oliver - Mclean - Sheridan - Wells - Foster - Golden Valley - Billings - Stark - Morton - Burleigh - Kidder - Stutsman - Slope - Hettinger - Grant - Bowman - Adams - Sioux - Emmons - Logan - La Moure - McIntosh - Dickey**

26	0430CST 0600CST				0	0			Winter Storm
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Low pressure over the four corners of southwestern U.S. moved into the central plains and intensified. A small band of heavy snow fell over parts of east central North Dakota. In Stutsman county at Jamestown 7.5 inches fell over a 12 hour period.

NORTH DAKOTA, East

NDZ038-049-052 **Barnes - Ransom - Sargent**

01	0900CST				0	0			Heavy Snow
02	0900CST								

A band of heavy snow fell from the Valley City area southward to Forman, North Dakota. Valley City reported 8 inches of snow, Litchville reported 7.5 inches, and Forman reported 9 inches. Snow totals tapered off rapidly to the east of this area.

NDZ006-014>016-024-026>030 **Towner - Benson - Ramsey - Walsh - Eddy - Nelson - Grand Forks - Griggs - Steele - Traill**

13	0900CST 2200CST				0	0			Winter Storm
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Four to six inches of snow fell across portions of northeast North Dakota, with Devils Lake the high total at 8 inches. When combined with 30 mph winds and wind chills down to 55 below, many activities across the area came to a halt. Schools dismissed early in the afternoon and visibilities in open country dropped to less than a half mile.

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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NORTH DAKOTA, East

NDZ027>029

Grand Forks - Griggs - Steele

17	0600CST				0	0			Heavy Snow
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As a low pressure system tracked from western South Dakota to near Fergus Falls, Minnesota, it produced a heavy snow band from Cooperstown to Grand Forks, North Dakota, and into northwest Minnesota. Cooperstown reported 6.5 inches of snow and the NWS in Grand Forks reported 6.2 inches.

OHIO, East

**OHZ039>041-
048>050-057>059-
068>069**

Tuscarawas - Carroll - Columbiana - Coshocton - Harrison - Jefferson - Muskingum - Guernsey - Belmont - Noble - Monroe

02	0600EST				0	0			Winter Storm
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A strong winter storm approached the region from the south central U.S. bringing a mix of snow, sleet and freezing rain to east central Ohio. Snowfall amounts of between 4 and 6 inches were common across the region. Towards the end of the event the snow changed over to freezing rain and produced ice accumulations of between 1/4 and 1/2 inch on top of the snow across the majority of the area.

**OHZ039>041-
048>050-057>059-
068>069**

Tuscarawas - Carroll - Columbiana - Coshocton - Harrison - Jefferson - Muskingum - Guernsey - Belmont - Noble - Monroe

08	0300EST				0	0			Winter Storm
09	0100EST								

A winter storm spread a mix of snow and freezing rain across all of east central Ohio. By the afternoon of the 8th, snowfall amounts generally ranged from 2 to 4 inches across the area, with slightly higher amounts of between 4 and 6 inches reported across the southernmost counties of Noble and Monroe. By the afternoon of the 8th the snow had turned over to freezing rain across the region, which continued into the evening hours. This precipitation later turned to all rain across some of the southernmost counties. Most areas across east central Ohio reported ice accumulations of between 1/4 and 1/2 inch.

Monroe County

Countywide

08	2252EST				0	0	10K		Flood
09	1900EST								

Rainfall, falling on top of 4 to 6 inches of new snow, produced rapid rises in creeks and streams across Monroe county. Portions of State Route 78 near the town of Ethel in extreme western Monroe County were closed by high water. Localized flooding was also reported in the extreme southern part of the county on County Road 68 near Rinard Mills along the Little Muskingum Creek.

Belmont County

Countywide

09	0330EST				0	0	20K		Flood
	1900EST								

Runoff from the rain which fell on top of 4 to 6 inches of new snow helped produce two ice jams on McMahan Creek in the Glencoe area. Minor flooding was reported in the city of Glencoe and along adjacent portions of State Route 149. Minor flooding was also reported across southern parts of the county where State Route 148 along Captina Creek was flooded, just west of the city of Powhatan Point.

**OHZ039>041-
048>050-057>059-
068>069**

Tuscarawas - Carroll - Columbiana - Coshocton - Harrison - Jefferson - Muskingum - Guernsey - Belmont - Noble - Monroe

13	0700EST				0	0	85K		Winter Storm
15	0700EST								

A powerful winter storm brought another combination of snow and freezing rain to all of east central Ohio. The precipitation began as snow, with between 1 and 3 inches of accumulation reported before the snow turned to freezing rain. All portions of east central Ohio reported at least 1/4 inch of ice accumulation, with some areas in Belmont and Harrison counties reporting over 1 inch of ice. The ice accumulation brought numerous power lines and large tree branches down, resulting in power outages to over 10,000 homes across the area.

Belmont County

1 W Powhatan Pt

13	1516EST				0	0			Flood
14	1100EST								

An ice jam on Cat Run produced some minor flooding onto County Road 56 just to the west of Powhatan Point.

Belmont County

Allledonia

18	0215EST				0	0			Flood
	0800EST								

A debris jam formed on Captina Creek near Allledonia, producing minor flooding onto adjacent fields and a portion of State Route 148.

Storm Data and Unusual Weather Phenomena

January 1999

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

OHIO, East

Belmont County

**2 SE Hunter to
Armstrongs Mills**

**18 1023EST
1400EST** **0 0** **Flood**

More debris jams formed on Captina Creek and caused water to rise onto State Route 148. Water was reported on parts of the roadway beginning from the intersection of State Routes 148 and 26, eastward to near Armstrongs Mills.

Monroe County

Cameron

**18 1102EST
1500EST** **0 0** **Flood**

The combination of heavy rain and a debris jam caused Sunfish Creek to rise out of its banks near the town of Cameron.

OHZ058

Guernsey

**19 1400EST
21 0600EST** **0 0** **Flood**

Rainfall and snowmelt caused the Wills Creek to rise above flood stage at Cambridge. The river crested at around 16.0 feet on the morning of the 20th and fell below the flood stage of 15.0 feet during the early morning hours of the 21st. This produced only localized minor flooding across the area, with no damage reported.

Coshocton County

Countywide

**19 1523EST
21 0745EST** **0 0** **Flood**

Rainfall and snowmelt caused the Muskingum River to rise to nearly three and a half feet above flood stage at Coshocton. The river crested at around 16.4 feet on the afternoon of the 23rd and did not fall below the flood stage of 13.0 feet until the early morning hours of the 31st. During this period minor flooding was also reported at other locations across the county. Several state and county roads were closed during this time period as water rose onto low-lying parts of the roadways.

Noble County

Middleburg

21 2300EST **0 0** **Hail (0.88)**

Monroe County

Lewisville

21 2315EST **0 0** **Hail (0.75)**

Monroe County

Woodsfield

21 2340EST **0 0** **Hail (1.00)**

Muskingum County

Sonora

21 2345EST **0 0** **Hail (0.75)**

Belmont County

Powhatan Pt

21 2355EST **0 0** **Hail (0.75)**

Muskingum County

New Concord

22 0010EST **0 0** **Hail (1.00)**

Guernsey County

Cambridge

22 0015EST **0 0** **Hail (1.00)**

Monroe County

Woodsfield

**22 0006EST
0400EST** **0 0** **Flash Flood**

Heavy rain from earlier thunderstorms caused minor flooding that closed State Routes 800 and 78 in the Woodsfield area.

Tuscarawas County

Countywide

**23 0601EST
26 1030EST** **0 0** **Flood**

Rainfall and snowmelt over a several day period caused the Stillwater Creek at Uhrichsville to rise above flood stage. Stillwater Creek crested at around 5.9 feet during the early morning hours of the 24th, falling below the flood stage of 5.0 feet on the morning of the 26th. During this period minor flooding was also reported at other locations across the county. Several state and county roads were closed during this time period as water rose onto low-lying parts of the roadways.

OHIO, North

**OHZ003-006>014-
017>023-027>033-
036>038-047**

Lucas - Wood - Ottawa - Sandusky - Erie - Lorain - Cuyahoga - Lake - Geauga - Ashtabula - Hancock - Seneca - Huron - Medina - Summit - Portage - Trumbull - Wyandot - Crawford - Richland - Ashland - Wayne - Stark - Mahoning - Marion - Morrow - Holmes - Knox

**02 0400EST
2200EST** **0 56 600K** **Winter Storm**

Snow changed to freezing rain and sleet, with a brief change to rain as temperatures rose slightly above freezing, and then back to

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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OHIO, North

snow. Temperatures dropped quickly into the teens causing the wet snow and ice to refreeze and creating significant ice on the ground, roads and sidewalks. Snow accumulations generally averaged six to eight inches with as much as 10 inches in northwest Ohio. Travel was restricted when some counties declared level two or three emergencies, including Wood, Lucas, Seneca and Hancock. Air temperatures eventually fell to near zero and the icy conditions and cold temperatures, with wind chills of around 30 degrees below zero, continued throughout the first week of January, closing schools and causing many minor car crashes and fender benders. Dozens of people were injured from falls on the ice. Many sidewalks and secondary streets remained uncleared for days due to the combination of very cold temperatures and thick ice. Salt was in such demand that most stores ran out and had difficulty restocking.

OHZ012>014

Lake - Geauga - Ashtabula

06	0700EST				0	0			Heavy Snow
	1900EST								

Snow accumulated an average of six to seven inches in parts of Lake and Geauga Counties and along the lakeshore in Ashtabula County.

OHZ009>014- 018>023-027>033- 036>038-047

Erie - Lorain - Cuyahoga - Lake - Geauga - Ashtabula - Seneca - Huron - Medina - Summit - Portage - Trumbull - Wyandot - Crawford - Richland - Ashland - Wayne - Stark - Mahoning - Marion - Morrow - Holmes - Knox

08	0400EST				0	0	46K		Winter Storm
	0900EST								

Snow in the morning and early afternoon on the 8th changed to sleet and freezing rain, then back to snow in the evening, and the snow continued into the morning hours on the 9th. Snow accumulations averaged six to eight inches with an average of 1/4 inch of ice. Several minor car accidents were reported.

OHZ012>014

Lake - Geauga - Ashtabula

10	2300EST				0	0	75K		Heavy Snow
	0900EST								

Heavy lake effect snow accumulated from six inches in Lake County to eight inches in Geauga County and 12 inches in Conneaut in Ashtabula County. The cover of snow and ice that had accumulated since late December now averaged up to two feet in depth. On the 12th, in Andover (Ashtabula County), the roof of a local business collapsed under the weight of the snow and ice. Two vehicles were destroyed and a work area damaged.

OHZ010>014- 017>023-027>033- 036>038-047

Lorain - Cuyahoga - Lake - Geauga - Ashtabula - Hancock - Seneca - Huron - Medina - Summit - Portage - Trumbull - Wyandot - Crawford - Richland - Ashland - Wayne - Stark - Mahoning - Marion - Morrow - Holmes - Knox

13	0130EST				0	0	58K		Winter Storm
	1400EST								

Freezing rain and sleet changed to snow as a stalled front across northeast Ohio began to sag south. Most areas had 1/4 inch of ice followed by one to three inches of new snow, with accumulations of four to six inches from Wooster (Wayne County) to Canton (Stark). A number of minor car accidents occurred and power lines were downed. In order to restrict traffic, level two and three emergencies were declared in some counties, including Ashtabula, Hancock and Trumbull.

OHZ008-010>011

Sandusky - Lorain - Cuyahoga

14	0000EST				0	2	250K		Heavy Snow
	2359EST								

During a 24 hour period, snow, while not reaching the threshold for heavy snow, continued to pile up. The cover of snow and ice that had accumulated since late December now averaged 14 to 18 inches. The weight of the snow and ice caused structures to collapse and damage to trees. Damage was mostly confined to outbuildings. Cold temperatures caused pipes to burst. On the 16th, a facade and awning collapsed at a local business in Fremont (Sandusky County), injuring two people. In Elyria (Lorain), the canopy of a gas station collapsed.

OHZ012>014- 021>023-032>033

Lake - Geauga - Ashtabula - Summit - Portage - Trumbull - Stark - Mahoning

14	2200EST				0	0	1.0M		Heavy Snow
	0700EST								

Heavy snow accumulated six to ten inches and blowing and drifting snow contributed to several traffic accidents. To restrict traffic, a level three emergency was declared in Trumbull County. The weight of snow and ice that had built up in the area since late December caused structures to collapse and damage to trees. Pipes burst because of the cold temperatures. The snow and ice cover ranged from 16 inches in Summit County to as much as 30 inches in Ashtabula County, where several buildings collapsed as a result. In Andover, on the 14th, one barn roof collapsed and then another on the 15th, damaging or destroying hay and farm machinery. On the 15th, one pole barn in Colebrook and one in Jefferson collapsed. Tractors, a pickup truck, tools, an all terrain vehicle and a bulldozer stored in them were damaged or destroyed. On the 17th, a building collapsed at the county fairgrounds in Summit County. Twenty six vehicles stored there were damaged or destroyed.

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
OHIO, North									
OHZ009			Erie						
	22	1000EST			0	0	100K		Flood
	24	0310EST							
	Rain and snowmelt caused the Huron River at Milan to exceed its flood stage of 14 feet. The river crested at 20.18 feet at 1945 EST on 01/22/99. Flooding occurred in lagoon communities from Milan to near Huron. Several roads were flooded and some small businesses were affected by the floodwaters in Milan near Route 250.								
OHZ036			Marion						
	22	1500EST			0	0			Flood
	24	0100EST							
	Rain and snowmelt caused the Scioto River at LaRue to exceed its flood stage of 11 feet. The river crested at 12.33 feet at 2050 EST on 01/22/99. Flooding was confined to low lying areas along the river and some low spots on nearby highways.								
Medina County									
Chippewa On The Lake	22	1700EST			0	0			Flood
		2200EST							
	Snowmelt and rainfall over several days saturated the soil and caused flooding of small streams, streets and low lying areas. Chippewa Road was covered by four feet of water in places.								
Ashland County									
Countywide	22	1800EST			0	0	50K		Flood
	25	1200EST							
	Snowmelt and rainfall over several days saturated the soil and caused flooding of streets, streams, drainage ditches, fields and low lying areas. Sections of the Mohican River rose above its banks and some roads and fields near the river and its tributaries remained under water on the 25th, although the river stayed below flood stage. Charles Mill Lake Park also was still experiencing flooding of roads and nearby fields on Monday.								
OHZ009			Erie						
	23	0600EST			0	0	100K		Flood
	24	0700EST							
	Ice jams on the Vermilion River at Vermilion caused it to exceed its flood stage of 10 feet. The river crested at 12.6 feet at 1130 AM EST on 01/23/99. Twenty homes on Riverside Drive had to be evacuated for 12 hours.								
OHZ008			Sandusky						
	23	0700EST			0	0			Flood
	25	1737EST							
	Rain and snowmelt caused the Portage River at Woodville to exceed its flood stage of nine feet. The river crested at 12.32 feet at 1250 PM EST on 01/24/99. Flooding occurred in low lying areas including Trail Marker Park.								
OHZ036			Marion						
	23	1115EST			0	0			Flood
	27	2230EST							
	Rain and snowmelt caused the Scioto River at Prospect to exceed its flood stage of nine feet. The river crested at 11.32 feet at 0200 EST on 01/25/99. Highway 203 became impassable north of Water Street and flooding occurred along Elm Street.								
Ashtabula County									
Ashtabula	23	1200EST			0	0	75K		Flash Flood
		1600EST							
	An ice jam on the Ashtabula River at Northcoast Marina and Yacht Club broke loose and snapped the docks apart like twigs. The river also flooded bottom land and at least one road. Other rural roads were flooded by melting piles of snow.								
Ashtabula County									
Kingsville	23	1430EST			0	0	75K		Flash Flood
		2000EST							
	An ice jam broke on Conneaut Creek. Nearby homes were flooded.								
OHZ017			Hancock						
	23	1500EST			0	0			Flood
	24	1600EST							
	Rain and snowmelt caused the Blanchard River at Findlay to exceed its flood stage of 11 feet. The river crested at 11.23 feet at 0650 EST on 01/24/99. Some roads were flooded and Riverside Park was also affected.								
OHZ003			Lucas						
	23	1700EST			0	0	75K		Flood
	26	1500EST							
	Rain and snowmelt caused the Maumee River at Waterville to exceed its flood stage of nine feet. The river crested at 13.36 feet at 0700 EST on 01/25/99. Basement flooding occurred in homes along the river and also in Side Cut Park.								

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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OHIO, North

OHZ006

Wood

23	2100EST				0	0	200K		Flood
27	1900EST								

Ice jams caused the Maumee River at Grand Rapids to exceed its flood stage of 15 feet. The river crested at 18 feet at 2300 EST on 01/23/99. Roads, fields, businesses and homes were flooded. Flooding of streets and parking lots occurred in Pemberville, also on the Maumee River.

OHZ027

Wyandot

23	2100EST				0	0			Flood
24	1500EST								

Rain and snowmelt caused the Sandusky River at Upper Sandusky to exceed its flood stage of 13 feet. The river crested at 13.5 feet at 0700 EST on 01/24/99. Flooding was confined to low lying areas.

Trumbull County

Countywide

23	2200EST				0	0			Flood
24	1200EST								

Snowmelt mixed with rainfall that occurred for several days caused flooding of small streams, roads and low lying areas.

OHZ038

Holmes

24	0030EST				0	0			Flood
	2030EST								

Rain and snowmelt caused the Killbuck Creek at Killbuck to exceed its flood stage of 16 feet. The river crested at 16.02 feet at 0430 EST on 01/24/99. Flooding was confined to low lying areas.

OHZ023

Trumbull

24	1300EST				0	0			Flood
25	0800EST								

Rain and snowmelt caused the Mahoning River at Leavittsburg to exceed its flood stage of 10 feet. The river crested at 10.22 feet at 0100 EST on 01/25/99. Flooding was confined to low lying areas.

OHIO, Northwest

OHZ001>002-004>005-015>016-024>025

Williams - Fulton - Defiance - Henry - Paulding - Putnam - Van Wert - Allen

02	0000EST				0	0			Heavy Snow
03	0000EST								

Synoptic and mesoscale conditions on the 1st of January 1999...

The northern hemishperic longwave pattern began the year in transition as a high zonal index hinted at major changes to the longwave pattern over the New Year's Day weekend. Two potent shortwaves...one associated with the northern branch of the jet stream and the other associated with the southern branch...were progged to phase over the central plains on the 2nd of January. Lee troughing developed during the day on the 1st with the eventual surface low developing across the Texas panhandle that afternoon. Tremendous moisture was advected off the gulf of mexico during the afternoon as the low deepened. Moderate to heavy snow began to break out across the county warning area by late evening.

On the 2nd of January...intense low pressure was located across northeast Arkansas and slowly moved northeastward into northwest Indiana by late evening. Snowfall rates of 1 to 2 inches per hour were common throughout the day with even heavier snow noted as the system wrapped up and closed off over northern Illinois that evening. Nearly all the snowfall across the county warning area was due to the tremendous warm advection that occurred on the nose of a 60 knot low level jet overtop the shallow cold dome that was in place. Precipitation in areas along and east of a Lafayette Indiana to Defiance Ohio line eventually changed to freezing rain and sleet as 850 millibar temperatures warmed to above freezing. Snowfall amounts were the highest observed since the Blizzard of 1978 in many areas. Several cooperative observer stations reported all-time record 24 hour snowfalls as well. Storm totals ranged from two feet across northwest Indiana and southwest lower Michigan...12 to 18 inches across north central Indiana into south central Michigan and northwest Ohio... 6 to 8 inches across east central Indiana into western Ohio, where significant sleet and freezing rain later fell on top of the heavy snow.

Impacts on the people across the area were significant. Many rural roads remained impassable for several days. Some schools were closed for up to two weeks after the snowstorm. Many buildings... especially manufacturing warehouses and large retail stores in areas that received the heavier snow... reported collapsed roofs due to the weight of the snow. Damage estimates were not known at the time of this report.

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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OHIO, Northwest

OHZ004-004-004>005 Defiance - Henry

22	2200EST				0	0	17.5K		Flood
31	0000EST								

At a location above the dam on the Auglaize River in Defiance County, the crawl space of a house was flooded. A park was flooded by the Maumee River in the city of Defiance. This resulted in volunteers having to evacuate six families and then opening a Red Cross shelter. A low area on the Tiffin River was flooded near Evansport. On the afternoon of the 23rd, flooding occurred on the first floor of six homes on Catherine Drive in Liberty Center (Washington Township). Damage was mainly to carpets, walls, and furniture.

OHIO, Southeast

OHZ066>067-075>076-083>087 Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence

01	0000EST				0	0			Monthly Precipitation
31	2300EST								

The total monthly precipitation was 4 to 8 inches, about twice the norm. Near Patriot of Gallia County, 7.5 inches was measured, while amounts of 5 to 6 inches were more widespread. With temperatures 3 to 5 degrees above normal, most of the precipitation fell as rain. However, no major river flooding occurred. The dry weather during late summer and autumn had left the ground water low and the top soil dry. The rains of January certainly replenished the surface water supply.

OHZ066>067

Perry - Morgan

02	0500EST				0	0			Winter Storm
	1100EST								

Snow fell to a depth of 2 to 4 inches before changing to sleet. The sleet deposited a half inch to an inch of additional accumulation.

OHZ066>067-075>076-084>085

Perry - Morgan - Athens - Washington - Vinton - Meigs

08	0400EST				0	0			Winter Storm
	1500EST								

A 2 to 4 inch snow accumulated, then changed to freezing rain. A quarter to a half inch of ice was deposited.

OHZ066>067-075-083>084

Perry - Morgan - Athens - Jackson - Vinton

13	1500EST				0	0			Ice Storm
14	1000EST								

A quarter to an half inch of ice accumulated in freezing rain. A strong frontal zone sank south on the 13th, through southeast Ohio, then oscillated back north during the morning of the 14th. A large north to south temperature gradient existed near this boundary.

Gallia County

Countywide	21	1000EST			0	0			Heavy Rain
		1700EST							

Lawrence County

Countywide	21	1000EST			0	0			Heavy Rain
		1700EST							

Rains of 2 to 3 inches fell were common across Gallia County, with 1 to 2 inches for northern Lawrence County. The rains fell just to the north of a warm front. Racoon and Symmes Creeks flooded the usual low lying roads. Schools dismissed early. No damage to structures was reported. The cooperative observer near Camp Creek, west of Patriot, measured the maximum with 3.5 inches, while Gallipolis had 2.44 inches.

Morgan County

2 E Bishopville	21	2235EST			0	0			Hail (1.00)
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OHZ066>067-075>076-083>087 Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence

22	1100EST				0	0			Record Warmth
	1800EST								

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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OHIO, Southeast

Afternoon temperatures in the 70s were common across southeast Ohio. For example, Beverly had 77 degrees, Gallipolis saw 76 degrees, while South Point had 75.

OHIO, Southwest

OHZ026-034>035-042>046-051>056-060>065-070>074-077>080

Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark - Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler - Warren - Clinton - Ross - Hocking - Hamilton - Clermont - Brown - Highland

01	2200EST								
02	2200EST				0	0			Winter Storm

A major winter storm affected much of Ohio beginning late on the 1st and continuing through much of the 2nd. Heavy snow fell initially with some areas receiving greater than 1 inch an hour rates. Some thunder was reported with some of the heaviest snow around Cincinnati and Dayton. By early afternoon on the 2nd, much of the snow had changed to a mixture of sleet and freezing rain. However, by that point the snow had accumulated from 6 to 8 inches with local 10 inch amounts around and north of Dayton and Columbus. Accumulations around Cincinnati generally ranged from 4 to 6 inches.

OHZ026-034>035-042>046-051>056-060>065-070>074-077>078-080

Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark - Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler - Warren - Clinton - Ross - Hocking - Hamilton - Clermont - Highland

07	2200EST								
09	0600EST				0	0			Winter Storm

A weak low pressure system brought an area of wintry precipitation to parts of central and southern Ohio. The precipitation began as a period of snow with 2 to 4 inches of accumulation occurring. After a period with no precipitation, freezing rain began with some significant ice accumulation occurring.

OHZ026-034>035-042>046-051>056-060>065-070>072-074

Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark - Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler - Warren - Clinton - Hocking

13	0300EST								
14	0700EST				0	0			Winter Storm

A low pressure system brought abundant moisture northward from the Gulf of Mexico. At the same time, an arctic high pressure system forced low level cold air southward. The rain changed to freezing rain first across the northern Miami Valley where up to 1 inch of ice accumulation occurred. Then, the freezing rain changed to snow with 3 to 6 inches of accumulation occurring. Around Dayton and Columbus, the rain changed to freezing rain with up to 1/2 inch of ice accumulation occurring. Eventually, the freezing rain changed to sleet with up to 1/2 inch of accumulation occurring.

Champaign County

St Paris

21	2200EST								
22	0300EST				0	0			Flood

Heavy rainfall caused roads to be flooded.

Fairfield County

Pleasantville

21	2300EST								
22	0200EST				2	1			Flood

Heavy rain washed out part of Highway 188. Two cars fell into the washed out area with one person being injured and two killed. F3VE, F23VE

Union County

Countywide

21	2300EST								
22	0300EST				0	0			Flood

Heavy rain caused roads to be flooded.

Darke County

South Portion

22	0020EST								
	0350EST				0	0			Flood

Several hours of very heavy rainfall caused roads to be flooded. Maple Swamp creek flooded out of its banks causing 18 people to be evacuated and 8 homes to be flooded.

Storm Data and Unusual Weather Phenomena

January 1999

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

OHIO, Southwest

Preble County

New Paris	22	0045EST 0350EST			0	0	Flood
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Heavy rainfall caused roads to be closed and washed out. Evacuations occurred due to high water entering houses.

Miami County

Troy	22	0050EST 0350EST			0	0	Flood
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More than 3 inches of rain fell in only a few hours causing creeks and streams to rise out of their banks. Many roads and neighborhoods were flooded and a few buildings and homes were flooded.

Shelby County

Countywide	22	0053EST 0350EST			0	0	Flood
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Heavy rainfall caused many roads and homes to be flooded. Evacuations of 75 people occurred.

OHZ077

Hamilton

23	0200EST				0	0	Flood
24	1800EST						

The Great Miami River came out of its banks around Miamitown and crested at an estimated 19.0 feet at 100 am on the 24th. Flood stage is 16.0 feet. The high water affected low land areas near the river and some cottages along the river near Miamitown.

OHZ064-082-088

Pickaway - Pike - Scioto

23	0445EST				0	0	Flood
24	1800EST						

The Scioto River came out of its banks at Circleville and Piketon. At Circleville, the river crested at 14.3 feet at noon on the 23rd. Flood stage is 14.0 feet. The flooding was limited to bottomland areas along the river near Circleville. At Piketon, the river crested at an estimated 18.5 feet at noon on the 24th. Flood stage is 18.0 feet. Backwater flooding occurred along area creeks in southern Pike and along Scioto Brush Creek in northern Scioto county.

OHZ054>055-064

Madison - Franklin - Pickaway

24	0013EST 0600EST				0	0	Flood
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The Big Darby Creek came out of its banks causing minor flooding along the banks.

OKLAHOMA, Eastern

OKZ057>058-062>063

Craig - Ottawa - Mayes - Delaware

01	0000CST				0	0	Winter Storm
02	2000CST						

Summary of winter storm events for January 1 1999:

The northeast corner of Oklahoma caught a glancing blow of what would become a memorable winter storm for much of the Midwest. The winter storm was developing as it moved across the central part of the nation on New Years Day. In advance of the system, there was freezing rain for much of the day in the northeast corner of Oklahoma which caused a thick layer of ice to form. By the morning of January 2, colder air filtering in behind the winter storm caused about 1/2 inch of snow to accumulate on top of the ice. This caused serious travel problems for many holiday travellers heading toward the Midwest. Power outages and tree damage were not widespread in northeast Oklahoma.

OKZ054>061-064>066-071

Osage - Washington - Nowata - Craig - Ottawa - Pawnee - Tulsa - Rogers - Creek - Okfuskee - Okmulgee - McIntosh

07	2200CST				0	0	Ice Storm
08	1500CST						

Summary of freezing drizzle events on January 7-8 1999:

Following the passage of an arctic cold front late on January 6, warm moist air returned over the top of the dome of shallow cold air. Drizzle then formed across all of eastern Oklahoma on January 7. Where temperatures were below freezing, the drizzle froze upon contact with the ground. Heavier drizzle then developed on the night of January 7 and caused more significant icing along and north of the I-44 corridor by the morning of January 8.

Roads and sidewalks became ice-covered and hazardous. All schools in the affected area cancelled class on January 8. More than 300 people were admitted with orthopedic injuries to Tulsa hospital emergency rooms because of slip-and-fall accidents. There

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
OKLAHOMA, Eastern									
were numerous traffic accidents caused by ice-covered streets. The Oklahoma Highway Patrol at Pawnee did not have enough patrolmen to respond to all of the accidents. While there was not enough ice to cause widespread power outages or tree damage, there were spotty power interruptions in Osage County and a power outage at Claremore in Rogers County affecting several thousand customers.									
Pushmataha County									
Clayton	21	1619CST			0	0			Hail (1.00)
Pushmataha County									
Stanley	21	1623CST			0	0			Hail (1.00)
Latimer County									
Bengal	21	1729CST			0	0			Hail (1.00)
Le Flore County									
Le Flore	21	1745CST			0	0			Hail (1.00)
Pushmataha County									
8 SW Clayton	21	1753CST			0	0			Hail (0.75)
Le Flore County									
Wister	21	1754CST			0	0			Hail (1.75)
Choctaw County									
Bluff	21	1800CST			0	0			Hail (0.75)
Le Flore County									
Kennady	21	1809CST			0	0			Hail (1.75)
Pushmataha County									
1 N Clayton	21	1813CST			0	0			Hail (0.88)
Le Flore County									
Poteau	21	1815CST			0	0	2.6M		Hail (1.75)
Golfball-sized hail caused major damage in Poteau. Many cars had their windshields broken out, their mirrors and antennae knocked off, and some cars were dented so badly that it knocked off paint. The entire police fleet suffered dents. Roof damage on many buildings was considerable. State Farm Insurance alone had 800 building damage claims and 350 auto claims stemming from the storm. The awning on the Black Angus restaurant on Broadway was shredded by the force of the hail. State Farm reported \$1.6 million in claims, and the Reed-Williams Insurance Company reported \$1 million in claims two weeks after the storm, and more claims were still coming in. All in all, this was a historic hailstorm for Poteau.									
Latimer County									
12 S Wilburton	21	1823CST			0	0			Hail (0.75)
Latimer County									
7 S Bengal	21	1850CST			0	0			Hail (0.75)
Haskell County									
Lequire	21	1855CST			0	0			Hail (0.75)
Pushmataha County									
13 ENE Cloudy	21	1900CST			0	0			Hail (0.75)
Le Flore County									
1 S Heavener	21	1921CST			0	0			Hail (0.75)
Le Flore County									
Summerfield	21	1924CST			0	0			Hail (0.88)
Le Flore County									
2 NNE Heavener	21	1953CST			0	0			Hail (0.88)
Location: Heavener Runestone State Park									
Le Flore County									
Hodgen	21	1954CST			0	0			Hail (0.75)
Choctaw County									
2 N Goodland	21	2115CST			0	0			Hail (0.88)

Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		January 1999
					Killed	Injured	Property	Crops	Character of Storm

OKLAHOMA, Eastern

Le Flore County

Muse	21	2130CST			0	0			Hail (0.88)
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Pushmataha County

Nashoba	21	2130CST			0	0			Hail (0.75)
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Dime-sized hail covered the ground at Nashoba.

Le Flore County

Panama	21	2205CST			0	0			Hail (0.75)
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Summary of events for January 21 1999:

Several rounds of severe thunderstorms affected southeast Oklahoma on the evening of January 21. The first batch of storms was the worst as it developed in northern Pushmataha County and pushed northeast across extreme southeast Latimer County and into Le Flore County to the state line near Rock Island. While this was a small storm, it packed quite a punch with hail as large as golfballs at Wister and Poteau. Other storms that evening produced hail to the size of dimes and nickels.

These thunderstorms developed in very unstable air in advance of a dryline as a powerful upper level jet approached the area.

**OKZ057>058-
060>062-066>067-070**

Craig - Ottawa - Tulsa - Rogers - Mayes - Okmulgee - Wagoner - Muskogee

	22	1900CST			0	0			Heavy Snow
	23	0400CST							

Summary of events for January 22-23 1999:

Numerous showers developed across northeast Oklahoma on the afternoon of January 22 as a vigorous upper level storm system passed to the south and east. As the center of the upper low and plenty of cold mid and upper level air made its nearest approach, rain quickly changed to sleet and then snow early in the evening in a band from near Okemah to near Vinita and Miami. Despite temperatures at or above freezing, the snow fell heavily enough to accumulate 2 or more inches in the counties listed here. Some snowfall totals include: Tulsa Oklahoma Highway Patrol Office...5", Tulsa NWS Office...3", Vinita...3", Wagoner...3", Pryor...2", Miami...2", Morris...2", Haskell...2". Some roads became snow-packed for a time, but most were simply slushy. Most all of the snow had melted off by late afternoon on January 23.

Pittsburg County

Mc Alester	30	0235CST			0	0			Hail (0.88)
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Tulsa County

Broken Arrow to 5 NW Broken Arrow	30	0848CST 0852CST			0	0			Hail (1.00)
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At 848 AM, one off-duty NWS employee reported nickel-sized hail in Broken Arrow. A few minutes later at 852 AM, another off-duty NWS employee reported quarter-sized hail 5 miles northwest of Broken Arrow with the same storm.

Tulsa County

Tulsa	30	1200CST			0	0			Urban/Sml Stream Fld
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Heavy rains filled Fry Ditch Creek past its banks. The water spilled over South Sheridan Road at 96th Street, causing firefighters to close the street for a time. Most areas around Tulsa saw between one and two inches of rain late on the morning and early on the afternoon of January 30, 1999.

Summary of events for January 30 1999:

A low pressure system stacked from the surface into the upper levels slowly moved over northwest Texas on January 30. On the northeast side of the low, there was a conveyor belt of rain, embedded thunderstorms, and strong gradient winds across eastern Oklahoma on the morning of January 30. With surface temperatures in the 40s across eastern Oklahoma, it did not take much for the embedded thunderstorms to produce hail, some of it marginally severe.

OKZ063

Delaware

	30	1000CST 1100CST			0	0	6K		High Wind
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Strong gradient winds in advance of a low pressure center caused arms and cable supporting a fishing dock near Grove to give way, allowing the walkway to break. A McDonalds sign was also blown down in Grove.

OKZ060

Tulsa

	31	0500CST 2359CST			0	0			Flood
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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

OKLAHOMA, Eastern

The Bird Creek at Sperry rose above its flood stage of 21 feet at 5 AM January 31, cresting at 22.2 feet at 7 PM on January 31. The river fell back below flood stage at 2 AM on February 1.

OKLAHOMA, Extreme Southeast

NONE REPORTED.

OKLAHOMA, Panhandle

OKZ001>003

Cimarron - Texas - Beaver

28	1800CST								
29	0600CST			0	0				Winter Storm

A vigorous upper level storm system moved slowly east across West Texas by the morning hours producing a mixture of snow, sleet, and freezing rain over the Texas and Oklahoma panhandles. There were numerous power outages and most roads and highways were closed all across the Oklahoma panhandle. Four to five inches of snow fell across the western and central Oklahoma panhandle while one quarter to one half inch of ice accumulation occurred across the eastern Oklahoma panhandle.

OKZ001>003

Cimarron - Texas - Beaver

29	0600CST								
30	0600CST			0	0				Winter Storm

A vigorous upper level low pressure system over West Texas moved northeast into Oklahoma and produced significant snowfall and accumulating ice all across the Oklahoma panhandle. There were numerous power outages and most roads and highways in the Oklahoma panhandle were closed. Six to seven inches of snow fell across the western and central Oklahoma panhandle while one quarter to one half inches of ice accumulation occurred across the eastern Oklahoma panhandle.

OKLAHOMA, Western, Central and Southeast

OKZ007>008-012>013-018>020

Grant - Kay - Garfield - Noble - Kingfisher - Logan - Payne

01	0200CST								
	0900CST			0	0				Ice Storm

Light freezing drizzle fell across much of north central Oklahoma on the 1st, producing a thin layer of ice on many roads. Roads were reported to be especially slick north of Enid and Ponca City. Many accidents resulted.

OKZ031>032-039>043-045>048-050>052

Seminole - Hughes - Stephens - Garvin - Murray - Pontotoc - Coal - Jefferson - Carter - Johnston - Atoka - Love - Marshall - Bryan

06	0600CST								
	0900CST			0	0				Fog

Dense fog formed across much of south central Oklahoma during the morning of the 6th with temperatures below freezing. Frost was deposited on many area roads causing numerous accidents. At least 14 accidents are known to have occurred. In Carter County, 2 accidents were reported; one woman rolled her vehicle more than 3 times down an embankment on Interstate 35 near the overpass of State Highway 142. She was taken to a local hospital with a broken arm. Another accident occurred in Lone Grove at the intersection of Meridian and State Highway 70. Numerous accidents were also reported in Garvin County.

OKZ004>040-042-044

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 - Hughes - Harmon - Greer - Kiowa - Jackson - Tillman - Comanche - Stephens - Garvin - Pontotoc - Cotton

07	0600CST								
08	1100CST			0	0				Ice Storm

Light freezing rain and freezing drizzle plagued much of western and central Oklahoma on the 7th and 8th. One to two hundredths of an inch of ice accumulated on area roads during this period. The largest amount of precipitation recorded during this event was 5 hundredths of an inch at Purcell and McGee Creek. In addition to the ice accumulation, dense fog formed across most of the area and persisted for as long as 24 hours. Hundreds of traffic accidents were reported across Oklahoma, including 3 fatal accidents. Oklahoma City Police reported 71 accidents in the Oklahoma City Metropolitan area by 2200 CST on the 8th. Thirty-seven people were treated for injuries. One accident involved 11 vehicles in the westbound lanes of Interstate 40 at Agnew Ave. Another accident involved an overturned cattle truck on Interstate 40. The westbound lanes were forced to close for 8 hours. Many schools were forced to close as well due to hazardous driving conditions. Lastly, power lines were downed due to the accumulation of ice in Lawton near NW 40th St. and Cache Rd., where 50 homes were left without power on the 8th.

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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OKLAHOMA, Western, Central and Southeast

Woodward County

Ft Supply	28	1600CST			0	0	5K		Lightning
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Lightning struck a tree in the middle of a field of cattle killing 5 of them.

OREGON, Central and East

ORZ017 Foothills Of The Blue Mountains

04	2000PST				1	4			Fog
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A single-car rollover occurred just west of Pendleton on Interstate 84 in fog and icy road conditions. All four occupants of the vehicle were injured in the rollover. As one of the victims was being loaded into an ambulance a semi-truck travelling on I-84 lost control. The truck struck a patrol car, jackknifed, hit the back end of an ambulance, and then the back tires of the truck struck and killed the victim. The other victims and an ambulance crew member were treated for minor injuries at a local hospital and released. F22VE

ORZ014 Central Oregon

11	1400PST				0	0			High Wind (G44)
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Wind gusts to 50 mph snapped two large trees in Bend.

ORZ019 Northeast Oregon

14	1800PST				0	0			Heavy Snow
15	0800PST								

Snowfall of 4 to 5 inches was reported overnight above 4000 feet elevation in Meacham.

ORZ014 Central Oregon

17	0400PST				0	0			Heavy Snow
	1600PST								

Up to 8 inches of snow fell near the town of Sisters. Around 4 inches of snow fell in the city of Bend.

ORZ019 Northeast Oregon

17	0600PST				0	0			Heavy Snow
	1830PST								

Above 3800 feet elevation, 5 to 8 of snow fell with 3 inches down to 3400 feet. Snow and blowing snow reduced the visibility to less than 1/8 of a mile in some places.

ORZ019 Northeast Oregon

19	1800PST				0	0			Heavy Snow
20	1000PST								

In Tollgate, 7 inches of new snow fell at an elevation of 5200 feet. In Meacham, 2 to 3 inches of snow fell at 4000 feet.

ORZ019 Northeast Oregon

20	1800PST				0	0			Heavy Snow
21	1730PST								

Tollgate received 6 inches of snow overnight at an elevation of 5200 feet with a total of 9 inches in 24 hours.

ORZ014 Central Oregon

20	2030PST				0	0			Heavy Snow
21	0830PST								

La Pine reported 3 inches of snow while Sunriver had 8 inches of new snow overnight above 4000 feet elevation.

ORZ014 Central Oregon

22	0700PST				0	0			Heavy Snow
	2000PST								

Up to 14 inches of new snow fell during the day in the La Pine area. In the Bend and Sisters areas, 4 to 5 inches of snow fell. Snow fall rates were over 1 1/2 inches an hour in places.

ORZ019 Northeast Oregon

29	1410PST				1	0			Avalanche
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Two cross country skiers and a snowboarder were on a back country outing near Spout Springs. At one point, the snowboarder stopped to adjust his bindings and his friends skied on. When they realized that their friend had not followed, they hiked back uphill and saw the aftermath of a 250-yard snowslide. They were not able to find him and called for help. Search and rescue crews using probes and a specially trained dog were called off around midnight because of high wind and blowing snow. About 50 people resumed the search the next morning and found the snowboarder's body around 11:30 AM.

M19OU

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
OREGON, Northwest									
ORZ001			Northern Coast						
	14	0200PST 1100PST			0	0			High Wind (G56)
	The first strong Pacific storm of the year brought high winds to the North Oregon coast. Arch Cape reported a gust to 64 mph, while Cannon Beach had 50 mph sustained winds with gusts to 58 mph, and Tillamook reported 40 mph winds .								
ORZ011			Northern Cascades						
	14	2000PST			0	0			Heavy Snow
	15	0200PST							
	Heavy snow in the Cascades accompanied the first significant storm of the month. Timberline Lodge on Mt Hood reported 17 inches of new snow, while Mt Hood and Meadows and Government Camp had 10 inches, and Bennett Pass received 8 inches.								
ORZ011			Northern Cascades						
	15	1800PST			0	0			Heavy Snow
	16	1400PST							
	Another winter storm left 15 inches of new snow at Mt Hood Meadows, 12 inches at Willamette Pass, 11 inches at Santiam Pass, 10 inches at Timberline Lodge, and 8 inches at Bennett Pass.								
ORZ001			Northern Coast						
	15	2000PST			0	0			High Wind (G53)
	16	0100PST							
	Another Pacific storm caused winds of 45 mph at Sea Lion Caves, and gusts to 61 mph at Cannon Beach.								
ORZ001>002			Northern Coast - Central Coast						
	17	0900PST 1500PST			0	0			High Wind (G61)
	A strong Pacific storm caused winds of 45 mph gusting to 70 mph at Netarts, 45 mph gusting to 61 mph at Newport, 42 mph gusting to 59 mph at Cannon Beach, a gust to 60 mph at Yachats, and winds 46 mph gusting to 59 mph at Sea Lion Caves.								
ORZ011			Northern Cascades						
	17	1100PST			0	0			Heavy Snow
	18	1200PST							
	Another in a series of winter storms dumped 18 inches of new snow at Mt Hood Meadows, 16 inches at Timberline Lodge, and 8 inches at Willamette Pass.								
Tillamook County									
Tillamook	17	2030PST			0	0	15K		Lightning
	Lightning struck a house in south Tillamook county, blowing a hole in the roof and ripping off some siding. Three TVs, a computer, and a hot water heater were destroyed. No one was injured.								
ORZ001>002			Northern Coast - Central Coast						
	17	2200PST			0	0			High Wind (G54)
	18	1000PST							
	The next in a daily parade of Pacific storms at mid month caused wind gusts to 62 mph at Netarts, winds of 44 mph gusting to 58 mph at Newport, and 54 mph winds gusting to 59 mph at Sea Lion Caves.								
ORZ011			Northern Cascades						
	20	0800PST			0	0			Heavy Snow
	21	0800PST							
	The biggest snow storm of the month, and one of the heaviest of this snowy season, dumped 29 inches of new snow at Santiam Pass, 27 inches at Mt Hood Meadows, 17 inches at Timberline Lodge, and 15 inches at Government Camp and Willamette Pass. Avalanches closed several passes during and after this storm, and rarely used avalanche control measures were employed at Santiam Pass .								
ORZ011			Northern Cascades						
	22	0000PST			0	0			Heavy Snow
	23	2300PST							
	Another snowstorm resulted in 10 inches of new snow at Timberline Lodge and Santiam Pass, 8 inches at Government Camp and Willamette Pass, and 6 inches at Warm Springs. The snow level was very low, and an inch of snow accumulated in the higher elevations of the Portland metropolitan area before it quickly melted.								
ORZ011			Northern Cascades						
	27	1200PST			0	0			Heavy Snow
	28	1200PST							
	Another snow storm left 11 inches of new snow at Mt Hood Meadows and Bennett Pass, 10 inches at Timberline Lodge, 9 inches at Santiam Pass, and 8 inches at Government Camp.								

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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OREGON, Northwest

ORZ001>002

Northern Coast - Central Coast

28	1400PST				0	0	20K		High Wind (G70)
29	1500PST								

The strongest Pacific windstorm of the month blew down trees and caused damages. Maximum reported winds included 55 mph gusting to 80 mph at Canon Beach, gusts to 70 mph at Arch Cape, 50 mph gusting to 68 mph at Netarts, gusts to 63 mph at Clatsop Spit at the mouth of the Columbia River, 47 mph gusting to 61 mph at Newport, a gust to 61 mph at Astoria, and 46 mph gusting to 58 mph at Sea lion Caves.

OREGON, Southeast

ORZ020-022

Baker - Southeast Oregon

17	0500MST				0	0			Heavy Snow
	1800MST								

A winter storm dropped 3 to 6 inches of snow over south eastern Oregon. In Baker County Haines received 6 inches of snow with generally 3 to 4 inches in the Baker Valley. In Southeast Oregon Burns received 5 inches, the Fields area 5 to 6 inches with 3 to 4 inches reported at lower elevation valley floors.

ORZ020-022

Baker - Southeast Oregon

22	0500MST				0	0			Heavy Snow
	1900MST								

A winter storm dumped 5 to 8 inches of snow over the higher terrain of south eastern Oregon. In Baker County Sumpter received 5 inches with 4 to 6 inches reported in the Baker City area. In Southeast Oregon 6 to 8 inches fell in the Burns area.

OREGON, Southwest

ORZ003-003-003

Southern Coast

17	0758PST				0	0			High Wind (G50)
	1100PST								

Cape Blanco winds 16050G60 KT

Yet another winter storm moved in from the Pacific, bringing another round of high winds to the coastal areas. The peak winds at Gold Beach and Cape Blanco are given above, along with a spotter report from Bandon. All three of these locations are on the immediate coast.

ORZ003-003

Southern Coast

18	0200PST				0	0			High Wind (G54)
	0258PST								

Cape Arago peak gust 54 KT.

The next storm followed hot on the heels of the preceding storm...resulting in more high winds over coastal Oregon.

ORZ003-003

Southern Coast

19	0500PST				0	0			High Wind (G44)
	0600PST								

Cape Blanco winds 44 KT gusting to 59 KT.

Another winter storm brought a brief period (2-3 hours) of high winds to the coastal areas of Southern Oregon. The strongest winds are listed above. No warning was issued for this storm.

ORZ003-003

Southern Coast

20	1200PST				0	0			High Wind (G60)
	2100PST								

Cape Arago winds 45g50 KT.

The string of windy winter storms continued as another storm approached the coast...bringing the strongest winds to Cape Arago this time around.

ORZ015

South Central Oregon

20	1535PST				0	0			High Wind (G70)
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A spotter 9 miles east of Chiloquin reported 60-70 mph winds and whiteout conditions.

Strong west winds developed behind a cold front as it moved through Klamath county. The high winds were short-lived, lasting only a few hours.

ORZ008-015-015-015-015-015-015

Rogue Basin - South Central Oregon

22	0920PST				0	0			Winter Storm
	1845PST								

Spotter JA84 in the Siskiyou reported 12 inches new snow in 3 hours.

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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OREGON, Southwest

A particularly wet Pacific storm made its way across southern Oregon and northern California, bringing snow to the higher elevations, particulating on the eastern side of the Cascades.

ORZ003

Southern Coast

22 1040PST 0 0 High Wind (G40)

A spotter at Bandon reported sustained winds 35-40 mph with gusts to 52 mph. Another strong Pacific storm moved into the Oregon coast. Gusts to near 80 mph were reported at the coast as it approached, but the only verified report with winds that met high wind criteria is above.

ORZ003

Southern Coast

23 1400PST 0 0 Flood

The Rogue River gage at Agness recorded 17.2 feet...flood stage 17.0 feet. A wet storm caused flooding on two rivers in Coos county in Southern Oregon. The Rogue River flooded briefly at Agness. The Coquille river flooded from Myrtle Point down to Bandon and that event was longer lived. The stage readings for the Coquille follow:

	01/22	01/23	01/24	01/25
Flood				
Coquille River at Coquille	21.27 at 01:45	21.9 at 01:00	22.1 at 04:45	20.8 at 04:45
21.0	21.80 at 07:45	22.2 at 13:45	21.7 at 18:45	
	22.00 at 15:45	22.2 at 19:45		
	21.90 at 20:45			

ORZ003-003-003-003

Southern Coast

29 0600PST 0 0 High Wind (G60)
2100PST

Cape Blanco reported 49 KT gusting to 69 KT. Another in a series of winter storms brought high winds to the coastal areas. There were numerous observations that exceeded High Wind Warning criteria. The highest sustained winds and gusts at each location is listed above.

PACIFIC

Rota

Central Portion 10 1207AST 1217AST 0 0 Funnel Cloud

Saipan

Saipan Intl Airport 10 1225AST 1227AST 0 0 Funnel Cloud

Guam

Inarajan to Merizo 14 0600AST 1200AST 0 0 Urban/Sml Stream Fld

Guam

Agana 15 0600AST 0615AST 0 0 2K Rip Currents

Guam

Inarajan to Merizo 21 0000AST 0700AST 0 0 Urban/Sml Stream Fld

Guam

Asan 21 1230AST 1400AST 0 3 Rip Currents

On the 10th funnel clouds were briefly seen at Rota and Saipan.

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.

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

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	January 1999
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PACIFIC

encountered rough surf and strong currents. It eventually capsized. At 612 fire 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 was following them.

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. An automated station in Merizo reported 1.03 inches of rain fell between midnight and 0700.

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 Co. Store around 1230. An off duty firefighter, Mark Terlaje, was driving home and noticed the people in the water. He then notified 911. As the brothers swam, they drifted into a channel with a strong current. 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. Rescue workers on the shore hung onto the ropes. The eventually pulled the three to shore.

25th. A group of fishing vessels departed Chuuk in the morning. A heavy rain squall and six to eight foot seas at about 1700 caused one boat to be separated 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 food and water enough 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 were in good shape. The ship Micro Trader went to pick up the men and return them to Chuuk.

PENNSYLVANIA, Central

<p>PAZ004>006-010>012-017>019-024>028-033>037-041>042-045>046-049>053-056>059-063>066</p>	<p>Warren - Mckean - Potter - Elk - Cameron - Northern Clinton - Clearfield - Northern Centre - Southern Centre - Cambria - Blair - Huntingdon - Mifflin - Juniata - Somerset - Bedford - Fulton - Franklin - Tioga - Northern Lycoming - Sullivan - Southern Clinton - Southern Lycoming - Union - Snyder - Montour - Northumberland - Columbia - Perry - Dauphin - Schuylkill - Lebanon - Cumberland - Adams - York - Lancaster</p>
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02	2300EST	0	0	Winter Storm
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Deep low pressure moved northeast across the upper midwest bringing large amounts of moisture into Pennsylvania east of the system. Very cold air trapped over the state permitted the precipitation to fall as light snow through the afternoon and evening of the 2nd before changing to sleet and freezing rain overnight. Heaviest snows fell across the Laurel Highlands of Somerset County, with Mt. Davis and Somerset both reporting 8 inches. Snowfall accumulations varied across the central mountains from about 1 to 4 inches. Water equivalent of the melted precipitation ranged from a half inch to over 2 inches. Fortunately, the heaviest precipitation fell as sleet, and most of the heaviest precipitation including freezing rain fell late at night. Because of the timing of the worst weather, traffic accidents were limited. There were a few power outages reported from the combination of ice and strong winds early Sunday morning. Some rural areas closed schools Monday because of icy roads.

<p>PAZ004>006-010>012-017>019-024>028-033>037-041>042-045>046-049>053-056>059-063>066</p>	<p>Warren - Mckean - Potter - Elk - Cameron - Northern Clinton - Clearfield - Northern Centre - Southern Centre - Cambria - Blair - Huntingdon - Mifflin - Juniata - Somerset - Bedford - Fulton - Franklin - Tioga - Northern Lycoming - Sullivan - Southern Clinton - Southern Lycoming - Union - Snyder - Montour - Northumberland - Columbia - Perry - Dauphin - Schuylkill - Lebanon - Cumberland - Adams - York - Lancaster</p>
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08	2000EST	0	0	Winter Storm
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This winter storm was very similar to the preceding storm of the 2nd, producing a progressive mixture of snow, sleet, and freezing rain. Although the weather system that produced this storm was not as powerful as the one on the 2nd that covered the entire upper midwest, large amounts of moisture were available from the deep south as low pressure moved northeast up the Tennessee Valley into Ohio. Water equivalents of melted precipitation were in excess of one inch in many locations. Snowfall was the greatest across the southern tier counties from Somerset east through Chambersburg to York and Lancaster. Heaviest amounts included 7 inches on Mt. Davis and Laurel Summit, and 6 inches in Meyersdale, Mercersburg, and Shippensburg. Up to 5 inches fell in Huntingdon and Gettysburg, with 4 inches in Hershey, Lancaster, and New Holland. Further north, snowfall was a bit less as precipitation turned to sleet and freezing rain. Freezing rain formed a glaze across the central and northern mountains late on the evening of the 8th or early morning of the 9th, forming a hard crust on the snow pack and making walking or driving treacherous. Road crews spread huge amounts of road salt to control ice buildup, but the ice caused little damage to trees or powerlines. In the Harrisburg area alone, police estimated they had handled 40 to 50 accidents on or near the Capital Beltway on I-81, I-83, and Route 581. Many schools closed or released students early in the afternoon of the 8th and many events were canceled that Friday evening.

<p>PAZ006-011</p>	<p>Potter - Cameron</p>
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12	0600EST	0	0	Heavy Snow
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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

PENNSYLVANIA, Central

A weak frontal system crossed the area dropping a general snow of about 2 to 4 inches over much of central Pennsylvania overnight. A few locations had heavier amounts as fluffy snow piled as deep as 8 inches in Emporium and 6 inches in Coudersport.

PAZ004>006-010>012-017>019-024>028-033>037-041>042-045>046-049>053-056>059-063>066

Warren - Mckean - Potter - Elk - Cameron - Northern Clinton - Clearfield - Northern Centre - Southern Centre - Cambria - Blair - Huntingdon - Mifflin - Juniata - Somerset - Bedford - Fulton - Franklin - Tioga - Northern Lycoming - Sullivan - Southern Clinton - Southern Lycoming - Union - Snyder - Montour - Northumberland - Columbia - Perry - Dauphin - Schuylkill - Lebanon - Cumberland - Adams - York - Lancaster

14 0600EST 0 0 Winter Storm

This was the third winter storm of the season to produce a widespread combination of heavy snow, piles of sleet and a glaze of freezing rain across all of central Pennsylvania over a two-day period. On Wednesday, the 13th, very cold air was forced southward out of Canada by a huge dome of high pressure located over Quebec. Early morning temperatures were in the 40's across many central locations, but by afternoon readings dropped into the 20's as the cold air spread southwestward with a mix of sleet and freezing rain. After the cold air became established, low pressure over the Tennessee Valley began spreading moisture northward into the region, continuing a persistent pattern of snow, sleet, and freezing rain across the area until the system finally moved east of the area on Friday. Water equivalents in the melted precipitation were in excess of an inch across most of the area, with Wellsboro reporting 2.41 inches over 2 days. Snowfall was heaviest across the northern mountains with up to 17 inches reported in Galeton, 14 inches in Coudersport, a foot in Covington, and 11 inches in Port Allegany and Kane. Across the central mountains, 3 to 6 inch depths were reported, but much of the precipitation fell as a heavy sleet. Across the lower Susquehanna and southern mountains, freezing rain produced a glaze and sleet measured about an inch. Schools, including Penn State University, were closed across the entire area for two days. Commerce was slowed and travel was hazardous.

Cambria County

Carrolltown 18 1310EST 0 0 10K Thunderstorm Wind
Winds tore shingles off a roof of a home 2 miles NW of Colver. Just east of the area, a mobile home lost its metal roof.

Blair County

Altoona 18 1320EST 0 0 10K Thunderstorm Wind
A couple of trees were blown down, including one that fell on a house.

Clearfield County

Burnside 18 1320EST 0 0 10K Thunderstorm Wind
Trees and wires down.

Bedford County

Bedford to 18 1320EST 2 20 0 0 50K Tornado (F0)
2 E Bedford 1325EST

A small tornado touched down on the north side of Bedford, taking down about a dozen trees and damaging the roofs of a couple of houses. Some of the needle and limb debris from the trees actually made a nice 10 foot circle in the snow next to one home. About 2 miles east of Bedford, a newly built oil change garage had the roof blown off and the bay doors buckled in by the winds. Eyewitnesses reported seeing a rotating column they described as a tornado that caused the damage to the garage. A gas station across the street also had slight damage to the canopy over the pumps.

Centre County

State College 18 1400EST 0 0 1K Thunderstorm Wind
Large limbs were blown down in State College.

Franklin County

Waynesboro 18 1410EST 0 0 10K Thunderstorm Wind
Windows were blown out of a house and trees were down.

Centre County

Millheim 18 1420EST 0 0 Hail (0.75)
3/4 inch hail reported in Millheim.

Columbia County

Countywide 18 1455EST 0 0 Flash Flood
1830EST
Roads & basements flooded.

Lebanon County

Countywide 18 1455EST 0 0 Flash Flood
1830EST
Basements & roads flooded.

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
PENNSYLVANIA, Central									
Lancaster County									
Countywide	18	1455EST 2230EST			0	0			Flash Flood
			Small stream and basement flooding.						
Northumberland County									
Countywide	18	1455EST 1800EST			0	0			Flash Flood
			Basements & roads flooded.						
Schuylkill County									
Countywide	18	1455EST 1830EST			0	0			Flash Flood
			Roads & basements flooded.						
Lycoming County									
Montoursville	18	1458EST			0	0			Thunderstorm Wind (G71)
			71mph wind gusts were reported at the Lycoming County Airport.						
Lycoming County									
Unityville	18	1510EST			0	0	10K		Thunderstorm Wind
			A couple watched as winds lifted a 32 foot camping vehicle into the air in the backyard of their Unityville home. The 9,000 lb. vehicle was tossed over a 12-foot shed, landing in a field on the other side in a crumpled mess. Then, the family watched as the shed and tractor inside were also blown over.						
Lancaster County									
Leacock	18	1530EST			0	0	1K		Thunderstorm Wind
			Telephone pole was snapped by high winds.						
York County									
Countywide	18	2300EST 2359EST			0	0			Flash Flood
			A vigorous cold front moved rapidly east across the state during the afternoon of the 18th. Strong winds and rains ahead of the front produced rapid melt of the snow pack and caused flooding of roads and basements across the Susquehanna Valley. A number of people had their cars towed from flooded intersections in Lancaster and Lebanon counties during the late afternoon and evening. High winds associated with the front took down trees and powerlines in spots across the region, and tore some shingles from a home and the metal roof off a mobile home near Carrolltown in Cambria County. The front also touched off a small tornado in the Bedford area. At Unityville, in eastern Lycoming County, a couple watched as winds picked up a 32-foot camper weighing 9,000 pounds and tossed it completely over a 12-foot shed.						
Bedford County									
Breezewood	23	1800EST			0	0	1K		Thunderstorm Wind
			Tree was blown over on the turnpike near Breezewood.						
Bedford County									
Countywide	23	1830EST 2130EST			0	0	5K		Flash Flood
Blair County									
Countywide	23	1830EST 2130EST			0	0	5K		Flash Flood
Cambria County									
Countywide	23	1830EST 2130EST			0	0	5K		Flash Flood
Somerset County									
Countywide	23	1830EST			0	0	5K		Flash Flood
Huntingdon County									
Countywide	23 24	2030EST 1400EST			0	0	5K		Flash Flood
Centre County									
Countywide	23 24	2300EST 1000EST			0	0	20K		Flash Flood

Storm Data and Unusual Weather Phenomena

January 1999

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

PENNSYLVANIA, Central

Juniata County

Countywide	23	2345EST			0	0	5K		Flash Flood
	24	1000EST							

Mifflin County

Countywide	23	2345EST			0	0	3K		Flash Flood
	24	0700EST							

Northumberland County

Countywide	24	0430EST			0	0	5K		Flash Flood
		1000EST							

Union County

Countywide	24	0430EST			0	0	5K		Flash Flood
		1300EST							

Columbia County

Countywide	24	0930EST			0	0	5K		Flash Flood
		1400EST							

Heavy rains fell across the central mountains of Pennsylvania with most areas receiving in excess of 1 inch from late afternoon on the 23rd until early morning of Sunday the 24th. The snow pack which included a hard layer of ice held up to 2 inches of water in some spots. Mild temperatures helped to melt some of the snow and ice pack, but probably because of the high ice content, flooding was not as severe as would have been possible if the pack was entirely snow. Still, small streams overflowed their banks, ice jams caused problems and some basements and roads were flooded.

PENNSYLVANIA, East

PAZ054>055-060>062-067>071 Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia

01		0000EST			0	0	0	0	Drought
31		2359EST							

January 1999 finally broke a string of unseasonably dry months that prevailed during the second half of 1998 across most of Eastern Pennsylvania. Conditions did not look promising at the start of the month. On January 5th, the Delaware River Basin Commission (DRBC) issued a conditional drought emergency. Heavy precipitation on the 3rd gave the area a temporary reprieve from going straight into a drought emergency. The DRBC expected that threshold to be reached on January 25th. Streamflow on both the Lehigh and Delaware Rivers was only 50 percent of normal. In Bucks and Montgomery Counties the North Penn and North Wales Water Authorities were still requesting a voluntarily reduction of water consumption. Subsequent heavy precipitation events on the 15th, 18th and 24th started replenishing reservoir and streamflow levels. By the 15th, Philadelphia Suburban Water Company's Green Lane Reservoir's capacity had risen 10 percent. After the 24th's precipitation event, the Springton Lake Reservoir in Delaware County was approaching normal levels. On a county weighted average, January monthly precipitation was 182% to 267% of normal. It ranged from 6.0 inches in Philadelphia County to 8.8 inches in Monroe County. The monthly precipitation total was 5.42 inches at the Lehigh Valley International Airport and 4.89 inches at the Philadelphia International Airport.

PAZ060>062-067>071 Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia

02		2200EST			0	0	0		Wintry Mix
03		0700EST							

PAZ054>055

Carbon - Monroe

02		2300EST			1	0	0		Winter Storm
03		0900EST							

M85OU

Wintry precipitation affected Eastern Pennsylvania the evening of the 2nd and morning of the 3rd. It lasted the longest in the Poconos and claimed the life of an 85-year-old Saylorsburg man (Monroe County) who slipped on the ice and died from the injuries he sustained a couple of weeks later.

A very cold and dry air mass built into Eastern Pennsylvania on the 1st and the 2nd. As the high pressure system built into New England and the adjacent coastal waters, the circulation around it and a low pressure system over the Lower Ohio Valley started to bring in warmer air from the Atlantic Ocean. During the evening of the 2nd the air near the ground was cold enough for precipitation to start as light freezing rain and sleet from the Lehigh Valley south. In the Poconos precipitation started as snow and sleet. Precipitation intensity was light for the first several hours of this event. This permitted temperatures to rise above freezing before the onset of heavy rain. The only places this did not occur were in the valleys of the Poconos as several hours of heavy freezing rain occurred during the early morning of the 3rd. By mid-morning of the 3rd even the Poconos' air temperatures went above freezing. Water equivalents of ice and sleet around the Philadelphia area were only a few hundredths of an inch. This increased to one to two tenths of an inch in Berks County and the Lehigh Valley and as much as three-quarters of an inch in the

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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PENNSYLVANIA, East

valleys of the Poconos.

Because this occurred late on a weekend night, the number of reported vehicular accidents was not very high in the Lehigh Valley and the Poconos. In and around Philadelphia numerous fender benders were reported. A truck spreading salt even overturned. A six lane stretch of Roosevelt Boulevard within Philadelphia was closed because of icy conditions.

PAZ067>071

Chester - Montgomery - Bucks - Delaware - Philadelphia

03	0600EST 0900EST				0	0	0	0	Wind
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. This second low increased the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes) along and near the coast and increased the onshore flow. The strongest winds occurred during the first half of the morning of the 3rd and diminished as the low pressure system passed through New Jersey. A SKYWARN spotter estimated wind gusts of around 50 mph in Coatesville. Most other peak wind gusts were between 40 and 45 mph and included Philadelphia International Airport.

Berks County

Countywide	03	0600EST 1200EST			0	0	0	0	Heavy Rain
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Bucks County

Countywide	03	0600EST 1300EST			0	0	0	0	Heavy Rain
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Carbon County

Countywide	03	0600EST 1100EST			0	0	0	0	Heavy Rain
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Chester County

Countywide	03	0600EST 1200EST			0	0	0	0	Heavy Rain
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Delaware County

Countywide	03	0600EST 1200EST			0	0	0	0	Heavy Rain
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Lehigh County

Countywide	03	0600EST 1400EST			0	0	0	0	Heavy Rain
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Monroe County

Countywide	03	0600EST 1100EST			0	0	0	0	Heavy Rain
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Montgomery County

Countywide	03	0600EST 1200EST			0	0	0	0	Heavy Rain
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Northampton County

Countywide	03	0600EST 1400EST			0	0	0	0	Heavy Rain
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Philadelphia County

Countywide	03	0600EST 1200EST			0	0	0	0	Urban/Sml Stream Fld
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On the evening of the 2nd, as one low pressure system headed into the Great Lakes, a second low pressure system formed along its frontal boundary along the coastal plains of the South Atlantic States. Not only did this second low pressure system increase the pressure gradient (or surface pressure difference between it and a strong high pressure system over the Canadian Maritimes), but it also brought heavy rain into the region. Heavy rain fell for most of the morning of the 3rd and produced the usual urban and poor drainage flooding. In the Poconos until mid morning a combination of heavy rain and heavy freezing rain fell. In Philadelphia, the Frankford Creek at Castor Avenue crested at 6.6 feet at 950 a.m. EST. Flood stage is estimated at 6 feet. The creek was above flood stage from 9 a.m. through 1030 a.m. EST. The usual poor drainage flooding occurred elsewhere, but no other serious flooding was reported.

Storm totals for the entire event included 2.50 inches in Center Bridge (Bucks County), 2.46 inches in New Hope (Bucks County), 2.45 inches in Crum Creek (Delaware County), 2.40 inches in West Chester (Chester County), 2.37 inches in Perkasie (Bucks County) and Chadds Ford (Delaware County), 2.31 inches in Glenmoore (Chester County), 2.30 inches in Tobyhanna (Monroe County), 2.29 inches in Springtown (Bucks County), 2.04 inches in East Stroudsburg (Monroe County), 1.95 inches in

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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PENNSYLVANIA, East

Morgantown (Berks County) and Easton (Northampton County), 1.90 inches in Green Lane (Montgomery County), 1.85 inches in Pottstown (Montgomery County), 1.71 inches at the Lehigh Valley International Airport, 1.57 inches in Hamburg (Berks County), 1.52 inches in Lehighton (Carbon County), 1.51 inches at the Philadelphia International Airport, 1.49 inches at the Northeast Philadelphia Airport, 1.43 inches in Long Pond (Monroe County) and 1.24 inches in Reading (Berks County).

PAZ069>071

Bucks - Delaware - Philadelphia

03	1300EST 1700EST	0	0	0	Tidal Flooding
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The combination of runoff from the heavy rain and higher than normal tides caused by the strong onshore flow in Delaware Bay caused minor flooding along the Delaware River and tidal sections of its tributaries in southeast Pennsylvania. In Philadelphia, the tide peaked at 9.1 feet above mean lower low water at 130 p.m. EST.

PAZ060>062-067>071

Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia

08	0600EST	1	0	0	Wintry Mix
09	0700EST				

F66PH

PAZ054>055

Carbon - Monroe

08	1000EST	0	0	0	Winter Storm
09	0700EST				

A low pressure system developed over Texas during the morning of the 8th. A broad southwest flow of air preceding it overran a frontal boundary over the central Appalachians and spread snow into the region the morning of the 8th. Enough warm air moved aloft to change the snow to sleet and freezing rain. Since the low pressure system tracked across western Pennsylvania, the onshore flow brought in milder air into the eastern part of the state and changed the freezing rain to plain rain. The freezing rain lasted the longest in the valleys of the northwest Philadelphia suburbs as well as in Berks County and the Lehigh Valley. The change to plain rain occurred during the early morning hours of the 9th and all locations were above freezing by 9 a.m. EST.

Snow began around 6 a.m. EST on the 8th in Chester, Delaware and Philadelphia Counties, spread northeast and reached the Poconos by around 10 a.m. EST. Sleet started to mix in with the snow around 1 p.m. EST in and around Philadelphia and precipitation changed over to freezing rain around 4 p.m. EST. The mixing with sleet and changing to freezing rain took longer farther north and west in Pennsylvania and occurred mainly during the evening hours. The change to plain rain occurred between 3 a.m. EST and 7 a.m. EST in most areas and occurred last in the valleys. Accumulations averaged between 2 and 5 inches with some higher amounts in the Poconos. Ice accretions were generally one-tenth of an inch or less, except around one quarter of an inch in the Poconos.

The wintry precipitation occurred on a Friday day and led to numerous accidents. In Berks County icy conditions and accidents forced numerous road closures in Brechnock and Greenwich Townships including Interstate 78. In Brechnock Township, Pennsylvania State Route 568 was closed twice as vehicles became stuck on a hill. Schools were dismissed around noon. In the Lehigh Valley on the night of the 8th a truck driver was seriously injured after the truck crashed through a guardrail heading west on the Interstate 78 bridge over the Delaware River and plunged over 100 feet. Several vehicles drove into trees in Allentown. On the morning of the 9th a 66-year-old Emmaus woman froze to death in her unheated home. Around the Philadelphia Metropolitan Area over a thousand accidents occurred. Hundreds of minor accidents occurred in Montgomery and Bucks Counties alone. Two thousand people lost power after a Ford Aerostar slid into a pole. Many school districts dismissed their children early. In Chester County, government offices and businesses sent their employees home early. Snow emergencies were declared in three Montgomery County municipalities. From 9 p.m. EST until Midnight (while freezing rain was occurring) EST two multi-vehicle accidents shut down Interstate 95 from the Commodore Barry bridge to the Delaware State line. Numerous accidents also occurred on the Schuylkill Expressway, U.S. Route 202, the Blue Route and the Pennsylvania Turnpike. In Delaware County, two 70-year-old men died of heart attacks after shoveling the snow.

Accumulations included 6 inches in Long Pond (Monroe County), 4 inches in Spring City (Chester County) and Clifton Heights (Delaware County), 3.5 inches in Broomall (Delaware County), Wynnewood (Montgomery County), West Chester (Chester County) and Fricks and Neshaminy Falls (Bucks County), 3 inches in Vinemont (Berks County), Philadelphia, Perkasie (Bucks County), Lehighton (Carbon County) and Upper Macungie Township (Lehigh County) and 2.5 inches in Bath (Northampton County) and Lincoln Park (Berks County).

PAZ067>071

Chester - Montgomery - Bucks - Delaware - Philadelphia

09	0500EST 1300EST	0	0	0	Fog
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The southeast flow from the Atlantic Ocean passing over the fresh snow pack produced widespread dense fog across most of southeast Pennsylvania during the morning of the 9th. Visibilities were a quarter of a mile or less. Numerous accidents were reported in Montgomery and Bucks Counties. All arriving flights between 1130 a.m. EST and 100 p.m. EST were diverted from landing at Philadelphia International Airport. A cold frontal passage shifted the winds to the west and dissipated the fog during the early afternoon.

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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PENNSYLVANIA, East

Berks County

North Portion	09	1415EST 1800EST			0	0	0		Flood
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The combination of ice jams on the streams, snow and ice melt and showers with heavy rain caused some small stream flooding in northern areas of Berks County during the afternoon of the 9th. Two families were evacuated when an ice jam on the Mill Creek caused flooding in Maxatawny Township. One house had waters up to its basement rafters. The Maiden Creek also flooded onto Pennsylvania State Route 662 along the Perry/Richmond Township line. Storm precipitation totals reached 2 inches in Virginville and 1.73 inches in Hamburg. No serious injuries were reported.

Lehigh County

West Portion	09	1430EST 1730EST			0	0	0		Flood
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The combination of ice jams on the streams, snow and ice melt and showers with heavy rain caused some small stream flooding in western areas of Lehigh County during the afternoon of the 9th. Flooding was reported in Upper Macungie Township including along Schantz Road. Farther northeast, an ice jam along the Jordan Creek broke up before any flooding occurred in South Whitehall Township. Doppler radar estimates put storm total precipitation amounts around 2 inches. No serious injuries or damage were reported.

**PAZ054>055-
060>062-067>070**

Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware

13	1400EST			0	48	0		Winter Storm
15	1300EST							

PAZ071

Philadelphia

13	2100EST			0	72	0		Wintry Mix
15	0500EST							

Delaware County

Countywide	15	0500EST 1000EST			0	0	0		Heavy Rain
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Philadelphia County

Countywide	15	0500EST 1000EST			0	0	0		Heavy Rain
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A very protracted winter storm affected Eastern Pennsylvania from the 13th through the 15th. A combination of snow, sleet and heavy freezing rain fell across the region. Some heavy rain even fell across Delaware and Philadelphia Counties. About 10,000 homes and businesses lost power throughout the area, most in Berks County. Eastern Pennsylvania was fortunate that a large enough portion of the precipitation fell as snow and sleet and not freezing rain. The water equivalent of frozen precipitation (snow, sleet and/or freezing rain) was around 1.25 inches. The highest reported accrual of ice were around half an inch. Philadelphia and most of Delaware County escaped further damage as the temperatures rose above the freezing mark just as the heavy rain moved in.

A cold front moved through the state the afternoon and evening of the 13th. Extremely cold air moved south behind it. Unlike the usual pattern with cold frontal passages, precipitation occurred behind the front and slowly worked its way south from the late afternoon on the 13th into the very early morning of the 14th. Precipitation started as sleet and snow in the Poconos, but started as either freezing rain or sleet farther south. Amounts through daybreak on the 14th were very light, generally just a few hundredths of an inch. A weak low pressure system developed on the cold front in the Tennessee Valley on the 14th, but weakened as it moved east off the Delmarva Peninsula during the evening of the 14th. A very strong high pressure system built into northern New England on the 14th. The high moved offshore the evening of the 14th and the flow across the Middle Atlantic States became more easterly. This permitted warmer air to move into the state during the late afternoon and evening of the 14th just as a second and stronger low pressure system was getting organized over the Tennessee Valley. A secondary low formed near Norfolk during the early morning of the 15th and this not only accelerated the increase of warmer air, but also produced heavy precipitation.

During the day on the 14th, the cold air became deep enough for precipitation to fall as primarily snow and sleet. During the evening of the 14th, the transition back to freezing rain started, first in Philadelphia around 7 p.m. EST and spread north into the Poconos by midnight. Enough warm air moved in to change the freezing rain to rain in Philadelphia starting at 4 a.m. EST on the 15th, just as the heavy precipitation moved in. The change to plain rain occurred around 7 a.m. EST in the Lehigh Valley and around 9 a.m. EST in the Poconos. Precipitation changed back to snow as it ended in the Poconos. Snow and sleet accumulations were about an inch or two from the Lehigh Valley south and from 3 to 7 inches in the Poconos. Ice accretions were generally between one quarter and half an inch; a little less within Philadelphia. Storm total amounts averaged between 1.0 and 1.7 inches for the event, most of which fell during the morning of the 15th. Where precipitation was lucky enough to change to rain, there was some poor drainage flooding, but no serious problems were reported.

Most schools in Eastern Pennsylvania were closed on both the 14th and 15th. Countless vehicular accidents occurred. There were

Storm Data and Unusual Weather Phenomena

January 1999

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

PENNSYLVANIA, East

also dozens and dozens of "slip and fall" pedestrian accidents as numbers of people suffered either fractures or sprains. In Northampton County, about 2,200 homes lost power, mainly because of a vehicle that struck a utility pole. A 77-year-old man was found dead in his Lower Nazareth Township garage. It was suspected he suffered a heart attack while shoveling the snow and ice. In Berks County, 6,000 homes and businesses lost power; 900 after a sports utility vehicle slammed into a pole in Amity Township. About 2,700 homes also lost cable service. Pennsylvania State Route 662 was closed in Richmond Township because of downed wires. Numerous street lights were out in Brechnock, Cumru and Exeter Townships. Pennsylvania State Route 422 in Exeter township was described as a slow go. In Chester County, some roads were closed because of accidents. In Delaware County, emergency personnel responded to 450 calls between Midnight and 8 a.m. EST on the 15th. Malls closed early. In Bucks County, a jackknifed tractor trailer forced the closure of the southbound lanes of Interstate 95 for an hour. In Philadelphia, there were numerous "slip and fall" accidents. Schools within the city were also closed for two days.

Once temperatures went above freezing, the problems did not stop. The Commodore Barry (between Gloucester and Delaware Counties) and Walt Whitman (between Camden and Philadelphia Counties) Bridges were both closed during the morning and early afternoon (respectively) of the 15th because of ice falling from overhead cables and beams. Several vehicles suffered cracked windshields and/or dents. The two outside lanes of the Ben Franklin Bridge were also closed. Some of the worst driving conditions in the Philadelphia northwest suburbs occurred during the evening of the 15th after the rain and above freezing temperatures had washed away the salt. Temperatures dropped below freezing and standing water turned to black ice. Chester County (150 accidents in three hours) issued an advisory warning motorists to stay home.

Snow and sleet accumulations for the entire event included 6.5 inches in Long Pond (Monroe County), 3 inches in Lehighton (Carbon County) and East Stroudsburg (Monroe County). Most others were two inches or less. Event total water equivalents included 1.72 inches in Springtown (Bucks County), 1.70 inches in Long Pond (Monroe County), 1.67 inches in Valley Forge (Chester/Montgomery County Line), 1.49 inches in Lehighton (Carbon County), 1.41 inches in West Chester (Chester County), 1.29 inches in Palm (Montgomery County), 1.28 inches in Hamburg (Berks County), 1.20 inches in Reading (Berks County), 1.13 inches in Easton (Northampton County), 1.11 inches at the Northeast Philadelphia Airport and 0.98 inches at the Philadelphia International Airport.

Berks County

Countywide

18	1400EST	0	0	0	Flood
19	0100EST				

The combination of showers and thunderstorms with heavy rain and the already saturated ground caused flooding along some of the creeks and streams across Berks County. Flooding was reported along the Cacoosing, Maiden, Monocacy and Sacony Creeks. Parts of Pennsylvania State Route 662 were under water and several homes were evacuated in Richmond Township. Roads were also closed and flooded in and around the Reading area. The recent heavy precipitation during the past week caused the Dauberville Dam in Centre Township to overflow. Storm totals were not excessively large, but this event came just a couple of days after another heavy precipitation event. The combination caused the flooding. Rainfall totals from the 18th included 1.34 inches in Vinemont, 1.2 inches in Reading and Virgenville, 1.18 inches in Hamburg, 1.14 inches in Lincoln Park, 1.06 inches in Bethel and 0.87 inches in Morgantown.

Chester County

Exton

18	1500EST	0	0	0	Thunderstorm Wind (G50)
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A severe thunderstorm uprooted many trees in Exton (within West Whiteland Township) around 3 p.m. EST. The strong winds also shattered and broke several windows at a local bank.

PAZ060

Berks

18	1515EST	0	0	0	High Wind (G52)
	1600EST				

High winds accompanied a cold front as it moved through Berks County between 3 p.m. and 4 p.m. EST on the 18th. The highest wind gusts were reported in Shartlesville and Bernville. The peak wind gust at the Reading Regional Airport was 46 mph. No significant damage or injuries were reported.

PAZ067

Chester

18	1545EST	0	0	0	High Wind (G52)
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Damaging wind gusts accompanied a cold front as it moved through Chester County around 4 p.m. EST. The peak wind gusts averaged around 60 mph and knocked down numerous trees, limbs and wires in the county. The high winds knocked a tractor trailer on its side on Pennsylvania State Route 10 in Sadsbury Township. The trailer split in half. In Phoenixville, the top part and a rafter of a roof in an apartment building was torn off and struck the apartment building across the street. A downed tree damaged a trailer in West Goshen Township. Siding was ripped off several houses on Lincoln University in Lower Oxford Township. PECO Energy reported about 34,000 homes and businesses lost power in their southeast Pennsylvania service area; 24,000 of the outages were in Chester County. All power was restored by the evening of the 19th.

PAZ061>062

Lehigh - Northampton

18	1600EST	0	0	0	Wind
	1650EST				

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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PENNSYLVANIA, East

A powerful cold front accompanied by rain showers produced wind gusts of around 50 mph in the Lehigh Valley. The winds knocked down numerous limbs and wires as well as a few trees within Allentown. A downed limb caused 1,300 Bethlehem residents to lose power. About 3,200 Pennsylvania Power and Light residents lost power in Lehigh and Northampton Counties. The peak wind gust at the Lehigh Valley International Airport was 47 mph at 424 p.m. EST.

PAZ069

Bucks

18	1600EST 1700EST				0	0	0	High Wind (G52)
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Damaging wind gusts accompanied a cold front as it moved through Bucks County between 4 p.m. and 5 p.m. EST on the 18th. Winds gusted up to around 60 mph and knocked down numerous limbs and wires as well as numerous trees in the county. Several trees were knocked down in Bedminster and Tinicum Townships. In Sellersville, the high winds peeled back a portion of the roof of the Sellersville Fire Department. Sporadic tree and limb damage was reported throughout Upper Bucks County. In Doylestown, one tree fell onto a house. The worst damage to a home though occurred in Falls Township as a tree fell through the roof into a bedroom. The house was deemed uninhabitable. Elsewhere in Lower Bucks, trees were uprooted in Lower Makefield, Lower Southampton, Middletown, Morrisville, Tullytown and Yardley. A shed was destroyed in Morrisville and a vehicle was damaged by a fallen tree in Lower Makefield Township. PECO Energy and Pennsylvania Power and Light reported that about 12,000 homes and businesses lost power in the county. All power was restored by the morning of the 19th.

PAZ068

Montgomery

18	1600EST 1645EST				0	0	0	High Wind (G57)
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Damaging wind gusts accompanied a cold front as it moved through Montgomery County between 4 p.m. and 445 p.m. EST on the 18th. Winds gusted to around 65 mph and knocked down numerous limbs and wires as well as several trees in the county. The worst damage occurred in Franconia Township and at the Willow Grove Naval Station. In Franconia Township, several barns and roofs were damaged. The high winds pushed in the doors and then tore off the roof of the Genco Federated Warehouse. One hundred persons were inside, but there were no serious injuries. Sheets of metal roofing became unhinged from storage barns on the MOPAC property. One barn was completely destroyed. The roof was partially torn off a Leidy Road house and the winds blew out the back of the barn on the property. Numerous trees were knocked down on Cowpath Road, one fell on and damaged a home. At the Willow Grove Naval Station, part of the roof and the side panel of one building blew off. The flying debris damaged six helicopters. Downed trees and limbs blocked roads in Lower Gwynedd, Lower Pottsgrove and Whitpain Townships. About 5,500 Pennsylvania Power and Light and PECO customers lost power in the county. All power was restored by the morning of the 19th.

PAZ070

Delaware

18	1615EST 1645EST				0	1	0	High Wind (G50)
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Damaging wind gusts accompanied a cold front as it moved through Delaware County between 4 p.m. and 5 p.m. EST on the 18th. Winds gusted to around 55 mph and knocked down numerous limbs and wires as well as several trees in the county. One person was injured in Radnor as a tree limb broke through the vehicle's window. Service was suspended on the Marcus Hook Regional Rail Line. This was part of a power outage that affected about 20 AMTRAK, SEPTA and New Jersey Transit trains on the AMTRAK Northeast Corridor rail lines between 520 p.m. and 730 p.m. EST. Power was restored between Philadelphia and Wilmington at about 635 p.m. EST and the rest came back on line by 730 pm. EST. PECO Energy reported about 1,000 homes and businesses lost power in the county. All power was restored by the morning of the 19th. The wind gusted to 55 mph at Philadelphia International Airport at 439 p.m. EST.

Philadelphia County

Philadelphia

18	1636EST	0.2	20	0	18	0	Tornado (F0)
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A weak (F0 on the Fujita Scale) gustnado briefly touched down in South Philadelphia in Marconi Plaza and injured 18 persons about 436 p.m. EST. The most serious injury occurred to a 19-year-old pregnant woman whose pelvis was fractured by a fallen tree limb. The woman was trapped under the large limb for 30 minutes until rescue workers chainsawed her free. The fetus was unharmed. The other seventeen persons suffered minor injuries from flying debris. Trees, limbs and wires were pulled down along Oregon Avenue from the plaza through at least 10th Street. Windows were also shattered along Oregon Avenue. About 35,000 PECO customers lost power throughout their southeast Pennsylvania service area; 1,000 were within Philadelphia. About 20 AMTRAK, SEPTA and New Jersey Transit trains were stranded on the AMTRAK Northeast Corridor rail lines when power was lost between 520 p.m. and 730 p.m. EST. Power was restored between Philadelphia and Wilmington at about 635 p.m. EST and the rest came back on line by 730 pm. EST. The gustnado's path length was 0.2 miles and its path width was 20 yards. Elsewhere within the city, the cold frontal passage was accompanied by very strong gusty winds. The peak wind gust of 55 mph was recorded at Philadelphia International Airport at 439 p.m. EST and a peak wind gust of 45 mph was recorded at Northeast Philadelphia Airport at 449 p.m. EST.

Montgomery County

Countywide

18	1900EST				0	0	0	Flood
19	0100EST							

The combination of showers and thunderstorms with heavy rain and the already saturated ground caused flooding along some of the smaller creeks and streams across Montgomery County. Many roads adjacent to streams were closed. Hardest hit townships included Upper Pottsgrove and Plymouth. Storm totals were not excessively large and were mostly around one inch. In

Storm Data and Unusual Weather Phenomena

January 1999

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

PENNSYLVANIA, East

Wynnewood, the storm total was 1.41 inches. This event came just a couple of days after another heavy precipitation event. The combination caused the flooding.

Lehigh County

Countywide	18	1900EST			0	0	0		Flood
	19	0600EST							

Northampton County

Countywide	18	1900EST			0	0	0		Flood
	19	0200EST							

The combination of showers and thunderstorms with heavy rain and the already saturated ground caused flooding along some of the creeks and streams in the Lehigh Valley. Numerous roads were closed. Hardest hit was Northampton County. In Palmer Township flooding was reported along the Lehigh River and the Schoeneck and Bushkill Creeks. Voluntary evacuations were recommended for residents in low-lying areas along the Bushkill Creek. About eight township roads were impassable. The flooding was described as severe in Hanover and East Allen Townships along Pennsylvania State Routes 512 adjacent to the Monocacy Creek. Numerous roads were closed in Forks and Moore Townships. In Easton, flood waters caused the collapse of a basement wall. In Lehigh County, flooding along area streams led to road closures in South Whitehall (including U.S. Routes 309), Whitehall and Salisbury Townships. The Little Lehigh River in Allentown crested at 5.74 feet at 230 a.m. EST on the 19th. Its flood stage is 5 feet. The river was above flood stage from midnight through 6 a.m. EST on the 19th. Storm totals were not excessively large, but this event came just a couple of days after another heavy precipitation event. Snow and ice melt also contributed. The combination caused the flooding. Rainfall totals from the 18th included 1.15 inches in Easton and 1.13 inches in Williams Township.

Chester County

East Portion	18	1930EST			0	0	0		Flood
		2100EST							

The combination of showers and thunderstorms with heavy rain and the already saturated ground caused flooding along some of the river and streams across the eastern part of Chester County. Pennsylvania State Route 100 at the intersection of Pennsylvania State Route 926 was closed because of flooding along the Brandywine Creek. The East Branch of the Brandywine Creek at Downingtown was above its 7 foot flood stage from 730 p.m. through 9 p.m. EST on the 18th. It crested at 7.06 feet at 8 p.m. EST. Storm totals were not very heavy rain, but this came just a couple of days after another heavy precipitation event. Rainfall totals included 1.17 inches in West Chester.

**PAZ054>055-
060>062-067>071**

Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia

	31	2359EST			0	0	0		Unseasonably Wet
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January 1999 finally broke a string of unseasonably dry months that prevailed during the second half of 1998 in most of Eastern Pennsylvania. On a county weighted average, January monthly precipitation was 182% to 267% of normal. It ranged from 6.0 inches in Philadelphia County to 8.8 inches in Monroe County. The monthly precipitation total was 5.42 inches at the Lehigh Valley International Airport and 4.89 inches at the Philadelphia International Airport.

PENNSYLVANIA, Northeast

**PAZ038>040-
043>044-047>048**

Bradford - Susquehanna - Wayne - Wyoming - Lackawanna - Luzerne - Pike

	02	1700EST			0	0	0		Ice Storm
	03	0900EST							

A low pressure system intensified across the Ohio Valley and lower Great Lakes region during the afternoon and evening hours of the 2nd. As it did so, it spread a mix of snow, sleet, and patchy freezing rain across northeastern Pennsylvania late in the afternoon. Snow accumulations were fairly minor in this event, generally only an inch or less. The reason for this was that the precipitation quickly changed over to sleet and then freezing rain from south to north. Steady freezing rain persisted across much of northeastern Pennsylvania during the overnight and early morning hours from the 2nd into the 3rd.

Freezing rain resulted in a substantial build up of ice. The hardest hit regions stretched from the Poconos into areas just north and east of Scranton. Ice accumulations to nearly one inch over parts of this area brought down trees and power lines. Power outages were widespread across Wayne, Pike, eastern Susquehanna, and northern Lackawanna counties. Department of Transportation and State Police officials also reported very treacherous travel conditions, especially early on Sunday the 3rd.

Warmer air pushed into northeastern Pennsylvania from the south and west during the early morning hours on the 3rd. This milder air changed freezing rain over to light rain showers and drizzle. Finally by late morning on the 3rd, temperatures pushed above freezing in the normally colder sections of the Poconos.

PAZ038>040-043

Bradford - Susquehanna - Wayne - Wyoming

	08	1200EST			0	0	0		Winter Storm
	09	1400EST							

A low pressure system developed over the lower Ohio Valley early on the 8th, then tracked northeastward across New York

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	January 1999
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PENNSYLVANIA, Northeast

State, eventually reaching northern New England by the evening of the 9th. This storm spread substantial amounts of Gulf moisture northward into northeastern Pennsylvania. As this moisture encountered the cold air mass in place, a variety of wintery type precipitation again resulted.

Snow began to fall over much of northeastern Pennsylvania during the late morning and early afternoon hours of the 8th. Amounts of 1 to 3 inches were common across the northern tier counties before snow began to change over to sleet and freezing rain late in the day.

A mixture of sleet, freezing rain, and even light rain occurred over Bradford, Susquehanna, and Wayne counties during the overnight hours from the 8th into the 9th. Many areas received a thin glaze of ice on top of already fallen snow. This created very hazardous travel conditions.

During the day on the 9th, as the main storm center pulled east into New England, colder air began to wrap back into central New York from the northwest. The result was another burst of snow. Additional accumulations of 2 to 4 inches were seen in many areas, especially the higher elevations. Storm totals of 6 to 7 inches of snow plus ice were observed over the Endless Mountain region of Susquehanna county and northern Wayne county near Pleasant Mount.

Snow tapered off from west to east on the afternoon on the 9th.

**PAZ038>040-
043>044-047>048**

Bradford - Susquehanna - Wayne - Wyoming - Lackawanna - Luzerne - Pike

13	2000EST									
15	1100EST			0	0					Winter Storm

A series of low pressure systems tracked eastward from the Ohio Valley across southern Pennsylvania and eventually off the New Jersey coast from the afternoon of the 13th through late in the day on the 15th. A consistent stream of moisture flowed northward during this time frame into a very cold arctic air mass in place over northeastern Pennsylvania. The end result was heavy snowfall for most areas, as well as periods of sleet and freezing rain.

Snow began falling on the evening on the 13th, then continued through much of the day on the 14th. Steady and heavy snow at times affected the region during the morning and early afternoon hours of the 14th. In addition, temperatures were unusually cold for such a significant snowfall in this part of the country. Around daybreak on the 14th, temperatures were around zero in many areas. As snow fell heavily during the day, readings only warmed up into the single digits and lower teens.

Snow tapered off to flurries, very light sleet, or freezing drizzle for a time during the afternoon and evening of the 14th. After midnight and lasting well into the morning on the 15th, precipitation intensity picked up once again. Precipitation type was a mixed bag of sleet, freezing rain, and snow. A coating of ice formed on top of already fallen snow in these areas, adding to the travel hazards and causing scattered power outages. Icy precipitation did go back to snow for a period later in the morning on the 15th.

Storm total snow accumulations generally ranged from 5 to 9 inches across northeastern Pennsylvania. The highest amounts stretched across the northern tier counties, with 8 to 9 inch accumulations common from central Susquehanna county into the higher elevations of southern Wayne and Pike counties.

Snow finally tapered off and ended by midday on the 15th.

PAZ038>039-043-047

Bradford - Susquehanna - Wyoming - Luzerne

24	0400EST									
25	0500EST			0	0					Flood

The combination of locally heavy rainfall and snowmelt caused minor flooding to take place throughout the Susquehanna River Basin in northeastern Pennsylvania.

Minor flooding was seen along a major tributary of the Susquehanna River, the Tunkhannock Creek in Wyoming county. The Lazy Brook subdivision took on some water during the evening around the time of crest in Tunkhannock. Damage, however, was quite minor.

Along the main stem portion of the Susquehanna River, minor flooding also occurred from Towanda downstream to Wilkes-Barre. At Meshoppen in Wyoming county, some roads immediately adjacent to the river needed to be closed for several hours in the afternoon and evening of the 24th. Otherwise, only minor lowland and flood plain impacts were noted.

Waters gradually receded back under flood stage throughout the Susquehanna Basin early in the morning on the 25th.

PENNSYLVANIA, Northwest

PAZ001>003

Northern Erie - Southern Erie - Crawford

02	1200EST									
	2300EST			0	14	90K				Winter Storm

Snow changed to freezing rain and sleet, then briefly to rain as temperatures rose above freezing, and back to snow again. Snow accumulations averaged around six inches. Temperatures then dropped into the teens and the wet snow and ice refroze, creating significant ice on the ground, roads and sidewalks. The icy conditions and low temperatures, with wind chills as low as thirty degrees below zero, continued throughout the first week of January resulting in many minor traffic accidents, injuries from falls on

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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PENNSYLVANIA, Northwest

the ice and school closings.

PAZ001>003

Northern Erie - Southern Erie - Crawford

08	0900EST				0	0			Winter Storm
09	0900EST								

Snow in the morning and afternoon of the 8th changed to sleet and freezing rain, then back to snow in the evening, and the snow continued into the morning of the 9th. Snow accumulations averaged eight to nine inches with an average of 1/4 inch of ice. A number of minor car accidents occurred.

PAZ001>002

Northern Erie - Southern Erie

10	2300EST				0	0			Heavy Snow
11	0900EST								

Heavy lake effect snow accumulated six to seven inches near the lakeshore and up to 18 inches inland (Franklin Center).

PAZ001>003

Northern Erie - Southern Erie - Crawford

13	0130EST				0	0	15K		Winter Storm
	1200EST								

Freezing rain and sleet changed to snow in the early morning hours. Most areas had 1/4 inch of ice and an average snow accumulation of three to five inches with eight inches reported in the city of Erie (Erie County). Roads were ice and snow covered and extremely slippery.

PAZ001>003

Northern Erie - Southern Erie - Crawford

14	2200EST				0	0			Heavy Snow
15	0700EST								

Heavy snow accumulated an average of six to eight inches.

PAZ001>003

Northern Erie - Southern Erie - Crawford

16	0000EST				0	0	150K		Heavy Snow
17	2359EST								

Snow and ice cover that had accumulated since late December averaged 20 inches at the lakeshore to over 30 inches inland. The weight caused structures to collapse and damage to trees. Pipes burst because of the cold temperatures.

Crawford County

Countywide

23	1700EST				0	0	50K		Flood
24	2300EST								

Snowmelt and rain that fell for several days caused flooding of streams, including French Creek, several roads and a few basements.

PENNSYLVANIA, West

**PAZ007>009-
013>016-020>023-
029>032**

**Mercer - Venango - Forest - Lawrence - Butler - Clarion - Jefferson - Beaver - Allegheny - Armstrong -
Indiana - Washington - Westmoreland - Greene - Fayette**

02	0800EST				2	1	250K		Winter Storm
03	0400EST								

A strong winter storm approached the region from the south central U.S., bringing a mix of snow, sleet and freezing rain to western Pennsylvania. Across southwest Pennsylvania, between 1 and 3 inches of snow fell before the precipitation turned to freezing rain. Ice accumulations of between 1/4 and 1/2 inch were reported across the majority of the area. Farther north, across northwest Pennsylvania (generally north of Interstate 80), snowfall amounts of between 3 and 6 inches were common before the precipitation turned to freezing rain. In addition to the snowfall, these areas also picked up between 1/4 to 1/2 inch of ice accumulation.

This combination of ice and snow produced numerous accidents on roads across western Pennsylvania. Two fatalities were reported as a woman and her 8-year-old daughter were killed after their car spun out of control on an icy section of the Pennsylvania Turnpike in Allegheny County. Winds picked up in intensity across the area on the evening of the 2nd with Fayette and Westmoreland Counties (which border the western slopes of the Laurel Highlands) reporting the most damage. Winds estimated at between 60 and 80 MPH downed trees, power lines and even telephone poles that were already weighed down with a thick accumulation of ice. As a result, an estimated 30,000 people were without power in those two counties. In Latrobe, Westmoreland County, winds blew a section of roof off of the American Legion building. In Fairchance, Fayette County, a restaurant completely collapsed due to the force of the winds. Also in Fayette County, a newly constructed garage near the town of Bridgeport was blown 15 feet off of its foundation and collapsed onto two parked vehicles. F43VE, F8VE

**PAZ007>009-
013>016-020>023-
029>032**

**Mercer - Venango - Forest - Lawrence - Butler - Clarion - Jefferson - Beaver - Allegheny - Armstrong -
Indiana - Washington - Westmoreland - Greene - Fayette**

08	0500EST				0	0			Winter Storm
09	0400EST								

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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PENNSYLVANIA, West

A winter storm spread a mix of snow and freezing rain across all of western Pennsylvania. By the afternoon of the 8th, snowfall amounts ranged from 2 to 4 inches across the west central Pennsylvania counties of Mercer, Venango, Clarion, Forest and Jefferson. These snowfall totals increased to 4 to 7 inches across the remainder of southwest Pennsylvania. By the evening of the 8th the snow had turned over to freezing rain across the entire region, which continued into the early morning hours of the 9th. Most areas across western Pennsylvania reported ice accumulations of between 1/4 and 1/2 inch.

**PAZ007>009-
013>016-020>023-
029>032**

**Mercer - Venango - Forest - Lawrence - Butler - Clarion - Jefferson - Beaver - Allegheny - Armstrong -
Indiana - Washington - Westmoreland - Greene - Fayette**

13	0800EST								
15	1000EST				0	0			Winter Storm

A powerful winter storm brought another combination of snow and freezing rain to all of western Pennsylvania. The precipitation remained mostly snow across the west central Pennsylvania counties of Mercer, Forest and Venango where between 10 and 12 inches of snow were reported. Across southwest Pennsylvania the snow mixed with freezing rain and snowfall totals dropped off quickly as you moved from north to south. Clarion, Lawrence, Butler, Armstrong and Beaver counties all reported between 3 and 6 inches of accumulation, while the extreme southwest corner of Pennsylvania received mostly freezing rain. The freezing rain continued through the overnight hours of the 14th, with the majority of counties across western Pennsylvania reporting between 1/4 and 1/2 inch of ice accumulation.

**PAZ021-023-023-
029>030-032**

Allegheny - Indiana - Washington - Westmoreland - Fayette

18	1135EST						85K		High Wind (G62)
	1250EST				0	0			

An intensifying area of low pressure moving across the Great Lakes trailed a strong cold front to the south. This front moved through western Pennsylvania during the early afternoon hours of the 18th. This front was accompanied by high winds gusting to over 60 MPH, along with a mix of rain, sleet and snow, as it passed across the area.

These high winds produced some damage across the area as part of a garage, along with several trees, were downed near South Strabane, Washington County. In Jacksonville, Indiana County, the high winds blew down a barn. Part of a barn, along with part of the roof from the adjacent house, were blown down in the Marion Center area of Indiana County. Several reports of downed trees were also received from across Indiana and Westmoreland Counties. One downed tree in Lower Burrell, Westmoreland County, fell onto a wooden deck, damaging the deck and attached awning.

Clarion County

New Bethlehem	23	1150EST							Flood
		1600EST			0	0			

Butler County

Northwest Portion	23	1231EST							Flood
		2200EST			0	0			

Lawrence County

Countywide	23	1430EST							Flood
	24	1200EST			0	0			

The combination of rainfall, melting snow, and ice jams caused several creeks and streams to rise out of their banks across portions of west central Pennsylvania. In Clarion County, an ice jam on Red Bank Creek near New Bethlehem caused some minor flooding. Slippery Rock Creek in northwest Butler County overflowed, producing some localized flooding in the vicinity of Moores Corners. In Lawrence County, Slippery Rock Creek flooded several local roadways in the southeast part of the county near McConnells Mill. Additional minor flooding was also reported in Lawrence County on the Neshanock Creek and Shenango River, where several roads were also closed.

PAZ015

Clarion

24	0957EST								Flood
		1800EST			0	0			

The Clarion River at Cooksburg briefly rose to its flood stage of 13.0 feet on the morning of the 24th. By the early evening of the 24th, the river fell back below flood stage. Only localized minor flooding occurred, with no damage reported.

Mercer County

3 NE Greenville	24	1255EST							Flood
	25	1000EST			0	0			

Rainfall and associated runoff forced Little Shanango River from its banks near Greenville. As a result, a small portion of Methodist Road was closed northeast of Greenville.

PUERTO RICO

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

January 1999

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

RHODE ISLAND

Bristol County

Bristol	03	1100EST 1800EST			0	0	Heavy Rain
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Kent County

Coventry to Conimicut	03	1100EST 1800EST			0	0	Heavy Rain
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Newport County

Tiverton	03	1100EST 1800EST			0	0	Heavy Rain
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Providence County

Providence	03	1100EST 1800EST			0	0	Heavy Rain
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Washington County

Westerly	03	1100EST 1800EST			0	0	Heavy Rain
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RIZ001>007 Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport

	03	1300EST 1900EST			0	0	Strong Winds
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RIZ005-007 Bristol - Newport

	03	1500EST 1530EST			0	0	High Wind (G63)
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A developing low pressure system moving from the mid Atlantic states to southern New England brought strong southeast winds and heavy rain to Rhode Island. The highest winds were reported in Newport County, where gusts over 60 mph were observed. Acquidnick Island Marina, with an open exposure to the south, reported a gust to 73 mph. Tiverton had a gust to 65 mph and small branches were blown down. A spotter in Portsmouth reported a gust to 63 mph. In Bristol County, a gust to 60 mph in Bristol blew a storm window off the side of a house. Some of the other higher gusts reported include 51 mph on Block Island and 46 mph in the city of Providence and at the Point Judith Coast Guard Station.

Rainfall amounts of 2 to 3 inches were common, and much of that fell in a period of less than 12 hours. As much as 2.85 inches fell in Cumberland, with 2.80 inches in Clayville, 2.56 inches in Cranston, and 2.35 inches in downtown Providence. There were no reports of flooding.

Bristol County

Bristol	15	0900EST 1700EST			0	0	Heavy Rain
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Kent County

Warwick	15	0900EST 1700EST			0	0	Heavy Rain
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Providence County

Providence	15	0900EST 1700EST			0	0	Heavy Rain
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RIZ001>007 Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport

	15	0900EST 1700EST			0	0	Strong Winds
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Washington County

Exeter	15	0900EST 1700EST			0	0	Heavy Rain
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More than 2 inches of rainfall, combined with rapid snowmelt, resulted in considerable urban street flooding. The problem was aggravated by storm drains which were clogged by snow and ice. Thunderstorms during the afternoon brought heavy downpours, adding to the localized flooding. Street flooding was most severe in Providence County. In Providence, Branch and Hawkins Avenues were flooded, and a portion of the roadway was washed out. In Johnston, Highland Avenue flooded, along with several nearby homes. In Cranston, Oaklawn Avenue flooded and several cars were submerged.

Strong southeast winds gusted as high as 55 mph. A spotter in Tiverton reported a peak wind gust of 52 mph.

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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RHODE ISLAND

RIZ001>007 Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport

18	1900EST 2200EST				0	0			Strong Winds
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RIZ002 Southeast Providence

18	1930EST				0	0			High Wind (G52)
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Cranston

Strong south winds gusted to 55 mph ahead of an approaching cold front. The highest gust reported was 60 mph, at a local television station in Cranston. Some of the other stronger wind gusts reported include 55 mph at Block Island and Barrington, 50 mph in Newport, 47 mph in Providence, and 46 mph in Coventry. The strong winds downed power lines in Cranston and Warwick, resulting in scattered power outages.

SOUTH CAROLINA, Central

Aiken County

Monetta	23	1312EST 1313EST			0	0	0	0	Thunderstorm Wind (G75)
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A strong downburst associated with a squall line destroyed an open end pole garage, severely damaged an outbuilding, and minor damage to roofs on poultry buildings. Several trees were also down.

Lancaster County

2 N Lancaster	23	1522EST 1523EST			0	0	0	0	Thunderstorm Wind (G60)
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A downburst associated with a squall line did light to moderate damage to a couple of mobile homes. Some trees were also down.

Chesterfield County

Jefferson	23	1600EST 1601EST			0	0	0	0	Thunderstorm Wind (G50)
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Sheriff reported trees down in and around the Jefferson area.

Chesterfield County

Patrick	23	1615EST 1616EST			0	0	0	0	Thunderstorm Wind (G50)
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Sheriff reported trees down in and around Patrick.

SOUTH CAROLINA, North Coastal

NONE REPORTED.

SOUTH CAROLINA, Northwest

SCZ001>008-010>013-019 Northern Oconee - Northern Pickens - Northern Greenville - Southern Oconee - Southern Pickens - Southern Greenville - Spartanburg - Cherokee - Anderson - Abbeville - Laurens - Union - Greenwood

02	1800EST				0	0	20.0M		Ice Storm
03	0000EST								

A shallow cold arctic airmass in place ahead of a developing storm system in the southern Plains set the stage for a significant ice storm for most of the Upstate during the evening of the 2nd. Patchy sleet began during the late morning and became more widespread and heavier during the afternoon - mixing at times with freezing rain. Sleet accumulated to nearly one inch across the foothills before changing to freezing rain in the early evening. Freezing rain continued through the evening, heavy at times and accumulated to damaging levels. Downed trees and power lines caused widespread power outages, totalling 160,000 across the Upstate. Much of the damage to homes was due to ice damming and to a lesser extent, fallen trees.

Pickens County

Central	23	1000EST			0	0	30K		Lightning
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Lightning caused a fire which burned a barn and its contents, including an antique car.

SCZ001>008 Northern Oconee - Northern Pickens - Northern Greenville - Southern Oconee - Southern Pickens - Southern Greenville - Spartanburg - Cherokee

31	1200EST 2359EST				0	0			Snow And Sleet
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Unusually strong arctic high pressure centered over New England ridged south into the western Carolinas during the morning of the 31st, ushering in very cold and dry air. The cold airmass was deep enough this time for the precipitation associated with a low pressure system tracking east across the Gulf Coast States to fall mainly as snow, although sleet was mixed in at times. Snow and sleet accumulations by late evening ranged between 1 and 3 inches.

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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SOUTH CAROLINA, South Coastal

NONE REPORTED.

SOUTH DAKOTA, Central and North

SDZ007>008-011-021 Marshall - Roberts - Day - Grant

01	1600CST								
02	0400CST				0	0			Winter Storm

Heavy snow of 6 to 8 inches fell across part of northeast South Dakota from the late afternoon hours of the 1st to the early morning hours of the 2nd. Strong north winds of 15 to 30 mph combined with temperatures in the single digits generated wind chills from 25 to 40 below and visibilities below 1/4 of a mile at times. Holiday travel along Interstate-29 and Highway 12 was most affected by this winter storm. There were some travel delays and some stranded motorists as a result. Some snowfall amounts included, 6 inches at Kidder, Victor, Sisseton, Webster, Waubay, Wilmot, and 8 inches at Britton and near Peever.

SDZ007>008-011-021 Marshall - Roberts - Day - Grant

17	1800CST								
18	0800CST				0	0			Blizzard

One to 4 inches of snowfall combined with winds of 30 to 45 miles an hour brought blizzard conditions to part of northeast South Dakota. Highway 12 and Interstate 29 were most affected by the low visibilities. There was a seven car pileup on Highway 12 near Andover with minor injuries. As a result, traffic was shut off in the westbound lanes for a few hours. Over 200 people were stranded overnight at a restaurant near Summit. There was also a rollover north of Summit which resulted in minor injuries. One traveler said the visibility was frequently near zero.

SDZ008-020>023 Roberts - Codington - Grant - Hamlin - Deuel

21	1900CST								
22	1200CST				0	0			Fog

Widespread dense fog and freezing drizzle created treacherous driving conditions across part of northeast South Dakota from the evening of the 21st to around noon on the 22nd. The freezing drizzle ended in the early morning hours of the 22nd. As a result, slippery conditions developed, especially across Hamlin, Deuel, and Codington counties. Many vehicles slid into the ditch. There were a few accidents resulting in minor injuries. Numerous activities were canceled the evening of the 21st and many schools had delayed starts on the 22nd.

SOUTH DAKOTA, Southeast

SDZ038>040-052>056-058>062-064>071 Beadle - Kingsbury - Brookings - Jerauld - Sanborn - Miner - Lake - Moody - Aurora - Davison - Hanson - Mccook - Minnehaha - Douglas - Hutchinson - Turner - Lincoln - Bon Homme - Yankton - Clay - Union

01	0600CST								
02	1800CST				0	0			Winter Storm

A major winter storm brought 4 to 10 inches of new snow, with 20 to 40 mph winds which caused blowing and drifting snow and dangerous wind chills. Visibilities were reduced to less than 1/2 mile at times. Actual temperatures dropped to as low as 20 below zero with wind chills as cold as 55 below zero. Travel became difficult and hazardous, and was greatly curtailed. Otherwise major problems were few on the holiday weekend, as most people heeded warnings and did not travel during the storm.

SDZ040-056 Brookings - Moody

15	1500CST								
	1800CST				0	0			Freezing Rain

Freezing rain produced only slight ice accumulations, but the resulting icy roads significantly disrupted travel.

SDZ054-056-059>062-066>067 Miner - Moody - Davison - Hanson - Mccook - Minnehaha - Turner - Lincoln

20	0500CST								
	1000CST				0	0			Freezing Rain

Freezing rain produced only slight ice accumulations, but the resulting icy roads significantly disrupted travel.

SOUTH DAKOTA, West

SDZ028>029 Central Black Hills - Southern Black Hills

06	0200MST								
07	0000MST				0	0			Winter Storm

8 TO 10 INCHES OF SNOW FELL

A FAST MOVING SHORTWAVE MOVED THROUGH THE REGION. FROM 4 TO 10 INCHES WERE REPORTED THROUGHOUT THE ENTIRE BLACK HILLS DURING A 24 HOUR PERIOD WITH THE GREATEST AMOUNTS (8 TO 10 INCHES) IN THE SOUTHERN AND CENTRAL BLACK HILLS.

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TENNESSEE, Central									
Decatur County									
Parsons	17	1905CST			0	0			Hail (1.00)
			Spotter reported quarter size hail.						
Stewart County									
Countywide	17	1915CST			0	0			Thunderstorm Wind (G50)
			Power lines and trees down throughout the county.						
Cheatham County									
Ashland City	17	1921CST			0	0			Thunderstorm Wind (G50)
			Numerous trees and power lines down.						
Perry County									
Linden	17	1922CST			0	0	50K		Thunderstorm Wind
			Power lines were blown down. There was damage in the northwest part of the county at the Deerpoint Campground. It is located at Crooked Creek and the Tennessee River. Some homes lost shingles, a number of campers at Deerpoint were overturned. A boat dock was damaged. The 240 foot long, and 64 foot wide boat dock was lifted off its moorings and placed atop several campers.						
Cheatham County									
Cheap Hill	17	1925CST			0	0			Hail (0.75)
			Dime size hail observed.						
Cheatham County									
Cheap Hill	17	1925CST			0	0			Thunderstorm Wind (G50)
			Large tree limbs were blown down on Highway 12.						
Humphreys County									
Waverly	17	1930CST			0	0			Thunderstorm Wind (G50)
			Trees and power lines were down.						
Dickson County									
Dickson	17	1944CST			0	0	5K		Thunderstorm Wind (G52)
			Spotter reported 60 mph wind gust. Newspaper account of metal outbuilding destroyed on Bellwood Drive, and also damage was reported to aluminum bleachers at Tenssco Park. The bleachers were picked up by high winds and hung on a fence.						
Montgomery County									
Clarksville	17	1953CST			0	0	5K		Thunderstorm Wind
			Several trees broken in half and front porch of home destroyed.						
Davidson County									
Bellevue	17	1955CST			0	0			Hail (0.75)
			Dime size hail reported.						
Cheatham County									
Pleasant View	17	2000CST			0	0			Thunderstorm Wind (G50)
			Power lines were down.						
Maury County									
Columbia	17	2005CST 2007CST			0	0	4M		Thunderstorm Wind
			About 350 homes and 25 businesses received damage from the straight line winds in Columbia. A large tree fell on a house. 30 to 40 homes and businesses received serious damage. At Columbia's Shady Brook Mall huge panes of glass at the entrance were blown in, and there was extensive roof damage. 40 mature trees were uprooted at the Graymere Country Club. There was \$400,000 worth of damage to the Pepsi Cola plant alone.						
Davidson County									
Nashville	17	2010CST			0	0			Hail (0.75)
			Dime size hail reported at South Nashville at the intersection of Old Hickory Boulevard and Franklin Road.						
Hickman County									
Countywide	17	2015CST 2016CST			0	0			Hail (0.75)
			Dime size hail reported countywide.						
Hickman County									
1.3 N Only	17	2015CST 2016CST			0	0			Thunderstorm Wind (G50)
			Trees and power lines were down at Bucksnot.						

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TENNESSEE, Central									
Robertson County									
Springfield	17	2015CST			0	0			Thunderstorm Wind (G50)
			Trees and power lines were down.						
Davidson County									
Nashville Metro Arpt	17	2016CST			0	0			Thunderstorm Wind (G60)
			70 mph thunderstorm wind gust recorded at the airport.						
Sumner County									
Gallatin	17	2029CST			0	0			Thunderstorm Wind (G50)
			Several large tree limbs were blown down.						
Sumner County									
Gallatin	17	2030CST			0	0			Hail (0.75)
			Off duty NWS employee reported dime size hail.						
Wilson County									
5 SSE Mt Juliet	17	2030CST			0	0	1.5K		Thunderstorm Wind
			A tree blown was down onto a wooden fence in the back yard of a NWS employee. Shingles were loosened on the roof.						
Rutherford County									
Christiana	17	2040CST			0	0			Hail (0.75)
			Spotter reported dime size hail.						
Maury County									
Cross Bridges	17	2050CST			0	0	5K		Thunderstorm Wind (G50)
			Several trees were blown down along with damage to 2 gas stations at Cross Bridges.						
Rutherford County									
Murfreesboro	17	2050CST			0	0			Hail (0.75)
			Spotter reported dime size hail.						
Maury County									
Columbia	17	2055CST			0	0			Hail (1.00)
			Quarter size hail reported.						
Smith County									
Elmwood	17	2057CST			0	0			Hail (0.75)
			Spotter reported dime size hail.						
Cannon County									
Woodbury	17	2100CST			0	0			Hail (0.75)
			Dime size hail reported.						
Lawrence County									
5 S Lawrenceburg	17	2100CST			0	0			Hail (1.00)
			Quarter size hail was reported.						
Smith County									
7 SW Carthage	17	2100CST			0	0	1K		Thunderstorm Wind
			High winds pulled a section of a white picket fence from the ground on Flat Rock Rd. Trees were blown down.						
Smith County									
Dixon Spgs	17	2100CST			0	0	5K		Thunderstorm Wind
			A barn roof was blown off.						
Trousdale County									
Countywide	17	2100CST			0	0			Hail (0.75)
			Dime size hail reported throughout the county.						
Trousdale County									
Hartsville	17	2100CST			0	0			Thunderstorm Wind (G50)
			Power lines and trees were down near Hartsville.						
Cannon County									
Sheybogan	17	2105CST			0	0			Hail (0.75)
			Dime size hail was reported.						

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
TENNESSEE, Central									
Macon County									
Lafayette	17	2105CST			0	0			Hail (0.75) Dime size hail was reported.
Macon County									
Southwest Portion	17	2105CST 2106CST			0	0	50K		Thunderstorm Wind 2 barns, several outbuildings and a house trailer were blown over. Numerous trees were blown down.
Clay County									
Hermitage Spgs	17	2115CST			0	0			Thunderstorm Wind (G50) Several trees and power lines were down.
Giles County									
Bodenham	17	2116CST			0	0			Hail (0.75) Dime size hail reported.
Putnam County									
Baxter	17	2117CST			0	0			Hail (0.88) Nickel size hail reported.
Clay County									
Celina	17	2118CST			0	0			Hail (0.75) Dime size hail was reported.
Marshall County									
Lewisburg Arpt	17	2130CST			0	0			Hail (0.75) Dime size hail was reported.
Sumner County									
West Portion	17	2130CST			0	0			Thunderstorm Wind (G50) House and barn destroyed, trailer flattened, and numerous trees were blown down between Portland and Gallatin.
White County									
Sparta	17	2130CST			0	0			Thunderstorm Wind (G50) Power lines and trees were down across several roads.
Overton County									
Livingston	17	2131CST			0	0			Hail (0.75) Dime size hail reported.
Overton County									
Rickman	17	2131CST			0	0			Hail (0.75) Dime size hail reported.
Jackson County									
Gainesboro Arpt	17	2140CST			0	0			Hail (1.75) Golf ball size hail observed.
Dickson County									
Dickson Muni Arpt	17	2145CST			0	0			Hail (0.75) Dime size hail was observed.
Giles County									
Pulaski	17	2145CST 2146CST			0	0			Hail (2.50) Tennis ball size hail was observed.
Jackson County									
Gainesboro	17	2145CST			0	0			Thunderstorm Wind (G50) Trees and power lines were down.
Giles County									
Pulaski	17	2147CST			0	0	10K		Hail (4.50) Softball size hail damaged numerous vehicles.

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TENNESSEE, Central									
Giles County									
Pulaski Arpt	17	2155CST			0	0			Hail (2.00)
									Hen egg size hail was observed.
Putnam County									
Cookeville	17	2155CST			0	0			Thunderstorm Wind (G50)
									Power lines were down.
Fentress County									
Jamestown	17	2200CST			0	0	10K		Thunderstorm Wind
									Barn was blown down. Several trees were blown down, including 2 trees down on homes.
Pickett County									
Byrdstown	17	2200CST			0	0			Thunderstorm Wind (G50)
									Several power lines and trees were blown down.
Lincoln County									
Fayetteville Arpt	17	2218CST			0	0			Hail (0.75)
									Dime size hail reported.
Grundy County									
Altamont	17	2350CST			0	0			Hail (0.88)
									Nickel size hail reported.
Franklin County									
Winchester Muni Arpt	18	0000CST			0	0			Hail (0.88)
									Nickel size hail reported.
Stewart County									
3 W Dover	17	1906CST	0.1	100	0	0	30K		Tornado (F1)
									F1 tornado took the roof off a Cee-Bee Grocery store. Employees in the store sought shelter in the freezer.
Houston County									
Countywide	17	1910CST 1912CST			0	0			Thunderstorm Wind (G50)
									Newspaper account of trees and power lines down around the county.
Montgomery County									
3.4 E Woodlawn to 3.7 ENE Woodlawn	17	1928CST 1929CST	0.6	250	0	0	20K		Tornado (F1)
									F1 tornado at HWY 79 and N. Liberty Church Rd. A hay barn lost a metal roof. A tobacco barn was destroyed. Utility poles were snapped. Trees were uprooted.
Robertson County									
6.2 ESE Adams to 6.1 E Adams	17	2000CST	0.5	50	0	0	50K		Tornado (F1)
									F1 tornado at 4751 Jones Chapel Rd. Lost shingles on roof of his home. The tobacco barn was destroyed. The greenhouse was damaged. A few trees were uprooted.
Benton County									
3.3 W Camden to 2.6 S Faxon	22	0320CST 0335CST	15	220	1	5	1M		Tornado (F3)
									This tornado resulted in the only fatality in Middle Tennessee from the severe weather outbreak of January 22,1999. The tornado killed a 50 year old woman who left her shelter in a double wide modular home located on Cedar Grove Road. She went outside to get her dogs inside her home, and that's when the tornado struck and killed her. Her husband remained inside the home and survived. There were 5 injuries from the tornado. A 1600 square foot frame home was moved 10 to 12 feet from its foundation. 12 homes were destroyed, 33 homes sustained damage and 5 businesses were damaged. Power lines and trees were blown down. The winds picked up a 7500 pound Cadillac, and hurled its engine 300-400 yards into a field. The chassis, its empty metal skin, was hurled even further. F500U
Montgomery County									
Clarksville to 4.3 NE Clarksville	22	0415CST	4.3	880	0	5	72.7M		Tornado (F3)

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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TENNESSEE, Central

An F3 tornado struck Clarksville at 415 AM, travelled through the downtown area and dissipated near St. Bethlehem. There were 5 injuries, 2 of them were for broken bones. Clarksville has a population of 89,000 people is Tennessee's fifth largest city. 25,000 people were without power. The Tornado Warning was issued by the NWS at 354 AM CST. The NOAA Weather Radio alerted the sleepy residents of Clarksville and urge them to take cover immediately. The tornado ripped apart a 5 block area of downtown Clarksville and tore up buildings in Austin Peay State University. Once the tornado ravaged the city, downtown Clarksville resembled bombed-out London during World War 2. Bricks and glass were strewn everywhere. The photo editor of the Leaf-Chronicle newspaper s, Fred Dye, said "It looked like somebody walked through with a broom and knocked over whatever was loose enough to knock down." The Montgomery county court house was in ruins. The City Fathers planned on rebuilding the court house. It was last rebuilt after a fire in 1878. The Leaf-Chronicle newspaper office was severely damaged. The newspaper had to set up a temporary office in Hopkinsville, KY. 22 buildings were heavily damaged at Austin Peay State University. Also, several old churches were heavily damaged in Clarksville. The Madison Street United Methodist Church lost its spires and roof. It will take about 2 years to rebuild the church. The Trinity Episcopal Church lost its roof. Police closed off downtown Clarksville from 6 PM-6 AM in order to prevent looting. The National Guard was on duty as well. On January 23, FEMA Director James Lee Whitt toured the devastation. He exclaimed, "Wow!" "It's like someone dropped a bomb on it. That's just what it look like." There was a total of 124 buildings destroyed and 562 buildings damaged. These figures included residential, commercial, government, public and buildings at Austin Peay.

Humphreys County

Gorman to McEwen	22	0443CST 0449CST	4	220	0	1	500K		Tornado (F2)
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Downed trees were reported from Gorman to McEwen. The hardest hit area was McEwen with 4 homes totally destroyed, 8 homes having severe damage, and 38 homes receiving minor damage. 8 to 10 outbuildings were destroyed and 60 trees were lost. 8 cars or trucks were damaged or destroyed. A man suffered a broken neck in his trailer.

Benton County

Camden	22	0325CST 0326CST			0	0			Hail (1.75)
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SKYWARN Spotter reported golf ball size hail on Main Street in downtown Camden.

Decatur County

South Portion	22	0400CST			0	0			Hail (0.75)
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Sheriff's department reported dime size hail in southern Decatur county.

Stewart County

Dover	22	0404CST			0	0	15K		Thunderstorm Wind
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A tree fell on a trailer.

Houston County

Countywide	22	0405CST 0406CST			0	0			Thunderstorm Wind (G50)
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Numerous trees were blown down around the county.

Houston County

Erin	22	0405CST 0406CST			0	0			Hail (1.50)
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Ping pong ball sized hail reported.

Stewart County

Countywide	22	1020CST			0	0			Flood
	23	0400CST							

Several roads were flooded especially in the Bumpus Mills area and Leatherwood.

Benton County

Countywide	22	1035CST			0	0			Flood
	23	0400CST							

Several county roads were under water.

Coffee County

Manchester	22	1100CST 1101CST			0	1			Thunderstorm Wind (G50)
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A metal roof from an H&R Block building was lifted and hurled into vehicles in downtown Manchester. There was one injury. The roof was estimated to be 20 feet by 20 feet, was made of aluminum and 2 by 4s.

Decatur County

South Portion	22	1321CST			0	0			Thunderstorm Wind (G50)
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Trees and power lines were down. Shingles were blown off roofs in southern Decatur county.

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
					Killed	Injured	Property		
TENNESSEE, Central									
Montgomery County									
St Bethlehem	22	1630CST			0	0			Flood
	23	0400CST							
Several roads closed due to high water.									
Lincoln County									
Flintville	22	1740CST			0	0	10K		Thunderstorm Wind
Strong thunderstorm winds destroyed one outbuilding.									
Smith County									
Defeated	22	1855CST			0	0			Thunderstorm Wind (G50)
		1856CST							
Trees were blown down.									
Benton County									
Countywide	22	1905CST			0	0			Thunderstorm Wind (G50)
		1910CST							
Numerous trees were down. Property damage reported at Holladay and Big Sandy. Some trees fell on homes.									
Marshall County									
Countywide	22	2205CST			0	0			Flood
	23	0400CST							
Numerous county roads were under water.									
Lincoln County									
Countywide	22	2228CST			0	0			Flood
	23	0400CST							
Scattered secondary roads were closed due to high water, and bridges were blocked off.									
Sumner County									
Countywide	22	2228CST			0	0			Flood
	23	0400CST							
Many small streams were out of their banks around the county. Many roads were flooded. At least 2 cars with people in them had to be rescued. 4.2 inches of rain fell in a 7 hour period ending Sunday morning January 23. People had to be removed from their homes by boats. The Sumner Regional Medical Center in Gallatin had water in the auditorium.									
Wilson County									
Countywide	22	2228CST			0	0			Flood
	23	0400CST							
Scattered secondary roads around the county were closed due to high water. Bridges were blocked off.									
Jackson County									
Countywide	22	2331CST			0	0			Flood
	23	0530CST							
Many county roads were under high water. The flood waters pushed debris up on many roads.									
Putnam County									
Cookeville	22	2331CST			0	0			Flood
	23	0530CST							
Low lying areas were flooded near Cookeville.									
Smith County									
Countywide	22	2335CST			0	0	100K		Flood
	23	0530CST							
Many roads were flooded around the county. It would cost \$100,000 to repair the county roads.									
TNZ059-062 Williamson - Rutherford									
	23	0000CST			0	0			Flood
	24	0600CST							
The Harpeth River Crested at 30.1 feet on January 24. It flooded several homes and businesses in Franklin, TN. 10 homes and 9 businesses reported flood damage. Harpeth Chrysler-Plymouth-Jeep-Eagle car dealership had to move their vehicles to higher ground. There was knee deep water in the showroom.									
Cheatham County									
Countywide	23	0004CST			0	0			Flood
		0400CST							

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

TENNESSEE, Central

Scattered secondary roads were closed, and bridges were blocked off.

Giles County

Countywide	23	0004CST 0400CST			0	0			Flood
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Many homes, churches, factories, markets, roads and parks were flooded around the county. More than 6 inches of rain fell in a 5 hour period.

Lawrence County

Countywide	23	0004CST 0400CST			0	0			Flood
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Scattered secondary roads were closed, and bridges were blocked off.

Maury County

Countywide	23	0004CST 0400CST			0	0			Flood
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Scattered secondary roads were closed, and bridges were blocked off.

Robertson County

Countywide	23	0030CST 0400CST			0	0			Flood
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6 or 7 roads around the county were closed due to high water.

TENNESSEE, East

TNZ042

Northwest Greene

02	1000EST				0	0	25K	High Wind
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Trees downed due to gradient winds. Most were in the McDonald, Camp Creek and Cedar Creek areas.

TNZ012>018-035>047-067>074-081>087-098>102

Scott - Campbell - Claiborne - Hancock - Hawkins - Sullivan - Johnson - Morgan - Anderson - Union - Grainger - Hamblen - Northwest Coker - Coker/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

06	0700EST 1700EST				0	0		Winter Storm
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Generally less than 2 inches of snow fell across East Tennessee, resulting in numerous school closings and traffic accidents. In Hamblen County, a school bus skidded 250 feet on snow-slickened Nightingale Road, traveled across Collinson Ford Road, then rolled down an embankment. None of the 32 students was injured.

Morgan County

Deer Lodge	17	2325EST			0	0	15K	Thunderstorm Wind
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Several trees down.

Grainger County

3 SE Rutledge	18	0100EST			0	0		Lightning
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A lightning strike on the home of George Russell on Lakeshore Road caused major damage. Bricks were knocked off the exterior of the house, collapsing a retaining wall and blowing electrical outlets out of the walls inside. Mr. Russell was shaken, but not injured.

Scott County

Countywide	18	2325EST			0	0		Hail (0.88)
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Campbell County

5 SE La Follette	18	2345EST			0	0		Hail (1.25)
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Knox County

4 E Knoxville	19	0030EST			0	0		Hail (1.00)
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Blount County

5 W Maryville	19	0030EST			0	0		Hail (0.75)
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Marion County

Kimball	19	0035CST			0	0		Hail (0.75)
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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		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TENNESSEE, East									
Sequatchie County									
Lone Oak	19	0040CST			0	0			Hail (1.00)
Loudon County									
3 NW Loudon	19	0045EST			0	0			Hail (0.75)
			3/4" hail near Roane County line.						
Jefferson County									
Jefferson City	19	0100EST			0	0			Hail (0.75)
Hamblen County									
Cherokee Lake	19	0100EST			0	0			Hail (0.75)
Jefferson County									
White Pine	19	0130EST			0	0		15K	Thunderstorm Wind
			Trees downed.						
Sevier County									
Kodak	19	0135EST			0	0			Hail (1.75)
Hamilton County									
Signal Mtn	19	0140EST			0	0			Hail (1.00)
Hamblen County									
2 NW Morristown	19	0140EST			0	0			Hail (0.75)
Hawkins County									
4 W Church Hill	19	0145EST			0	0		20K	Thunderstorm Wind
			Trees downed.						
Hamilton County									
Chattanooga	19	0210EST			0	0			Hail (1.25)
Mcminn County									
1 NE Athens	19	0240EST			0	0		20K	Thunderstorm Wind
			Trees and large limbs downed.						
Bradley County									
2 N Cleveland	19	0245EST			0	0			Hail (1.75)
Polk County									
Conasauga	21	2210EST			0	0			Hail (0.75)
Bledsoe County									
2 E Pikeville	23	0225CST 0325CST			0	0	20K		Thunderstorm Wind
			Four power poles downed on upper East Valley Road.						
Hamilton County									
Chattanooga	23	0340EST			0	0		25K	Thunderstorm Wind
			Trees downed.						
Marion County									
North Portion	23	0930CST			0	0			Flash Flood
			Numerous roads closed due to flooding.						
Rhea County									
Countywide	23	0950EST			0	0			Flash Flood
			Lots of standing water on roads. A trailer park in Evensville was flooded.						
Bradley County									
Countywide	23	1000EST			0	0			Flash Flood
			Numerous roads and highways closed from flooding.						
Hamilton County									
East Ridge	23	1000EST			0	0			Flash Flood
			West Chickamauga Creek flooded a campground, closing some buildings and roads.						
Mcminn County									
Athens	23	1000EST			0	0			Flash Flood

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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TENNESSEE, East

A house was flooded, shorting out the electricity and causing a fire. The combined flood/fire damage totalled \$15,000.

TNZ040>041

Northwest Cocco - Cocco/Smoky Mountains

31	1300EST 2200EST				0	0	25K	40K	High Wind
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Strong winds downed numerous trees throughout the county. Numerous power outages reported due to trees falling on lines. At approximately 5 pm in Parrottsville, a barn on Happy Hollow Road was blown down, temporarily blocking one lane of traffic.

TENNESSEE, West

Lake County

Tiptonville	17	1740CST 1745CST			0	0	0.01K		Hail (0.75)
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Tipton County

Covington	17	1740CST 1745CST			0	0	1.8K		Hail (2.75)
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Tipton County

Covington	17	1740CST 1745CST			0	0	5K		Thunderstorm Wind
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Several trees were blown down.

Tipton County

Munford	17	1740CST 1745CST			0	0	0.10K		Hail (1.00)
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Shelby County

Millington	17	1748CST 1755CST			0	0	0.75K		Hail (1.75)
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Lauderdale County

2 W Halls to 1.5 E Halls	17	1755CST 1805CST	3.5	75	0	11	2M		Tornado (F2)
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The tornado formed just west of Halls and travelled east. A mobile home park was damaged west of Halls with eight homes ripped apart. In Halls, several homes sustained damage to roofs, porches and siding. The tornado moved through the north end of the business district flattening two business with several other buildings including a church suffering major damage. As the tornado exited Halls, it damaged roofs, toppled trees and demolished a solitary mobile home. A total of 49 structures were damaged or destroyed.

Dyer County

Countywide	17	1800CST 1815CST			0	0	10K		Thunderstorm Wind
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Numerous trees were knocked down across the county.

Crockett County

1 S Alamo to 2 N Gadsden	17	1809CST 1825CST	10	125	0	4	1.6M		Tornado (F3)
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The tornado began just south of Alamo and tracked northeast damaging the south side of Alamo before moving into rural areas. Eleven conventional homes, five mobile homes and one commercial building were destroyed. Seventy-three other homes and buildings were damaged.

Weakley County

Martin to Dresden	17	1810CST 1830CST			0	0	40K		Thunderstorm Wind (G55)
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Three business and a church were damaged in Dresden. Numerous trees and power lines were blown down.

Fayette County

1 S Hickory Withe	17	1815CST 1820CST			0	0	0.05K		Hail (0.88)
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Hail ranged in size from dime to nickel.

Haywood County

2 SE Eureka to 3 E Hillville	17	1815CST 1825CST	7	200	0	2	100K		Tornado (F3)
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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
TENNESSEE, West									
The tornado started southeast of Eureka in Haywood County and travelled northeast crossing into Madison County eventually reaching the north part of the city of Jackson. In Haywood county, seven houses, five mobile homes, five barns and seven sheds were destroyed. In Madison county, the tornado damaged or destroyed several homes in Mercer and Denmark. While moving toward Jackson, the tornado struck the south side of McKellar-Sipes Regional Airport damaging the ASOS equipment located at the airport. The new Tennessee National Guard armory and a hangar were flattened. Two UH-60 helicopters and two other helicopters were destroyed with four additional helicopters damaged. In Jackson, a total of 38 apartments were destroyed.									
Obion County									
Union City	17	1815CST 1820CST			0	0	10K		Thunderstorm Wind
Several large trees and power lines were knocked down.									
Shelby County									
Memphis	17	1815CST 1820CST			0	0	0.01K		Hail (0.75)
Dime size hail fell in downtown Memphis.									
Gibson County									
Humboldt	17	1820CST 1825CST			0	0	75K		Thunderstorm Wind
A couple of houses had their roofs blown off. Some windows were also blown out. A crop duster was flipped up. Some large tree limbs were knocked down as well.									
Haywood County									
Dancyville	17	1820CST 1825CST			0	0	0.10K		Hail (1.00)
Madison County									
3 W Bemis to 3 NW Beech Bluff	17	1825CST 1840CST	16	500	6	106	10M		Tornado (F4)
The tornado developed just east of Bemis and tracked northeast across the southern part of the city of Jackson. A shopping center suffered severe damage while a nearby funeral home was demolished except for the interior rooms. More than 200 homes were obliterated or heavily damaged while 300 other homes sustained lesser damage. The building housing the school buses for the county was destroyed and 55 school buses were damaged. A high-school baseball stadium was destroyed and the football stadium was damaged. F9PH, F81PH, F46OT, M43PH, M43MH, F29PH									
Madison County									
2 W Mercer to 1 W Jackson	17	1825CST 1840CST	15	600	0	0	25M		Tornado (F3)
The tornado started southeast of Eureka in Haywood County and travelled northeast crossing into Madison County eventually reaching the north part of the city of Jackson. In Haywood county, seven houses, five mobile homes, five barns and seven sheds were destroyed. In Madison county, the tornado damaged or destroyed several homes in Mercer and Denmark. While moving toward Jackson, the tornado struck the south side of McKellar-Sipes Regional Airport damaging the ASOS equipment located at the airport. The new Tennessee National Guard armory and a hangar were flattened. Two UH-60 helicopters and two other helicopters were destroyed with four additional helicopters damaged. In Jackson, a total of 38 apartments were destroyed.									
Fayette County									
3 SE La Grange to 5 SE La Grange	17	1835CST 1840CST	2	350	0	0	5K		Tornado (F1)
The tornado started in extreme southeast Fayette county and moved northeast. Fourteen homes including several mobile homes were destroyed and another 27 homes were damaged near Saulsbury. More than thirty power poles were knocked down.									
Hardeman County									
3 S Grand Jct to 3.5 W Middleton	17	1840CST 1900CST	10	350	1	4	400K		Tornado (F1)
The tornado started in extreme southeast Fayette county and moved northeast. Fourteen homes including several mobile homes were destroyed and another 27 homes were damaged near Saulsbury. More than thirty power poles were knocked down. F41MH									
Chester County									
Henderson	17	1845CST 1850CST			0	0	0.75K		Hail (1.75)
Henry County									
Paris	17	1845CST 1850CST			0	0	0.01K		Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TENNESSEE, West									
Henry County									
Paris	17	1845CST 1850CST			0	0	12K		Thunderstorm Wind
About a dozen power poles were blown down.									
Henderson County									
4.3 SW Blue Goose to 2 N Lexington	17	1900CST 1920CST			1	4	2.6M		Thunderstorm Wind
The same thunderstorm complex that produced a tornado in Madison county continued to move northeast and produced downburst winds over parts of Henderson county. One person was killed and several buildings were destroyed south of Blue Goose. Nine houses, 26 mobile homes and 22 other structures were destroyed. Another 134 houses, 61 mobile homes and 52 farm structures were damaged. F72PH									
Henderson County									
4 N Lexington	17	1900CST 1905CST			0	0	0.10K		Hail (1.00)
Carroll County									
Atwood to 2 E Mc Lemoresville	17	1905CST 1915CST	10	75	1	1	750K		Tornado (F1)
The tornado started in Atwood and moved northeast. Two mobile homes were destroyed in McLemoresville. Two mobile homes were destroyed and eight others were damaged in Atwood. A house under construction was destroyed near hollow Rock. Numerous trees and power lines were blown down. M49MH									
Shelby County									
Memphis	17	1905CST 1910CST			0	0	0.25K		Hail (1.25)
Hail was reported near the Wolfchase Galleria Mall.									
Hardeman County									
2 W Middleton to 3 E Middleton	17	1915CST 1935CST			0	0	10K		Thunderstorm Wind
A church steeple was damaged. Numerous trees were blown down.									
Mcnairy County									
Selmer	17	1925CST 1930CST			0	0	0.10K		Hail (1.00)
Chester County									
Countywide	17	1930CST 1945CST			0	0	10K		Thunderstorm Wind
Some trees and power lines were knocked down across the county.									
Mcnairy County									
Countywide	17	1930CST 1945CST			0	0	20K		Thunderstorm Wind
One home was damaged near Selmer. Several trees and power lines were blown down over the county.									
Obion County									
Union City	21	2040CST 2045CST			0	0	10K		Thunderstorm Wind
A commercial building lost part of its roof.									
Weakley County									
Dresden	21	2100CST 2105CST			0	0	5K		Thunderstorm Wind
An outbuilding collapsed due to the thunderstorm winds.									
Lake County									
Tiptonville	21	2328CST 2335CST	0.1	10	0	0	0.05K		Tornado (F0)
A tornado briefly touched down near Tiptonville producing little damage.									
Fayette County									
La Grange	22	0156CST 0205CST			0	0	5K		Thunderstorm Wind
A few trees were blown down.									

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
TENNESSEE, West									
Fayette County									
Williston	22	0205CST 0210CST			0	0	0.05K		Hail (0.88)
Madison County									
Beech Bluff	22	0220CST 0225CST			0	0	5K		Thunderstorm Wind
Several trees were knocked down.									
Henderson County									
Blue Goose to Cedar Grove	22	0240CST 0250CST			0	0	1.5K		Hail (1.75)
Madison County									
Leighton	22	0258CST 0305CST			0	0	0.01K		Hail (0.75)
Hardeman County									
Bolivar	22	0300CST 0305CST			0	0	0.10K		Hail (1.00)
Madison County									
Jackson	22	0304CST 0310CST			0	0	0.01K		Hail (0.75)
Carroll County									
Westport to Clarksburg	22	0315CST 0325CST			0	0	0.75K		Hail (1.75)
Hail ranged in size from dimes near Clarksburg to golfballs near Westport.									
Chester County									
6 W Henderson to Henderson	22	0317CST 0330CST			0	0	0.75K		Hail (1.75)
Hail ranged in size from pea to golfball.									
Carroll County									
Buena Vista	22	0325CST 0330CST			0	0	5K		Thunderstorm Wind
Several trees were knocked down.									
Madison County									
Pinson	22	0325CST 0330CST			0	0	0.10K		Hail (1.00)
Fayette County									
Somerville	22	0340CST 0345CST			0	0	0.01K		Hail (0.75)
Shelby County									
Memphis	22	0345CST 0350CST			0	0	0.05K		Hail (0.88)
Henderson County									
Countywide	22	0346CST 0400CST			0	0	0.75K		Hail (1.75)
Hail ranged in size from marble to golfball across the county.									
Henderson County									
Countywide	22	0346CST 0400CST			0	0	10K		Thunderstorm Wind
Several trees and power lines were blown down.									
Shelby County									
Memphis	22	0420CST			0	0	5K		Thunderstorm Wind
A large metal building was destroyed.									
Shelby County									
Cordova to Eads	22	0425CST 0435CST	3.5	100	0	0	300K		Tornado (F1)

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
TENNESSEE, West									
The tornado started in the eastern edge of Cordova and tracked northeast. Two homes were destroyed. Several homes, two businesses and one school sustained roof damage. Several outbuildings were also destroyed.									
Madison County									
1 W Jackson	22	0430CST 0435CST			0	0	25K		Thunderstorm Wind
One mobile home was destroyed.									
Fayette County									
Oakland	22	0600CST 0605CST			0	0	0.01K		Hail (0.75)
Shelby County									
Eads	22	0606CST 0610CST			0	0	5K		Thunderstorm Wind
One house lost part of its roof.									
Fayette County									
Oakland	22	0620CST 0625CST			0	0	5K		Thunderstorm Wind
A few trees were knocked down.									
Hardeman County									
Bolivar	22	0710CST 0715CST			0	0	2K		Thunderstorm Wind
A couple of large trees were knocked down.									
Carroll County									
Countywide	22	0800CST 1300CST			0	0	5K		Flash Flood
Numerous roads were flooded across the county as heavy rains fell Thursday night and Friday. Some water reached the yards of a few houses.									
Henderson County									
Countywide	22	0800CST 1300CST			0	0	5K		Flash Flood
Several roads were flooded across the county after nearly 4 inches of rain fell in a 12 hour period. Some farmland was also flooded.									
Chester County									
Montezuma to Henderson	22	0815CST 0835CST			0	0	0.11K		Hail (1.00)
Hail ranged in size from dimes near Henderson to quarters near Montezuma.									
Chester County									
Montezuma to Henderson	22	0815CST 0835CST			0	0	0.11K		Hail (1.00)
Hail ranged in size from dimes near Henderson to quarters in Montezuma.									
Henderson County									
Lexington	22	1100CST 1105CST			0	0	0.01K		Hail (0.75)
Chester County									
Henderson	22	1125CST 1130CST	0.1	10	0	0	0.10K		Tornado (F0)
A tornado briefly touched down near Henderson producing little damage.									
Hardeman County									
Pocahontas	22	1205CST 1210CST	0.1	10	0	0	0.10K		Tornado (F0)
A tornado briefly touched down near Pocahontas producing little damage.									
Menairy County									
Selmer	22	1225CST 1230CST			0	0	25K		Thunderstorm Wind
A barn was destroyed and a fence was blown over. Several trees were also knocked down.									

Storm Data and Unusual Weather Phenomena

January 1999

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

TENNESSEE, West

Hardin County

Saltillo	22	1535CST 1540CST			0	0	5K	Thunderstorm Wind
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Several trees were knocked down.

TEXAS, Central

Menard County

Menard	29	0234CST			0	0		Hail (0.75)
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Tom Green County

8 S Christoval	29	0815CST			0	0		Hail (1.75)
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Runnels County

Miles	29	0845CST			0	0		Hail (0.88)
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Taylor County

4 S Abilene	29	0853CST			0	0		Hail (0.75)
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Tom Green County

Harriet	29	0920CST			0	0		Hail (0.75)
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Mcculloch County

Brady	29	1045CST			0	0		Hail (0.88)
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Brown County

Lake Brownwood	29	1140CST			0	0		Hail (0.75)
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A cold front triggered a line of thunderstorms across West Central Texas during the morning of the 29th. While most of the hail was dime or nickel size, hail up to the size of golf balls was reported across southern Tom Green County south of Christoval.

TEXAS, Central Southeast

Walker County

3 NE Huntsville to 5 NE Huntsville	01	1300CST 1310CST	2.5	75	0	7	125K	Tornado (F1)
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Tornado touchdown in the Acres Hills subdivision just NE of Huntsville. One mobile home completely destroyed. Three people inside escaped with fairly minor injuries (cuts and abrasions, separated shoulder). A large oak tree bisected another trailer down the road pinning the resident who was later Life Flighted to Houston and had a broken leg and ankle, and a collapsed lung. Three other residents sustained minor injuries (lacerations, etc). Numerous trees and roof damage was noted throughout the remainder of the subdivision.

Walker County

5 SE Huntsville	01	1305CST			0	0	74K	Thunderstorm Wind
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Medium sized oak tree uprooted and fell on mobile home. Uncompleted home framework collapsed.

Walker County

Riverside	01	1323CST 1324CST	0.3	25	0	1	10K	Tornado (F0)
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Brief tornado touchdown in the Hickory Hills subdivision caused barn damage and one unconfirmed injury.

Trinity County

7 S Trinity to 12 S Trinity	01	1341CST 1347CST	5	500	0	0	750K	Tornado (F2)
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Funnel reported over the Trinity River bridge. Storm abruptly took a right turn along the eastern shore of Lake Livingston. Tornado touched down 7 miles south of Trinity. Effected Timber Bay, Whiterock Estates, Azteck Cove and Timber Cove subdivisions. Major damage caused by trees falling on residences/vehicles. Strongest damage (and not necessarily caused by falling trees) occurred at Whiterock Estates. Resident in Timber Bay (where the first touchdown occurred) had anemometer that clocked 110 mph winds before it was blown away. Mostly F1 damage with F2 damage in Whiterock Estates.

Trinity County

Groveton	01	1408CST			0	0	5K	Hail (0.75)
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Trinity County

Groveton	01	1408CST 1410CST	0.5	50	0	0	40K	Tornado (F0)
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DPS & sheriff reported around 20 homes and 30 mobile homes damaged from falling trees in Groveton.

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
TEXAS, Central Southeast									
Montgomery County									
Porter to 5 E Splendor	01	2233CST	8	75	0	0	75K		Tornado (F1)
Tornado touched down from Live Oak Estates (Porter area) to near Splendor. Moderate house damage and trees down throughout the area.									
Harris County									
Webster	01	2249CST			0	0	3K		Hail (0.75)
Harris County									
Houston	01	2324CST 2334CST			0	0	5K		Hail (0.75)
Hail for 10 minutes in downtown Houston.									
Harris County									
Houston	01	2324CST			0	0	5K		Thunderstorm Wind (G52)
60 mph gusts in downtown Houston.									
Liberty County									
12 ESE Devers to 10 E Devers	01	2340CST 2345CST	4	100	0	0	175K		Tornado (F2)
The tornado appeared to have formed just on the other side of a canal in the Dunning's Farm area. At this point three large houses were completely destroyed with widespread tree damage. The tornado moved NE and dragged heavy farm tractors (approximately 50000 lbs) over 10 to 15 feet. The tornado moved across a wide open field and crossed into Jefferson county.									
Galveston County									
Gilchrist	02	0020CST 0022CST	0.5	75	0	0	35K		Tornado (F1)
The initial touchdown occurred just off Hwy 87 at the intersection of Car Street and Featherstone Street where it ripped off the roof of a dilapidated house. In addition, a motorized boat was tossed from this location and found approximately 150 to 200 feet (from interview with resident) down the street. Numerous pieces of wood were embedded into the ground. Street signs were also downed by high winds.									
Liberty County									
Countywide	02	0020CST			0	0	15K		Thunderstorm Wind
Numerous trees blown down across the entire county.									
Galveston County									
1 N Gilchrist	02	0026CST 0027CST	0.3	75	0	0	25K		Tornado (F0)
The initial touchdown was near the beach where it partially destroyed a beach home on stilts and a moderate sized radio tower. The most significant damage occurred to a house where approximately 100 windows were blown out. In addition high winds rolled a motor home about 10 feet.									
Harris County									
Houston	13	1636CST			0	0	5K		Hail (0.75)
Hail at Beltway 8 & Telephone Rd.									
Burleson County									
1 N Chriesman	22	0215CST			0	0	15K		Hail (1.75)
Golfball hail along northern portion of county bordering Milam County line.									
Burleson County									
Caldwell	22	0230CST			0	0	4K		Hail (0.75)
Damage to shutters and a pickup.									
Brazos County									
College Station	22	0310CST 0315CST			0	0	10M		Hail (4.50)
Golfball size hail was dominate across the Bryan/College Station area, however, there were also softball sized hail mixed in. Widespread damage to windows, cars, and roofs.									
Brazos County									
Millican	22	0434CST			0	0	3K		Hail (0.75)
Grimes County									
2 NNE Bedias	22	0506CST			0	0	15K		Hail (1.75)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>TEXAS, Central Southeast</u>									
Walker County									
Crabbs Prairie	22	0530CST			0	0	15K		Hail (1.75)
Polk County									
Corrigan	22	0545CST			0	0	15K		Hail (1.75)
Liberty County									
Cleveland	22	0757CST			0	0	4K		Hail (0.75)
San Jacinto County									
2 WSW Shepherd	22	0811CST			0	0	7K		Hail (1.25)
Houston County									
Countywide	29	0442CST 0805CST			0	0	5K		Flash Flood
Minor street flooding countywide.									
Houston County									
Countywide	29	0832CST 1430CST			0	0	5K		Flash Flood
Many roads flooded across the county. Road closures include: FM 229, HWY 70, and HWY 75.									
Trinity County									
Countywide	29	1020CST 1125CST			0	0	5K		Flash Flood
High water reported on HWY 19, HWY 94, and FM 287.									
San Jacinto County									
North Portion	29	1100CST 1300CST			0	0	5K		Flash Flood
Some roads flooded across northern portions of the area.									
Walker County									
Countywide	29	1200CST 1315CST			0	0	5K		Flash Flood
FM 230 closed due to high water. Minor street flooding across the remainder of the county.									
Burleson County									
Caldwell	29	1700CST			0	0	4K		Hail (0.75)
<u>TEXAS, Extreme West</u>									
TXZ055>056 El Paso - Hudspeth									
	21	1100MST 1800MST			0	0			High Wind (G68)
High winds associated with a strong coldfront moving through the area brought widespread but mostly minor damage.									
<u>TEXAS, Mid - South</u>									
Bee County									
Pettus	02	0035CST			0	0			Hail (0.75)
Live Oak County									
5 SE Oakville	02	0040CST			0	0			Hail (0.75)
Live Oak County									
5 SE Dinero	02	0125CST			0	0			Hail (1.00)
<u>TEXAS, North</u>									
Bell County									
Rogers	01	1710CST			0	0			Hail (0.75)
Milam County									
Milano	01	1937CST			0	0			Hail (0.75)
Young County									
5 E Graham	01	2000CST			0	0			Hail (0.75)
Jack County									
8 S Jacksboro	01	2054CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, North									
Wise County									
10 N Boonsville	01	2058CST			0	0			Hail (1.00)
Hill County									
Hubbard	21	2010CST			0	0			Hail (0.75)
McLennan County									
Lorena	21	2015CST			0	0			Hail (0.75)
McLennan County									
Hewitt	21	2025CST			0	0			Hail (0.75)
Navarro County									
Corsicana	21	2025CST			0	0			Hail (1.75)
Henderson County									
6 NW Tool	21	2045CST			0	0	2K		Thunderstorm Wind
									High thunderstorm winds blew the roof off a vacant building.
Kaufman County									
Kemp	21	2050CST			0	0			Hail (1.75)
McLennan County									
Waco	21	2058CST			0	0			Hail (1.00)
Kaufman County									
Mabank	21	2105CST			0	0			Hail (1.00)
Van Zandt County									
21 W Ben Wheeler	21	2105CST			0	0			Hail (1.50)
Van Zandt County									
Canton	21	2110CST			0	0			Hail (1.75)
Van Zandt County									
Fruitvale	21	2115CST			0	0			Hail (0.75)
Van Zandt County									
Grand Saline	21	2120CST			0	0			Hail (0.75)
Limestone County									
Mexia	21	2140CST			0	0			Hail (2.00)
Freestone County									
Fairfield	21	2200CST			0	0			Hail (0.75)
Anderson County									
Cayuga	21	2300CST			0	0	50K		Lightning
									A church was destroyed by fire after a lightning strike.
Leon County									
Jewett	21	2330CST			0	0			Hail (1.75)
Leon County									
Jewett	22	0000CST			0	0			Hail (1.00)
Robertson County									
Hearne	22	0115CST			0	0			Hail (0.75)
Leon County									
Centerville	22	0200CST			0	0			Hail (1.75)
Hunt County									
2 N Lone Oak	28	1220CST			0	0	50K		Thunderstorm Wind
									A roof was damaged by high winds.
Hunt County									
Lone Oak	28	1225CST			0	0			Hail (1.75)
Hunt County									
2 N Commerce	28	1245CST			0	0	50K		Thunderstorm Wind

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
<u>TEXAS, North</u>									
Thunderstorm winds damaged several school buildings and four mobile homes. An eighteen wheeler was blown over and power lines were blown down.									
Erath County									
8 N Stephenville	28	2005CST			0	0			Hail (1.00)
Anderson County									
10 NW Palestine	28	2100CST			0	0			Flash Flood
A twenty foot section of the Lake Creek bridge, on Highway 281, was washed out by flash flooding from heavy thunderstorm rains.									
Leon County									
Countywide	28	2100CST			0	0			Flash Flood
Thunderstorm rains caused 11 roads to be closed, as well as the frontage roads along Interstate 45.									
Parker County									
Weatherford	28	2145CST			0	0			Hail (1.50)
Anderson County									
Countywide	28	2230CST			0	0			Flash Flood
The Lake Creek Bridge caved in from high water due to thunderstorm rains.									
Denton County									
Denton Hartlee Arpt	29	0900CST			0	0			Flash Flood
Corbin Street, just west of the airport, was closed due to high water from thunderstorms.									
Navarro County									
15 SW Corsicana	29	1700CST			0	0			Flash Flood
Farm Market 55, south of Farm Market 709, was flooded by heavy thunderstorm rains.									
Robertson County									
3 N Franklin	29	1730CST			0	0			Flash Flood
Heavy rains flooded Highway 46, north of Franklin.									
Kaufman County									
Terrell	29	1804CST			0	0			Flash Flood
Thunderstorm rains flooded several streets in Terrell.									
Hunt County									
3 SE Caddo Mills	29	1846CST			0	0			Flash Flood
The intersection of Highway 36 and Farm Market 1564 was under eight inches of water from thunderstorm rains.									
Hunt County									
6 W Quinlan	29	1846CST			0	0			Flash Flood
Highway 26 was flooded by thunderstorm rains.									
Anderson County									
Tennessee Colony	29	1852CST			0	0			Hail (0.75)
Hunt County									
2 SW Caddo Mills	29	2048CST			0	0			Flash Flood
Thunderstorm rains flooded Farm Market 1565, south of Highway 66.									
Grayson County									
Tom Bean	29	2100CST			0	0			Hail (1.75)
<u>TEXAS, North Panhandle</u>									
TXZ009-014 Roberts - Gray									
	22	0600CST 1200CST			0	0			Heavy Snow
A vigorous upper level low pressure system which developed and moved across West Texas brought a brief period of localized heavy snow to the east-central Texas panhandle during the morning hours. Four to five inches of snow fell in extreme southern Roberts county and extreme northern Gray county or about twelve miles southwest of Miami.									
TXZ002>005-007>010-012>014-017>018 Sherman - Hansford - Ochiltree - Lipscomb - Moore - Hutchinson - Roberts - Hemphill - Potter - Carson - Gray - Randall - Armstrong									
	28	1800CST			0	0			Winter Storm
	29	0600CST							
A vigorous upper level low pressure system moving slowly east across West Texas during the early morning hours produced a									

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

TEXAS, North Panhandle

mixture of sleet, accumulating freezing rain, and snow across most of the Texas panhandle. There were numerous power outages and most roads and highways in the Texas panhandle were closed. A one vehicle accident which was the indirect result of the winter storm occurred near U.S. Highway 217 and Interstate 27 near Canyon in Randall county. A woman and her young daughter were injured in the accident. Four inch snowfalls occurred across mainly the northwest and central Texas panhandle while one quarter to one half inch ice accumulations occurred over the northeast and eastern Texas panhandle.

TXZ001>019

Dallam - Sherman - Hansford - Ochiltree - Lipscomb - Hartley - Moore - Hutchinson - Roberts - Hemphill - Oldham - Potter - Carson - Gray - Wheeler - Deaf Smith - Randall - Armstrong - Donley

29	0600CST				0	0	8.5M		Winter Storm
30	0600CST								

A vigorous upper level low pressure system moved from West Texas northeast into Oklahoma producing heavier amounts of snow across the western Oklahoma and Texas panhandles, a mixture of ice and snow across the central Oklahoma and Texas panhandles, and mainly freezing rain and sleet over the eastern sections of the panhandles. There were considerable power outages due to the storm and most roads and highways remained closed across the panhandles. Snowfall amounts ranged from eight to ten inches across the northwest and western Texas panhandle to four to six inches across the central Texas panhandle. Ice accumulations of one quarter to one half inch were reported across the northeast and eastern Texas panhandle. One to two inches of sleet occurred over Wheeler county with one half inch to one inch of sleet over Donley county in the southeastern Texas panhandle. The eight and a half million dollar property damage was estimated and combined for all areas affected for the three days the storm lasted. Fifty-thousand people were without power and one thousand poles were down along with three thousand cross arms.

TEXAS, Northeast

Angelina County

3 SE Diboll	01	1520CST			0	0			Funnel Cloud
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Angelina County

3 S Lufkin	01	1538CST			0	0			Thunderstorm Wind (G52)
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Angelina County

Lufkin	01	1545CST			0	0			Hail (0.88)
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Reported on the east side of Lufkin.

Smith County

2 SW Lindale	01	1940CST			0	0			Thunderstorm Wind (G61)
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Titus County

10 NE Mt Pleasant	01	1945CST			0	0			Thunderstorm Wind (G52)
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Smith County

6 S Tyler	01	2030CST			0	0			Thunderstorm Wind (G52)
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Smith County

6 S Tyler	01	2030CST			0	0			Thunderstorm Wind (G52)
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Numerous trees down.

Smith County

Whitehouse	01	2030CST			0	0			Thunderstorm Wind (G52)
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Trees and powerlines down.

Rusk County

3 S Kilgore	01	2045CST			0	0			Thunderstorm Wind (G52)
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Gregg County

Kilgore	01	2045CST			0	0			Thunderstorm Wind (G52)
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Gregg County

8 W Longview	01	2045CST			0	0			Thunderstorm Wind (G52)
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Four large pines snapped across east Lake Devernia road.

Upshur County

Rosewood	01	2045CST			0	0			Thunderstorm Wind (G52)
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Trees and powerlines down.

Cherokee County

Alto	01	2045CST			0	0			Thunderstorm Wind (G52)
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Numerous trees and powerlines down.

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
TEXAS, Northeast									
Cherokee County									
Reklaw	01	2055CST			0	0			Thunderstorm Wind (G52) Trees and powerlines down.
Harrison County									
5 N Hallsville	01	2105CST			0	0			Thunderstorm Wind (G52) Numerous trees and powerlines down.
Rusk County									
1 E Henderson	01	2115CST			0	0			Thunderstorm Wind (G52) Several large trees down along FM3135 and Hwy 79.
Rusk County									
1 E Henderson	01	2115CST			0	0	25K		Thunderstorm Wind (G61) Twelve large trees down. One uprooted tree fell on a house at FM3135 and Hwy 79.
Harrison County									
Woodlawn	01	2120CST			0	0			Thunderstorm Wind (G52) Numerous trees and powerlines down.
Panola County									
6.1 SW De Berry to 3.6 SSE De Berry	01	2158CST 2216CST	5.3	50	0	0	12K		Tornado (F1) The damage path was in a mostly wooded region with little population. Only one (1) home was damaged from a pine tree that fell on it. Remainder of damage consisted of numerous snapped and fallen trees.
Nacogdoches County									
Nacogdoches	01	2300CST			0	0			Thunderstorm Wind (G52) Numerous trees and powerlines down.
Cass County									
Queen City	21	1525CST			0	0			Hail (0.88)
Franklin County									
Cypress	21	2154CST			0	0			Hail (1.75) Reported along Hwy 115.
Franklin County									
Purley	21	2155CST			0	0			Hail (0.75)
Smith County									
Tyler	21	2250CST			0	0	150K		Hail (2.75) Numerous automobiles and roofs were damaged.
Smith County									
Tyler	21	2252CST			0	0	5K		Hail (1.75) Golfball sized hail broke out automobile windows.
Smith County									
1 E Tyler	21	2258CST			0	0			Hail (0.75)
Cherokee County									
5 W Jacksonville	21	2310CST			0	0			Thunderstorm Wind (G52) Few trees down across Hwy 135.
Cherokee County									
5 N Jacksonville	21	2310CST			0	0			Thunderstorm Wind (G52) Trees down across Hwy 110.
Upshur County									
Ore City	21	2315CST			0	0			Hail (0.88)
Rusk County									
Overton	21	2320CST			0	0			Thunderstorm Wind (G52) Several large trees down.
Gregg County									
Liberty City	21	2322CST			0	0			Hail (0.88)

Storm Data and Unusual Weather Phenomena

January 1999									
Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, Northeast									
Gregg County									
Longview	21	2330CST			0	0			Hail (1.00)
Cass County									
Linden	21	2340CST			0	0			Hail (1.75)
Rusk County									
4 S Kilgore	21	2325CST			0	0	12K		Thunderstorm Wind (G52)
									Roof damage.
Gregg County									
Kilgore	21	2325CST			0	0	640K		Thunderstorm Wind (G62)
									Numerous roofs were damaged. Several mobile homes were destroyed and extensive roof damage to an apartment complex.
Gregg County									
Longview	21	2330CST			0	0			Thunderstorm Wind (G59)
Harrison County									
Marshall	21	2359CST			0	0			Thunderstorm Wind (G57)
Gregg County									
Kilgore	22	0002CST			0	0			Thunderstorm Wind (G52)
									Trees and powerlines down.
Cass County									
Atlanta	22	0020CST			0	0			Hail (1.00)
Cass County									
Atlanta	22	0020CST			0	0			Thunderstorm Wind (G61)
Cass County									
Atlanta	22	0005CST			0	0	40K		Thunderstorm Wind (G62)
									Damage to the roof of the local high school.
Cherokee County									
7 SW Rusk	22	0230CST			0	0			Hail (2.00)
Cherokee County									
Rusk	22	0235CST			0	0			Hail (1.75)
Nacogdoches County									
5 N Nacogdoches	22	0425CST			0	0			Hail (1.75)
Bowie County									
New Boston	22	1710CST 1711CST	0.3	25	0	0	40K		Tornado (F1)
									A tornado touched down near the 700 block of Anderson St. and traveled northeast across Texas Hwy 8 then onto I-30 and lifted. Damage: The Bostonian Motor Inn, EZ-Mart convenience store, construction site of a new Ford Dealership and one house. All damage was minor. A piece of sheet metal 22 x 27 feet was ripped from the roof of the Bostonian Inn and thrown into a car. A window was shattered, ceiling tile damaged, and store merchandise damaged at the E-Z Mart. Scaffolding at the Ford Dealership toppled onto a pickup truck breaking the front window and crushing the hood. A construction trailer was set upside down in its original spot. Numerous eye witness and photographed by the New Boston Citizen Tribune.
Bowie County									
Hooks	22	1758CST			0	0			Thunderstorm Wind (G52)
									Few trees and powerlines toppled.
Bowie County									
5 W Texarkana	22	1820CST			0	0			Hail (1.00)
Nacogdoches County									
Nacogdoches	28	2133CST 2340CST			0	0			Flash Flood
									Local and secondary roads were flooded and closed.
Shelby County									
2 E Timpson	28	2200CST 2340CST			1	0			Flash Flood

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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TEXAS, Northeast

James Ezra Moore of Timpson, Texas was swept off FM 947 after his truck ran off the road. His body was later found in a flooded creek along FM 947.
M84IW

Angelina County

Lufkin	29	0040CST 0440CST			0	0			Flash Flood
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Several roads were under water including major highways 59 and 69. FM roads 3150 and 2497 were also closed.

Rusk County

Mt Enterprise	29	0630CST 1025CST			0	0			Flash Flood
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Heavy rain of 4 to 6 inches lead to secondary road closures including CR 3122 and 3207 which were washed out.

Cherokee County

Rusk	29	0630CST 1025CST			0	0			Flash Flood
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Heavy rains of 6 to 8 inches lead to numerous flooding problems. A total of 29 road closures were reported including Highway 23, FM 855, FM 343 and FM 1857.

Angelina County

Lufkin	29	0630CST 1425CST			0	0			Flash Flood
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Rains of 6 to 8 inches lead to numerous flooding problems. High water led to the closures of Major Hwy 69 north and FM roads 3150, 7806, 1475 and 326. Other county roads included major Hwy 59 and FM 2497.

Panola County

De Berry	29	0930CST 1025CST			0	0	10K		Flash Flood
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Heavy rain led to the closure of CR 336. Two cars were washed off the road by no injuries occurred.

Shelby County

Center	29	0945CST 1425CST			0	0			Flash Flood
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Heavy rains of 6 to 8 inches led to numerous reports of flash flooding across the area. Several highways and secondary roads were flooded including Hwy 84, 87, and 7.

Nacogdoches County

Nacogdoches	29	1300CST 1425CST			0	0			Flash Flood
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Numerous roads were closed from excessive heavy rainfall.

Smith County

3 W Tyler	29	1935CST			0	0			Hail (0.75)
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Smith County

8 NE Tyler	29	2040CST			0	0			Hail (2.00)
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Gregg County

Longview	29 30	2215CST 0115CST			0	0			Flash Flood
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Numerous flooding problems were reported with the closure of Hwy 135 and numerous local streets.

Bowie County

Texarkana	30	0100CST 0330CST			0	0	166K		Flash Flood
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Reports of cars floating off highways in town. West 70th was flooded and closed. FEMA declared a disaster area.

TXZ153-167

Shelby - Sabine

	31	0700CST			0	0	90K		Flood
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Heavy rains upstream on the Sabine River in extreme northeast Texas led to river flooding where about 20 homes were flooded from Juquin Texas to Logansport Louisiana as the river crested at 33.2 feet. Toledo Bend rose to 173.60 feet, some eight inches above full pool stage. The high water resulted in the Sabine River Authority having to open the gates completely at the dam with releases of 116,000 cfs. This flooding is mostly due to backwater flooding from very high pool stages on Toledo Bend.

TEXAS, South

NONE REPORTED.

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
TEXAS, South Central									
Caldwell County									
Lytton Spgs	01	1845CST 1850CST			0	0	0	0	Hail (0.75)
Wilson County									
1 E Stockdale to 1.1 E Stockdale	01	1915CST 1916CST	0.1	20	0	0	0	0	Tornado (F0)
The brief tornado was observed by a sheriff's deputy in open country near Stockdale.									
Guadalupe County									
10 S Seguin to 9.9 S Seguin	01	1921CST 1922CST	0.1	30	0	0	0	0	Tornado (F0)
Another short-lived tornado was spotted by a sheriff's deputy south of Seguin, with no damage indicated.									
Gonzales County									
Leesville	01	2000CST 2005CST			0	0	0	0	Hail (1.75)
Gonzales County									
2 E Leesville to 2.1 E Leesville	01	2005CST 2006CST	0.1	30	0	0	0	0	Tornado (F0)
Gonzales County									
East Portion	01	2030CST 2330CST			0	0	3K	0	Flash Flood
Heavy rain, along with large hail and gusty winds preceded a small tornado near Leesville. The tornado was spotted by a sheriff's deputy, but remained in open country. The tornado dissipated quickly, but heavy rainfall continued over the eastern part of Gonzales County, producing between 2 and 3 inch totals, with isolated 6 inches amounts. Brief flash flooding ensued, ending just before midnight.									
Lavaca County									
Shiner	01	2120CST 2125CST			0	0	0	0	Hail (1.75)
Lavaca County									
5 E Shiner to 5.1 E Shiner	01	2145CST 2146CST	0.1	30	0	0	0	0	Tornado (F0)
Lavaca County									
North Portion	01 02	2200CST 0030CST			0	0	3K	0	Flash Flood
Large hail moved into Shiner just after 900 pm CST. It was followed by the fourth small tornado of the day, spotted by a sheriff's deputy just east of Shiner. The tornado dissipated quickly with no damage indicated. Heavy rain from the Gonzales area had also moved into Lavaca County near 2100CST. General 2 to 3 inch amounts fell, with isolated totals of up to 5 inches in the northern portion of Lavaca County. Brief flash flooding developed.									
Gonzales County									
Leesville	01	2210CST 2215CST			0	0	0	0	Hail (1.50)
Fayette County									
Countywide	01 02	2230CST 0100CST			0	0	5K	0	Flash Flood
Heavy rainfall from the Gonzales County storms also spread slowly into Fayette County. General 2 to 3 inch rainfall fell across Fayette County with isolated totals of up to 4 inches near Flatonia in the southern part of the county. Brief flash flooding took place.									
Lee County									
5 SW Giddings	22	0213CST 0220CST			0	0	0	0	Hail (0.75)
Lee County									
Old Dime Box	22	0216CST 0220CST			0	0	0	0	Hail (1.75)
TXZ183-202									
Val Verde - Kinney	22	1115CST 1630CST			0	0	130K	0	High Wind (G52)

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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TEXAS, South Central

Winds of sustained 35 to 45 mph with gusts up near 60 mph blew down power lines and uprooted trees from the Del Rio area to near Brackettville.

TEXAS, South Panhandle

**TXZ021>023-
027>028-033**

Parmer - Castro - Swisher - Bailey - Lamb - Cochran

29	0200CST				0	0	1.5M		Winter Storm
30	0400CST								

An intense winter storm severely impacted the northwestern South Plains and the extreme southwest Panhandle on the 29th and 30th. Over a foot of snow fell across parts of Parmer and Bailey Counties, where drifts reached as high as 6 feet and major highways were closed for hours. Five to seven inches of snow fell in Castro, Swisher, Lamb, and Cochran Counties. Some of these same areas received significant accumulations of freezing rain. The combined effect of this storm snapped numerous trees and tree limbs, and caused many thousands of people to lose power (some for more than two full days). In Swisher County alone, approximately 700 power poles were snapped or brought down due to the weight of the freezing rain and snow. The storm finally tapered off during the early hours on the 30th.

The very early part of the storm may have contributed to 3 indirect fatalities and 8 indirect injuries due to a vehicle accident on U.S. Highway 84, seven miles southeast of Farwell in southern Parmer County. However, DPS officials attributed at least some of the blame of this accident to the "unsafe rate of speed" of the vehicle.

Castro County

3 W Dimmitt

29	0300CST				0	0	5K	0	Lightning
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A rare, middle of the night, winter time lightning strike to a farm house west of Dimmitt damaged the home's phones, computer, fax machine, television sets, and even blew out two windows.

TXZ024-029-034>035

Briscoe - Hale - Hockley - Lubbock

29	1500CST				0	0	500K		Winter Storm
30	0100CST								

The same winter storm mentioned above also affected Briscoe, Hale, Lubbock, and Hockley Counties, though to a lesser extent and for less time. Four inches of snow fell in the city of Lubbock, and 4 to 6 inches fell across these four counties. In addition, Briscoe County received significant accumulations of freezing rain, which helped snap trees and power poles, down power lines, and cause lengthy power outages.

TEXAS, Southeast

Jefferson County

**3.5 SW Nome to
2 NE Nome**

01	2345CST	5.5	400		0	5	500K		Tornado (F3)
	2355CST								

A strong tornado that developed in Liberty County moved into western Jefferson County, destroying several rice dryers, two mobile homes, and a brick house. Five people were injured in the mobile homes and brick house. Two people received broken necks and other injuries after they were ejected from one of the mobile homes.

A fiberglass tub from the destroyed brick home was found one mile away. Cancelled checks and other paperwork were found seven miles away in southern Hardin County.

This tornado was strongest southwest of Nome, and was weakening as it passed through the small community of Nome. At least 20 homes received minor damage such as shingles blown off, and many trees were blown down.

Hardin County

Kountze

01	2351CST				0	0	10K		Thunderstorm Wind
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Several trees were blown down near Kountze.

Jasper County

**6 E Evadale to
4 E Buna**

02	0045CST	8	800		1	10	1.3M		Tornado (F2)
	0055CST								

An F2 tornado moved across southern Jasper County. At least 15 homes were destroyed, 20 received major damage, and 10 received minor damage. The worst hit area was Callier Loop, south of Buna. The fatality occurred here. A tied down mobile home rolled over at least five times, ejecting a man 100 yards and a woman 500 yards. The man received a broken back and other serious injuries, while the woman died a few days later from a broken neck, back, and internal injuries. Debris from this home was spread over a mile across the fields.

Brick walls were cracked in permanent homes, pickup trucks were lifted in the air and pushed 20 feet from where they originally were parked, and any mobile home situated lengthwise north to south was rolled over and destroyed. There were several stories of people being ejected from their mobile homes, and walking away with minor injuries.

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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TEXAS, Southeast

This tornado moved into Newton County. Total path length for both Jasper and Newton Counties is 12.5 miles. F55MH

Newton County

12 S Call to 9 SE Call	02	0055CST 0100CST	4.5	250	0	0	20K		Tornado (F1)
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The Jasper County tornado moved into Newton County, and did significant damage to forested lands in rural Newton County.

Newton County

Deweyville	02	0116CST			0	0	10K		Thunderstorm Wind
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Trees were blown down and a barn received damage to its roof during a severe thunderstorm.

Jasper County

2 SW Jasper	13	1840CST			0	0			Hail (0.75)
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Newton County

10 S Call	22	1030CST 1035CST	1	10	0	0	25K		Tornado (F0)
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A small tornado touched down in rural areas, damaging some trees.

Jasper County

Kirbyville	22	1030CST			0	0			Hail (0.75)
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Tyler County

5 S Spurger to 5 E Spurger	29	1420CST 1430CST	6	400	0	0	20K		Tornado (F2)
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A strong tornado moved across rural sections of eastern Tyler County, tearing up a large swath of trees and damaging a few out buildings. Some trees were as wide as 15 feet across and 100 feet tall. This tornado moved into rural sections of Jasper County.

Jasper County

11 SW Magnolia Spgs to Magnolia Spgs	29	1430CST 1445CST	11	100	0	0	20K		Tornado (F1)
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The same tornado that hit Tyler County moved into Jasper County, damaging several homes, but staying in rural areas.

Newton County

3 W Newton	29	1520CST 1522CST	1	50	0	0	10K		Tornado (F0)
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A small, weak tornado developed from the same storm that produced the Tyler and Jasper County tornado, but the only damage was a few trees down in wooded areas.

Jasper County

Kirbyville	29	1700CST 1800CST			0	0	10K		Flash Flood
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Around 4 inches of rain fell in less than 2 hours, resulting in several side and back roads near Kirbyville being flooded.

Newton County

Newton	29	1700CST 1800CST			0	0	10K		Flash Flood
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Four inches of rain fell in less than 2 hours, resulting in flooding of rural roads across northern Newton County.

TEXAS, West

**TXZ045>048-
050>052-057>063-
067>070-074>075-
079>082**

Gaines - Dawson - Borden - Scurry - Andrews - Martin - Howard - Van Horn/Guadalupe Mountains Area - Reeves County And Upper Trans Pecos - Loving - Winkler - Ector - Midland - Glasscock - Ward - Crane - Upton - Reagan - Davis Mountains - Pecos - Presidio Valley - Marfa Plateau - Big Bend Area - Terrell

01 31	0001CST 2359CST				0	0			Drought
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The drought continued in January across West Texas with those stations that received precipitation measuring less than 1/2 inch. Many parts of the area, especially the south, did not record any measurable precipitation at all. Agricultural losses from the preceding year were still being calculated and will be included when reasonable estimates can be determined.

Ector County

Gardendale	28	2245CST 2300CST			0	0			Hail (1.75)
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Widely scattered thunderstorms developed ahead of a winter storm system that approached from the west. A few of these storms had small hail, with the one isolated report of golfball size hail.

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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TEXAS, Western North

TXZ083>086-090 Hardeman - Foard - Wilbarger - Wichita - Clay

07	2000CST				0	0			Ice Storm
08	1100CST								

Periods of light freezing rain and dense fog persisted across western north Texas on the 7th and 8th. Numerous accidents were reported, and many schools were forced to close.

UTAH, North, Central and South

UTZ014 Sanpete/Sevier Valleys

02	1200MST				2	0	0	0	Avalanche
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Two teenagers from Mapleton were killed when they triggered an avalanche in Fairview Canyon, 12 miles southeast of Fairview in San Pete County. The boys, ages 16 and 17, ventured out onto a snow cornice which collapsed, sweeping the pair 150 feet down the mountain. Their bodies were discovered the next afternoon, while the snowboards remained on top of the hill.

M16OU, M17OU

UTZ006>008-017 Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Central And Southwest Mountains

15	1100MST				0	0	0	0	Heavy Snow
19	1900MST								

A series of fast-moving storms over the period produced significant snowfall in the mountains of mainly Northern Utah. A brief shot of heavy snow also moved through the Southern Utah mountains during this period. Most of Utah's valleys received rain. Some heavier snowfall amounts through the period included 30 inches at Beaver Mountain, Brighton and Park City, 28 inches at Deer Valley, 27 inches at Alta, 26 inches at Powder Mountain and Solitude, 25 inches at The Canyons, 21 inches at Snowbird and 19 inches at Snowbasin.

UTZ001>004-006>012-014-016>017-023>025

Cache Valley/Utah Portion - Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake And Toole Valleys - Southern Wasatch Front/Lehi/Provo/Nephi - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Western Uinta Mountains - Wasatch Plateau/Book Cliffs - Western Uinta Basin - Castle Country/Price/Castle/Dale/Emery - Sanpete/Sevier Valleys - Southwest Utah/Cedar City/Milford - Central And Southwest Mountains - Eastern Uinta Mountains - Eastern Uinta Basin - Tavaputs Plateau

20	1200MST				0	0	10K	0	Winter Storm
22	1200MST								

A major Winter storm finally blasted the Northern half of the state with very heavy snow in the mountains and locally heavy snow in the valleys. Thunderstorms and gusty winds accompanied the cold front as it moved through the state on the 21st. Heavy snow in Park City caused a closure of the schools on the 21st. This was a much needed storm for area ski resorts, but it also exacerbated the avalanche danger. The storm generally dropped 3-6 inches on the valley floors of the north, with 4-10 inches along the benches of the Wasatch Front, with 1-3 feet of fresh powder common in the Northern mountains. Some of the higher amounts in the mountains included 41 inches at Alta and Silver Lake, 39 inches at Snowbird, 38 inches at Brighton, 36 inches at Solitude and 32 inches at The Canyons. Valley and bench locations included 10 inches at East Millcreek, 8 inches in Bountiful, 7 inches in Logan, 6 inches in Sandy and the University of Utah, 5 inches in East Layton and 4 inches in Orem. The snow made driving rather hazardous, and there were several minor traffic accidents reported, but no injuries occurred.

UTZ007 Wasatch Mountains I80 North

23	0800MST				0	0	0	0	High Wind
	2100MST								

Strong south winds blew ahead of an approaching cold front. Many mountain locations reported gusts in excess of 60 mph. The strongest gusts were 91 mph (79 kts) at Snowbird Hidden Peak, 79 mph (69 kts) at Alta Baldy, 72 mph (63 kts) at Sundance Arrowhead, and 65 mph (56 kts) at Vernon Hill.

UTZ001>008

Cache Valley/Utah Portion - Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake And Toole Valleys - Southern Wasatch Front/Lehi/Provo/Nephi - Great Salt Lake Desert And Mountains/Wendover/Snowville - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80

23	1900MST				0	0	0	0	Heavy Snow
24	1200MST								

A storm moved in late on the 23rd, and lasted into the 24th, bringing heavy snow to the northern mountains with areas of heavy snow in the northern valleys. Even the usually dry western deserts got into the act, with Wendover receiving 5 inches of snow. The mountains generally got between 10 and 18 inches, while the valleys and benches received 4-10 inches as a rule. Some of the

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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UTAH, North, Central and South

higher amounts included Nordic Valley with 18 inches, Park City with 17 inches, Deer Valley with 15 inches, The Canyons with 14 inches, and Pineview with 13 inches. In the valleys and benches, Bountiful reported 9 inches, Tooele had 8 inches, Brigham City and Centerville with 7 inches, while Logan, Layton and South Ogden had 6 inches.

UTZ001>004-006>008-010

Cache Valley/Utah Portion - Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake And Toole Valleys - Southern Wasatch Front/Lehi/Provo/Nephi - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Wasatch Plateau/Book Cliffs

26	1200MST	0	4	50K	0	Winter Storm
27	1800MST					

Another winter storm brought heavy snow to the northern portions of the state. The snow brought hazardous driving conditions during rush hour on the 27th, with numerous slide-offs and fender-benders reported. Only minor injuries were reported, however. Up to 50 cars slid off the road near a corner in Pleasant Grove, but surprisingly, none of the cars hit each other and nobody was hurt. The mountains received 1-2 feet with this storm, with the lower elevations getting 6-12 inches in most areas. Sundance had 24 inches, Elk Meadows 20 inches, and Brian Head reported 18 inches. In the valleys and benches, Highland had 13 inches, Alpine 12 inches, with 10 inches reported in East Layton, North Orem, Pleasant Grove and South Ogden.

UTZ008

Wasatch Mountains South Of I80

29	1530MST	1	0	0	0	Avalanche
	1600MST					

A 31-year-old snowmobiler died when he triggered an avalanche on the east side of Mt. Nebo in Santaquin Canyon. The avalanche was half a mile long and a quarter mile wide. The avalanche was set off when the snowmobiler undercut the snow bank just under the peak, then it all just fell on top of him. It took rescue worker 2 hours to reach the scene, where he was pronounced dead.
M310U

UTAH, Northeast

NONE REPORTED.

VERMONT, North and Central

VTZ002>004-006>008-010-012

Franklin - Orleans - Essex - Lamoille - Caledonia - Washington - Orange - Windsor

03	0200EST	0	0	40K	0	Winter Storm
	1700EST					

A complex storm system moved through the Great Lakes region during Sunday, January 3rd, and then into Canada Monday, January 4th. A weak secondary low pressure system moved north along the New England coast Sunday night and early Monday.

Snow overspread the area early Sunday (January 3) and then mixed with or changed to sleet and freezing rain during the morning and afternoon. Some areas received significant accumulations of sleet and ice on top of several inches of snow. A few of the heavier accumulations of snow before the changeover included:

Groton (Caledonia county).....8 inches
 White River Jct (Windsor county).....5 inches
 Sheldon Springs (Franklin county)...4 inches
 Montpelier (Washington county).....4 inches

VTZ005

Chittenden

03	0600EST	0	0	5K	0	High Wind (G60)
	1400EST					

A complex storm system moved through the Great Lakes region during Sunday, January 3rd, and then into Canada Monday, January 4th as a weak secondary low pressure system moved north along the New England coast Sunday night and early Monday. Strong southerly winds preceded this storm.

Wind gusts exceeded 60 mph (52 knots) in portions of eastern Chittenden county. In Chittenden county, the wind gusted at times to as high as 69 mph in Hanksville and to 63 mph in Jericho where branches were blown down.

VTZ006

Lamoille

03	0700EST	0	0	5K	0	High Wind (G65)
	1200EST					

A complex storm system moved through the Great Lakes region during Sunday, January 3rd, and then into Canada Monday,

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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VERMONT, North and Central

January 4th as a weak secondary low pressure system moved north along the New England coast Sunday night and early Monday. Strong southerly winds preceded this storm.

Wind gusts exceeded 60 mph (52 knots) in portions of western Lamoille county. In Lamoille county, the wind gusted to 75 mph (65 knots) in Pleasant Valley.

VTZ001>012

Grand Isle - Franklin - Orleans - Essex - Chittenden - Lamoille - Caledonia - Washington - Addison - Orange - Rutland - Windsor

08	1700EST								
09	1600EST				0	0	65K		Winter Storm

An area of low pressure over the Ohio Valley during Friday afternoon (January 8th) moved northeast across New England during Saturday (January 9th). Snow overspread the region with accumulations generally between 8 and 15 inches with the lesser amounts across Windsor county. A few representative snowfall reports were:

Craftsbury (Orleans county)..... 15 inches
 Underhill (Chittenden county).....13 1/2 inches
 Cambridge (Lamoille county).....13 inches
 Shrewsbury (Rutland county).....9 inches
 Jay Peak (Franklin county).....14 inches
 Island Pond (Essex county).....13 inches
 Orwell (Addison county).....13 inches
 Sutton (Caledonia county).....12 inches
 Brookfield (Orange county).....9 inches
 Marshfield (Washington county).....8 1/2 inches
 Ludlow (Windsor county).....6.4 inches

VTZ001>012

Grand Isle - Franklin - Orleans - Essex - Chittenden - Lamoille - Caledonia - Washington - Addison - Orange - Rutland - Windsor

13	0200EST								
	1200EST				0	0	60K		Light Snow

An area of low pressure moved from the Tennessee Valley Tuesday afternoon (January 12) into southern New England Wednesday (January 13). Light snow accumulating to between 3 and 6 inches and colder air accompanied this system. A few snowfall reports were:

Springfield (Windsor county).....6 inches
 Orwell (Addison county).....4 inches
 East Berkshire (Franklin county)...3.5 inches
 Rutland (Rutland county).....3 inches
 Colchester (Chittenden county)...3 inches
 South Newbury (Orange county)...3 inches

VTZ001>012

Grand Isle - Franklin - Orleans - Essex - Chittenden - Lamoille - Caledonia - Washington - Addison - Orange - Rutland - Windsor

14	1500EST								
15	1600EST				0	0	60K		Winter Storm

An area of low pressure over the Ohio Valley region Thursday (January 14th) moved to the Delmarva area Thursday night and across eastern New England Friday (January 15th). Snow developed across the area late Thursday and continued into Friday afternoon. The snow mixed with or changed to sleet and freezing rain for periods of time Friday. Snow accumulations were generally between 5 and 10 inches across the area with some accumulation of ice. A few snowfall reports included:

Northfield (Washington county).....10 inches
 Springfield (Windsor county).....9 inches
 Hanksville (Chittenden county).....8.5 inches
 Morrisville (Lamoille county).....7.5 inches
 Island Pond (Essex county).....7 inches
 Rutland (Rutland county).....6.5 inches
 Salisbury (Addison county).....5.9 inches
 Sutton (Caledonia county).....5.1 inches

VTZ005

Chittenden

18	1200EST								
	1530EST				0	0	1K		High Wind

A storm system moved through the Great Lakes region Sunday night (January 17th) and into southern Canada during Monday (January 18th). Strong gusty winds resulted along the western slopes of the Green Mountains of Vermont. In Jericho, VT

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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VERMONT, North and Central

(Chittenden county) winds gusted in excess of 54 mph with tree branches blown down.

Addison County

Central Portion	24	0930EST 1400EST			0	0	5K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in a few rivers reaching or exceeding their banks during Sunday. In particular, the New Haven River flooded fields in and around Bristol, VT.

Washington County

Countywide	24	1000EST 1400EST			0	0	10K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in many rivers reaching or exceeding their banks during Sunday. In particular, the Mad River flooded fields and streets in and around the Waitsfield VT area with route 100 closed for a short time.

Rutland County

East Portion	24	1000EST 1400EST			0	0	5K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in the flooding of route 4 in and around Sherburne, VT.

Lamoille County

West Portion	24	1100EST 1500EST			0	0	10K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in a few rivers reaching or exceeding their banks during Sunday. In and around Cambridge, VT the Seymour and Lamoille Rivers were flooding fields and a few local roads.

Chittenden County

Central Portion	24	1400EST 1600EST			0	0	5K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow coupled with rain Saturday night and Sunday resulted in many rivers reaching or exceeding their banks during Sunday. Ice jams also formed. In particular, the Browns River flooded fields and portions of route 128.

Franklin County

Countywide	24	1400EST 1600EST			0	0	10K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). A few ice jams formed Sunday (January 24). These jams along with the mild weather with melting snow and rain Saturday night and Sunday resulted in a few rivers reaching or exceeding their banks during Sunday. In particular, flooding was reported in and around the Bakersfield area and on the Trout River Sunday afternoon (January 24).

Windsor County

South Portion	24	1500EST 1800EST			0	0	10K		Flood
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A storm system moved through the Great Lakes region Saturday and Saturday night (January 23) and into eastern Canada Sunday (January 24). Mild weather with melting snow and rain Saturday night and Sunday coupled with ice jams resulted in many rivers reaching bankful during Sunday. Flooding occurred along the Williams River in and around Chester, VT.

VTZ001>012

Grand Isle - Franklin - Orleans - Essex - Chittenden - Lamoille - Caledonia - Washington - Addison - Orange - Rutland - Windsor

27	2000EST				0	0	60K		Light Snow
29	0900EST								

During the period from late Wednesday (1/27/99) through early Friday (1/29/99) a series of low pressure systems moved to the south of New England. During this extended period of several episodes of snowfall, accumulations ultimately ranged from as little as 3 inches in northeast Vermont up to around 9 inches in Rutland county. A few specific accumulations were:

Rutland (Rutland county).....9.0 inches
 Ludlow (Windsor county).....8.3 inches
 Waitsfield (Washington county)...8.0 inches
 Hanksville (Chittenden county)....7.9 inches

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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VERMONT, North and Central

Chelsea (Orange county).....7.5 inches
 So. Lincoln (Addison county).....6.6 inches
 W. Danville (Caledonia county).....6.5 inches
 St. Albans (Franklin county).....5.0 inches
 Morrisville (Lamoille county).....4.7 inches
 Albany (Orleans county).....4.0 inches
 Island Pond (Essex county).....3.0 inches

VERMONT, South

VTZ013>014

Bennington - Windham

02	2300EST								
03	2300EST				0	0			Winter Storm

A deep low pressure area moved from the Mississippi Valley into the Great Lakes region during the night of January 2 and January 3. With arctic air in place over southern Vermont, a wintry mix of sleet and freezing rain resulted in significant ice accumulations across the region. Total melted precipitation exceeded an inch in portions of southeast Vermont.

VTZ013>014

Bennington - Windham

08	0600EST								
09	0600EST				0	0	1.1K		Winter Storm

A low pressure area moved from western Pennsylvania to the Saint Lawrence valley on January 8-9. This storm brought heavy snow sleet and freezing rain to southern Vermont. Dorset Vermont in Bennington county reported 9.3 inches of snow accumulation while West Wardsboro in Windham county had 7. There were also reports of significant icing once the snow changed to sleet and freezing rain.

VTZ013>014

Bennington - Windham

14	0600EST								
15	1400EST				0	0	1.5K		Winter Storm

Extremely cold arctic air moved into southern Vermont on January 13 and January 14. At the same time an area of low pressure formed in Kentucky. This low tracked east into northern Virginia then turned north and moved through the Hudson Valley of New York on January 15 and early January 16. The storm dumped heavy snow on the region followed by an extended period of sleet and freezing rain. The onset of the snow was accompanied by dangerously cold conditions with temperatures as low as 9 below zero. Snowfall amounts included 11 inches at Dorset Bennington county.

VTZ013

Bennington

24	0430EST								
26	2100EST				0	0	5K		Flash Flood/Flood

The combination of rain and very mild temperatures produced rapid snow melt in southern Vermont. This runoff and ice jams triggered flooding on the upper Battenkill near Arlington and on the Waloomsac River near Bennington.

VIRGIN ISLANDS

NONE REPORTED.

VIRGINIA, East

**VAZ048>049-
060>061**

Fluvanna - Louisa - Prince Edward - Cumberland

02	1600EST								
03	0400EST				0	0			Winter Storm

A storm system moved through the Ohio Valley and produced a mix of freezing rain and sleet across portions of central Virginia from Saturday evening, January 2nd into early Sunday morning, January 3rd. Ice accumulations of generally 1/4 to 1/2 inch were reported on roadways, trees and power lines. This resulted in numerous accidents and scattered power outages.

Hanover County

1 W Doswell

03	0450EST								
					0	0	30K		Dry Microburst

A microburst blew down numerous large trees, demolished a cinder block shed, and caused some shingle damage to a few houses.

**VAZ048>049-
060>064-069-074>076**

Fluvanna - Louisa - Prince Edward - Cumberland - Goochland - Hanover - Caroline - Powhatan - Essex - Westmoreland - Richmond

08	0930EST								
09	0200EST				0	0			Winter Weather

Sleet, freezing rain and freezing drizzle occurred off and on during Friday, January 8th across portions of the piedmont of central Virginia into the Virginia northern neck. This precipitation resulted in ice accumulations on many roads and bridges, and in turn, several accidents were reported.

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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VIRGINIA, East

**VAZ048>049-
060>061-064**

Fluvanna - Louisa - Prince Edward - Cumberland - Caroline

15	0130EST 1030EST				0	0			Winter Weather
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Freezing rain occurred during the early morning hours of Friday, January 15th across portions of the piedmont of central Virginia. This precipitation resulted in some ice accumulation on trees, power lines, and roads. Several accidents were reported.

Lunenburg County

4 W Pleasant Grove

18	1205EST				0	0			Hail (0.75)
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Chesterfield County

Chester

18	1445EST				0	0			Hail (1.00)
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One inch hail reported near intersection of Route 288 and I-95.

Chesterfield County

Chester

18	1445EST				0	0	3K		Thunderstorm Wind
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Several trees blown down onto I-95 and one window blown out.

New Kent County

Barhamsville

18	1515EST				0	0	2K		Thunderstorm Wind
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Few trees down on Route 273.

VIRGINIA, Extreme Southwest

NONE REPORTED.

VIRGINIA, North

**VAZ021-025>031-
039>042-052>054**

Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Madison - Rappahannock - Fauquier - Loudoun - Prince William - Fairfax - Arlington

02	1600EST				0	0			Winter Storm
03	0600EST								

VAZ037>038-051

Albemarle - Greene - Culpeper

02	1600EST				0	0			Winter Weather
03	0600EST								

An area of low pressure moved from the Ohio Valley to the Eastern Great Lakes on the 2nd, spreading precipitation across the Mid-Atlantic region from midday on the 2nd to early morning on the 3rd. High pressure centered over New England brought a shallow layer of sub-freezing air to locations east of the Appalachian Mountains. Closer to the mountains this layer of cold air was deep enough to allow up to 5 inches of snow to fall. Just east of the West Virginia border, this layer of cold air was shallower, forcing a majority of the precipitation to fall in the form of sleet and freezing rain. Shortly after midnight on the 3rd, a warm front from the Atlantic Ocean moved into Central and Northern Virginia. This front warmed temperatures east of a line from Albemarle to Loudoun County from the upper 20s to the upper 40s in less than 6 hours, turning all freezing precipitation into rain for the remainder of the morning. Locations to the west of the front saw snow, sleet and freezing rain through the entire event. Precipitation amounts ranged from 2 to 3 inches of snow and 1/4 to 1/2 inches of ice accumulation west of a line from Albemarle County to Loudoun County. A trace to 1 inch of snow and 1/4 inch or less of ice accumulated east of this line.

The aftermath of this storm included scattered power outages, icy roads, and dense fog. Ice accumulations were blamed for brief power outages to 29,000 customers across Northern Virginia, and 4,500 customers in Albemarle County including Waynesboro and Staunton. Some locations in the foothills of the Appalachian Mountains, where the rapid warmup did not occur, had problems with icy roads for several days after the storm. Schools remained closed in Warren County through the 7th due to poor driving conditions. Hundreds of traffic accidents were reported across the region, including a pickup crash with two injuries just north of the Mauzy exit on Interstate 81 in Rockingham County, and a tractor trailer and car collision that closed southbound I-81 for a brief time near Winchester in Frederick County. The rapid warmup during the early morning on the 3rd also created dense fog across much of Northern Virginia through midday, leading to additional travel problems.

**VAZ021-025>031-
039>041**

Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Madison - Rappahannock - Fauquier

08	0200EST				0	0			Winter Storm
09	0400EST								

**VAZ036>038-042-
050>056**

Nelson - Albemarle - Greene - Loudoun - Orange - Culpeper - Prince William - Fairfax - Arlington - Stafford - Spotsylvania

08	0200EST				0	0			Winter Weather
09	0400EST								

An area of low pressure over Ohio brought a variety of precipitation to Northern Virginia. Precipitation started off as snow during

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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VIRGINIA, North

the early morning hours of the 8th. By early afternoon warm air moved into the middle levels of the atmosphere turning the precipitation into freezing rain. The freezing rain continued through early morning on the 9th, when temperatures finally rose above freezing at the surface. Snowfall amounts included 9 to 10 inches in Highland County, 4 to 6 inches west of a line from Augusta County to Loudoun County and in Fauquier County, and 1 to 4 inches elsewhere. Ice accumulations on top of the snowfall ranged from a trace to 1/3 of an inch. The aftermath of the snow and ice included school closings and many car accidents. Over 200 traffic accidents occurred in the Washington D.C. metropolitan area leading to 27 injuries. The most serious accident occurred on the Dulles Toll Road where a jackknifed tractor trailer closed the road for an hour. Most metropolitan area schools were closed on the 8th. Interstates 66 and 81 across Northern Virginia were referred to as "treacherous" by law enforcement during the storm. Officials responded to 50 accidents along I-81 in Augusta County, mostly between mile markers 213-205 near Staunton. U.S. Route 29 was closed just south of Warrenton in Fauquier County because of a jackknifed tractor trailer and in Culpeper County due to several accidents. Snowfall up to 10 inches in Highland County made driving difficult, especially near Monterey.

VAZ021-025-036>038-050-057

Highland - Augusta - Nelson - Albemarle - Greene - Orange - King George

14	0200EST								
15	0900EST								Winter Weather

VAZ026>031-039>042-051>056

Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Madison - Rappahannock - Fauquier - Loudoun - Culpeper - Prince William - Fairfax - Arlington - Stafford - Spotsylvania

14	0200EST								
15	0900EST					320K			Ice Storm

A strong arctic cold front moved slowly southeast across the Mid-Atlantic region from late on the 13th to midday on the 15th. This front brought a thin layer of sub freezing air to the lowest levels of the atmosphere, but just off the surface warmer air moved in. A low pressure system developed on the 13th over the Tennessee Valley. The low moved into the Mid Atlantic region over the next few days, spreading precipitation region wide from early on the 13th through midday on the 15th. The precipitation started as snow but melted into rain as it fell through the warm layer of air in the mid levels of the atmosphere. Unfortunately west of the cold front the ground was below freezing during the period so the rain froze on every surface in came in contact with. This created ice accumulations of one quarter to one half inch north and west of a line from Loudoun County to Rockingham County through early afternoon on the 14th. By 9am on the 15th, ice accumulations from one quarter to nearly one inch occurred north of a line from Augusta County to Spotsylvania County.

The ice this storm left behind had a large impact on the region. Hundreds of car accidents, slip and fall injuries, downed trees, and power outages were reported. A 28 vehicle pileup occurred on the Dulles Toll Road in Fairfax County at 10:30 PM on the 15th, and county officials reported 62 other accidents through sunrise on the 15th. Dozens of wrecks were reported in Clarke and Winchester Counties, including an overturned truck at the intersection of Interstates 66 and 81. In Stafford County, a jackknifed tractor trailer closed State Route 3 and 621, and Interstate 95 had to be temporarily shut down to clear fallen trees. An ambulance and fire truck ended up in a ditch after hitting ice in Shenandoah County. Loudoun County officials reported 37 accidents from 5 to 10 AM, including an accident that closed Snickersville Turnpike at Route 50 for two hours on the 15th. The icy conditions also led to over 500 pedestrian slip and fall injuries. One hospital in the Washington Metropolitan area treated over 250 patients alone with storm related injuries on the 15th. Winds gusted over 40 MPH after the precipitation ended and trees weighed down by the heavy ice accumulations fell on homes, across roads, and onto power lines across the area. Over 215,000 customers lost power from the storm across Northern Virginia, and Central Virginia reported over 6,000 additional outages. Several traffic signals across the area were out because of the power disruption through the 17th, causing additional traffic jams in the Washington D.C. suburbs.

Prince William County

Manassas Arprt

18	1530EST								
						15K			Thunderstorm Wind

A vigorous cold front swept across the region during mid afternoon on the 18th, accompanied by thunderstorms with damaging wind. Washington Reagan National Airport in Arlington County recorded a wind gust of 44 MPH at 3:15 PM. A gust of 51 MPH was recorded by a spotter in Northern Rockingham County at 3:25 PM, and 50 MPH winds were estimated by a spotter in Rappahannock County. At 3:30 PM, gusty winds from this same line of thunderstorms moved through Manassas and caused \$15,000 damage to a business building. A wood and metal facade on the side of the building was ripped from its mooring and was blown onto the ground and onto a parked car nearby.

Madison County

Countywide

24	0400EST								
	0800EST								Flash Flood

Storm Data and Unusual Weather Phenomena

January 1999

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

VIRGINIA, North

Page County

East Portion	24	0400EST 0800EST			0	0	Flash Flood
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Warren County

Front Royal	24	0400EST 0800EST			0	0	Flash Flood
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Strong southerly winds ahead of an area of low pressure ushered in copious amounts of moisture from the Gulf of Mexico and the Atlantic Ocean. Rain showers developed across Central Virginia on the 23rd and continued to drop heavy rain through sunrise on the 24th. Rainfall totals were heaviest in Warren, Page, and Madison Counties. Rainfall totals from Page County early on the 23rd through midday on the 24th included 3.54 inches at Lewis Mountain Camp, 3.52 inches at Big Meadows, 2.84 inches at Rocky Branch, and 2.56 inches at Skyland. County officials reported high water covering Highway 211 east of the foot of Skyline Drive, and two additional low lying bridges in the county under water at 7:30 AM. Rainfall totals from Madison County included 3.03 inches at Syria, 2.83 inches at Hood, 2.72 inches at Nethers, and 2.52 inches at Fork Mountain. Hogback Mountain in Warren County reported 3.84 inches of rainfall. Officials in Warren County reported high water covering the East 8th Street Bridge and the intersection of Hollow and Float Mountain in Front Royal at 7:30 AM.

VIRGINIA, Northwest

Dickenson County

Haysi to Mc Clure	18	0105EST			0	0	2K Thunderstorm Wind
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Trees fell along Route 63.

VAZ003>004

Dickenson - Buchanan

	22	1100EST 1800EST			0	0	Record Warmth
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Afternoon temperatures reached the 70s in the river valleys. Grundy was 78 degrees, while Clintwood observed 72.

VIRGINIA, Southwest

VAZ007

Tazewell

	02	1900EST 1930EST			0	0	20K High Wind
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High winds during the evening hours on the 2nd destroyed two mobile homes two miles west of Tazewell.

Carroll County

2 NE Dugspur	23	1420EST			0	0	10K Thunderstorm Wind
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Floyd County

2.7 SSW Indian Vly to 2.5 SSW Indian Vly	23	1428EST			0	0	10K Thunderstorm Wind
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Floyd County

2.2 S Indian Vly to 2 S Indian Vly	23	1430EST	0.2	60	0	0	12K Tornado (F1)
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Floyd County

1.6 SSE Indian Vly	23	1432EST			0	0	0.50K Thunderstorm Wind
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Franklin County

Gladehill	23	1550EST			0	0	0 Thunderstorm Wind
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Franklin County

Union Hall	23	1550EST			0	0	0 Thunderstorm Wind
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Thunderstorm winds during the afternoon hours on the 23rd resulted in damaging winds and a tornado.

A tornado formed about 2.2 miles south of Indian Valley at 1430 EST and travelled north-northeast about 1/5 mile before dissipating. The tornado uprooted and snapped off trees, damaged a barn and a house, and destroyed two outbuildings.

Thunderstorm winds snapped off trees in Glade Hill and Union Hall, knocked down and snapped off trees and destroyed a hay barn about 2 1/2 miles south-southwest of Indian Valley, snapped off a tree and damaged an outbuilding about 1 1/2 miles south-southeast of Indian Valley, and tore the roof off a barn, destroyed an outbuilding and snapped off and knocked over numerous trees 2 miles northeast of Dugspur.

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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VIRGINIA, Southwest

VAZ058

Halifax

24	1930EST				0	0			Flood
26	1400EST								

Heavy rain on the 23rd resulted in minor flooding on the Dan River at South Boston. The Dan River crested almost three feet above flood stage at South Boston at 0600 EST on the 25th

WASHINGTON, Northeast

WAZ033-035>038-041>044

Washington Palouse - Upper Columbia Basin - Spokane Area - Northeast Mountains - Okanogan Highlands - Wenatchee Area - East Slopes Northern Cascades - Okanogan Valley - Waterville Plateau

10	1700PST				0	0			Heavy Snow
30	1700PST								

Heavy snow of 4-18" each day across portions of eastern Washington. Some sites included Bodi Mountain, Pullman, Hartline, Davenport, Methow, Waterville, Chelan, Mt. Spokane and Chewelah. The heaviest 24hr snowfall amount was 28" near Wintrop in the East Slopes of the Cascades.

WASHINGTON, Northwest

WAZ009

Admiralty Inlet Area

14	1700PST				0	0			High Wind (G52)
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A spotter in Oak Harbor reported sustained winds of 40-45 mph.

Kitsap County

4 S Brownsville

18	1100PST				0	0			Heavy Rain
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In the 5 day period ending the 19th, Bremerton reported 5.7 inches of rain (the average for the month of Jan is 7.64). The heavy rain caused the Skokomish River to flood and several mudslides. The Illahee-Brownsville Road was closed until 18 dump truck loads of mud were removed from the roadway.

WAZ017

West Slopes Northern Cascades And Passes

18	2000PST				1	0			Avalanche
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On Mount Baker, the body of a missing snowboarder was not found. He is presumed dead. M29OU

WAZ002-005>011-016

Western Whatcom - Northwest Interior - Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Admiralty Inlet Area - Hood Canal/Kitsap Peninsula - Southwest Interior - Central Coast

28	2235PST				0	0	500K		High Wind (G65)
29	0800PST								

Sustained winds of 40 mph were reported from spotters in Bremerton and Lyman. There were also gusts to 75 mph reported in Bellingham and from the Hood Canal Bridge, which closed for about 6 hours. At one point there were about 50,000 Puget Sound area customers without power. Ferries were running late or not at all, a few trees fell on houses and part of the Ocasta school roof in Grays Harbor County was blown off.

Clallam County

2 W Joyce

29	0000PST				0	0	350K		Heavy Rain
	1200PST								

A part of State Highway 112 collapsed near Fielding Creek.

WASHINGTON, Southeast

WAZ028

Lower Columbia Basin

04	1145PST				0	0			High Wind (G51)
	1215PST								

Several remote sensors at Hanford reported wind gusts to near 60 mph between 1145 A.M. and 1215 P.M.. The Richland airport reported sustained wind of 35 mph with gusts to around 50 mph at noon.

WAZ025

East Slopes Southern Cascades

17	0600PST				0	0			Heavy Snow
	1700PST								

In the town of Wenas and near Chinook Pass, 6 to 7 inches of snow fell above 2500 feet elevation.

WAZ030

Northwest Blue Mountains

17	1200PST				0	0			Heavy Snow
18	0500PST								

Ski Bluewood reported 9 inches of new snow between noon and 5 A.M..

WAZ030

Northwest Blue Mountains

21	0500PST				0	0			Heavy Snow
22	0500PST								

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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WASHINGTON, Southeast

Ski Bluewood reported 11 inches of new snow in 24 hours at 4200 feet elevation.

WAZ030

Northwest Blue Mountains

22	0500PST				0	0			Heavy Snow
23	0500PST								

Ski Bluewood reported 9 inches of new snow in 24 hours at 4200 feet elevation.

WAZ026>027

Kittitas Valley - Yakima Valley

22	1000PST				0	0			Heavy Snow
	1800PST								

Up to 2 1/2 inches of snow fell below an elevation of 2200 feet.

WAZ025

East Slopes Southern Cascades

27	0700PST				0	0			Heavy Snow
28	1200PST								

Light snow began to fall during the morning of the 27th and increased in intensity during the afternoon. In the lowest elevations (1900 feet) 9 inches of snow fell. Above 3000 feet, up to 2 1/2 feet of new snow fell at Snoqualmie Pass.

WASHINGTON, Southwest

WAZ021

South Coast

15	2000PST				0	0			High Wind (G40)
16	0100PST								

Cape Disappointment lighthouse on the Southern Washington coast reported 46 mph winds .

WAZ021

South Coast

17	2200PST				0	0			High Wind (G35)
18	1000PST								

Another Pacific storm caused winds of 40 mph at Cape Disappointment lighthouse.

WAZ021

South Coast

28	1400PST				0	0			High Wind (G48)
29	1200PST								

Another strong Pacific storm caused 48 mph winds gusting to 55 mph at Cape Disappointment lighthouse.

WEST VIRGINIA, East

WVZ048>055

Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy

02	1400EST				0	0			Winter Storm
03	0400EST								

An area of low pressure moved from the Ohio Valley to the Eastern Great Lakes on the 2nd, spreading precipitation across the Mid-Atlantic region from the morning of the 2nd to early morning on the 3rd. High pressure centered over New England brought a shallow layer of sub-freezing air to locations east of the Appalachian Mountains. Closer to the mountains this layer of cold air was deep enough to allow 2 to 5 inches of snow to fall. East of a line from Hardy to Morgan County, this layer of cold air was shallower, causing some of the precipitation to fall in the form of sleet and freezing rain. Berkeley County reported 1/3 inch of ice accumulation in addition to 2 inches of a snow/sleet mix.

WVZ048>055

Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy

08	0200EST				0	0			Winter Storm
	2300EST								

An area of low pressure over Ohio brought a variety of precipitation to the Eastern Panhandle of West Virginia. Precipitation started off as snow during the early morning hours of the 8th. By mid to late afternoon warm air moved into the middle levels of the atmosphere turning the precipitation into freezing rain. The freezing rain continued through late evening when temperatures finally rose above freezing at the surface. Snowfall amounts included 10 to 12 inches in the higher elevations of Western Grant and Mineral Counties, and 7 to 10 inches in Central Grant and Mineral Counties and Western Pendleton County. Five to 7 inches fell across the rest of Pendleton, Grant, and Mineral Counties, in addition to Hampshire, Hardy, Morgan, Berkeley, and Jefferson Counties. Ice accumulations on top of the snowfall ranged from a trace to 1/4 of an inch. The aftermath of the snow and ice included school closings and several car accidents. Interstate 81 was treacherous during the storm. All schools across the Eastern Panhandle were closed on the 8th due to poor driving conditions.

WVZ048>055

Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy

14	0000EST				0	0	80K		Ice Storm
15	0700EST								

A strong arctic cold front moved slowly southeast across the Mid-Atlantic region from late on the 13th to midday on the 15th. This front brought a thin layer of sub freezing air to the lowest levels of the atmosphere, but just off the surface warmer air moved in. A low pressure system developed on the 13th over the Tennessee Valley. The low moved into the Mid-Atlantic region over the next few days, spreading precipitation region wide from early on the 14th through early on the 16th. The precipitation started as snow but melted into rain as it fell through the warm layer of air in the mid levels of the atmosphere. Unfortunately the ground was below

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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WEST VIRGINIA, East

freezing during the period so the rain froze on every surface it came in contact with. This created ice accumulations of one quarter to one half inch through early afternoon on the 14th. By 9 PM on the 15th, up to an additional one quarter inch of ice accumulated.

The ice this storm left behind had a significant impact on the region. Several car accidents, slip and fall injuries, downed trees, and power outages were reported. A motorist was seriously injured in an accident on Highway 522 in Morgan County south of the Hancock Bridge at 1:30 PM on the 15th. Many area schools were closed on the 15th. Winds gusted over 40 MPH after the precipitation ended and some trees weighed down by ice fell onto roads and power lines.

WEST VIRGINIA, North

WVZ001>004-012-021>023-041 **Hancock - Brooke - Ohio - Marshall - Wetzel - Marion - Monongalia - Preston - Tucker**

02	0700EST								
03	0400EST				0	0	50K		Winter Storm

A strong winter storm approached the region from the south central U.S., bringing a mix of snow, sleet and freezing rain to northern West Virginia. Snowfall amounts of between 2 and 3 inches were reported across the panhandle counties during the day of the 2nd. Otherwise, slightly lesser amounts of between 1 and 3 inches were found across the remaining sections of northern West Virginia. Some isolated higher amounts of between 4 and 6 inches were reported on some of the mountain ridges of Preston County. Most problems came later on the 2nd as the snow turned over to freezing rain. Ice accumulations of between 1/4 and 1/2 inch were reported across much of the area. This freezing rain caused numerous power outages which lasted into the early morning hours of the 3rd. In Preston County, 22 elderly residents of an apartment complex in Masontown were evacuated on the evening of the 2nd as a power outage cut off their electric heat.

WVZ001>004-012-021>023-041 **Hancock - Brooke - Ohio - Marshall - Wetzel - Marion - Monongalia - Preston - Tucker**

08	0400EST								
09	0300EST				0	1	60K		Winter Storm

A winter storm spread a mix of snow and freezing rain across all of northern West Virginia. By the afternoon of the 8th, snowfall amounts generally ranged from 3 to 5 inches across the area, with higher amounts of over 6 inches reported over some of the higher terrain in Preston and Tucker Counties. Humbleton, in Tucker County, reported a total of 13 inches. By the evening of the 8th the snow had turned over to freezing rain across the region and continued into the early morning hours of the 9th. Many areas across northern West Virginia reported ice accumulations of around 1/4 inch. As a result, over 8,000 people were without power by the evening of the 8th. This coating of ice also made travel extremely hazardous across the area. A 19-year-old female was injured on the afternoon of the 8th as her vehicle slid off Interstate 68 and down an embankment near Bruceton Mills in Preston County.

Marshall County

Countywide **09 0930EST** **0 0 50K** **Flood**
2200EST

Runoff from the rain which fell on top of several inches of new snow caused minor flooding at several locations across the county. A few houses experienced minor flooding along Big Grave Creek in Moundsville. Minor flooding was also reported along Middle Grave Creek, Fish Creek and the Big Wheeling Creek.

WVZ001>004-012-021>023-041 **Hancock - Brooke - Ohio - Marshall - Wetzel - Marion - Monongalia - Preston - Tucker**

13	0700EST								
15	1000EST				0	0	85K		Winter Storm

A powerful winter storm brought another combination of snow and freezing rain to all of northern West Virginia. The precipitation began as a mix of snow and freezing rain across the panhandle counties, and as freezing rain across the remainder of northern West Virginia. By the time the freezing rain turned back over to all snow during the evening hours of the 14th, ice had accumulated to at least 1/4 inch across the area. Some areas in Marshall and Preston Counties reported over 1 inch of ice accumulation. The ice accumulation brought numerous power lines and large tree branches down, resulting in power outages to over 10,000 homes across the area. In Preston County alone, over 3,000 homes were without power, producing what the power company called "the worst power outage in the county since 1983".

Marshall County

6 S Moundsville **13 1845EST** **0 0** **Flood**
14 1600EST

An ice jam on Fish Creek produced minor flooding onto Fish Creek Road.

WVZ021-023-041 **Marion - Preston - Tucker**

18	1225EST								
	1250EST				0	0	35K		High Wind (G60)

An intensifying area of low pressure moving across the Great Lakes trailed a strong cold front to the south. This front passed through northern West Virginia during the early afternoon hours of the 18th. This front was accompanied by high winds estimated at over 60 MPH, along with a mix of rain, sleet and snow, as it passed across the area.

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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WEST VIRGINIA, North

These high winds produced some damage across the area as a portion of a roof was peeled back in Fairmont, Marion County. Roof damage was also reported in Gladesville, Preston County. Several reports of downed trees were received from across Tucker County.

Marshall County

Viola	18	2348EST			0	0			Flood
	19	1100EST							

An ice and debris jam near Viola caused the Big Wheeling Creek to rise out of its banks. Nearly one foot of water was reported on Big Wheeling Creek Road in Viola.

Marshall County

Graysville	22	0001EST			0	0			Hail (0.75)
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WEST VIRGINIA, Southeast

NONE REPORTED.

WEST VIRGINIA, West

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 Precipitation
31	2300EST								

Total monthly precipitation was 4 to 8 inches, about twice the norm. With temperatures averaging 4 to 6 degrees above normal, most of the precipitation fell as rain. However, despite the abundant rain, no major river flooding occurred. The dry weather during late summer and autumn had left the ground water low and the top soil dry. January's rain certainly replenished the surface water supply. It was the 5th wettest January for Elkins with 6.28 inches. The most precipitation reported from cooperative observers included 8.67 inches at Snowshoe, 8.14 inches at Glady, 7.96 inches at Kumbrabow State Forest, and 7.62 inches at Rock Cave.

WVZ033>038-046>047
Mcdowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Pocahontas - Randolph

02	1700EST				0	0			Winter Storm
	2200EST								

Freezing rain and sleet accumulated a quarter to a half inch. In Pocahontas County, the depth was around 2 inches. Scattered power outages occurred. A gusty southeast wind gusted to 50 mph at Sophia.

WVZ038>040-047
Webster - Upshur - Barbour - Randolph

06	1800EST				0	0			Snow
07	0400EST								

Moisture along and behind a cold front, resulted in a 2 to 6 inch snowfall.

WVZ005>006-013>015-026>027
Wayne - Cabell - Lincoln - Putnam - Kanawha - Boone - Clay

08	0200EST				1	0			Ice Storm
	0900EST								

Rains of 0.5 to 0.8 inches fell with surface temperatures of 25 to 30 degrees. A quarter to a half inch of ice accumulated. Roads were not as icy as sidewalks, since most roads were previously treated. Ice accumulated the most on vehicles and trees. A 40 year old female was killed in Huntington around 0830E when a large tree fell onto a vehicle. She was the front passenger of that vehicle. A few power outages also occurred. F40VE

WVZ009>011-017>020-028>032-038>040
Wood - Pleasants - Tyler - Wirt - Calhoun - Ritchie - Doddridge - Braxton - Gilmer - Lewis - Harrison - Taylor - Webster - Upshur - Barbour

08	0400EST				0	0			Winter Storm
	1200EST								

One to 3 inches of snow accumulated, then changed to freezing rain. A quarter inch of ice was deposited.

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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WEST VIRGINIA, West

WVZ046>047

Pocahontas - Randolph

	08	0400EST 1200EST			0	0			Winter Storm
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Two to 5 inches of snow accumulated, then changed to freezing rain. A quarter inch of ice was deposited.

Mingo County

Delbarton

	18	0125EST			0	0	2K		Thunderstorm Wind
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Large tree branches were downed.

Mingo County

Williamson

	18	0125EST			0	0			Hail (0.75)
--	----	---------	--	--	---	---	--	--	-------------

Wayne County

Crum

	18	0125EST			0	0	2K		Thunderstorm Wind
--	----	---------	--	--	---	---	----	--	-------------------

Power lines were blown down.

Mingo County

Lenore

	18	0135EST			0	0			Hail (1.25)
--	----	---------	--	--	---	---	--	--	-------------

Wayne County

Wayne to Dunlow

	18	0135EST			0	0	2K		Thunderstorm Wind
--	----	---------	--	--	---	---	----	--	-------------------

Several large tree branches fell across the roads.

Lincoln County

Ranger

	21	0910EST			0	0			Hail (0.75)
--	----	---------	--	--	---	---	--	--	-------------

Roane County

Spencer to Reedy

	21	1600EST 2100EST			1	0	250K		Flash Flood
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F27VE

Lewis County

Crawford to Ireland

	21	1800EST 2200EST			0	0	5K		Flash Flood
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Wirt County

4 S Palestine

	21	1800EST 2100EST			0	0	15K		Flash Flood
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Upshur County

Countywide

	21	2000EST			0	0	20K		Flash Flood
	22	0200EST							

Rains of 2 to 2.5 inches were common between 1100 to 1900E, in a narrow band located north of a warm frontal zone. The heaviest rains, estimated at over 3 inches fell over northern Roane County. The most rain measured by cooperative observers included Ripley with 2.7 inches, Racine Locks near Letart 2.5 inches, and Creston with 2.4 inches. Flooding occurred along Reedy Creek that flows into southern Wirt County. Around 1700E, a 27 old female, driving a small car, flipped over into Stover Fork, west of Spencer. Only the 4 wheels of the vehicle were showing. Two fireman got her out. She died later that evening. In the community of Reedy, evacuations of 40 to 45 people were required. They were sheltered at the Reedy Grade School. One home and one mobile home had major damage. A total of 20 dwellings and businesses had minor water damage in the Reedy vicinity. One home near Ellamore of Upshur County and another home near Lucille of Wirt County had minor damage.

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

	22	1100EST 1800EST			0	0			Record Warmth
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Afternoon temperatures reached the 70s in the lowlands, with 50s and 60s in the mountains. Preliminary data indicated Hamlin and downtown Huntington were the warmest with 78 degrees.

WISCONSIN, Extreme Southwest

NONE REPORTED.

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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WISCONSIN, Northeast

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

02	1000CST				0	0			Winter Storm
03	0100CST								

WIZ022-038>040-048>050 Door - Outagamie - Brown - Kewaunee - Winnebago - Calumet - Manitowoc

02	1000CST				0	0			Blizzard
	2100CST								

An intense area of low pressure produced strong winds and heavy snow across northeast Wisconsin. Blizzard conditions were common in east central Wisconsin where wind gusts over 40 mph and 8 to 15 inches of snow produced whiteout conditions. Strong winds and 7.7 inches of snow closed Austin Straubel Airport in Green Bay (Brown county) but the heaviest snowfall was 15.2 inches at Brillion in Calumet county. Snowfall totals were mainly in the 6 to 12 inch range across the rest of northeast Wisconsin where winds were not quite as strong.

WIZ005-010-018 Vilas - Oneida - Lincoln

22	0900CST				0	0			Heavy Snow
	2000CST								

WIZ013-020>021-031-036>039-045-048>049 Marinette - Menominee - Oconto - Shawano - Portage - Waupaca - Outagamie - Brown - Waushara - Winnebago - Calumet

22	1000CST				0	0			Glaze
23	1000CST								

A storm system over the central plains brought a surge of moisture from the Gulf of Mexico into the region. Cold surface temperatures combined with warmer air aloft, resulting in a lengthy period of light freezing rain across central and northeast Wisconsin. Untreated streets and sidewalks became glazed with ice and numerous traffic accidents were reported. Cold air entrenched across northern Wisconsin kept precipitation there mainly in the form of snow. Snowfall totals there were fairly uniform in the 6 to 7 inch range.

WISCONSIN, Northwest

WIZ001>004 Douglas - Bayfield - Ashland - Iron

02	2100CST				0	0			Heavy Snow
04	1000CST								

Heavy lake effect snow fell across northwestern Wisconsin, resulting in 27 inches in and around Hurley, up to 17 inches on the Bayfield Peninsula, and 8 inches in Wentworth.

WIZ002>004 Bayfield - Ashland - Iron

26	1545CST				0	0			Heavy Snow
27	0800CST								

Heavy snowfall in northwestern Wisconsin ranged from 6 inches in Hurley up to 7.5 inches in Bayfield.

WISCONSIN, Southeast

WIZ062-067>068 Iowa - Lafayette - Green

02	0700CST				0	0			Winter Storm
	2359CST								

Specific snow accumulations: Darlington (Lafayette Co.) 16.5 inches, Monroe (Green Co.) 12.5, Dodgeville (Iowa Co.) 10.0 inches.

Additional details for this Winter Storm can be found in the narrative paragraphs associated with the 01/02/99 Blizzard over southeast Wisconsin during the 0900-2359CST timeframe.

WIZ051>052-058>060-064>066-069>072 Fond Du Lac - Sheboygan - Dodge - Washington - Ozaukee - Jefferson - Waukesha - Milwaukee - Rock - Walworth - Racine - Kenosha

02	0900CST				0	5	11K		Blizzard
	2359CST								

A snarling, crippling winter storm/blizzard all but paralyzed southcentral and southeast Wisconsin, depositing 10 to 20.5 inches of snow, generating wind gusts to 45 to 63 mph, whipping up huge drifts of 4 to 8 feet in height, and causing numerous chain-reaction collisions of dozens of vehicles. For some locations, this storm was the worst since the famous January 1947 storm. Thanks to cold temperatures of 15 to 22 degrees, the snow was fluffy. Consequently, the horizontally moving snow was so dense that it looked like fog, as mentioned in the Milwaukee Journal-Sentinel newspaper. The Milwaukee Mitchell International Airport closed down at the height of the storm on Saturday, and Greyhound buses stopped running at 1030CST. Many flights at the Madison airport

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

WISCONSIN, Southeast

were canceled. As a result, roughly \$1.0 million in revenue was lost in the aviation community. Nearly all cities and villages declared a snow emergency to help snow plowing operations which were expected to total about \$1.0 million. Snowpiles eventually resembled small mountains.

Peak wind gusts from the east/northeast were generally around 39 knots (45 mph) west of a line from Fond du Lac to Janesville where Winter Storm conditions prevailed. Visibilities in the Winter Storm area were occasionally below 1/4 mile... but most of the time around 1/2 mile. East of this line peak gusts were 43 to 48 knots (50 to 55 mph), except for gusts to around 52 knots (60 mph) along the Lake Michigan shoreline. Port Washington (Ozaukee Co.) had the highest measured gust of 55 knots (63 mph). Blizzard conditions prevailed east of the Fond du Lac to Janesville line where visibilities were frequently 1/4 mile or less... and occasionally near zero.

There were 4 cases of frostbite treated at Milwaukee County hospitals. In addition, a man suffering from hypothermia was rescued from his garage in Wauwatosa. Otherwise, there were 4 indirectly-related deaths in Milwaukee County due to people suffering from heart attacks after shoveling snow.

In Waukesha County, about 60 vehicles were involved in a chain-reaction collision at 1400CST on I-94 near the Highway 18 exit due to near zero visibilities. There was one indirectly-related fatality in this accident. Elsewhere, a 51 vehicle pile up occurred at 0930CST on I-94 in Racine County. A 16 vehicle pile up was reported in Kenosha County on I-94 at 1330CST. Milwaukee County noted a 14 vehicle pile up near Mitchell Field at 1130CST. A driver in Kenosha County said it was like driving in a can of white paint. All together there were probably about 300 vehicle accidents in southcentral and southeast Wisconsin, resulting in at least 17 indirectly-related injuries.

Structural damage was reported in the city of Port Washington due to the strong winds. Two businesses noted damage to signs and roofs. In addition, a church had a stained glass window blown in. The wind also snapped some power lines, resulting in the loss of electrical service to about 5000 customers in the counties of Milwaukee, Racine, and Kenosha; and to about 2000 customers in Sheboygan county.

What made the winter storm/blizzard so different was the duration of blizzard-like conditions for 12 to 15 hours, while snowfall rates occasionally peaked at 1 to 1.5 inches per hour. Synoptically, the responsible low pressure eventually moved north/northeast through southeast Illinois, western Indiana, and then up along the eastern shoreline of Lake Michigan. Generally, a swath of 15 to 20 inches of accumulation extended from around West Bend (Washington Co.) to western Kenosha County. Elsewhere a band of 12 to 16 inches was observed from Lafayette County northeast through western Dane County to western Sheboygan County.

Specific snow accumulations in the blizzard area include...

- Washington County: 20.5 inches at Big Cedar Lake, 18.5 at West Bend, and 18.3 at Cedarburg
- Kenosha County: 19.0 inches at Wilmot, and 14 at Kenosha
- Waukesha County: 17.0 inches at Waukesha
- Milwaukee County: 16.7 inches at West Allis, and 15.4 inches at Mitchell Field
- Ozaukee County: 15 inches at Port Washington
- Sheboygan County: 15 inches at Sheboygan Falls, and 12.5 inches at Sheboygan
- Walworth County: 14.7 inches at Lake Geneva
- Jefferson County: 14.5 inches 4SSE of Sullivan, 14 inches at Watertown, 13.2 at Ft. Atkinson
- Racine County: 14 inches at Burlington, and 12 at Caledonia
- Fond du Lac County: 13.5 inches at Fond du Lac
- Rock County: 13 inches at Milton, 12.5 at Janesville, and 11.5 at Beloit.

Marquette - Green Lake - Sauk - Columbia - Dane

02	1000CST 2359CST	0	0		Winter Storm
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Specific snowfall totals include...

- Columbia County: 16.0 inches at Wisconsin Dells, and 14 at Portage
- Dane County: 16.0 inches at Windsor, 14.1 at Cross Plains, 11.5 at Stoughton, and 10.8 at Madison Airport
- Marquette County: 13.1 inches at Oxford, and 11 at Montello
- Sauk County: 12 inches at Rock Springs
- Green Lake County: 10 inches at Green Lake

Additional details for this Winter Storm can be found in the narrative paragraphs associated with the 01/02/99 Blizzard over southeast Wisconsin during the 0900-2359 timeframe.

**WIZ046>047-
056>057-063**

Storm Data and Unusual Weather Phenomena

January 1999

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

WISCONSIN, Southeast

WIZ046>047-051>052-056>060-062>072 Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha

05 0000CST 1800CST 0 0 Extreme Cold

The combination of an arctic high pressure ridge, a fresh, deep snowcover, clear skies, and light winds allowed temperatures to plunge to well below zero across southcentral and southeast Wisconsin. Several new low temperatures records were set: -23 at Janesville (Rock Co.), breaking the old daily record of -19 set back in 1998, and -20 in the city of Kenosha.

Baraboo (Sauk Co.) was the coldest in the state with a -32, while Monroe (Green Co.) dropped to -26. Other observed minimums...Portage (Columbia Co.) -24, Stoughton (Dane Co.) -23, Ft. Atkinson (Jefferson Co.) -21, Germantown (Washington Co.) -21, Madison (Dane Co.) -20, Kenosha (Kenosha Co.) -20, Union Grove (Racine Co.) -20, Watertown and Lake Mills (Jefferson Co.) -20, Waukesha (Waukesha Co.) -19, Beloit (Rock Co.) -19, Wisconsin Dells (Columbia Co.) -17, Racine (Racine co.) -16, Fond du Lac (Fond du Lac co.) -15, and Milwaukee (Milwaukee Co.) -15.

Thousands of calls to local AAA and car service centers were logged due to stalled vehicles. Maximum temperatures were only around zero. This was the coldest weather observed since February 1996 in southcentral and southeast Wisconsin.

WISCONSIN, Southwest

WIZ032>034-041>044-053>055-061 Buffalo - Trempealeau - Jackson - La Crosse - Monroe - Juneau - Adams - Vernon - Crawford - Richland - Grant

01 2200CST 03 0700CST 0 6 Winter Storm

The first winter storm of the season brought 8 to 13 inches of snow to southwest and central Wisconsin. Strong northeast winds created 2 to 4 foot drifts, making many roads impassable. The highest snowfall accumulations of 12 to 13 inches were reported by cooperative observers at Lancaster (Grant County), Mauston (Juneau County) and Wilton (Monroe County).

WIZ041>043 La Crosse - Monroe - Juneau

24 1200CST 2100CST 1 20 130K Heavy Snow

A heavy snow band set up from La Crosse through the Tomah area to around Mauston with accumulations of 6 to 8 inches. A 28 car pileup occurred on Interstate 90-94 near Oakdale (Monroe County), but only minor injuries were reported. Another weather related accident occurred when a man was killed when his pickup truck was hit by a semi-trailer on a snowy on-ramp near Lyndon Station (Juneau County). M41VE

WISCONSIN, West

WIZ023>025 St. Croix - Pierce - Dunn

22 0300CST 2300CST 0 0 Winter Storm

Strong surface low pressure tracked across Nebraska and Iowa and created a belt of mixed precipitation in west central Wisconsin. Total snow amounts between three and five inches fell in the mentioned counties. Freezing rain accumulations were between one tenth and one quarter of an inch.

WYOMING, Central and West

WYZ004 Cody Foothills

14 0820MST 0920MST 0 0 High Wind (G61)

Two "18-wheelers" blown over on Hiways 120 and 294 in northern Park County. Winds estimated at least 70 mph.

WYZ006 Teton/Moutains

17 2200MST 18 1900MST 0 0 Heavy Snow

Up to 10 inches of new snow in the Bondurant and Togwotee Pass areas.

WYOMING, Extreme Southwest

NONE REPORTED.

WYOMING, North Central

WYZ099 Sheridan Foothills

16 1600MST 1800MST 0 0 High Wind (G49)

Storm Data and Unusual Weather Phenomena

January 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, North Central

A cold front produced sustained winds of 46 mph with gusts up to 56 mph in Sheridan as it moved through North Central Wyoming.

WYOMING, Northeast

NONE REPORTED.

WYOMING, Southeast

WYZ064-066>067-069 North Laramie Range - Laramie Range - Platte - Cheyenne Foothills

05	0300MST 1320MST				0	0	0	0	High Wind (G67)
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Strong west winds of 35 to 45 mph, with gusts over 65 mph occurred in the southeast mountains and adjacent plains.

WYZ063>064-066>067 Snowy Range - North Laramie Range - Laramie Range - Platte

09	0250MST 1535MST				0	0	0	0	High Wind (G49)
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Strong west winds of 40 to 50 mph with higher gusts occurred along the east slopes of the southeast mountains and adjacent plains.

WYZ061-063-065>067-069 Southwest Carbon - Snowy Range - Laramie Valley - Laramie Range - Platte - Cheyenne Foothills

10	1900MST				0	0	0	0	High Wind (G68)
11	1536MST								

Strong west winds of 35 to 50 mph, with gusts over 60 mph occurred in the southeast mountains and adjacent plains. A peak gust of 78 mph occurred 15 miles west of Cheyenne.

WYZ061-065>067-069 Southwest Carbon - Laramie Valley - Laramie Range - Platte - Cheyenne Foothills

14	0930MST 1755MST				0	0	0	0	High Wind (G63)
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Strong west to southwest winds were sustained at 30 to 40 mph, with gusts up to 60 mph at the lower elevations of southeast Wyoming. In the southeast mountains, west to southwest winds of 40 to 50 mph, with gusts over 70 mph occurred.

WYZ059-061-063>067 Converse - Southwest Carbon - Snowy Range - North Laramie Range - Laramie Valley - Laramie Range - Platte

14	2145MST				0	0	0	0	High Wind (G87)
15	1545MST								

Strong northwest winds of 25 to 35 mph with gusts over 70 mph, occurred in the southeast mountains and adjacent plains. A peak gust of 87 mph occurred at Dodge Creek in the Laramie Range.

WYZ061 Southwest Carbon

21	0440MST 2300MST				0	0	0	0	Winter Storm
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A winter storm dumped 6 to 8 inches of snow in the Rawlins area.

WYZ061 Southwest Carbon

23	1115MST				0	1	12K	0	Ice Roads
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Icy roads caused several crashes a few miles west of Rawlins. In one accident, a tow truck driver was injured, when a car which was struck from behind by a semi, left the roadway and hit him as he was working to clear another accident on the shoulder of Interstate 80.

WYZ062>063 North Carbon - Snowy Range

24	0300MST 1500MST				0	0	0	0	Winter Storm
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A winter storm produced 8 to 12 inches of snowfall in the Snowy Range.

WYZ069 Cheyenne Foothills

26	1248MST				0	0	10K	0	High Wind (G44)
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Strong winds caused a semi-trailer to roll over and three Union Pacific cars to derail at 1250. There were no injuries in the rollover or derailment.

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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August 1998

ADDITIONS/CORRECTIONS

ALASKA, Southeast

**AKZ022>025-
027>028**

**Cape Fairweather To Cape Suckling-Coastal Area - Cape Decision To Cape Fairweather-Coastal Area -
Lynn Canal-Glacier Bay - Juneau Borough-Admiralty Island-Icy Strait Area - Southern Southeast Alaska
Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area**

28	0330AST								
29	2045AST				0	0			High Wind (G53)

A strong low over the Central Gulf of Alaska tracked north over Cape Yakataga, and the associated front moved onshore over the Panhandle with strong, gusty winds. Peak gust was 53kt/61mph at Ketchikan. A power outage occurred in Juneau due to a downed tree near the high school.

PACIFIC

Guam

Ritidian Point

29	1605SST 1817SST								
				1	0				Rip Currents

A man, Herlin Honik, 36, was spear fishing with three other relatives near a rocky channel near the Guam National Wildlife office at Ritidian Point. Honik was in the water when he noticed that one of his relatives was having trouble in the water. He tried to rescue that person, who eventually made it back to shore. The relatives contacted the assistant manager of the refuge, Mike Ritter, at 1615 to get help. Rescue crews arrived 10 minutes later. A HC-5 helicopter joined several Guam rescue units. Two fire fighter rescue divers found Honik's body at 1817, there were no signs of life. M36IW

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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September 1998

ADDITIONS/CORRECTIONS

ALASKA, Southeast

AKZ028

Dixon Entrance To Cape Decision-Coastal Area

05	2115AST				0	0			High Wind (G55)
06	0100AST								

Strong, gusty winds occurred over the southern outer coast of Southeast Alaska ahead of a frontal boundary approaching from the North Pacific. Hyaberg Seaplane Base reported 63 mph winds.

PACIFIC

Guam

Countywide

11	2000SST				0	0			Urban/Sml Stream Fld
12	0000SST								

Guam

Countywide

12	0400SST				0	0			Urban/Sml Stream Fld
	1000SST								

Saipan

Garapan

27	1500SST				1	0			Rip Currents
	1600SST								

M20IW

Active Monsoon trough developed in the region of Guam. The trough and a few weak circulations that developed in the trough brought periods of heavy rains to Guam on the 11th and 12th. On the 11th 0.75 of an inch of rain fell at the Tiyan Weather Service Office from 2000 to 2100 local. An additional 1.33 inches of rain fell from 2200 local to midnight. On the 12th 1.58 inches of rain fell from 4 to 10 local time. One of the small circulations on the trough eventually developed into Tropical Depression 08W.

On the 27th Dong Suk Kim, who was about 20 years old, was walking along the beach in Saipan with a friend. The both of them were looking for a third friend. At about 1500 local they were hit by a huge wave.

Dong's friend managed to hold onto a rock, but Dong was swept out into the sea. Rescue divers found Dong's body under about 41 feet of water.

Storm Data and Unusual Weather Phenomena

October 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

ALASKA, Southeast

Lynn Canal / Glacier Bay

Countywide	20	0700AST 1530AST			0	0			Flood
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AKZ025-025-027>028 Juneau Borough-Admiralty Island-Icy Strait Area - Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area

20	0900AST			0	0			High Wind (G62)
27	1230AST							

The same slow moving frontal boundary which caused the flooding and mudslides in the Juneau area brought strong, gusty winds. Peak winds reported were 64 mph at Mayflower Island, 64 mph at the Federal Building, and 56 mph at the Juneau Airport.

Juneau Borough / Admiralty Is

Juneau	20	1145AST 1530AST			0	0	2.3M		Flood
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After over 24 hours of steady moderate-heavy rain, widespread flooding occurred along small streams and in urban areas in Juneau. Montana Creek rose above flood stage and approximately 2 feet of water inundated a residential area in the Mendenhall Valley. A number of damaging mudslides occurred around the Juneau area causing minor damage to an unknown number of homes, roads, and state trails. The most devastating slide removed a portion of Fritz Cove Road and completely destroyed a nearby home. Juneau received 6-10 inches of rain in less than 48 hours Oct 19-20.

Flooding occurred along the Taiya and Skagway Rivers due to heavy rain over Oct.19-20. The Haines ASOS measured 4.40 inches of rain in 24 hours. A Park Service Campground near Haines was flooded, and the highways along the rivers near Skagway were damaged due to erosion. Mass wasting in the Haines area caused major damage to Lutak Road, and several other state roads and trails were washed out.

PACIFIC

Guam

Apra Harbor	10	1700AST 1730AST			0	0			Waterspout
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GUZ002-008 Micronesia - Rota

Yap	11	0300AST 1800AST			0	0	50K		Tropical Storm
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20 percent of the banana trees damaged and also some papaya trees damaged.

Saipan

Central Portion	11	1000AST 1500AST			0	2			Rip Currents
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GUZ002 Micronesia

26	1320AST 1830AST			0	0	25K		High Wind
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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.

Typhoon Zeb (18W). On the 9th a tropical disturbance located in the monsoon trough became the subject of a Tropical Cyclone Formation Alert by the Joint Typhoon Warning Center. At this time the disturbance was located near 10.8N 143.6E. The tropical disturbance developed into Tropical Depression 18W at 0400 Guam time on the 9th. At this time it was located 115 miles east of Ulithi. The center of the tropical depression passed 75 miles north of Ulithi on the night of the 10th. Tropical depression 18W strengthened into Tropical Storm Zeb on the morning of the 11th. The tropical storm passed 50 miles north of Yap during the morning of the 11th. At least 4.67 inches of rain fell on Yap from midnight on the 10th to midnight on the 12th. Significant flooding was observed over the southwest part of Yap. Peak wind observed on Yap was 45 mph at 1319 on the 11th. No deaths or injuries were reported. No buildings were damaged. About 20 percent of the banana trees were damaged. Papaya trees were also damaged. The tropical storm continued to move west and passed out of the Guam Area of Responsibility on the night of the 12th.

Tropical Storm Alex (19W). A small circulation that was to the east of Guam and Rota quickly developed into a small tropical storm on the morning of the 11th. It passed over Rota and caused a brief period of 45 mph sustained winds to the island. Minimal damage was reported. Alex was a small circulation and became caught up in the larger circulation of Typhoon Zeb. It eventually became absorbed in the larger circulation of Zeb by the 13th.

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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October 1998

ADDITIONS/CORRECTIONS

PACIFIC

Two water spouts were seen off of Apra Harbor, Guam between 1700 and 1730 local time.

Hazardous surf caused strong currents across the Marianas Islands on the 11th. Two men, Steve Gilles, 31 and Kenneth Miller, 44 were snorkeling at the Grotto in Marpi in Saipan. Both men got caught in a large wave, which swept them out to sea. Mr. Miller swam to Bird Island where he called for help. Mr. Gilles was stranded on the reef. He sustained several laceration to his face and also had bruises all over his body. It took a while to bring Mr. Gilles back to land because of the jagged rocks in the area and the distance involved.

On the 26th Strong winds moved across Chuuk State. Winds started picking up at the National Weather Service 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 exposure of the island was damaged. Low level wind convergence aided by upper level divergence helped produce showers across the region. these showers produced the strong and gusty winds over 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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November 1998

ADDITIONS/CORRECTIONS

ALASKA, Southeast

AKZ023-028

Cape Decision To Cape Fairweather-Coastal Area - Dixon Entrance To Cape Decision-Coastal Area

26	1630AST 2215AST			0	0		High Wind (G61)
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Tremendous pressure rises behind a strong front brought strong winds along the outer coast of Southeast Alaska. Cape Decision reported 70 mph winds and Cape Spencer had 62 mph winds.

PACIFIC

Guam

Chalan Pago

09	1315AST 1320AST			0	0	15K	Lightning
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Thunderstorms briefly developed across Guam during the afternoon of the 9th. A lightning bolt struck the Apusento Gardens apartment complex in Chalan Pago. Several residents reported damage to televisions, computers and other appliances. No injuries were reported.

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

IDAHO, Northwest

Several reports of 8-18" of snow in a 12 hour period were received each day from Sandpoint to Lookout Pass, Coeur d'Alene area, Moscow to Potlatch and near Kellogg.

IDZ001

Northern Panhandle

22	0100PST 1000PST				0	0	0	0	Extreme Cold
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Temperatures of -20 and -28 F were reported at the Lookout Pass and near Sandpoint.

Latah County

Moscow

27	0300PST				0	0	5K	0	Flood
29	0800PST								

Minor flooding of small streams and creeks occurred due to snow melt and 2 - 4" of rain during this period.

PACIFIC

Guam

Ritidian Point

24	1105AST 1330AST				1	0			Rip Currents
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On the 24th a Japanese tourist named Kininchiro Endo, 31 died at Ritidian Point. The man was snorkeling with his wife when he got in trouble. The women made it to shore at 1115 and notified the rangers at the National Wildlife Refuge that her husband was in trouble. They eventually pulled the man's body out of the water at 1330. The women was wearing a life jacket, but the man was not.

On the 8th a small circulation to the southeast of Palau near 6N 140E became the subject of a Tropical Cyclone Formation Alert (TCFA) issued at 1330 local time. This became Tropical Depression 24W later in the day. It remained poorly organized for a few days and was still a tropical depression when it moved north of Palau on the 9th. It passed out of the Guam Area of Responsibility on the morning of the 10th. The system eventually became Tropical Storm Faith while it was over the Philippines. M31IW

WASHINGTON, Northeast

WAZ033>038- 042>044

Washington Palouse - Moses Lake Area - Upper Columbia Basin - Spokane Area - Northeast Mountains - Okanogan Highlands - East Slopes Northern Cascades - Okanogan Valley - Waterville Plateau

01	0600PST				0	0	0	0	Heavy Snow
28	2200PST								

Several reports of 4-15 inches of snow fell in a 12 hour period each day. The highest amount was 23" near Plain. Other locations that received heavy snow were Republic, Chewelah, Leavenworth, Omak, Deer Park, Pullman, Meatalin, Waconda, Wilbur, Waterville and Quincy. Several highway accidents were reported from the snow and icy roads.

WAZ032

Lower Garfield & Asotin

27	1700PST 2300PST				0	0	20K	0	High Wind
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Winds of 50-60 mph ripping through Pomeroy causing roof damage to several buildings and taking a garden shed down. Heavy rain also accompanied the wind.

Whitman County

Pullman

27	2100PST				0	0	50K	0	Flood
28	0500PST								

Rapid snowmelt and 2-4 inches of rain lead to flooding of small creeks and streams around Pullman. Portions of the WSU campus experienced flooding, while several downtown businesses and city streets were inundated by a foot of water. Portions of Highway 195 were closed.

Chelan County

Cashmere to Entiat

28	0900PST				0	0	80K	0	Flood
29	1700PST								

An ice jam on Mission Creek in addition to rapid snow melt caused flooding from Cashmere to Entiat. Several basements of homes and structures were flooded, included a few downtown businesses in Cashmere. Portions of Highway 28 were closed. Douglas Creek also caused some minor flooding.

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. This number can be either E (estimated) by damage caused, or M (measured) by known calibrated anemometers. Ex. (M61) = measured 61 knots or E(75) = estimated at 75 knots.

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.

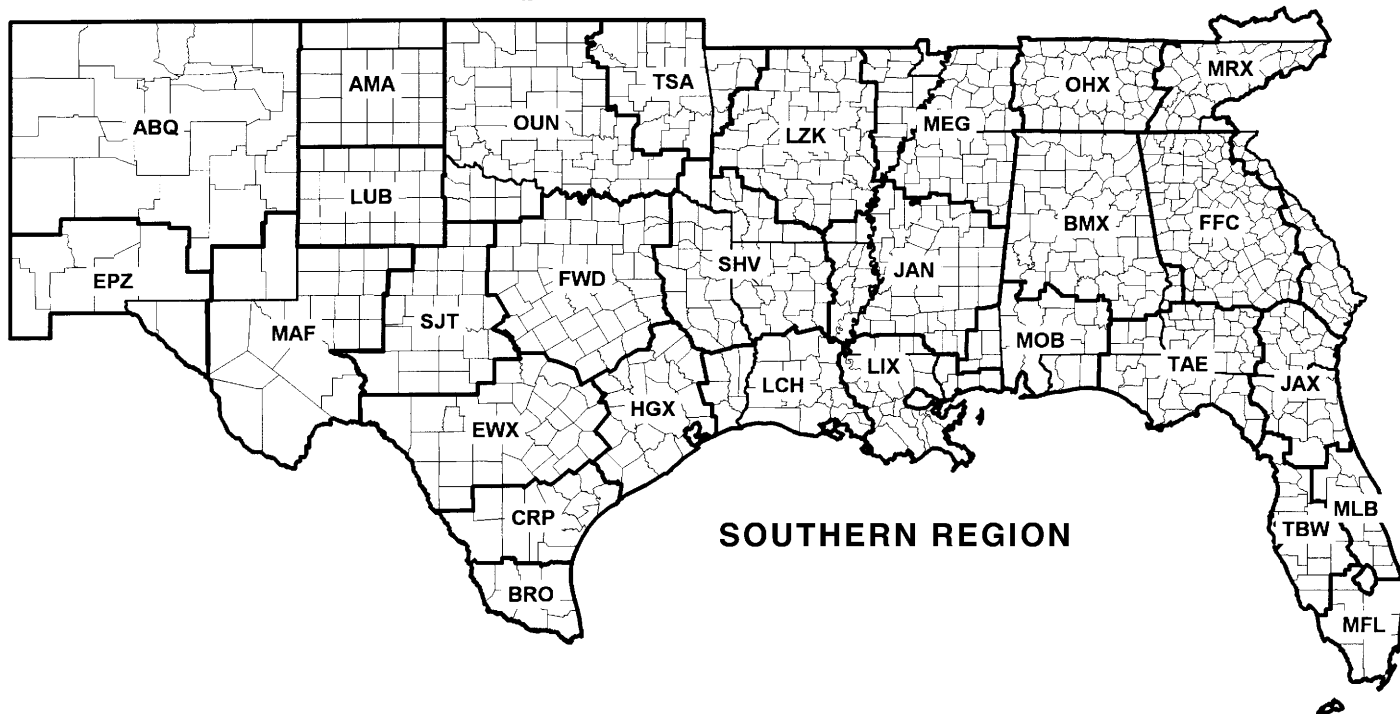


* From the Journal of Atmospheric Science, August 1981, p. 1517-1519

COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS

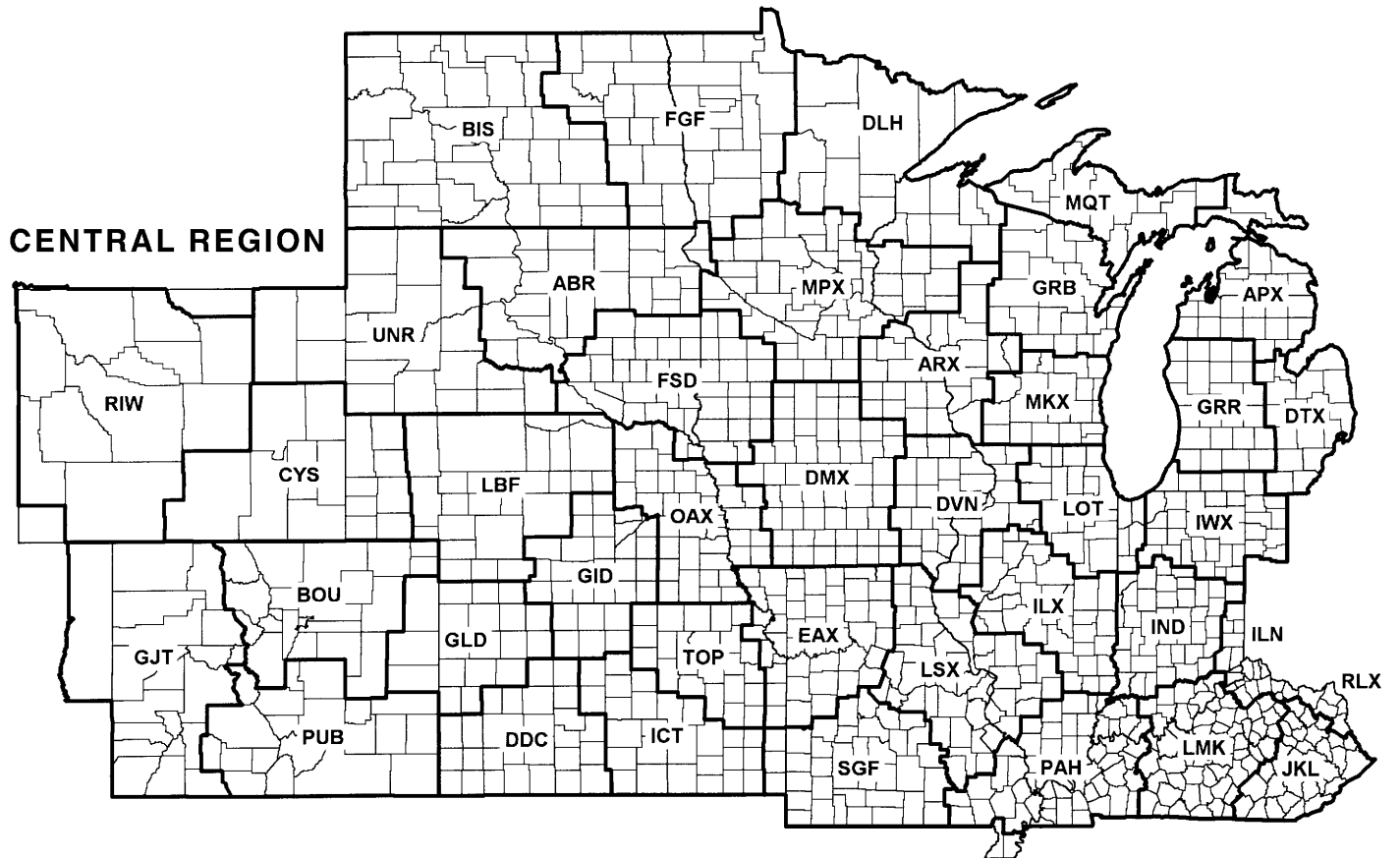
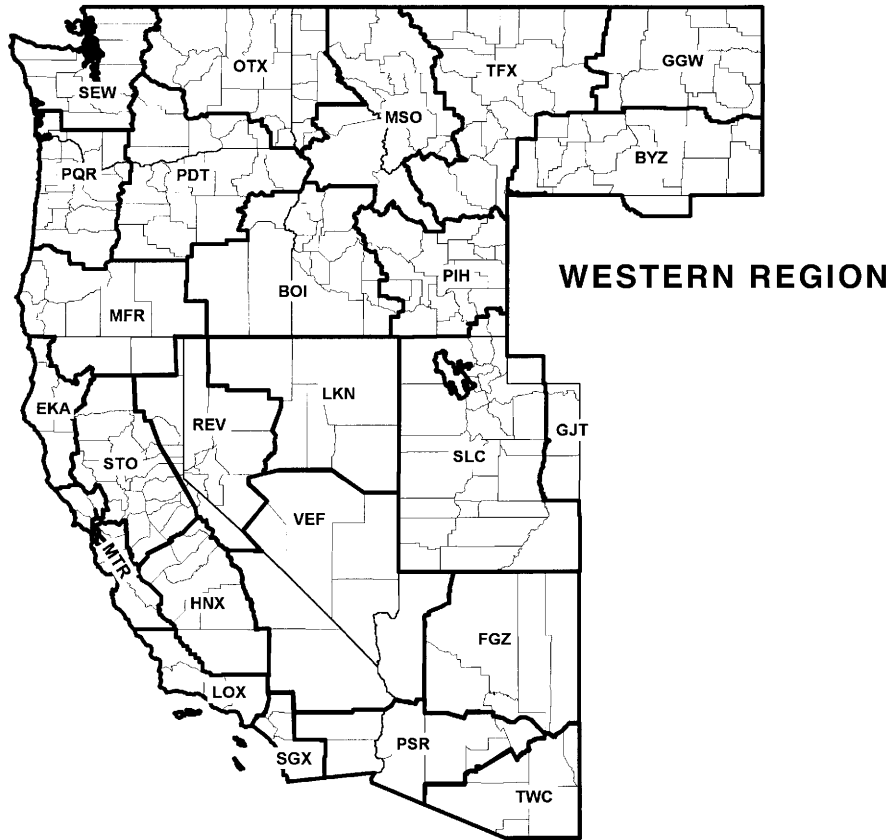


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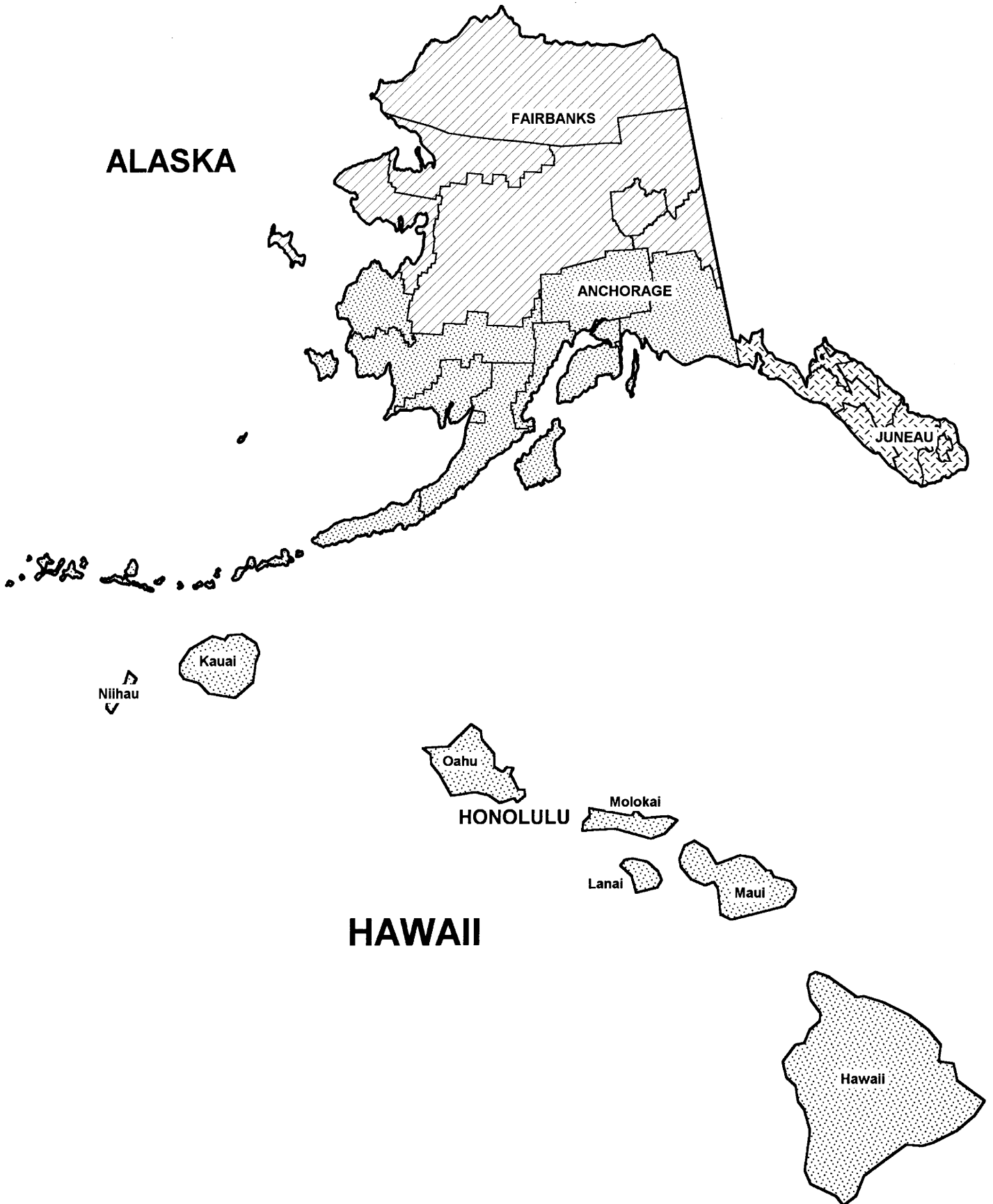


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MODERNIZED COUNTY WARNING AREAS



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