

**JANUARY 1998
VOLUME 39
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: Several inches of ice coat tree branches in central Maine, causing them to bend due to the weight. A severe ice storm struck the region during the first week of January. Much of the area was without power for up to three weeks. *(Photograph courtesy of John Jensenius, Warning Coordination Meteorologist, National Weather Service, Grey, Maine)*

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STORM DATA

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National Climatic Data Center

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

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

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

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

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

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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" or "Et Cetera" sections of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

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

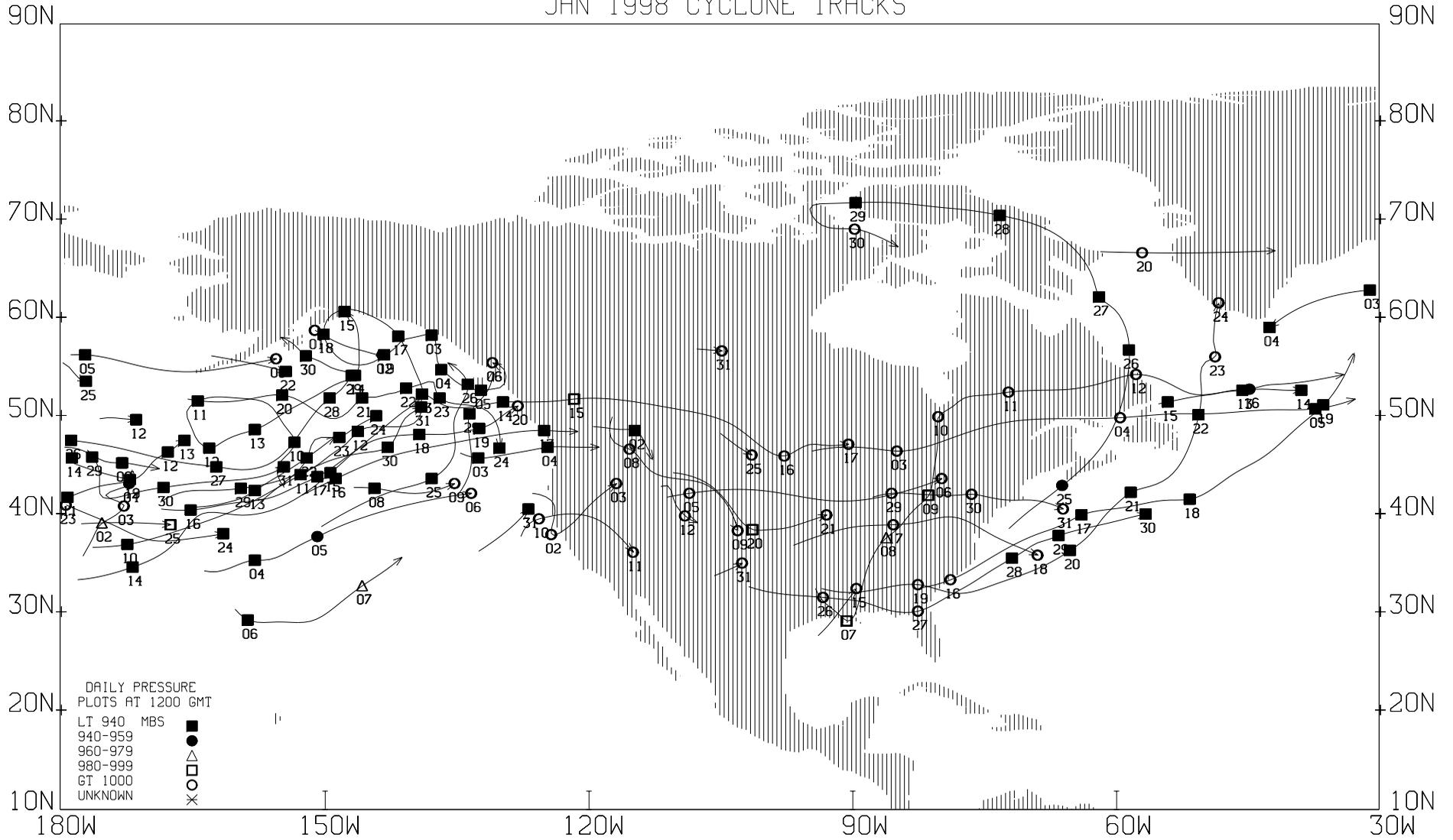
Any such items received by the editor will be for use in **STORM DATA** only. Any other use will be with the permission of the owner of said items. Materials submitted will be returned if requested in the original submission.

"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

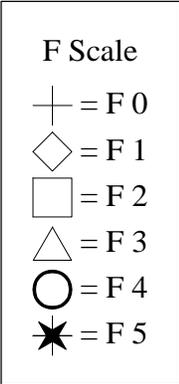
JAN 1998 CYCLONE TRACKS



January 1998 Confirmed Tornadoes



4



F Scale	F0	F1	F2	F3	F4	F5	Total
Number	31	15	3	0	0	0	49

OUTSTANDING STORMS OF THE MONTH

1. ICE STORM CAUSES MAJOR DAMAGE IN THE NORTHEAST

A low pressure system developed over the northern Mississippi Valley on January 5 and tracked over the Great Lakes region, spreading rain showers ahead of its associated cold front. High pressure was in place over Nova Scotia, pushing cold air south toward the New England states. With the cold air in place and the warm southerly flow of moisture over-riding the thin layer of freezing air, the conditions were favorable for a severe icing event. Another low pressure system (994 mb) tracked up the lower Mississippi Valley, over the Ohio Valley and into the Northeast on January 7 - 10, creating more freezing rain in the Northeast. Maine and interior sections of New Hampshire suffered extensive damage with as much as 3 inches of ice accumulating on trees, powerlines and other structures. Electrical power was lost to 70% of the state of Maine. Most residents were without power for more than a week. Some residents lost electrical service for as much as three weeks.

Right: The road sign at the National Weather Service office in Grey, Maine is coated with icicles.



Below: This single blade of grass is coated with two inches of ice. Notice the blade of grass on the right side of the ice.

(All Maine photographs are courtesy of John Jensenius, National Weather Service, Grey, ME)



Below: In this peculiar looking field, each blade of grass is coated with up to 2 inches of ice.





Left: A photograph of long grass coated with two inches of ice.

Above: Bushes coated with ice. The ice built up slowly on the branches, allowing them to become supported by the ice.

2. WET SNOW IN APPALACHIANS CAUSE WIDESPREAD POWER OUTAGES

A strong surface low pressure system associated with a deep cut-off upper-level low, tracked up the east coast causing a winter storm throughout the Appalachian Mountains during late January, 1998. This storm picked up copious amounts of moisture from the Atlantic Ocean and deposited up to 3 feet of very wet, heavy snow in some locations. Emergency management and local officials reported hundreds of automobile accidents, thousands of downed trees and thousands of residents with interruption to electric service. Some residents were without power for up to a week. Five fatalities and numerous injuries occurred as a direct result of the storm. Damage has been estimated near \$25 Million, much in the form of clean-up and debris removal. Thanks to Ken Batty, National Weather Service, Charleston WV. For contributing to this story.

Below Left: Structural damage and roof failure are examples of damage caused by the winter storm. This store employee is clearing the snow from its roof in an effort to keep it from collapsing.

Below Right: The roof of this supermarket in Beckley, WV collapsed due to the weight of the snow prior to opening for business. Luckily, no one was injured..

(Photographs courtesy of Rick Barber, The Register-Herald, Beckley, West Virginia)



Storm Data and Unusual Weather Phenomena

January 1998

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									
Marengo County									
Sweet Water	07	0720CST			0	0	0	0	Hail (0.75)
Marengo County									
Sweet Water	07	0720CST			0	0	3K	0	Thunderstorm Wind (G50)
Several trees were down in Sweet Water, and dime size hail was reported.									
Autauga County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Barbour County									
Countywide	07	0930CST 1400CST			0	0	35K	5K	Flash Flood
Bibb County									
Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Blount County									
Countywide	07	0930CST 1400CST			0	0	50K	5K	Flash Flood
Bullock County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Calhoun County									
Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Chambers County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Cherokee County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Chilton County									
Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Clay County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Cleburne County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Colbert County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Coosa County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Cullman County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Dallas County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Dekalb County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Elmore County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Etowah County									
Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>ALABAMA, North Central</u>									
Fayette County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Franklin County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Greene County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Hale County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Jackson County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Jefferson County Countywide	07	0930CST 1400CST			0	0	40K	5K	Flash Flood
Lamar County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Lauderdale County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Lawrence County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Lee County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Limestone County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Lowndes County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Macon County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Madison County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Marengo County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Marion County Countywide	07	0930CST 1400CST			0	0	35K	5K	Flash Flood
Marshall County Countywide	07	0930CST 1400CST			0	0	50K	5K	Flash Flood
Montgomery County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Morgan County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Perry County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood

Storm Data and Unusual Weather Phenomena

January 1998

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

Pickens County Countywide	07	0930CST 1400CST			0	0	50K	5K	Flash Flood
Pike County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Randolph County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Russell County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Shelby County Countywide	07	0930CST 1400CST			1	0	35K	5K	Flash Flood
	F5OU								
St. Clair County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Sumter County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Talladega County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Tallapoosa County Countywide	07	0930CST 1400CST			0	0	25K	5K	Flash Flood
Tuscaloosa County Countywide	07	0930CST 1400CST			0	0	60K	5K	Flash Flood
Walker County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood
Winston County Countywide	07	0930CST 1400CST			0	0	30K	5K	Flash Flood

A strong low pressure system move over Alabama from the Gulf of Mexico, bringing heavy rain to the state. Rivers, creeks and ditches were all out of their banks. Numerous streets were closed due to water over the road. Bridges were washed out in Cullman, Etowah, and Marshall counties. A five year old girl was killed in Shelby county when she was playing in a storm drain and was sucked in and couldn't get out. There were numerous traffic accidents due to wet roads and several motorist were stranded on top of there cars while trying to cross flooded roads. The following counties were affected by the flooding. Lauderdale, Colbert, Franklin, Limestone, Lawrence, Morgan, Madison, Jackson, Marshall, DeKalb, Marion, Winston, Cullman, Blount, Etowah, Lamar, Fayette, Walker, Jefferson, St. Clair, Pickens, Tuscaloosa, Bibb, Shelby, Sumter, Greene, Hale, Perry, Chilton, Coosa, Marengo, Dallas, Autauga, Lowndes, Montgomery, Cherokee, Calhoun, Cleburne, Talladega, Clay, Randolph, Tallapoosa, Chambers, Lee, Elmore, Macon, Russell, Bullock, Barbour, and Pike. Every county received over two inches with several counties receiving over six inches. F005

A few of the higher rainfall totals were:

Blount Co	8.25"
Tuscaloosa Co	6.48"
Lamar Co	6.42"
Jefferson Co	6.42"
Pickens Co	6.27"
Marshall Co	6.16"

Jefferson County Hoover	07	0945CST			0	0	5K	0	Thunderstorm Wind (G50)
Shelby County Pelham	07	0945CST			0	0	5K	0	Thunderstorm Wind (G50)

Storm Data and Unusual Weather Phenomena

January 1998

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

Several trees and power lines were down in the Hoover and Pelham areas. There was a tree on a house in Hoover.

Autauga County

Pine Level

07	1030CST				0	0	7K	0	Thunderstorm Wind (G50)
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An old barn was destroyed and a shed was damaged in the Pine Level community, in the eastern part of the county.

Chilton County

4.5 NW Clanton to 7.5 NNW Clanton

07	1055CST 1105CST				0	0	90K	0	Thunderstorm Wind (G70)
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What was believed to be a downburst damaged a number of structures and downed trees and power lines in central Chilton County between Clanton and Thorsby around New Salem Church and Collins Chapel. Two mobile homes were destroyed, five mobile homes were damaged, at least eight permanent homes were damaged, two vehicles were damaged, and a number of trees were down. Three poles along a major power line were also downed forcing US 31 traffic to be rerouted for several hours. The damage area was surveyed by NWS meteorologists and the damage pattern was consistent with straight-line wind.

Elmore County

4 NW Holtville to Seman

07	1115CST				0	1	50K	0	Thunderstorm Wind (G70)
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Strong straight-line wind was believed responsible for property damage across northern Elmore County from southeast of the Lightwood community in northwest Elmore County to Seman in the north central part of the county. A house of unknown construction was destroyed about 4 miles northwest of Holtville. A man lying on a sofa was picked up by the wind along with the sofa and blown about 300 yards. Numerous trees along with power lines were downed by the wind. Emergency management officials surveyed the damage, and they believe the damage was caused by strong wind.

Talladega County

10 NW Talladega

07	1240CST				0	0	0	0	Thunderstorm Wind
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A tree fell on a power line along CR 34 in the northwest part of the county. Wind was believed to have gusted to 45 mph.

ALABAMA, Southeast

NONE REPORTED.

ALABAMA, Southwest

Mobile County

Mobile

07	0530CST 0531CST				0	0	3K		Thunderstorm Wind (G50)
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Several trees were down in west Mobile.

Washington County

Tibbie

07	0600CST 0602CST				0	0	25K		Thunderstorm Wind (G60)
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High winds damaged five homes near the community of Tibbie. One home had most of its roof taken off. The other four had minor damage. Several trees were also blown down. One of the trees fell on a cow and killed it.

Mobile County

Mobile Bates Fld

07	0630CST 0631CST				0	0	3.5K		Thunderstorm Wind (G50)
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A few trees and power lines were blown down near the airport.

Clarke County

Salitpa

07	0640CST 0641CST				0	0	2K		Thunderstorm Wind (G50)
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Trees were blown down near Salitpa.

Mobile County

Central Portion to South Portion

07	0640CST 1159CST				0	0	30K		Flash Flood
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Four to six inches of rain caused many streets and small streams in the central and south parts of the county to flood. Many school buses became stranded in high water while taking kids to school. The flooding was more severe along US Highway 90 and west of I-65 between US Highway 98 and I-10. Fortunately no one was injured. A major washout occurred at the back of a shopping center along Twelvemile Creek near the intersection of Old Shell and University. The University of South Alabama recorded a twenty-four hour rainfall of 8.01 inches ending at 1159 pm on January 7 with 5.54 inches falling between 508 and 708 am and 3.4 8 inches from 608 to 708 am. At Mobile Regional Airport 2.89 inches of rain was recorded in an hour ending at 702 am.

Clarke County

Suggsville

07	0645CST 0647CST				0	0	5K		Thunderstorm Wind (G50)
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Trees and power lines were blown down near the community of Suggsville. One of the trees fell on a home and damaged the roof.

Choctaw County

Countywide

07	0700CST 1100CST				1	0	20K		Flash Flood
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Three to five inches of rain caused extensive flooding and road closures throughout the county. Most of the roads that had to be

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
ALABAMA, Southwest									
									closed were secondary dirt roads. One death was attributed to the flooding. Two persons were driving along a county road six miles east of Gilbertown. Their automobile became stranded near a bridge across Okatuppa Creek. The rapidly rising current flowing across the road washed the automobile into the creek. One of the passengers was able to swim to shore and the other drowned. M32IW
Washington County Countywide	07	0700CST 1100CST			0	0	20K		Flash Flood
									Two to four inches of rainfall caused numerous culverts and roads to wash out throughout the county. Most of the affected roads were dirt roads. No injuries were reported.
Choctaw County Pennington	07	0715CST 0716CST			0	0	3K		Thunderstorm Wind (G50)
									Trees were blown down near Pennington.
Baldwin County Whitehouse Forks	07	0730CST 0731CST			0	0	25K		Thunderstorm Wind (G70)
									Two homes were damaged by microburst winds estimated at around 80 mph. One of the homes had major roof damage and the other had minor roof damage. Numerous trees were blown down in the area. Some outbuildings were also damaged. The damage occurred near the community of Whitehouse Forks which is southwest of Bay Minette.
Baldwin County Gulf Shrs	07	0730CST 0740CST			0	0	25K		Thunderstorm Wind (G50)
									Thirty vehicles along the Gulf Shores beach had their windows either broken or cracked by debris picked up by high winds. Winds were estimated at around 60 mph and lasted for ten to fifteen minutes. A canopy at a restaurant was blown away. Numerous chairs were blown from balconies along the beach.
Baldwin County Seminole	07	0820CST 0821CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down along US Hwy 90 just west of Seminole.
Monroe County Excel	07	0835CST 0836CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down near Excel.
Escambia County Brewton	07	0845CST 0846CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down northwest of Brewton.
Conecuh County Castleberry	07	0855CST 0856CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down along US Hwy 31 just north of Castleberry.
Wilcox County Fatama	07	0910CST 0911CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down along State Highway 265 just north of the Fatama community.
Escambia County Brewton	07	0915CST 0916CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down just west of Brewton.
Baldwin County Central Portion to South Portion	07	1000CST 1230CST			0	0	20K		Flash Flood
									Three to four inches of rain across the central and south parts of the county caused many small streams to overflow their banks. Many secondary roads had standing water in them especially along US Hwy 59 south of I-10. Most secondary roads near the communities of Silverhill and Foley were impassable and some even washed out, because of the heavy rains.
Covington County River Falls	07	1005CST 1006CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down along US Hwy 84 near River Falls.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ALABAMA, Southwest									
Butler County Greenville	07	1030CST 1031CST			0	0	3.5K		Thunderstorm Wind (G50)
			Trees and power lines were blown down in Greenville.						
Escambia County Southwest Portion to Central Portion	07	1045CST 1215CST			0	0	10K		Flash Flood
			One to three inches of rainfall in a short period of time caused several roads around the Brewton and Atmore areas to become impassable. US Hwy 41 north of Brewton was impassable for more than an hour because of high water over the road. US Highway 31 between Atmore and Flomaton also had to be closed for a short time due to high water. No one was injured.						
Covington County Andalusia	07	1100CST 1101CST			0	0	3K		Thunderstorm Wind (G50)
			Several trees were blown down along US Hwy 84 just east of Andalusia.						
Covington County Opp	07	1115CST 1117CST			0	0	3.5K		Thunderstorm Wind (G50)
			Trees and power lines were blown down around Opp.						
Baldwin County South Portion	07	1700CST 1900CST			0	0	10K		Flash Flood
			Because of the heavy rains earlier in the day and the resulting runoff, the Fish river started rising very rapidly, especially south of County Road 104. The water got into a couple of homes south of Marlow. The river started receding during the early evening hours, shortly after high tide. No one was forced to evacuate and only minor damage was reported to the homes that had water in them.						
Mobile County Citronelle	22	0500CST 0501CST			0	0			Hail (0.75)
			Dime size hail was reported just west of Citronelle.						
Washington County Mc Intosh	22	0515CST 0516CST			0	0			Hail (0.75)
			Dime size hail was reported just west of McIntosh.						
Clarke County Carlton	22	0530CST 0531CST			0	0			Hail (0.75)
			Dime size hail was reported just west of Carlton.						
Mobile County Semmes	22	0715CST 0716CST			0	0	3K		Thunderstorm Wind (G50)
			A few trees were blown down along County Road 217 just north of Semmes near the community of Lott.						
Baldwin County Daphne	22	0745CST			0	0	100K		Lightning
			Lightning struck a home just north of Daphne. The home caught on fire and burned to the ground. No one was home at the time of the fire.						
Baldwin County Elsanor	22	0757CST 0758CST			0	0	3K		Thunderstorm Wind (G50)
			A few trees were blown down along US Hwy 90 near Elsanor.						
Escambia County Brewton	22	0840CST 0841CST			0	0	3K		Thunderstorm Wind (G50)
			A few trees were blown down in Brewton.						
Covington County 8 SW Andalusia	22	0920CST 0921CST			0	0	3K		Thunderstorm Wind (G50)
			Several trees were blown down southwest of Andalusia near the community of Fairfield.						
Mobile County Alabama Port	22	1023CST 1024CST			0	0			Hail (0.75)
			Dime size hail was reported in the extreme southeast part of the county near Alabama Port.						

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
ALABAMA, Southwest									
Baldwin County									
Magnolia Spgs	22	1045CST			0	0	3K		Thunderstorm Wind (G50)
	Several trees were blown down near Magnolia Springs.								
ALASKA, Northern									
AKZ001									
	01	0000AST			0	0			Extreme Windchill
		1200AST							
	Evtnt continued from Dec 1997. High pressure over the Beaufort Sea and moderate complex low pressure over southern Alaska produced winds over 20 mph and cold air temperatures resulting in Wind Chill temperatures of 90 below over the western Arctic Coast between Lisburne and Icy Cape, notably at Point Lay.								
AKZ001									
	01	0015AST			0	0			Blizzard
		0515AST							
	Moderate winds having continued for some time, increased to at least 30 kts between Cape Lisburne and Icy cape, resulting in low visibilities in blowing snow at Point Lay - AWOS visibilities were at least 1/4 mile during this period, sometimes 0 (zero).								
AKZ001									
	04	0000AST			0	0			Blizzard
		1700AST							
	Blizzard Conditions were experienced for one hour at Prudhoe Bay, otherwise Barter Island experienced the heaviest weather.								
AKZ007									
	06	0600AST			0	0			Extreme Windchill
		2300AST							
	Strong High pressure built over the eastern Interior of Alaska causing windy conditions along the Tanana River with little change in an already cold airmass. Wind chill values ranged from 70 to near 80 below at Delta Junction.								
AKZ005									
	08	1500AST			0	0			Extreme Windchill
	09	0400AST							
	Cold temperatures over the Upper Yukon Valley combined with 20 to 25 mph winds produced wind chills of 70 to 80 below zero at Eagle. Conditions were also possible over stretches of the Yukon River farther downstream, but did not include Fort Yukon.								
AKZ006-008									
	09	0800AST			0	0			Heavy Snow
	10	0800AST							
	A disturbance aloft moved north over the western Lower Yukon Valley and eastern Seward Peninsula, producing 6 inches of snow at Kaltag (Zone 8) and Koyuk (Zone 6).								
AKZ001									
	10	0500AST			0	0			Blizzard
		0900AST							
	A disturbance aloft brough a period of fresh snow and increased winds, resulting in near blizzard condition at Point Lay - AWOS winds were between 25 and 30 kts and visibilities were 1/4 mile at times.								
AKZ004									
	13	0900AST			0	0			High Wind (G53)
	14	1000AST							
	Strong pressure gradient across the Brooks Range caused winds at the Chandalar Shelf D.O.T. Camp to reach 61 mph. Anaktuvuk Pass AWOS during the period recorded a maximum gust of 36kt.								
AKZ009									
	14	1300AST			0	0			High Wind (G49)
	16	1000AST							
AKZ001>004									
	15	1500AST			0	0			Extreme Windchill
	19	1300AST							
	Moderate winds developing over a cold airmass across northwest Alaska produced severe wind chills: Zone 1: Point Lay: -85 to -100 Wind Chill Zone 2: Anaktuvuk Pass: -85 to -100 Wind Chill Zone 3: Point Hope: -70 to -78 Wind Chill Zone 4: Upper Noatak RAWS (ID: KTZ) -70 to -85 Wind Chill								
AKZ003									
	17	0900AST			0	0			High Wind (G53)
	18	1000AST							

Storm Data and Unusual Weather Phenomena

January 1998

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

ALASKA, Northern

AKZ009 **St. Lawrence Island-Bering Strait Coast**
 20 1600AST 0 0 **High Wind (G48)**
 22 1600AST
 Strong Pressure gradient produced strong winds meeting criterion at Gambell only: sustained 39 kts, gusts 48 kts.

AKZ009 **St. Lawrence Island-Bering Strait Coast**
 28 1600AST 0 0 **Extreme Windchill**
 31 1200AST
 Moderate north winds developed over an existing cold airmass resulting in Wind Chill values from 70 to 85 below.

ALASKA, Southeast

AKZ022>023-025 **Cape Fairweather To Cape Suckling-Coastal Area - Cape Decision To Cape Fairweather-Coastal Area - Juneau Borough-Admiralty Island-Icy Strait Area**
 03 0800AST 0 0 **Heavy Snow**
 1600AST
 Heavy snowfall occurred over the northeastern gulf coast and northern Southeast Alaska due to gulf moisture overrunning an arctic airmass ahead of an approaching frontal system. Snowfall totals during the eight-hour event included 20 inches in Elfin Cove, 8 inches at Tee Harbor (north of Juneau), 8 inches in the Mendenhall Valley, and 10 inches in Yakutat.

AKZ025 **Juneau Borough-Admiralty Island-Icy Strait Area**
 04 1145AST 0 0 **High Wind (G54)**
 2300AST
 Strong outflow (gap) winds occurred in downtown Juneau. The peak wind gusts recorded were 54kt at Mayflower Island and 49kt at the rock dump.

AKZ025 **Juneau Borough-Admiralty Island-Icy Strait Area**
 18 1745AST 0 0 **High Wind (G56)**
 2350AST
 A strong arctic high center in the Yukon helped produce strong outflow (gap) winds in downtown Juneau. Both reporting stations in the downtown area-- Mayflower Island and the rock dump-- recorded peak winds of 56kt.

AKZ027>028 **Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area**
 26 0845AST 0 0 **High Wind (G59)**
 1300AST
 An intense low pressure system in the Northeast Pacific brought high winds to the southern panhandle. Peak wind gusts reported were 59kt at Ketchikan airport, 57kt at Annette Island, 48kt at Metlakatla Harbor, and 43kt at Hydaberg.

AKZ028 **Dixon Entrance To Cape Decision-Coastal Area**
 30 0500AST 0 0 **High Wind (G56)**
 31 0400AST
 High winds occurred ahead of a strong occlusion along the southern outer coast of Southeast Alaska. Peak wind gusts reported were 56kt at Cape Decision and 43kt at Hydaberg.

ALASKA, Southern

AKZ020 **Aleutian Islands**
 01 0000AST 0 0 **High Wind (G55)**
 02 0900AST
 A moderate front near Kamchatka brought brisk southeasterly winds to the western half of the Aleutians...gusting up to 63 mph.

AKZ015-018 **Cook Inlet - Kodiak Island-Eastern Alaska Peninsula**
 02 1200AST 0 0 **High Wind (G40)**
 04 1200AST
 A deepening low near Middleton Island, coupled with strengthening high pressure in the central Alaskan interior, produced brisk northwesterly winds across the area. Gusts reached 43 mph at Kodiak and 46 mph at Big River Lakes, along the west side of Cook Inlet.

AKZ017 **Central Gulf Coast**
 03 0000AST 0 0 **High Wind (G60)**
 05 1200AST
 Strong high pressure building across the central interior produced strong northerly winds across Prince William Sound. Gusts reached 69 mph at Whittier and Valdez.

AKZ020 **Aleutian Islands**
 05 0300AST 0 0 **High Wind (G60)**
 06 2100AST
 A strong 958 mb low moved northward across the western Aleutians late Monday, curving northwest and weakening Tuesday. Wind gusts reached 69 mph both in advance of the front and around the south semicircle of the low.

Storm Data and Unusual Weather Phenomena

January 1998

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

ALASKA, Southern

AKZ020

Aleutian Islands

07 0000AST

0 0

High Wind (G50)

08 0900AST

A moderate frontal system elongated eastward across the Aleutians...bringing brisk easterly wind gusts of 58 mph to Adak and Shemya.

AKZ018

Kodiak Island-Eastern Alaska Peninsula

08 0000AST

0 0

High Wind (G39)

09 2359AST

Brisk northwest winds were reported at the official observing site in Kodiak. Gusts reached 40 mph on Thursday and 45 mph on Friday.

AKZ017

Central Gulf Coast

27 1800AST

0 0

High Wind (G52)

28 1200AST

A moderate front progressed northwestward through the Gulf of Alaska, bringing wind gusts of 60 mph to Middleton Island.

AKZ017

Central Gulf Coast

30 1800AST

0 0

High Wind (G45)

31 1200AST

An intense, 964 mb low crossed northwestward through the Gulf of Alaska...making landfall along the Kenai Peninsula where it rapidly weakened Saturday. In advance of the low, easterly winds reached speeds of 52 mph as reported at Middleton Island. The low also brought heavy snows to areas adjacent to Prince William Sound.

AKZ017

Central Gulf Coast

31 0600AST

0 0

Avalanche

1830AST

A slope loaded with wet, heavy snow avalanched in the mountains south of Portage over the weekend, sweeping three loaded coal cars off Alaska Railroad tracks and closing the rail route to Seward. The derailment dumped some 300 tons of coal at a spot called Tunnel, 12 miles south of Portage and about 50 miles north of Seward. The avalanche took out 200 feet of rail. The original 66 car train was split into two 33 car sections near Spencer (10 miles south of Portage) to allow the train to climb the steep grade to Grandview. With 6 inches of fresh snow on the tracks Saturday morning, the engines had trouble hauling 33 cars, so the train was split again...leaving 16 cars at Tunnel, while 17 were pulled to Grandview. Before engineers could return for the remaining 16, the railroad's avalanche expert told them to stop because the area was unsafe. "It's not great to leave railroad cars in a slide zone, but it's worse to endanger lives by sending in people to remove the cars" said avalanche forecaster David Hamre. Workers bringing a locomotive from Portage discovered the slide at 6:15pm Saturday. It had pushed the first three cars off the tracks, nearly burying the middle car in snow. The avalanche also piled up against the next six cars, but they remained on the tracks.

AMERICAN SAMOA

ASZ001>004

Swains - Tutuila - Manu'A - Rose

01 1600SST

0 0

Hurricane

05 1000SST

Swains was critically stormed by Hurricane Ron on January 2, 1998. The Territorial Emergency Management Coordinating Office reported that all of the 49 residents of Swains Island were fine except for a few minor injuries. Most of the residential homes were destroyed, except for concrete buildings that withstood the strong winds. All of the residents took sheltered in one of the concrete buildings. One of the residents, a professional fishermen, estimated the sustained winds to be around 80-90 mph with higher gusts.

The highest peak gust recorded at WSO-Tafuna was 37 mph on January 3, 1998, with a rainfall amount of 2.51 from January 2-5, 1998. No injuries or damages reported from the other Samoan islands.

ASZ002

Tutuila

24 0700SST

0 0

Tropical Storm

26 0600SST

Tropical Cyclone Tui first developed into a Tropical Disturbance around 01/24/0000Z near 9.0S 175.0W. Tropical Storm Tui generated winds of 40 to 55 knots that were recorded by the ARCs across Western Samoa. Numerous gusts to 35 knots were recorded at Tafuna Weather Station with a peak gust of 42 knots recorded on 01/25/98 at 4:00 am.

No damages or injuries reported from both Western and American Samoan Islands.

Storm Data and Unusual Weather Phenomena

January 1998

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

ARIZONA, Central and Northeast

AZZ015	Western Mogollon Rim				0	0	0	0	Heavy Snow
	04	0600MST		2300MST					

Heavy snow fell over the highest elevations in northern Arizona. The San Francisco Peaks north of Flagstaff received 10-14 inches of snow accumulation above 8000 feet.

AZZ004-015>017	Kaibab Plateau - Western Mogollon Rim - Eastern Mogollon Rim - White Mountains								
	09	1500MST			0	0	0	0	Heavy Snow
	10	2300MST							

Heavy snow hit the higher elevations of northern and central Arizona during a storm that spanned two days. Snow accumulations by zone include:

Kaibab Plateau.....	12 in. in 24 hours
Western Mogollon Rim.....	10 in. in 12 hours
Eastern Mogollon Rim.....	8 in. in 12 hours
White Mountains.....	8 in. in 12 hours

ARIZONA, Northwest

NONE REPORTED.

ARIZONA, South

AZZ029	Southeast Pinal County				0	0			Fog
	11	0400MST		0900MST					

Dense fog with visibilities less than 1/4 mile was reported by sheriff dispatch

AZZ029-033	Southeast Pinal County - Tucson Metro/Marana/Green Valley								
	11	2000MST			0	0			Fog
	12	0800MST							

Dense fog with visibilities less than 1/4 mile were reported by spotters and sheriff dispatch.

AZZ035	Cochise County				0	0			Fog
	14	0400MST		0900MST					

Dense fog reported by sheriff deputies between Tombstone and Willcox.

ARIZONA, Southwest

NONE REPORTED.

ARKANSAS, Central and North Central

Franklin County Charleston	04	0300CST			0	0	4K		Lightning

Lightning struck a home in Charleston, resulting in some electrical damage to the home. Several appliances in the home sustained damage.

Johnson County Countywide	05	0300CST			0	0	15K		Flash Flood
		0700CST							

Heavy rains resulted in flash flooding across several areas of Johnson County. A number of county roads and bridges suffered damage due to the heavy rainfall.

Pope County Countywide	05	0300CST			0	0			Flash Flood
		0700CST							

Flash flooding occurred across a number of locations in Pope County. Numerous roads sustained damage as a result of the heavy rains. Several buildings were also flooded for a period of time.

Yell County Countywide	05	0400CST			0	0	108K		Flash Flood
		0800CST							

Heavy rains caused flash flooding in several parts of Yell County. Numerous low water bridges and roads sustained damage as a result of the heavy rains.

Logan County Countywide	05	0400CST			0	0	45K		Flash Flood
		0800CST							

Heavy rains caused flash flooding across parts of Logan County. Several county roads and low water bridges were washed out as a result of the heavy rainfall.

Storm Data and Unusual Weather Phenomena

January 1998

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

Ouachita County

12 W Camden	06	0255CST			0	0			Thunderstorm Wind (G50)
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Thunderstorm winds knocked down some power lines.

Dallas County

Sparkman	06	0355CST			0	0			Thunderstorm Wind (G50)
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Several trees were blown down.

Dallas County

4 S Carthage	06	0405CST			0	0			Thunderstorm Wind (G50)
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Thunderstorm winds blew down some trees.

Cleveland County

Rison	06	0415CST			0	0			Hail (0.75)
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Jefferson County

13 SW Pine Bluff	06	0420CST			0	0			Hail (1.75)
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Hail up to golfball size covered the ground.

Jefferson County

Pine Bluff	06	0430CST			0	0			Hail (0.75)
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Jefferson County

Pine Bluff	06	0430CST			0	0			Thunderstorm Wind (G50)
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Thunderstorm winds blew down some power lines.

ARKANSAS, East

NONE REPORTED.

ARKANSAS, Northwest

Washington County

Countywide	04	1000CST			0	0	10K		Flash Flood
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Van drove into running water over Hwy. 45 south of Lincoln and became trapped. Occupants rescued safely. Many streets closed in Fayetteville area.

Sebastian County

Countywide	04	1930CST			0	0			Flash Flood
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Many roads flooded in southern part of Sebastian County.

Madison County

South Portion	05	0600CST			1	0	10K		Flash Flood
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The Madison County sheriff died when his patrol car was swept off of a low-water bridge over the White River on County Road 112 near St. Paul around 7:00 am. The river was swollen by heavy rains during the night. The 24-hour rainfall ending at 7 AM for St. Paul was 3.39 inches. M581W

A strongly baroclinic, southwest-northeast oriented front pulled up stationary over eastern Oklahoma on Jan. 4-5. A series of upper level disturbances in southwest flow aloft caused heavy rains to break out across the region. Rainfall totals of three to six inches were common. Fayetteville's Drake Field had a two-day rainfall total of 6.33 inches, coming on top of already-saturated grounds caused by heavy rains during the week before Christmas. Most creeks and rivers overflowed their banks, and numerous low-water bridges were covered with water. Unfortunately, this led to the death of Madison County's sheriff when he unsuccessfully tried to cross one such bridge near St. Paul in his patrol car on a routine patrol. His car overturned in the fast and high water, and he was unable to escape.

ARKANSAS, Southeast

NONE REPORTED.

ARKANSAS, Southwest

Miller County

Doddridge	06	0145CST			0	0			Hail (0.75)
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Lafayette County

Lewisville	06	0220CST			0	0			Hail (1.00)
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Nevada County

Willisville	06	0232CST			0	0			Hail (0.75)
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50 mph winds also reported.

Storm Data and Unusual Weather Phenomena

January 1998

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

CALIFORNIA, North Central

Stanislaus, Eldorado, Amador, Calaveras, and Tuolumne Counties when three 115,000 volt transmission lines shorted out in the snow and high winds. Power outages were also recorded in Shasta County.

Butte County Countywide	12	0100PST 1400PST			0	0			Heavy Rain
Lake County Countywide	12	0100PST 1300PST			0	0			Heavy Rain
Shasta County Countywide	12	0100PST 1300PST			0	0			Heavy Rain
Tehama County Countywide	12	0100PST 1300PST			0	0			Heavy Rain
Glenn County Countywide	12	0200PST 1400PST			0	0			Heavy Rain
Solano County Countywide	12	0200PST 1500PST			0	0			Heavy Rain
Colusa County Countywide	12	0300PST 1400PST			0	0			Heavy Rain
El Dorado County Countywide	12	0300PST 1700PST			0	0			Heavy Rain
Nevada County Countywide	12	0300PST 1700PST			0	0			Heavy Rain
Placer County Countywide	12	0300PST 1600PST			0	0			Heavy Rain
Sacramento County Countywide	12	0300PST 1500PST			0	0			Heavy Rain
San Joaquin County Countywide	12	0300PST 1500PST			0	0			Heavy Rain
Stanislaus County Countywide	12	0300PST 1500PST			0	0			Heavy Rain
Sutter County Countywide	12	0300PST 1400PST			0	0			Heavy Rain
Yolo County Countywide	12	0300PST 1500PST			0	0			Heavy Rain
Yuba County Countywide	12	0300PST 1700PST			0	0			Heavy Rain
Amador County Countywide	12	0400PST 1700PST			0	0			Heavy Rain
Calaveras County Countywide	12	0500PST 1800PST			0	0			Heavy Rain
Tuolumne County Countywide	12	0500PST 1900PST			0	0			Heavy Rain

Heavy rains from a strong Pacific storm caused widespread but minor flooding across the Sacramento and Northern San Joaquin

Storm Data and Unusual Weather Phenomena

January 1998

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

CALIFORNIA, North Central

Sutter County Countywide	18	1200PST 1800PST			0	0			Heavy Rain
Yolo County Countywide	18	1200PST 1800PST			0	0			Heavy Rain
Yuba County Countywide	18	1200PST 2000PST			0	0			Heavy Rain
Tuolumne County Countywide	18	1300PST 2200PST			0	0			Heavy Rain
Calaveras County Countywide	18	1400PST 2200PST			0	0			Heavy Rain

0.75 inches of rain in 6 hours in downtown Sacramento was one of the lighter rainfall totals as a Pacific storm brought brief but heavy rain to the Sacramento and Northern San Joaquin Valleys and surrounding foothills. 27,000 customers across the area lost power at sometime during the storm. Numerous traffic accidents also occurred, including one near Loomis, CA in which two teens were drowned as their car flipped into a flooded ditch.

CALIFORNIA, Northeast

CAZ072	Greater Lake Tahoe Area 02	0345PST 0745PST			0	0			Heavy Snow
	Brockway Pass at 6800 feet: 7 inches of snow in 4 hours.								
CAZ072	Greater Lake Tahoe Area 03 04	0600PST 0600PST			0	0			Winter Storm
	24 hour snow fall: Donner Pass 20 inches, and Central Sierra Snow Lab 32 inches. Trans-Sierra highways closed at least 6 hours due to snow.								
CAZ072	Greater Lake Tahoe Area 03 04	1800PST 0600PST			0	0			Winter Storm
	12 hour snow fall at ski areas: Alpine Meadows 10-14 inches, Northstar at Tahoe 12 inches, Kirkwood 15-24 inches, and Heavenly Valley 12-18 inches.								
CAZ072	Greater Lake Tahoe Area 03 04	2100PST 0900PST			0	0			Winter Storm
	12 hour snow fall: Tahoe City (near South Lake Tahoe) 10 inches.								
CAZ071	Lassen/Eastern Plumas/Eastern Sierra 03 04	2100PST 0945PST			0	0			Winter Storm
	12 hour snow fall: Westwood (Lassen county) 10-12 inches, Portola (Plumas county) 9-10 inches and Sattley (Plumas county) 14 inches.								
CAZ071	Lassen/Eastern Plumas/Eastern Sierra 03 04	2245PST 1045PST			0	0			Winter Storm
	12 hour snow fall: Yuba Pass (Plumas county on Hwy 49) 12 inches.								
CAZ072	Greater Lake Tahoe Area 04 05	0600PST 0600PST			0	0			Winter Storm
	24 hour snow fall: Squaw Valley Ski Are 12-24 inches between 7000 feet and 9000 feet elevation.								
CAZ071	Lassen/Eastern Plumas/Eastern Sierra 09	2200PST			0	0			Fog
	Lassen county sheriff reported dense fog with about 1/8 mile visibility around Bieber CA.								
CAZ072	Greater Lake Tahoe Area 10 11	1530PST 1530PST			0	0			Winter Storm
	24 hour snow fall: Sugar Bowl Ski Area 16-18 inches.								

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
CALIFORNIA, Northeast									
CAZ072			Greater Lake Tahoe Area			0	0		Winter Storm
	12	0700PST							
	13	0700PST							
	24 hour snow fall: Castle Peak (Donner Pass) 14 inches, and Squaw Valley Ski Area 10-30 inches above 7000 feet elevation.								
CAZ072			Greater Lake Tahoe Area			0	0		Winter Storm
	18	0445PST							
	19	0445PST							
	24 hour snow fall: Donner Pass 22 inches, Kirkwood Ski Area 18-24 inches, Northstar at Tahoe 12-24 inches, Sierra at Tahoe 18-24 inches, and along Hwy 89 in Placer county 18 inches above 7000 feet elevation.								
CAZ073			Mono			0	0		Winter Storm
	18	0600PST							
	19	0600PST							
	24 hour snow fall: Mammoth Mountain Ski Area 14-22 inches above 7000 feet elevation.								
CAZ072			Greater Lake Tahoe Area			0	0		Winter Storm
	28	1530PST							
	29	1530PST							
	24 hour snow fall: Kirkwood Ski Area 14 inches.								
CALIFORNIA, Northwest									
CAZ003>004-076			North Coast Interior - Upper Trinity River - Mendocino Interior			0	0		Heavy Snow
	06	0900PST							
		2100PST							
	Four to eight inches of snow fell above 2500 feet.								
CAZ004			Upper Trinity River			0	0		Heavy Snow
	12	0800PST							
		1500PST							
	Four inches of snow fell above 5000 feet.								
CAZ002			Mendocino Coast			0	0		Flood
	12	0900PST							
		2000PST							
	The Garcia River flooded Highway 1 near Pt. Arena.								
CAZ001			Redwood Coast			0	0		Flood
	12	1500PST							
		2000PST							
	Jacoby Creek flooded around homes and fields near Old Arcata Road.								
CAZ001			Redwood Coast			0	0		High Wind (G59)
	23	0700PST							
		1400PST							
	At Crescent City, 59 mph winds were measured while 52 mph winds occurred at the Redwood National Park visitors center near Orick. Numerous trees and power lines were blown down, especially near Carlotta.								
CAZ002			Mendocino Coast			0	0		Flood
	26	0700PST							
	27	0800PST							
	Spotter reports of flooding of the Navarro River along Highway 128 and the Garcia River at Highway 1.								
CAZ001>002			Redwood Coast - Mendocino Coast			0	0		High Wind (G58)
	28	1700PST							
		2200PST							
	Wind damage to buildings in Arcata and Blue Lake.								
Humboldt County									
9 S Honeydew	29	0556PST			0	0			Hail (0.75)
		0606PST							
CALIFORNIA, South Central									
CAZ022			Southern Sierra Nevada-Yosemite National Park To Kings Canyon			0	0		Heavy Snow
	09	1800PST							
	10	0600PST							
	8 inches of new snow at the higher elevations.								
	January began a very wet time for the Central California area with January having 16 days of measureable precipitation at Fresno, CA. The subsequent month of February continued with 13 of the first 16 days having precipitation and resulted in widespread flooding problems.								

Storm Data and Unusual Weather Phenomena

January 1998

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

CALIFORNIA, South Central

CAZ022 Southern Sierra Nevada-Yosemite National Park To Kings Canyon
12 0100PST 0 0 Heavy Snow
13 0500PST
 14 inches of new snow at the higher elevations.

CAZ020>021 Central San Joaquin Valley - Southern San Joaquin Valley
13 0300PST 0 0 Fog
1100PST
 Dense fog formation after shower activity had occurred on the 12th. Visibilities in Fresno and Bakersfield dropped to near zero by 0350 AM PST with satellite imagery showing dense fog in the Central and Southern San Joaquin Valley forming between KBFL and KFAT, especially along State Highways 99 and 43.

CAZ020 Central San Joaquin Valley
15 1830PST 0 0 5.3M 0 Flood
16 0300PST
 Merced County flooding event. Minimal damage to agriculture from this flooding event.

Tulare County
6 N Springville 16 0015PST 2 0 Urban/Sml Stream Fld
 In trying to cross the Tule River in the mountains of Tulare County, an elderly couple's car was swept downstream off of a 100-foot low-water crossing. The river was running at a higher than normal level of 5 feet deep due to recent rains in Central California. M74VE, F70VE

Rain amounts of 2.0 to 2.5 inches...with peaks up to 3 inches... in the Southern Sierra Nevada foothills in East Merced and West Mariposa Counties lead to small streams running at bankfull in Merced County. Streams affected were those as depicted in flood plain maps, i.e., Miles, Dutchman, Deadman, Mariposa, Owens, and Bear Creeks. Bear Creek overtopped its banks on the lower end of Merced City affecting numerous residences (180), inundating roads and over 5000 acres of farmland west-southwest of town. The event most likely began around 1830 PST on Thursday, Jan 15, with Bear Creek reaching 7000+ CFS of flow and it did not go below that figure until after 0300 PST on the 16th. Flow contributions from Black Rascal Creek likely led to the inability of the Bear Creek channel to handle the combined flow. The peak flow at a gauging station just east of town reached 7533 CFS at midnight. This was the first flooding from Bear Creek since 1955 according to the County Emergency Manager.

CAZ022 Southern Sierra Nevada-Yosemite National Park To Kings Canyon
18 1800PST 0 0 Winter Storm
19 0900PST
 Frontal passage brought 12-18 inches of new snow inside a 24-hour period to the higher elevations of the Southern Sierra Nevada in CA Zone 22. Sierra Summit Ski Area received 9 inches of new snow overnight at the 7000 foot level.

Fresno County
7 WSW Shaver Lake 19 0215PST 0 0 5K Heavy Rain
 Heavy downpour dislodged rocks above Highway 168 northeast of Fresno at the 2500 foot level of the Southern Sierra Nevada.

Frontal passage through Central California brought pre-frontal high wind to the Southern San Joaquin Valley including Tulare County. Over 4700 customers lost power at 1549 PST due to wind in Fresno, Tulare, and Kern Counties. Subsequent heavy rain/snow followed in the upper elevations of the CWFA.

CAZ020>021 Central San Joaquin Valley - Southern San Joaquin Valley
23 0400PST 0 6 60K Fog
1000PST

Dense fog formation through the Central and Southern San Joaquin Valley brought numerous vehicle collisions including one in Clovis, 1 in Hanford with an injury, and another in Porterville that involved a school bus (5 injured).

CAZ022 Southern Sierra Nevada-Yosemite National Park To Kings Canyon
29 0100PST 0 0 Heavy Snow
30 0600PST
 13 inches of new snow at the higher elevations of the S.Sierra Nevada.

Fresno County
Fresno 29 1209PST 0 0 Tstm Wind/Hail
1230PST

Thunderstorm occurrence brought 36Kt wind from the southeast to the Fresno Air Terminal along with large amounts of 1/8-inch hail. Over 7000 customers lost power in the Fresno City area due to downed powerlines and the small hail felled nursery tents in North Fresno. In Southeast Fresno 1/2-inch hail occurred between 1215-1230 PST.

Fresno County
7 N Fresno 29 1215PST 0 0 Urban/Sml Stream Fld
1600PST

Small hail and heavy rain led to numerous intersections and streets being flooded within North-Central Fresno. The small hail pile d up 2-3 inches deep thereby plugging drains and contributing to the overall urban flooding problems.

Storm Data and Unusual Weather Phenomena

January 1998

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

CALIFORNIA, South Central

Fresno County

Selma

29	1300PST				0	0			Lightning
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Numerous power outages in the Selma area affected 3400 customers. A lightning strike took out a power pole at 1300 PST.

Tulare County

(Vis)Visalia Arpt

29	1330PST				0	0			Tstm Wind/Hail
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Numerous locations within Tulare County having power outages to over 5000 customers associated with thunderstorm wind and locally heavy rain/small hail. Cities reporting lines down due to trees/limbs include Visalia, Tulare, Woodlake, Exeter, and Ivanhoe. Over 1000 customers experienced power loss in Visalia alone.

A line of strong thunderstorms swept through Central California during the early afternoon hours of Thursday, Jan 29. Small hail occurred with this line to such an extent that 2-3 inches accumulated on the ground. In fact, some confusion occurred about hail size being one inch when the reference was to the depth of hail on the ground. Hail sizes during the day varied from 1/8- to 1/2-inch in diameter. Reflectivity values depicted by WSR-88D reached 64 dBz. VIL values ranged from 23 for 1/4-inch hail to 28 for 1/2-inch hail on this day. The southern end of the thunderstorm line was Kings County and eastward. The initial thunderstorm line moved into the S.Sierra Foothills around 1400 PST.

CALIFORNIA, Southeast

NONE REPORTED.

CALIFORNIA, Southwest

San Diego County

1 SW Chula Vista

02	1400PST				0	0			Funnel Cloud
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Unstable conditions in advance of a weak, upper-level low pressure trough, spawned a funnel cloud just southwest of Chula Vista.

San Bernardino County

Chino

09	1200PST				0	0			Urban/Sml Stream Fld
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San Bernardino County

**Rancho Cucamonga to
1 NE Ontario**

09	1200PST				0	0			Urban/Sml Stream Fld
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Orange County

3 SW Laguna Beach

09	1330PST				0	0			Waterspout
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Heavy rains soaked Southwestern California in advance of a low pressure trough and cold front. Rains began on the afternoon of the eighth, and lasted until early on the tenth. Many areas received over two inches of rain, with greater amounts in the mountains. Chino and Rancho Cucamonga were hard hit with flooding. Sixteen intersections in Chino were closed, and several businesses on the south side of town reported damage. In Rancho Cucamonga, water two to three feet deep rushed down some roads, stranding motorists. In addition, a waterspout was spotted offshore of Laguna Beach.

CAZ042>043

Orange County Coastal Plain - San Diego County Coasts

28	2000PST				0	2			Heavy Surf
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A series of powerful storms lined up across the Pacific, generated towering surf and swell, that battered beach-front buildings, hammered crumbling sea cliffs, and swamped low-lying coastal roads during high tide. Waves, occasionally reaching 15 to 20 feet, ripped away support beams from the Seal Beach pier, and damaged 32 homes in San Clemente. In San Diego County, the waves scoured much of the sand from North County beaches, closed Highway 101 several times, and damaged the Ocean Beach pier. Lifeguards were busy with numerous rescues. A Solana Beach lifeguard was injured while rescuing a drowning teen, who also suffered minor injuries.

San Diego County

**1 W Encinitas to
Encinitas**

29	1105PST				0	0			Waterspout
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San Diego County

Encinitas

29	1112PST	0.5	40		0	0			Tornado (F1)
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Moderate to heavy showers ahead of a cold front spawned a waterspout, which moved onshore at Encinitas. It travelled up "A" Street, before making a left turn, and hit several businesses. The twister tossed an 800 pound dumpster across a parking lot, where it slammed into a camper truck, tore the fiberglass roof off of an auto repair shop, ripped down signs, and snapped flag poles.

Storm Data and Unusual Weather Phenomena

January 1998

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

CALIFORNIA, Western

Alameda County

Oakland

13 1000PST **0 0** **Flood**
flooded basement at Whittier Elementary School

CAZ006-006-009

San Francisco County - Coastal Monterey County

18 1400PST **1 0** **5K 0** **High Wind (G60)**
25 0900PST
carport roof was torn off its mooring at a mobile home park F?OU

Alameda County

Berkeley

19 1000PST **0 0** **Flood**
basement flooded

San Francisco County

San Francisco

19 1200PST **0 0** **Heavy Rain**
a vast sinkhole estimated at 12 feet deep swallowed up an entire lane of John Muir Drive between Skyline and Lake Merced

COLORADO, Central and Northeast

COZ033>036

Rabbit Ears & Medicine Bow Ranges/Rocky Mountain National Park - Summit County/Mosquito Range/Indian Peaks - Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin

05 1800MST **0 0** **0** **Winter Storm**
06 1100MST

Heavy snow blanketed portions of the North Central Mountains and Front Range Foothills. Snowfall totals included: 15 inches 8 miles north of Blackhawk, 14 inches at Winter Park Ski Area, 13 inches at Evergreen and 5 miles east of Nederland, 12 inches at Coal Creek Canyon, 11 inches 8 miles west of Conifer, 10 inches at Sunshine Canyon and 11 miles southwest of Morrison, 9 inches at South Turkey Canyon, with 8 inches reported at Eldora Ski Area, 1 mile east of Buckhorn Mountain and 7 miles east northeast of Virginia Dale.

COZ034

Summit County/Mosquito Range/Indian Peaks

12 0000MST **0 0** **0** **Blizzard**
0800MST

Very strong winds and heavy snow caused blizzard conditions to develop on a localized scale as another winter storm moved through the area. Loveland and Winter Park ski areas picked up 6 and 8 inches of snow respectively. Just east of the Continental Divide, sustained winds from 80 to 85 mph with gusts to 100 mph were recorded at Silver Spruce Ranch near Ward, resulting in whiteout conditions.

COZ035-040

Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Denver Metropolitan Area

15 0000MST **0 0** **0** **High Wind (G62)**
0900MST

Strong winds developed in and near the Front Range Foothills. Peak wind gusts included 72 mph (62 kts) 9 miles west southwest of Rustic and 71 mph (61 kts) at Jefferson County Airport.

COZ032>034

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

17 0600MST **0 0** **0** **Blizzard**
18 0600MST

Heavy snow and high winds pounded the northern mountains as well as portions of Middle Park as a vigorous strong storm system moved through the area. Sustained winds from 30 to 50 mph were common causing whiteout conditions. Blizzard conditions developed above 10 thousand feet with winds gusting to near 100 mph (85 kts). Peak wind gusts to 98 mph recorded at the Breckenridge and Winter Park ski areas. The combination of heavy snow and high wind triggered numerous avalanches which blocked roads and highways. Berthoud, Loveland and Vail passes were closed. In addition, I-70 between Silverthorne and Georgetown was closed. Scores of travellers were forced to seek shelter overnight until roads and highways could be cleared and avalanche control operations completed the following day.

Snowfall totals included: 16 inches at the Eisenhower Tunnel, 12 inches 12 miles west of Walden with 11 inches recorded at Grand Lake. Elsewhere snowfall generally ranged from 6 to 9 inches.

COZ035-050

Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Sedgwick And Phillips Counties

17 1600MST **0 0** **0** **High Wind (G109)**
2300MST

Hurricane force winds developed on a very localized scale as a strong mountain wave developed ahead of an approaching storm system. A peak wind gust to 125 mph (109 kts) was recorded 1 mile east of Buckhorn Mountain with a gust to 75 mph (65 kts) at Golden Gate Canyon. Strong winds developed in portions of the Northeast Plains later in the evening as Padroni recorded a peak

Storm Data and Unusual Weather Phenomena

January 1998

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

COLORADO, Central and Northeast

wind gusts to 67 mph (58 kts).

COLORADO, East Central

NONE REPORTED.

COLORADO, South Central and Southeast

COZ061-067-070>075 Eastern San Juan Mountains - Teller County/Rampart Range/Pikes Peak - Wet Mountains - Southern El Paso County/Colorado Springs And Vicinity - Northern El Paso County/Monument Ridge - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity - Upper Purgatoire River Basin/Trinidad And Vicinity

05	0700MST	0	0			Heavy Snow
06	1430MST					

A storm system moved across Colorado on the 5th and 6th, bringing snow to the southern mountains. Four to 10 inches of snow fell in the eastern San Juan Mountains. Wolf Creek Pass picked up around 8 inches, with the Creede area in Mineral county logging around 4 inches. As a cold front swept through the state the night of the 5th, bands of snow developed across the eastern slopes of the southern mountains and nearby plains. Total accumulations ranged from 1 to 4 inches across Teller, El Paso, and Pueblo counties. Walsenburg in Huerfano county and Trinidad in western Las Animas county received 5 to 6 inches, Beulah and Rye in the Wet Mountains received 6 to 7 inches, and Cuchara in the Southern Sangre De Cristo Mountains tallied 10 inches.

COZ061 Eastern San Juan Mountains

19	1900MST	0	0			Heavy Snow
	2330MST					

A weather disturbance moved into Colorado late the afternoon of the 19th, bringing snow to the eastern San Juan Mountains later that night. In a relatively short period of time 3 inches of snow fell at the Wolf Creek Ski Area, and 4 to 5 inches of snow fell near Creede in Mineral county. Strong southwest winds at 20 to 40 mph produced widespread areas of blowing and drifting snow, reducing visibilities to near zero at times.

COZ066>067-071 Southern Sangre De Cristo Mountains - Teller County/Rampart Range/Pikes Peak - Southern El Paso County/Colorado Springs And Vicinity

31	1300MST	0	0			Heavy Snow
	2000MST					

A weather disturbance moved across New Mexico, bringing snow to the southern mountains and nearby foothills of Colorado the afternoon and evening of the 31st. Localized favorable upslope flow caused snowfall amounts of 3 to 5 inches across extreme western El Paso County, in western Colorado Springs and Manitou Springs, while Woodland Park in Teller County and Cuchara in the Southern Sangre De Cristo Mountains received 7 inches of accumulation.

COLORADO, West

COZ009>010-012-019 Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Southwestern San Juan Mountains

02	2100MST	0	0			Winter Storm
04	1400MST					

A moist southwest flow produced 6 to 10 inches of snow in some central and southern mountain areas of western Colorado. Heavier reported amounts included 18 inches at Chattanooga and 13 inches over Red Mountain Pass. Wind gusts ranging from 40 to 70 MPH were clocked in exposed areas.

COZ001-009-012-019-021>023 Lower Yampa River Basin/Rangely And Vicinity - Grand And Battlement Mesas - West Elk And Sawatch Mountains/Taylor Park - Southwestern San Juan Mountains - Four Corners/Upper Dolores River/Cortez And Vicinity - Animas River Basin/Durango And Vicinity - San Juan River Basin/Pagosa Springs And Vicinity

05	0000MST	0	0			Heavy Snow
06	0900MST					

A Pacific trough produced widespread snow throughout western Colorado. Heavy snow was concentrated in some central and southern mountain areas where storm totals generally ranged from 6 to 12 inches. Heavy snow also fell in the lower elevations of extreme northwest and extreme southwest Colorado where amounts of 5 to 9 inches were common. Some of the largest reported snow totals included 20 inches at Bonham Reservoir on the Grand Mesa and 17 inches at the Purgatory Ski Area in the southwest San Juan Mountains.

COZ004>005-012 Elkhead And Park Mountains/Flat Tops/White River Plateau - Upper Yampa River Basin/Steamboat Springs And Vicinity - West Elk And Sawatch Mountains/Taylor Park

10	0000MST	0	0			Winter Storm
12	1000MST					

A persistent west to northwest flow of moist air produced heavy snow in some northern and central mountain areas of western Colorado. Snowfall ranged from 8 to 13 inches below the 8000 foot level and 10 to 20 inches at higher elevations. The largest reported snow total was 22 inches in the mountains near Steamboat Springs. Wind gusts of 20 to 40 MPH resulted in areas of blowing and drifting snow.

Storm Data and Unusual Weather Phenomena

January 1998

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

COLORADO, West

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

	13	0400MST			0	0			Heavy Snow
	14	0800MST							

A Pacific trough deposited 8 to 14 inches of snow in the northern and central mountains of western Colorado. Some northwest valleys received 4 to 9 inches of new snow.

COZ004>005-010-012 **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**

	15	2200MST			0	0			Winter Storm
	17	1700MST							

A moist northwest flow brought 8 to 20 inches of snow to many northern and central mountain areas of western Colorado. The heaviest reported snowfall totals included 22 inches in the mountains around Steamboat Springs and 17 inches at Crested Butte Ski Area. Winds generally gusted 30 to 50 MPH, with a peak wind to 84 MPH clocked on the ridge top above Snowmass Ski Area.

COZ010-012-018>019 **Gore And Elk Mountains/Central Mountain Valleys/Aspen And Vicinity - West Elk And Sawatch Mountains/Taylor Park - Northwestern San Juan Mountains - Southwestern San Juan Mountains**

	19	1600MST			0	0			Winter Storm
	20	0700MST							

A rapidly moving Pacific low pressure system produced 6 to 12 inches of snow in most central and southern mountain areas of western Colorado. The heaviest reported snowfall was 16 inches above Marble. Wind gusts of 30 to 50 MPH produced areas of blowing and drifting snow. The strongest reported gust was 63 MPH on Whitehouse Mountain. This storm also resulted in many avalanches.

COZ018 **Northwestern San Juan Mountains**

	21	1545MST			1	0			Avalanche
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A snowboarder was carried off in an avalanche and buried while skiing down San Bernardo Mountain, 8 miles southwest of Telluride. The unstable snowpack resulted from heavy snowfall and wind loading which occurred on the previous day. M25OU

CONNECTICUT, Northeast

CTZ002 **Hartford**

	03	1320EST			0	0			Record Warmth
--	----	---------	--	--	---	---	--	--	----------------------

The mean temperature for the day at Bradley International Airport in Windsor Locks was 46 degrees. This tied the record warmest mean temperature for the date set in 1913.

CTZ002 **Hartford**

	09	2200EST			0	0			Flood
	12	2200EST							

The combination of a significant rain event and melting snow caused by mild temperatures resulted in a minor river flood episode along the Connecticut River. At Hartford, flood stage of 16 feet was reached at 10 PM on January 9th and was followed by a crest of 19.2 feet at 6 PM on the 11th. The river dropped below flood stage at 10 PM on the 12th.

CTZ002>004 **Hartford - Tolland - Windham**

	15	1600EST			0	0			Ice Storm
	16	1200EST							

Low pressure over the southeastern United States moved northeast to a position off the Mid-Atlantic coast. A moderate ice storm occurred across northern Connecticut with ice accretions averaging just under one-half inch. One-half inch of accretion was reported in Woodstock in Windham County. Power outages affected 86,00 customers in the northern part of the state. The hardest hit town was New Britain. Schools were closed throughout the area and flights were delayed leaving Bradley International Airport in Windsor Locks. State police reported around 200 accidents on roadways throughout the area.

CONNECTICUT, Northwest

Litchfield County
Countywide

	08	1500EST			0	0	25K		Flood
	09	2000EST							

On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across parts of Litchfield County. The Nepaug River in the Winsted area flooded. Several roads throughout the county were flooded by small streams.

CTZ001 **Litchfield**

	15	1200EST			0	0	20K		Winter Storm
	16	1200EST							

On January 15 and 16, a winter storm moved from the southeast Atlantic coast north to the southern New Jersey coast and then out to sea. This storm produced light accumulations of snow across Litchfield County followed by damaging accumulations of freezing rain and sleet. The freezing rain downed trees and power lines which resulted in numerous power outages.

Storm Data and Unusual Weather Phenomena

January 1998

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

CONNECTICUT, Southern

CTZ007

Northern Middlesex

10 1200EST
11 1200EST

0 0

Flood

Due to previous heavy rainfall and snowmelt north of Northern Middlesex County, the Connecticut River left its banks in the Portland/Cromwell area. In Portland, a few low-lying stretches of Main Street were under water for several days. In addition, water covered parts of Route 17A in Portland, between Bartlett Street and the former Portland Drive-In. Some water was also over a section of River Road near the Cromwell Outboard Association's boathouse.

CTZ005>007

Northern Fairfield - Northern New Haven - Northern Middlesex

15 1900EST
16 0900EST

0 0

Ice Storm

As a strong high pressure system moved slowly east over Southeast Canada, a low pressure system developed off the Carolina Coast and moved northeast. The low passed east of the area during Friday morning, January 16th.

The high provided the region with temperatures at or below freezing along the surface and the low provided the moisture needed for an ice storm. Generally, from 1/2 to 1 inch of mainly liquid precipitation fell. Freezing rain began around 5 pm. Icing became widespread and significant by around 7 pm.

As ice accumulated on roads, there was widespread and significant traffic accidents that led to numerous injuries across the area. Several parts of roads were closed due to severe icing. At least 1/2 inch of ice accumulated on trees and power lines. The hardest hit areas were in Northern New Haven County where several communities (Meriden, Southington, Cheshire) were without power due to tree limbs collapsing on power lines from the weight of the ice. Several other communities across Northern Middlesex County (Cromwell, Portland, and Middletown) and Northern Fairfield County (New Fairfield and Danbury) also experienced power outages.

**Fairfield County
Countywide**

23 1900EST
24 0600EST

0 0

Urban/Sml Stream Fld

With a weak low pressure system moving east across the Ohio Valley and a strong High sliding slowly southeast over Maine, a strong east wind flow developed across the region early Friday morning, January 23rd. As the High moved southeast, the low over Ohio weakened as another low formed over the Southeast U.S. This second low rapidly intensified as it moved northeast, passing over New York City (NYC) late Friday evening. With abundant moisture available, heavy precipitation, mainly heavy rain along with strong gusty winds occurred from Friday afternoon through early Saturday morning.

Precipitation began in the form of snow from 6 am to 7 am. It accumulated up to 3 inches (Danbury) before it changed to rain during the afternoon. As the low moved toward NYC, heavy showers and thunderstorms formed and spread north across the region. Heavy rainfall from around 1 1/2 to 4 inches resulted in widespread small stream and low-lying poor drainage flooding.

In Fairfield County, rainfall amounts ranged from 1.44 inches in Danbury to 4.25 inches at Stratford. In Bridgeport, 2.85 inches of rain fell, which set a new daily record.

**New Haven County
Countywide**

23 2300EST
24 1415EST

0 0

Flood

**Middlesex County
Countywide**

24 0000EST
1415EST

0 0

Flood

**New London County
Countywide**

24 0230EST
1415EST

0 0

Flood

With a weak low pressure system moving east across the Ohio Valley and a strong High sliding slowly southeast over Maine, a strong east wind flow developed across the region early Friday morning, January 23rd. As the High moved southeast, the low over Ohio weakened as another low formed over the Southeast U.S. This second low rapidly intensified as it moved northeast, passing over New York City (NYC) late Friday evening. With abundant moisture available, heavy precipitation, mainly heavy rain along with strong gusty winds occurred from Friday afternoon through early Saturday morning.

Storm Data and Unusual Weather Phenomena

January 1998

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

CONNECTICUT, Southern

Precipitation began in the form of snow around 7 am. It accumulated up to 3 inches (Wolcott) before it changed to rain during the afternoon. As the low moved toward NYC, heavy showers and thunderstorms formed and spread north across the region. Heavy rainfall from around 2 to 6 inches resulted in widespread river, small stream, and low-lying poor drainage flooding.

In New Haven County:

The Wepawaug River in Milford rose out of its' banks around 11 pm on January 23rd before cresting more than 2 feet above its' flood stage around 7 am January 24th. The Quinnipiac River in Wallingford rose out of its' banks around midnight on January 24th before cresting at least 2 1/2 feet above flood stage during Saturday morning.

In New London County

Numerous small streams rose out of their banks. The Yantic River in Norwich experienced a 7 foot rise in response to 4 inches of rainfall spread across the watershed. The Norwich Civil Preparedness Director reported flooding of the Fireman's Field upstream of the gage.

Here are selected rainfall amounts:

- o For New Haven County, from 3.05 inches in Milford to 3.70 inches at North Branford.
- o For New London County, from 2.70 inches at Groton to 5.78 inches at Norwich Middle School.

Rainfall amounts were unavailable from Middlesex County.

DELAWARE

DEZ001>004

New Castle - Kent - Inland Sussex - Delaware Beaches

04	1000EST	0	0	0	0	Unseasonably Warm
09	1700EST					

A high pressure system over the Western Atlantic, in a position normally seen during the summer months, gave the Delmarva Peninsula six days of unseasonably warm weather during early January. A cold front tried to move south across the area on the 5th, but stalled and remained over northern Pennsylvania and New Jersey. A stronger cold front moved through the region on the 9th. The warmest day for most locations was the 8th as many new record high temperatures were set. High temperatures that day included 72 degrees in Odessa, 70 degrees in Bridgeville and Pennyhill, 69 degrees in Georgetown and Salisbury, MD, 68 degrees in Lewes and 66 degrees at the New Castle County Airport.

**Kent County
Countywide**

23	0900EST	0	0	0	Heavy Rain
	2300EST				

**New Castle County
Countywide**

23	0900EST	0	0	0	Heavy Rain
	2300EST				

**Sussex County
Countywide**

23	0900EST	0	0	0	Heavy Rain
	2300EST				

A low pressure system moved into the Ohio Valley the morning of the 23rd. A series of weak secondary low pressure systems developed along this primary low's cold front. Not only did this prolong the rain through the evening of the 23rd, but also helped it fall heavy at times especially during the afternoon on the 23rd. Storm totals averaged between 1.25 inches and 2.50 inches across Delaware with the highest amounts in the northern part of the state. This caused the usual poor drainage flooding in low-lying areas. In New Castle County, ponding of water on underpasses on U.S. Routes 13 and 40 caused back-ups during the evening commute. Storm totals included 2.77 inches in Wilmington, 2.51 inches at the New Castle County Airport, 1.86 inches in Dover and 1.24 inches in Georgetown.

**Kent County
Countywide**

28	0100EST	0	0		Heavy Rain
	1900EST				

**Sussex County
Countywide**

28	0100EST	0	0		Heavy Rain
	1900EST				

DEZ002

Kent

28	0400EST	0	0		Wind
	1800EST				

Storm Data and Unusual Weather Phenomena

January 1998

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

DELAWARE

DEZ003>004

Inland Sussex - Delaware Beaches

28	0400EST								
	1800EST			0	0				High Wind (G71)

DEZ002>004

Kent - Inland Sussex - Delaware Beaches

28	0600EST								
	1200EST			0	0	1.3M			Coastal Flooding/Erosion

An intense northeaster pounded Kent and Sussex Counties with tidal flooding, beach erosion, strong winds and heavy rain on the 28th. Conditions were progressively worse closer to the coast in Kent and Sussex Counties. Severe coastal flooding was reported in Sussex County. The high tide the morning of the 28th at Lewes was 9.0 feet (4.3 feet above normal) above mean lower low water. This came within half a foot of the all-time record tide of 9.5 feet above mean lower low water set during the Ash Wednesday Storm of 1962. Wind gusts exceeded hurricane force, in the low 80s around Indian River Inlet and reached 70 mph at the Pilot Tower. Service was suspended on the Cape May-Lewes Ferry after wind gusts reached 65 mph. Eight to ten foot seas were reported within the breakwater on Delaware Bay. Rainfall totals averaged between 2 and 4.5 inches. Unfortunately the damaging winds, high tide and heavy rain all occurred nearly simultaneously the morning of the 28th and this exacerbated the damage that was caused. About 10,000 homes and businesses lost power, most were in Sussex County. No serious injuries were reported. Damage estimates were around 1.3 million dollars.

The low pressure system (Northeaster) was in the Gulf Coast States the morning of the 26th and moved to near Savannah, Georgia the morning of the 27th. The low intensified as it moved very slowly north along the Atlantic Coast during the day and the night of the 27th. At 7 a.m. EST on the 28th, the northeaster was located near Virginia Beach, Virginia and then moved eastnortheast during the day. By the next morning, it was about 450 miles east of the southern New Jersey coast.

The worst damage occurred between 7 a.m. EST and 1 p.m. EST on the 28th in the southern part of the state as the heavy rain, strong and sometimes damaging winds coincided with the high tide. While heavy rain and strong winds persisted into the afternoon, the rain was lighter by the evening high tide and the winds were starting to shift to the north. Mainly minor tidal flooding occurred during the evening high tide on the 28th and the morning high tide on the 29th. The highest wind gusts included 82 mph at Indian River Inlet, 70 mph at the Pilot Tower, 65 mph in Delaware Bay and 52 mph in Georgetown. Storm rainfall totals included 4.59 inches at the Georgetown Airport, 3.85 inches in Lewes, 3.32 inches in Bridgeville and 2.04 inches in Dover.

Sussex County suffered the worst damage and some of the worst tidal flooding occurred on the Delaware Bay side in Broadkill Beach, Lewes and Primehook Beach. The bay went into the foundation of homes in Broadkill Beach as six foot waves crashed ashore. Flooding was described as "deep" and "unheard of" in Lewes as flooding reached Bay Avenue and Cedar Street. Several streets were barricaded because of the flooding and numerous cars were damaged.

Along Coastal Sussex County most of the dune protection was lost from Dewey Beach to Fenwick Island. Large stretches of Delaware State Route 1 between Rehoboth Beach and Fenwick Island were closed. Waves breached the dunes in several places along the shore, but none were described as major. The boardwalk was damaged at Cape Henlopen State Park. Trees were flattened in North Shores. In Henlopen Acres, fifty to sixty trees were uprooted and their limbs punched holes into homes. The damaging winds also ripped shingles from the roofs of several homes between 9 a.m. and 1 p.m. EST. In Rehoboth Beach, the beach erosion was so severe that it swept away sand from the WEST side of the Boardwalk, exposed the shipwreck of the S.S. Thomas Tracey and the city's first jetty built in the 1920s. The handicap ramp on Maryland Avenue was washed away. The surf broke through the seawall on Virginia Avenue. In addition, the hurricane force wind gusts ripped off roofing, pieces of the boardwalk and knocked down trees (One landed on the roof of the Rehoboth Yacht and Country Club.). In Dewey Beach, the ocean broke through the dunes in two locations. There was also bayside flooding on the western side of the town. About 100 feet of beach was eroded from in front of McKinley Street. It was estimated that only 30 to 40 percent of the dune protection was left. The strong winds tore shingles from roofs. In South Bethany, every street east of Delaware State Route 1 was closed for several days because of flooding and debris left on the road. The asphalt on large parts of Ocean Drive were torn away. Homes along the shore lost decks and stairs.

Damage was not limited to the shore. Strong winds knocked down trees inland in Millsboro and Indian River Inlet. The wind and heavy rain also caused damage to poultry homes. About 10,000 homes and businesses lost power, mainly between 9 a.m. EST and 130 p.m. EST. Hardest hit were the municipalities of Rehoboth Beach (1,900), Clarksville, Dagsboro, Dewey Beach, Fenwick Island, Frankford, Laurel, Long Neck and Millsboro. Tidal flooding extended so far inland that the Indian River flooded Millsboro's Cupola Park. The combination of tidal flooding and heavy rain forced the closure of about 10 major roadways within Sussex County, two (Sussex County Roads 82 and 360) were still closed the next morning (the 29th).

In Kent County, all the roadways in beach areas were covered with water during the morning high tide on the 28th. About ten roads were closed due to tidal flooding near the bay. Several roads had to be closed due to flooding from the heavy rain inland. Three roads were still closed through the morning high tide on the 29th. Hardest hit were the townships of Bowers along the shore and Frederica inland. About 500 homes and businesses in Clayton lost power because of the strong winds.

Storm Data and Unusual Weather Phenomena

January 1998

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

DELAWARE

DEZ001>004

New Castle - Kent - Inland Sussex - Delaware Beaches

31 2359EST 0 0 0 0 Unseasonably Warm

Courtesy of the warm spell at the start of the month and the lack of any prolonged invasions of arctic air the rest of the month, January 1998 was one of the ten warmest Januarys on record for the state of Delaware. At the New Castle County Airport, the January monthly mean temperature of 39.8 degrees was 9.2 degrees above normal and was the 7th warmest January of the 20th century.

DISTRICT OF COLUMBIA

DCZ001

District Of Columbia

06 0000EST 0 0 Unseasonably Warm
09 1200EST

A sprawling area of high atmospheric pressure became anchored over the western Atlantic for several days. Circulation around the high brought an unencumbered flow of tropical air from the Caribbean region into the immediate Washington, DC metropolitan region over a 2 1/2 day period beginning around midnight on the 6th and continuing until around noon on the 9th. A new record high temperature was set at National Airport on the 8th. More interestingly, temperatures remained above 55 degrees for over 48 hours, spanning two mornings when the normal low temperatures were nearly 30 degrees colder!

After nine days, mean temperatures across the metropolitan region were between 18 and 20 degrees above normal - more like April than early January.

DCZ001

District Of Columbia

23 0700EST 0 0 Heavy Rain
1400EST

Low- and mid-level flow of deep moisture, overrunning a chilly surface air mass, produced a prolonged period of moderate to heavy rain across the District of Columbia and immediate suburbs during the morning and early afternoon of the 23rd. A daily rainfall record was set at National Airport, where 1.75 inches fell. In nearby Largo, MD, 1.84 inches fell. Two tunnels were closed in downtown Washington due to high standing water, and ponding was a common theme during the late morning and early afternoon. Area creeks and streams ran high but below bankful.

DCZ001

District Of Columbia

28 0400EST 0 0 Heavy Rain
1600EST

A fairly intense and slow-moving nor'easter produced a large area of moderate to heavy rain across the Washington metropolitan area beginning late on the 27th and continuing through late afternoon on the 28th. The heaviest rains fell while the low tracked along the South and North Carolina coastline. Storm totals ranged from 1 1/2 to 2 1/2 inches across the region.

High standing water posed some problems during both the morning and evening commute on the 28th. Astronomical high tides, combined with wind-driven waves and upstream runoff, caused minor flooding at the tidal basin near Haines Point. Wind gusts in excess of 35 mph produced scattered power outages and knocked down a few tree limbs at isolated locations around the area.

FLORIDA, East Central

Lake County

Clermont

07 1200EST 0 0 85K Flood
08 1200EST

Heavy rains in December and January continued to produce flooding of low lying areas in the Clermont area of Lake County. Four mobile homes were flooded in a mobile home park.

Osceola County

Kissimmee

07 1200EST 0 0 100K Flood

Heavy rains from December through January produced flooding in low lying area of northern Osceola County. Eight mobile homes in a park received minor flooding. Most of the park was evacuated.

Brevard County

Malabar

23 1258EST 0 0 Hail (1.75)

Golf ball size hail fell in Malabar.

Brevard County

Malabar

23 1330EST 0 0 30K Flash Flood
1430EST

Three homes received minor flood damage as four to six inches of rain fell in the Malabar area.

Storm Data and Unusual Weather Phenomena

January 1998

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, Northeastern</u>									
Marion County									
Ocala	08	1000EST 2200EST			0	0	20K		Flood
Numerous streets were closed in Downtown Ocala.									
Clay County									
Middleburg	27	1810EST			0	0			Hail (1.75)
<u>FLORIDA, Northwest</u>									
Walton County									
Santa Rosa Beach	07	1125EST			0	0	30K		Thunderstorm Wind (G50)
One barn sustained minor damage and a large shed was destroyed from strong thunderstorm winds.									
Franklin County									
Apalachicola	15	1445EST 1450EST			0	0	15K		Thunderstorm Wind (G50)
Straight-line winds inflicted minor roof damage to a drug store. Several tree tops were snapped off, one which fell onto a vehicle. The flagpole at the National Guard Armory Post was bent horizontally.									
Bay County									
Camp Flowers	22	1615EST			0	0	20K		Thunderstorm Wind (G50)
Straight-line winds blew siding and roof off a residence at the intersection of Camp Flowers Road and Florida Highway 231 in northern Bay County. A few large pine trees were toppled. A small fire resulted from downed power lines.									
<u>FLORIDA, Southern</u>									
Dade County									
Coral Gables	08	2000EST 2020EST			0	0			Thunderstorm Wind (G78)
uprooted trees along .5 mile swath near 8000 block of old cutler rd.									
Dade County									
Miami	08	2015EST	0.1	125	0	0	30K		Tornado (F0)
maximum winds estimated from 60 to 70 mph. tornado touched down near 900 sw 32 ave causing damage to mobile home park and pottery shop. trees and a fence were knocked down.									
FLZ072									
Coastal Broward									
	21	2100EST			0	0			Flood
	22	0600EST							
a shallow warm front stalled over southeast palm beach county. by 22/2210 est a spotter in boca raton reported 4.50 inches in less than 3 hours. overnight amounts in excess of 9 inches were reported. widespread street flooding was reported over most of the southern half of coastal palm beach county. the most extensive flooding was between the florida turnpike east to military trail and okeechobee rd. north to 45th st.									
Dade County									
Miami Beach	26	0918EST 0925EST			0	0			Waterspout
waterspout was observed about 40 miles east of miami beach.									
<u>FLORIDA, West Central</u>									
De Soto County									
1 W Arcadia	01 02	0000EST 0800EST			0	0	4K	0	River Flood
The Peace River along State Road 70 in Arcadia crested at 11.5 feet on the 1st, one half foot above the flood stage of 11 feet.									
Hillsborough County									
13 NE Tampa	01 02	0000EST 0800EST			0	0	0	0	River Flood
The Hillsborough River in Hillsborough county crested at 32.9 feet at Morris Bridge Road on the 1st, nearly a foot above the flood stage of 32 feet.									
Sarasota County									
25 SE Sarasota	01 12	0000EST 0800EST			0	0	0	0	River Flood
The Myakka River at Myakka State Park crest at 7.8 feet on the 1st, three quarters of a foot above the flood stage of 32 feet.									
Hillsborough County									
21 NE Tampa	01	0000EST 2100EST			0	0	100K	0	River Flood
The Hillsborough River at Hillsborough State Park crested at 10.6, a half foot above the flood stage of ten feet on the 1st, before the river receded.									

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
FLORIDA, West Central									
Pasco County									
18 W Zephyrhills	01 14	0000EST 0800EST			0	0	10K	0	River Flood
									The Cypress Creek at Worthington Gardens along State Road 54 crested at 10.8 feet, nearly three feet above the flood stage of eight feet, on the 1st. Minor flooding and water damage occurred at a fish and trailer camp along State Road 54.
Pasco County									
Trilby	01 25	0000EST 0800EST			0	0	500K	0	River Flood
									The Withlacoochee River rose to 16.3 feet on the 4th, nearly four and a half feet above the flood stage of twelve feet, which caused significant water damage to properties along the river.
Hernando County									
11 E Brooksville	01 26	0000EST 0800EST			0	0	100K	0	River Flood
									The Withlacoochee River at Croom crested at 10.9 feet, nearly two feet above the flood stage of nine feet on the 5th. Several homes along the Hernando-Pasco county line from Croom south to Ridge Manor were damaged by floodwaters.
Citrus County									
5 ENE Holder	02 31	0800EST 2359EST			0	0	2M	0	River Flood
									The Withlacoochee River at Holder crested at 10.5 feet, two and a half feet above the flood stage of eight feet on the 20th. Up to 200 homes in the Arrowhead subdivision were damaged by floodwaters near State Road 200 north of County Road 491.
Hernando County									
Spring Hill to Brooksville	06	1900EST 2300EST			0	0	10K	0	Urban/Sml Stream Fld
									Heavy rains of three to four inches in less than four hours caused localized flooding of roads and low lying areas of western Hernando county along State Road 50.
Hernando County									
Spring Hill to Brooksville	08	0430EST 1000EST			0	0	5K	0	Urban/Sml Stream Fld
									Heavy rain of two to three inches in less than five hours caused minor localized flooding of roads and low lying areas.
Pasco County									
Aripeka to New Port Richey	08	0430EST 1000EST			0	0	200K	0	Urban/Sml Stream Fld
									Heavy rain of two to three inches in less than five hours caused minor flooding of roads and low-lying areas. Several vehicles incurred water damage along U.S. Highway 19 in New Port Richey.
Pasco County									
Richland	08	0530EST			0	0	0	0	Thunderstorm Wind (G50)
									Thunderstorm winds of 58 mph were observed by a Skywarn Spotter.
Highlands County									
Sebring	08	1012EST			0	0	15K	0	Thunderstorm Wind
									Thunderstorm winds downed several large trees and caused minor structural damage to three homes.
Lee County									
1 NE Ft Myers	08	1100EST			0	0	8K	0	Tstm Wind (G45)
									A thunderstorm wind gust of 50 mph partially forced a tractor trailer off the north bound lane of the I-75 bridge over the Caloosahatchee River. Nearly 8,000 dollars worth of damage was caused to the tractor trailer.
Lee County									
Cape Coral	08	1130EST 1400EST			0	0	25K	0	Urban/Sml Stream Fld
									Heavy rain of three to five inches in less than three hours caused localized flooding of roads and low lying areas in Cape Coral. A few cars stalled and incurred water damage from the floodwaters in Cape Coral.
Citrus County									
1 N Citrus Spgs to Citrus Spgs	11 31	0800EST 2359EST			0	0	20K	0	River Flood
									The Withlacoochee River at Dunnellon crested at 29.6 feet, over a half foot above the flood stage of 29 feet, on the 20th.
Pasco County									
Port Richey	15	1245EST 1500EST			0	0	20K	0	Urban/Sml Stream Fld
									Heavy rains of two to four inches in less than two hours caused minor flooding of roads and low lying areas in Port Richey. A few cars stalled and incurred water damage from the floodwaters along U.S. Highway 19.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
FLORIDA, West Central									
Sarasota County									
25 SE Sarasota	16	0800EST			0	0	5K	0	River Flood
	31	2359EST							
The Myakka River at Myakka State Park crested at 8.1 feet on the 27th, over a foot above the flood stage of seven feet.									
Pasco County									
18 W Zephyrhills	22	0800EST			0	0	0	0	River Flood
	27	0800EST							
The Cypress Creek at Worthington Gardens along State Road 54 crested at 8.3 feet, nearly a half foot above the flood stage of eight feet, on the 24th.									
Hillsborough County									
21 SSE Tampa	23	0800EST			0	0	50K	0	River Flood
	27	1300EST							
In Hillsborough county, heavy rains caused the Little Manatee River to crest at 14.7 feet, over three and a half feet above the eleven foot flood stage at U.S. Highway 301. A few homes were damaged by floodwaters in Ruskin.									
Manatee County									
21 SSE Bradenton	23	0800EST			0	0	50K	400K	River Flood
	27	0800EST							
The Manatee River at Myakka Head along State Road 64 crested at 15.5 feet on the 24th, eight and a half feet above the flood stage of seven feet. Significant crop damage occurred, mainly to tomatoes, from the floodwaters.									
De Soto County									
8 W Arcadia	23	0800EST			0	0	100K	0	River Flood
	29	0800EST							
The Horse Creek crested at 13.3 feet, nearly one and a half feet above the flood stage of twelve feet, on the 24th. A few homes in the Hidden Acres subdivision received minor flood damage.									
De Soto County									
1 W Arcadia	23	0800EST			0	0	200K	0	River Flood
	31	2359EST							
The Peace River along State Road 70 in Arcadia crested at 13.7 feet on the 28th, nearly three feet above the flood stage of 11 feet. A few homes along the banks of the Peace River received minor flood damage.									
Charlotte County									
Grove City	23	0810EST			0	0	0	0	Waterspout
A waterspout was observed from the Indigo Isle Mobile Home Park in Lemon Bay of the Intercoastal Waterway northwest of Buc k Creek.									
Charlotte County									
Grove City	23	0815EST	0.6	40	0	0	100K	0	Tornado (F0)
A waterspout moved onshore as a tornado and destroyed two mobile homes and damaged up to another 25 at the Indigo Mobile Home Park near State Road 775 and Grove Road. Most of the damage was carport, pool cage, torn aluminum siding and shed damage along Emerald and Amber Streets in the Indigo Mobile Home Park.									
Pinellas County									
9 N St Petersburg	23	0845EST			0	0	0	0	Waterspout
A waterspout was observed by the public one half mile south of the Howard Franklin Bridge (I-275).									
Sarasota County									
North Port	23	0915EST	0.1	5	0	0	5K	0	Tornado (F0)
A short lived tornado touched down along Kaayan Street between Price and Norlendale Boulevards and downed several power lines, snapped tree tops and blew down stop signs before it lifted and dissipated.									
Hillsborough County									
6.2 N Tampa to 6.9 N Tampa	23	0925EST 0930EST	0.9	10	0	0	75K	0	Tornado (F0)
A tornado sporatically touched down along a nearly one mile path from Linebaugh Avenue and 18th Street N. northeast across 22nd Street N. and lifted at 112 Avenue and 27th Street N. The tornado caused moderate shingle damage to three homes and caused minor damage to 22 additional homes.									
The tornado caused minor siding damage to portable classrooms at the Belle Witter Elementary school at the intersections of 109th Avenue and 22nd Street N. Several trees, power poles and lines were downed before the tornado lifted and dissipated.									
Highlands County									
2 S Avon Park	23	0945EST	0.3	10	0	0	10K	0	Tornado (F0)
A tornado briefly touched down and blew over five to seven toppers at a recreational vehicle dealership along U.S. Highway 27 before it lifted and dissipated.									

Storm Data and Unusual Weather Phenomena

January 1998

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

FLORIDA, West Central

Manatee County Countywide

23	1000EST 1900EST				0	0	150K	0	Urban/Sml Stream Fld
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Heavy rains of four to five inches caused localized flooding of roadways and low lying areas. The Rogers Garden Park apartments on the 5800 block of Eighth Street Court East incurred water damage from the floodwaters. Also, several vehicles on 55th Street in Bradenton were damaged by floodwaters up to three feet deep.

Sarasota County Countywide

23	1000EST 1900EST				0	0	250K	0	Urban/Sml Stream Fld
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Heavy rains of four to five inches caused localized flooding of roadways and low lying areas. Several cars stalled and incurred water damage between U.S. Highways 41 and 301 in Sarasota.

Hardee County Countywide

23	1100EST 1900EST				0	0	10K	0	Urban/Sml Stream Fld
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Polk County Countywide

23	1100EST 1900EST				0	0	10K	0	Urban/Sml Stream Fld
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Heavy rains caused several roads to flood in low lying areas of Hardee and Polk counties. A few cars stalled and incurred water damage from the floodwaters in the cities of Lakeland and Wauchula.

Manatee County Bradenton to Myakka Head

23	1900EST				0	0	1.2M	0	Flood
24	0900EST								

Heavy rainfall of three to five inches in less than 24 hours caused flooding of up to 300 homes from Bradenton to Myakka Head in Manatee county. Several roads and bridges were damaged by the flooding across Manatee county.

Five homes incurred major water damage and another 131 had minor damage from the floodwaters as high as two feet deep. Total damage from the floodwaters was estimated at \$1.2 million dollars.

Hardee County 1 N Zolfo Spgs

24	0800EST				0	0	50K	0	River Flood
31	2359EST								

Heavy rainfall caused the Peace River at Zolfo Springs to crest during late January. Floodwaters of the Peace River washed away the river gage and caused damage to a few homes along it's banks.

FLORIDA, West Panhandle

Escambia County Pensacola

07	0900CST 0901CST				0	0	3K		Thunderstorm Wind (G50)
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A few trees were blown down near downtown Pensacola.

Santa Rosa County Chumuckla

07	0900CST 0901CST				0	0	7K		Thunderstorm Wind (G60)
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A couple of homes sustained roof damage and trees were blown down near Chumuckla. A couple of out buildings were also damaged. A trailer truck parked on the side of the road was turned over.

Santa Rosa County Navarre

07	1000CST 1001CST				0	0	3.5K		Thunderstorm Wind (G50)
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Trees and power lines were blown down in Navarre.

Okaloosa County Destin

07	1015CST 1016CST	0.1	25		0	1	7K		Tornado (F0)
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A waterspout moved onshore on Okaloosa Island and damaged a home under construction. The waterspout/tornado quickly dissipated as it moved onshore. The tornado track on the island was less than a block long. A male working on the house was injured and was briefly hospitalized.

GEORGIA, East Central

NONE REPORTED.

GEORGIA, Lower

Jeff Davis County 1 E Denton

22	1730EST				0	0			Hail (1.75)
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Jeff Davis County 8 S Hazelhurst

22	1825EST				0	0	1.5K		Thunderstorm Wind
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Large trees were blown down along Highway 19.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>GEORGIA, Lower</u>									
Jeff Davis County									
6 SW Hazelhurst to 6.1 SW Hazelhurst	22 30	1830EST 1830EST	0.1	20	0	0	15K		Tornado (F0)
Two sheds were destroyed, with debris carried across both sides of Alma Highway.									
Appling County									
6 SW Baxley	22	1845EST			0	0	2K		Thunderstorm Wind
Large trees were blown down along Zoar Road.									
Appling County									
Baxley	22	1900EST			0	0	1.5K		Thunderstorm Wind
Large trees were blown down along HWY 15.									
<u>GEORGIA, North and Central</u>									
Bibb County									
Macon	07	1800EST			0	0	0.50K		Thunderstorm Wind
A channel 24 TV meteorologist reported thunderstorm winds knocked down a couple of trees. One fell on a power line causing a power outage.									
Greene County									
Greensboro	07	1940EST			0	0	2M		Thunderstorm Wind
A severe thunderstorm caused damage in downtown Greensboro, mainly in a 2 block by 3 block area around the intersection of State Roads 15 and 44. A total of 23 businesses were damaged. Two homes sustained minor damage. Roofs being damaged or blown off and windows being blown out accounted for much of the damage. Other damage came from debris being blown around and water damage inside stores and shops where the roofs were blown off. One car was destroyed by falling bricks. Witnesses said there were roaring sounds, but sight survey by a NWS employee indicated the damage was by straight-line winds from a downburst. Luckily, there were no injuries or deaths, since most businesses close early on Wednesday evenings.									
Laurens County									
Dublin	07	2200EST			0	0	75K		Thunderstorm Wind
Severe thunderstorm winds destroyed a barn and knocked trees down onto a mobile home. Several other trees were uprooted and windows were blown out of a home and a barber shop.									
Wilcox County									
10 E Rochelle	22	1600EST			0	0	0.50K		Thunderstorm Wind
A truck driver reported several trees were knocked down on highway 129.									
<u>GEORGIA, Northeast</u>									
Habersham County									
Countywide	07 08	1400EST 0000EST			0	0			Flood
Rabun County									
Clayton	07	1800EST 2300EST			0	0			Flood
GAZ018									
Stephens									
	07	1855EST			0	0			High Wind (G50)
Franklin County									
Countywide	07	2030EST 2300EST			0	0			Flood
Hart County									
Countywide	07	2030EST 2300EST			0	0			Flood
Elbert County									
Countywide	07	2045EST			0	0			Thunderstorm Wind (G50)
Stephens County									
Toccoa	07	2123EST			0	0	0.50K		Thunderstorm Wind (G54)
Elbert County									
Countywide	07 08	2130EST 0000EST			0	0			Flood

A powerful winter storm brought heavy rain and severe thunderstorms to much of northeast Georgia. Flooding developed quickly in the early afternoon and persisted through the evening. Many roads became impassable due to high water and several bridges were washed out. A few low-topped thunderstorms became severe, producing damaging winds (measured at 63 mph in Toccoa) that blew numerous trees, power lines, and signs down in Stephens and Elbert counties. High environmental winds, blowing from the south in advance of the main area of low pressure blew trees and signs down in Stephens county early in the evening, as well as causing roof damage to some structures.

Storm Data and Unusual Weather Phenomena

January 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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HAWAII

headquartered in Waimea, said streams in the South Kohala District were no longer flowing, and pasture lands on the west side of Mauna Kea at Waikii and Keamuku were beginning to show stress.

On Maui, the East Maui Irrigation Co. reported no rainfall since the 1st, and flows in the Wailoa ditch had dropped to 25 percent of capacity.

Honolulu County

Kahaluu to
Kaaawa

01	0230HST				0	0			Urban/Sml Stream Fld
	0900HST								

Heavy showers caused minor flooding of roads and low-lying places in the Waikane area from Kahaluu to Kualoa. Several motorists stalled out in waters as deep as 2 feet on Kamehameha Highway. Three bridges were flooded: one over the Waihole Valley Road, another over the Waikane Valley Road, and one near Kamaha Place.

HIZ001>006

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

01	1000HST				0	0			High Surf
	03 0500HST								

A developed storm low far northeast of the Hawaiian Islands produced surf of 8 to 12 feet along the northwest and north facing shores and 6 to 10 feet along northeast facing shores of the islands. All beach parks in the vicinity of Hilo on the Island of Hawaii were closed on the 1st.

HIZ001>006

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

04	1200HST				0	0			High Surf
	08 0200HST								

A gale low centered about 500 miles to the north of the Hawaiian Islands caused surf of 8 to 12 feet along northwest and north facing shores of the islands.

HIZ004

Island Of Hawaii

05	0400HST				0	0			High Wind (G78)
	08 0100HST								

Westerly winds of 70 to 90 mph were recorded near the summit of Mauna Kea. Light snow created slick conditions on the road to the mountain summit, closing the road on the 6th.

HIZ003

Maui

05	0400HST				0	0			High Wind (G52)
	06 1600HST								

Westerly winds were in the range of 40 to 60 mph near the summit of Haleakala.

A cold front, moving from the northwest to the southeast, passed through the islands from the 5th to the 7th.

Honolulu County

Honolulu

05	1400HST				0	0			Urban/Sml Stream Fld
	1700HST								

Isolated heavy showers produced minor flooding of roads and low-lying areas in and around Ala Moana Park.

HIZ001>006

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

10	1000HST				0	0			High Surf
	14 0500HST								

A strong storm low far northwest of the Hawaiian Islands generated surf of 12 to 18 feet along northwest and north facing shores of all the islands.

HIZ001>006

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

20	1600HST				0	0			High Surf
	22 0200HST								

A deep storm low far northwest of the Hawaiian Islands caused surf of 8 to 15 feet along the northwest and north facing shores of the islands.

HIZ001>006

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

23	0100HST				0	0	20K		High Surf
	31 2359HST								

A series of developed storm lows far northwest of the Hawaiian Islands produced surf that eventually built to 25 to 40 feet (on the 28th) along northwest and north facing shores and 15 to 20 feet along western facing shores of all the islands. The high surf caused damage to two units of the Ke Iki Hale apartment complex on the North Shore of Oahu. This event also closed all North Shore beaches on the 28th, and the surf was deemed too dangerous to hold the Quiksilver Eddie Aikau Big Wave Invitational surfing competition--which requires at least 20-foot waves to be held in the first place. Waves also occasionally crossed roadways along western and northern shorelines on Oahu, depositing sand and other debris on the road surfaces. On the Island of Hawaii, Keokaha and other Hilo District beaches were closed on the 28th.

HIZ004

Island Of Hawaii

29	1000HST				0	0			High Wind (G70)
	30 0200HST								

West to northwest winds of 60 to 80 mph were recorded near the summit of Mauna Kea.

Storm Data and Unusual Weather Phenomena

January 1998

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

HAWAII

HIZ003

Maui	29	1000HST			0	0			High Wind (G52)
		2000HST							

West to northwest winds of 40 to 60 mph occurred near the summit of Haleakala.

IDAHO, Extreme Southeast

NONE REPORTED.

IDAHO, North

NONE REPORTED.

IDAHO, Northwest

IDZ001-004

Northern Panhandle - Shoshone					0	0	0	0	Heavy Snow
	07	2000PST							
	14	1800PST							

12 inches new snow in Copeland...8 inches new snow in Porthill...4 inches new snow in Coolin

IDZ001

Northern Panhandle					0	0	0	0	Extreme Windchill
	11	0730PST							

-40 windchill in Sandpoint

IDZ001

Northern Panhandle					0	0	50K	0	Extreme Cold
	11	0742PST							

Spirit Lake spotter reported a temperature of -24...Public Works department in Sandpoint was flooded by broken water pipes

IDAHO, Southeast

Lincoln County

Richfield	17	1005MST			0	0			Thunderstorm Wind (G54)
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Minidoka County

Minidoka	17	1030MST			0	0			Tstm Wind/Hail
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Thunderstorm Gust 48 kts.

Cassia County

Burley	17	1030MST			0	0			Tstm Wind/Hail
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High winds from a thunderstorm blew down trees and power lines with damage to roofs.

Bingham County

Taber	17	1035MST			0	0			Thunderstorm Wind (G53)
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Bingham County

Aberdeen	17	1045MST			0	0			Thunderstorm Wind (G59)
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Bingham County

Blackfoot	17	1050MST			0	0			Thunderstorm Wind (G50)
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Power County

Pocatello Arpt	17	1058MST			0	0			Tstm Wind/Hail
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Thunderstorm gust 45 kts.

Bannock County

3 W Pocatello	17	1100MST			0	0	2K		Thunderstorm Wind
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High wind from thunderstorm blew 70 to 80 shingles off a roof and knocked over highway signs along Interstate 86.

IDAHO, Southwest

IDZ013

Boise Mountains					0	0			Heavy Snow
	01	2200MST							
	02	1000MST							

During the night of January 1st a localized, mountain enhanced snow storm dumped heavy snow over portions of the Boise Mountains with Lowman reporting 8 inches of new snow.

IDZ019

Upper Snake Highlands					2	0			Avalanche
	03	1500MST							
		1600MST							

During the first week of January, dangerous avalanche conditions prevailed in the mountainous regions of central and eastern Idaho. On January 3rd one avalanche killed a snowmobiler near Island Park. In the same area and at roughly the same time, a second snow snowmobiler was reported missing and presumed dead due to a second avalanche. At the time of publishing of this report, the victim remains missing. M37OU, M59OU

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
IDAHO, Southwest									
IDZ004		Shoshone							
	07	2200MST			0	0			Heavy Snow
	08	1000MST							
	During the night of January 7th, heavy snow fell over Shoshone County in the Idaho Panhandle. Six inches was reported at Osburn, 8 inches at Wallace and Silverton, with 12 inches at Silver Mountain Resort. Numerous traffic accidents occurred on area roads.								
IDZ011-013-018>019-022>023		West Central Mountains - Boise Mountains - Sawtooth Mountains - Upper Snake Highlands - South Central Highlands - Caribou Highlands							
	09	2200MST			0	0			Heavy Snow
	11	2100MST							
	A moist pacific storm system swept over central and southern Idaho, beginning over the western zones on the night of January 9th and reaching the eastern zones on the 10th. Heavy snow was reported from numerous mountain locations. In Idaho's central mountains Placerville reported 12 inches, Ellis reported 10 to 12 inches, 13 to 15 inches fell at Cascade, 12 inches at Smith's Ferry with 12 inches at Council. In the Upper Snake Highlands 8 inches fell near Driggs with blowing snow resulting in almost zero visibility. Victor reported 12 inches. The heaviest amounts fell in the South Central and South Eastern Highlands of Idaho with Pomerelle reporting a storm total of 40 inches. Twenty inches fell at Wayan and 18 inches fell at Inkom. Soda Springs reported 12 inches.								
IDZ013		Boise Mountains							
	14	2000MST			0	0			Heavy Snow
	15	1000MST							
	During the night of January 14th, heavy snow fell over the Boise Mountains, cutting power to much of the region and disrupting traffic. Bogus Basin Ski Resort reported 10 inches of new snow and Idaho City received 6 to 8 inches.								
IDZ004		Shoshone							
	16	0430MST			0	0			Heavy Snow
	17	1630MST							
	Heavy snow fell over the higher elevations of Shoshone County with Silver Mountain reporting 7 inches of new snow.								
IDZ011		West Central Mountains							
	17	0200MST			0	0			Heavy Snow
		0900MST							
Elmore County Glenns Ferry	17	1015MST			0	0			Hail (0.75)
		1017MST							
	During the morning of January 17th a strong cold front crossed southern and central Idaho. A heavy snow shower dumped 6 inches at Middle Fork Lodge while in the Treasure Valley the front triggered a thunderstorm that produced dime sized hail at Glenns Ferry. Pocatello, in the Magic Valley, reported a wind gust to 52 mph from another thunderstorm.								
IDZ018>019		Sawtooth Mountains - Upper Snake Highlands							
	19	0700MST			0	0			Heavy Snow
		2359MST							
	A storm system crossed southern Idaho on January 19th bringing heavy snow to portions of the central mountains and eastern Idaho. in the Salmon/Sawtooth Mountains Ketchum reported 6 inches of new snow. In the Upper Snake Highlands Island Park reported 6 to 8 inches.								
ILLINOIS, Central									
ILZ027>031-036>037-040>041-047>050		Knox - Stark - Peoria - Marshall - Woodford - Fulton - Tazewell - Schuyler - Mason - Cass - Menard - Scott - Morgan							
	08	0500CST			0	0			Heavy Snow
		2000CST							
	Rain across Central Illinois quickly changed over to snow northwest of a line from Springfield to Bloomington during the early morning hours. Heavy snow amounts occurred across these areas before ending by early evening. Snowfall amounts of greater than 3 inches occurred in these areas. the heaviest snow occurred along and northwest of the Illinois River with total snowfall amounts of 4 to 8 inches. Numerous traffic accidents were noted but no serious injuries were reported.								
ILZ071		Clay							
	08	1800CST			0	0			Flood
	10	1800CST							
	A persistant rain fell across Central Illinois over a 6 day period from January 4 through 9. This created rises and subsequent flooding on the Little Wabash River at Clay City by January 8. Only minor flooding of low lying areas adjacent to the river resulted with a crest only about 1 foot above flood stage on January 9.								
ILZ036-040>041-047		Fulton - Schuyler - Mason - Cass							
	10	1800CST			0	0			Flood
	23	1800CST							
	A combination of persistant rains and some snowmelt across Central Illinois through mid January resulted in minor flooding on the Illinois River from Havana to Beardstown beginning on January 10 through January 23. Only minor flooding of low lying areas adjacent to the river occurred as river levels only rose to about 1 foot above flood stage.								

Storm Data and Unusual Weather Phenomena

January 1998

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

ILLINOIS, Central

ILZ027>030-036>038-040>043-047>053 **Knox - Stark - Peoria - Marshall - Fulton - Tazewell - Mclean - Schuyler - Mason - Logan - De Witt - Cass - Menard - Scott - Morgan - Sangamon - Christian - Macon**
14 **0600CST** **0** **0** **Winter Storm**
2200CST

A winter Storm across much of Central Illinois produced widespread Freezing Rain, Sleet and Snow mainly affecting areas northwest of a Taylorville to Champaign line. The precipitation spread from west to east across the area during the morning hours. This resulted in several traffic accidents across the area, but no serious injuries were reported.

ILLINOIS, Northeast

ILZ003>006-008-010>012-014 **Winnebago - Boone - Mchenry - Lake - Ogle - Lee - De Kalb - Kane - Cook**
08 **0600CST** **0** **0** **Heavy Snow**
1800CST

A band of heavy snow began falling over northwest Illinois the morning of the 8th. By that evening, a band of 4 to 8 inches of snow had fallen over much of north central Illinois and the extreme northeast corner of Illinois. The heaviest snow fell from west of Peoria through Rockford and as far east as the northwest and north suburbs of Chicago. The heavier snowfall amounts include: Dixon - 7.7 inches in Lee county, Rockford - 7.2 in Winnebago county, Wonderlake - 7.5 inches in McHenry county, and Barrington - 6.5 inches in northern Cook county.

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**
08 **1000CST** **0** **0** **Winter Storm**
2000CST

A winter storm over Eastern Iowa and Western Illinois produced widespread snow across the area. Accumulations were mainly in the 2 to 4 inch range, however a swath of heavier snow fell across Bureau, Henry and Putnam counties with amounts ranging from 6 to 11 inches . Numerous accidents were reported due to the snow and several schools sent students home early.

ILZ001>002-007-009 **Jo Daviess - Stephenson - Carroll - Whiteside**
20 **2300CST** **0** **0** **Winter Storm**
21 **0800CST**

A winter storm dumped 2 to 4 inches of snow over Eastern Iowa and Northwest Illinois with isolated heavier amounts.

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**
06 **0100CST** **0** **0** **Fog**
1000CST

Dense fog reduced visibility to a quarter mile or less across much of the area.

ILZ084 **Jackson**
09 **0700CST** **0** **0** **Flood**
13 **2000CST**

Very minor flooding of the Big Muddy River occurred near Murphysboro. The crest was less than two feet above flood stage, affecting primarily agricultural bottomland.

ILZ087-092>094 **Gallatin - Alexander - Pulaski - Massac**
11 **0200CST** **0** **0** **Flood**
18 **2000CST**

Due to heavy rains in the upper Ohio River Basin, the Ohio River rose slightly above flood stage at many locations. The river exceeded flood stage at Shawneetown, Brookport, Grand Chain, and Cairo. At most of these locations, the crests were about 2 feet above flood stage. The exception was at Shawneetown, where the crest was four feet over flood stage. The minor flooding affected primarily agricultural bottomlands.

ILZ080>081-084>086-088>094 **Perry - Franklin - Jackson - Williamson - Saline - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac**
17 **0300CST** **0** **0** **Freezing Drizzle**
0600CST

Light freezing drizzle caused icing of bridges and overpasses. Several accidents occurred on the Interstate 57 bridge over the Mississippi River. The U.S. 62 bridge over the Ohio River also became icy.

ILZ075-080>081-084 **Jefferson - Perry - Franklin - Jackson**
22 **1100CST** **0** **0** **Snow**
1800CST

A mixture of precipitation changed to snow during the midday hours. Accumulations were around 2 inches northwest of a line from Carbondale to DuQuoin, and as high as 4 inches in Willisville, about 15 miles west of DuQuoin. Because most of the snow fell at temperatures just above freezing, it formed a slushy coating on roads. Several accidents were reported in the Carbondale area, but

Storm Data and Unusual Weather Phenomena

January 1998

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

ILLINOIS, South

none were believed to be serious.

ILZ075>078-080>094	Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac								
	27	0300CST 0800CST			0	0			Fog

Widespread dense fog developed over far southern Illinois during the early morning hours. The most persistent dense fog occurred in the Marion/Carbondale area, where visibility was locally near zero for several hours. The dense fog hindered early morning commuters.

ILZ075>078-080>094	Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac								
	30	0200CST 0900CST			0	0			Fog

Widespread dense fog caused travel difficulties during the early morning hours. Illinois State Police reported visibility as low as two car lengths near Metropolis in Massac County.

ILLINOIS, Southwest

ILZ058-095>099	Greene - Adams - Brown - Pike - Calhoun - Jersey								
	08	0800CST 1800CST			0	0			Winter Storm

A fast moving storm system dropped from 2 to 5 inches of snow across parts of West Central and Southwest Illinois. Since temperatures hovered around the freezing mark, most roads became slushy around midday but remained passable. Most area schools and businesses remained open.

ILZ058>060-064>065-069>070-074-079-095>102	Greene - Macoupin - Montgomery - Bond - Fayette - Clinton - Marion - Washington - Randolph - Adams - Brown - Pike - Calhoun - Jersey - Madison - St. Clair - Monroe								
	12	0200CST 1200CST			0	0			Winter Storm

Freezing drizzle put a thin coating of ice on area roads causing widespread early morning travel problems. The hardest hit areas were just north of the St. Louis Metro area, including parts of Madison, Calhoun, and Jersey counties.

ILZ074-079-100>102	Washington - Randolph - Madison - St. Clair - Monroe								
	22	0700CST 1800CST			0	0			Winter Storm

A snowstorm dropped from 2 to 4 inches of snow across parts of Southwest Illinois. The snow caused some traffic problems mainly early in the morning.

INDIANA, Central

INZ028>029-035-043>044	Warren - Tippecanoe - Fountain - Vermillion - Parke								
	06	0700EST			0	0			Flood
	12	0700EST							

INZ021>023	Carroll - Cass - Miami								
	06	1200EST			0	0			Flood
	12	1200EST							

INZ051-053-060>061-067>072	Vigo - Owen - Sullivan - Greene - Knox - Daviess - Martin - Lawrence - Jackson - Jennings								
	10	0700EST			0	0			Flood
	16	0700EST							

Heavy rains of 1 to 2 inches on the 3rd and 4th, and an additional 1 to 2 inches rainfall on the 6th through the 8th of January resulted in most streams across Indiana to exceed bankfull. Most rivers exceeded flood stage by 1 to 4 feet with a few spots exceeding five feet. In nearly all cases, only low land flooding occurred along with some minor flooding and closings of some stretches of river roads. The initial flooding began in the north third of Indiana on the 6th and progressed downstate with flood stages beginning in these areas around the 10th. Flooding in most cases ended about one week later.

INDIANA, Northeast

NONE REPORTED.

INDIANA, Northwest

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

January 1998

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

INDIANA, South Central

INZ079	Jefferson								
	08	0800EST			0	0			Flood
		1400EST							

The Muscatatuck River at Deputy crested at 20.4 feet (flood stage is 20 feet) at 10 am January 8. This caused some minor agricultural flooding and county road flooding.

INDIANA, Southeast

INZ058	Fayette								
	08	0700EST			0	0			Flood
		2130EST							

From 1 to 3 inches of rain fell across Southeastern Indiana on the 7th and 8th causing the Whitewater River at Alpine to rise out of its banks. The river crested around 12.6 feet at 400 pm est on the 8th causing flooding of low-lying agricultural land. Flood stage is 12.0 feet.

INDIANA, Southwest

INZ081>082-085>088	Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer								
	06	0100CST			0	0			Fog
		0800CST							

Widespread dense fog reduced visibility to a quarter mile or less in many areas.

INZ085-087	Posey - Warrick								
	11	0300CST			0	0			Flood
	17	0300CST							

Due to heavy rains in the Upper Ohio River basin, the Ohio River rose to near or slightly above flood stage. The river crested about three feet over flood stage at Newburgh and Mt. Vernon. This minor flooding primarily affected agricultural bottomlands.

IOWA, Central

IAZ004>007-015>017-023>028-033>039-044>050-057>062-070>075-081>086-092>097	Emmet - Kossuth - Winnebago - Worth - Palo Alto - Hancock - Cerro Gordo - Pocahontas - Humboldt - Wright - Franklin - Butler - Bremer - Sac - Calhoun - Webster - Hamilton - Hardin - Grundy - Black Hawk - Crawford - Carroll - Greene - Boone - Story - Marshall - Tama - Audubon - Guthrie - Dallas - Polk - Jasper - Poweshiek - Cass - Adair - Madison - Warren - Marion - Mahaska - Adams - Union - Clarke - Lucas - Monroe - Wapello - Taylor - Ringgold - Decatur - Wayne - Appanoose - Davis								
	04	0630CST			0	0	1.0M		Ice Storm
		2100CST							

Iowa was caught in the battle zone between very warm and moist air to the southeast and shallow Arctic air to the north. An Arctic cold front slipped south across the state the previous day. Temperatures across the state ranged from around 10 over the northwest to near freezing over the southeast on the morning of the 4th. An upper level system advanced northeast into Iowa, bringing with it widespread precipitation. Temperatures were well above freezing in the air that over ran the state. The result was widespread ice accretion. Much of the state received between one quarter and six tenths inch of ice accumulation. The heaviest accretion was over the northwest half of the state. Over the southeast, precipitation began as freezing rain, but changed over to rain in the afternoon as temperatures warmed above freezing. The ice caused spotty power outages with downed tree limbs in places. Automobile accidents were very numerous. In Des Moines for example, the major trauma center had to turn patients away to other hospitals for a four hour period as accident victims flooded the emergency room. Travel was difficult over the northwest half of the state, with scattered slick spots over the southeast. On the morning of the 5th, numerous school districts either began classes late or cancelled school.

IAZ070>072-081>086-092>097	Cass - Adair - Madison - Adams - Union - Clarke - Lucas - Monroe - Wapello - Taylor - Ringgold - Decatur - Wayne - Appanoose - Davis								
	14	0130CST			0	0	30.0K		Ice Storm
		0930CST							

Arctic high pressure was located to the east of Iowa as an upper level system approached from the west. Warm air was drawn north over the top of the Arctic air in place in the lower levels of the atmosphere. Fog and low clouds spread into the state from the southwest during the early morning hours of the 14th. Freezing drizzle developed and in the southern part of the state had increased to freezing rain before sunrise. Though amounts were not excessive, ice accretions of a few hundredths of an inch up to one tenth inch were common. The ice caused travel problems as the freezing rain fell into surface temperatures around -10 C. Roads became 100% ice covered and numerous accidents were reported. Schools were delayed or cancelled in many areas. Fortunately, the icing was not heavy enough to cause much in the way of tree limb damage.

IAZ023-033>038-044>050-057>062-070>072	Pocahontas - Sac - Calhoun - Webster - Hamilton - Hardin - Grundy - Crawford - Carroll - Greene - Boone - Story - Marshall - Tama - Audubon - Guthrie - Dallas - Polk - Jasper - Poweshiek - Cass - Adair - Madison								
	20	1800CST			0	0	229.9K		Heavy Snow
	21	0300CST							

A very powerful storm system moved into the Rockies on the 19th and advanced into the Plains during the afternoon of the 20th. Though the moisture was limited with the system, strong dynamics made up for the lack in moisture. The surface low moved east-northeast across Missouri, while the upper level system moved directly over Iowa. The precipitation initially started as a mix of

Storm Data and Unusual Weather Phenomena

January 1998

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

light snow and freezing drizzle. Some ice pellets were mixed with the precipitation as well. As the evening progressed and deeper moisture finally reached the system, intensity picked up. By the late evening hours convective bands of heavy snow had developed with visibilities reduced to under one quarter mile in heavy snow over a large part of the state. There were reports of "thundersnow" over the central counties of the state. The heaviest snow fell over the west central into the central counties. Amounts of 5 to 7 inches were common with several reports of 7 to 8 inches. The heaviest official report came in from Toledo in Tama County, where 8.1 inches of snow was measured. Thunderstorms produced a small area of very heavy snow over Calhoun County. Twelve inches of snow was recorded in the city of Manson and thunderstorms with heavy snow pelted the area. To the southwest of Manson, the town of Manning in Carroll County received about 8 inches of snow. This was on the southwest edge of one of the stronger convective snow bands. Travel was disrupted by the snow as roads became very icy. Numerous accidents were reported and most events were cancelled for the evening of the 20th and many schools closed or opened late on the morning of the 21st. Winds during the storm were easterly at 15 to 30 MPH. This caused considerable drifting of snow, but blowing was limited. Spotty damage was reported as the snow was fairly heavy by Iowa standards with a ratio of nearly 10 to 1.

IOWA, East Central and Southeast

IAZ054-065>068-078-089 Jackson - Cedar - Clinton - Muscatine - Scott - Louisa - Des Moines

08	1000CST 1800CST	0	0				Winter Storm
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A winter storm over Eastern Iowa and Western Illinois produced widespread snow across the area. Accumulations were mainly in the 2 to 4 inch range, however a swath of heavier snow with amounts of 6 to 11 inches fell across West Central Illinois. Numerous were reported due to the snow and several schools sent students home early.

IAZ040>042-051>054-065>066 Buchanan - Delaware - Dubuque - Benton - Linn - Jones - Jackson - Cedar - Clinton

20	2200CST	0	0				Winter Storm
21	0630CST						

A winter storm dumped 2 to 4 inches of snow over Eastern Iowa and Northwest Illinois with isolated heavier amounts..

IOWA, Northeast

IAZ008>011-018>019-029>030 Mitchell - Howard - Winneshiek - Allamakee - Floyd - Chickasaw - Fayette - Clayton

04	1300CST 2000CST	0	1	19.5K			Ice Storm
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A glaze of ice 1/4 to 3/4 of an inch thick coated northeast Iowa, causing slick roads and numerous accidents. Only minor injuries were reported and since winds were light, only a few power outages occurred due to falling tree limbs.

IOWA, Northwest

NONE REPORTED.

IOWA, Southwest

IAZ055>056-069 Harrison - Shelby - Pottawattamie

20	1700CST	0	0				Winter Storm
21	0100CST						

A winter storm system produced 6 to 8 inches of snow on the affected areas.

KANSAS, East

KSZ010>012-021>024-026-035>040-054>056-058>059 Marshall - Nemaha - Brown - Clay - Riley - Pottawatomie - Jackson - Jefferson - Dickinson - Geary - Morris - Wabaunsee - Shawnee - Douglas - Lyon - Osage - Franklin - Coffey - Anderson

04	0300CST 1000CST	1	2	40K			Ice Storm
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A mixture of sleet and freezing rain, accompanied by scattered thunderstorms produced rapid accumulations of ice. The heaviest precipitation fell as sleet with local accumulations of 1 to 2 inches. Glaze or sleet accumulations at most locations ranged from one-fourth to one-half inches. A fatal accident occurred on US Highway 36 five miles west of Belleville when a van overturned after hitting a guard rail. The accident occurred at 1250 PM CST from ice left over from the storm. Several other accidents also occurred, including a five car wreck. Overall the number of accidents was less than it could have been since the brunt of the storm occurred shortly before daybreak on a Sunday morning. M9VE

KSZ022>024-026-036-038>040-055>056 Riley - Pottawatomie - Jackson - Jefferson - Geary - Wabaunsee - Shawnee - Douglas - Osage - Franklin

12	0300CST 1100CST	1	4	60K			Glaze
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A light mixture of freezing rain, freezing drizzle and snow caused numerous but mostly minor accidents. One fatal accident however occurred at 430 PM south of Melvern in the southeast part of Osage County. Some of the accidents including the fatal one occurred on patches of ice remaining on roads after most of the precipitation had ended. F30VE

Storm Data and Unusual Weather Phenomena

January 1998

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

KANSAS, Extreme Southeast

NONE REPORTED.

KANSAS, North Central

KSZ005	Phillips								
	06	0000CST			0	0	45K	0	Ice Storm
	07	0000CST							

KANSAS, Northeast

KSZ025-057-060-102>105	Atchison - Miami - Linn - Doniphan - Leavenworth - Wyandotte - Johnson								
	04	0500CST			0	0			Ice Storm
		1500CST							

An icy rain on the morning of January 4th resulted in about an eighth of an inch of ice build up and slippery roads. Several non-injury traffic mishaps were reported as well as several minor injuries resulting from pedestrians falling on icy walkways.

KSZ103>105	Leavenworth - Wyandotte - Johnson								
	11	2200CST			0	0			Ice Storm
	12	1000CST							

A light freezing rain developed during the late evening hours of January 11th and continued into the morning commute on January 12th. There were a few non-injury traffic accidents reported in Kansas City and in portions of Johnson County. School closures were not as numerous as the neighbouring Missouri school districts.

KANSAS, Northwest

NONE REPORTED.

KANSAS, Southeast

NONE REPORTED.

KANSAS, Southwest

KSZ066-080>081-089>090	Stafford - Kiowa - Pratt - Comanche - Barber								
	03	1500CST			0	0			Ice Storm
	04	0240CST							

One half to one inch of ice accumulated causing numerous accidents but no injuries were reported. Structural damage was not reported.

KENTUCKY, Central

KYZ042>043-045-063	Bourbon - Nicholas - Nelson - Hart								
	07	2300EST			0	0			Flood
	10	0800EST							

The Rolling Fork of the Salt River at Boston crested at 36.4 feet (flood stage is 35 feet) at 4 pm est January 10. Some minor agricultural bottom flooding resulted. The Green River at Munfordville crested at 28.9 feet (flood stage is 28 feet) at 11 pm est on January 8. A city park was flooded. Minor cropland flooding resulted along the Licking River at Blue Licks Spring as the river crested at 26.5 feet (flood stage is 25 feet) at 11 pm est January 8. Finally, Stoner Creek at Paris crested at 19 feet (flood stage is 18 feet) at 3 am est on January 8. Only minor flooding resulted.

KENTUCKY, Eastern

Pulaski County									
Bronston	07	1500EST			0	0	10K	0	Flash Flood
		2100EST							
Rockcastle County									
Brodhead	07	1530EST			0	0	3K	0	Flash Flood
		2100EST							
Powell County									
Clay City	07	1545EST			0	0	0	0	Flash Flood
		2200EST							
Bath County									
4 SW Owingsville	07	1645EST			1	0	0	0	Flash Flood
		2200EST							

F62OU

Storm Data and Unusual Weather Phenomena

January 1998

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

Estill County									
Irvine	07	1645EST 2100EST			0	0	0	0	Flash Flood
Montgomery County									
Jeffersonville	07	1645EST 2200EST			0	0	0	0	Flash Flood
Lee County									
2 S Beattyville	07	1700EST 2100EST			0	0	0	0	Flash Flood
Fleming County									
Flemingsburg	07	1745EST 2200EST			0	0	0	0	Flash Flood
Jackson County									
Mc Kee	07	1745EST 2100EST			0	0	0	0	Flash Flood

Heavy rain of up to 6 inches resulted in flash flooding in areas from Somerset to Flemingsburg. In many areas streams were out of their banks and numerous roads were flooded. In Pulaski County, near Bronston, a car was swept away by flood waters and several houses were surrounded by water. In Bath County, a 62 year old woman fell from a foot bridge, and was drowned in a flooded creek.

Perry County									
5 S Hazard	08	2030EST			0	0	0	0	Hail (0.75)
Perry County									
Fusonia	08	2033EST			0	0	0	0	Hail (1.00)
Perry County									
Hazard	08	2035EST			0	0	0	0	Hail (1.00)
Magoffin County									
Salyersville	08	2035EST			0	0	0	0	Hail (1.25)
Knott County									
1 E Hindman	08	2056EST			0	0	0	0	Hail (1.50)
KYZ088-118-120									
		Harlan - Letcher - Pike							
	27	1100EST			0	0	20K	0	Heavy Snow
	28	0200EST							

Heavy wet snow occurred in the mountains near the Virginia border. Snowfall accumulations were elevation dependent, with locations below 1000 feet receiving less than 1 inch, while locations above 2500 feet received 8 to 22 inches. Some specific amounts included 3 inches at Whitesburg, 4 inches at Jenkins, Phelps, Cumberland, and Dorton, 5 inches at Partridge, and 6 inches at Ash Camp. Up to 14 inches of snow accumulated in areas just outside of Jenkins, and 22 inches accumulated on Black Mountain where Kentucky Route 160 crosses into Virginia. The heavy wet snow brought down numerous trees and power lines. More than 100 vehicles were stranded for about 4 hours on KY 160 where the road crosses Pine Mountain between Gordon and Sand Hill. Conditions were even worse on Black Mountain, where approximately 15 motorists were stranded for over 14 hours.

KENTUCKY, Northeast

Boyd County									
Countywide	07	1900EST 2200EST			0	0	5K		Flash Flood
Carter County									
Countywide	07	1900EST 2200EST			0	0	10K		Flash Flood
Greenup County									
Countywide	07	1910EST 2300EST			0	0	15K		Flash Flood
Rains of 1.5 to 2.5 inches fell in 12 to 18 hours, forcing several road closures from small stream flooding. The Little Sandy River crested just over 18 feet at Grayson, a few feet below flood stage. No evacuations were reported.									
Lawrence County									
Charley	08	2130EST			0	0			Hail (0.75)
Boyd County									
Catlettsburg	08	2140EST			0	0	10K		Hail (1.75)
A few vehicles, plus awning on homes, were dented.									
Carter County									
1 E Willard	08	2140EST			0	0			Hail (1.00)

Storm Data and Unusual Weather Phenomena

January 1998

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

Webbville	08	2140EST				0	0	20K	Hail (1.75)
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Roofs in the vicinity were damaged.

KENTUCKY, Northern

Lewis County

Kinniconick	07	2200EST 2230EST				0	0	3K	Flood
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Heavy rainfall caused several creeks to overflow their banks.

KENTUCKY, Southwest

KYZ003>005-007>008-010>011-013>016-018>020

Carlisle - Ballard - Mccracken - Livingston - Marshall - Crittenden - Lyon - Caldwell - Union - Webster - Hopkins - Henderson - Daviess - Mclean

06	0300CST 0900CST				0	0		Fog
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Dense fog reduced visibility to a quarter mile or less across much of the area.

KYZ014

Union

15 17	0100CST 2000CST				0	0		Flood
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Heavy rains in the upper Ohio Valley sent the Ohio River rising just above flood stage at several locations, primarily on the Illinois side. On the Kentucky side, the river crested less than one foot above flood stage at J.T. Meyers Lock and Dam near Uniontown. This minor flooding affected agricultural bottomlands.

KYZ001>002-006-009-012-017

Fulton - Hickman - Graves - Calloway - Trigg - Christian

16	0300CST 0900CST				0	0		Freezing Rain
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Freezing rain coated many roads with ice during the early morning hours. The icing was confined to counties along the Tennessee border, primarily from Hopkinsville to Murray and Mayfield. The freezing rain was caused by an upper level storm system that passed over west Tennessee. Numerous accidents occurred, and the Purchase Parkway was closed near mile marker 9. Two men were treated for minor injuries after their tractor-trailer truck ran through a guard rail and down a short embankment off the Purchase Parkway. A tractor-trailer rig wreck blocked a section of Kentucky 94 in Fulton County for several hours. Even though the truck overturned, the driver was not injured. Icy roads produced another wreck 20 miles south of Mayfield on Kentucky 129. In this wreck, the pickup truck flipped onto the driver's side, causing minor injuries to the driver. Schools opened late in most districts in the affected counties.

KYZ004>005-007

Ballard - Mccracken - Livingston

17	0300CST 0600CST				0	0		Freezing Drizzle
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Light freezing drizzle caused icing of some bridges and overpasses. Major trouble spots included bridges over the Ohio River, such as the U.S. 60 bridge near Wickliffe and the Brookport bridge near Paducah. A multi vehicle accident occurred on the Brookport bridge.

KYZ001>013

Fulton - Hickman - Carlisle - Ballard - Mccracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell

30	0400CST 0900CST				0	0		Fog
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Widespread dense fog formed over far west Kentucky during the early morning hours. The dense fog, which was most extensive west of Kentucky Lake, reduced visibility below 100 feet in some low lying areas. Travel difficulties abated by mid morning as the fog thinned out.

LOUISIANA, Northeast

NONE REPORTED.

LOUISIANA, Northwest

Natchitoches Parish

Natchitoches	06	1300CST				0	0	5K	Flash Flood
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Numerous road closures. A bridge was severely damaged on LA Hwy 478 also resulting in road closure from LA Hwy 1 to I-49..

Lincoln Parish

3.8 NE Choudrant	07	0800CST 1700CST				0	0		Flash Flood
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Norris Rd closed from flooding streams.

Storm Data and Unusual Weather Phenomena

January 1998

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									
Lincoln Parish 4.2 NNW Mt Zion	07	0800CST 1600CST			0	0			Flash Flood
									Young Road closed due to flooding.
Lincoln Parish 2.4 N Mt Zion	07	0800CST 1600CST			0	0			Flash Flood
									May's Crossing flooded and roads closed due to rapid rise of water.
Lincoln Parish 1.7 SE Mt Zion	07	0800CST 1600CST			0	0			Flash Flood
									Norris Rd closed from swelling streams.
Natchitoches Parish 4 S Natchitoches	07	1600CST			0	0	50K		Flood
									Bridge washed out on LA Hwy 478 (Water Wells Rd). Highway closed from LA Hwy 1 to I-49.
LAZ018									
									Natchitoches
	07	1944CST			1	0			Flood
									LA 120 near Flora was barricaded due to flooding. A 72 year old male ran the barricades and continued for approximately one mile before his vehicle stalled in high water. He then left his vehicle and continued on foot until he disappeared according to witnesses. A rescue team with the Natchitoches Parish Sheriffs Office found the man drowned. It is not know if he stepped into a hole or was swept off the road by the current.
									M72IW
Caddo Parish Blanchard	11	1916CST			0	0			Hail (1.00)
Bossier Parish Bossier City	11	1938CST			0	0			Hail (0.88)
Bossier Parish Haughton	11	1940CST			0	0			Hail (2.00)
Bossier Parish Haughton	11	1955CST			0	0			Hail (0.75)
Webster Parish Doyline	11	2009CST			0	0			Hail (0.75)
Webster Parish Dubberly	11	2027CST			0	0			Hail (0.88)
Bienville Parish 2 E Gibsland	11	2044CST			0	0			Hail (1.00)
Lincoln Parish Grambling	11	2108CST			0	0			Hail (1.75)
Bienville Parish Ringgold	11	2130CST			0	0			Hail (1.00)
Ouachita Parish Calhoun	11	2140CST			0	0			Hail (0.75)
Bienville Parish 2 W Castor	11	2143CST			0	0			Hail (1.25)
Sabine Parish Zwolle	11	2330CST			0	0			Hail (0.75)
Natchitoches Parish 4.2 S Robeline to 6.4 SW Provencal	12	0011CST 0014CST	0.7	20	0	0	0	0	Tornado (F0)
									Damage path consisted of numerous snapped and fallen limbs. Several dozen small trees were also flattened in a convergent pattern toward the east. The damage path was in a wooded region far from any population with no structures present.
Natchitoches Parish Cypress	12	0022CST			0	0			Hail (0.75)
Natchitoches Parish Natchitoches	12	0030CST			0	0			Thunderstorm Wind (G60)
									Numerous trees and power lines down on east side of the city.
Natchitoches Parish 2 E Cypress	12	0035CST			0	0	30K		Thunderstorm Wind
									Mobile home flipped upside down along Hwy 119.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>LOUISIANA, Northwest</u>									
Grant Parish Dry Prong	12	0110CST			0	0			Hail (0.75)
LAZ005 Lincoln	14	0645CST 1030CST			0	0			Fog
Dense fog caused 3 tractor-trailer rigs and 1 vehicle to collide on I-20 near Simsboro. No injuries occurred.									
Grant Parish 3 E Colfax	21	2103CST			0	0	12K		Thunderstorm Wind (G52)
Motor home blown off road.									
Grant Parish 2 E Colfax	21	2105CST			0	0			Hail (1.50)
Hail 1 1/2 inches in diameter covered the ground along Hwy 492.									
Grant Parish Bentley	21	2110CST			0	0			Hail (1.50)
Grant Parish Pollock	21	2115CST			0	0			Hail (1.50)
Grant Parish Pollock	21	2115CST			0	0			Hail (1.50)
<u>LOUISIANA, Southeast</u>									
Tangipahoa Parish Hammond	05	0600CST 0900CST			0	0			Urban/Sml Stream Fld
Jefferson Parish North Portion	05	0700CST 1000CST			0	0	250K		Flash Flood
Orleans Parish New Orleans	05	0700CST 1000CST			0	0			Urban/Sml Stream Fld
St. Tammany Parish Slidell	05	0700CST 1000CST			0	0			Urban/Sml Stream Fld
Heavy rain of three to five inches occurred over portions of extreme southeast Louisiana, including the greater New Orleans area, during the morning hours. The heavy rain occurred within a few hours time and overwhelmed drainage pumping capacity resulting in widespread street flooding. Particularly hard hit was portions of Jefferson Parish where many cars were flooded and stranded during the morning commute. Several businesses and homes in Jefferson Parish were flooded, and one business building collapsed from the weight of rain water on its flat roof.									
Assumption Parish Countywide	06 07	2200CST 0400CST			0	0			Urban/Sml Stream Fld
East Baton Rouge Parish Countywide	06 07	2200CST 0200CST			0	0	30K		Flash Flood
Iberville Parish Countywide	06 07	2300CST 0300CST			0	0			Urban/Sml Stream Fld
Terrebonne Parish Countywide	06 07	2300CST 0600CST			0	0	35K		Flash Flood
Washington Parish Countywide	06 07	2300CST 0400CST			0	0			Urban/Sml Stream Fld
Lafourche Parish Countywide	07	0000CST 0400CST			0	0			Urban/Sml Stream Fld
St. Charles Parish Countywide	07	0000CST 0400CST			0	0			Urban/Sml Stream Fld

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
LOUISIANA, Southeast									
St. James Parish Countywide	07	0000CST 0400CST			0	0	10K		Flash Flood
St. John The Baptist Parish Countywide	07	0000CST 0400CST			0	0			Urban/Sml Stream Fld
St. Bernard Parish Countywide	07	0100CST 0500CST			0	0	100K		Flash Flood
St. Tammany Parish Countywide	07	0200CST 1200CST			0	0	100K		Flash Flood
Heavy rainfall of three to six inches occurred during the night and morning hours across much of east central and southeast Louisiana. Many parishes experienced flooding of rural secondary roadways, and street flooding occurred in many communities. Substantial flooding occurred in several areas where the heavy rain overwhelmed the drainage capacity. In the Baton Rouge area, St Charles Parish, and Terrebonne Parish, several houses and or businesses were reported flooded. In St. Bernard Parish, flood waters entered 24 houses in the Arabi area. In St. Tammany Parish, a number of houses and a few businesses were flooded in the Slidell and Mandeville area, small streams left their banks around Abita Springs flooding roads into that community. Damage amounts were estimated.									
St. Tammany Parish 1 W Slidell	07	0145CST	0.2	30	0	0	0.20K		Tornado (F0)
A tornado touched down briefly in the Ozone Woods subdivision snapping trees and downing power lines.									
East Baton Rouge Parish Baton Rouge	12	0300CST 1200CST			0	0	50K		Urban/Sml Stream Fld
Approximately 10 houses were flooded with as much as a foot of water.									
Tangipahoa Parish Hammond	12	0730CST			0	0	8K		Thunderstorm Wind
Thunderstorm winds tore off a large section of a house's tin roof and pulled a door from it's hinges. A storage shed was blown across the street and struck a truck causing minor damage. A fence was blown down and some shingles were blown off several apartment roofs. A camper was blown off a truck. Several trees were snapped and uprooted.									
St. Tammany Parish Covington to Folsom	12	0800CST 1200CST			0	0	10K		Flash Flood
Heavy rain caused one house to flood and a few others had minor flooding. In addition considerable street and secondary roadway flooding was reported.									
St. Tammany Parish Mandeville	12	0845CST			0	0	0		Hail (0.75)
St. Tammany Parish Slidell	12	0912CST			0	0	0		Hail (0.75)
Penny sized hail was reported in several locations between Mandeville and the Slidell area.									
Iberville Parish White Castle	13	0804CST			0	0			Hail (1.75)
Large hail was reported by the parish emergency management staff.									
Terrebonne Parish Gray	14	0200CST			0	0	10K		Thunderstorm Wind
Thunderstorm winds downed utility poles, destroyed a shed and tore off the roof of a mobile home. A tree fell on top of a garage and damaged an automobile.									
Tangipahoa Parish Ponchatoula	22	0300CST 0600CST			0	0			Urban/Sml Stream Fld
Heavy rain of 2.5 inches caused extensive street flooding.									
St. Tammany Parish Slidell	22	0600CST 1200CST			0	0			Urban/Sml Stream Fld
Around 2.5 inches of rain caused some streets to flood.									
Terrebonne Parish Montegut	22	0715CST			0	0	15K		Thunderstorm Wind

Storm Data and Unusual Weather Phenomena

January 1998

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

LOUISIANA, Southeast

Thunderstorm winds ripped apart a portion of a house roof and enclosed carport. The carport of another house and the chimneys of two houses were damaged. A storage shed was destroyed and the contents scattered. A tree was uprooted and two mobile homes were moved off their foundations.

Terrebonne Parish 6 S Houma

	22	0715CST			0	0	0.50K	Thunderstorm Wind
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Thunderstorm wind gusts ripped shingles off a house roof, blew an awning off the house, and downed power lines.

Terrebonne Parish Grand Caillou

	22	0715CST			0	0	0.50K	Thunderstorm Wind
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The Office of Emergency Management reported minor damage to three house roofs.

Livingston Parish Walker

	26	1850CST			0	0		Hail (1.75)
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Louisiana State Police reported golfball size hail.

LOUISIANA, Southwest

Avoyelles Parish Bunkie

	04	2100CST			0	0	10K	Flood
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Late night thunderstorms produced three to five inches of rain across Avoyelles Parish, resulting in flooded roads. This included Highways 107, 115, and 114 around the Bunkie area.

Vermilion Parish Abbeville

	05	0230CST			0	0	20K	Flood
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Several streets in Abbeville had two feet of water covering them. This was a result of six to nine inches of rain falling in a six hour period during the early morning hours.

Lafayette Parish Carencro

	05	0300CST			0	0	200K	Flood
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Around eight inches of rain fell across Lafayette Parish, resulting in serious flooding in Carencro. 41 homes received flood damages, of which 14 had major damage. Several businesses also were damaged by the floods. Several roads in the city of Lafayette were also flooded.

Vernon Parish Anacoco

	06	0650CST			0	0	75K	Tstm Wind/Hail
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A severe thunderstorm brought golf ball sized hail, and damaging winds that damaged four homes. The most serious was a mobile home that was lifted off its blocks, and had the roof blown off. The other homes had trees blown down on them. Many other homes reported shingles blown off their roofs. Hail fell so suddenly that it piled up over two inches deep on the streets.

Evangeline Parish Mamou

	06	1100CST			0	0	20K	Flood
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Around five inches of rain fell across southwestern sections of Evangeline Parish, resulting in several non-paved roads to be washed out in low-lying areas. Schools were closed for one day due to the hazardous travelling conditions.

Beauregard Parish De Ridder

	06	1300CST			0	0	100K	Flood
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Extreme flooding occurred across Beauregard Parish, especially in the DeRidder area. Doppler radar estimated six inches of rain fell between DeRidder, Singer, and Fields. Sheriff deputies reported that 90 percent of the parish roads were under water at some time during the evening. Nearly every major highway in the parish was closed and barricaded at one time. Around ten homes received flood waters in them in the DeRidder area. One family had to be evacuated.

Rapides Parish Alexandria

	06	1300CST			0	0	20K	Flood
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Slow-moving thunderstorms produced around four inches of rain across Rapides Parish, resulting in several streets flooded and closed in Alexandria, Glenmora, and Tioga.

Vernon Parish Leesville

	06	1300CST			0	0	30K	Flood
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Between four and six inches of rain fell across central portions of Vernon Parish, resulting in serious street flooding in Leesville, Rosepine, and New Llano.

Avoyelles Parish Bunkie

	06	1400CST			0	0	20K	Flood
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Around four inches of rain fell across water-logged areas of Bunkie, resulting in serious street flooding on Ash Street.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
LOUISIANA, Southwest									
Acadia Parish									
Estherwood	06 07	1600CST 0100CST			0	0	20K		Flood
A large, slow-moving thunderstorm complex dumped between three and six inches across Acadia Parish throughout the day. The hardest hit areas were in the southwest, including the Mermentau, Morse, and Estherwood communities. Many roads were closed in this area.									
Allen Parish									
Elton	06 07	1600CST 0200CST			0	0	20K		Flood
Slow moving thunderstorms dumped around six inches of rain across southeastern Allen Parish. The hardest hit area was Elton, where Powell Road went under water.									
Calcasieu Parish									
Lake Charles	06 07	1600CST 0100CST			0	0	20K		Flood
Three to four inches of rain fell across the Lake Charles area, resulting in Enterprise Boulevard being closed near Interstate 10.									
Jefferson Davis Parish									
Jennings	06 07	1600CST 0100CST			0	0	30K		Flood
The northwest and southeast sections of Jeff Davis Parish received between three and six inches of rain. The hardest hit area was in Jennings, near the railroad tracks, and in Welsh, in northern sections of town. Four homes had water enter them.									
Lafayette Parish									
Lafayette	06 07	1600CST 0100CST			0	0	40K		Flood
Another two to three inches fell across Lafayette, adding up to a two-day total of nearly ten inches. Many roads were closed in the city of Lafayette, and Carencro also reported many roads closed.									
St. Landry Parish									
Palmetto	06	1600CST 2300CST			0	0	20K		Flood
Around four inches of rain fell across western sections of St. Landry Parish. Palmetto had several roads under water due to street flooding.									
Vermilion Parish									
Kaplan	06	1600CST 2300CST			0	0	20K		Flood
Between four and six inches of rain fell across northwestern sections of Vermilion Parish, resulting in serious street flooding in Kaplan.									
Iberia Parish									
New Iberia	06	1900CST 2300CST			0	0	20K		Flood
Around four inches of rain fell between New Iberia and Jeanerette, resulting in street flooding and closures.									
St. Mary Parish									
Franklin	06	1900CST 2300CST			0	0	80K		Flood
Nearly nine inches of rain fell across portions of St. Mary Parish, resulting in major flooding in Franklin, where a video store roof collapsed, and in Morgan City, where numerous roads had two to three feet of water covering them.									
Beauregard Parish									
5 NW Dry Creek	12	0145CST			0	0	10K		Thunderstorm Wind
Trees were blown down near Bundicks Lake during a severe thunderstorm.									
Rapides Parish									
Glenmora	12	0218CST			0	0	10K		Thunderstorm Wind
Severe storms blew down trees across the power lines in Glenmora.									
Allen Parish									
Oakdale	12	0300CST 1200CST			0	0	100K		Flood
Slow-moving thunderstorms produced between six and eight inches across northern Allen Parish in the early morning hours. In Oakdale, over 30 streets were flooded, and 30 homes were damaged from flood waters. Most of the flood problems occurred on the east side of town.									
Beauregard Parish									
De Ridder	12	0300CST 1200CST			0	1	50K		Flood
Slow-moving thunderstorms produced between four and six inches of rain across northern Beauregard Parish. Many streets were closed in and around De Ridder and Bundicks Lake. One minor injury occurred when a man drove his car into a washed out section									

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
LOUISIANA, Southwest									
of Long Acre Road east of De Ridder.									
Evangeline Parish Easton	12	0300CST 0305CST	1	20	0	0	150K		Tornado (F1)
A tornado touched down in Easton, damaging several homes and cars. One mobile home was completely destroyed by the tornado, another home had a tree crash through it, and a third mobile home was moved off its blocks. A garage was also completely demolished, as well as two cars inside of it.									
Evangeline Parish 2 W Ville Platte	12	0314CST			0	0			Hail (1.75)
Evangeline Parish Mamou	12	0330CST 1200CST			0	0	40K		Flood
Early morning thunderstorms produced between four and six inches of rain across Evangeline Parish. The hardest hit area was Mamou, where all the schools were closed due to high water. The Mamou Canal flooded for most of the morning, but had receded enough by afternoon to allow roads to be re-opened.									
Rapides Parish Glenmora	12	0330CST 1200CST			0	0	10K		Flood
Extreme southern sections of Rapides Parish had flooding due to slow-moving thunderstorms. Several streets in the Glenmora and Forest Hill were closed due to high water. Doppler radar estimated between two and three inches of rain fell across this area.									
Calcasieu Parish 10 N Sulphur	12	0445CST	0.5	10	0	0	50K		Tornado (F0)
A small tornado touched down north of Sulphur at a horse farm. One barn was destroyed, and a race horse inside was killed from flying debris. The storm was on the ground for less than one minute, and was observed by the farm owner.									
St. Landry Parish Opelousas	12	0600CST 1200CST			0	0	20K		Flood
Early morning thunderstorms produced between six and eight inches of rain across central sections of St. Landry Parish. The hardest hit areas were along Highway 190, from Eunice to Lawtell, Opelousas, and Port Barre. Several homes and businesses had water enter them, and area roads had as much as two to three feet of water covering them.									
Jefferson Davis Parish Lacassine	12	0645CST			0	0	10K		Thunderstorm Wind
Severe thunderstorm winds blew down power lines and trees on Highway 101 just south of Lacassine.									
Calcasieu Parish Lake Charles	12	0715CST 1200CST			0	0	500K		Flood
Slow-moving thunderstorms produced four to six inches of rain across Calcasieu Parish during morning rush hour, tying up traffic for several hours. Motorists were stranded in high water across Lake Charles, Westlake, and Sulphur. Exit ramps of Interstate 10 and 210 were closed due to four to five feet of water covering them. Hundreds of cars were damaged due to water entering them, and several businesses and homes had water enter them due to people driving too fast and creating large waves that would break across parking lots and yards, and enter the buildings. Several accidents were attributed to the wet roads and stand-still traffic.									
Jefferson Davis Parish Jennings	12	0800CST 1200CST			0	0	25K		Flood
Between four and six inches of rain fell across Jeff Davis Parish, primarily along Interstate 10. Roads were flooded in Jennings, Welsh, and Roanoke.									
Vermilion Parish Maurice	12	0800CST 1200CST			0	0	20K		Flood
The combination of two inches of rain across northern Vermilion Parish and runoff from heavy rain north of the parish resulted in drainage canals overflowing its banks around Maurice. Secondary roads, yards, and farm fields were flooded.									
Acadia Parish Rayne	12	0830CST			0	1			Lightning
Lightning struck a man working on top of a treatment tank at the waste water plant during a thunderstorm. Doctors said the man may have saved his life by wearing rubber boots and a rubber rain slicker when he was struck. The man had remarked to a co-worker that they had to hurry due to the close storm clouds just before he was injured. The man was knocked down and felt numb for a few minutes. He was admitted to a local hospital for observations, but no permanent injuries were reported. The lightning bolt left no mark on his body, however a chain he was wearing that identifies his allergies was melted onto his skin.									

Storm Data and Unusual Weather Phenomena

January 1998

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

LOUISIANA, Southwest

LAZ030

Beauregard

13	0600CST				0	0	20K		Flood
	2300CST								

Due to the heavy rain of the past few days, many sections of northern Beauregard Parish remained flooded on Tuesday, January 13th. This included the areas of DeRidder and Bundicks Lake.

Jefferson Davis Parish

14	1810CST				0	0			Hail (1.75)
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Jefferson Davis Parish

14	1937CST				0	0			Hail (1.25)
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Jefferson Davis Parish

14	2007CST				0	0			Hail (1.00)
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Evangeline Parish

14	2232CST				0	0			Hail (1.50)
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Calcasieu Parish

21	2100CST				0	0			Hail (0.75)
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Beauregard Parish

21	2130CST				0	0			Hail (0.75)
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Jefferson Davis Parish

21	2200CST				0	0			Hail (1.00)
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Allen Parish

21	2200CST				0	0			Hail (0.75)
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Avoyelles Parish

21	2250CST				0	0			Hail (0.75)
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Beauregard Parish

21	2300CST				0	0	10K		Thunderstorm Wind
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Trees were blown down between Longville and Singer during severe thunderstorms.

Jefferson Davis Parish

22	0000CST				0	0			Hail (0.75)
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Cameron Parish

22	0000CST				0	0			Hail (0.75)
-----------	----------------	--	--	--	----------	----------	--	--	--------------------

Cameron Parish

22	0021CST				0	0	10K		Thunderstorm Wind
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Severe thunderstorm winds blew down two pine trees, a TV antenna, and some shingles off a roof.

Calcasieu Parish

22	0045CST				0	0	10K		Flash Flood
	0145CST								

Around three inches of rain fell in less than two hours, resulting in street flooding in southern sections of Lake Charles.

Cameron Parish

22	0100CST				0	0	10K		Thunderstorm Wind
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Severe thunderstorms blew several trees down over the highway.

Jefferson Davis Parish

22	0120CST				0	0	20K		Tstm Wind/Hail
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Severe thunderstorms produced dime size hail in Lake Arthur, and severe winds destroyed a storage shed, removed the roof of a barn, and downed several trees in the Thornwell community, at the junction of Highway 99 and 14.

St. Mary Parish

26	0800CST				0	0	250K		Lightning
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Lightning struck a Christian radio stations transmitter, causing it to be off the air for two weeks.

MAINE

MEZ001>006

Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook

05	0200EST				0	0	7M		Heavy Snow
10	0200EST								

Storm Data and Unusual Weather Phenomena

January 1998

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

MAINE

MEZ007>022-024>030 Northern Oxford - Northern Franklin - Central Somerset - Southern Piscataquis - Central Penobscot - Southern Oxford - Southern Franklin - Southern Somerset - Southern Penobscot - Interior Hancock - Interior Washington - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo - Coastal Hancock - Coastal Washington

05 0300EST 1 0 304M Ice Storm
10 0200EST
M81PH

A severe ICE STORM hit sections of central and southern Maine from January 5 through January 9. One of the hardest hit areas stretched from Bridgton to Lewiston to Augusta to Waterville where ice accreted several inches thick on trees, power lines, and other exposed surfaces causing almost everyone in those areas to lose electrical service. Statewide, the storm knocked out power to about 365,000 customers, an estimated 840,000 people or about 70 percent of the state's population of 1.2 million people. About one third of those that lost power were without electricity for more than a week. For some, the electricity was off for up to 3 weeks. During this time, residents and those involved with the restoration efforts had to contend with snow, additional freezing rain, rain, slippery roads, falling ice and other debris, sub-zero temperatures, strong winds, and dangerous wind chills. For many homes, the lack of electrical power also meant no heat, no running water, no means for cooking food. In Maine, the storm caused an estimated 300 million dollars in damages (as of late April) with this estimate continuing to climb as cleanup efforts continue. Debris cleanup from the storm was expected to last into the summer. Utilities had to replace over 3200 snapped utility poles, over 1.2 million feet of wire/cable, more than 1600 crossarms, and more than 2100 transformers. A major transmission line that serviced Downeast Maine was flattened by the storm as the weight of the ice snapped all the poles in an eight-mile section of line. A total of 7 radio or communications towers were felled by the ice. The storm damaged an estimated \$300 million worth of timber with after harvest losses estimated to be \$28 million. Numerous disaster shelters were set up throughout the affected areas. Following the storm, all counties in Maine were declared federal disaster areas by the President.

The storm started as intermittent light freezing rain freezing drizzle during the early morning hours of Monday, January 5th and continued through the day Wednesday, January 7th. While temperatures warmed to above freezing in some parts of southern Maine during this period, areas of central interior Maine remained below freezing. By Wednesday morning, areas of central interior Maine were reporting generally 1/8 to 1/4 inch of ice accretion with some localized areas with up to 1/2 inch of ice accretion. Northern Maine had light snow during this period.

Steadier and heavier freezing rain and freezing drizzle developed over portions of central and southern Maine during Wednesday afternoon and evening, January 7, 1998 and continued through Friday, January 9th, as a quasistationary front remained south of the state. To the north of the front, cold air remained entrenched near the ground as warm moist air moved northward from the mid-Atlantic states over the wedge of colder air. Severe icing occurred over most of southern and central Maine.

By Saturday morning, January 10, the precipitation had ended over Maine with 1 to 3 inches of ice accretion to wires, poles, branches, etc., over most of central and southern Maine. Accretions to communication towers were even greater. A 1/2 inch guy wire in the Bar Harbor area was reported to be encased in ice 9-inches in diameter. This ice not only provided additional weight to the objects it coated, it also provided additional support. As temperatures warmed Saturday in southern areas, this additional support melted away causing numerous trees and branches, and at least 4 radio or communication towers to fall. Falling ice also created additional problems and was an extreme hazard to anyone venturing outside. The town of Gray declared a state-of-emergency Saturday morning to keep residents from venturing out of shelters, due to the extreme hazard. These hazards continued in southern and central areas Sunday, particularly in areas that failed to get above freezing during the day Saturday. In central part of the state, particularly in shaded areas, the threat from falling ice and debris persisted considerably longer.

In parts northern Maine, more than two feet of snow during the week with as much as 6 to 10 inches of sleet reported in some parts of north central Maine.

Within the state, 5 deaths were attributed to the storm, although most occurred in the aftermath of the storm. Two men died in separate incidents from carbon monoxide poisoning from inadequately ventilated generators. Carbon monoxide poisoning reached epidemic proportions statewide with between 300 and 400 people treated at area hospitals, possibly the largest outbreak of carbon monoxide poisoning ever in the nation. One man was killed when he was struck by a tree while cleaning up debris shortly after the storm. One elderly man died of hypothermia after falling down a flight of stairs in his dark, unheated home. In addition, one man was crushed when the roof over a gas station island collapsed under the weight of snow and ice several weeks after the storm. In addition, the weight of the ice/snow from this and subsequent storms caused numerous roofs and buildings to collapse, primarily in central and eastern Maine.

Long-term effects from the ice storm are expected to persist for many years. Tree damage was extensive and will affect those people and companies that depend on trees for quite a few years. In some areas, most of the maple trees used for syrup were severely damaged. For many municipalities, debris cleanup will last well into the summer. The debris will create an increase in the forest fire danger over the next several years and has blocked many fire access roads and trails. Some recreational hiking trails remain closed due to debris. Additionally, many, many tree limbs were left dangling by the ice storm and many trees were left partially fallen. These "widow makers" will pose a significant threat to anyone who works, walks, or drives through wooded areas.

Storm Data and Unusual Weather Phenomena

January 1998

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

MAINE

over the next several years.

MEZ001>030

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

12	0300EST 1000EST	0	0		Cold Temperatures
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Cold temperatures created problems for the 160,000 customers, an estimated 370,000, people in southern and central Maine that remained without power from the previous week's ice storm. Minimum temperatures on Monday morning, January 12, ranged from about 10 degrees F below zero in northern Maine to 5 to 15 degrees F above zero in central and southern Maine. The cold temperatures created worries about the potential for frozen pipes, and caused some residents to move from their homes to emergency shelters. In addition, the cold temperatures made power restoration efforts more difficult, especially for out-of-state crews that were not accustomed to working in cold conditions.

MEZ001>030

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

13	2200EST	0	0		Gusty Winds
14	2300EST				

Winds became strong and gusty following the passage of a cold front late Tuesday, January 13, and continuing through the day Wednesday. Light mixed precipitation preceded the front as low pressure track to the northwest of the state. The strong winds which followed the front slowed restoration efforts and created additional power outages in the wake of the previous week's ice storm. Partially downed trees, dangling tree branches, and ice continued to fall in southern and central parts of the state. In Augusta, winds gusted to over 45 mph during the day Wednesday, January 14.

MEZ001>030

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

14	0400EST 2000EST	0	0		Cold Wind Chill Temperatures
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A cold front which passed through the state on the 13th marked the leading edge of arctic air which invaded the state Tuesday night and Wednesday. Gusty winds and cold temperatures caused dangerously cold wind chill temperatures across the state. Wind chill temperatures generally dropped to the -20 to -40 degree range across the state hampering power restoration efforts and increasing the risk of frostbite or hypothermia to the crews working outside to restore power.

MEZ001>030

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

14	0400EST	0	0		Cold Temperatures
15	1200EST				

The arctic air behind a cold front that passed through the state on Tuesday, the 13th, brought very cold temperatures to Maine from early Wednesday morning through Thursday morning. The cold temperatures further aggravated the emergency conditions caused by the previous week's ice storm. More than 100,000 customers, an estimated 230,000 people remained without power Wednesday morning. Temperatures Wednesday morning had dropped to near zero in the north and mountains, to the single digits over most of the central Maine, and to the teens over southwestern Maine. During the day Wednesday, with strong, gusty winds, temperatures warmed only to the single digits in the north and mountains, and only to the teens over most of the remainder of the state. Minimum temperatures Thursday morning dropped well below zero in the north and mountains (Alagash reported -26 degrees F), and to the single digits over the remainder of the state. These cold temperatures increased the threat of damage to homes without

Storm Data and Unusual Weather Phenomena

January 1998

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

MAINE

the January 5-9 storm remained without power when the new storm hit. The most significant damage from the storm occurred in York and coastal Cumberland Counties, however freezing rain and extremely slippery conditions were reported throughout the state. An elderly couple in East Sullivan apparently died from hypothermia and/or heart failure when their car became stuck on their slippery driveway, and they were unable to make it safely back to their home.

MEZ015-029

Southern Penobscot - Coastal Hancock

24	0800EST	0	0	Urban/Street Flooding
	2130EST			

Heavy rain from a storm moving along the coast dumped from 2 to more than 4 inches of rain on downeast Maine. Many streets were flooded and closed because of clogged storm drains, frozen culverts, and deep snow/ice banks. Roads were closed in Bangor, Brewer, Hampden, Seal Harbor, Northeast Harbor, and Blue Hill.

York County

**Kittery Pt to
Old Orchard Beach**

29	0815EST	0	0	100K	Storm Surge
	1215EST				

Low pressure moving slowly northeastward to just east of Nantucket Island brought high tides and large waves to the extreme southwestern coast of Maine. In Kennebunkport, Harris Street was flooded with rocks left covering the roadway. In Camp Ellis, a foot of water covered four of the roads. The ponds at Fortunes Rocks were also reported to have flooded.

MARYLAND, Central

**MDZ002>007-
009>011-013>014-
016>018**

Allegany - Washington - Frederick - Carroll - Northern Baltimore - Harford - Montgomery - Howard - Southern Baltimore - Prince Georges - Anne Arundel - Charles - St. Mary'S - Calvert

06	0700EST	0	0	Unseasonably Warm
09	1200EST			

A sprawling area of high atmospheric pressure became anchored over the western Atlantic for several days. Circulation around the high brought an unencumbered flow of tropical air from the Caribbean region into all of Maryland for a 2 1/2 day period beginning around dawn on the 6th and continuing until around noon on the 9th. A new record high temperature was set at Hagerstown (MDZ003) on the 8th; the record was tied on the 6th. More interestingly, temperatures remained above 55 degrees for over 48 hours, spanning two mornings when the normal low temperatures were some 35 degrees colder!

After nine days, the mean temperatures across central and western Maryland were between 15 and 20 degrees above normal - more like April than early January.

**Frederick County
Countywide**

08	0700EST	0	0	10K	Flash Flood
	1200EST				

**Carroll County
West Portion**

08	0800EST	0	0	3K	Flash Flood
	1200EST				

Unseasonably warm and humid air plus developing low pressure over the Ohio Valley produced bands of heavy rain across portions of north central Maryland. The combination of tropical rainfall, saturated soil (due to recent snow melt) and time of year led to flash flooding of numerous small streams, creeks, and low-lying areas - especially in Frederick Co.

At least 40 secondary roads, and several major thoroughfares, were closed during the morning. Included were state routes 26, 351, and 880. At least three vehicles were stranded on back streets in the city of Frederick. Rainfall totals averaged between 2 and 3 inches. Portions of the Big Pipe Creek watershed in northern Carroll Co reported flash flooding, with 3 or more roads closed. Some flooding was reported on the Monocacy River in the town of Detour.

**MDZ002-005>006-
009>010**

Allegany - Carroll - Northern Baltimore - Montgomery - Howard

15	0800EST	0	0	5K	Winter Weather
	1600EST				

MDZ003>004

Washington - Frederick

15	1200EST	0	0	15K	20K	Ice Storm
16	0200EST					

Warm moist air overrunning a shallow polar surface air mass produced a variety of winter weather beginning around daybreak on the 15th and continuing until just after midnight on the 16th. Precipitation began as a mix of sleet and snow but quickly changed to rain and freezing rain across areas west of the Chesapeake Bay.

The combination of quick action by Maryland State Highway Administration road crews, and the still above freezing subsoil temperatures, kept most main arteries and secondary roads free from accumulation. However, in the ice storm area, free standing structures such as trees, power poles/wires, and exposed bridges received between 1/4 and 1/2 inch of ice accretion. A small area of higher terrain between Hagerstown/Williamsport (MDZ003) and Middletown (MDZ004) received the most icing. In these

Storm Data and Unusual Weather Phenomena

January 1998

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

MARYLAND, Central

locations, spotty power outages were noted, and a few large limbs and small trees snapped under the weight of the ice. Allegheny Power reported 150 customers were without power in the Hagerstown/Sharpsburg vicinity during the evening of the 15th and early morning of the 16th. Some wires reportedly burned.

In the winter weather area, mixed precipitation quickly changed to rain during the late morning and early afternoon hours, but not before causing a minor build up of ice, along with an early morning coating of slush on area roadways.

MDZ002>003

Allegheny - Washington

22	2200EST			0	0				Winter Weather
23	2200EST								

Low pressure over the southeastern U.S., combined with weak polar high pressure moving east of New England, produced a small area of light snow and sleet which changed to freezing rain late at night. In Washington Co (MDZ003), snow/sleet accumulations ranged from 1 inch near Hagerstown to 3 inches near Hancock. A broad area of 3 inches of measured snow was observed in Allegheny Co, with the highest elevations of the far western portion (Frostburg) receiving around 4 inches. Slushy roads were noted, especially from western Washington Co through Allegheny Co. Precipitation changed to a cold rain around dawn on the 23rd.

Though several accidents were noted, few were significant. A notable accident involved a tractor-trailer which flipped along Interstate 70 just east of Hancock (MDZ003). No injuries occurred.

MDZ004>005

Frederick - Carroll

24	1800EST			0	0				Snow
	2200EST								

A band of light to moderate snow developed over northern and central Maryland during the evening, as a vigorous upper-level disturbance enhanced low- and mid-level lifting of residual moisture left behind from a previous system. The snow, which fell onto relatively warm ground, produced accumulations which varied greatly with elevation. In general, accumulations along the Catoctin Mountains were between 3 and 4 inches. Higher piedmont locations of northern Frederick (MDZ004) and Carroll (MDZ005) Cos averaged 2 to 3 inches, and lower elevations reported generally around 1 inch.

MDZ003

Washington

27	1500EST			0	0				Winter Weather
28	1400EST								

MDZ002

Allegheny

27	1900EST			0	0	2K			Winter Storm
28	1300EST								

A winter storm developed along the Georgia coast on the 27th, then intensified as it moved slowly northward along the coast later on the 27th and 28th. The cyclone, which tracked to the Virginia capes by late afternoon on the 28th, spread a variety of winter weather across portions of western Maryland during a 24-hour period. As had been the case with other episodes during the 1997/98 winter, accumulations varied greatly with elevation. In Washington Co (MDZ003), accumulations were generally 1 to 2 inches, with up to 3 inches at higher elevations. Accumulations were even more varied in Allegheny Co. Between 2 and 4 inches fell from the Allegheny/Washington Co border to just west of Cumberland, at least a foot fell in Frostburg near the Allegheny plateau. Allegheny Power reported 200 customers without power in Allegheny Co alone.

MDZ005>007-009>011-013>014

Carroll - Northern Baltimore - Harford - Montgomery - Howard - Southern Baltimore - Prince Georges - Anne Arundel

28	0400EST			0	0				Heavy Rain
	1600EST								

MDZ013>014-017>018

Prince Georges - Anne Arundel - St. Mary'S - Calvert

28	0700EST			0	0	75K			Gusty Wind
	1600EST								

**Frederick County
Countywide**

28	0900EST			0	0	5K			Flood
	1600EST								

**Calvert County
Countywide**

28	1100EST			0	0	5K			Flood
	1700EST								

**Charles County
East Portion**

28	1100EST			0	0				Flood
	1700EST								

Storm Data and Unusual Weather Phenomena

January 1998

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

MARYLAND, Central

St. Mary'S County Countywide

28	1100EST 1700EST			0	0	10K	Flood
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A fairly intense and slow-moving nor'easter produced a large area of moderate to heavy rains across central and lower southern Maryland beginning late on the 27th and continuing through late afternoon on the 28th. The heaviest rain fell while the storm was tracking along the South and North Carolina coastline. Storm totals ranged from 1 1/2 to 2 1/2 inches over the area, except between 3 and 4 inches across lower southern Maryland.

Widespread minor to moderate flooding of small streams, creeks, and low-lying areas occurred over much of lower southern Maryland. Other localized flooding was observed in Frederick Co.

The Maryland State Highway Administration and local emergency management officials reported numerous road closures in these areas. In Frederick Co, fifteen roads were closed due to high water. More pronounced road closures were noted in lower southern Maryland and portions of east-central Maryland.

Nuisance road closures (for instance, Davidsonville Road and Crownsville Road) occurred in the Annapolis area. In St Mary's Co, at least two dozen roads were closed. Most were secondary roads, but two were rural state highways (routes 5, 235, and 238). A local NWS cooperative observer noted nearly 6 1/2 inches in a five-day period, with 3.96 inches from the nor'easter alone. In Charles Co, six secondary roads were closed.

Though no coastal flooding was observed, there was some minor overwash at Annapolis, Chesapeake Beach (Calvert Co), and Breton Beach (St Mary's Co). Channelling northerly winds down the bay reduced the flood threat, especially since tides were astronomically high. These same northerly winds, blowing at gale force, built waves in the Bay to 5 feet or more. Unfortunately, these waves aided in sinking a tugboat 1 1/2 miles northeast of the Thomas Point Lighthouse. The three-man crew was rescued at approximately 0130EST on the 28th.

Gale-force winds extended inland a bit, affecting most of the counties along the western shore of the Bay. Gusts in excess of 30 mph were observed in the piedmont, and over 40 mph along the coastal plain. The combination of gusty winds and saturated soil caused several instances of trees, limbs, and power lines to come down. Baltimore Gas and Electric, and Potomac Electric Power Co reported 3800 and 538 customers without power, respectively, during the peak of the storm (0945EST on the 28th). In Calvert Co (MDZ018), two homes sustained minor damage from fallen trees. At least 20 trees/limbs blocked roads in St Mary's (MDZ017) Co; numerous other trees/limbs and wires were down across Charles, Calvert, and Anne Arundel Cos. Eleven lines were down across Prince Georges Co, and several fell in Anne Arundel.

MDZ009>011-013>014 Montgomery - Howard - Southern Baltimore - Prince Georges - Anne Arundel

29	0500EST 0900EST			0	0		Black Ice
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Residual moisture from rainfall of the previous evening combined with clear calm conditions to produce abundant black ice in the Maryland suburbs of Washington, DC and Baltimore during the morning commute. Dozens of accidents occurred as motorists travelled at unsuitable rates of speed considering the untreated roads. Sixty accidents were reported in northern Anne Arundel Co alone, and one bridge in the Annapolis area was briefly closed. No serious injuries were reported.

MARYLAND, Northeast

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

04 09	1000EST 1700EST			0	0	0	0	Unseasonably Warm
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A high pressure system over the Western Atlantic, in a position normally seen during the summer months, gave the Delmarva Peninsula six days of unseasonably warm weather during early January. A cold front tried to move south across the area on the 5th, but stalled and remained over northern Pennsylvania and New Jersey. A stronger cold front moved through the region on the 9th. The warmest day for most locations was the 8th as many new record high temperatures were set. High temperatures that day included 70 degrees in Bridgeville (DE), 69 degrees in Salisbury and 67 degrees at the Baltimore-Washington International Airport.

Caroline County Countywide

23	0900EST 2300EST			0	0	0	Heavy Rain
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Cecil County Countywide

23	0900EST 2300EST			0	0	0	Heavy Rain
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Kent County Countywide

23	0900EST 2300EST			0	0	0	Heavy Rain
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Storm Data and Unusual Weather Phenomena

January 1998

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

MARYLAND, Northeast

Queen Anne'S County

Countywide	23	0900EST 2300EST			0	0	0		Heavy Rain
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Talbot County

Countywide	23	0900EST 2300EST			0	0	0		Heavy Rain
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A low pressure system moved into the Ohio Valley the morning of the 23rd. A series of weak secondary low pressure systems developed along this primary low's cold front. Not only did this prolong the rain through the evening of the 23rd, but also helped it fall heavy at times especially during the afternoon on the 23rd. Storm totals averaged between 1.25 inches and 2.25 inches across the Maryland Eastern Shore. This caused the usual poor drainage flooding in low-lying areas. Storm totals included 2.18 inches in Conowingo and 1.35 inches in Salisbury.

Caroline County

Countywide	28	0100EST 1900EST			0	0			Heavy Rain
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Kent County

Countywide	28	0100EST 1900EST			0	0			Heavy Rain
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Queen Anne'S County

Countywide	28	0100EST 1900EST			0	0			Heavy Rain
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Talbot County

Countywide	28	0100EST 1900EST			0	0			Heavy Rain
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MDZ012-015-019 Kent - Queen Annes - Talbot

	28	0400EST 2300EST			0	0			Tidal Flooding
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MDZ012-015-019>020 Kent - Queen Annes - Talbot - Caroline

	28	0400EST 1800EST			0	0			Wind
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An intense northeaster pounded the Maryland Eastern Shore with heavy rain, strong winds and some minor tidal flooding on the 28th. The low pressure system was in the Gulf Coast States the morning of the 26th and moved to near Savannah, Georgia the morning of the 27th. The low intensified as it moved very slowly north along the Atlantic Coast during the day and the night of the 27th. At 7 a.m. EST on the 28th, the northeaster was located near Virginia Beach, Virginia and then moved eastnortheast during the day. By the next morning, it was about 450 miles east of the southern New Jersey coast.

Heavy rain moved into the southern part of the Maryland Eastern Shore shortly after midnight on the 28th and continued through the early afternoon. By 130 p.m. EST, 2.40 inches of rain fell in Preston in Caroline County. In Talbot County, several roads had considerable flooding and a culvert was washed out from another roadway. Storm totals ranged from around 1 inch in Cecil County to around 3.5 inches in southern parts of Caroline and Talbot Counties. The storm total in Federalsburg was 3.4 inches. The heavy rain and the strong onshore flow in the lower part of Chesapeake Bay helped combine to produce some minor tidal flooding at the times of high tide on the 28th. In Talbot County, bay flooding in some yards was reported in Oxford. Also in Oxford, one lane of Maryland State Route 333 was totally submerged near the causeway. Field flooding was reported in Saint Michaels and on Tilghman Island.

Strong winds increased during the day on the 28th and became their strongest between 10 a.m. and 2 p.m. EST. Peak gusts reached between 45 and 55 mph. The strong winds and heavy rain were able to push over some weak trees and power lines across the Eastern Shore. In Caroline County most roads were littered with tree limbs. A peak wind gust of 47 mph was recorded in Preston. There were downed trees and morning power outages in Talbot County. In Queen Anne's County, the wind restriction halted high profile traffic on the William Preston Lane Memorial Bridge from 421 a.m. EST on the 28th. The peak wind gust on the bridge was 56 mph. About 100 homes lost power from downed trees and lines during a five hour period at the height of the storm. Trees had to be removed from several main roads. In Kent County, power outages occurred in Chestertown and Millington. Downed power lines cluttered Maryland State Route 291. In all about 1,000 Eastern Shore residents lost power. But, no major injuries were reported.

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

	31	2359EST			0	0	0	0	Unseasonably Warm
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Courtesy of the warm spell at the start of the month and the lack of any prolonged invasions of arctic air the rest of the month, January 1998 was one of the ten warmest Januaries on record for the Maryland Eastern Shore.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
MARYLAND, South									
Dorchester County									
Cambridge	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Somerset County									
Princess Anne	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Wicomico County									
Salisbury	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Worcester County									
Ocean City	27	1400EST			0	0			Heavy Rain
	28	2200EST							
A Nor'easter produced heavy rain and strong winds across the Lower Maryland Eastern Shore on Tuesday, January 27th and Wednesday, January 28th. Rainfall totals generally ranged from 3 to 5 inches. This rainfall caused street flooding and flooding of poor drainage areas throughout the region.									
MDZ024>025									
Inland Worcester - Maryland Beaches									
	27	1400EST			0	0	1.5M		Coastal Flooding
	28	2200EST							
A Nor'easter battered the Lower Maryland Eastern Shore on Tuesday, January 27th and Wednesday, January 28th. The slow movement of the storm combined with the highest astronomical tides of the month resulted in an extended period of gale to storm force onshore winds which drove tides to an estimated 8.0-8.5 feet above MLLW at Ocean City. These tide levels resulted in moderate coastal flooding throughout the Lower Maryland Eastern Shore. The rainfall combined with the gale and storm force winds resulted in scattered tree limbs downed across much of the area. Numerous homes, several buildings and one hotel sustained damage in the Ocean City area. Assateague State Park also received significant damage. In addition, there were widely scattered power outages.									
MARYLAND, West									
MDZ001									
Garrett									
	27	1200EST			0	0			Heavy Snow
	28	0800EST							
A winter storm moved from the Carolinas to the Virginia coast and brought heavy snow to western Maryland. Six to eight inch amounts were common across Garrett County. In Grantsville 7 inches fell, Deep Creek Lake State Park 8 inches, and in Oakland 6 inches.									
MASSACHUSETTS, Central and East									
MAZ016									
Eastern Norfolk									
	03	1320EST			0	0			Record Warmth
The temperature soared to a balmy maximum of 59 degrees at Blue Hill Observatory in Milton, setting a new record for the date. The old record was 58 degrees set in 1930.									
MAZ004>005									
Northern Worcester - Western Middlesex									
	09	0100EST			0	0	20K		Ice Storm
		1800EST							
Spotty areas of freezing rain fell in parts of northern Worcester County and extreme northwest Middlesex County. In a few places, there was severe icing. The icing was confined to specific elevations. A state of emergency was declared in the town of Paxton, where ice accretion brought down many tree limbs and wires causing road closures and power outages. Similar problems were reported in Leicester, Ashby, and Westminster. Power outages affected several hundred customers. There were scattered areas of icing in other towns, but no damage was reported.									
MAZ003-008									
Eastern Franklin - Western Hampshire									
	09	1200EST			0	0			Flood
	11	1100EST							
The combination of a significant rain event and melting snow caused by mild temperatures resulted in a minor river flood episode along the Connecticut River. At Montague City, the Connecticut River reached flood stage of 28 feet at noon on January 9th, crested at 28.82 feet at 8 PM the same day, then dropped below flood stage at 3 AM on January 10th. At Northampton, the Connecticut River reached flood stage of 112.0 feet at 6 PM on January 9th, crested at 113.0 feet at 7 AM on the 10th, then dropped below flood stage at 11 AM on January 11th.									
MAZ011									
Eastern Hampden									
	15	1800EST			0	0			Ice Storm
	16	1200EST							

Storm Data and Unusual Weather Phenomena

January 1998

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

MASSACHUSETTS, Central and East

MAZ002>008-012>017 Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Western Hampshire - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol

	15	2100EST			0	0			Heavy Snow
	16	1200EST							

Low pressure moved from the southeastern United States to a position off the Mid-Atlantic coast. Heavy snow and a pocket of freezing rain affected much of the state. A moderate ice storm occurred across much of Hampden County. The maximum ice accretion reported was 5/8 inch in Agawam. A few scattered power outages were reported. Heavy snow occurred across Massachusetts from Norfolk, Suffolk, Essex, and Middlesex Counties in the Greater Boston area west and northwest across Worcester and Franklin Counties. Maximum snowfall totals reached 10 inches in parts of Middlesex and Worcester Counties. Some totals included: Princeton, 10 inches; Sudbury and Clinton, 9.5 inches; Shrewsbury, 9.0 inches; Worcester, 8.8 inches; Westboro, 8.4 inches; Rowe, Shelburne, and Bernardston, 8.0 inches; and Blue Hill, in Milton, 7.0 inches. Boston's Logan International Airport had 3.5 inches. This storm resulted in many school closings and a difficult Friday morning commute and poor driving conditions in the heavy snow and freezing rain areas.

MAZ002>005-008>010 Western Franklin - Eastern Franklin - Northern Worcester - Western Middlesex - Western Hampshire - Western Hampden - Eastern Hampshire

	23	0900EST			0	0			Heavy Snow
		2100EST							

Bristol County

	23	1500EST			0	0			Heavy Rain
Countywide	24	0600EST							

Middlesex County

	23	1500EST			0	0			Heavy Rain
Countywide	24	0600EST							

Plymouth County

	23	1500EST			0	0			Heavy Rain
Countywide	24	0600EST							

Worcester County

	23	1500EST			0	0			Heavy Rain
Countywide	24	0600EST							

Hampden County

	23	1800EST			0	0			Urban/Sml Stream Fld
Countywide	24	0900EST							

Worcester County

	23	1800EST			0	0			Urban/Sml Stream Fld
Countywide	24	0900EST							

Snow accumulated to over 6 inches in parts of central and western Massachusetts before changing to sleet, freezing rain, and finally rain. State police responded to numerous reports of spinouts on Interstates 190, 290, and 495 as the combination of snow changing to freezing rain created very hazardous driving conditions. Some snowfall totals included: Granville, 7.5 inches; Ashburnham, 7.2 inches; Goshen, 6.5 inches; Huntington, North Amherst, and Lowell, all 6.0 inches. After a change to heavy rain, considerable urban and lowland flooding was reported, especially south of the Mass. Turnpike. Lowland flooding was reported along a small stream in Grafton, in Worcester County. Heavy rainfall occurred across central and eastern Massachusetts. Precipitation totals of one and one-half to three inches occurred, with a few places exceeding three inches. Some rainfall totals included: Plymouth, 3.54 inches; New Bedford, 3.42 inches; Foxboro, 3.10 inches; Maynard, 2.73 inches; West Medway, 2.67 inches; Natick, 2.58 inches; Taunton, 2.48 inches; and Worcester, 2.20 inches.

MAZ019>024 Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket

	28	1700EST			0	0			Strong Winds
	29	1200EST							

MAZ019-023>024 Eastern Plymouth - Dukes - Nantucket

	29	1000EST			0	0	200K		Coastal Flood
		1400EST							

A large and powerful slow moving ocean storm passing across the Atlantic Ocean to the south of Cape Cod brought strong southeast winds to southeastern Massachusetts, with high tides and beach erosion affecting north and east facing coastal areas. The strong northeast winds before high tide piled water toward shore and combined with astronomically high tides to produce coastal flooding. Some peak wind gusts reported late on January 28th included: Buzzards Bay Buoy, 52 mph at 5 PM; Boston Buoy, 45 mph at 9 PM and midnight. Some peak wind gusts reported during the morning of January 29th included: Nantucket, 53 mph at 1:15 AM; Bourne, 52 mph at 2 AM; Dennis, 46 mph; and Martha's Vineyard, 45 mph.

Coastal flooding was reported along the coast south of Boston at Hull and Scituate, where shore roads were closed because crashing waves sent rocks and other debris over sea walls. The tide in Scituate was reported to be about 3 feet above normal. An 80-foot section of the most vulnerable sea wall in Scituate collapsed in the aftermath of the storm, on the tide following the noon high tide

Storm Data and Unusual Weather Phenomena

January 1998

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

MASSACHUSETTS, Central and East

on January 29th. This left a section of one coastal road completely (but temporarily) unprotected. Farther south along the coast of Marshfield, in the Brant Rock section, the surf washed over cars parked near a pier and flooded several streets. On Cape Cod, three dozen dolphins died after being stranded on Cape beaches by the high tide. On Nantucket Island, Pebble Beach parking lot was relocated due to erosion and high tide was reported to be 2.5 feet above normal. On Martha's Vineyard, flooding was reported at Edgartown and at several other points along the coast. In the Boston area, high tides forced the closing of several coastal roads to the north and south of the city. Roads were closed for about one hour around the time of the noon high tide. However, in Winthrop, one coastal causeway was closed for two hours.

MASSACHUSETTS, West

MAZ001	Berkshire				
	15	1200EST	0	0	Winter Storm
	16	1200EST			

On January 15 and 16, a winter storm moved from the southeast Atlantic coast north to the southern New Jersey coast and then out to sea. This storm produced two to six inches of snow across Berkshire County, followed by significant accumulations of sleet and freezing rain.

MAZ001	Berkshire				
	23	0300EST	0	0	Winter Storm
	24	0100EST			

On January 23 and 24, a winter storm tracked from the North Carolina coast to Cape Cod. This system produced several inches of snow across Berkshire County before the precipitation changed to sleet and heavy freezing rain. There were numerous traffic accidents but only minor injuries.

MICHIGAN, East

MIZ047>048-053	Midland - Bay - Saginaw				
	07	2000EST	0	0	Ice Storm
	08	1600EST			

Low pressure moved from Mississippi on the afternoon of the 7th, to Ohio by the evening of the 8th. This low spread a mixture of freezing rain, sleet and snow across parts of southeast lower Michigan including the Flint, Saginaw and Thumb regions. The heaviest of the freezing rain fell in the Saginaw area where it caused power outages to 200 customers and some flight delays at Tri Cities International Airport.

MICHIGAN, Extreme Southwest

NONE REPORTED.

MICHIGAN, North

MIZ008-015	Chippewa - Mackinac				
	04	1600EST	0	0	Winter Storm
	05	1200EST			

A mix of snow...sleet and freezing rain developed across Eastern Upper Michigan to the north of a low and warm front lifting into the lower Great Lakes region. Ice accumulations ranged from 1/4-1/2 inch in many areas while sleet accumulated up to 1 inch deep.

MIZ016>036-041>042	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				
	08	0800EST	0	0	Winter Storm
		2300EST			

Low pressure tracking across the lower Great Lakes region spread an area of snow into Northern Lower Michigan during the morning of the 8th. The snow became locally heavy at times during the afternoon ...occasionally falling at the rate of 1-2 inches per hour. The snow tapered off toward midnight leaving 6 - 8 inch accumulations north and west of a line from Manistee to Alpena...with 3-5 inch accumulations across the rest of Northern Lower Michigan.

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				
	14	1600EST	0	0	Winter Storm
	15	0500EST			

Snow developed across Northern Lower and Eastern Upper Michigan during the evening of the 14th in association with a storm tracking across lower Michigan. Convective enhancements within the general area of snow produced localized snowfall rates of 2-3 inches per hour at times. The convective snows mainly affected portions of Alcona...Alpena...Cheboygan...Montmorency...Oscoda...Otsego and Presque Isle counties where snowfall totals averaged 6-10 inches with localized accumulations of up to 12 inches. In addition...southeasterly winds over Lake Huron contributed to lake enhanced snows...particularly across Mackinac county where accumulations ranged from 3-10 inches. Across the rest of Northern Lower and Eastern Upper Michigan accumulations generally averaged 3-6 inches.

Storm Data and Unusual Weather Phenomena

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

January 1998

MICHIGAN, Upper

MIZ007-012>014

Luce - Menominee - Delta - Schoolcraft

04	2000EST				0	0			Ice Storm
05	0800EST								

A band of freezing rain affecting south central and eastern Upper Michigan left a half inch layer of ice on most objects and the ground. The ice cause minor power outages near Menominee.

MIZ005-011>012

Marquette - Dickinson - Menominee

08	1900EST				0	0			Heavy Snow
09	1900EST								

A band of heavy snow moved north through central Upper Michigan starting during the evening of the 8th and continuing through noon on the 9th. The axis of heaviest snow extended through Iron Mountain and Marquette. Dickinson County received the heaviest snow with 11 inches at Foster City and 10.1 inches at Iron Mountain. In Marquette County, the Marquette County Airport received 9.9 inches, the city of Marquette 8.9 inches and Gwinn 8.5 inches. In Menominee County, Stephenson received 9.0 inches and Spalding received 8.0 inches of snow.

MIZ001>003

Keweenaw - Ontonagon - Houghton

09	1900EST				0	0			Heavy Snow
11	1600EST								

Cold west winds blowing across the relatively warm waters of Lake Superior brought a weekend of heavy lake-effect snow to northwest Upper Michigan. The snow began during the evening of the 9th and continued until the afternoon of the 11th. The highest snowfall total was at Phoenix with 20 inches in Keweenaw County. Other snowfall totals included, in Houghton County, Laurium 18 inches and Dollar Bay and Redridge 12 inches, and in Ontonagon County 17 inches at Ontonagon and Silver City.

MIZ001-006>007

Keweenaw - Alger - Luce

12	0600EST				0	0			Heavy Snow
14	0600EST								

Cold northwest winds blowing over the relatively warm waters of Lake Superior produced 2 areas of heavy lake-effect snow surrounded by a large area of lighter snow. The event began during the morning of the 12th and ended during the morning of the 14th. Heavy snow occurred in three isolated locations: Phoenix in Keweenaw County with 13 inches, Shingleton in Alger County with 12.5 inches and Two Heart in Luce County with 10.5 inches.

MICHIGAN, West

MIZ037-037>038-

038>039-039>040-040-

043>045-045>046-046-

050>051-051>052-052-

056>059-064>067-

073>074

Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Muskegon - Montcalm - Gratiot - Ottawa - Kent - Ionia - Clinton - Allegan - Barry - Eaton - Ingham - Calhoun - Jackson

04	0000EST 2345EST				0	0			Freezing Rain
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A strong cold front moved south across Michigan's Lower Peninsula during the early morning hours of Sunday, January 4th. Temperatures behind the cold front fell into the upper 20's and lower 30's, changing light rain to freezing rain across much of central and southern lower Michigan. One period of light freezing rain fell from after midnight to around 10:00 AM EST, resulting in light ice accumulations of around one-tenth of an inch. No serious problems were reported, other than icy spots on secondary roads and bridges/overpasses.

A more significant period of freezing rain developed later in the afternoon across central lower Michigan from Montcalm and Gratiot counties north across Mecosta, Isabella, Mason, Lake, Osceola, and Clare counties. This precipitation was associated with an area of low pressure moving northeast across Iowa. Temperatures held near or slightly below freezing from 5:00 PM to 11:45 PM EST across the affected areas, resulting in additional ice accumulation from one- to three-tenths of an inch. Law enforcement officials reported a coating of ice on trees, the ground, sidewalks, and on area bridges and secondary roads. Tree limbs, which broke from the weight of the ice that had accumulated from both morning and evening events, were reported down on some area roads and blocked a few roads near Sheridan in Montcalm County. Downed tree limbs and power lines resulted in power outages. Nearly 2,500 customers lost power in the Greenville area of Montcalm County. Other sporadic power outages were reported in Edmore and Stanton. At least one serious accident was attributed to the icy road conditions. The accident occurred in Sidney Township in Montcalm County Sunday afternoon and injured both the driver and passenger. Dense fog and icy road conditions brought school closings and delayed openings to some districts in Montcalm, Gratiot, and Isabella counties on Monday, January 5th.

MIZ037>040-043>046-

050>052-056>059-

064>067-071>073-

077>078

Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Muskegon - Montcalm - Gratiot - Ottawa - Kent - Ionia - Clinton - Allegan - Barry - Eaton - Ingham - Van Buren - Kalamazoo - Calhoun - Berrien - Cass

07	1700EST				0	0			Winter Storm
08	1600EST								

Storm Data and Unusual Weather Phenomena

January 1998

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

MICHIGAN, West

A winter storm which tracked from the Gulf coast of Louisiana north across the Ohio River Valley region, then north across Michigan's Lower Peninsula, produced a wintry mix of snow, sleet, and freezing rain across the mentioned counties. Freezing rain first spread across the Holland, Grand Rapids, Ionia, and Lansing areas during the evening hours of Wednesday, January 7th, then expanded south to the Interstate-94 corridor as temperatures fell below freezing later that night. As colder air aloft moved south, freezing rain and sleet changed to snow from Berrien, Van Buren, Barry, Eaton and Ingham counties northward, resulting in storm total accumulations of around an inch in Berrien, Eaton, and Ingham counties and 2 to 6 inches elsewhere in the mentioned counties (with the exception of Cass County, where most problems were a result of freezing rain accumulation).

Areas hardest hit by the sleet and freezing rain Wednesday night and Thursday morning, January 7th and 8th respectively, included Barry, Calhoun, Clinton, Eaton, Gratiot, Ingham, and Kalamazoo counties. Ice accumulated up to one-quarter of an inch in these areas. Trees and power lines were downed under the weight of the glaze. Up to 4,000 customers lost power at the height of the storm. Icy roads were the cause of several serious accidents. Four fatalities were blamed on weather-related accidents. A 73 year-old male and 54 year-old female were killed in a collision which occurred near the intersection of Michigan Highway 57 and McClelland Road in Gratiot County at 12:25 PM EST on Thursday, January 8th. One other male suffered serious injuries in the same accident. In Calhoun County, a 55 year-old male Indiana truck driver was killed on Interstate-69 just south of Marshall and a 72 year-old male was killed on Michigan Highway 66 when his car was struck by an oncoming vehicle while he was pulling out of his driveway in Athens. Numerous minor accidents were reported during the Thursday morning rush hour across the Grand Rapids metropolitan area and also in Hastings in Barry County.

Snowfall reports from the storm included 5-6 inches across Ottawa, Allegan, and Mason Counties, 4.3 inches in Muskegon, 3.7 inches in Grand Rapids, 3.5 inches in Sparta and Vestaburg, 2.8 inches in Big Rapids, around 2.5 inches in Lansing and Hastings, and around 2 inches in St. Johns and Ionia.

MIZ074

Jackson

12	1200EST 1800EST	0	0	Freezing Rain
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A brief period of freezing rain on the afternoon of Monday, January 12th, caused major roads and highways to become icy and hazardous across Jackson County. Numerous weather-related accidents were reported, including a several-car pile-up on the South Street bridge over U.S. Highway 127 in Jackson. Bridges and overpasses were most affected by icing.

MIZ040-045>046-050>051-056>057-064

Clare - Mecosta - Isabella - Muskegon - Montcalm - Ottawa - Kent - Allegan

14	1900EST	0	0	Heavy Snow
15	0100EST			

An upper level disturbance and associated surface trough of low pressure, which moved east across Michigan's Lower Peninsula the evening of Wednesday, January 14th, produced a brief period of heavy snow in a narrow swath across west central and central lower Michigan. Snowfall accumulations of 3 to 5.5 inches were reported in a 4 to 6 hour period in the mentioned counties. Roads quickly became snow-covered and hazardous as snow fell at the rate of 1 to 2 inches per hour. No serious accidents were reported, however. Snowfall totals from this brief, heavy snow event included 5.4 inches in Grand Haven, 4.7 inches in Muskegon, 4.2 inches in Grandville, 4.0 inches in Holland and Clare, 3.7 inches at the National Weather Service Office in Grand Rapids, and 3.5 inches in Sparta.

MIZ045-051-057>058

Mecosta - Montcalm - Kent - Ionia

21	0600EST 1200EST	0	0	Snow
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Numerous weather-related traffic accidents were reported across the mentioned counties during the morning of Wednesday, January 21st. Light snow which fell across the region during the pre-dawn hours and through the morning rush hour made for hazardous travel conditions. Although only one-half to an inch of snow accumulated, roads were slick and dangerous. A weather-related accident in Montcalm County at 10:50 AM EST claimed the life of a 50 year-old Mount Pleasant man on Michigan Highway 46 in Belvidere Township near Six Lakes. The victim lost control of his minivan on the snow-coated road and collided with 2 other vehicles, injuring 3 others who were treated at the accident scene. In Mecosta County, a semi-truck rear-ended another vehicle, then slid off southbound U.S. Highway 131 and rolled over. Two people were injured in that accident. Greater than 15 weather-related property damage accidents and several minor personal injury accidents occurred during the morning across the mentioned counties.

MIZ037>040-043>046-050>052-056>059-064>067-071>074-077>081

Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Muskegon - Montcalm - Gratiot - Ottawa - Kent - Ionia - Clinton - Allegan - Barry - Eaton - Ingham - Van Buren - Kalamazoo - Calhoun - Jackson - Berrien - Cass - St. Joseph - Branch - Hillsdale

22	1900EST	0	0	Winter Storm
23	1000EST			

A winter storm tracked northeast from northern Alabama at 5:00 PM EST on Thursday, January 22nd, across western

Storm Data and Unusual Weather Phenomena

January 1998

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

MICHIGAN, West

Kentucky and central Ohio overnight, and reached Lake Erie by midday on Friday, January 23rd. The storm spread a large swath of moderate to occasionally heavy snow across most of western, central, and southern portions of Michigan's Lower Peninsula from Thursday evening through mid-morning Friday, January 22nd-23rd. Snow first moved into the southern border counties of the state shortly after 7:00 PM EST on Thursday. Snow ended from southwest to northeast during the morning hours on Friday. Snow accumulations across the mentioned counties ranged from 3 to 6.5 inches, with 6 inch or greater amounts concentrated in Ingham and Jackson counties.

Most major highways and roads became snow-covered during the storm and travel conditions were hazardous from late Thursday evening through the Friday morning rush hour. Numerous weather-related minor accidents were reported across the region. Many local school districts were closed because of road conditions on Friday, January 23rd.

Snowfall reports included 6.5 inches in Dansville and 6.0 inches in Stockbridge, both in eastern Ingham County, 5.5 inches in Jackson, 5.2 inches in Allegan, 5.0 inches in Lansing, Hastings, and Reed City, 4-5 inches reported in the Grand Rapids-Muskegon-Holland metropolitan area, and around 4 inches in Kalamazoo, Battle Creek, St. Joseph and Hillsdale.

MIZ056

Ottawa

26	1200EST 2100EST	0	0	Lake Effect Snow
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Lake effect snow showers moved inland across Ottawa County during the afternoon and early evening hours of Sunday, January 26th. Although only around one inch of snow accumulated from the event, road conditions became icy and hazardous after sunset. Temperatures were slightly below freezing during the afternoon, but solar energy melted the snow on most roads. After sunset, temperatures fell several more degrees, quickly turning the standing water into ice on many roads across the area. Several traffic accidents were reported in Spring Lake and Grand Haven and were attributed to icy roads. Four people received minor injuries in weather-related accidents between 5:00 and 6:00 PM EST in the Tri-Cities area (Grand Haven, Spring Lake, and Ferrysburg).

MIZ045>046-051>052

Mecosta - Isabella - Montcalm - Gratiot

29	0600EST 1130EST	0	0	Heavy Snow
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Narrative...

MINNESOTA, Central and South Central

MNZ063-069>070-076>078-083>085-091>093

Washington - Scott - Dakota - Le Sueur - Rice - Goodhue - Blue Earth - Waseca - Steele - Martin - Faribault - Freeborn

04	1400CST	0	0	Ice Storm
05	0100CST			

Freezing rain produced ice accumulations ranging from one-quarter to three-quarters of an inch. Numerous car accidents were reported, one of which resulted in a fatality near Fairmont in Martin County. Little wind occurred with this system, therefore no damage to power lines or trees was reported.

MINNESOTA, Northeast

MNZ020>021

Southern Lake - Southern Cook

08	2200CST	0	0	Heavy Snow
09	1530CST			

Heavy snow fell along Minnesota's north shore, with 6 inches reported at Two Harbors and the Gunflint trail.

MNZ020>021

Southern Lake - Southern Cook

13	1600CST	0	0	Heavy Snow
15	1045CST			

Heavy snow fell along Minnesota's north shore, with a maximum of 11 inches reported at Trout Lake, about 10 miles north of Grand Marais. Other locations along the north shore received around half a foot.

MINNESOTA, Northwest

MNZ001>002-004-007-014>015

West Polk - Norman - Kittson - West Marshall - Red Lake - East Polk

05	0800CST 1900CST	0	0	Heavy Snow
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Snowfall amounts of 6 to 7 inches fell over northwest Minnesota.

MINNESOTA, Southeast

MNZ079-086>088-094>096

Wabasha - Dodge - Olmsted - Winona - Mower - Fillmore - Houston

04	1500CST 2200CST	0	1	32K	Ice Storm
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Widespread ice accumulations of 1/4 to 3/4 of an inch caused several accidents. However, no serious injuries were reported and

Storm Data and Unusual Weather Phenomena

January 1998

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

MINNESOTA, Southeast

only a few power outages occurred.

MNZ086>087-095		Dodge - Olmsted - Fillmore							
		20 1900CST			0	0			Heavy Snow
		21 0900CST							

8 inches of snow fell in a narrow band from Preston and Lanesboro to just south and west of Rochester.

MINNESOTA, Southwest

NONE REPORTED.

MINNESOTA, West

NONE REPORTED.

MINNESOTA, West Central

NONE REPORTED.

MISSISSIPPI, Central

Forrest County
Hattiesburg

	07	0400CST 0600CST			0	0	500K	Flash Flood
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Major flooding occurred over much of the county. At least thirteen homes had water in them. Several business were flooded. Numerous roads across the county had to be closed due to flooding. Three bridges were washed out.

Lamar County
Purvis to
Oak Grove

	07	0400CST 0600CST			0	0	250K	Flash Flood
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Many roads throughout the county were under water. Ten homes had major damage and fourteen homes had minor damage.

Forrest County
Hattiesburg

	07	0415CST			0	0	1K	Thunderstorm Wind
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Several trees were blown down.

Clarke County
Quitman

	07	0500CST 0700CST			0	0		Flash Flood
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Ten to twenty roads were under water due to the flooding.

Jasper County
Heidelberg

	07	0500CST 0800CST			0	0	100K	Flash Flood
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Several county roads had to be closed due to flooding. Three business were flooded in Heidleberg.

Jones County
Laurel

	07	0500CST 0700CST			0	0	60K	Flash Flood
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Many small streams across the county were out of their banks. Several roads were under water. Three homes were flooded in Laurel.

Lauderdale County
Meridian

	07	0500CST 0700CST			0	0		Flash Flood
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Several roads were closed due to flooding across the county.

Lauderdale County
Meridian

	07	0800CST 1100CST			0	0	500K	Flash Flood
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Two roads county were completely closed due to flooding. Numerous county roads had to be temporarily closed. One house was destroyed by flooding. Seventeen homes, four mobile homes and three business had minor damage. Sixty-seven roads across the county were damaged by the flooding.

Kemper County
4 S Scooba

	07	0900CST 1100CST			0	0		Flash Flood
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Flood waters covered several roads.

Neshoba County
Philadelphia

	07	0900CST 1100CST			0	0		Flash Flood
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Several county roads were flooded.

Storm Data and Unusual Weather Phenomena

January 1998

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									
Clarke County Quitman to Shubuta	08	0730CST 1130CST			0	0	500K		Flash Flood
An emergency spillway on a small dam at the Archusa Water Park failed and sent flood waters down the Chickasawhay river. Water got up around fifty homes, but only twenty five homes were flooded.									
Jones County 6 N Moselle	12	0416CST			0	0			Hail (0.75)
Warren County Vicksburg	22	0130CST 0330CST			0	0			Flash Flood
Several streets were flooded in Vicksburg. Heavy rains also caused a few mud slides.									
Lamar County Lumberton	22	0151CST			0	0	50K		Hail (1.75)
Several cars and roofs were damaged.									
Forrest County Hattiesburg	22	0237CST			0	0	100K		Hail (1.75)
Several cars and roofs were damaged.									
MISSISSIPPI, North									
MSZ031			Lowndes						
	07	2200CST			0	0	310K		Flood
	08	1800CST							
McBee Creek went over its bank and flooded parts of the city of Columbus. Water got into an estimated 20 to 25 homes with people in those homes forced to evacuate. Nearly 50 homes had water reach them. Up to 30 inches of water reached some homes with water as high as mailboxes in some areas. Several roads were closed due to the high water.									
MSZ001>017-021>024			De Soto - Marshall - Benton - Tippah - Alcorn - Tishomingo - Tunica - Tate - Prentiss - Coahoma - Quitman - Panola - Lafayette - Union - Pontotoc - Lee - Itawamba - Yalobusha - Calhoun - Chickasaw - Monroe						
	15	1400CST			0	0	0		Winter Storm
	16	0400CST							
A winter storm dumped a mix of freezing rain, sleet and snow across much of northern Mississippi. Up to 8 inches of sleet and snow accumulated in some areas.									
MISSISSIPPI, South									
Pike County Countywide	06 07	2300CST 0900CST			0	0	25K		Flash Flood
Pearl River County Countywide	07	0200CST 1000CST			0	0	100K		Flash Flood
Hancock County Countywide	07	0300CST 1000CST			0	0	10K		Flash Flood
Harrison County Countywide	07	0400CST 1000CST			0	0			Urban/Sml Stream Fld
Jackson County Countywide	07	0500CST 1000CST			0	0	50K		Flash Flood
Widespread rains of 3 to 5 inches occurred across the region during the morning hours. Considerable runoff occurred due to saturated soil from heavy rain during the previous two days resulted in widespread flooding of streets and secondary roadways. Poplarville, in Pearl River County, was hardest hit with 20 houses being flooded according to the Civil Defense Office. In Jackson County, two houses were flooded in Pascagoula and several houses in Helena.									
Harrison County Biloxi	07	0530CST			0	0	100K		Thunderstorm Wind
Thunderstorm winds struck a beachfront casino causing minor damage to an outer cosmetic layer covering the concrete structure. Numerous trees were downed on roadways.									
Jackson County Big Pt	07	0600CST			0	0	0.30K		Thunderstorm Wind
Trees were downed over the west portion of the county.									

Storm Data and Unusual Weather Phenomena

January 1998

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, South</u>									
Hancock County									
Lakeshore	07	0630CST			0	0	1K		Thunderstorm Wind
									Thunderstorm winds destroyed a three bay garage.
<u>MISSISSIPPI, Southeast</u>									
Greene County									
Avera	07	0515CST 0516CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down along State Highway 63 near Avera.
Wayne County									
Boice	12	0530CST 0531CST			0	0			Hail (0.75)
									Dime size hail was reported along US Hwy 45 near Boice.
Perry County									
10 SE Janice	12	0820CST 0821CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down in the southeast part of the county near Deep Creek.
Stone County									
Wiggins	22	0600CST 0602CST			0	0	3K		Thunderstorm Wind (G50)
									A few trees were blown down along State Highway 26 just east of Wiggins. Marble size hail was also reported in Wiggins.
George County									
6 NE Benndale	22	0630CST 0631CST			0	0	3K		Thunderstorm Wind (G50)
									Several trees were blown down along State Highway 26 near the community of Crossroads.
Stone County									
West Portion	26	1430CST 1500CST			0	0	1K		Flash Flood
									Rainfall of two to four inches caused standing water along State Highway 26 in the west part of Stone county. The road was never closed but several vehicles had to wait about an hour for the water to recede from the highway before they could get through.
Perry County									
Southwest Portion	26	1430CST 1500CST			0	0	1K		Flash Flood
									Rainfall of two to four inches caused standing water in the southwest part of the county along State Highway 29. The road was impassable for a short period of time where the highway crosses Bluff Creek.
<u>MISSOURI, East</u>									
MOZ035>036-051>052-060>061-063-065									
	08	0800CST 1800CST			0	0			Winter Storm
									A fast moving storm system dropped between 2 to 5 inches of snow across parts of Northeast and East Central Missouri. The heaviest snow fell just northwest of the St. Louis Metro area, mainly across Montgomery, Lincoln, Warren and Pike counties. Since temperatures remained near the freezing mark, most area roads became slushy around midday but remained passable.
MOZ009>010-018>019-026>027-034>036-041>042-047>052-059>065-072>075									
	12	0200CST 1200CST			0	0			Winter Storm
									Freezing drizzle began during the early morning hours and produced a thin glaze of ice across most roads. The hardest hit areas were in Central and East Central Missouri. Most schools across Central Missouri were closed as was the University of Missouri in Columbia. It was the first time since 1995 and only the third time since 1966 the University closed due to weather. At least 5 deaths and numerous injuries occurred in vehicle accidents due to the ice covered roads.
MOZ074>075-084>085									
	22	0700CST 1800CST			0	0			Winter Storm
									A snowstorm dropped from 3 to 5 inches of snow across parts of South Central Missouri. The storm caused numerous traffic problems, caused some schools to close and others to let out earlier than usual.

Storm Data and Unusual Weather Phenomena

January 1998

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

MISSOURI, Lower

NONE REPORTED.

MISSOURI, Northwest

MOZ001>008-011>017-020>025-028>033-037 **Atchison - Nodaway - Worth - Gentry - Harrison - Mercer - Putnam - Schuyler - Holt - Andrew - De Kalb - Daviess - Grundy - Sullivan - Adair - Buchanan - Clinton - Caldwell - Livingston - Linn - Macon - Platte - Clay - Ray - Carroll - Chariton - Randolph - Jackson**

04	0500CST 1500CST	0	0		Ice Storm
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An icy rain fell during the morning hours of January 4th resulting in an eighth to a quarter inch of ice accumulation and slippery roadways. There were numerous non-injury traffic accidents reported throughout Northwest Missouri and many reports of minor injuries due to pedestrians falling on icy sidewalks. Since the freezing rain occurred on a Sunday, traffic was light which prevented widespread problems.

MOZ032-039-044-054-054 **Chariton - Saline - Johnson - Henry**

05	0000CST	0	0		Flood
10	2359CST				

Minor stream flooding occurred over Missouri rivers and streams early in January.

South Grand River
Urich, MO

Flood Stage	24 ft
Above Flood Stage	1/5 to 1/9
Crest	25.8 ft on 1/7

Grand River
Sumner, MO

Flood Stage	26ft
Above Flood Stage	1/6 to 1/7
Crest	26.8 ft on 1/7

Blackwater River
Valley City, MO

Flood Stage	22 ft
Above Flood Stage	1/6 to 1/7
Crest	25.5 ft on 1/7

Blue Lick, MO

Flood Stage	24 ft
Above Flood Stage	1/8 to 1/10
Crest	25.46 ft on 1/9

Big Creek
Blirstown, MO

Flood Stage	20 ft
Above Flood Stage	1/8 to 1/9
Crest	Estimated 20.0 ft on 1/9

MOZ023-031>033-037>040-043>046 **Livingston - Carroll - Chariton - Randolph - Jackson - Lafayette - Saline - Howard - Cass - Johnson - Pettis - Cooper**

11	2200CST	0	0		Ice Storm
12	1000CST				

A light freezing drizzle began late on the evening of January 11th then blossomed into a steady light freezing rain. Icy roads and walkways resulted in numerous problems during the morning commute on January 12th.

Storm Data and Unusual Weather Phenomena

January 1998

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

MISSOURI, Northwest

Numerous traffic accidents were reported, some involving minor injury and there were several minor injuries as a result of pedestrians falling on icy walkways. Many schools in West Central Missouri closed due to the hazardous conditions.

In Kansas City, a 75 year old woman suffered a heart attack after her car skidded into a van at the intersection of 85th and Holmes. Also in Kansas City, nine cars were involved in an a non-injury accident on Stadium Drive near Arrowhead Stadium. In Independence, another driver skidded off the road and crashed into the wrought iron fence at the Harry Truman Home. Traffic mishaps were also common in Blue Springs, Grain Valley and Oak Grove as a result of the icy conditions.

In Moberly, 40 people were treated for minor injuries as a result of the icy weather. Most of the injuries were bone fractures. A dump truck spreading salt in Pettis County skidded off the road and fell on its side between Goodwill Chapel and McVey roads. Most schools in Chillicothe were closed as a result of the icy conditions.

MISSOURI, Southeast

MOZ076-086>087-100-107>112-114 Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid

06	0100CST								
	0800CST			0	0				Fog

Dense fog reduced visibility to one quarter mile or less in many locations.

Cape Girardeau County

Jackson to Cape Girardeau

06	0400CST								
	0900CST			0	0	5K			Urban/Sml Stream Fld

Heavy thunderstorms that moved across the region dumped over an inch of rain on parts of Cape Girardeau County. A few of the streets that were flooded in Cape Girardeau were North Main, Third, and Rand. Water was also observed running across some roads in the northern part of Cape Girardeau County and near Delta to the south.

MOZ076-087-111>112 Perry - Cape Girardeau - Scott - Mississippi

17	0300CST								
	0600CST			0	0				Freezing Drizzle

Light freezing drizzle caused icing of bridges and overpasses. Bridges over the Mississippi River, including the U.S. 60 bridge near Cairo, IL and the Interstate 57 bridge, became very hazardous. Several accidents occurred on the I-57 bridge.

MOZ076-086>087 Perry - Bollinger - Cape Girardeau

22	1100CST								
	1700CST			0	0				Snow

A mixture of wintry precipitation changed to snow during the midday hours. Accumulations of 2 to 3 inches were common around Perryville, about 30 miles northwest of Cape Girardeau. With temperatures hovering right around the freezing mark, a slushy coating formed on roadways. Police agencies answered numerous reports of vehicles off of roadways.

MISSOURI, Southwest

Mcdonald County Countywide

04	1000CST								
	1400CST			0	0	0			Flash Flood

Newton County Countywide

04	1000CST								
	1400CST			0	0	0			Flash Flood

Barry County Countywide

04	1240CST								
	1400CST			0	0	0			Flash Flood

Stone County Countywide

04	1315CST								
	1500CST			0	0	0			Flash Flood

Howell County Countywide

04	1700CST								
	0300CST			0	0	0			Flash Flood

Ozark County Countywide

04	1700CST								
	0300CST			0	0	0			Flash Flood

Taney County Countywide

04	2000CST								
	0300CST			0	0	0			Flash Flood

Widespread heavy rainfall occurred over much of extreme southern Missouri from the late morning hours of Sunday January 4th

Storm Data and Unusual Weather Phenomena

January 1998

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

NEBRASKA, Central

NEZ004>010-022>029-035>038-056>059-069>071 **Sheridan - Cherry - Keya Paha - Boyd - Brown - Rock - Holt - Garden - Grant - Hooker - Thomas - Blaine - Loup - Garfield - Wheeler - Arthur - Mcpherson - Logan - Custer - Deuel - Keith - Perkins - Lincoln - Chase - Hayes - Frontier**
20 0100CST 0 0 6K Winter Storm
2300CST

A winter storm produced freezing drizzle and snow which caused icy streets and highways across western and northcentral Nebraska. A few traffic accidents due to the icy conditions were reported.

NEBRASKA, East

NEZ011>012-015>018-030>033-042>043 **Knox - Cedar - Thurston - Antelope - Pierce - Wayne - Boone - Madison - Stanton - Cuming - Platte - Colfax**
09 0700CST 0 0 Extreme Windchill
1200CST

Extreme wind chills of 35 to 45 below zero were experienced over the area.

NEZ044-051

Dodge - Saunders
21 2000CST 0 0 12K Flood
31 2359CST

A three mile long ice jam formed along the Platte river to the southwest of Fremont upstream from the highway 77 bridge to Big Island. The jam caused water to rise upstream and resulted in lowland flooding at Ridgeland Road, Hormel Park, the YMCA Camp, and Big Island. In addition, 8 homes along the Platte river were flooded receiving 1 to 4 inches of water in the main level.

NEBRASKA, Extreme Northeast

NONE REPORTED.

NEBRASKA, Extreme Southwest

NONE REPORTED.

NEBRASKA, South Central

NEZ062 **Hall**
20 2000CST 0 0 0 0 Flood
21 2000CST

An ice jam along the Platte River in the southwest part of Hall county forced the relocation of one family from their home. The jam had been in place for days and water flow remained restricted. Sand bags were used to divert the flow of water from the home for a time. The jam broke loose on the 21st allowing the family to return home safely. No damage was reported.

NEBRASKA, West

NEZ019 **Scotts Bluff**
10 0800MST 0 0 12K 0 Icy Roads

A 1987 Chevy Blazer rolled upside down off of County Road R, west of County Road 13. The driver told police that she lost control in the snow. The driver was not injured but her vehicle sustained \$12,000 in damage.

NEZ021 **Morrill**
20 0700MST 0 2 2K 0 Icy Roads

A thin layer of ice caused a rollover accident on highway 385 a quarter of a mile south of the Box Butte county line. The 39 year old driver of the car lost control on the ice and drove into the east ditch and rolled the vehicle. The driver and a passenger were both ejected. The driver sustained a broken collar bone and the passenger had a severe leg cut. The vehicle was totalled.

NEVADA, North

NVZ012 **Lander/Eureka**
04 1000PST 0 0 Heavy Snow
05 1000PST

A localized heavy snow storm dropped heavy snow over the Toiyabe Mountains of southern Lander county. A 24 hour snowfall total of 7 inches was reported at Austin.

NVZ007-010 **Northern Elko - Ruby Mountains/East Humboldt Range**
12 0600PST 0 0 Heavy Snow

A strong winter storm dropped heavy snow over the Northeast Nevada mountains above 6000 feet. 12 hour snowfall totals ending at 6:00 am PST included: 14 inches at Dorsey Basin (8100'), 12 inches in Lamoille Canyon (7500'), 11 inches at Bear Creek Ranger Station (8200'), 10 inches at Upper Jack Creek (7250') and 6 inches at Wildhorse Reservoir.

NVZ012 **Lander/Eureka**
19 0400PST 0 0 Heavy Snow

A rapidly moving strong cold front produced localized heavy thundersnow over parts of East Central Nevada. In the city of Eureka, 6 inches of snow accumulated in a 3 hour period ending at 4:00 am.

Storm Data and Unusual Weather Phenomena

January 1998

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

NEVADA, South

NONE REPORTED.

NEVADA, West

NVZ003

Greater Reno/Carson City/Minden Area

01	1235PST								
	1236PST			0	0				High Wind (G64)

Spotter reported peak wind gust to 64 kts. No damage.

NVZ003

Greater Reno/Carson City/Minden Area

01	1307PST								
	1315PST			0	0				High Wind (G73)

Spotter reported wind gusts between 69-73 kts in SW Reno, near Windy Hill. No damage.

NVZ003

Greater Reno/Carson City/Minden Area

01	1624PST								
	1625PST			0	0				High Wind (G76)

Spotter reported peak wind gust to 76 kts with no damage over SW Reno.

NVZ003

Greater Reno/Carson City/Minden Area

01	1700PST								
	2300PST			0	0				High Wind (G60)

Various Washoe County remote wind sensors reported wind gusts to 60 kts. No damage reported.

NVZ003

Greater Reno/Carson City/Minden Area

11	1500PST								
	1502PST			0	0				High Wind (G52)

Spotter reported peak wind gust to 52 kts. No damage.

NVZ003

Greater Reno/Carson City/Minden Area

16	1900PST								
	2100PST			0	0				High Wind (G65)

Spotters and remote wind sensors reported peak wind gusts to 54 kts near Gardnerville, and to 65 kts at the Wildcreek Golf Course in NE Reno. No damage.

NVZ002

Greater Lake Tahoe Area

18	0600PST								
	0600PST			0	0				Winter Storm

24 hour snow fall: Mt. Rose Ski Area 18-24 inches above 7000 feet elevation.

NVZ003

Greater Reno/Carson City/Minden Area

18	1229PST								
	1230PST			0	0				High Wind (G54)

Spotter near Gardnerville reported peak wind gusts to 54 kts. No damage.

NEW HAMPSHIRE, North and Central

NHZ001>010

Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford

07	0700EST								
	2300EST			0	1	26.9M			Ice Storm

A severe ICE STORM hit sections of New Hampshire from January 7 through January 9. The hardest hit areas in northern and central New Hampshire were generally between about 1000 and 2000 ft above sea level. While many cities and towns at lower elevations received only rain, towns at higher elevations, such as New London, where the temperatures were slightly cooler had freezing rain. Ice accreted several inches thick on trees, power lines, and other exposed surfaces causing many people in those areas to lose electrical service. Statewide, the storm knocked out power to about 55,000 customers, an estimated 125,000 people. During the time without power, residents and those involved with the restoration efforts had to contend with snow, additional freezing rain, rain, slippery roads, falling ice and other debris, sub-zero temperatures, strong winds, and dangerous wind chills. For many homes, the lack of electrical power also meant no heat, no running water, no means for cooking food. The storm caused an estimated 30 million dollars in damages. Debris cleanup from the storm was expected to last into the summer. Utilities had to replace over 250 snapped utility poles, more than 780 crossarms, and more than 430 transformers. A radio tower in Laconia fell due to ice loading. The storm damaged an estimated \$100 million worth of timber with the actual amount of the loss in value still unknown at the time of this writing. Many disaster shelters were set up throughout the affected areas. Following the storm, all counties in New Hampshire, with the exception of Rockingham County, were declared federal disaster areas by the President.

Intermittent freezing rain, freezing drizzle, rain and drizzle developed early in the day Wednesday, January 7th. Steadier and heavier rain, freezing rain, and freezing drizzle developed over the state during Wednesday afternoon and evening, January 7, 1998 and continued through Friday, January 9th, as a quasi-stationary front remained south of the state. To the north of the front, cold air remained entrenched near the ground as warm moist air moved northward from the mid-Atlantic states over the wedge of colder air. Temperatures at lower elevations were just above freezing while temperatures at elevations between about 1000 and 2000 ft. were

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW HAMPSHIRE, North and Central

just slightly below freezing. Above about 2000 ft., temperatures were above freezing. Severe icing occurred at elevations between 1000 and 2000 ft.

By Saturday morning, January 10, the precipitation had ended with 1 to 3 inches of accretion to wires, poles, branches, etc., in the most affected areas. This ice not only provided additional weight to the objects it coated, it also provided additional support. As temperatures warmed Saturday in southern areas, this additional support melted away causing numerous trees and branches, and a radio tower in Laconia to fall. Falling ice also created additional problems and was an extreme hazard to anyone venturing outside. These hazards continued in northern and central areas Sunday, particularly in areas that failed to get above freezing during the day Saturday. In northern and central part of the state, particularly in shaded areas, the threat from falling ice and debris persisted considerably longer.

Within the state, there were no deaths directly attributed to the storm, although one utility worker was partially paralyzed when struck by a falling tree while making repairs to a line. Carbon monoxide poisoning was a problem and many residents were treated at area hospitals.

Long-term effects from the ice storm are expected to persist for many years. Tree damage was extensive in some areas and will affect those people and companies that depend on trees for quite a few years. In some areas, most of the maple trees used for syrup were severely damaged. For many municipalities, debris cleanup will last well into the summer. The debris will create an increase in the forest fire danger over the next several years and has blocked many fire access roads and trails. Some recreational hiking trails remain closed due to debris. Additionally, many, many tree limbs were left dangling by the ice storm and many trees were left partially fallen. These "widow makers" will pose a significant threat to anyone who works, walks, or drives through wooded areas over the next several years.

NHZ001>010-013>014 Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham
12 0300EST 0 0 Cold Temperatures
1000EST

Cold temperatures created problems for the 11,000 customers, an estimated 25,000 people, in New Hampshire that remained without power from the previous week's ice storm. Minimum temperatures on Monday morning, January 12, ranged from near 0 degrees F in northern New Hampshire to 5 to 15 degrees F above zero in central areas, to the mid-teens in southern areas. The cold temperatures created worries about the potential for frozen pipes, and caused some residents to move from their homes to emergency shelters. In addition, the cold temperatures made power restoration efforts more difficult, especially for out-of-state crews that were not accustomed to working in cold conditions.

NHZ001>010-013>014 Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham
13 1800EST 0 0 Gusty Winds
14 1800EST

Winds became strong and gusty following the passage of a cold front late Tuesday, January 13, and continued through the day Wednesday. Light mixed precipitation preceded the front as low pressure tracked to the northwest of the state. The strong winds which followed the front slowed power restoration efforts and created additional power outages in the wake of the previous week's ice storm. Partially downed trees, dangling tree branches, or ice continued to fall in throughout the state in the areas affected by the ice storm. In many areas of the state, winds gusted to over 30 mph Tuesday night and Wednesday, January 14.

NHZ001>010-013>014 Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham
14 0400EST 0 0 Cold Wind Chill
1800EST Temperatures

A cold front which passed through the state on the 13th marked the leading edge of arctic air which invaded the state Tuesday night and Wednesday, the 14th. Gusty winds and cold temperatures caused dangerously cold wind chill temperatures across the state. Wind chill temperatures generally dropped to near -25 in the northern part of the state and to near zero along the coast. The cold wind chill temperatures hampered power restoration efforts and increased the risk of frostbite or hypothermia to the crews working outside to restore power.

NHZ001>010-013>014 Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham
14 0400EST 0 0 Cold Temperatures
15 1200EST

The arctic air behind a cold front that passed through the state on Tuesday, the 13th, brought very cold temperatures to New Hampshire from early Wednesday morning through Thursday morning. The cold temperatures further aggravated the emergency conditions caused by the previous week's ice storm. More than 2000 customers, an estimated 5000 people remained without power Wednesday morning. Temperatures Wednesday morning had dropped to near zero in the north and mountains, to the single digits or teens elsewhere. During the day Wednesday, with strong, gusty winds, temperatures warmed only to the single digits in the north

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW HAMPSHIRE, North and Central

and mountains, to the teens in central areas, and into the 20s in southern parts of the state. Minimum temperatures Thursday morning dropped below zero in the north and mountains and to the single digits over most of the remainder of the state. These cold temperatures increased the threat of burst water pipes in those homes still without power and/or heat and caused some residents to move from their homes to emergency shelters.

NHZ004-006 Northern Carroll - Southern Carroll
 15 1600EST 0 0 Moderate Snowfall
 16 1500EST

NHZ001>003-005-007>010-013>014 Northern Coos - Southern Coos - Northern Grafton - Southern Grafton - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham
 15 1700EST 0 0 Heavy Snow
 16 1500EST

Low pressure moving eastward from the lower Great Lakes to off the mid-Atlantic Coast brought heavy snow to much of New Hampshire. Snowfall amounts generally ranged from 5 to 10 inches statewide with some reports of nearly a foot in northern Hampshire County and reports of over a foot in northern Coos County.

NHZ002>003-010-013 Southern Coos - Northern Grafton - Strafford - Interior Rockingham
 23 0600EST 0 0 Moderate Snowfall
 24 0300EST

NHZ001-004>009 Northern Coos - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap
 23 0700EST 0 0 Heavy Snow
 24 0300EST

An area of low pressure moving eastward from the Ohio River Valley on Friday the 24th caused a mixture of precipitation types across the state. Snow began in western sections Friday morning, then spread eastward during the day. The snow then changed to sleet, freezing rain, and rain in areas from late Friday afternoon through Friday night. A secondary low pressure center formed along the southern New England Coast Saturday, then moved slowly northeastward through Sunday morning, the 26th. The storm generally caused 4 to 9 inches of snow and sleet statewide, except in the Connecticut River Valley and along the immediate coast where somewhat lesser amounts were observed. In sections of southeastern New Hampshire, a significant freezing rain event followed the snow and sleet (see separate ICE STORM entry).

NHZ010-013>014 Strafford - Interior Rockingham - Coastal Rockingham
 23 2300EST 0 0 Ice Storm
 24 1700EST

Low pressure that developed off the southern New England Coast combined with an area of low pressure moving eastward from the Ohio River Valley to bring a mixture of precipitation to the state. Heavy snow was followed by sleet and freezing rain. The freezing rain which began late Friday evening in extreme southeastern New Hampshire persisted in some areas for much of the day Saturday. More than 33,000 customers (an estimated 80,000 people) lost electrical service as ice-laden trees and branches fell onto power lines. Some of the power outages lasted several days. An elderly man died from carbon monoxide poisoning in Dover while using an electrical generator (inside his garage) to provide electricity to his home during the power outage.

Rockingham County Seabrook Beach to Portsmouth
 29 0815EST 0 0 20K Storm Surge
 1215EST

Low pressure moving slowly northeastward to just east of Nantucket Island brought high tides and large waves to the coast of New Hampshire. In Hampton Beach, waves threw rocks and other debris onto Route 1.

NEW HAMPSHIRE, Southern

NHZ011>012 Cheshire - Hillsborough
 07 0800EST 0 0 1M Ice Storm
 10 0800EST

MAJOR ICE STORM...AND PRESIDENTIAL DISASTER DECLARATION.

A large low pressure system located in the Tennessee Valley, with its warm front extending northeast to Long Island, New York, set the stage for a prolonged period of freezing rain in northern New England. A moisture-laden airmass overran a cold Canadian airmass which remained in place during moderate to heavy rainfall, producing a massive ice storm.

The major and prolonged icing event affected a number of towns in Cheshire and Hillsborough Counties in southern New Hampshire, starting on Wednesday, January 7th and continuing until Saturday, January 10th. Elevations ranging from roughly 1,100 feet to 2,500 feet were most severely impacted. Radial ice accretions reached one to two inches by late Friday, January 9th and early Saturday, January 10th. Thousands of trees and power lines were felled, with some landing on houses and others crashing through windshields of moving vehicles. This icing event was most unusual for the fact that damage occurred only in specific parts of the same town. For example, in Marlow (Cheshire County), the hardest hit areas were on the north and east facing sections of the town including the bordering towns of Lempster, Washington, and Stoddard. A maximum ice accretion radius of 1.39 inches was measured on Pitcher Mountain in Stoddard on Sunday, January 11th, where there had been very little melting up until that time. The circumference of ice on a small branch was 8.75 inches. In Harrisville, at an elevation of about 1,400 feet, the north-facing corridor to the northwest of the center of town was hit the hardest. A tree fell on a fire truck on Friday evening as it was responding

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW HAMPSHIRE, Southern

to a fire; trees and limbs were down on houses with broken windows reported. The radial ice accretion there reached two inches on Friday. In the neighboring town of Marlborough, located to the southwest, there were no problems reported.

In extreme northwest Hillsborough County, in the town of Windsor, power failed early Thursday morning, January 8th, and was not restored until Sunday, January 11th. Ice was reported one-half to one inch thick on trees. About 10 miles to the east, the neighboring town of Hillsborough reported on very minor damage. Also, in Hillsborough County, in the town of Weare, the southeast part of town remained ice-free while the northwest part had icing. Radial ice accretion was reported at about one inch (ice on a wire was two inches in diameter). There is an elevation difference of only 100 feet in the town.

Quite remarkably, there were few injuries from this icing event. Statewide, power outages affected 67,000 electric customers. A utility power lineman died of a heart attack while clearing tree limbs from power lines in Washington. Power remained out an average of several days, but the more isolated areas were without power for a week. Damage to forests was very extensive statewide, but also in Cheshire and Hillsborough Counties, where it could only be compared to the effects of the Hurricane of 1938. The fallen trees will likely result in increased fire danger within two years. Damage from the ice storm in Cheshire and Hillsborough Counties is estimated to be around 1 million dollars, but the damage figure was much higher in northern portions of New Hampshire. Cheshire and Hillsborough Counties both were included in a presidential disaster declaration.

NHZ011>012

Cheshire - Hillsborough

15	2100EST	0	0	Heavy Snow
16	1200EST			

Low pressure over the southeastern United States moved northeast to a position off the Mid-Atlantic coast. Heavy snowfall of 6 to 7 inches fell across much of Cheshire and Hillsborough Counties. Some specific amounts included: Weare, 6.5 inches; Frankestown, 6.0 inches; and Jaffrey, 6.0 inches. No particular problems resulted from this storm.

NHZ011>012

Cheshire - Hillsborough

23	0900EST	0	0	Heavy Snow
	2100EST			

NHZ012

Hillsborough

23	2100EST	0	0	10K	Ice Storm
24	1200EST				

Heavy wet snow fell across Cheshire and Hillsborough Counties with amounts averaging between 6 and 8 inches. The precipitation changed to sleet and then freezing rain, causing an ice storm in much of Hillsborough County. The maximum snowfall occurred at Frankestown with a total of 10 inches. Some other totals included: Westmoreland, 8 inches; Swanzey and Weare, 7.5 inches; Jaffrey, Walpole, and Peterborough, 7 inches; Temple, Hillsborough, and Wilton, 6 inches. The heavy wet snowfall caused a rash of skidding and roll-over accidents, especially during the Friday evening rush hour on January 23rd. In Manchester alone, there were ten accidents between 3 PM and 8 PM. Power outages affected as many as 31,000 households across the state of New Hampshire. In the Milford area and surrounding towns, as many as 3,100 electric customers lost power as ice-laden trees knocked down wires and poles.

NEW JERSEY, Northeast

Bergen County

Lyndhurst	09	1500EST	0	0	Thunderstorm Wind (G50)
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A line of showers and thunderstorms developed in a moist unstable airmass ahead of an approaching cold front.

As thunderstorms moved northeast at around 40 mph, they produced damaging winds, small hail, heavy downpours, and lightning. Wires were downed in Lyndhurst.

Bergen County

Countywide	23	1800EST	0	0	Urban/Sml Stream Fld
	24	0500EST			

Essex County

Countywide	23	1800EST	0	0	Urban/Sml Stream Fld
	24	0500EST			

Hudson County

Countywide	23	1800EST	0	0	Urban/Sml Stream Fld
	24	0500EST			

Union County

Countywide	23	1800EST	0	0	Urban/Sml Stream Fld
	24	0500EST			

With a weak low pressure system moving east across the Ohio Valley and a strong High sliding slowly southeast over Maine, a strong east wind flow developed across the region early Friday morning, January 23rd. As the High moved southeast, the low over Ohio weakened as another low formed over the Southeast U.S. This second low rapidly intensified as it moved northeast, passing

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW JERSEY, Northeast

over New York City (NYC) late Friday evening. With abundant moisture available, heavy precipitation, mainly heavy rain along with strong gusty winds occurred from Friday afternoon through early Saturday morning.

Precipitation began in the form of snow flurries from 3 am to 4 am. It quickly changed to sleet then rain before noon. As the low moved toward NYC, heavy showers and thunderstorms formed and spread north across the region. Heavy rainfall from around 1 1/2 to just over 3 inches resulted in widespread flooding of low-lying and poor drainage areas. Numerous road closures caused by flooding was reported.

Here are selected rainfall amounts:

- o For Bergen County, from 1.67 inches at New Milford to 3.10 inches at Woodcliff Lake.
- o For Essex County, from 1.66 inches at Caldwell to 2.29 inches at Newark Airport, which set a new daily record.
- o For Hudson County, 2.26 inches fell at Harrison.
- o For Union County, from 1.50 inches at Cranford to 3.20 inches at Canoe Brook.

NJZ006

Hudson

29	0530EST	0	0					Coastal Flood
	0930EST							

As a high pressure system moved north of the area, a strong low pressure system developed off the Mid-Atlantic Coast.

As this low moved slowly east-northeast, it produced strong gusty northeast winds (38 knots with gusts to 41 knots at the Ambrose Bouy) , high seas (10 to 14 ft at the Ambrose Bouy), large sea swells (ESE from 6 to 10 feet), and minor to moderate coastal flooding. Route 7 in Kearny was closed due to tidal flooding along the Hackensack River.

NEW JERSEY, South and Northwest

NJZ001-007>010-012>026

Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Eastern Monmouth - Mercer - Salem - Gloucester - Camden - Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean

04	1000EST	0	0	0	0			Unseasonably Warm
09	1700EST							

A high pressure system over the Western Atlantic, in a position normally seen during the summer months, gave New Jersey six days of unseasonably warm weather during early January. A cold front tried to move down across the area on the 5th, but stalled around the extreme northern part of the state. A stronger cold front moved through the region on the 9th. The warmest day for inland locations was the 8th and for coastal areas the 4th. Many new high temperature records were set. The highest temperatures during this warm spell included 71 degrees in Millville (Cumberland County), 70 degrees in Mount Holly (Burlington County), Hightstown (Mercer County) and New Brunswick (Middlesex County), 69 degrees in Belle Mead (Somerset County), Glassboro (Gloucester County), Marlboro (Monmouth County) and Estell Manor (Atlantic County), 68 degrees in Long Valley (Morris County), Wertsville (Hunterdon County) and Somerdale (Camden County), 67 degrees in Cape May Courthouse (Cape May County), the Marina within Atlantic City, Toms River (Ocean County) and Stewartville (Warren County) and 66 degrees in Sussex (Sussex County) and the Atlantic City International Airport in Pomona.

Hunterdon County
Flemington

09	1400EST	0	0	0				Thunderstorm Wind
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A severe thunderstorm knocked down trees in Flemington and caused power outages in Lambertville. About 500 GPU customers lost power in both Hunterdon and Somerset Counties.

Somerset County
Woods Tavern

09	1416EST	0	1	0				Thunderstorm Wind
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A severe thunderstorm blew out the back wall of a storage warehouse in Hillsborough Township. The strong wind knocked a warehouse employee off the loading dock. The damaging winds also took down some power lines within the township in Neshanic Station. About 500 GPU customers lost power in both Hunterdon and Somerset Counties.

NJZ001-007>010

Sussex - Warren - Morris - Hunterdon - Somerset

15	0800EST	0	0	0	0			Ice Storm
16	0700EST							

NJZ015

Mercer

15	0800EST	0	0	0				Freezing Rain
	1800EST							

A large high pressure system that moved across lower Quebec Province helped set the stage for freezing rain and an ice storm

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW JERSEY, South and Northwest

across much of Eastern Pennsylvania. Cold air circulating around this high pressure system became trapped at the lowest layers of the atmosphere as a developing low pressure system along the southeast coast of the United States helped pump warmer air above the ground across the region. The northeast winds circulating around this low pressure system kept the cold air trapped as temperatures only stubbornly rose toward the freezing mark. Enough warm air made into Mercer County to change the freezing rain to rain by the evening of the 15th. Farther north, from northern Hunterdon and Somerset Counties through Sussex County precipitation fell heavier and longer as freezing rain with as much as 2/3rds of an inch of ice accruing on exposed surfaces in Sussex County. The heaviest freezing rain fell during the afternoon and early evening hours on the 15th. By midnight temperatures rose above the freezing mark in all locations of Northwest New Jersey, but remained around the freezing mark through the morning of the 16th in Sussex County.

In Somerset County, twenty-five accidents an hour were reported during a two hour span the afternoon of the 15th in the northern part of the county, from Interstate 78 northward. One woman was trapped in her vehicle for 40 minutes on Interstate 78. In Morris County, Interstate 287 was described as a parking lot. A jackknifed tractor trailer shut down the eastbound lanes of Interstate 80 for more than an hour during the afternoon of the 15th. In Hanover Township, 17 accidents occurred within 30 minutes. In Dover, 25 accidents occurred within an hour. Sections of New Jersey State Route 24 and U.S. Route 202 (called a death trap in Montville Township) were closed. In Rockaway Township, a school bus was involved in an accident, but none of the children on board were injured. Accidents also occurred in the other northwestern New Jersey Counties. In Warren County, in Lopatcong Township, westbound U.S. Route 22 was closed due to a serious accident. Downed tree limbs and power lines also caused blackouts to about 2,000 homes within the county, mainly around Phillipsburg and Oxford Township.

NJZ007>010-015	Warren - Morris - Hunterdon - Somerset - Mercer	23	0100EST 1200EST	0	0	0	Wintry Mix
NJZ001	Sussex	23	0200EST 2000EST	0	0	0	Winter Storm

A low pressure system, that moved into the Ohio Valley the morning of the 23rd, brought a wintry mix of snow, sleet and freezing rain to West Central and Northwest New Jersey and a more substantial winter storm to Sussex County. Prior to precipitation starting, a high pressure system built into northern New England on the 22nd and 23rd. This brought enough cold air to the area for precipitation to start as snow shortly after midnight on the 23rd. Due to the low's location, winds were from the east near the ground and this brought in warmer air from the Atlantic Ocean. In West Central New Jersey precipitation changed over quickly to freezing rain and sleet as accumulations were two inches or less. All precipitation was falling as plain rain by the mid-morning hours. Snow persisted longer farther north and accumulations were heavier. The change to sleet, freezing rain and rain took until the daylight hours in Northwest New Jersey (except Sussex County) and precipitation did not fall as plain rain in all areas until noon. In Sussex County, snow was falling in the northwest corner of the county well into the afternoon of the 23rd and the last vestige of freezing rain was not scoured completely until around 8 p.m. EST that evening. A prolonged period of freezing rain occurred elsewhere in the county during the day. Untreated roadways, especially in Sussex County were treacherous.

Snowfall accumulations prior to the changeover included 5 inches in High Point (Sussex County), 4 inches in Wantage (Sussex County), 3.7 inches in Montague (Sussex County), 2 inches at the Delaware Water Gap (Warren County) and Hightstown (Mercer County) and 1.5 inches in Rockaway Township (Morris County) and White House Station (Hunterdon County).

A series of weak secondary low pressure systems developed along the primary low's cold front and this prolonged the precipitation as rain through the evening of the 23rd.

Atlantic County Countywide	23	0900EST 2300EST	0	0	0	Heavy Rain
Burlington County Countywide	23	0900EST 2300EST	0	0	0	Heavy Rain
Camden County Countywide	23	0900EST 2300EST	0	0	0	Heavy Rain
Cape May County Countywide	23	0900EST 2300EST	0	0	0	Heavy Rain
Cumberland County Countywide	23	0900EST 2300EST	0	0	0	Heavy Rain

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
NEW JERSEY, South and Northwest									
Gloucester County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Hunterdon County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Mercer County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Middlesex County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Monmouth County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Morris County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Ocean County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Salem County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain
Somerset County									
Countywide	23	0900EST 2300EST			0	0	0	0	Heavy Rain

A low pressure system moved into the Ohio Valley the morning of the 23rd. A series of weak secondary low pressure systems developed along this primary low's cold front. Not only did this prolong the rain through the evening of the 23rd, but also helped it fall heavy at times especially during the afternoon on the 23rd. Storm totals averaged between 1.5 inches and 2.75 inches across most of the state. This caused the usual urban and poor drainage flooding in low-lying areas and caused some minor flooding along the Assunpink Creek and the Cooper, Millstone and Raritan Rivers. Please refer to the separate storm data entries about specific crests for these waterways. Storm totals included 2.79 inches in Iselin (Middlesex County), 2.77 inches at the McGuire AFB, 2.71 inches in Hazlet (Monmouth County), 2.52 inches in Red Bank (Monmouth County), 2.47 inches in Princeton (Mercer County), 2.46 inches in New Lisbon (Burlington County), 2.41 inches in Mount Holly (Burlington County), 2.31 inches in Cherry Hill (Camden County), 2.27 inches in Washington Crossing (Mercer County), 2.22 inches in Wertsville (Hunterdon County), 2.21 inches in Verga (Gloucester County), 2.18 inches in Seabrook (Cumberland County) and Chatham (Morris County), 2.16 inches at the Atlantic City International Airport, 2.14 inches in Belle Mead (Somerset County), 1.75 inches in Washington Township (Morris County) and 1.51 inches in Margate (Atlantic County).

NJZ015

Mercer

23 2000EST
24 0200EST

0 0 0 Flood

Heavy rain in the Assunpink Creek drainage basin that averaged between 2.0 and 2.5 inches helped push the creek above bankfull and cause some minor flooding. In Trenton, the Assunpink Creek was above its 7 foot flood stage from 8 p.m. EST on the 23rd until 2 a.m. EST on the 24th. It crested at 7.9 feet at 1115 p.m. EST on the 23rd. No serious damage was reported.

NJZ018

Camden

23 2100EST
2115EST

0 0 0 Flood

Heavy rain in the Cooper River drainage basin that averaged between 2.0 and 2.5 inches made the river briefly reach its flood stage of 2.8 feet in Haddonfield between 9 p.m. and 915 p.m. EST.

NJZ010

Somerset

24 0500EST
25 0200EST

0 0 0 Flood

Heavy rain in the Raritan River drainage basin that averaged between 2.0 and 2.5 inches helped push the main stem of the Raritan River and the Millstone River above bankfull and cause some minor flooding. The Millstone River at Blackwell Mills was above its 9 foot flood stage from 6 a.m. EST on the 24th through 2 a.m. EST on the 25th. It crested at 9.9 feet at 2 p.m. EST on the 24th. Along the main stem Raritan River, at Manville its 12 foot flood stage was exceeded from 5 a.m. until 11 a.m. EST on the 24th. It crested at 12.3 feet at 745 a.m. EST. Farther downstream in Bound Brook, the Raritan River was above its 26 foot flood stage from 9 a.m. through 3 p.m. EST on the 24th. It crested at 26.4 feet at 2 p.m. EST. No serious damage was reported.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
NEW JERSEY, South and Northwest									
Atlantic County									
Countywide	28	0100EST 1900EST			0	0			Heavy Rain
Cape May County									
Countywide	28	0100EST 1900EST			0	0			Heavy Rain
Cumberland County									
Countywide	28	0100EST 1900EST			0	0			Heavy Rain
NJZ020>022-025>026			Western Ocean - Cumberland - Western Atlantic - Eastern Atlantic - Eastern Ocean						
	28	0400EST 1800EST			0	0			Wind
NJZ023>024			Western Cape May - Eastern Cape May						
	28	0400EST 1800EST			0	0			High Wind (G56)
NJZ014-024>026			Eastern Monmouth - Eastern Cape May - Eastern Atlantic - Eastern Ocean						
	28	0600EST			0	0	15M	0	Coastal Flooding/Erosion
	29	1200EST							

An intense northeaster pounded the New Jersey Shore with tidal flooding, beach erosion, strong winds and rain on the 28th. Conditions were progressively worse farther south along the New Jersey shore. While Monmouth County escaped with some minor tidal flooding and light rain, Cape May County was rocked with moderate to locally severe flooding, heavy rain and wind gusts in excess of 60 mph. A limited state of emergency was declared in Avalon, North Wildwood and Stone Harbor. No serious injuries were reported. Preliminary damage estimates were fifteen million dollars, most of which occurred in Cape May County.

The low pressure system (Northeaster) was in the Gulf Coast States the morning of the 26th and moved to near Savannah, Georgia the morning of the 27th. The low intensified as it moved very slowly north along the Atlantic Coast during the day and the night of the 27th. At 7 a.m. EST on the 28th, the northeaster was located near Virginia Beach, Virginia and then moved eastnortheast during the day. By the next morning, it was about 450 miles east of the southern New Jersey coast.

The worst damage occurred during the morning high tide on the 28th in the southern part of the state as the heavy rain, strong and sometimes damaging winds coincided with the high tide. While heavy rain and strong winds persisted into the afternoon, the rain was lighter by the evening high tide and the winds were starting to shift to the north. Mainly minor tidal flooding occurred during the evening high tide on the 28th and the morning high tide on the 29th. High tides the morning of the 28th were 8.7 feet above mean low water at Stone Harbor (4.0 feet above normal) and 7.6 feet above mean low water at Atlantic City (2.7 feet above normal). Tidal departures farther north along the shore averaged around 2 feet. The highest wind gusts included 65 mph in Delaware Bay, 64 mph in North Wildwood and 56 mph in Waretown in Ocean County. Storm rainfall totals included 4.59 inches in Stone Harbor, 2.82 inches at Cape May County Courthouse, 2.52 inches in Absecon, 2.31 inches at the Atlantic City Marina and 1.55 inches in Dennis Township.

Cape May County suffered the worst damage with this northeaster. During the morning high tide, all access roads to the barrier islands were closed. Even the U.S. Route 9 Beesleys Point Bridge connecting Upper Township and Somers Point was closed. Avalon, North Wildwood and Stone Harbor declared limited states of emergency. The National Guard deployed troops in North Wildwood, Strathmere and Wildwood. The winds were strong enough to force the suspension of service on the Cape May-Lewes Ferry after gusts reached 65 mph on Delaware Bay. The damaging winds tore down trees and power lines. About 2,500 homes and businesses lost power. Dunes were breached in Strathmere, Sea Isle City and Cape May Point. In Sea Isle City, the dunes were washed away or destroyed along the first twelve blocks at the north end of the municipality. Whale Beach was hard hit. Waves broke onto Landis Avenue. Landis Avenue was closed between 4th and 8th streets because of sand and debris. The geotubes were exposed at the south end of Sea Isle City. Erosion caused the collapse of the Townsends Inlet Bridge that connects Sea Isle City with Avalon. About 420,000 cubic yards of sand were lost along the shore. In Strathmere, a breach at Commonwealth Avenue isolated the community (without any emergency services) during the day. About 100 yards of dunes were leveled and about five yards of beach were lost. At Cape May Point, the South Cape Meadows dunes were breached and caused flooding in Cape May Point and Lake Lilly. About 200,000 cubic yards of sand were removed by the surf. The flooding in the Wildwoods was described as the worst in six years. Damage in these communities alone was estimated at 4 million dollars. Sixteen West Wildwood residents were evacuated as waist high water flooded their homes. Two bulkheads snapped. One of the strongest reported wind gusts with the northeaster, 64 mph, occurred in North Wildwood. Shingles were blown off homes and signs knocked down. Several cars were also destroyed. The surf carved 8 foot drops along the shore. In Avalon, an estimated 100,000 cubic yards of sand were washed away. In Stone Harbor, the entire line of dune fencing was destroyed as were dozens of sets of beach steps. In Ocean City, seven cars became trapped in high water after driving around barricades. The pounding surf created two to five foot cliffs along the ocean and flattened the dunes.

In Atlantic County, both the White Horse (U.S. Route 30) and Black Horse (U.S. Route 40) Pikes in and out of Atlantic City were closed for more than four hours the morning of the 28th. The Eastbound lanes of the Black Horse Pike were closed again the

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW JERSEY, South and Northwest

evening of the 28th. Several other roads were closed due to bayside tidal flooding in Egg Harbor Township, Absecon, Atlantic City and Pleasantville. Sections of U.S. Route 9 in Linwood and County Road 152 in Somers Point and Longport were also closed. Along the oceanside, erosion took a heavy toll. In Margate 50 to 90 percent of the dunes vanished or suffered damage. In Brigantine about 1,000 feet of dune fencing was lost. In Ventnor, the ramp to the beach washed away and the ocean carved huge chunks out of the dunes. Atlantic City lost about 3 feet of its beach and vertical drops of 3 to 4 feet were created in Absecon and Brigantine.

In Ocean County, severe erosion at Ortley Beach between 6th and 7th avenues left about 6 to 12 condominiums vulnerable to future storms. Some street flooding was reported in bayside neighborhoods in Southern Ocean County including Long Beach Boulevard in Beach Haven. In Monmouth County, minor flooding was reported on the bay side of Sea Bright. The worst damage was caused by erosion as much of the sand was gone from the beach side of Sea Bright. In Sandy Hook, about 80 percent of the sand pumped into a critical zone was lost. The Gateway National Recreational Area's Sandy Hook Unit was closed for several hours because of debris and sand on the roadways.

NJZ007>010-015

Warren - Morris - Hunterdon - Somerset - Mercer

28 0500EST 0 0 0 Freezing Rain
1600EST

The northern fringe of the precipitation associated with an intense northeaster that moved eastnortheast off the Virginia coast affected most of West Central and Northwest New Jersey through the morning commute and most of the daylight hours on the 28th. Precipitation fell as a mixture of rain, freezing rain and sleet, but the intensity was very light and storm totals were only around one-tenth of an inch water equivalent. Untreated roadways were slippery, but no major accidents or traffic snarls were reported.

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 Warm

Courtesy of the warm spell at the start of the month and the lack of any prolonged invasions of arctic air the rest of the month, January 1998 was one of the ten warmest Januaries on record for the state of New Jersey. At the Atlantic City International Airport in Pomona, the January monthly mean temperature of 40.3 degrees was 9.4 degrees above normal and was the 4th warmest January on record. The heavy rain that fell across southeast New Jersey also made January 1998 (5.78 inches) the 7th wettest on record at Pomona. At the Atlantic City Marina, the monthly mean temperature of 43.1 degrees was 10.0 degrees above normal and also the 4th warmest January on record.

NEW MEXICO, Central and North

NONE REPORTED.

NEW MEXICO, South Central and Southwest

NONE REPORTED.

NEW MEXICO, Southeast

NONE REPORTED.

NEW YORK, Central

NYZ022-024-044>046-055>057

Stauben - Chemung - Cortland - Chenango - Otsego - Tioga - Broome - Delaware

06 1200EST 0 0 410K Flood
12 1800EST

The combination of rapid snowmelt from well above normal temperatures and periodic heavy rain propelled minor to moderate flooding along the Susquehanna and Chemung river basins in central New York.

Several consecutive days of temperatures in the upper 40s and 50s caused enough runoff from just snowmelt to bring the Tioughnioga river at Cortland out of its banks by early afternoon on the 6th. River levels at Cortland continued to slowly rise over the next several days; fueled by bouts of heavy rainfall. Minor flooding occurred along adjacent roadways just south of Cortland with basement flooding within the city itself. Water levels began to gradually recede on the 9th and dropped below flood stage on the evening of the 10th.

Along the main branch of the Susquehanna river, several points spilled over flood stage beginning on the evening of the 7th. These included Conklin, Waverly, Vestal, and Binghamton. Also, the Unadilla and Chenango rivers saw lowland flooding commence late in the evening on the 7th. Most points within the Susquehanna basin crested late on the 9th or early on the 10th some 3 to 6 feet above flood stage. Several trailer parks along the river between Vestal and Waverly took on water during this time frame. Also, road closures took place and minor first floor damage to a few homes was incurred in Conklin. The situation was exacerbated by 1 to 3 inches of rain which fell across the basin from the evening of the 7th through the afternoon hours of the 9th. Finally, water levels began receding during the day on the 10th. By early evening on the 12th, all river points along the main stem of

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, Central

the Susquehanna, the Chenango, and the Unadilla rivers had fallen below their respective flood stages.

Late in the afternoon on the 8th, the Cohocton river at Campbell and the Chemung river at Elmira exceeded their flood stages. Mainly lowland flooding occurred at these locations during the next 24 to 30 hours. A few immediately adjacent roadways and walkways were closed off due to high water conditions. Flood protection levees sheltered downtown Elmira from any significant effects. By late in the evening on the 9th, water levels had fallen back below flood stage for all points within the Chemung river basin.

Steuben County

Avoca

08	0030EST 0600EST	0	0				Flash Flood
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A band of heavy rain lifted northward from central Pennsylvania across the central southern tier and Finger Lakes regions of New York from the evening of the 7th into the pre-dawn hours of the 8th. An inch and a half to two inches of rain were common across northern sections of Steuben county.

Heavy rainfall combined with snowmelt runoff to bring Tenmile creek out of its banks shortly after midnight on the 8th in the Avoca vicinity. Minor lowland flooding was the main consequence, with a couple of adjacent local roadways taking on water for a short time. Water levels receded back within bankfull around sunrise.

Oneida County

Countywide

08	1200EST 2000EST	0	0	50K			Flash Flood
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Heavy rainfall affected Oneida county from the evening of the 7th into the early morning hours of the 8th. Generally, 2 to 3 inches of rain fell within this time period. Substantial runoff from this rain combined with snowmelt due to warm temperatures to bring many creeks and streams out of their banks.

In particular, problems arose from flooding of the Oriskany creek. Many homes and yards close to the creek took on water in the afternoon and early evening of the 8th. Fire departments from numerous townships were called on to pump water out of basements and first floor rooms. Several businesses in downtown Utica sustained water damage from poor drainage area flooding and water backed up tributaries of the Mohawk river. In addition, roads were flooded out and closed throughout the county as saturated ground surfaces could not hold rapidly accumulating runoff.

By mid evening, water levels in many sections of the county had receded and most roads were reopened.

Tioga County

Spencer

08	1700EST 2300EST	0	0				Flash Flood
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Another batch of heavy rain lifted northeastward from Pennsylvania and affected New York's southern tier from late afternoon on the 8th until late that evening. Locally, 0.5 to 0.75 inches of rain fell within a 3 to 4 hour period. This was enough to re-aggravate flooding problems.

In the town of Spencer, the Owl creek spilled over its banks late in the afternoon with nearly a foot of water covering some adjacent roadways. These roads were reopened late in the evening. Also, route 96 in Candor was closed due to high water conditions for a time in the evening. By midnight, all small streams and creeks were back within their banks.

Broome County

**Choconut Center to
Castle Creek**

09	1135EST 1142EST	0	0				Hail (1.00)
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A fast moving squall line with embedded thunderstorms developed along a cold front as it crossed central New York during the midday hours. A thunderstorm cell became severe across northern Broome county and produced large hail. A swath of hail ranging from pea sized to dime sized was reported in an area from Johnson City northward to Choconut Center. A short time later, hail to one inch in diameter was observed by a skywarn spotter in Castle Creek. Hail even covered the ground for a time in this vicinity.

Chenango County

**Preston to
Sherburne**

09	1209EST 1245EST	0	0				Hail (1.00)
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A line of thunderstorms that produced large hail over northern Broome county continued to intensify as it plowed eastward across Chenango county. Numerous reports of hail were received across the county as the squall line moved through. Hail to one inch in diameter fell in the towns of Preston and Greene in the southwestern portion of the county. Similarly sized hail was also observed by skywarn spotters and law enforcement officials further east in a corridor from Norwich up to Sherburne.

Otsego County

Exeter Center

09	1318EST	0	0				Hail (1.50)
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A line of severe thunderstorms continued to push rapidly eastward into Otsego county, maintaining its intensity. A skywarn spotter reported golf ball sized hail as the storm passed Exeter Center.

Once the storms moved into the eastern half of the county, their intensity began to weaken.

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, Central

Otsego County Worcester

09	1430EST 1800EST				0	0			Flash Flood
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Showers and locally strong to severe thunderstorms dumped as much as three-quarters of an inch to an inch of rain in a short period of time across Otsego county. Since soil conditions were already saturated, isolated flash flooding resulted.

The Schevenus creek near Worcester overflowed its banks early that afternoon with water covering adjacent roadways. By early evening, the creek had receded back within its banks.

NYZ009-037

Northern Oneida - Southern Oneida

13	2100EST				0	0			Heavy Snow
14	0700EST								

A band of lake effect snow developed late in the evening on the 13th. As cold westerly winds persisted through the night and into the morning of the 14th, locally heavy accumulations occurred in a narrow slot from Florence southeastward to Stokes Hill and Holland Patent. Holland Patent picked up 10.5 inches of snow during this period while Stokes Hill and Florence received 6 to 8 inches of fresh powder.

NYZ009-037

Northern Oneida - Southern Oneida

15	2100EST				0	0			Heavy Snow
16	1200EST								

A storm system intensified as it moved northeastward from the Carolina coast on the evening of the 15th into the early morning hours of the 16th. This system dumped a mixed bag of wintery precipitation over much of central New York.

Across Oneida county, precipitation fell almost entirely in the form of snow as cold air was deeper. Several hours of heavy snow fell in this area. By the time snow began to wind down early in the afternoon on the 16th, accumulations of 6 to 9 inches were common.

NYZ046-057-062

Otsego - Delaware - Sullivan

15	2100EST				0	0			Ice Storm
16	1200EST								

A storm system intensified as it moved northeastward from the Carolina coast on the evening of the 15th into the early morning hours of the 16th. This system dumped a mixed bag of wintery precipitation over much of central New York.

Across the western Catskills, significant icing occurred as an elevated warm layer persisted for most of the event. Ice accumulations of up to a quarter of an inch on exposed surfaces were observed across the higher terrain. Scattered power outages resulted from the weight of the ice on power lines. Freezing rain and sleet changed back to snow for a brief time before ending around midday on the 16th.

NYZ009-018-036>037

Northern Oneida - Onondaga - Madison - Southern Oneida

23	0200EST 1300EST				0	0			Heavy Snow
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A complex storm tracked northeastward from the lower Mississippi Valley on the evening of the 22nd to a position off the New England coast by late on the 23rd. Significant Atlantic moisture wrapping into central New York produced a period of snow, sleet, and freezing rain.

Heaviest accumulations of snow occurred over the higher terrain of Onondaga, Madison, and Oneida counties. Snow fell at the rate of 1 to 2 inches per hour for a time during the mid and late morning hours of the 23rd in these areas. Some final snowfall tallies included: 8.5 inches just outside of Rome in Oneida county, 7.5 inches in both Forestport and Boonville in Oneida county, and 6 inches in Marcellus in Onondaga county.

NEW YORK, Coastal

NYZ068

Putnam

09	0700EST				0	2			Fog
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Widespread dense fog reduced visibilities to near 0 and caused a traffic accident that resulted in 2 injuries. According to Kent Police, the fog was so thick that the motorists could not see the pavement markings while they were making turns.

Orange County Warwick

09	1450EST				0	0			Thunderstorm Wind (G50)
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Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, Coastal

Westchester County

Yonkers	09	1545EST			0	0			Thunderstorm Wind (G50)
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A line of showers and thunderstorms developed in a moist unstable airmass ahead of an approaching cold front.

As thunderstorms moved northeast at around 40 mph, they produced damaging winds, small hail, heavy downpours, and lightning. Tree damage was reported on West Ridge Road in Warwick and also in Yonkers.

NYZ067>070

Orange - Putnam - Rockland - Northern Westchester

15		1700EST			0	0			Ice Storm
16		0800EST							

As a strong high pressure system moved slowly east over Southeast Canada, a low pressure system developed off the Carolina Coast and moved northeast. The low passed east of the area during Friday morning, January 16th.

The high provided the region with temperatures at or below freezing along the surface and the low provided the moisture needed for an ice storm. Generally, from 1/2 to 1 inch of mainly liquid precipitation fell. Precipitation developed as light snow around 10:00 am. It changed to freezing rain during the early afternoon. Icing became widespread and significant by 5:00 pm.

As ice accumulated on roads, there was widespread and significant traffic accidents that led to numerous injuries across the area. Several parts of roads were closed due to severe icing. In Orange County, Stewart Airport was closed because of severe icing from 6:30 pm on January 15th through 4:30 am on January 16th. Additionally, at least 1/4 inch of ice accumulated on trees and power lines. The hardest hit areas were in Orange County where several communities were without power due to tree limbs collapsing on power lines from the weight of the ice.

Bronx County Countywide

23		1730EST			0	0			Urban/Sml Stream Fld
24		0500EST							

Kings County Countywide

23		1730EST			0	0			Urban/Sml Stream Fld
24		0500EST							

New York County Countywide

23		1730EST			0	0			Urban/Sml Stream Fld
24		0500EST							

Queens County Countywide

23		1730EST			0	0			Urban/Sml Stream Fld
24		0500EST							

Richmond County Countywide

23		1730EST			0	0			Urban/Sml Stream Fld
24		0500EST							

Nassau County Countywide

23		1800EST			0	0			Urban/Sml Stream Fld
24		0530EST							

Suffolk County Countywide

23		1830EST			0	0			Urban/Sml Stream Fld
24		0630EST							

With a weak low pressure system moving east across the Ohio Valley and a strong High sliding slowly southeast over Maine, a strong east wind flow developed across the region early Friday morning, January 23rd. As the High moved southeast, the low over Ohio weakened as another low formed over the Southeast U.S. This second low rapidly intensified as it moved northeast, passing over New York City (NYC) late Friday evening. With abundant moisture available, heavy precipitation, mainly heavy rain along with strong gusty winds occurred from Friday afternoon through early Saturday morning.

Precipitation began in the form of snow flurries from 4 am to 7 am. It quickly changed to sleet then rain before noon. As the low moved toward NYC, heavy showers and thunderstorms formed and spread north across the region. Heavy rainfall from 2 to just over 4 inches resulted in widespread flooding of low-lying and poor drainage areas.

Here are selected rainfall amounts:

- o For NYC, from 2.62 inches at LaGuardia Airport to 2.88 inches in Brooklyn. At Central Park, 2.64 inches fell, which set a new daily record.

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, Coastal

- o For Nassau County, from 2.67 inches at Wantagh-Cedar Creek to 4.06 inches at Mineola.
- o For Suffolk County, from 2.85 inches at Middle Island to 4.07 inches at Hauppauge.

NYZ077-081

Nassau - Southeast Suffolk
29 0530EST
1000EST

0 0 60K 60K Coastal Flood

As a high pressure system moved north of the area, a strong low pressure system developed off the Mid-Atlantic Coast.

As this low moved slowly east-northeast, it produced strong gusty northeast winds (35 knots with gusts to 43 knots at Bouy 44025) , high seas (12 to 16 ft at Bouy 44025), large sea swells (ESE from 8 to 12 feet), heavy surf, and minor to moderate beach erosion and coastal flooding.

Local emergency managers from Freeport (Nassau County) reported moderate coastal flooding during the morning high tide. Some cars were towed to minimize damage. Suffolk County Emergency Managers reported moderate coastal flooding in Bridgehampton, where water was over Dune Road and people had to evacuate one house. The parking lot at Southampton's Scott Cameron Beach in Mecox was under water. Heavy surf crashed through into the parking lot.

NEW YORK, East

Herkimer County
Countywide

07 2000EST
10 0500EST
0 0 60K Flood

From January 7 to January 10, mild weather along with significant rain and snowmelt resulted in small stream flooding across Herkimer County. There were road closures throughout the county due to ponding of water and small stream flooding. Spencer Creek in the southern portion of the county spilled over its banks.

Hamilton County
Countywide

08 0200EST
10 0500EST
0 0 100K Flood

From January 8 to January 10, mild weather along with significant rain and snowmelt resulted in small stream flooding across Hamilton County. There were road closures throughout the county due to ponding of water and small stream flooding. Some specific road closures and washouts included: Big Brook Road at Indian Lake, North Point Road at Long Lake, Bear Creek Road, Hope Falls Road and Cherry Beach at Lake Pleasant.

Montgomery County
Countywide

08 0200EST
09 2200EST
0 0 250K Flood

On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across Montgomery County. Severe flood damage was incurred especially due to the Chuctanunda and Cayadutta Creeks. At Amsterdam, the Chuctanunda Creek caused the bank to collapse at the Noteworthy Company which resulted in the evacuation of ninety people. After the bank collapsed the creek was ponding at the structure and this resulted in basement flooding and structural damage. There were many other road closures throughout the county due to ponding of water and small stream flooding including the creek at Rockton.

Washington County
Countywide

08 0200EST
10 0500EST
0 0 200K Flood

From January 8 through January 10, mild weather along with significant rain and snowmelt resulted in small stream flooding across Washington County. The Mettawee River at Granville, had what is believed to be the worst flooding ever known there. During the afternoon of January 8, the river crested at 10.68 feet which was more than three feet over flood stage. There was considerable flooding of fields along the Mettawee River. Approximately twenty road closures occurred throughout the county due to flooding and washouts with the most numerous closures between Greenwich and Whitehall.

NYZ033

Hamilton

08 0300EST
10 0800EST
0 0 50K Flood

From January 8 to January 10, the Sacandaga River in Hamilton County flooded, due to a combination of significant rain and snowmelt. The river crested approximately two feet above flood stage at Hope during the early afternoon of January 8. Flooding occurred along State Route 30 in the Hope area and at Wells several homes were evacuated.

NYZ032

Northern Herkimer

08 0400EST
10 1300EST
0 0 20K Flood

From January 8 through January 10, the Moose River flooded in northern Herkimer County from the Old Forge area to McKeever,

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, East

due to a combination of significant rain and snowmelt. The river crested 2.5 feet over flood stage and came within 2.54 feet of its flood of record. The crest occurred during the early evening hours of January 8. The river flooded the road next to the gage house at McKeever.

Fulton County Countywide

08	0500EST								
09	2200EST			0	0	150K		Flood	

On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across Fulton County. There were many road closures throughout the county due to ponding of water and small stream flooding. The Cayadutta Creek at Johnstown and Gloversville, flooded many streets.

Warren County Countywide

08	0500EST								
10	0500EST			0	0	100K		Flood	

From January 8 to January 10, mild weather along with significant rain and snowmelt resulted in small stream flooding across Warren County. Approximately 12 roads were closed due to flooding including portions of route 9N.

NYZ038-040-048>050-052 Southern Herkimer - Montgomery - Western Schenectady - Eastern Schenectady - Southern Saratoga - Eastern Albany

08	0600EST								
11	0800EST			0	0	150K		Flood	

From January 8 to January 11, the Mohawk River flooded from the eastern Mohawk Valley to where the river flows into the Hudson River. The river crested 1.5 feet above flood stage at Little Falls in southern Herkimer County, 1.6 feet above flood stage at Schenectady and .4 feet above flood stage at Cohoes in Albany County. Moderate flooding occurred in southern Herkimer and Montgomery Counties. There, roads and houses along the Mohawk River were affected by the flood waters and the water was high enough to reach parts of State Highway 5S. In Schenectady, the Schenectady County Community College parking lot was flooded with several feet of water. The Stockade region of Schenectady was flooded and forced the closure of Ingersoll Avenue, North Street, Front Street and North Ferry Street. No evacuations were required but many homes had to be pumped out.

NYZ033-041>043-050-052>053-059>060 Hamilton - Northern Saratoga - Warren - Washington - Southern Saratoga - Eastern Albany - Western Rensselaer - Eastern Greene - Western Columbia

08	0600EST								
12	1200EST			0	0	745K		Flood	

From January 8 to January 12, the Hudson River flooded from its headwaters to where it crosses into Greene and Columbia Counties, due to a combination of significant rain and snowmelt. In Hamilton and Warren Counties, the river rose to heights that came close to the flood of record. Flood damage in this area was kept to a minimum due to its flow through undeveloped areas and vacation property which was secured for the winter. At North Creek in northern Warren County, the crest fell 0.6 feet below the flood of record. At Lake Luzerne, six homes were evacuated along the Hudson River. In Washington County, River Road was closed in the Town of Greenwich and roads and backyards were flooded in the Village of Fort Edward. In the Village of Waterford in southern Saratoga County, a State of Emergency was declared during the evening on January 8. One hundred and twenty five people were evacuated from their homes and electrical power was shut off to the flooded area. Seventy people were temporarily housed in shelters and approximately 150 homes sustained flood damage. In the Village of Stillwater in southern Saratoga County, a State of Emergency was also declared. Several feet of water flooded Wrights Loop, Ferry Lane and River Road. The rising water forced the evacuation of 60 people. At the Town of Saratoga which includes Schuylerville, 15 to 20 homes were evacuated near the Hudson River. At the Town of Moreau in northern Saratoga County, houses along Dyke and Nolan Roads were surrounded by rising water Friday night January 9 and evacuated by boats. In Albany County, the Hudson River forced the closure of entrance ramps to Interstate 787 and a tunnel was flooded in downtown Albany. In Rensselaer County, flooding occurred along Riverfront Park behind City Hall and in low lying areas especially in Lansingburgh. Approximately 34 homes in the City of Troy sustained flood damage. Tidal flooding occurred along the Hudson River in southern Albany, southern Rensselaer, Greene and Columbia Counties. Portions of route 9J at Stuyvesant in northern Columbia County were closed due to the tidal flooding.

Schoharie County Countywide

08	0700EST								
09	2200EST			0	0	50K		Flood	

On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across Schoharie County. Several roads throughout the county were closed due to flooding.

Saratoga County Countywide

08	0800EST								
10	0500EST			0	0	125K		Flood	

From January 8 through January 10, mild weather along with significant rain and snowmelt resulted in small stream flooding across Saratoga County. Many roads were closed throughout the county due to flooding and washouts. In the Towns of Milton and Malta, the Kayaderosseras, Mourningkill and Gordon Creeks flooded onto roadways. The Kayaderosseras Creek flooded parts of State Route 9 and the Creek-n-Pines trailer park. A two thousand foot section of Wilton Mountain Road was washed out. On Thursday January 8, State Route 9 in the Town of Wilton was flooded from Ballard Road to Ernst Road. Roads were also closed in the Towns of Northumberland and Moreau and in Clifton Park.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
NEW YORK, East									
NYZ040-047>048		Montgomery - Schoharie - Western Schenectady							
	08	0800EST			0	0			Flood
	10	0600EST							
	From January 8 to January 10, the Schoharie Creek flooded in Montgomery, Schoharie and western Schenectady Counties, due to a combination of significant rain and snowmelt. The flooding was minor with only fields and a couple of roads impacted by the flood waters. Flooding was most significant in Montgomery County. The river crested just over a half foot above flood stage at Burtonsville during the early morning hours of January 9.								
NYZ065		Western Dutchess							
	08	0930EST			0	0	1K		Strong Wind
		1130EST							
	Strong winds ahead of an intense low pressure system produced wind gusts around 40 miles an hour in parts of Dutchess County. At Wappingers Falls, gusting winds downed tree limbs and flipped a metal storage shed. The shed was destroyed.								
Albany County Countywide									
	08	1200EST			0	0	40K		Flood
	09	2200EST							
	On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across Albany County. Roads were flooded across parts of the county with several road closures. The Normans Kill in the Town of Guilderland flooded a couple of roads.								
Ulster County Countywide									
	08	1400EST			0	0	25K		Flood
	09	2200EST							
	On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across Ulster County. Small streams flooded roadways throughout the county, with the most significant flooding occurring in the New Paltz and Eddyville area.								
NYZ043		Washington							
	08	1400EST			0	0	70K		Flood
	10	1200EST							
	From January 8 to January 10, the Battenkill in Washington County flooded, due to a combination of significant rain and snowmelt. The river crested nearly one foot above flood stage at Battenville. The main impact from the flood waters was extensive flooding of fields, especially in the Shushan area and flooded roadways. State road 29 was flooded in several locations.								
Rensselaer County Countywide									
	08	2100EST			0	0	30K		Flood
	09	2100EST							
	On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across parts of Rensselaer County. Several roads were flooded throughout the county. The Walloomsac River flooded from the Vermont border to where it flows into the Hoosic River.								
NYZ038>040		Southern Herkimer - Fulton - Montgomery							
	08	2100EST			0	0	30K		Flood
	10	1600EST							
	From January 8 to January 10, the East Canada Creek flooded in southern Herkimer, Fulton and Montgomery Counties, due to a combination of significant rain and snowmelt. The creek experienced a 80 year peak flow. Roads and several residents were impacted by the flood waters in Dolgeville. Most of the flooding was confined to fields and roadways along the creek.								
NYZ043-053>054		Washington - Western Rensselaer - Eastern Rensselaer							
	08	2200EST			0	0	30K		Flood
	10	0900EST							
	From January 8 to January 10, the Hoosic River in northern Rensselaer and southern Washington Counties flooded, due to a combination of significant rain and snowmelt. The river crested approximately one foot over flood stage at Eagle Bridge during the morning of January 9. Flooding occurred along River Road in Washington County and along State Highways 7 and 22 in Rensselaer County. County Highway 103 was also flooded in Rensselaer County from route 67 to the covered bridge. The Hoosic River spilled into the Buskirk Fire House and Circuit Materials Plant in Rensselaer County.								
NYZ042		Warren							
	09	1100EST			0	0	25K		Flood
	13	1400EST							
	From January 9 through January 13, the Schroon River in Warren County flooded, due to a combination of significant rain and snowmelt. The river crested 1.7 feet above flood stage at Riverbank. The flooding was mainly confined to fields and roadways adjacent to the river.								
Herkimer County Little Falls									
	09	1400EST			0	0			Hail (0.88)
	During the afternoon of January 9, a cold front produced showers and thunderstorms across eastern New York. At Little Falls in Herkimer County, a severe thunderstorm dumped nickel size hail.								

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, East

NYZ038

Southern Herkimer

09	2100EST								
11	1200EST			0	0	25K			Flood

From January 9 to January 11, the West Canada Creek in southern Herkimer County flooded, due to a combination of significant rain and snowmelt. The resulting runoff caused water to spill over the Hinkley Dam and initiate flooding along the West Canada Creek. The flood waters impacted recreational areas, trailer parks and several roads including parts of route 28.

NYZ032>033-039>043-047>053-058>061-063>066

Northern Herkimer - Hamilton - Fulton - Montgomery - Northern Saratoga - Warren - Washington - Schoharie - Western Schenectady - Eastern Schenectady - Southern Saratoga - Western Albany - Eastern Albany - Western Rensselaer - Western Greene - Eastern Greene - Western Columbia - Eastern Columbia - Western Ulster - Eastern Ulster - Western Dutchess - Eastern Dutchess

15	1200EST								
16	1200EST			0	0	80K			Winter Storm

On January 15 and 16, a winter storm moved from the southeast Atlantic coast north to the southern New Jersey coast and then out to sea. This storm dumped heavy snow across the southern Adirondacks and upper Hudson Valley. From the Mohawk Valley south to the mid Hudson Valley the precipitation fell as a mix of snow, sleet and freezing rain. In the eastern Mohawk Valley, Capital District, Catskills and northern Taconics, three to six inches of snow fell with significant accumulations of sleet and freezing rain. Across much of Ulster and Dutchess Counties, a light accumulation of snow occurred followed by damaging accumulations of freezing rain and sleet. In this area the freezing rain downed trees and power lines which resulted in power outages to approximately 6,000 customers. Power outages were most widespread across northern Dutchess County and in the Towns of Ulster, Woodstock and Saugerties in Ulster County. Some specific snowfall totals included: 8 inches at Stillwater Reservoir in northern Herkimer County, 7 inches at Indian Lake in Hamilton County, 7 inches at Bolton Landing in Warren County and 6 inches at Whitehall in Washington County.

NYZ032>033-039-041>043-048>054-058>059-063>064

Northern Herkimer - Hamilton - Fulton - Northern Saratoga - Warren - Washington - Western Schenectady - Eastern Schenectady - Southern Saratoga - Western Albany - Eastern Albany - Western Rensselaer - Eastern Rensselaer - Western Greene - Eastern Greene - Western Ulster - Eastern Ulster

23	0300EST								
24	0100EST			0	0	6K			Winter Storm

On January 23 and 24, a winter storm tracked from the North Carolina coast to Cape Cod. This system produced heavy snow across the southern Adirondacks where a foot of snow fell. In the upper Hudson Valley, eastern Mohawk Valley, Capital District, eastern Catskills and parts of the mid Hudson Valley, the snow changed to sleet and heavy freezing rain after several inches had fallen. South of the Capital District the precipitation changed to rain before ending. There were numerous traffic accidents but only minor injuries. In eastern Washington County, power outages occurred from Granville south to the Town of Jackson. The outages were due to tree limbs falling on power lines. Some specific snowfall totals included: 12 inches at Indian Lake and 11 inches at Piseco Lake in Hamilton County, 9 inches at Conklingville in Saratoga County, 8 inches at East Jewett in Greene County, 6 inches at Alcove Reservoir in Albany County, 7 inches at Gloversville in Fulton County, 7 inches at Phoenecia in Ulster County and 6 inches at Whitehall in Washington County.

NEW YORK, North

NYZ026>028

Northern St. Lawrence - Northern Franklin - Northeast Clinton

04	2000EST								
06	0900EST			0	0	125K			Freezing Rain

A cold front moved south out of Canada Sunday (January 4) and Monday (January 5). This front resulted in a low level flow of cold air across extreme northern New York. Moist air riding over this front resulted in freezing rain across the area Sunday night and Monday with freezing drizzle Monday night into Tuesday morning. Power failures due to down trees and power lines resulted. Ice accumulations were generally less than 1/2 inch.

NYZ026>028-031-035

Northern St. Lawrence - Northern Franklin - Northeast Clinton - Southwest Clinton - Eastern Essex

06	2100EST								
09	1200EST			1	0	11M			Ice Storm

A storm system moved from the Tennessee Valley on Wednesday (January 7) and Thursday (January 8) into New England thereafter. A cold front across New England and New York associated with an Arctic High Pressure system across Canada resulted in a flow of low level cold air into northern New York. Warm moist air riding over this low level cold air resulted in a major ice storm across northern New York. During Friday afternoon (January 9), a few thunderstorms with gusty winds and small hail moved across the Champlain Valley of northern New York.

Ice accumulations during this event were generally between 1 and 3 inches with the greatest amounts along the New York and Canadian border regions. The impact on the region was dramatic. The ice accumulations resulted in damage to tens of thousands of trees. Trees and power lines snapped due to the weight of the ice with 100 thousand reported without power for several days. Damage to the utility companies ran in the millions. The economic impact ranged from stores closed for several days, banks closed with ATMs not working due to lack of power. With no electricity, the agricultural community was unable to milk cows with loss of income and damage to cows. Automobile and air travel was dramatically impacted with Massena International Airport closed for a period. Many roads and bridges were closed due to ice and fallen trees. There were numerous traffic accidents. Several radio stations were knocked off the air.

Storm Data and Unusual Weather Phenomena

January 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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NEW YORK, North

There were five INDIRECT deaths due to carbon monoxide poisoning while improperly using generators. One DIRECT death occurred when an individual slipped on accumulated ice and received head injuries. The National Guard assisted with cleanup operations after the storm. Falling tree limbs and other debris was a significant hazard during and following the storm. F87PH

NYZ029>030-034

Southern St. Lawrence - Southern Franklin - Western Essex

06	2100EST					0	0	240K	Freezing Rain
09	1200EST								

A storm system moved from the Tennessee Valley on Wednesday (January 7) and Thursday (January 8) into New England thereafter. A cold front across New England and New York associated with an Arctic High Pressure system across Canada resulted in a flow of low level cold air into northern New York. Warm moist air riding over this low level cold air resulted in icing across northern New York.

Ice accumulations during this event were generally less than 1/2 inch with the most significant icing in western portions of Essex county. The ice accumulations resulted in damage to many trees especially in western Essex county with power outages reported. Automobile travel was negatively impacted with several roads closed due to ice and fallen trees. There were numerous traffic accidents. The National Guard assisted with cleanup operations after the storm.

Clinton County Countywide

08	1300EST					0	0	5K	Flood
	2100EST								

Essex County Countywide

08	1300EST					0	0	5K	Flood
	2100EST								

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area was 3 to 5 inches with flooding on the Ausable and Saranac Rivers among other rivers.

St. Lawrence County South Portion

09	1600EST					0	0	5K	Flood
13	0800EST								

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area was 3 to 6 inches. The Raquette and Oswegatchie Rivers resulted in extensive field flooding and some road flooding before gradually receding over an extended period of time.

NYZ027>031-034>035

Northern Franklin - Northeast Clinton - Southern St. Lawrence - Southern Franklin - Southwest Clinton - Western Essex - Eastern Essex

15	1000EST					0	0	60K	Winter Storm
16	1200EST								

An area of low pressure over the southeastern United States on Thursday, January 15th moved northeast to a position along the mid-atlantic coast late Thursday night (January 15) and moved to a location east of New England later Friday afternoon (January 16).

Heavy snow fell across the region with a few reports of snow accumulations as follows:

Peru	(Clinton county).....14.6 inches
Ellenburg Depot Eden	(Clinton county).....9.0 inches
Lake Placid	(Essex county).....11.0 inches
Newcomb	(Essex county).....8.0 inches
Malone	(Franklin county).....14.0 inches
Tupper Lake	(Franklin county).....11.0 inches
Edwards	(St Lawrence county).....7.4 inches

NYZ026

Northern St. Lawrence

15	1000EST					0	0	5K	Light Snow
16	1200EST								

An area of low pressure over the southeastern United States on Thursday, January 15th moved northeast to a position along the mid-atlantic coast late Thursday night and moved to a location east of New England later Friday afternoon, January 16th. Generally between 3 and 6 inches of snow fell across the area.

NYZ028-031-034>035

Northeast Clinton - Southwest Clinton - Western Essex - Eastern Essex

23	0900EST					0	0	30K	Winter Storm
24	0100EST								

An area of low pressure over the Gulf of Mexico Thursday (January 22) moved to the Ohio Valley Friday morning (January 23) and weakened. A secondary storm developed in the mid-atlantic coastal region Friday (January 23) and moved northeast. The snow

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, North

mixed with sleet and freezing rain Friday night.

A few snow accumulations were as follows:

Newcomb NY (Essex county).....8.2 inches
 Peru NY (Clinton county).....6.9 inches.

NYZ026>027-029>030 Northern St. Lawrence - Northern Franklin - Southern St. Lawrence - Southern Franklin
23 0900EST 0 0 20K Light Snow
24 0100EST

An area of low pressure over the Gulf of Mexico Thursday (January 22) moved to the Ohio Valley Friday morning (January 23) and weakened. A secondary storm developed in the mid-atlantic coastal region Friday (January 23) and moved northeast. The snow mixed with sleet and freezing rain Friday night.

A few snow accumulations were as follows:

Gouverneur NY (St Lawrence county).....4.0 inches
 Malone NY (Franklin county).....4.5 inches.

NEW YORK, West

NYZ007>008 Jefferson - Lewis
08 0300EST 0 0 12M Ice Storm
0500EST

A devastating ice storm paralyzed Jefferson and parts of Lewis counties. The freezing rain accumulated ice of an inch to an inch and a half thick. The ice coated trees, power lines, and poles and sent them crashing to the ground. Hundreds of thousands of customers were without power for several days to over a week. In Jefferson county, 75% of the county was without power. The county was declared a state and federal disaster area.

NYZ010-010-010-010-010>011 Erie - Genesee
08 0800EST 0 0 105K Flood
11 0300EST

A general two and a half to three inches of rain fell in a two day period. The rain fell onto bare, already saturated ground. The rapid runoff caused Buffalo area creeks and streams to crest quickly. Levels on Buffalo, Cazenovia, Ellicott and Cayuga creeks crested about a foot or two above flood stage, but not significant damage was reported. Tonawanda creek crested over four feet above flood stage, the highest since 1985. One hundred homes had to be evacuated in Batavia.

NYZ003-003-003-012>013 Monroe - Wyoming - Livingston
08 0800EST 0 0 400K Flood
11 1200EST

A general three to four inches of rain fell on bare, saturated ground across the Genesee basin. The Genesee river crested at 36.4 feet at Avon (highest since 1972) and at 16.8 feet in Rochester (highest since 1984). The Black Creek crested at Churchville at 9.2 feet (highest since 1960). At Garbutt, the Oatka Creek crested at 8.7 feet (a record flood).

NYZ021 Allegany
08 1000EST 0 0 15K Flood
11 2000EST

A general two to three inch rain fell on saturated ground causing rapid rises in the Allegheny River. The river rose about flood stage along the entire length from Portville through Olean and Salamanca.

Erie County Lancaster
08 1100EST 0 0 75K Flash Flood
1545EST

Cattaraugus County Conewango
08 1200EST 0 0 10K Flash Flood
1545EST

Chautauqua County Frewsburg
08 1200EST 0 0 15K Flash Flood
1545EST

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
NEW YORK, West									
Genesee County									
Le Roy	08	1200EST 1545EST			0	0	10K		Flash Flood
Oswego County									
Hannibal	08	1300EST 1545EST			0	0	10K		Flash Flood
Wyoming County									
Attica	08	1300EST 1545EST			0	0	10K		Flash Flood
Allegany County									
Centerville	08	1400EST 1545EST			0	0	10K		Flash Flood
Cayuga County									
Fair Haven	08	1400EST 1545EST			0	0	25K		Flash Flood
Livingston County									
Caledonia	08 09	1400EST 1545EST			0	0	25K		Flash Flood
Monroe County									
Webster	08	1400EST 1545EST			0	0	100K		Flash Flood
Orleans County									
Albion	08	1400EST 1545EST			0	0	15K		Flash Flood
Wayne County									
Palmyra	08 09	1400EST 1545EST			0	0	100K		Flash Flood
Allegany County									
Centerville	08	1545EST 2145EST			0	0	1K		Flash Flood
Cattaraugus County									
Conewango	08	1545EST 2145EST			0	0	1K		Flash Flood
Cayuga County									
Fair Haven	08	1545EST 2150EST			0	0	1K		Flash Flood
Chautauqua County									
Frewsburg	08	1545EST 2145EST			0	0	1K		Flash Flood
Erie County									
Lancaster	08	1545EST 2145EST			0	0	1K		Flash Flood
Genesee County									
Le Roy	08	1545EST 2150EST			0	0	1K		Flash Flood
Livingston County									
Caledonia	08	1545EST 2150EST			0	0	1K		Flash Flood
Monroe County									
Webster	08	1545EST 2150EST			0	0	1K		Flash Flood
Orleans County									
Albion	08	1545EST 2150EST			0	0	1K		Flash Flood
Oswego County									
Hannibal	08	1545EST 2150EST			0	0	1K		Flash Flood
Wayne County									
Palmyra	08	1545EST 2150EST			0	0	1K		Flash Flood

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
NEW YORK, West									
Wyoming County									
Attica	08	1545EST 2150EST			0	0	1K		Flash Flood
Jefferson County									
Watertown	08	1600EST 1645EST			0	0	20K		Flash Flood
Lewis County									
Lowville	08	1600EST 1645EST			0	0	15K		Flash Flood
Niagara County									
Niagara Falls	08	1600EST 1645EST			0	0	1M		Flash Flood
Ontario County									
South Bristol	08 09	1600EST 1645EST			0	0	15K		Flash Flood
Jefferson County									
Watertown	08	1645EST 2150EST			0	0	1K		Flash Flood
Lewis County									
Lowville	08	1645EST 2150EST			0	0	1K		Flash Flood
Niagara County									
Niagara Falls	08	1645EST 2145EST			0	0	1K		Flash Flood
Ontario County									
South Bristol	08	1645EST 2150EST			0	0	1K		Flash Flood
Cayuga County									
Fair Haven	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Genesee County									
Le Roy	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Jefferson County									
Watertown	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Lewis County									
Lowville	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Livingston County									
Caledonia	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Monroe County									
Webster	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Ontario County									
South Bristol	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Orleans County									
Albion	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Oswego County									
Hannibal	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Wayne County									
Palmyra	08 09	2150EST 0300EST			0	0	1K		Flash Flood
Wyoming County									
Attica	08 09	2150EST 0300EST			0	0	1K		Flash Flood

Storm Data and Unusual Weather Phenomena

January 1998

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

NEW YORK, West

Western and central New York was drenched with unprecedented January rainfalls over a 36 hour period. All of the region received between two and four inches of rain...rain which fell on bare, saturated ground. The rapid runoff produced urban flooding as well as flooding of many small streams and creeks. A rainfall record was established at Buffalo. Numerous roads throughout the area were closed due to flood waters. Local firefighting and public works departments were called out to pump water from flooded basements. The floodwaters overwhelmed several area wastewater treatment plants and water emergencies were declared. States of Emergency were also declared in various locations within the area. Several school districts cancelled classes. In the town of Niagara, Niagara county, 575 homes were evacuated. Fifteen of the homes were deemed unsafe to live in while nine others suffered major damage.

NYZ007>008

Jefferson - Lewis

08	1600EST	0	0	33K	Flood
10	1400EST				

One to two inches of rain fell on saturated ground across all of the North Country and eastern Lake Ontario counties. At Watertown, the Black River crested at 16.0 feet...a record flood.

NYZ001>002-007>008

Niagara - Orleans - Jefferson - Lewis

15	1600EST	0	0	30K	Heavy Snow
	1830EST				

A weak frontal system stalled across the area and brought heavy snows to the northern sections of the region. The heaviest snow extended from Niagara and Orleans counties across Lake Ontario to Jefferson and Lewis counties. Six to eight inches of snow fell in the above mentioned areas with up to six inches in the Buffalo and Rochester metro areas. Amounts dropped off markedly to the south because of a mixture of snow, sleet and freezing rain.

NORTH CAROLINA, Central

NCZ073

Stanly

06	1800EST	0	0		Flood
08	1200EST				

River Flooding began on the Rocky River at Norwood during the evening and continued for 2 days. The crest at Norwood was 17.1 feet or 2.1 feet above the flood stage of 15 feet. Heavy rain during the afternoon and evening in the Rocky River basin produced the flooding that affected mainly farmland adjacent to the river.

Anson County

**Ansonville to
Wadesboro**

06	2000EST	0	0		Flash Flood
	2135EST				

Heavy rain fell at the rate of 1 to 1.5 inches per hour for several hours over Anson county causing flooding on Highway 52 between Wadesboro and Ansonville. Flooding was also reported on numerous secondary roads where as much as 1 to 2 feet of water closed roads for several hours. Several creeks and streams that feed into the Rocky River came out of their banks. Rainfall amounts of 2 to 3 inches were common throughout the county.

Forsyth County

Walkertown

08	0300EST	0	0		Urban/Sml Stream Fld
	0400EST				

Thunderstorms produced very heavy rain over eastern Forsyth county. Street flooding was reported at several locations in Walkertown.

Cumberland County

Godwin

08	0600EST	0	0	15K	Thunderstorm Wind
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A modular home was blown 10 to 20 feet off its foundation with debris strewn 100 yards to the east. Numerous pine trees were snapped off in the yard, several falling on the house. The damage was isolated and occurred in rural northeast Cumberland county near Godwin on Highway 301-N.

Durham County

Durham

16	1255EST	0	0		Hail (0.75)
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Dime sized hail was reported by a Skywarn spotter on Highway 98 and Lynn Road.

Harnett County

Dunn

16	1300EST	0	0		Hail (0.75)
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Dime sized hail fell in extreme eastern Harnett county in the town of Dunn.

Wake County

Raleigh

16	1700EST	0	0	50K	Flash Flood
	2100EST				

Heavy rain brought a rapid rise in Crabtree Creek in Raleigh. The flooding occurred from Wake Forest Road downstream to Atlantic Avenue and to Capital Boulevard. The gage at Wake Forest Road rose to 1 foot above flood stage for a few hours time. This caused minor flooding to the parking lots and businesses adjacent to the creek. Atlantic Avenue and Hodges Streets had to be closed due to 2 to 3 feet of water. Several cars were submerged in the high water and had to be evacuated. High water also flooded portions of Capital Boulevard, closing several lanes of traffic.

Storm Data and Unusual Weather Phenomena

January 1998

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

NORTH CAROLINA, Central

Flooding of creeks and streams throughout Wake county caused the closing of other roads including Poole Road and Rose Lane in east Raleigh. Avent Ferry Road, near North Carolina State Universities Centennial Campus was also closed due to several feet of water on the roadway. Flooding occurred all along Swift Creek in south Raleigh to Fuquay Varina.

**Wake County
Wake Forest**

16 1900EST 0 0 35K Lightning

Lightning struck a brick house on Seawell Drive in Wake Forest about 20 miles northeast of Raleigh during the early afternoon. The lightning bolt hit the chimney of the new two story house, and the current ran throughout the house's wiring and into one of the bedrooms. Most of the damage was to the roof and in the bedroom. Flying debris and brick knocked holes in the walls, and bricks from the chimney were found 105 feet away in a neighbors yard.

NCZ027>028-041>043-073>077-083>084-086

Nash - Edgecombe - Wake - Johnston - Wilson - Stanly - Montgomery - Moore - Lee - Harnett - Anson - Richmond - Hoke

19 0600EST 0 0 Heavy Snow
1330EST

A soaking rain developed across central North Carolina during the overnight hours and gradually changed to snow. Two bands of heavy snow fell. The first band extended from Ansonville of the southern Piedmont northeast through Troy, Southern Pines, Pinehurst, and to Sanford. The second band stretched from Raleigh east through Zebulon, Bailey, Wilson, and Tarboro. Accumulations were in the 2 to 4 inch range with the most accumulations on grassy surfaces and in the trees. Warm ground temperatures, rain soaked ground, and air temperatures in the mid 30s throughout the storm limited snowfall totals significantly.

NCZ042-078

Johnston - Wayne

19 1200EST 0 0 Flood
31 2359EST

River flooding occurred along the Neuse River from Clayton downstream to Smithfield and Goldsboro. The significant flooding occurred from Smithfield downstream to Goldsboro where many homes and businesses were affected. The flooding began on January 17th at Clayton and Smithfield and at Goldsboro on the 19th. The river reached crests at Clayton on January 18 (2 feet above flood stage), Smithfield on January 18 and again on the 25th and 27th (3 feet above flood stage), and Goldsboro January 31st (6 feet above flood stage).

NCZ011-028

Halifax - Edgecombe

22 1600EST 0 0 Flood
30 1600EST

Flooding occurred on the Fishing Creek at Enfield and along the Tar River at Tarboro during the month of January. The crest at Enfield reached flood stage on January 30th. The crest at Tarboro reached 2 feet above flood stage on the 29th and continued at that level through the 31th. This flooding affected the agricultural land surrounding the rivers.

**Anson County
Wadesboro**

23 0900EST 0 0 Urban/Sml Stream Fld
1100EST

Urban and small stream flooding was reported in the Wadesboro area of Anson county during the late morning hours. Steady rains overnight became heavy downpours by 9 am creating urban street flooding. Several roads leading into town had to be closed for brief periods of time. One rural road was also closed due to small stream flooding near Wadesboro.

**Wake County
Raleigh**

23 1200EST 0 0 Urban/Sml Stream Fld
1500EST

Urban flooding occurred in the city of Raleigh as a general soaking rain became heavy during the late morning and lasted into the early afternoon. Rainfall amounts of 1 inch per hour brought storm totals in the 3 to 4 inch range in the area. Several small streams came out of their banks and numerous streets in low lying/flood prone areas became flooded with 6 to 12 inches of water. Jones Sausage and Rock Quarry Roads in east Raleigh were closed for brief periods of time. Several cars became submerged in the water on Capital Boulevard near Crabtree Boulevard and at Capital and New Hope Church Roads.

NCZ028-039-042>043-073>077-084-086

Edgecombe - Randolph - Johnston - Wilson - Stanly - Montgomery - Moore - Lee - Harnett - Richmond - Hoke

27 1300EST 0 0 Flood
28 1600EST

**Wilson County
Lucama**

27 1300EST 0 0 Flash Flood
28 1600EST

A soaking rain fell over central North Carolina during January 27 into the early afternoon hours of January 28th. The rain became heavy in many locations during the 28th. Flooding caused many rural county roads to become impassable and many had to be closed.

Storm Data and Unusual Weather Phenomena

January 1998

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

NORTH CAROLINA, Central

In Anson county, Highway 52 at the Anson/Stanly county line was closed. Many streams that feed the Rocky River came out of their banks flooding roads in Stanly and Anson counties. Some of the closed roads included High Rock Crusher Road, Brown Creek Church Road, and Union Church Road. In Moore, Montgomery, Davidson and Richmond counties, flooding closed roads around High Rock Lake, Lexington, Troy, Robbins and Carthage. These included: Hoggan's Farm Road, Seven Lakes Drive, Haywood Road, and Beck's Church Road. In Johnston, Edgecome, and Wilson counties, several roads also had to be closed as well.

In addition to the rapid rises in streams and creeks in these counties, river flooding was well underway due to the excessive rainfall for the month of January. Continuous storm systems brought heavy precipitation to central North Carolina during the month, with a major storm ending the month with flooding and river flooding.

NCZ040

Chatham

28	1200EST	0	0				Flood
29	1800EST						

The Haw River came out of it's banks at Bynum during January 28 after significant rain affected the river basin. The crest at Bynum was 12.3 feet on the 28th. Flood stage is 11.0 feet. The flooding affected agricultural land near the river.

NORTH CAROLINA, Central Coastal

Duplin County

Potters Hill	08	0915EST	0	1	100K		Thunderstorm Wind
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Greene County

Wootens Xrds	08	0920EST	0	0	90K		Thunderstorm Wind
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Greene County

5 N Snow Hill	08	0925EST	0	0			Thunderstorm Wind (G50)
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Lenoir County

Deep Run	08	0925EST	0	0	5K		Thunderstorm Wind
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Pitt County

Grifton	08	0940EST	0	0			Thunderstorm Wind (G50)
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Martin County

Williamston	08	0955EST	0	0			Thunderstorm Wind (G51)
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Craven County

Bridgeton	08	1030EST	0	0	5K		Thunderstorm Wind
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Craven County

2 E Havelock	08	1030EST	0	0			Thunderstorm Wind (G50)
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Pamlico County

Vandemere	08	1100EST	0	0	5K		Thunderstorm Wind
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Fast moving low-topped thunderstorms produced wind damage across eastern North Carolina. In Potters Hill one person was injured by flying glass when a window blew in at a restaurant. A garage collapsed onto a recreational vehicle, a tree fell on a house and car and a portion of the roof of the Fellowship Hall was blown off. In Wootens Xroads two garages were destroyed and a mobile home damaged. A barn in Vandemere was destroyed by high winds. Trees were blown down north of Snow Hill, in Grifton and in Williamston.

NCZ029-044>047-

079>081-090>095-098-103>104

Martin - Pitt - Washington - Tyrrell - Western Dare - Greene - Beaufort - Western Hyde - Duplin - Lenoir - Jones - Craven - Pamlico - Carteret - Onslow - Eastern Dare - Eastern Hyde

19	1100EST	2	14				Winter Storm
	1600EST						

Low pressure intensifying off the South Carolina coast produced snow across much of east central North Carolina. Totals ranged from 4 inches in Martin and Pitt counties to a trace along the coast. Numerous accidents were reported as vehicles slid into ditches. A mother and her son were killed in a head-on collision on Highway 264 in Yeatsville (Beaufort County). F34VE, M10VE

NCZ029-044>047-

079>081-090>095-098-103>104

Martin - Pitt - Washington - Tyrrell - Western Dare - Greene - Beaufort - Western Hyde - Duplin - Lenoir - Jones - Craven - Pamlico - Carteret - Onslow - Eastern Dare - Eastern Hyde

27	0500EST	0	0	600K			Winter Storm
29	1000EST						

A major low pressure system off the southeast coast combined with a strong high pressure system over New England to produce gale force winds along the coast. Seas between 14 and 18 foot resulted in coastal flooding and lead to major beach erosion problems along the Bogue and Outer Banks. The Beach Road in Kill Devil Hills was flooded and 3 piers were partially damaged. Two homes were destroyed. In the wake of the storm some soundside flooding was reported on Hatteras Island. Heavy rains of up to 3 inches caused several rivers including the Neuse and Tar to exceed flood stage and threaten some highways and homes.

Storm Data and Unusual Weather Phenomena

January 1998

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

NORTH CAROLINA, Extreme Southwest

Cherokee County Countywide	07	0930EST 1315EST			0	0			Urban/Sml Stream Fld
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Clay County Countywide	07	0930EST 1315EST			0	0			Urban/Sml Stream Fld
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Heavy rain fell over extreme southwest North Carolina causing creeks and streams to rise above bankfull. Many roads, intersections and low spots were partially covered with water.

Cherokee County Countywide	07	2200EST			0	0			Flash Flood
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Clay County Countywide	07	2200EST			0	0			Flash Flood
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In Cherokee county, the town of Andrews had flooding along Junaluska Creek, closing Junaluska Road and Wakefield Road. In Clay county, flooding along Shooting Creek washed out Sally Gap Road. Tusquittee Road and Julia Buckner Road were also flooded. The Hiwassee River flooded some bend areas, including the River Bend subdivision. Many secondary roads remained under water until the early morning hours of the next day. Creeks and streams remained above bankfull into the early morning hours of the next day as well.

Cherokee County 2 E Ranger	08	1815EST			0	0			Hail (0.75)
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Cherokee County Andrews	08	1912EST			0	0			Hail (0.75)
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NORTH CAROLINA, North Coastal

Bertie County Windsor	08	1015EST 1025EST			0	0	2K		Thunderstorm Wind
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Few trees down throughout the county, including in Republican and Woodard.

Hertford County Murfreesboro	08	1028EST			0	0	1K		Thunderstorm Wind
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Few trees down.

Chowan County Edenton	16	1455EST			0	0			Hail (0.75)
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Bertie County Windsor	27 28	1400EST 2200EST			0	0			Heavy Rain
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Camden County Camden	27 28	1400EST 2200EST			0	0			Heavy Rain
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Chowan County Edenton	27 28	1400EST 2200EST			0	0			Heavy Rain
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Currituck County Currituck	27 28	1400EST 2200EST			0	0			Heavy Rain
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Gates County Gates	27 28	1400EST 2200EST			0	0			Heavy Rain
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Hertford County Ahoskie	27 28	1400EST 2200EST			0	0			Heavy Rain
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Northampton County Jackson	27 28	1400EST 2200EST			0	0			Heavy Rain
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Pasquotank County Elizabeth City	27 28	1400EST 2200EST			0	0			Heavy Rain
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Perquimans County Hertford	27 28	1400EST 2200EST			0	0			Heavy Rain
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A Nor'easter produced heavy rain and strong winds across northeast North Carolina on Tuesday, January 27th and Wednesday,

Storm Data and Unusual Weather Phenomena

January 1998

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

NORTH CAROLINA, North Coastal

January 28th. Rainfall totals generally ranged from 2 to 4 inches. This rainfall caused street flooding and flooding of poor drainage areas throughout the region.

NORTH CAROLINA, Northwest and North Central

Watauga County

Countywide	07	2300EST		0	0				
	08	0330EST							Flash Flood

Surry County

Countywide	07	2345EST		0	0	10K			Thunderstorm Wind
	08	0015EST							

Alleghany County

Cherry Lane	08	0025EST		0	0	50K			Flash Flood
		0200EST							

Ashe County

North Portion	08	0030EST		0	0	250K			Flash Flood
		0330EST							

Wilkes County

Countywide	08	0115EST		0	0	100K			Flash Flood
		0400EST							

Thunderstorms in northwestern North Carolina during the evening hours on the 7th and early morning hours on the 8th resulted in flash flooding and damaging winds.

Flash flooding in Watauga County resulted in the evacuation of 7 homes in Foscoe and a nursing home in Boone and flooded numerous roads. Several roads were damaged from flood waters in the northeastern portion of Ashe County. Flood waters washed out a bridge on Brushy Creek near Cherry Lane in Alleghany County and flooded and damaged some roads in Wilkes County.

In Surry County, thunderstorm winds knocked down several trees and outbuildings in Low Gap and knocked down trees throughout Surry County.

NCZ002>003-018

Alleghany - Surry - Watauga

15	0100EST			0	0				Ice Storm
		1300EST							

Freezing rain and freezing drizzle on the 15th resulted in ice buildup on trees in excess of one quarter inch in portions of Watauga, Alleghany, and Surry Counties. The weight of the ice broke off a few tree limbs.

NCZ001>002-018

Ashe - Alleghany - Watauga

27	0400EST			0	0	450K			Heavy Snow
		1200EST							

Heavy wet snow developed during the early morning hours on the 27th and continued until around noon on the 28th. Total snowfall amounts were generally from 18 to 36 inches with maximum snow depths from 14 to 24 inches.

The heavy wet snow closed schools, businesses, and church services and stranded people in homes and vehicles. There were numerous traffic accidents, some with injuries indirectly attributed to the storm. The snow was so deep that even four-wheel drive vehicles got stuck. The weight of the snow knocked down utility lines, trees, and tree limbs, resulting in thousands of people without power. At one point, it was estimated that half of Watauga County was without power. Buildings, barns, awnings, greenhouses were damaged or collapsed due to the weight of the snow. A carport in Crumpler in Ashe County collapsed and damaged two vehicles. Shelters were set up and the National Guard was called out. Ashe and Watauga County were declared federal disaster areas.

NCZ019>020

Wilkes - Yadkin

27	1900EST			0	0				Flood
		0400EST							

Heavy rainfall and snow melt resulted in minor flooding on the Yadkin River at Elkin. The Yadkin River crested a little over one foot above flood stage at Elkin around 0100 EST on the 28th.

Yadkin County

4 NNW Yadkinville	27	2200EST		0	0				Flash Flood
		2359EST							

Heavy rain resulted in the flooding of route 601, four miles north-northwest of Yadkinville.

NCZ006

Caswell

28	0300EST			0	0				Flood
		2330EST							

Heavy rainfall and snow melt resulted in flooding of the Dan River in Caswell County on the 28th and 29th.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>NORTH CAROLINA, South Coastal</u>									
Pender County									
Currie to Rocky Pt	08	0840EST 0900EST			0	0			Thunderstorm Wind (G60)
		A LINE OF THUNDERSTORMS DOWNED TREES AND POWER LINES, MINOR DAMAGE TO 3 STRUCTURES IN BURGAW							
New Hanover County									
Wilmington	08	0901EST 0902EST	0.2	10	0	3	175K		Tornado (F1)
		A GUSTNADO INDUCED BY MICROBURST, TOSSED A STATION WAGON 100FT, TIPPED A TRUCK ON IT'S SIDE A DAMAGED A CONVENIENCE STORE AND A MANUFACTURING PLANT ON 23RD STREET.							
Brunswick County									
Long Beach	23	1200EST 1300EST			0	0			Flash Flood
		RAINFALL AMOUNTS OF AROUND 3 INCHES IN THE PRECEEDING 12 HOURS RESULTED IN MINOR FLOODING IN THE YAUPON BEACH AND LONG BEACH AREA.							
New Hanover County									
Wilmington	23	1300EST 1330EST			0	0			Flash Flood
		HIGH WATER COVERED MASONBORO LOOP ROAD AND RIVER ROAD WAS FLOODED BY BARNARD CREEK.							
Pender County									
Burgaw	23	1300EST 1330EST			0	0			Flash Flood
		HIGH WATER COVERD SEVERAL ROADS IN PENDER COUNTY, BUT NONE HAD TO BE CLOSED							
<u>NORTH CAROLINA, Southwest</u>									
Union County									
Monroe to Wingate	06	1600EST 2100EST			0	0			Flood
Mecklenburg County									
South Portion	06	1800EST 2100EST			0	0			Flood
		Heavy rain during the day caused area streams to rise out of their banks, flooding many roads. One road was washed out between Monroe and Wingate in Union county and other roads in the far southern part of Mecklenburg county, near the Union county line, were washed out as well.							
Transylvania County									
Countywide	07	1200EST 1900EST			0	0			Flood
Henderson County									
Countywide	07 08	1300EST 1200EST			0	0	500K		Flood
		Several roads and bridges were washed out. The French Broad River rose significantly out of its banks on the 8th, causing damage to homes and businesses along the river.							
Macon County									
Franklin to South Portion	07 08	1400EST 0000EST			0	0			Flood
Buncombe County									
Countywide	07 08	1600EST 1200EST			0	0	1M		Flood
		Sweeten Creek backed up and flooded, causing significant property damage in the Barnardsville and Biltmore Village areas.							
Haywood County									
Waynesville	07 08	1600EST 1200EST			0	0	500K		Flood
NCZ053>054-058>059-062>064									
		Buncombe - Mcdowell - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania							
	07 08	1600EST 0300EST			0	0	30K		High Wind (G50)
Swain County									
Countywide	07	1630EST 2200EST			0	0			Flood

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>NORTH CAROLINA, Southwest</u>									
Transylvania County									
Rosman to Brevard	07 08	1900EST 1200EST			0	10	1.5M		Flash Flood
Excessive rain in conjunction with significant flooding of the French Broad and North Transylvania Rivers resulted in 40 to 50 mobile homes and 2 bridges destroyed. In addition, 34 roads were under water through noon on the 8th.									
Avery County Countywide	07	2000EST 2300EST			0	0			Flood
Yancey County Countywide	07	2000EST 2300EST			0	0			Flood
Mitchell County									
Bakersville to Spruce Pine	07 08	2100EST 1200EST			0	0	5M		Flash Flood
Major flooding, the worst since 1977, destroyed 23 homes, wiped an entire trailer park out, and damaged 200 homes. The height of the flooding was between midnight and 2 am on the 8th.									
Rutherford County									
West Portion	07 08	2230EST 1200EST			0	0	20K		Flood
The Broad river flooded south of Lake Lure. Several roads were under water and some bridges were washed out.									
Polk County									
Countywide	07 08	2245EST 1200EST			0	0			Flood
Avery County									
Plumtree to Roaring Creek	07 08	2300EST 0300EST			0	0	5.5M		Flash Flood
Major flooding, the worst since 1977, destroyed numerous homes and vehicles.									
Mcdowell County									
West Portion	07 08	2300EST 0300EST			0	0	25K		Flood
Excessive rainfall caused rockslides and flooding along Interstate 40, U.S. Highway 221 and NC Highway 80. A wall of water washed away part of a flea market and caused 12 thousand dollars of damage.									
Yancey County									
Countywide	07 08	2300EST 0300EST			0	0	200K		Flash Flood
Due to excessive rainfall in a short period of time, rivers flooded quickly, sending a wall of water through portions of the county.									
Caldwell County									
Collettsville to Globe	08	0100EST 1200EST			0	0			Flood
The Johns River flooded, covering nearby roads and bridges with water and causing early morning evacuations.									
Avery County									
Countywide	08	0300EST 1200EST			0	0			Flood
NCZ048									
Madison									
	08 09	0300EST 1200EST			0	1	50K		Flood
The French Broad River flooded significantly at all forecast points and caused some property damage. One person drowned (indirect) and another was injured while attempting to canoe down the raging river.									
Yancey County									
Countywide	08	0300EST 1200EST			0	0			Flood
A powerful winter storm pumped abundant moisture on very strong southerly winds into western North Carolina. The result was nearly 15 million dollars in damage across the mountains and foothills as up to 15 inches of rain fell on the higher terrain, causing significant to major flooding and flash flooding. The Asheville Airport set a new record for 24 hour rainfall in the month of January with 4.42 inches. Where not specified above, the excessive rain caused creeks and streams to rise well out of their banks. This combined with the enormous amounts of run-off to cause numerous roads and bridges to be covered in water or washed out. The Blue Ridge Parkway in Haywood county sustained considerable damage.									

A few counties experienced widespread flooding for several hours before convective rain pushed north across the mountains, overwhelming already saturated ground and raging water basins. People in Avery, Mitchell and Yancey counties reported "a wall of water" that ripped through several communities. Rock and/or mudslides also occurred in Swain and Transylvania counties, adding to

Storm Data and Unusual Weather Phenomena

January 1998

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

NORTH CAROLINA, Southwest

1-3 inches across the entire area by the early morning of the 19th. However, several high elevation locations began to receive heavy snow by midnight. Before the snow ended at 6 am on the 19th, some of these locations had between 4 and 7 inches.

NCZ070>072-082	Gaston - Mecklenburg - Cabarrus - Union				0	0			Snow
	19	0600EST							

A wet snow fell at a pretty good rate early in the morning across the southern piedmont, including the Charlotte metro area. Despite temperatures hovering just above freezing, the snow accumulated between 1 and 3 inches.

NCZ033	Avery				0	0			Snow
	24	0600EST							

Light snow accumulated to 2 inches on Beech Mountain and other high elevations in Avery county.

NCZ033-048>050	Avery - Madison - Yancey - Mitchell				0	0			Snow
	24	1800EST							

Light snow accumulated to around 2 inches, mainly at the higher elevations.

NCZ033>034-048>055-058>059-062>067	Avery - Caldwell - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - McDowell - Burke - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania - Henderson - Polk - Rutherford				0	0			Heavy Snow
	27	0400EST							

A deep cut-off low drifted across western North Carolina, drawing abundant moisture into air just cold enough to support snow. A heavy wet snow began in the pre-dawn hours on the 28th and moved north across the mountains. Snow accumulated quickly during the day, before tapering to a light snow in the evening. Light snow continued into the following morning, especially north of Asheville. Snowfall totals ranged from 4 to 8 inches at lower elevations to between 1 and 3 feet at high elevations. To make matters worse, strong winds combined with the snow to create near blizzard conditions at times in the higher elevations. Tens of thousands of people were without power for up to 3 days as numerous trees and power lines were downed. Thousands of motorists were stranded on roads and highways. Interstate 40 through the mountains was closed for several hours and the National Guard had to be called in to rescue people stranded on the highway.

Union County Countywide					0	0			Flood
	27	0800EST							

Lincoln County Countywide					0	0			Flood
	27	1500EST							

A deep cut-off low meandered east across North Carolina and brought abundant rain to the piedmont. Heavy rain fell on already saturated soils and caused area creeks and streams to rise out their banks. Many roads and bridges became covered in water, leading to some road closures.

NORTH DAKOTA, Central and West

NONE REPORTED.

NORTH DAKOTA, East

NONE REPORTED.

OHIO, East

Muskingum County Countywide					0	0			Flood
	07	1945EST							

Several roads and streams were flooded in Roseville. State Route 16 in Adams Mills was flooded. Maysville Pike in southern Zanesville was flooded. Dresden Road and Fairville Road were flooded in the northern part of the county. The White Cottage Fire Department was reportedly evacuated. State Route 208 between Adams Mills and Dresden was closed due to a mudslide.

Four miles east of Roseville, Brush and Goose Creek were out of their banks and flooding nearby roads and an observer reported 2.5 inches total rainfall.

Coshocton County Countywide					0	0			Flood
	07	2130EST							

Many small streams were flooded throughout the county. County Road 6 in extreme southwestern Virginia Township, along Mill Fork, was flooded.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
OHIO, East									
Guernsey County									
Countywide	07	2135EST			0	0			Flood
	08	1300EST							
	Several county roads were reported flooded throughout the county.								
Tuscarawas County									
Countywide	07	2140EST			0	0			Flood
	08	0800EST							
	Several roads were reported flooded across the county.								
Monroe County									
Countywide	07	2230EST			0	0			Flood
	08	0300EST							
	Widespread heavy rainfall led to flooding of several roads throughout the county. Many small streams were out of their banks. State Route 78 had one lane closed and State Route 379 were flooded in the northwest part of the county.								
Columbiana County									
East Portion	07	2230EST			0	0			Flood
	08	0200EST							
	A tree washed out in a mudslide across a road just north of Wellsville. Significant ponding of water on roads was reported. Route 154 was closed due to flooding of the Middle Fork of Beaver Creek. Twelve people, in low-lying areas, were evacuated in Elkton.								
Belmont County									
Countywide	07	2300EST			0	0			Flood
	08	0800EST							
	A few roads were flooded across the county.								
Noble County									
Countywide	07	2300EST			0	0			Flood
	08	0800EST							
	A few roads were flooded across the county.								
Harrison County									
Countywide	07	2320EST			0	0			Flood
	08	0800EST							
	Rose Valley Road near Hopedale was flooded. Several roads near Jewett, Deersville and in the Tappan Lake area were also flooded.								
Carroll County									
Countywide	07	2320EST			0	0			Flood
	08	0800EST							
	Several county roads were flooded, one road had water 6 to 7 feet deep. Route 332 near Carrollton was also reported flooded.								
Jefferson County									
Southeast Portion	07	2325EST			0	0	3K		Flood
	08	1300EST							
	County Road 15, near Route 150 was flooded. A few basements were flooded in Connorville.								
Monroe County									
Countywide	09	0045EST			0	0			Flood
		0800EST							
	Flooding of low-lying areas near Woodsfield was reported. County Road 15 was flooded by Wood Creek. Sunfish Creek went out of its banks and caused flooding in Cameron.								
Monroe County									
Antioch	09	0045EST			0	0	1K		Thunderstorm Wind
	A large tree and some limbs were downed by thunderstorm winds in Antioch. The tree was down across Route 800.								
Belmont County									
Countywide	09	0100EST			0	0			Flood
		0800EST							
	Many roads and low-lying areas were flooded across the county. A few mudslides were also reported.								
Guernsey County									
South Portion	09	0100EST			0	0			Flood
		0300EST							
	Route 821, near Pleasant City, was flooded by Leatherwood Creek. Significant low-land flooding was also reported.								
Belmont County									
Powhatan Pt	09	0100EST			0	0	1K		Thunderstorm Wind
	A few trees were downed by thunderstorm winds.								
OHZ058									
	Guernsey								
	09	1100EST			0	0			Flood
	11	1300EST							
	Widespread rainfall between 1.5 and 3.0 inches resulted in flooding along Wills Creek at Cambridge. The river crested at 16.5 feet,								

Storm Data and Unusual Weather Phenomena

January 1998

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

OHIO, East

1.5 feet above its 15 foot flood stage, on January 10 at 9 am EST.

Tuscarawas County

Uhrichsville

09	1120EST				0	0			Flood
11	0445EST								

Stillwater Creek at Uhrichsville crested less than 1 foot above its 5 foot flood stage.

OHZ059

Belmont

10	0400EST				0	0			Flood
	1100EST								

The Ohio River at Moundsville crested just 0.5 feet above its 37 foot flood stage at 7 am EST on January 10.

OHIO, North

OHZ009

Erie

07	1600EST				0	0	100K		Flood
09	1515EST								

The Huron River at Milan exceeded its flood stage of 14 feet and crested at 20.5 feet on 01/09/98 at 1215 EST. Flooding in lagoon communities, from Milan to near Huron, resulted in some cottages and homes being completely surrounded by flood waters. Small businesses were affected near Route 250 in Milan and several roads were impassable. In Franklin Flats, four miles north of Milan, flood waters forced some families to flee their homes.

Erie County

Countywide

07	1941EST				0	0			Flood
	2250EST								

Huron County

Countywide

07	1946EST				0	0			Flood
	2200EST								

Lorain County

Countywide

07	1951EST				0	0	80K		Flood
	2255EST								

Medina County

Countywide

07	1953EST				0	0			Flood
	2120EST								

Cuyahoga County

Euclid

07	1956EST				0	0			Flood
	2125EST								

Lake County

Countywide

07	2007EST				0	0			Flood
08	0050EST								

Mahoning County

Countywide

07	2130EST				0	0			Flood
	2300EST								

Ashtabula County

Countywide

07	2140EST				0	0			Flood
08	0115EST								

Trumbull County

Countywide

07	2145EST				0	0			Flood
	2315EST								

Heavy thunderstorm rain on already saturated soil caused flooding of small streams, low lying areas, roads and basements. Vrooman Road (Lake County) was covered with up to four feet of water in some spots. Several basements were flooded, especially in the Vermilion area (Lorain).

Seneca County

Countywide

08	0038EST				0	0			Flood
	0100EST								

Hancock County

Countywide

08	0046EST				0	0			Flood
	0130EST								

Heavy thunderstorm rain on already saturated soil caused flooding of roads and low lying areas.

OHZ036

Marion

08	0530EST				0	0			Flood
09	2045EST								

The Scioto River at LaRue exceeded its flood stage of 11 feet and crested at 12.5 feet on 01/09/98 at 2051 EST. There was minor flooding of roads near the river.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
OHIO, North									
OHZ011			Cuyahoga						
	08	0700EST 1500EST			0	0			Flood
	The Cuyahoga River at Independence exceeded its flood stage of 16 feet and crested at 16.4 feet on 01/08/98 at 0951 EST. Only minor flooding of low lying areas occurred.								
OHZ027			Wyandot						
	08 09	0800EST 1100EST			0	0			Flood
	The Sandusky River at Upper Sandusky exceeded its flood stage of 13 feet and crested at 13.6 feet on 01/09/98 at 0700 EST. Minor flooding occurred on some county roads along the river.								
OHZ008			Sandusky						
	08 10	0800EST 1045EST			0	0			Flood
	The Portage River at Woodville exceeded its flood stage of nine feet and crested at 10.8 feet on 01/09/98 at 1238 EST. Lowland flooding occurred at Trail Marker Park.								
OHZ017			Hancock						
	08 09	1000EST 1700EST			0	0			Flood
	The Blanchard River at Findley exceeded its flood stage of 11 feet and crested at 12.2 feet on 01/09/98 at 0051 EST. Flooding occurred near Riverside Park and East Main Cross Street, around the sewage plant and on County Highway 140.								
OHZ003			Lucas						
	08 11	1215EST 2345EST			0	0			Flood
	The Maumee River at Waterville exceeded its flood stage of nine feet and crested at 10.8 feet at 1045 EST on 01/12/98. Flooding was confined to low lying areas.								
Stark County									
Canton	08	1750EST 1830EST			0	0			Flood
	Heavy thunderstorm rain on already saturated soil caused flooding of streets and low lying areas.								
OHZ018			Seneca						
	08 10	1845EST 0615EST			0	0			Flood
	The Sandusky River at Tiffin exceeded its flood stage of 8 feet and crested at 8.7 feet on 01/09/98 at 0100 EST. There was some minor flooding of roads along the river.								
Henry County									
Countywide	09	0015EST 0200EST			0	0			Flood
Sandusky County									
Countywide	09	0030EST 0300EST			0	0			Flood
Marion County									
Prospect	09	0040EST 0600EST			0	0			Flood
Erie County									
Countywide	09	0042EST 0200EST			0	0			Flood
Huron County									
Monroeville	09	0046EST 0230EST			0	0			Flood
Richland County									
Countywide	09	0051EST 0130EST			0	0			Flood
Ashland County									
Countywide	09	0055EST 0530EST			0	0			Flood
Holmes County									
Big Prairie	09	0109EST 0200EST			0	0			Flood

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
OHIO, North									
Lorain County									
Lorain	09	0113EST 0500EST			0	0			Flood
Cuyahoga County									
Cleveland	09	0117EST 0230EST			0	0			Flood
Medina County									
Chippewa On The Lake	09	0121EST 0150EST			0	0			Flood
Heavy thunderstorm rain on already saturated ground caused flooding of small streams, streets and low lying areas. On Hillman-Ford Road In Morral (Marion County), the driver of a school bus attempted to drive through high water from the Little Scioto River. The bus slid into a ditch but the more than 30 students and bus driver were rescued from the precariously tilted vehicle.									
OHZ023									
Trumbull									
	09	0045EST			0	0			Flood
	10	0545EST							
The Mahoning River at Leavittsburg exceeded its flood stage of 10 feet and crested at 10.4 feet on 01/09/98 at 0100 EST. There was only minor flooding of low lying areas.									
Summit County									
Southeast Portion	09	0200EST 0335EST			0	0	50K		Flood
Portage County									
Ravenna	09	0213EST 0315EST			0	0	15K		Flood
Geauga County									
Countywide	09	0217EST 0400EST			0	0			Flood
Ashtabula County									
Countywide	09	0226EST 0400EST			0	0			Flood
Heavy thunderstorm rain on already saturated ground caused flooding of small streams, roads, basements and low lying areas. Several basements were flooded around Green in Summit County, and there was flooding of Breakneck Creek in Ravenna (Portage County).									
OHZ036									
Marion									
	09	2030EST			0	0	50K		Flood
	12	1530EST							
The Scioto River at Prospect exceeded its flood stage of 10 feet and crested at 12.2 feet on 01/10/98 at 1400 EST. Flooding occurred on several roads and residents along Main Street experienced some minor flooding.									
OHZ033									
Mahoning									
	09	2245EST			0	0			Flood
	10	0945EST							
The Mahoning River at Youngstown exceeded its flood stage of 10 feet and crested at 12.6 feet on 01/09/98 at 1500 EST. Flooding was confined to low lying areas.									
Cuyahoga County									
Countywide	13	0000EST			0	61			Glaze
	16	0300EST							
Erie County									
Countywide	13	0000EST			0	8			Glaze
	16	0300EST							
Geauga County									
Countywide	13	0000EST			0	17			Glaze
	16	0300EST							
Henry County									
Countywide	13	0000EST			0	4			Glaze
	16	0300EST							
Huron County									
Countywide	13	0000EST			0	4			Glaze
	16	0300EST							

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>OHIO, North</u>									
Knox County									
Countywide	13	0000EST			0	0			Glaze
	16	0300EST							
Lake County									
Countywide	13	0000EST			0	45			Glaze
	16	0300EST							
Lucas County									
Countywide	13	0000EST			0	12			Glaze
	16	0300EST							
Morrow County									
Countywide	13	0000EST			0	0			Glaze
	16	0300EST							
Ottawa County									
Countywide	13	0000EST			0	2			Glaze
	16	0300EST							
Sandusky County									
Countywide	13	0000EST			0	3			Glaze
	16	0300EST							
Seneca County									
Countywide	13	0000EST			0	2			Glaze
	16	0300EST							
Wood County									
Countywide	13	0000EST			0	8			Glaze
	16	0300EST							
A combination of occasional rain, freezing rain, sleet and snow, particularly on Tuesday the 13th, caused icy roads, bridges, sidewalks and other exposed surfaces. Many schools were closed. Hospital emergency rooms treated numerous ice related injuries (mostly from slips and falls). Even salt trucks had trouble negotiating the icy roads - at least two of them tipped over. This event did not meet winter storm criteria.									
OHZ012-014									
		Lake - Ashtabula							
	19	1100EST			0	0			Heavy Snow
	20	0700EST							
Heavy lake effect snow accumulated six to eight inches, including eight inches each in Geneva and Harpersfield (Ashtabula County), and eight inches each in Painesville and Madison (Lake).									
<u>OHIO, Northwest</u>									
NONE REPORTED.									
<u>OHIO, Southeast</u>									
Athens County									
Countywide	07	1900EST			0	0	25K		Flash Flood
	08	0700EST							
Jackson County									
Countywide	07	1900EST			0	0	40K		Flash Flood
	08	0300EST							
Lawrence County									
Countywide	07	1900EST			0	0	10K		Flash Flood
	08	0300EST							
Perry County									
Countywide	07	1900EST			0	0	25K		Flash Flood
	08	0300EST							
Vinton County									
Countywide	07	1900EST			0	0	40K		Flash Flood
	08	0300EST							
Gallia County									
Countywide	07	2000EST			0	0	10K		Flash Flood
	08	0200EST							
Meigs County									
Countywide	07	2000EST			0	0	10K		Flash Flood
	08	0200EST							

Storm Data and Unusual Weather Phenomena

January 1998

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

OHIO, Southeast

Morgan County Countywide

	07	2015EST			0	0	10K		Flash Flood
	08	0200EST							

Rains of 1.5 to over 3 inches fell along a frontal boundary in 12 to 18 hours. The heaviest rains in southeast Ohio were over Perry, Vinton, and Jackson Counties. McArthur reported 3.25 inches of rain. The Middle Fork of Salt Creek flooded around Ratcliffsburg in Vinton County. Some evacuations were required in western Vinton County. Many roads were closed across the 8 counties.

Lawrence County South Pt

	08	2200EST			0	0	5K		Hail (1.00)
--	----	---------	--	--	---	---	----	--	--------------------

Lawrence County Willow Wood

	08	2205EST			0	0			Hail (1.00)
--	----	---------	--	--	---	---	--	--	--------------------

OHZ075-085>086

Athens - Meigs - Gallia

	09	0000EST			0	0	120K		Flood
	11	1000EST							

Washington County Newport

	09	0015EST			0	0	5K		Thunderstorm Wind
--	----	---------	--	--	---	---	----	--	--------------------------

Several trees were blown down.

Athens County Countywide

	09	0030EST 0300EST			0	0	25K		Flash Flood
--	----	--------------------	--	--	---	---	-----	--	--------------------

Meigs County Countywide

	09	0030EST 0300EST			0	0	10K		Flash Flood
--	----	--------------------	--	--	---	---	-----	--	--------------------

Perry County Countywide

	09	0030EST 0300EST			0	0	10K		Flash Flood
--	----	--------------------	--	--	---	---	-----	--	--------------------

Washington County Countywide

	09	0040EST 0300EST			0	0	5K		Flash Flood
--	----	--------------------	--	--	---	---	----	--	--------------------

The final period of heavy rain deposited a half inch to an inch, in less than 3 hours, over saturated ground. In Meigs County, 80 percent of the roads in Rutland Township were affected by high water. Sunday Creek in Athens County surrounded homes in Glouster, Jacksonville, and Trimble.

The Hocking River went into flood across Athens County. The river crested at 21.5 feet in the city of Athens during the late morning hours of the 9th. Flood stage is 20 feet. Yet, the flood control project protects the city to 27 feet. The most serious flooding along the Hocking River was in the Chauncey vicinity. Here water got into many homes and was 1 to 2 feet deep on the roads.

Minor river flooding finally occurred on the mainstem of the Ohio River from the mouth of the Hocking River to the mouth of the Kanawha River. Racine Lock and Dam crested at 42.7 feet. Pomeroy crested at 46.1 feet. Roads, parking lots, and parks were flooded, but not homes or businesses. This level was about 4 to 5 feet lower than in March of 1997.

OHIO, Southwest

Hocking County Carbon Hill to Laurelville

	07	2010EST			0	0	10K		Flood
	08	0015EST							

Several hours of heavy rainfall water to flood across county roads. Six roads were closed and several cars were trapped in over 3 feet of water.

Adams County Cedar Mills

	07	2030EST 2230EST			0	0	3K		Flood
--	----	--------------------	--	--	---	---	----	--	--------------

Persistent heavy rainfall caused water to flood across Rte. 348.

Pike County Waverly

	07	2030EST 2200EST			0	0	5K		Flood
--	----	--------------------	--	--	---	---	----	--	--------------

Heavy rainfall causes several county roads to be closed due to high water.

Scioto County Lucasville

	07	2200EST 2230EST			0	0	3K		Flood
--	----	--------------------	--	--	---	---	----	--	--------------

Heavy rainfall caused water to flood across Rte 23.

Storm Data and Unusual Weather Phenomena

January 1998

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									
Logan County									
De Graff	08	0030EST 0800EST			0	0	5K		Flood
			Heavy rainfall on the 7th and 8th caused numerous county roads to be covered by water.						
OHZ081									
		Adams							
	07	2100EST			0	0			Flood
	08	2100EST							
			Heavy rainfall on the 7th and 8th caused the Ohio Brush Creek at West Union to rise out of its banks. The river crested around 17.7 feet at 330 am EST on the 8th causing lowland flooding and some flooding along State routes 348, 32, and 41. Flood stage is 15.0 feet.						
OHZ074									
		Hocking							
	08	0430EST			0	0			Flood
	10	0200EST							
			From 2 to locally 4 inches of rain fell across Central Ohio on the 7th and 8th causing the Hocking River at Enterprise to rise out of its banks. The river crested around 13.5 feet on the 9th around noon causing water to spill onto State Route 93 near Logan. Flood stage is 12.0 feet.						
OHZ016									
		Putnam							
	08	2300EST			0	0			Flood
	10	1300EST							
			From 1 to 3 inches of rain fell across West-Central Ohio on the 7th and 8th causing the Blanchard River at Ottawa to overflow its banks. The river crested at 25.0 feet on the 9th around noon EST causing some agricultural land to be flooded. Flood stage is 23.0 feet.						
OHZ082									
		Pike							
	09	0300EST			0	0			Flood
	10	1300EST							
			From 2 to locally 4 inches of rain fell across South-Central Ohio on the 7th and 8th causing the Scioto River at Picketon to rise out of its banks. The river crested around 19.5 feet around 1100 pm EST on the 9th causing some low-lying country roads to be flooded. Flood stage is 18.0 feet.						
OKLAHOMA, Eastern									
Mayes County									
Pryor	04	0515CST			0	0	0.70K		Thunderstorm Wind (G50)
			Two trees blown down. Scattered shingles blown off some roofs. Garden shed blown over.						
Ottawa County									
Fairland	04	0630CST			0	0	60K		Thunderstorm Wind (G78)
			Ten homes/businesses with minor damage. Three businesses with major roof and structural damage. Winds were estimated at 90 to 100 miles an hour.						
Adair County									
Countywide	04	0930CST 1100CST			0	0			Flash Flood
			Widespread flooding reported near Stilwell with some water reaching homes. Flood waters washed a car off of a small bridge.						
Latimer County									
East Portion	04	1930CST 2100CST			0	0			Flash Flood
			Numerous county roads around Talihina closed.						
Le Flore County									
Countywide	04	1930CST			0	0			Flood
	05	0400CST							
			Serious flooding took place near Heavener with travel in area nearly impossible. Oil Branch Creek at Heavener overflowed its banks. Major flooding in Poteau and Talihina with many roads under water.						
			A strongly baroclinic, southwest-northeast oriented front pulled up stationary over eastern Oklahoma on Jan. 4. As upper level disturbances moved by in southwest flow aloft, heavy rain developed across parts of eastern Oklahoma. Two-day rainfall totals of two to six inches were common, falling on already-saturated grounds caused by heavy rains during the week before Christmas. Many rivers, particularly in southeast Oklahoma, rose out of their banks.						
OKZ054-056>057-057>066-068>071-073									
		Osage - Nowata - Craig - Ottawa - Pawnee - Tulsa - Rogers - Mayes - Delaware - Creek - Okfuskee - Okmulgee - Cherokee - Adair - Muskogee - Mcintosh - Pittsburg							
	08	0200CST 1100CST			0	0			Winter Storm
			A winter storm on the morning of Jan. 8 dropped a band of 1 to 3 inches of snow accumulation across parts of eastcentral and southeast Oklahoma. Heavier accumulations of up to 6 inches occurred in parts of northeast Oklahoma between Okemah and Tulsa.						

Storm Data and Unusual Weather Phenomena

January 1998

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

OKLAHOMA, Eastern

In northeast Oklahoma, the precipitation changed over from rain to sleet around 1:00 am and changed to all snow after 3:00 am. The snow had ended across the area by late morning. The sleet initially caused roads to be slick, and the heavy snow caused roads, particularly from Okemah to Tulsa, to become snow-packed. Specific snow totals follow (in inches): Okmulgee...6.0, Berryhill (3W Tulsa)...4.5, Broken Arrow...4.2, Tulsa Int'l Airport...4.0, Okemah...4.0, Beggs...4.0, NWS Office (E Tulsa)...3.0, Checotah...3.0, Vinita...3.0, Oktaha...2.0, Miami...2 to 3, Scipio...2.0, Pryor...1.0, Muskogee...1.0, McAlester...0.5. Temperatures were very close to freezing when the snow fell, therefore this was a wet snow with high water content. Most of the snow had melted off by the end of the day.

The snow formed as an upper level low moving through the southern branch of the jet stream moved across Texas from west to east. A pool of mid-level cold air to the left of the upper level low's track and favorable jet dynamics were just enough for a changeover to snow. At the surface, low pressure formed on the morning of Jan. 7 near the mouth of the Mississippi River and was located in the Ohio River valley by the morning of Jan. 8.

OKLAHOMA, Extreme Southeast

McCurtain County

2 SE Idabel 11 1400CST 0 0 Hail (0.75)

OKLAHOMA, Panhandle

OKZ002>003

Texas - Beaver

04 0000CST 0 0 Ice Storm
1200CST

A disturbance in the upper atmosphere over the South Plains of Texas moving slowly northeast and a moist flow at the surface behind a cold front combined to produce light to moderate freezing rain across the central and eastern Oklahoma Panhandle. One quarter to one inch of ice accumulated on exposed surfaces.

OKLAHOMA, Western, Central and Southeast

Comanche County

Lawton

04 0030CST 0 0 4K Thunderstorm Wind

Severe thunderstorm winds blew the steeple off a church roof.

OKZ005>006-

010>012-015-017

Woods - Alfalfa - Woodward - Major - Garfield - Dewey - Blaine

04 0300CST 0 0 Ice Storm
2100CST

Freezing rain fell across portions of northwest and north-central Oklahoma, leaving accumulations of ice up to 1/2 inch on trees and power lines. Widespread tree damage, including large branches that were snapped from trees, occurred over much of northern Oklahoma.

Seminole County

.3 N Little

04 0510CST 0 0 75K Lightning

Lightning struck and set fire to a house. The house and its contents were destroyed.

Pontotoc County

3 N Ada

04 0740CST 0 0 Flash Flood

A county bridge north of Ada was flooded.

Murray County

.5 S Sulphur

04 1045CST 0 0 Flash Flood
1145CST

After 3.3 inches of rain fell at the Chickasaw National Recreation Area, two feet of water covered roads at three low water crossings and water was standing in picnic areas.

Choctaw County

Hugo

04 2030CST 0 0 Flash Flood

Water covered several roads in town.

Atoka County

1 E Wardville

05 0130CST 0 0 Flash Flood

Highway 131 was closed due to high water.

Choctaw County

10 SW Hugo

05 0130CST 0 0 Flash Flood

Flash flood waters washed away trees and a portion of Highway 109.

Choctaw County

Hugo

04 2030CST 0 0 Flash Flood

Water covered roads in town.

Storm Data and Unusual Weather Phenomena

January 1998

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

OKLAHOMA, Western, Central and Southeast

Atoka County 1 E Wardville	05	0130CST			0	0			Flash Flood
Highway 131 was closed due to high water.									
Choctaw County 10 SW Hugo	05	0130CST			0	0			Flash Flood
Flash flood waters washed away trees and a portion of Highway 109.									
Johnston County 6 N Mannsville	05	2255CST			0	0			Hail (0.75)
Pontotoc County 2 S Francis	05	2330CST			0	0	0.01K		Thunderstorm Wind
Several 3-inch diameter tree limbs were blown down by severe thunderstorm winds.									
Bryan County Durant	05	2344CST			0	0			Hail (0.75)
3/4-inch hail fell on the southwest edge of Durant.									
Bryan County Bokchito	06	0019CST			0	0			Hail (0.75)
OKZ031>032- 042>043-047-051>052	Seminole - Hughes - Pontotoc - Coal - Johnston - Marshall - Bryan								
	07	2300CST			0	0			Heavy Snow
	08	1000CST							

Rain changed to snow across the eastern half of Oklahoma late the night of the 7th and ended during the morning of the 8th. The heaviest snow fell in a band from Vinita to Okmulgee to Madill. Areas from Seminole to Sasakwa to Calvin to Indianola and northward received 2 to 4 inches of snow, with a local maximum of 6 inches in Okmulgee. (See Storm Data for Northeast Oklahoma for more details.) A second local maximum was reported over Marshall County at Kingston, where 2.5 inches of snow accumulated.

OKZ008-013-019>020- 025>026-030 Kay - Noble - Logan - Payne - Oklahoma - Lincoln - Pottawatomie

	13	2100CST			0	0			Freezing Rain
	14	1000CST							

Rain changed to freezing rain across parts of north-central and central Oklahoma during the late evening of the 13th and lasted until the morning of the 14th. Ice accumulation on roads contributed to countless traffic accidents, resulting in numerous injuries and at least two fatalities.

Greer County Willow	31	0200CST			0	0			Hail (0.75)
Garfield County (Wdg) Woodring Arpt	31	0913CST			0	0			Hail (0.75)
Kiowa County 2 NNE Cooperton	31	2045CST			0	0			Hail (0.75)
Kiowa County 1 N Cooperton	31	2045CST			0	0			Hail (0.75)
3/4-inch hail covered Highway 54 to depths of 3-inches.									
Kiowa County Cold Spgs	31	2140CST			0	0			Flash Flood
3 inches of rain fell at Cold Springs in only a few hours.									
Comanche County 8 W Meers	31	2200CST			0	0			Hail (0.88)
Nickel-sized hail fell at the Wichita Mountains Wildlife Refuge.									
Comanche County 10 W Meers to 6 N Sterling	31	2220CST			0	0			Hail (0.88)

Numerous reports of nickel-sized hail were received from the northern portion of Comanche County.

OREGON, Central and East

ORZ014	Central Oregon								
	01	1345PST			0	0			High Wind (G56)
		1445PST							

Wind gusts to 65 mph sent a dead tree limb onto a power line causing about 1600 customers in Bend to go with out power for about

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
OREGON, Central and East									
		40 minutes.							
ORZ016		Lower Columbia Basin							
		04 0000PST			1	1			Winter Storm
		2000PST							
		A 49 year old man was killed around 4 pm Sunday near Shaniko. The car he was driving was hit by a pickup that lost control on the icy road. The man's 10 year old daughter was taken to a hospital with facial injuries. The driver of the pickup was not injured. A winter storm left as much as three inches of snow in north central Oregon on Sunday, January 4.							
		M49VE							
ORZ010-013>014-016>019		Eastern Columbia River Gorge - North Central Oregon - Central Oregon - Lower Columbia Basin - Foothills Of The Blue Mountains - Columbia Deschutes Plateau - Northeast Oregon							
		10 0800PST			0	4			Heavy Snow
		11 1600PST							
		A winter storm dumped from 4 inches to 19 inches of snow over central, north central, and northeast Oregon. The snowfall caused area schools to close for up to three days or open late. About 8000 customers in Bend lost power Saturday night (January 10) for over an hour when a car slid out of control and struck a guy wire on a utility pole. There were a few serious accidents with four injuries reported in central Oregon. Two people were injured in a traffic accident in north central Oregon. There were also problems transporting goods and medical products into central Oregon because of road and airport closures outside the area. At least 10 traffic accidents, some with minor injuries, were caused by snow covered roads in Umatilla county.							
ORZ016		Lower Columbia Basin							
		13 2200PST			0	0			Winter Storm
		14 1200PST							
		Freezing rain started late Tuesday night and by Wednesday morning ice on roads caused dangerous driving conditions. An overturned tractor trailer briefly blocked the Interstate-84 on-ramp near Stanfield. Multiple, mostly minor, traffic accidents caused a two-hour closure of ice covered Highway 97 between Wasco and Biggs. Ice on roads and sidewalks kept area schools closed.							
ORZ010		Eastern Columbia River Gorge							
		15 0800PST			0	4			Winter Storm
		2200PST							
		Snow, ice and standing water caused at least five traffic accidents on I-84 east of The Dalles. Four people were sent to area hospitals, but none of them appeared to be seriously injured.							
ORZ014		Central Oregon							
		15 1400PST			0	1			Avalanche
		A snowmobiler in Newberry Crater, 25 miles southeast of Bend, dislodged a foot-ball field sized snow field that knocked him more than 100 yards and buried him under 5 feet of snow. Another man, covered to his waist, freed himself and joined a friend to help dig the buried man out. When buried man's head was uncovered he was unconscious, his face discolored and his breathing labored. His friends were able to dig him out and drive him back to the lodge. He was then airlifted to a medical center in Bend where he was treated and released.							
ORZ018		Columbia Deschutes Plateau							
		26 1600PST			0	0			Flood
		1900PST							
		A weather spotter in Post reported heavy rain and street flooding. Another weather spotter in Post reported one inch of rain in a n hour.							
OREGON, Northwest									
ORZ002		Central Coast							
		01 0730PST			0	0			High Wind (G61)
		1700PST							
		The first day of 1998 a Pacific storm caused high winds along the Central Oregon coast. Sea Lion Caves in Lane county reported sustained winds of 54 mph gusting to 70 mph while Florence reported a gust to 60 mph.							
ORZ011		Northern Cascades							
		03 1200PST			0	0			Heavy Snow
		04 0700PST							
		A winter storm deposited 10 inches of new snow at Mt. Hood Meadows and Santiam Pass.							
ORZ011		Northern Cascades							
		04 2200PST			0	0			Heavy Snow
		05 1600PST							
		Eleven inches of new snow were reported at Mt. Hood Meadows and nearby Bennett Pass.							
Clatsop County									
Seaside		05 1300PST	0.1	10	0	0	3K		Tornado (F0)
		A weak tornado did minor damage to the Kinni-Kinnic Lodge and an adjacent home on Beach Street in Seaside.							

Storm Data and Unusual Weather Phenomena

January 1998

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

ORZ011	Northern Cascades				0	0			Heavy Snow
	06	0700PST							
	07	1400PST							
	New snow accumulations of 10 inches at Timberline Lodge on Mt. Hood, 9 inches at Santiam Pass, and 8 inches at Mt. Hood Meadows were reported.								

ORZ001-004>006-009	Northern Coast - Northern Willamette Valley Including Portland Metro Area - Central Willamette Valley Including Salem - Southern Willamette Valley Including Eugene - Western Columbia River Gorge				1	0	600K		Winter Storm
	10	1500PST							
	29	2000PST							
	M43OU								

ORZ001-004>006-009	Northern Coast - Northern Willamette Valley Including Portland Metro Area - Central Willamette Valley Including Salem - Southern Willamette Valley Including Eugene - Western Columbia River Gorge				1	0	1.1M		Ice Storm
	11	0400PST							
	14	2000PST							
	M33VE								

A series of storms accompanied by very cold arctic air from Alaska and Canada brought widespread snow and then freezing rain to Southwest Washington and Northern Oregon from Saturday afternoon, January 10, through Wednesday afternoon, January 14. Up to three feet of snow accumulated in the Cascades and Columbia Gorge, with the heaviest accumulation in the Hood River Valley on the east end of the Gorge. Most of this snow fell from Saturday evening through Sunday. The Portland Metro area, especially the eastern portion near the Gorge, received up to 6 inches of snow Saturday night and Sunday, then a mixture of freezing rain, sleet, and snow fell intermittently Sunday through Tuesday morning. Light snow fell between Portland and Salem Saturday night and Sunday, and light freezing rain fell in the central and southern Willamette Valley and north coast Sunday and Sunday night. The Gorge and the eastern Portland metro areas received most of the problem weather.

The event began when an arctic front brought very cold air from Alaska into Washington state and northern Oregon, resulting in widespread snow. Then a warmer Pacific front moved inland Sunday, and snow turned to freezing rain except near the Gorge. Snow turned to freezing rain in the Gorge Monday, and persisted there and within the reach of strong east winds blowing out of the west end of the Gorge, while a warm front brought above freezing temperatures elsewhere.

Trees and large tree limbs were knocked down over a large area, and there were widespread power outages. On Sunday and early Monday flights in and out of Portland International Airport were cancelled, and on Monday many businesses and schools in the Portland area were closed. On Sunday Portland mayor Vera Katz urged all citizens to stay home. The worst of the storm occurred in the Portland area during the weekend, which undoubtedly resulted in less traffic accidents and disruptions than had the storm's brunt occurred during the normal work week.

There were three known fatalities attributed to the storm. A 33 year old man died when his car hit a tree and he was thrown from the vehicle. The accident occurred at about 10 PM January 10 near Eagle creek in Clackamas county. A 41 year old man died about 1 PM January 12 when the rental van and trailer he was driving slid off I-5 near Wilsonville in Clackamas county. A 43 year old man was found dead from exposure in the back yard of his home in Astoria, in Clatsop county, on January 12. Numerous injuries ranging from minor to critical were attributed to slips on icy streets and sidewalks.

ORZ011	Northern Cascades				0	0			Heavy Snow
	10	1600PST							
	14	1200PST							
	The arctic airmass and series of storms that brought heavy snow and freezing rain to Southwestern Washington and Northern Oregon also dumped heavy snow on the Oregon Cascades. Storm totals were 3 to 5 feet at pass levels.								

ORZ001>002	Northern Coast - Central Coast				0	0	15K		High Wind (G62)
	14	0000PST							
		1200PST							
	A warmer Pacific storm brought high winds to the coast, which blew down trees, some weakened by the previous weeks ice storm, causing local power outages. Highest reported winds were sustained 55 mph gusting to 71 mph at Sea Lion Caves in Lane county, sustained 50 mph gusting to 70 mph at Netarts in Tillamook county, sustained 55 mph gusting to 63 mph at Florence in Lane county, sustained 50 mph gusting to 62 mph at Cannon Beach in Clatsop county, and a gust to 66 mph at Newport in Lincoln county.								

ORZ002	Central Coast				0	0			High Wind (G61)
	16	1900PST							
	17	0200PST							
	Winds accompanying a Pacific storm gusted to 61 mph at Florence in Lane county.								

ORZ001>002	Northern Coast - Central Coast				0	0			High Wind (G63)
	23	1000PST							
		1600PST							
	A Pacific storm caused high winds at the coast. Maximum wind speeds reported were sustained 53 mph gusting to 72 mph at Florence and sustained 53 mph gusting to 63 mph at Sea Lion Caves, both in Lane county, and a gust to 66 mph at Cannon Beach in								

Storm Data and Unusual Weather Phenomena

January 1998

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									
			Clatsop county.						
ORZ002			Central Coast						
	24	0500PST			0	0			High Wind (G58)
		1200PST	Another Pacific storm caused wind gusts to 67 mph at Sea Lion caves in Lane county.						
ORZ002			Central Coast						
	25	1600PST			0	0			High Wind (G65)
		2000PST	The last strong Pacific storm of the month caused wind gusts to 75 mph at Newport in Lincoln county, and 64 mph at Sea Lion Caves in Lane county.						
OREGON, Southeast									
ORZ020			Baker						
	11	1800PST			0	0			Heavy Snow
	12	0900PST	During the night of January 11th heavy snow fell over Baker County. Eleven inches fell in Baker City, 20 inches at Halfway, 12 to 14 inches at Sumpter and 22 inches in Ladd Canyon. Interstate 84 was closed for a short time, disrupting traffic through the region.						
ORZ020			Baker						
	15	0700PST			0	0			Fog
		0900PST	On the morning of January 15th a combination of icy roads and dense fog caused an 11 vehicle pile-up on Interstate 84 near Baker. No injuries were reported.						
OREGON, Southwest									
ORZ015			South Central Oregon						
	01	1200PST			1	0			Winter Storm
			Truck driver was killed when the tractor-trailer truck she was driving slid off icy Hwy 97 near Gilchrist, and slammed into a tree. F51OU						
ORZ015			South Central Oregon						
	02	0900PST			2	0			Winter Storm
			A car skidded to the shoulder of Hwy 97 just south of the Hwy 62 intersection and crashed into a snowplow head-on, killing both occupants of the car, a father and son from Canada. M43OU, M16OU						
Curry County									
7 E Sixes	03	0700PST			0	0			Heavy Rain
	04	0700PST	4.20 inches rainfall fell in past 24 hours.						
Curry County									
5 E Port Orford	03	0800PST			0	0			Heavy Rain
		1600PST	2.24 inches of rainfall was recorded in 8 hours.						
ORZ003			Southern Coast						
	18	1458PST			0	0			High Wind (G65)
			Cape Blanco had a peak wind gust of 65 kt. An intense low pressure system offshore produced strong, gusty winds along the southern Oregon coast and locally inland across southern Oregon.						
ORZ015			South Central Oregon						
	21	1900PST			0	0			Heavy Snow
	22	0700PST	Heavy snow fell overnight in northern Klamath County. Spotters just north of Chiloquin reported up to 7-8 inches of new snow in 12 hours.						
ORZ003-003-003-003-015			Southern Coast - South Central Oregon						
	23	1239PST			0	0	10K		High Wind (G81)
		1533PST	Port Orford spotter reported wind gusts to 65 mph. A strong Pacific low pressure system caused windy conditions from the southern Oregon coast inland to the Klamath basin. Non-thunderstorm winds tore the roof of an outbuilding near the Klamath Falls airport. At the coast wind gusts ranged from 62 mph at Bandon in Coos County to 93 mph at Cape Blanco in Curry County.						
Coos County									
1 N Bandon	24	0951PST			0	0			Thunderstorm Wind (G53)
			Trees down from thunderstorm winds. A strong thunderstorm just north of Bandon downed trees and produced up to half inch hail.						

Storm Data and Unusual Weather Phenomena

January 1998

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

OREGON, Southwest

ORZ003	Southern Coast	24 1658PST			0	0			High Wind (G69)
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Strong, gusty winds continued for a second day along the southern Oregon coast. The peak wind gusts reached 77 mph at Cape Blanco both in the morning and again late in the afternoon.

ORZ008	Rogue Basin	28 2210PST			0	0	30K		High Wind
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A high wind event affected interior sections of southwest Oregon. South to southeast winds gusted to 50 mph, and caused a tree to fall on a mobile home. Temporary power outages were reported from Medford to Ashland.

PACIFIC

GUZ002>003-006	Micronesia - Marshall Islands - Guam	01 0100HST			0	0			Drought
		31 0100HST							

Guam	Talofofu	14 1100HST			0	0	70K		Wild/Forest Fire
		19 2000HST							

Guam	Ritidian Point	17 1730HST			0	3			Rip Currents
		18 1945HST							

Rip Current for Guam on January 18, 1998 from 1330 to 1545 LST. One person got caught in the rip currents at the beach at Sirena Beach, which is near Ritidian Point. One person went in to try to rescue the person, but couldn't. A third person went in and got caught in the same current.

Wildfires over the southern sections of Guam. These began on January 15 and continued into January 20th LST. These fires were a combination of tree damage left from Super Typhoon Paka in December and dry conditions from a beginning drought. The Guam Fire Department reported 115 fires with 1380 acres burnt

Drought in Micronesia. Rainfall levels are well below average across the Micronesian islands of Chuuk, Pohnpei, Yap, Palau and Majuro. Also the smaller outer islands were effected by the drought. In Pohnpei water rationing was begun. Small streams have dried up in Pohnpei with the flow in the large rivers slowed.

PENNSYLVANIA, Central

Warren County	Countywide	07 2100EST			0	0			Flash Flood
		08 0800EST							
Adams County	Countywide	08 1100EST			0	0			Flash Flood
		2100EST							
Dauphin County	Countywide	08 1100EST			0	0			Flash Flood
		2100EST							
Lancaster County	Countywide	08 1100EST			0	0			Flash Flood
		2100EST							
Lebanon County	Countywide	08 1100EST			0	0			Flash Flood
		2100EST							
Mckean County	Countywide	08 1100EST			0	0			Flash Flood
		2100EST							
Schuylkill County	Countywide	08 1100EST			0	0			Flash Flood
		2100EST							
York County	Countywide	08 1100EST			0	0			Flash Flood
		2100EST							
Cumberland County	Countywide	08 1300EST			0	0			Flash Flood
		1700EST							
Franklin County	Countywide	08 1300EST			0	0			Flash Flood
		1700EST							

Storm Data and Unusual Weather Phenomena

January 1998

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									
Perry County Countywide	08	1300EST 1700EST			0	0			Flash Flood
Potter County Countywide	08	1400EST 2100EST			0	0			Flash Flood
Centre County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Clinton County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Columbia County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Huntingdon County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Juniata County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Lycoming County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Mifflin County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Montour County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Northumberland County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Snyder County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Sullivan County Countywide	08	1600EST 2100EST			0	0			Flash Flood
Union County Countywide	08	1600EST 2100EST			0	0			Flash Flood
<p>Heavy rains produced flooding across a large area of central Pennsylvania over a 3-day period from January 7th through the 10th. Large amounts of moisture moved northeast across the Ohio Valley into the area. Especially hard hit was the Russell area of eastern Warren County, where homes were evacuated as the Conewango River crested at 10.8 feet on the 10th. Route 220, the major north-south highway across eastern Lycoming and Sullivan counties, was closed by flooding during the evening of the 8th. The Susquehanna River also exceeded flood stage at Bloomsburg and Lewisburg on the 9th and Danville and Harrisburg on the 10th.</p>									
Cumberland County Cumberland Park	09	0355EST			0	0			Thunderstorm Wind (G51)
									Trees down in Cumberland.
York County Dillsburg	09	0420EST			0	0			Thunderstorm Wind (G51)
									Trees down in Dillsburg.
Dauphin County Middletown	09	0433EST			0	0			Thunderstorm Wind (G51)
									Winds gusted to 60 mph at the airport.
Lebanon County Lickdale	09	0500EST			0	0			Thunderstorm Wind (G51)
									Trees down.

Storm Data and Unusual Weather Phenomena

January 1998

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

PENNSYLVANIA, East

as well as the rest of the Northwestern Philadelphia suburbs to change the freezing rain to rain by the evening of the 15th. Farther north, from Upper Bucks County through the Poconos, precipitation fell mainly as freezing rain with as much as 3/4 of an inch of ice accruing on exposed surfaces in the Poconos. The heaviest freezing rain fell during the afternoon and evening hours on the 15th. By midnight, temperatures rose above the freezing mark in Upper Bucks County and the Lehigh Valley, but remained around the freezing mark through the morning of the 16th in the Poconos.

In the Lehigh Valley within Allentown, nine ice related accidents occurred within a 20 minute span on bridges and overpasses the afternoon of the 15th. In Northampton County, in East Allen Township, a car spun out of control on Pennsylvania State Route 248 and crashed into a pole injuring the three persons in the vehicle and blacking out 1,400 residents. In Forks Township, downed tree limbs damaged other wires. Several accidents were also reported in Bath. In all about 2,000 residents lost power in Northampton County. In the Poconos, Interstate 80 had to be closed because of the hundreds of accidents on the roadway in Monroe County. County officials advised motorists from driving because of the extremely hazardous road conditions.

PAZ060>062-067>069	Berks - Lehigh - Northampton - Chester - Montgomery - Bucks								
	23	0100EST			0	0	0		Wintry Mix
		1200EST							
PAZ054>055	Carbon - Monroe								
	23	0200EST			0	0	0		Winter Storm
		1500EST							

A low pressure system, that moved into the Ohio Valley the morning of the 23rd, brought a wintry mix of snow, sleet and freezing rain to Berks County, the Lehigh Valley and the northwestern Philadelphia Suburbs and a more substantial winter storm to the Poconos. Prior to precipitation starting, a high pressure system built into northern New England on the 22nd and 23rd. This brought enough cold air to the area for precipitation to start as snow. Due to the low's location, winds were from the east near the ground and this brought in warmer air from the Atlantic Ocean. In the Northwest Philadelphia suburbs, the Lehigh Valley and Berks County, precipitation changed over quickly to freezing rain and sleet as accumulations were 2 inches or less. The change to plain rain though took longer and not until around 8 a.m. EST in the upper parts of Bucks County and not until noon in the northern extremes of the Lehigh Valley. In the Poconos, precipitation stayed snow longer and the change to sleet did not start until around sunrise of the 23rd. A mixture of sleet, freezing rain and rain persisted in the Poconos through the mid-afternoon hours. Untreated roadways, especially in the Poconos were treacherous.

Snowfall accumulations prior to the changeover included 5 inches in Tobyhanna (Monroe County), 4 inches in East Stroudsburg (Monroe County), 3 inches in Jim Thorpe (Carbon County), 1.8 inches in Springtown (Bucks County), 1.6 inches in Hamburg (Berks County), 1.5 inches in Palm (Montgomery County), 1.4 inches in Glenmoore (Chester County) and around an inch at the Lehigh Valley International Airport.

A series of weak secondary low pressure systems developed along the primary low's cold front and this prolonged the precipitation as rain through the evening of the 23rd.

Bucks County									
Countywide	23	0900EST			0	0	0		Heavy Rain
		2300EST							
Chester County									
Countywide	23	0900EST			0	0	0		Heavy Rain
		2300EST							
Delaware County									
Countywide	23	0900EST			0	0	0		Heavy Rain
		2300EST							
Montgomery County									
Countywide	23	0900EST			0	0	0		Heavy Rain
		2300EST							
Philadelphia County									
Countywide	23	0900EST			0	0	0		Heavy Rain
		2300EST							

A low pressure system moved into the Ohio Valley the morning of the 23rd. A series of weak secondary low pressure systems developed along this primary low's cold front. Not only did this prolong the rain through the evening of the 23rd, but also helped it fall heavy at times especially during the afternoon on the 23rd. Storm totals averaged between 1.25 inches and 2.5 inches across Southeast Pennsylvania with the highest amounts around the city of Philadelphia. Temperatures went above the freezing mark in the far northwest Philadelphia suburbs just before the heavy rain arrived. The heavy rain caused the usual urban and poor drainage flooding in low-lying areas. Storm totals included 3.09 inches in Crum Creek (Delaware County), 2.47 inches in the Franklin Institute within Philadelphia and Phoenixville (Chester County), 2.4 inches in Southampton (Bucks County), 2.34 inches at the Philadelphia International Airport, 1.82 inches in Doylestown (Bucks County), 1.71 inches in Glenmoore (Chester County) and 1.56 inches in Perkasie (Bucks County).

Storm Data and Unusual Weather Phenomena

January 1998

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

PENNSYLVANIA, East

PAZ054>055-060>062- Carbon - Monroe - Berks - Lehigh - Northampton - Bucks 069

	24	1900EST			0	0	0	0	Snow
	25	0100EST							

An upper air disturbance that moved through Eastern Pennsylvania the evening of the 24th helped produce a quick burst of snow across the Poconos, Berks County, the Lehigh Valley and Upper Bucks County. Farther southeast across Eastern Pennsylvania, the precipitation intensity was lighter and the snow mixed with rain at times. Accumulations averaged between 2 and 5 inches across much of this area. Specific accumulations included 5 inches in Stroudsburg (Monroe County), 4.5 inches in Williams Township (Northampton County), 4.3 inches in East Stroudsburg (Monroe County), 4.2 inches in Springtown (Bucks County), 4 inches in Reading (Berks County), 3 inches in Robesonia (Berks County), 2 inches in Lehighton (Carbon County) and 1.5 inches at the Lehigh Valley International Airport. Untreated roads were hazardous.

PAZ067>069 Chester - Montgomery - Bucks

	28	0300EST			0	0			Ice Storm
		1500EST							

The northern fringe of the precipitation associated with an intense northeaster that moved eastnortheast off the Virginia coast affected the northwest Philadelphia suburbs through the morning commute and most of the daylight hours on the 28th. Precipitation fell as a mixture of rain, freezing rain and sleet in the lower parts of the county and mainly as freezing rain in the upper parts of the county. Storm totals were around one-quarter of an inch water equivalent. Air temperatures were very close to the freezing mark and this prevented most roadways from becoming very treacherous. But ice began to accrue onto bridges, overpasses, trees and power lines. The ice on exposed surfaces coupled with northeast winds gusting between 30 and 40 mph brought down tree limbs and consequently power lines. About 10,000 PECO customers lost power. Traveling was hazardous on untreated bridges and overpasses.

PAZ060>062 Berks - Lehigh - Northampton

	28	0500EST			0	0	0		Freezing Rain
		1600EST							

The northern fringe of the precipitation associated with an intense northeaster that moved eastnortheast off the Virginia coast affected Berks County and the Lehigh Valley through the morning commute and most of the daylight hours on the 28th. Precipitation fell as a mixture of rain, freezing rain and sleet, but the intensity was very light and storm totals were only around one-tenth of an inch water equivalent. Untreated roadways were slippery, but no major accidents or traffic snarls were reported.

PAZ054>055-060>062- Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia 067>071

	31	2359EST			0	0	0	0	Unseasonably Warm
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Courtesy of the warm spell at the start of the month and the lack of any prolonged invasions of arctic air the rest of the month, January 1998 was one of the ten warmest Januarys on record for Eastern Pennsylvania. At the Philadelphia International Airport, the January monthly mean temperature of 41.0 degrees was 10.6 degrees above normal and was tied for the 8th warmest January on record. At the Lehigh Valley International Airport, the monthly mean temperature of 36.5 degrees was 9.9 degrees above normal and was the 5th warmest January on record.

PENNSYLVANIA, Northeast

PAZ038>039-043-047 Bradford - Susquehanna - Wyoming - Luzerne

	08	0400EST			0	0	125K		Flood
	10	2200EST							

The combination of snowmelt from well above normal temperatures and periodic heavy rainfall propelled minor to moderate flooding along the north branch of the Susquehanna river in northeastern Pennsylvania.

The river first rose above flood stage from Great Bend to Towanda and Meshoppen during the morning hours of the 8th. By that afternoon, significant rises had made it downstream to Wilkes-Barre. Periods of heavy rain over the region on the evening of the 8th added enough runoff to continue ascent of river levels well into the day on the 9th. By the early evening hours of the 9th, water levels had crested 3 to 5 feet above flood stage at most points. This resulted in minor lowland flooding and closure of adjacent roadways along many stretches of the river. However, in the Falls township section of Wyoming county, a portion of a more frequently traveled road (route 92) was closed for a time on the 9th and some basement flooding was also reported. Sections of route 11 in West Pittston in Luzerne county also took on water with minor flooding occurring in some yards close to the river banks.

The river began receding during the evening of the 9th. By late at night on the 10th, all points within the Susquehanna basin had fallen back below flood stage.

Pike County Lackawaxen

	09	1300EST			0	0			Hail (0.88)
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A short line of thunderstorms developed across the Poconos in advance of an approaching cold front. One embedded cell became severe across northern Pike county. This storm briefly dropped nickel sized hail in Lackawaxen before moving across the Delaware river.

Storm Data and Unusual Weather Phenomena

January 1998

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

PENNSYLVANIA, Northeast

PAZ040-044-048	Wayne - Lackawanna - Pike								
	15	1900EST			0	0			Ice Storm
	16	1000EST							

A storm system intensified as it moved northeastward from the Carolina coast on the evening of the 15th into the early morning hours of the 16th. This system dumped a mixed bag of wintery precipitation over much of northeastern Pennsylvania.

Across the Poconos, significant icing occurred as an elevated warm layer persisted for most of the event. Ice accumulations of up to a quarter of an inch on exposed surfaces were observed across the higher terrain. Scattered power outages resulted from the weight of the ice on power lines. Freezing rain and sleet changed back to snow for a brief time before ending late in the morning on the 16th.

PENNSYLVANIA, Northwest

Erie County Countywide	07	2155EST			0	0	60K		Flood
		2345EST							

Crawford County Countywide	07	2159EST			0	0	80K		Flood
		2300EST							

Heavy thunderstorm rain on already saturated soil caused flooding of streams, low lying areas, roads and basements, especially in the areas of Meadville, Vernon Township and Conneaut Lake (all in Crawford County). Six feet of water closed an underpass on Route 98 in Fairview Township and waters from French Creek flooded some roads at Mill Village (Erie).

Crawford County Countywide	08	1950EST			0	0	30K		Flood
		2030EST							

Heavy thunderstorm rain on already saturated soil caused flooding of several roads and at least one basement in the Meadville area.

Crawford County Countywide	09	0200EST			0	0	50K		Flood
		0400EST							

Erie County Countywide	09	0300EST			0	0			Flood
		0430EST							

Heavy thunderstorm rain on already saturated ground caused flooding of roads, low lying areas and basements. Basement flooding was most prevalent in Crawford County.

PAZ003	Crawford								
	09	0345EST			0	0	50K		Flood
	10	2200EST							

The French Creek at Meadville exceeded its flood stage of 14 feet and crested at 14.9 feet on 01/09/98 at 1300 EST. Flooding occurred at Wilson Chute, Race and Mead Streets and Route 19 south of Meadville. The Asbury Manor West Mobile Home and Cussewago Parks along Cussewago Creek were also affected.

Crawford County Countywide	13	0000EST			0	13			Glaze
	16	0300EST							

Erie County Countywide	13	0000EST			0	29			Glaze
	16	0300EST							

A combination of occasional rain, freezing rain, sleet and snow, particularly on Tuesday the 13th, caused icy roads, bridges, sidewalks and other exposed surfaces. Schools were closed and hospitals treated numerous ice related injuries (mostly from slips and falls). This event did not meet winter storm criteria.

PENNSYLVANIA, West

Beaver County Countywide	08	0730EST			0	0			Flood
		1300EST							

Numerous roads were flooded throughout the county, a few were closed.

Forest County East Hickory	08	0830EST			0	0	5K		Flood
		1300EST							

Hickory Creek flooded near the Allegheny River. An observer reported 2.05 inches storm total. Some roads and a few homes and basements were flooded.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>PENNSYLVANIA, West</u>									
Beaver County Countywide	09	0100EST 0400EST			0	0	20K		Flash Flood
									Route 68 in Industry was closed due to heavy, flooding, thunderstorm rains. A restaurant in Bridgewater had five feet of water in the basement. Thirty-two homes had flooded basements throughout the county. The Connoquenessing Creek flooded some roads in Franklin Township. Two automobiles were stranded in flood waters in Rochester. Two private bridges were washed out in Daugherty Township, one bridge reportedly was washed downstream into the other.
Washington County Washington	09	0205EST 0220EST			0	0	5K		Thunderstorm Wind
									Several trees were downed by thunderstorm winds throughout the county.
Allegheny County Emsworth	09	0225EST			0	0	1K		Thunderstorm Wind
									Several large limbs were downed by thunderstorm winds.
Allegheny County Millvale	09	0230EST			0	0	5K		Hail (0.75)
									Some cars were damaged near Mt. Troy. The hail covered the ground.
Washington County West Brownsville	09	0300EST 0400EST			0	0			Flash Flood
									Some mudslides and flooded roads were reported in West Brownsville.
Westmoreland County Lower Burrell	09	0300EST			0	0			Hail (0.75)
Westmoreland County Lower Burrell	09	0300EST			0	0	3K		Thunderstorm Wind
									Several trees were downed by thunderstorm winds.
Armstrong County Kittanning	09	0315EST			0	0			Hail (1.00)
Clarion County Sligo	09	0341EST			0	0	1K		Thunderstorm Wind
									A tree was downed onto and snapped a power line.
PAZ021		Allegheny							
	09	0700EST 2100EST			0	0			Flood
									Widespread rainfall between 1.5 and 3.0 inches led to flooding along the Ohio River at Pittsburgh and on the lower Allegheny River at Acmetonia. The Allegheny River crested at its 17 foot flood stage at Acmetonia at 7 am EST on January 9. The Ohio River at Pittsburgh went above flood stage by 8 am on January 9, crested at 25.6 feet at 1 pm and went below flood stage by 9 pm that evening.
Allegheny County Crafton	09	0739EST			0	0	1K		Thunderstorm Wind
									Several tree limbs were downed by thunderstorm winds. One-quarter inch hail also accumulated to a depth of one inch.
<u>PUERTO RICO</u>									
Humacao Rio Grande	03	1200AST 1700AST			1	0			Flash Flood
									Heavy rains over the Espiritu Santo river basin in Rio Grande produced a water crest that swept down the river a swimmer. M14IW
Humacao Juncos to Yabucoa	06	0600AST 1400AST			0	0	30K		Flash Flood
San Juan Caguas to Canovanas	06	0600AST 1400AST			0	0			Flash Flood
									Heavy rains associated with a cold front produced widespread flooding across the central and east sections of Puerto Rico. The areas most affected were near Juncos and Yabucoa where the Commonwealth Civil Defense and a local tv channel 11 reported three flooded houses in Juncos. Roads 928 and 30 between Caguas and Humacao were flooded, and a house collapsed in Yabucoa. In Caguas roads 172 and 1 were flooded and in Canovanas power lines were downed by a fallen tree.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>PUERTO RICO</u>									
San Juan San Juan	07	0030AST 0630AST			0	0	10K		Flash Flood
San Juan Toa Baja to Dorado	07	0030AST 0630AST			0	0			Flash Flood
The remnants of a cold front produced heavy rains across parts of the San Juan metropolitan area and over the north sections of Puerto Rico. Civil Defense reported flooding in Ocean Park and Punta las Marias in San Juan and in Dorado and Toa Baja. The San Juan Star newspaper reported that the heavy rains damaged underground power lines in Condado and Miramar where 4000 residences were without electric power.									
Humacao Humacao	09	1300AST 1500AST			0	0			Urban/Sml Stream Fld
Civil Defense reported several creeks overflowed and flooding of low lying areas in Humacao.									
Aguadilla Moca	11	1500AST 1700AST			0	0			Urban/Sml Stream Fld
Heavy rains produced street flooding in the town of Moca. 1.76 inches of rain was reported.									
San Juan Vega Alta	11	1600AST 1700AST			0	0			Urban/Sml Stream Fld
Heavy rains produced localized urban flooding in Vega Alta. A voluntary observer reported 3.15 inches of rain in Vega Alta from 1600 AST to 1700 AST.									
<u>RHODE ISLAND</u>									
RIZ004									
Eastern Kent 03		1354EST			0	0			Record Warmth
The maximum temperature at T.F. Green Airport in Warwick reached a balmy, record-setting 62 degrees. The previous record was 58 degrees set on this date in 1913.									
Providence County Cranston to North Providence	24	0700EST 1500EST			0	0			Flood
In Cranston, the Pocasset River overflowed its banks, flooding a local road with 2 feet of water between 7:00 AM and 9:00 AM on January 24th. Later, between 1:00 PM and 3:00 PM, flooding was reported along the Woonasquatucket River in North Providence. There were no reports of property damage. The flooding was in response to heavy rainfall which occurred throughout Providence County. Total 24-hour reports included 3.50 inches of rain at Clayville and 3.61 inches in downtown Providence. As much as 3 inches fell during a 12-hour period.									
<u>SOUTH CAROLINA, Central</u>									
Kershaw County Lugoff	08	0510EST			0	0	2K	0	Thunderstorm Wind (G50)
Sheriff department reported severe thunderstorm winds took down trees and powerlines.									
Kershaw County Camden	08	0515EST			0	0	5K	0	Thunderstorm Wind (G50)
Police reported severe thunderstorm winds took down numerous trees and powerlines.									
Chesterfield County 2 W Cheraw	08	0600EST			0	0	0	0	Thunderstorm Wind (G50)
EPD and Highway Maintenance report several trees down on SC Hwy 22.									
Aiken County 12 SW Aiken	16	0720EST			0	0	0	0	Hail (0.75)
Highway Patrol reported a severe thunderstorm produced 3/4 inch hail along I-20.									
Chesterfield County 7 NE Chesterfield	16	1015EST			0	0		0	Hail (0.75)
SKYWARN spotter reports 3/4 inch hail covering the ground.									
<u>SOUTH CAROLINA, North Coastal</u>									
Horry County Myrtle Beach	23	0900EST 1000EST			0	0			Flash Flood
HEAVY RAINS DURING THE EARLY MORNING CAUSED SOME MINOR FLOODING ON SOME SECONDARY ROADS IN HORRY COUNTY. JORDANVILLE ROAD WAS CLOSED FOR A SHORT TIME.									

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
SOUTH CAROLINA, Northwest									
Oconee County Countywide	07 08	1930EST 0300EST			0	0			Flood
A mudslide occurred at 2200 EST which closed Rte 107. Twenty other roads were closed across the county due to high water.									
Anderson County 8 NE Pendleton to 5 NW Pendleton	07	2020EST 2025EST			0	0	100K		Thunderstorm Wind (G60)
A one mile long swath of damage occurred in northern Anderson county in the Double Springs community. An eye-witness describes a swirl of wind that came across a lake and damaged a couple of residences as well as downed a few large trees. This quite possibly could have been a tornado, but the report was received too late to do a damage survey.									
Pickens County 2 S Easley to Easley	07	2110EST 2115EST	1.5	35	0	4	3M		Tornado (F2)
A tornado developed from a fast moving severe thunderstorm that raced north out of eastern Georgia. The F2 tornado destroyed several houses and mobile homes and severely damaged many other homes and businesses. Damage was sustained to the south of the track of the tornado due to strong inflow into the storm. Damage from severe thunderstorm winds in the rear flank downdraft occurred north into Easley.									
Pickens County 3 N Pickens	07 08	2200EST 0300EST			1	3	50K		Flash Flood
Excessive rain fell just north of Pickens causing raging water flowing into a lake to wash out a road. Two cars drove into this washout around 2300 EST and then were swept into the lake, killing one young man and injuring three other people. M19VE									
Greenville County North Portion	07 08	2215EST 0900EST			0	0	50K		Flood
Excessive rain caused the Reedy River in Greenville to rise to stage over 12 feet, covering roads and washing a few bridges out. Evacuations were needed in the northern part of Greenville county near the Saluda water system.									
SCZ003-006	Northern Greenville - Southern Greenville								
	07	2215EST			0	0			High Wind (G50)
Anderson County Anderson	07 08	2300EST 0300EST			0	0			Flood
Spartanburg County Landrum	08	0100EST 0700EST			0	0			Flood
Excessive rain flooded Highway 14 and other bridges and roads in the Landrum area were covered by high water. The Pacolet River flooded other nearby roads and fields.									
York County Rock Hill	08	0130EST			0	0	0.30K		Thunderstorm Wind (G50)
Pickens County Pumpkintown to Dacusville	08	0300EST 0700EST			0	0			Flood
Heavy rain caused Laurel and Hardy Lake to rise above full pool and resulted in the evacuation of nearby residents.									
A powerful winter storm brought flooding rain, high winds, and a tornado to the Upstate from the evening of the 7th into the early morning of the 8th. Rainfall between 4 and 7 inches during a 2-day period across the mountains and foothills resulted in significant flooding. Many roads and bridges were covered or washed out. A wash out in Pickens county resulted in one fatality. Thunderstorms raced north through the area adding to the deluge as well as creating or enhancing strong to damaging winds. An F2 tornado touched down near Easley. Meso-scale high winds behind the complex of thunderstorms moved across the northern half of Greenville county and blew down trees and power lines. Severe thunderstorm winds combined with strong gradient winds to down trees and power lines in York county as well.									
Oconee County Tamassee	08	1853EST			0	0			Hail (1.75)
York County Clover	08	1955EST			0	0			Hail (1.75)
Scattered thunderstorms developed in an unstable airmass created by an upper level cold pool moving across the region in the wake of the powerful storm earlier in the day. A couple of storms became severe and dropped golf ball size hail.									
SCZ007>009-013>014	Spartanburg - Cherokee - York - Union - Chester								
	19 29	0600EST 0900EST			0	0			Snow

Storm Data and Unusual Weather Phenomena

January 1998

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

SOUTH CAROLINA, Northwest

A wet snow fell at a pretty good clip for a few hours in the morning. Accumulations were between 1 and 3 inches, but temperatures just above freezing precluded the development of any serious travel problems.

SCZ001>003 Northern Oconee - Northern Pickens - Northern Greenville
27 0400EST 1800EST 0 0 Heavy Snow

A deep, slow-moving low pressure system drew abundant moisture into air just cold enough to support snow. A heavy wet snow fell across the mountains of South Carolina, most of it in the morning and at elevations above 2500 feet. Accumulations ranged between 4 and 8 inches, closing several roads into North Carolina.

SCZ003-006>008 Northern Greenville - Southern Greenville - Spartanburg - Cherokee
28 0900EST 1200EST 0 0 High Wind (G50)

High winds behind deep low pressure blew down numerous trees, although partly due to soggy soil, from Greenville to Gaffney. In addition a canopy was torn off a store.

SOUTH CAROLINA, South Coastal

SCZ044>045 Dorchester - Berkeley
01 0000EST 31 2359EST 0 0 Flood

The Edisto River at Givhans Ferry crested at 14.1 ft on the 30th. Flood stage is 10.0 ft. The Santee River at Jamestown crested at 17.9 on the 31st. Flood stage is 10.0 ft. Both the Edisto River and the Santee River remained above flood stage for the entire month of January. This was the result of rainfall ranging from 2.5 to more than 4 inches above normal for the month. People along the banks of both rivers suffered a considerable amount of inconvenience with roads cut off to their houses and water several feet deep in their yards and in some cases in their homes. Many residents had to use boats to travel between their car and their home.

Jasper County South Portion 23 0920EST 1200EST 0 0 Flood

Beaufort County Countywide 23 0930EST 1230EST 0 0 Flood

Colleton County South Portion 23 0930EST 1300EST 0 0 Flood

Charleston County East Portion 23 0945EST 1300EST 0 0 Flood

Heavy rainfall ranging from 3 inches to near 7 inches in 24 hours caused numerous roads and streets to be either washed out or closed. Some homes had more than a foot of standing water in their yards.

SOUTH DAKOTA, Central and North

NONE REPORTED.

SOUTH DAKOTA, Southeast

NONE REPORTED.

SOUTH DAKOTA, West

SDZ029 Southern Black Hills
08 1500MST 09 0100MST 0 0 Heavy Snow

Localized heavy snow fell in the higher elevations of the Southern Black Hills, just north of Custer. The maximum snowfall was 9 inches at Crazy Horse Memorial.

TENNESSEE, Central

TNZ022-024>025-032-057-094 Benton - Humphreys - Dickson - Putnam - Hickman - Lawrence
01 1200CST 1800CST 0 0 Heavy Snow

Here is a list of snow depths reported to the National Weather Service broken into counties and inches: Lawrence and Dickson counties/ 4-5 inches/, Fentress/ 4 inches/, Putnam/ 3-4 inches/, Humphreys/ 2-4 inches/, Warren, Marshall, and Bledsoe/ 3 inches/, Grundy, Warren, and Wayne/ 2-3 inches/, Robertson, Sumner, Macon, Jackson, and Dekalb/ 2 inches/, Lincoln, Hickman and Marion/ 2 inches/, Coffee, Bedford, Montgomery, Wilson, Benton/ 1-2 inches, but a local newspaper reported some areas in Benton county had as much as 4 inches/.

Storm Data and Unusual Weather Phenomena

January 1998

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 and Cheatham/ 1-2 inches/, Stewart, Davidson, Rutherford, Williamson, and Franklin had 1 inch. Five inches of snow was reported at Bon Aqua in Hickman county even though most of Hickman county had only 2 inches. Interestingly, as temperatures warmed into the middle 30s over most of middle Tennessee that afternoon, significant snow melt occurred at many locations. For example, here at the National Weather Service at Old Hickory, an inch of snow was on the ground this morning but had melted by mid-afternoon.

Lincoln County

Fayetteville

07	0630CST 1200CST				0	0			Flash Flood
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Lincoln county EMA reported minor flash flooding had occurred in some areas of the county. One family had to be moved to higher ground.

Franklin County

Countywide

07	1230CST 1600CST				0	0			Flash Flood
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Sheriff's office reported many county roads closed. State Hwy 127 was closed over the northern part of the county. At one point, there were 20 roads closed throughout the county.

Lawrence County

Lawrenceburg

07	1240CST 1600CST				0	0			Flash Flood
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EMA officials reported Moss and Shoal Creeks out of their banks. Copious flooding in town with Hwys 43 and 64 closed.

Coffee County

**7.1 E Manchester to
7.2 ENE Manchester**

07	1245CST 1246CST	0.5	20		0	0	250K		Tornado (F1)
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The Coffee county EMA director surveyed the damage. 5 homes had some roof damage, but a brick home lost an entire roof. Some outbuildings were destroyed. There were no injuries. A woman did see a funnel before the tornado struck. Trees and power lines were down on Ragsdale Road.

Bedford County

Shelbyville

07	1300CST 1600CST				0	0			Flash Flood
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Old Unionville Road was under 1 to 3 feet of water.

Cannon County

Woodbury

07	1300CST 1600CST				0	0			Flash Flood
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Low spots on roadways were flooded.

Clay County

Countywide

07	1300CST 1600CST				0	0			Flash Flood
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Many culverts are flooded and washed out around the county.

Coffee County

Countywide

07	1300CST 1600CST				0	0			Flash Flood
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Many roads were closed due to high water countywide. Harrison Branch Road was washed out.

Marion County

Countywide

07	1305CST 1600CST				0	0			Flash Flood
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Numerous county roads were closed. Mud slides occurred on Suck Creek Mt. The Little Sequatchie River came out of its banks.

Coffee County

Tullahoma

07	1315CST 1600CST				0	0			Flash Flood
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A SKYWARN Spotter reported extensive low lying flooding around Tullahoma. The park by the high school was under water.

Dekalb County

Keltonburg

07	1326CST 1600CST				0	0			Flash Flood
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Sink Creek Road, near Keltonburg, was closed. Several tiles were washed out.

Putnam County

Countywide

07	1345CST 1600CST				0	0	1K		Flash Flood
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Many county roads were being flooded due to the heavy rains. Schools were let out early. A pool hall in Cookeville had its basement flooded. A wooden bridge was washed out. The wooden floor of the bridge was torn from its steel-girder underpinning by the high

Storm Data and Unusual Weather Phenomena

January 1998

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									
Morgan County Countywide	07	0930EST 1315EST			0	0			Urban/Sml Stream Fld
Rhea County Countywide	07	0930EST 1315EST			0	0			Urban/Sml Stream Fld
Roane County Countywide	07	0930EST 1315EST			0	0			Urban/Sml Stream Fld
Scott County Countywide	07	0930EST 1315EST			0	0			Urban/Sml Stream Fld
Heavy rain fell over the Cumberland Plateau and southeast Tennessee causing creeks and streams to rise above bankfull. Many roads, intersections and low spots were partially covered with water. A few roads were closed due to high water.									
TNZ034-066-099									
		Fentress - Cumberland - Hamilton							
	07	1200CST 1300CST			0	0			Flood
Heavy rain over parts of the Cumberland Plateau and southeast Tennessee resulted in widespread flooding of streets and roads in these counties. Many secondary roads were under water for a long time. The flooding continued through the afternoon and into the early morning hours of the following day.									
Carter County Countywide	07	2135EST			7	0	20M		Flood
Heavy rain over several hours triggered flash flooding. The heaviest rain fell between 1900 EST, January 7 and 0100 EST, January 8, where two to five inches fell during the period. Nearly 8 inches of rain fell in 24 hours in a rain gage in the headwaters of the Doe River, enabling the Doe River at Elizabethton, TN to reach its record flood stage of 10.92 feet. Approximately one foot of snow in the mountains had melted the previous day, adding to runoff problems. Several tributaries of the Doe River flooded and caused damage. The water system in Roan Mountain was heavily damaged. Twelve bridges along with several sections of roadway were rendered unusable. Over two hundred mobile homes and more than a dozen houses were destroyed. Nearly two hundred other houses and buildings, and six businesses were severely damaged. M37IW, M73VE, F65VE, M59VE, F49VE, F33VE, F12VE									
Johnson County Countywide	07	2135EST			0	0	500K		Flood
Unicoi County Countywide	07	2135EST			0	0			Flood
Heavy rain over several hours triggered flash flooding across these counties in northeast Tennessee.									
Sevier County Countywide	07	2145EST			0	0			Flash Flood
Rain on top of snow melt resulted in flash flooding across most of the county. The west prong of the Little Pigeon River reached 11.7 feet, far above the 1 to 1 1/2 foot level. Rising water forced the temporary evacuation of Park Place Condominiums and some hotel lodgers. All were able to return by midnight. Most of the flooding in Gatlinburg was around Howard Johnson's and a Mexican restaurant, No Way Jose's. Water reached the street in the Baskins Creek intersection and also near Applebee's on the Parkway. The river is flashy, and the water receded quickly.									
Sevier County 5 SW Gatlinburg	08	1800EST			0	0			Hail (0.75)
Monroe County Tellico Plains	08	1850EST			0	0			Hail (0.75)
Hawkins County 2 W Surgoinsville	08	2135EST			0	0			Hail (1.00)
TNZ016>018-040>047-071>074									
		Hawkins - Sullivan - Johnson - Northwest Coker - Coker/Smoky Mountains - Northwest Greene - Southeast Greene - Washington - Unicoi - Northwest Carter - Southeast Carter - Northwest Blount - Blount/Smoky Mountains - North Sevier - Sevier/Smoky Mountains							
	27	1930EST			1	0	1M		Winter Storm
	28	1130EST							
Heavy snow fell throughout most of northeast Tennessee. Most snowfall totals ranged from 5 to 10 inches. However, in the high mountain elevations of Johnson, Carter, Greene, Coker, Sevier and Blount counties, as much as 2-3 feet of snow fell. 3-4 feet was reported on top of Roan Mountain in Carter county. The heavy wet snow resulted in numerous power outages in northeast Tennessee, with as many as 100,000 people with out power at one point. A man in the Hartford community in Coker county was killed when a snow-laden barn collapsed on him. The roof of the island gas pumps at a market in Elizabethton (Carter Co.) collapsed due to the weight of snow. M68LS									

Storm Data and Unusual Weather Phenomena

January 1998

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

TNZ020>021-048>053-088>092 Gibson - Carroll - Lauderdale - Tipton - Haywood - Crockett - Madison - Chester - Shelby - Fayette - Hardeman - McNairy - Hardin

15	1400CST				0	0	970K	Winter Storm
16	0400CST							

A winter storm brought a mix of freezing rain, sleet and snow to much of southwest Tennessee. Numerous trees, power lines and phone lines were brought down by the freezing rain and sleet leaving more than 75,000 homes without power. Several areas had fallen trees damaging homes and cars. Up to 4 inches of snow accumulated in some areas.

TEXAS, Central

Mcculloch County								
Brady	05	1600CST			0	0		Hail (2.00)
Mcculloch County								
Melvin	05	1610CST			0	0		Hail (1.50)
Mcculloch County								
4 W Brady	05	1623CST			0	0		Hail (0.88)
Mcculloch County								
3 N Brady	05	1633CST			0	0		Hail (0.75)
Mcculloch County								
3 W Brady	05	1637CST			0	0		Hail (1.75)
Mcculloch County								
Brady	05	1638CST			0	0		Hail (2.00)
Mcculloch County								
Brady	05	1640CST			0	0		Hail (2.00)
								Extensive hail damage to windows and vehicles in Brady
Mcculloch County								
Rochelle	05	1647CST			0	0		Hail (1.75)
San Saba County								
4 NE San Saba	05	1750CST			0	0		Hail (1.75)
San Saba County								
7 NE San Saba	05	1800CST	0.1	15	0	0	1K	Tornado (F0)
								A small shed was destroyed

TEXAS, Central Southeast

Brazoria County								
North Portion	04	1645CST 1745CST			0	0	7K	Flash Flood
								Street flooding in Pearland and Alvin. Church had high water in it in Alvin.
Galveston County								
North Portion	04	1645CST 1930CST			0	0	3K	Flash Flood
								Street flooding in South Shore Harbor and on feeder roads of I-45 at FM 517 and FM 518.
Harris County								
Southeast Portion	04	1645CST 1745CST			0	0	3K	Flash Flood
								Red Bluff in Pasadena flooded, feeder roads near Almeda Mall flooded
Chambers County								
Oak Island	06	0510CST			0	0	5K	Hail (0.88)
Galveston County								
Galveston	06	0635CST 0900CST			0	0	5K	Flash Flood
								High water on Broadway, 45th-47th St, 53rd St, 61st St. on Galveston Island
Chambers County								
Northwest Portion	06	0805CST 1115CST			0	0	5K	Flash Flood
								High water on HWY 146 & I-10.
Liberty County								
Dayton	06	0952CST 1345CST			0	0	3K	Flash Flood
								FM 1409 & Champions Rd near Dayton had 2 feet of water on it.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, Central Southeast									
Brazos County									
College Station	06	1430CST 1545CST			0	0	5K		Flash Flood
		Street flooding in Bryan/College Station.							
Burleson County									
Countywide	06	1430CST 1545CST			0	0	3K		Flash Flood
		Street flooding across the county.							
Houston County									
South Portion	06	1500CST 1700CST			0	0	3K		Flash Flood
		High water on FM 1280.							
Polk County									
Countywide	06	1500CST 1930CST			0	0	25K		Flash Flood
		Moderate flooding across the county. FM 1988 at HWY 146 flooded. Bridge washed out at FM 942 between Corrigan and Camden.							
Trinity County									
Trinity	06	1500CST			0	0	3K		Flash Flood
		Street flooding in Trinity.							
Liberty County									
Countywide	06	1515CST 2245CST			0	0	10K		Flash Flood
		Moderate street flooding countywide.							
Chambers County									
Northwest Portion	06	1630CST 1845CST			0	0	5K		Flash Flood
		HWY 146 & I-10 closed due to high water. FM 565 flooded.							
Galveston County									
Dickinson	06	1630CST			0	0	2K		Thunderstorm Wind (G60)
		60 mph gust at NWSO Houston/Galveston.							
Montgomery County									
Countywide	06	1630CST 2300CST			0	0	20K		Flash Flood
		Major flooding throughout the county, especially the Magnolia/Montgomery areas. HWY 1097, and FM 1097 at I-45 closed due to high water. Magnolia Bend Subdivision evacuated at 2250 CST due to rising water.							
Harris County									
Webster	06	1640CST			0	0	2K		Thunderstorm Wind (G60)
		60 mph gusts and large tree limbs down at Bay Area Blvd & FM 528							
Harris County									
Bellaire	06	1700CST 1925CST			0	0	3K		Flash Flood
		Street flooding.							
San Jacinto County									
Countywide	06	1715CST 2245CST			0	0	5K		Flash Flood
		Numerous roads closed across the county due to high water.							
Harris County									
Bellaire	06	1945CST 2130CST			0	0	2K		Flash Flood
		Street flooding							
Brazoria County									
Pearland	06	2150CST 2315CST			0	0	2K		Flash Flood
		Street flooding.							
Montgomery County									
Countywide	06 07	2345CST 0450CST			0	0			Flood
		Runoff from earlier heavy rains continue widespread street flooding.							

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, Central Southeast									
San Jacinto County									
Countywide	06 07	2345CST 0450CST			0	0			Flood
Runoff from earlier heavy rains continue widespread street flooding.									
Houston County									
Crockett	07	1030CST			0	0	15K		Lightning
Lightning induced fire at Spring Creek Country Club damaged 11 golf carts and other golf equipment.									
Brazos County									
4 S College Station	11	1855CST			0	0	3K		Hail (0.75)
Brazos County									
College Station	11	1858CST			0	0	20K		Hail (1.75)
Substantial damage to cars from golfball size hail.									
Brazos County									
1 S Wellborn	11	1858CST			0	0	5K		Hail (2.00)
Grimes County									
Stoneham	11	1935CST			0	0	3K		Hail (0.75)
Grimes County									
Stoneham	11	1935CST			0	0	15K		Thunderstorm Wind
2 barns destroyed and several trees uprooted by strong winds.									
Montgomery County									
Willis	11	2030CST 2040CST			0	0	7K		Hail (1.50)
Polk County									
Goodrich	11	2150CST			0	0	3K		Hail (0.75)
Chambers County									
North Portion	13	1205CST 1330CST			0	0	1K		Flash Flood
High water on FM 563.									
Colorado County									
Eagle Lake	21	1342CST			0	0	5K		Hail (1.25)
Burleson County									
Deanville	21	1505CST			0	0	3K		Hail (0.75)
Burleson County									
Caldwell	21	1540CST			0	0	10K		Hail (1.75)
Jackson County									
La Salle	21	1540CST 1541CST	0.1	25	0	0			Tornado (F0)
Union Pacific Railroad officials reported brief tornado touchdown on the railroad tracks. No damage reported.									
Burleson County									
Lyons	21	1543CST			0	0	10K		Hail (1.75)
Matagorda County									
Sargent	21	1543CST			0	0	3K		Hail (0.88)
Burleson County									
2 N Somerville	21	1548CST			0	0	10K		Hail (2.00)
Burleson County									
Lyons	21	1608CST			0	0	20K		Hail (2.75)
Brazos County									
4 NW Millican	21	1625CST			0	0	3K		Hail (0.88)
Brazos County									
2.5 WNW Millican to .5 E Millican	21	1644CST 1650CST	3	50	0	0	35K		Tornado (F0)
Tornado broke and lifted 2-by-6's off a barn roof 2.5 WSW Millican. As the tornado reached Millican, it tore a front porch of a house off, and also peeled a house and barn roof off.									
Grimes County									
Shiro	21 28	1720CST 1720CST			0	0	10K		Hail (1.75)

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, Central Southeast									
Madison County									
9 NNW Madisonville to 10 N Madisonville	21	1725CST 1728CST	1	50	0	0	250K		Tornado (F0)
Tornado tore roof off Yellow Rose Cattle Company Restaurant at OSR & I-45.									
Grimes County									
Richards to .5 E Richards	21	1729CST 1731CST	0.5	75	0	0	5K		Tornado (F0)
Tornado downed trees and powerlines in Richards. As the tornado moved into Montgomery County along FM 149, a barn roof was damaged 3 miles east of Richards, and a tree limb was blown through the metal on a car door. The storm continued moving to the east-northeast downing trees to the Montgomery/Walker County line near FM1791.									
Fort Bend County									
Needville	21	1732CST 1742CST			0	0	5K		Hail (1.00)
Hail covering 90% of the ground.									
Montgomery County									
14 NNW Dobbin to 11 N Montgomery	21	1734CST 1746CST	6.5	75	0	0	10K		Tornado (F0)
Tornado moved in from Grimes County along FM 149. Barn roof damaged 3 miles east of Richards, tree limb blown through metal of a car door. Storm continued moving east-northeast downing trees to the Montgomery/Walker County line near FM 1791.									
Montgomery County									
14 NNE Dobbin	21	1749CST			0	0	1K		Hail (0.75)
Walker County									
10 W New Waverly to 7 W New Waverly	21	1749CST 1810CST	3	200	0	0	200K	200K	Tornado (F1)
Tornado continued from the Montgomery/Walker County line moving to the east-northeast through Sam Houston National Forest. This tornado snapped numerous trees along its path, some 18 inches in diameter. Timber loss was estimated at \$200,000. Most significant number of trees down along FR 208 & 208A. In addition to downed trees, numerous camping shelters were destroyed in Huntsville State Park causing that area of the forest to be closed to campers for weeks.									
Grimes County									
Roans Prairie	21	1800CST			0	0	10K		Hail (1.75)
Walker County									
4 S Huntsville	21	1827CST 1835CST			0	0	5K		Hail (1.00)
Grimes County									
Central Portion	21	1830CST 1930CST			0	0	3K		Flash Flood
HWY 30 between Carlos and Roans Prairie flooded.									
Grimes County									
Richards	21	1830CST			0	0	3K		Hail (1.00)
Montgomery County									
5 NW Conroe	21	1830CST			0	0	3K		Hail (0.75)
Walker County									
Countywide	21	1830CST			0	0	5K		Flash Flood
Street flooding across the county.									
San Jacinto County									
Coldspring	21	1850CST			0	0	3K		Hail (0.75)
San Jacinto County									
Coldspring	21	1850CST			0	0	15K		Thunderstorm Wind
Large trees blown down on powerlines.									
San Jacinto County									
7 S Pointblank	21	1850CST			0	0	3K		Hail (1.00)
Harris County									
Houston	21	1853CST			0	0	3K		Hail (0.75)
Hail at Key Map location 532									
Harris County									
Houston	21	1905CST			0	0	3K		Hail (0.75)
Hail 2 miles east of Hobby Airport.									
Harris County									
Houston	21	1925CST			0	0	5K		Hail (1.00)
Hail 5 miles east of Hobby Airport.									

Storm Data and Unusual Weather Phenomena

January 1998

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

TEXAS, Central Southeast

Polk County

Livingston	21	1925CST			0	0	5K		Thunderstorm Wind
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Trees blown down onto powerlines.

Harris County

La Porte	21	1940CST			0	0	5K		Hail (1.00)
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Harris County

Morgans Pt	21	1940CST			0	0	3K		Hail (0.88)
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Harris County

Shoreacres	21	1944CST			0	0	3K		Hail (0.88)
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Harris County

Clear Lake City	21	1945CST			0	0	3K		Hail (0.75)
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Chambers County

Cove	21	2010CST			0	0	10K		Hail (1.75)
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Brazoria County

Rosharon	21	2035CST			0	0	3K		Hail (0.75)
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Chambers County

Anahuac	21	2058CST			0	0	5K		Hail (1.00)
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Chambers County

Hankamer	21	2058CST			0	0	3K		Hail (1.00)
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Chambers County

7 W Winnie	21	2110CST			0	0	10K		Hail (1.75)
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Chambers County

Winnie	21	2144CST			0	0	3K		Hail (0.75)
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Chambers County

Countywide	21	2145CST			0	0	5K		Flash Flood
	22	0400CST							

Street flooding across the county. HWY 146 & I-10 flooded.

Harris County

Southeast Portion	21	2200CST			0	0	5K		Flash Flood
	22	0400CST							

Street flooding across the area, especially in the Pasadena area.

Chambers County

Countywide	22	0430CST			0	0			Flash Flood
		0655CST							

Runoff from earlier heavy rains continued producing minor street flooding across the area.

TEXAS, Extreme West

NONE REPORTED.

TEXAS, Mid - South

Goliad County

10 N Goliad	06	1710CST			0	0			Thunderstorm Wind (G50)
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Park Ranger reported several large trees downed by thunderstorm wind resulting in road closures.

Calhoun County

Seadrift	21	1448CST			0	0			Hail (1.00)
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Spotter report of quarter sized hail.

Victoria County

Placedo	22	0855CST			0	0			Hail (0.75)
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Bee County

Skidmore	22	1031CST			0	0			Hail (0.75)
		1035CST							

NWS spotter report of dime sized hail.

Live Oak County

Three Rivers	31	1235CST			0	0			Hail (0.75)
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Sheriff report of dime sized hail.

Bee County

5 W Beeville	31	1338CST			0	0			Hail (0.75)
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Storm Data and Unusual Weather Phenomena

January 1998

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

TEXAS, Mid - South

Aransas County 3 N Rockport	31	1612CST			0	0			Hail (0.75)
Aransas County Rockport	31	1622CST 1630CST			0	0			Thunderstorm Wind (G60)
Strong thunderstorm wind gusts reported by spotter.									
Aransas County Rockport	31	1650CST			0	0			Hail (0.75)
Kleberg County Kingsville	31	1705CST			0	0			Hail (1.00)
Spotter report of quarter sized hail.									
Kleberg County Kingsville	31	1730CST			0	0			Thunderstorm Wind (G50)
Strong thunderstorm wind gust resulted in numerous power outages.									

TEXAS, North

TXZ091>095-100>107-115>123-129>135-141>148-156>162-174>175 - **Montague - Cooke - Grayson - Fannin - Lamar - Young - Jack - Wise - Denton - Collin - Hunt - Delta - Hopkins - Stephens - Palo Pinto - Parker - Tarrant - Dallas - Rockwall - Kaufman - Van Zandt - Rains - Eastland - Erath - Hood - Somervell - Johnson - Ellis - Henderson - Comanche - Mills - Hamilton - Bosque - Hill - Navarro - Freestone - Anderson - Lampasas - Coryell - Bell - McLennan - Falls - Limestone - Leon - Milam - Robertson**

	04	1600CST			0	0			Excessive Rain
	05	0400CST							
An arctic cold front moved slowly across the northwestern half of North Texas on the 4th as an upper level disturbance rotated into the Southern Plains. Abundant gulf moisture was drawn into the region ahead of the disturbance and over the front. Widespread rain and thunderstorms developed across the area. One to two inches of rain fell across the eastern two-thirds of northern Texas with more than four inches occurring in a 40 mile wide band from the DFW Metroplex to Bonham. Another four inch band of rain fell from Temple to Fairfield. The soil was already saturated due to the unusually wet December that much of Texas experienced and this heavy rain resulted in excessive runoff and flash flooding in many places. Roads were flooded and vehicles became stranded in the rising waters. A young boy drown in a fast-moving flood current. The strongest storms also produced dime to nickel size hail and a short-lived tornado.									
Collin County 3 S Mc Kinney	04	1622CST			0	0			Hail (0.75)
Collin County Allen	04	1625CST			0	0			Hail (1.00)
Collin County Branch	04	1630CST			0	0			Hail (1.00)
Collin County Mc Kinney	04	1640CST 1830CST			0	0			Flash Flood
Street flooding was reported in town.									
Collin County Mc Kinney	04	1645CST 1845CST			0	0			Flash Flood
Highway 380 was closed due to flooding.									
Collin County Blue Ridge	04	1650CST 1900CST			0	0			Flash Flood
Streets were flooded in town.									
Collin County Princeton	04	1752CST 2000CST			0	0			Flash Flood
Roads were reported flooded in and around town.									
Collin County Prosper	04	2109CST 2300CST			0	0			Flash Flood
Many roads were reported flooded in the western portion of the county.									
Collin County Blue Ridge	04	2200CST			0	0	20K		Lightning
Lightning struck and severely damaged a home.									

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, North									
Bell County Temple	04	1945CST 2130CST			0	0			Flash Flood
		Portions of I-35 were flooded.							
Bell County 2 E Temple	04	1945CST			0	0			Hail (0.88)
Bell County Troy	04	2030CST 2230CST			0	0			Flash Flood
		Portions of I-35 were flooded and closed due to six to eight feet of water over the road.							
Bosque County Clifton	04	2000CST			0	0			Hail (0.75)
Erath County Stephenville	04	2020CST 2200CST			0	0			Flash Flood
		A vehicle was washed into the Bosque River by flood waters.							
Erath County Stephenville	04	2026CST			0	0			Thunderstorm Wind (G52)
Falls County 2 N Chilton	04	2059CST 2101CST	0.1	30	0	0			Tornado (F0)
		A brief tornado touchdown was reported.							
Falls County Lott	04	2154CST 2300CST			0	0			Flash Flood
		Highway 320 was flooded and closed.							
Falls County Marlin	04	2200CST 2330CST			0	0			Flash Flood
		Many roads were flooded. Several motorists were stranded in flood waters.							
Dallas County Irving	04	2100CST 2230CST			1	0			Flash Flood
		A boy drown in fast-moving flood waters after he jumped off a bridge into a swollen stream. M15IW							
Dallas County Dallas	04	2141CST 2330CST			0	0			Flash Flood
		A few roads in town were reported flooded with up to two feet of water.							
Dallas County Dallas	04 05	2323CST 0130CST			0	0			Flash Flood
		Several roads were closed in the northwest side of town.							
Grayson County Sherman	04	2115CST 2315CST			0	0			Flash Flood
		Several roads were reported flooded in and around town.							
Fannin County Bonham	04	2117CST 2330CST			0	0			Flash Flood
		Several roads were flooded and closed.							
Fannin County Bonham	04	2201CST 2345CST			0	0	50K		Flash Flood
		Several roads were flooded and closed. Several bridges were washed out.							
Tarrant County Dalworthington	04	2150CST 2345CST			0	0			Flash Flood
		Several streets were reported flooded.							

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, North									
Tarrant County									
Arlington	04	2200CST 2345CST			0	0			Flash Flood
Several streets were flooded.									
Limestone County									
3 W Center	04	2318CST			0	0			Hail (0.75)
Freestone County									
5 S Teague	04	2340CST			0	0			Hail (0.75)
Ellis County									
Ennis	05	0000CST 0230CST			0	0			Flash Flood
Highway 75 was closed due to flooding.									
Ellis County									
Midlothian	05	2140CST			0	0			Hail (0.75)
Limestone County									
Groesbeck	05	0100CST 0300CST			0	0			Flash Flood
Portions of Highway 164 were flooded.									
Limestone County									
10 W Mexia	05	2020CST			0	0			Hail (0.88)
Limestone County									
Groesbeck	05	2200CST 2345CST			0	0			Flash Flood
Several roads were reported flooded across the county.									
Falls County									
Marlin	05	0315CST 0500CST			0	0			Flash Flood
Several roads were reported flooded across the county.									
Falls County									
5 E Reagan	05	1930CST			0	0			Hail (0.75)
Falls County									
4 E Lott	05	2030CST 2300CST			0	0	50K		Flash Flood
A bridge on Highway 712 was washed out.									
TXZ091>095-100>107- 115>123-129>135- 141>148-156>162- 174>175	05 07	1700CST 1200CST			0	0			Excessive Rain
Montague - Cooke - Grayson - Fannin - Lamar - Young - Jack - Wise - Denton - Collin - Hunt - Delta - Hopkins - Stephens - Palo Pinto - Parker - Tarrant - Dallas - Rockwall - Kaufman - Van Zandt - Rains - Eastland - Erath - Hood - Somervell - Johnson - Ellis - Henderson - Comanche - Mills - Hamilton - Bosque - Hill - Navarro - Freestone - Anderson - Lampasas - Coryell - Bell - McLennan - Falls - Limestone - Leon - Milam - Robertson									
The arctic cold front that moved into North Texas on the 4th remained stationary over the area through the 7th. Rich gulf moisture remained in place and periods of heavy rain and thunderstorms occurred as several upper level disturbances translated across the area. Soils were saturated from earlier precipitation and each rain event triggered another period of flash flooding as heavy runoff overwhelmed swollen creeks and streams. Numerous roads were flooded and closed and many homes were engulfed in rising flood water. Widespread rainfall totals of two to four inches for the 3-day period from the 4th through the 7th occurred. A band of five to seven inches of rain fell from Arlington to Bonham and a band of five to ten inches of rain fell from Temple to Waco to Corsicana to Tyler. This period of heavy rain contributed to the unusually wet monthly precipitation totals across much of the area. January 1998 was the third wettest January on record in the Dallas/Fort Worth area and it was the second wettest January on record in the Waco area.									
Leon County									
Centerville	05	1731CST			0	0			Hail (0.75)
Mills County									
10 S Goldthwaite	05	1800CST	0.1	30	0	0			Tornado (F0)
A brief tornado touchdown was reported.									
Mills County									
4 S Goldthwaite	05	1809CST			0	0			Hail (1.75)

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
TEXAS, North									
Mills County									
5 NE Goldthwaite	05	1852CST 1855CST	0.5	40	0	0	40K		Tornado (F1)
									A tornado severely damaged a mobile home.
Mills County									
Mullin	05	2012CST			0	0			Hail (1.75)
									Golfball size hail covered the ground.
Mills County									
Priddy	05	2040CST			0	0			Hail (0.75)
									Dime size hail covered the ground and was three inches deep.
Mclennan County									
China Spg	05	1905CST			0	0			Hail (0.75)
Mclennan County									
Mart	05	2010CST			0	0			Hail (0.75)
Hamilton County									
5 S Hico	05	1915CST 1916CST	0.1	30	0	0			Tornado (F0)
									A brief tornado touchdown was reported.
Hamilton County									
8 S Hico	05	2100CST			0	0			Hail (0.75)
Hamilton County									
8 S Hico	05	2100CST			0	0			Thunderstorm Wind (G52)
Bosque County									
Kopperl	05	1935CST			0	0			Hail (0.75)
Hill County									
Whitney	05	1935CST			0	0			Hail (0.75)
Hill County									
4 NW Whitney	05	2001CST			0	0			Hail (1.00)
Johnson County									
Cleburne	05	2051CST			0	0			Hail (1.75)
Johnson County									
Joshua	05	2108CST			0	0	25K		Hail (2.00)
									Large hail broke windows out of cars.
Johnson County									
Burlison	05	2115CST			0	0			Hail (0.88)
Henderson County									
Larue	05	2020CST			0	0			Hail (0.88)
Henderson County									
New York	05	2020CST			0	0			Hail (0.88)
Henderson County									
6 SW Chandler	05	2300CST			0	0			Hail (1.50)
Henderson County									
6 SW Chandler	05	2300CST			0	0			Thunderstorm Wind (G52)
Henderson County									
Chandler	05 06	2315CST 0130CST			0	0			Flash Flood
									Portions of Highway 31 were flooded by up to one foot of water.
Freestone County									
7 E Fairfield	05	2030CST			0	0			Hail (1.75)
Freestone County									
7 E Fairfield	05	2030CST			0	0			Thunderstorm Wind (G52)
Freestone County									
Fairfield	05	2200CST 2345CST			0	0			Flash Flood
									Secondary roads across the county were flooded.
Tarrant County									
Ft Worth	05	2118CST			0	0			Hail (1.75)

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, North									
Tarrant County									
Ft Worth	05	2130CST			0	0			Hail (1.00)
Tarrant County									
Ft Worth	05	2132CST			0	0			Hail (0.88)
Tarrant County									
Grapevine	05	2145CST			0	0			Hail (0.88)
Anderson County									
Cayuga	05	2120CST			0	0			Hail (1.75)
Anderson County									
Tennessee Colony	05	2130CST			0	0	15K		Thunderstorm Wind
									Strong winds blew the roof off the community center and uprooted trees.
Anderson County									
Montalba	05	2135CST			0	0			Thunderstorm Wind (G52)
									Strong winds blew down trees.
Robertson County									
Wheelock	05	2145CST			0	0			Hail (0.88)
Navarro County									
Corsicana	05 06	2300CST 0130CST			0	0	150K		Flash Flood
									Numerous roads were flooded. Several homes were flooded with one to three feet of water.
McLennan County									
Waco	06	0000CST 0130CST			0	0			Flash Flood
									Water was reported over several roads.
McLennan County									
Waco	06	0038CST 0200CST			0	0			Flash Flood
									Many rural roads across the county were reported flooded.
McLennan County									
Mart	06	0854CST 1100CST			0	0			Flash Flood
									Water covered portions of Farm-to-Market Road 939.
Henderson County									
Athens	06	0048CST 0230CST			0	0			Flash Flood
									Many roads were reported flooded across the county.
Henderson County									
Athens	06	0852CST 1030CST			0	0			Flash Flood
									Numerous roads were reported flooded and closed across the county.
Henderson County									
Athens	06	1740CST 1930CST			0	0			Flash Flood
									Many roads across the county were reported flooded.
Anderson County									
Palestine	06	0100CST 0330CST			0	0			Flash Flood
									Numerous county roads were flooded. A bridge over Catfish Creek had five feet of water over it.
Anderson County									
Palestine	06	0854CST 1100CST			0	0			Flash Flood
									Several roads across the county remained closed due to flooding.
Anderson County									
Palestine	06	1738CST 1945CST			0	0			Flash Flood
									Several roads across the county were closed due to high water.
Hill County									
Abbott	06	0115CST 0330CST			0	0			Flash Flood
									Several roads were reported flooded in and around town.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, North									
Hill County Malone	06	0115CST 0345CST			0	0			Flash Flood
Several roads were reported flooded in and around town.									
Limestone County Groesbeck	06	0120CST 0330CST			0	0			Flash Flood
Several roads were reported flooded. A car was washed off Highway 171.									
Limestone County Mexia	06	1736CST 1930CST			0	0			Flash Flood
Several roads were reported flooded in and around town.									
Ellis County Ennis	06	0133CST 0345CST			0	0			Flash Flood
Several roads were closed due to flooding.									
Van Zandt County Canton	06	0300CST 0500CST			0	0			Flash Flood
Several roads were flooded and subsequently closed due to flooding.									
Van Zandt County Canton	06	0800CST 1000CST			0	0			Flash Flood
Many roads across the county were flooded and closed.									
Navarro County Corsicana	06	0358CST 0600CST			0	0			Flash Flood
Several roads were reported flooded in and around town.									
Navarro County Corsicana	06	0850CST 1100CST			0	0			Flash Flood
Several roads across the county were reported flooded.									
Navarro County Corsicana	06	1100CST 1330CST			0	0			Flash Flood
Numerous roads across the county were reported flooded and closed.									
Navarro County Corsicana	06	1737CST 1900CST			0	0	500K		Flash Flood
Several roads remained flooded and closed across the county while others were washed out by raging flood waters. Flood water damaged 40 homes, 3 churches, 1 school, 6 public buildings and 10 businesses.									
Freestone County 8 E Dew	06	0830CST 1030CST			0	0			Flash Flood
Water was reported over Highway 179.									
Freestone County Fairfield	06	0945CST 1130CST			0	0			Flash Flood
Several roads across the county were reported flooded.									
Freestone County Fairfield	06	1400CST 1600CST			0	0			Flash Flood
Several roads across the county remained flooded.									
Freestone County Fairfield	06	1735CST 1900CST			0	0			Flash Flood
Many roads across the county were reported flooded.									
Lampasas County Lampasas	06	1000CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, North									
Milam County									
Cameron	06	1052CST 1230CST			0	0			Flash Flood
			Several roads across the county were closed.						
Bell County									
4 N Belton	06	1734CST 2000CST			0	0			Flash Flood
			A road was flooded and closed.						
Falls County									
Marlin	06	1742CST 2000CST			0	0			Flash Flood
			Several roads were flooded across the county.						
Limestone County									
Groesbeck	07	0025CST 0230CST			0	0			Flash Flood
			Several roads were closed due to flooding in and around town.						
Limestone County									
Mexia	07	0025CST 0300CST			0	0			Flash Flood
			Several roads were closed due to flooding in and around town.						
Limestone County									
Groesbeck	07	0539CST 0800CST			0	0			Flash Flood
			Numerous roads were reported flooded.						
Freestone County									
Fairfield	07	0030CST 0230CST			0	0			Flash Flood
			A few roads remained flooded across the county.						
Freestone County									
Fairfield	07	1125CST 1400CST			0	0			Flash Flood
			Numerous roads were reported flooded and remained closed.						
Navarro County									
Corsicana	07	0035CST 0300CST			0	0			Flash Flood
			Numerous roads were reported flooded across the county.						
Navarro County									
Corsicana	07	0535CST 0800CST			0	0			Flash Flood
			Numerous roads across the county remained flooded.						
Navarro County									
Corsicana	07	1121CST 1400CST			0	0			Flash Flood
			Numerous roads across the county remained flooded and closed.						
Anderson County									
3 NW Cayuga	07	0043CST 0300CST			0	0			Flash Flood
			Several roads in and around town were reported flooded.						
Anderson County									
Palestine	07	1123CST 1400CST			0	0			Flash Flood
			Numerous roads remained closed due to high water.						
Henderson County									
Athens	07	0045CST 0300CST			0	0			Flash Flood
			Many roads across the county were reported flooded.						
Tarrant County									
Arlington	11	1415CST			0	0			Hail (0.75)
Hunt County									
4 SE Greenville	11	1430CST			0	0			Hail (1.00)

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, North									
Henderson County									
Eustace	11	1711CST			0	0			Hail (1.75)
Henderson County									
Murchison	11	1723CST			0	0			Hail (1.75)
Henderson County									
Chandler	11	1744CST			0	0			Hail (0.75)
TXZ158									
	12	0010CST 1000CST			0	0			Fog
Widespread dense fog blanketed the area and contributed to several fatal traffic accidents.									
Ellis County									
Ennis	21	1255CST			0	0			Hail (0.75)
Ellis County									
3 N Palmer	21	1710CST			0	0			Hail (2.75)
Kaufman County									
4 S Rosser	21	1315CST			0	0			Hail (0.75)
Kaufman County									
6 S Elmo	21	2000CST 2230CST			0	0			Flash Flood
Farm-to-Market Road 2727 was flooded at the intersection of Highway 429.									
Henderson County									
Brownsboro	21	1320CST			0	0			Hail (0.88)
Van Zandt County									
3 SE Canton	21	1345CST			0	0			Hail (0.75)
Van Zandt County									
8 E Canton	21	1845CST			0	0			Hail (0.75)
Bell County									
5 W Rogers	21	1435CST			0	0			Hail (0.75)
Milam County									
Ben Arnold	21	1440CST			0	0			Hail (0.75)
Milam County									
Buckholts	21	1515CST			0	0			Hail (1.00)
Quarter size hail covered the ground.									
Robertson County									
Hearne	21	1518CST			0	0			Hail (0.75)
Robertson County									
5 N Hearne	21	1530CST			0	0			Hail (1.75)
Dallas County									
Garland	21	1605CST			0	0			Hail (1.00)
Dallas County									
Richardson	21	1610CST			0	0			Hail (1.50)
Collin County									
Murphy	21	1625CST			0	0			Hail (1.00)
Leon County									
3 NW Normangee	21	1635CST			0	0			Hail (1.75)
Leon County									
3 NW Normangee	21	1635CST 1636CST	0.1	30	0	0			Tornado (F0)
A brief tornado touchdown was reported.									
Leon County									
4 S Leona	21	1728CST 1732CST	0.5	40	0	1	50K		Tornado (F1)
A tornado severely damaged the roof of a restaurant. The manager of the restaurant, who was inside the building at the time, received minor injuries.									
Grayson County									
Sherman	25	2240CST			0	0			Hail (0.88)

Storm Data and Unusual Weather Phenomena

January 1998

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

TEXAS, North Panhandle

Randall County

1 NW Canyon	03	2038CST			0	0			Hail (0.75)
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Reported at Hunsley Hills in northwest Canyon.

Randall County

4 SW Amarillo	03	2045CST			0	0			Hail (0.75)
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Thunderstorms developed over the southern Texas Panhandle during the evening hours and became severe just south of Amarillo. These storms produced only dime size hail as they moved northeast.

TXZ003>005-008>010

Hansford - Ochiltree - Lipscomb - Hutchinson - Roberts - Hemphill

	04	0000CST			0	0			Ice Storm
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A disturbance in the upper atmosphere over the Texas South Plains moving slowly northeast and a moist flow at the surface behind a cold front combined to produce light to moderate freezing rain across the northern and northeastern Texas Panhandle during the morning hours. One quarter to one inch of ice accumulated on exposed surfaces.

TEXAS, Northeast

Upshur County

Gilmer	04	0124CST			0	0	0		Lightning
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Lightning struck a house which resulted a fire department call out. No fire resulted and no damage occurred.

Smith County

Gresham to 4.2 S Tyler	05	2252CST	4.2	75	0	0	120K		Tornado (F2)
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HP Supercell developed along a quasi-stationary front and moved northeast. This Supercell produced a family of three tornadoes, numerous microbursts and giant hail. A meso was detected by dopplar radar with the HP supercell. In this supercell an F2 tornado was produced. As the supercell developed, massive mid level convergence occurred resulting in giant hail. The evolution continued resulting in a bow echo pattern where two additional weak tornadoes occurred in the northern comma heads. In the first tornado, damage consisted of numerous snapped and fallen trees. Fifteen homes and three businesses were either moderately or severely damaged including roofs removed on two homes. Southwestern Bell phone truck heavily damaged from a fallen tree and a Ford Aerostar Van was crushed almost beyond recognition. Several telephone poles were tilted to a 45 degree angle.

Smith County

1.8 S Winona to 5.2 NE Winona	05	2334CST	5.6	50	0	0	0		Tornado (F0)
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HP Supercell developed along a quasi-stationary front and moved northeast. This Supercell produced a family of three tornadoes, numerous microbursts and giant hail. A meso was detected by dopplar radar with the HP supercell. As the supercell developed, massive mid level convergence occurred resulting in giant hail. The evolution continued resulting in a bow echo pattern where a weak tornado occurred in the comma head. In this second tornado, damage consisted of numerous snapped and fallen trees. No structures were present.

Upshur County

3.8 SSE Gilmer to 3.8 SE Gilmer	06	0008CST	2.1	25	0	0	0		Tornado (F0)
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HP Supercell developed along a quasi-stationary front and moved northeast. This Supercell produced a family of three tornadoes, numerous microbursts and giant hail. A meso was detected by dopplar radar with the HP supercell. As the supercell developed, massive mid level convergence occurred resulting in giant hail. The evolution continued resulting in a bow echo pattern where a weak tornado occurred in the comma head. A few small oaks were pushed over (saturated soil) and numerous limbs snapped. No structures were in the area.

Smith County

8 SW Tyler	05	2300CST			0	0			Hail (1.25)
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Smith County

8 SW Tyler	05	2300CST			0	0			Thunderstorm Wind (G65)
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Smith County

5 SW Tyler	05	2301CST			0	0			Hail (1.75)
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Reported along Hwy 155.

Smith County

Tyler	05	2308CST			0	0			Hail (1.75)
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Reported 2 miles west of Loop 232.

Smith County

2 SW Tyler	05	2308CST			0	0			Thunderstorm Wind (G65)
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Several large trees down on FM 344 and the intersection of Hwy 2661 and Hwy 271.

Smith County

Tyler	05	2315CST			0	0			Thunderstorm Wind (G65)
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Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, Northeast									
Smith County 1 S Starrville	05	2350CST			0	0			Hail (0.75) Hail covered the roadways resulting in a car accident on I-20 and Hwy 271. No injuries.
Smith County .2 SE Friendship	05	2355CST			0	0			Hail (2.50)
Gregg County Gladewater	05	2358CST			0	0			Hail (2.75)
Gregg County 2 E Gladewater	06	0000CST			0	0			Hail (2.50)
Gregg County White Oak	06	0003CST			0	0			Hail (1.75)
Upshur County 4 N Gladewater	06	0015CST			0	0			Hail (1.75)
Gregg County 5 N Longview	06	0019CST			0	0			Hail (1.75)
Smith County Tyler	05	2330CST			0	0	20K		Flash Flood Numerous homes flooded across south and west side of town. Numerous county roads also under water.
Gregg County 5 W Longview to 8 NW Longview	06	0000CST			0	0	1M		Hail (4.50) Grapefruit to softball size hail went through the roofs of houses and mobile homes. Two to three inch hail drifts remained along Hwy 300 between Longview and Gilmer 17 hours after it fell.
Upshur County 12 SE Gilmer to 3 SE Gilmer	06	0000CST			0	0	1M		Hail (4.50) Grapefruit to softball size hail went through the roofs of houses and mobile homes. Two to three inch hail drifts remained along Hwy 300 between Longview and Gilmer 17 hours after it fell.
Upshur County Union Grove	06	0000CST			0	0	250K		Hail (2.75) Baseball size hail broke numerous windows at the Union Grove School and damaged the roof.
Gregg County White Oak	06	0005CST			0	0			Hail (4.50) Softball size hail.
Gregg County Longview	06	0140CST			0	0			Hail (1.75) Nickel to golfball size hail west side of Longview reported by off duty NWS employee.
Upshur County 1 W Gilmer	06	0012CST			0	0	90K		Thunderstorm Wind (G80) Numerous trees were felled across Hwy 271. Winds turned over a Cessna 150 single engine airplane at the Gilmer Upshur County Airport. Several businesses in Gilmer also suffered wind damage. Winds blew the roof off a barn at a tree farm. A portable workshop building at the Gilmer lumber company suffered minor damage when it blew over onto a truck parked alongside it.
Upshur County 4 N Gilmer	06	0015CST			0	0	1.1M		Hail (1.75) Three automobile dealerships suffered considerable hail damage to their entire inventories of over 300 vehicles. The hail fell continuously for over 20 minutes. A 24 year veteran in insurance claims said that the hail episode was the second worse he had ever seen in north Texas.
Upshur County Diana	06	0040CST			0	0			Hail (1.75)
Harrison County 11 NE Harleton	06	0045CST			0	0			Hail (1.75)
Cass County 1 N Linden	06	0050CST			0	0			Hail (1.00)
TXZ153 Shelby	06	0100CST			0	0			Flood FM 417 east of Center and US Highway 84 west of Joaquin flooded.
Gregg County Longview	06	0600CST			0	0			Flood Highway 14 and Ford Road closed by high waters.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, Northeast									
Harrison County 3 N Hallsville	06	0600CST			0	0			Flood
									FM 449 flooded and closed.
Smith County Tyler	06	0600CST			0	0			Flood
									Black Fork Creek overflowed on U.S. Highway 69 closing the road.
Gregg County White Oak	06	0132CST			0	0			Hail (0.75)
Bowie County 6 SW Texarkana	06	0135CST			0	0			Hail (2.75)
									Baseball sized hail along Highway 59.
Bowie County Texarkana	06	0210CST			0	0			Flash Flood
									Several highways and underpasses were under water.
Harrison County Marshall	06	0247CST			0	0			Lightning
									Electricity knocked out across a portion of the city. Power restored within about 3 hours.
Upshur County 4 SE Gilmer	06	0300CST			0	1	6K		Flash Flood
									A woman believed to be a newspaper carrier was trapped for 3 hours when her car was overtaken by floodwaters on Bobwhite Rd. She was rescued by Gilmer firefighters with only minor injuries reported.
Gregg County Longview	06	0520CST			0	0			Flash Flood
									Highway 1650 north of longview flooded by knee deep water.
Gregg County 5 N Longview	06	1240CST			0	0	125K		Hail (2.75)
									Numerous homes suffered severe roof damage resulting in water damage to the interior of homes.
Nacogdoches County Nacogdoches	06	1300CST			0	0	2K		Flash Flood
									Numerous roads were underwater and closed from heavy rainfall. An automobile was swept off CR 230 but no injuries occurred.
Smith County 1 N Lindale	06	2100CST			0	0	4K		Flood
									Cattle bridge on FM 1804 washed out.
Smith County 6 W Tyler	06	2100CST			0	0			Flood
									Highway 64 at the Neches river closed due to flood waters.
Shelby County 5 W Center	06	2315CST			0	0			Flood
									FM 138 closed due to high flood waters.
Shelby County 1 E Shelbyville	06	2315CST			0	0			Flood
									FM 2694 closed due to high flood waters.
Marion County 2 S Jefferson	11	0905CST			0	0			Hail (0.75)
									Located on FM 2208 in Jefferson.
Titus County 5.4 SW Mt Pleasant to 5.7 SE Mt Pleasant	11	1559CST 1617CST	7.1	20	0	0	0		Tornado (F1)
									HP Supercell developed along a slow moving northeast-southwest orientated cold front. This supercell made a gradual transition into a squall line with a line-echo wave pattern on doppler radar. A family of 6 weak tornadoes were produced across 5 counties in 2 states. Damage path extended from the eastern edge of Lake Bob Sandlin across wooded area. Numerous limbs were either snapped or fallen and several dozen small trees were pushed over. The damage path was in a wooded region away from any population with no structures present. Without a survey the tornado would have been unreported.
Titus County 7.7 SSE Mt Pleasant to 10.5 SE Mt Pleasant	11	1604CST 1622CST	5.5	25	0	0	0		Tornado (F1)
									HP Supercell developed along a slow moving northeast-southwest orientated cold front. This supercell made a gradual transition into a squall line with a line-echo wave pattern on doppler radar. A family of 6 weak tornadoes were produced across 2 states and 5 counties. Damage consisted of numerous snapped and fallen limbs. Several dozen small trees were also flattened. The damage

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, Northeast									
path was in a wooded region away from any population with no structures present. Without a survey the tornado would have been unreported.									
Morris County 2 W Omaha	11	1615CST			0	0			Hail (0.75)
Titus County 7 S Mt Pleasant	11	1627CST			0	0			Hail (1.75)
Morris County 6.1 NW Daingerfield to 5 NW Daingerfield	11	1622CST 1626CST	1.1	20	0	0	0		Tornado (F0)
HP supercell developed along a slow moving northeast-southwest orientated cold front. This supercell made a gradual transition into a squall line with a line-echo wave pattern on doppler radar. A family of 6 weak tornadoes were produced across 2 states and 5 counties. Damage path consisted of snapped and fallen limbs. The damage path was in a wooded region away from any population with no structures present. Without a survey the tornado would have been unreported.									
Cass County 2 N Hughes Spgs	11	1630CST			0	0			Funnel Cloud
Funnel cloud reported by spotter dropped down to around 500 feet above the ground then lifted.									
Cass County 2 N Hughes Spgs	11	1630CST			0	0			Funnel Cloud
Two funnels spotted by spotters..									
Cass County 2 N Hughes Spgs	11	1633CST			0	0			Hail (1.75)
Cass County Linden	11	1700CST			0	0			Hail (1.75)
Cass County Atlanta	11	1708CST			0	0			Hail (1.00)
Cass County 8.1 E Linden to 10.1 SE Queen City	11	1707CST 1730CST	7	25	0	0	0		Tornado (F1)
HP supercell developed along a slow moving northeast-southwest orientated cold front. This supercell made a gradual transition into a squall line with a line-echo wave pattern on Doppler radar. A family of 6 weak tornadoes were produced across 2 states and 5 counties. Damage consisted of numerous snapped and fallen trees. Some oak trees had a bole of 6 feet however the ground was totally saturated and soft to great depths. The damage path was in a wooded region away from any population with few structures present. Without a survey the tornado would have been unreported.									
Wood County Hawkins	11	1715CST			0	0			Hail (1.75)
Upshur County Big Sandy	11	1758CST			0	0			Hail (1.75)
Harrison County 2 E Jonesville	11	1811CST			0	0			Hail (0.75)
Rusk County Overton	11	1849CST			0	0			Funnel Cloud
Funnel cloud reported briefly by spotter over north Overton.									
Panola County 3 NE Tatum	11	1940CST			0	0			Hail (1.00)
Shelby County Neuville	11	2255CST			0	0			Hail (0.88)
Shelby County Patroon	11	2255CST			0	0			Hail (0.88)
Angelina County Diboll	11	2318CST			0	0			Hail (1.75)
Smith County Noonday	21	1334CST			0	0			Hail (0.75)
Smith County 1.5 S Starrville	21	1350CST			0	0			Hail (0.75)
Smith County 8 NE Tyler	21	1350CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

January 1998

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

TEXAS, South

NONE REPORTED.

TEXAS, South Central

Gillespie County Fredericksburg

06	0902CST 0905CST					0	0	0	0	Hail (0.75)
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Hail was reported to have covered roads.

Llano County 12 S Llano to 14 SE Llano

06	0930CST 1100CST					0	0	3K	0	Flash Flood
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Between 2 and 3 inches of rain falling between 0700 and 0800 CST produced brief flooding along Sandy Creek north of the Enchanted Rock area.

Williamson County Coupland

06	1010CST 1015CST					0	0	0	0	Hail (1.50)
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Frio County Derby

06	1130CST 1135CST					0	0	0	0	Hail (0.88)
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Frio County Dilley

06	1200CST 1400CST					0	0	3K	0	Flash Flood
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Heavy rainfall accumulations of up to 3 inches in one hour produced flash flooding around Dilley.

Atascosa County Jourdanton

06	1350CST 1355CST					0	0	0	0	Hail (0.75)
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Bexar County Countywide

06	1400CST 1530CST					0	0	5K	0	Flash Flood
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Rainfall totals of between 2 and 3 inches in just over an hour produced flash flooding across many low areas, mainly across the western part of Bexar County.

Comal County Bulverde

06	1405CST 1410CST					0	0	0	0	Hail (1.00)
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De Witt County Countywide

06	1730CST 1830CST					0	0	20K	0	Flash Flood
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Flash flooding developed over much of the county as a result of nearly 4 inches of rain in just over 2 hours. Worst hit by the flooding were the communities of Nordheim, Yorktown, and Yoakum.

Fayette County Flatonia

11	1605CST 1610CST					0	0	3K	0	Hail (1.75)
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Fayette County Flatonia

11	1605CST 1610CST					0	0	5K	0	Thunderstorm Wind
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Fayette County Holman

11	1630CST 1632CST					0	0	0	0	Funnel Cloud
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Fayette County Flatonia

11	1640CST 1645CST					0	0	10K	0	Hail (2.00)
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Minor damage was reported to windows of homes and cars due to the hail driven by high winds.

Lee County 2 S Giddings to 1 NE Giddings

11	1630CST 1638CST	2.5	400			0	0	80K	20K	Tornado (F1)
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The tornado developed just south of Giddings, moving toward the northeast as it destroyed a barn and a mobile home. The tornado crossed SH 290 and damaged a nursery along with several small sheds before dissipating.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, South Central									
Lee County 2 NE Giddings to 3 NE Giddings	11	1710CST 1714CST	1	100	0	0	50K	0	Tornado (F1)
									A second tornado was spotted just northeast of Giddings by a Deputy Sheriff. It also moved briefly northeastward, destroying a barn and fence.
Lee County 5 E Giddings	11	1720CST 1725CST			0	0	0	0	Hail (0.75)
Lee County Lexington	21	1430CST 1432CST			0	0	0	0	Funnel Cloud
Lee County Lexington	21	1430CST 1450CST			0	0	10K	0	Hail (1.75)
Lee County 2 W Dime Box	21	1456CST 1458CST	0.2	100	0	0	0	0	Tornado (F0)
									A short-lived tornado was sighted by the public just west of Dime Box. No damage was reported.
Lee County 8 NE Lexington	21	1507CST 1509CST	0.2	50	0	0	0	0	Tornado (F0)
									A second short-lived tornado was sighted just northeast of Lexington by several members of the public.
Lee County Dime Box to 1 E Dime Box	21	1509CST 1514CST	1	400	0	0	80K	10K	Tornado (F1)
									A third tornado touched down near Dime Box. It was spotted by a constable who reported that it destroyed a barn and several sheds across a city block, taking off tin roofs, tossing lumber about and knocking down fences.
Lee County 5 N Lexington	21	1512CST 1515CST	0.2	50	0	0	0	0	Tornado (F0)
									A final, very short-lived tornado was spotted by a Sheriff's Deputy just north of Lexington.
Bandera County Southeast Portion	31	0600CST 0800CST			0	0	15K	0	Flash Flood
									Flash flooding developed in the wake of 3 inches of rain in the southeast part of the county, across Bandera, Mason and Privilege Creeks.
Uvalde County Countywide	31	0730CST 1100CST			0	0	20K	0	Flash Flood
									Flash flooding began around 0730CST over low water crossings and low areas along the Frio River and the Sabinal River. Flash flooding ended near 1100CST.
Medina County Hondo	31	1030CST 1100CST			0	0	30K	0	Flash Flood
									Flash flooding developed in and around Hondo with streets under water and some businesses flooded briefly as a result of 2 to 3 inches of rain in just over 2 hours.
Bexar County Countywide	31	1100CST 1130CST			0	0	15K	0	Flash Flood
									Minor flash flooding was reported across the county as thunderstorms produced between 3 and 4 inches of rain in just under 3 hours.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
TEXAS, South Panhandle									
Kent County Clairemont	04	1825CST			0	0	0	0	Hail (0.75)
Kent County 2 W Jayton	04	1838CST			0	0	0	0	Hail (1.25)
Stonewall County Old Glory	04	1902CST			0	0	0	0	Hail (1.00)
Stonewall County Aspermont	04	2042CST			0	0	0	0	Hail (0.75)
Isolated severe thunderstorms developed over the southern portions of the Rolling Plains. These produced dime to half dollar-sized hail in Clairemont, near Jayton, in Aspermont, and near Old Glory.									
TEXAS, Southeast									
Hardin County Lumberton	06	1000CST 1200CST			0	0	10K		Flood
Between four and six inches of rain fell between Beaumont and Lumberton, resulting in street flooding along Highway 105.									
Tyler County Warren	11	2235CST			0	0			Hail (0.75)
Jasper County Kirbyville	11	2330CST			0	0			Hail (0.75)
Hardin County Silsbee	13	1100CST 1800CST			0	0	10K		Flood
Heavy rains of four inches resulted in several streets and subdivisions of Silsbee and Lumberton being flooded.									
Orange County Vidor	13	1100CST 1800CST			0	0	10K		Flood
Heavy rain of four inches resulted in several streets flooding in northern sections of Vidor.									
Tyler County Spurger	13	1125CST			0	0			Hail (1.75)
Jasper County Kirbyville	13	1217CST			0	0			Hail (1.75)
Hardin County Kountze	21	1448CST			0	0			Hail (1.75)
Tyler County Fred	21	1516CST			0	0			Hail (1.00)
Jasper County 9 W Kirbyville	21	1730CST			0	0			Hail (0.75)
Newton County Newton	21	1800CST			0	0			Hail (1.00)
Newton County 5 N Newton	21	1845CST			0	0			Hail (0.75)
Tyler County Woodville	21	2015CST			0	0			Hail (0.75)
Jasper County Kirbyville	21	2130CST			0	0	150K		Tstm Wind/Hail
A severe thunderstorm moved across Kirbyville, dropping golfball size hail. Straight-line winds estimated to be around 75 mph knocked trees down on three to five homes and businesses, and another five buildings had shingles ripped off the roof. A barn that was destroyed during the storm was sheltering fifteen head of cattle and one horse. The horse escaped injury, but one cow was killed instantly and another six had to be destroyed due to their serious injuries.									
Jefferson County Hampshire	21	2140CST			0	0			Hail (0.75)
Jefferson County Fannett	21	2150CST			0	0			Hail (1.00)
Jasper County Kirbyville	21	2156CST			0	0			Hail (1.75)

Storm Data and Unusual Weather Phenomena

January 1998

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

TEXAS, Southeast

Newton County

Bleakwood

21	2200CST				0	0	10K		Tstm Wind/Hail
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Severe thunderstorms produced 0.75 inch hail, blew trees down, and caused street flooding from the Bleakwood intersection of Highway 87 to Highway 2460, a stretch of 2.5 miles.

Orange County

Bridge City

21	2250CST				0	0			Hail (0.75)
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Jefferson County

Nederland

21	2300CST				0	0	40K		Flood
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22 0300CST
Around five inches of rain fell in less than three hours, resulting in several streets to be flooded in Nederland and Port Arthur.

Orange County

Bridge City

21	2320CST				0	0	20K		Flash Flood
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22 0100CST
Around three inches of rain fell across sections of Orange County, resulting in street flooding in Bridge City.

Jefferson County

Port Arthur

21	2330CST				0	0			Hail (0.75)
----	---------	--	--	--	---	---	--	--	--------------------

Jasper County

Evadale

26	0506CST				0	0			Hail (0.75)
----	---------	--	--	--	---	---	--	--	--------------------

Hardin County

2 E Kountze

26	0538CST				0	0			Hail (0.75)
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Hardin County

Kountze

26	0610CST				0	0	50K		Thunderstorm Wind
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Severe thunderstorms blew down the wall of a paper company and damaged a local lumber yard.

Hardin County

Silsbee

26	0630CST				0	0			Hail (0.75)
----	---------	--	--	--	---	---	--	--	--------------------

TEXAS, West

Scurry County

Dermott

04	1823CST				0	0			Hail (0.75)
----	---------	--	--	--	---	---	--	--	--------------------

Scurry County

9 NE Dermott

04	1838CST				0	0			Hail (0.75)
----	---------	--	--	--	---	---	--	--	--------------------

Dime size hail was reported in Dermott and just south of the Kent County line along Highway 208. A very early severe weather event for West Texas. Low level moisture had been in place for the past couple of days and with an upper level disturbance approaching from the west and a frontal boundary sagging into the area from the north, a few strong to severe cells were produced.

Sounding data indicated about 1100 J/kg of buoyancy and a Lifted Index of -5. Surface dew points were in the lower 50s and the frontal boundary was located from E of Lubbock to S of Abilene. This particular storm formed in north-central Martin County and moved to the ENE at about 20 mph through Borden County and then into Scurry County.

TEXAS, Western North

Foard County

Thalia

04	1950CST				0	0			Hail (1.00)
----	---------	--	--	--	---	---	--	--	--------------------

Wilbarger County

Lockett

04	2010CST				0	0			Hail (0.88)
----	---------	--	--	--	---	---	--	--	--------------------

Wilbarger County

Vernon

04	2015CST				0	0			Hail (1.00)
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Quarter-sized hail fell across the western and southwestern parts of town.

Wichita County

Electra

04	2146CST				0	0			Hail (0.88)
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Baylor County

4 N Bomarton

31	0400CST				0	0			Hail (0.88)
----	---------	--	--	--	---	---	--	--	--------------------

Wichita County

5 SW Wichita Falls

31	0430CST				0	0			Hail (0.88)
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UTAH, North, Central and South

UTZ006>008-017

Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Central And Southwest Mountains

02	2300MST				0	0	0		Heavy Snow
03	1800MST								

Storm Data and Unusual Weather Phenomena

January 1998

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

UTAH, North, Central and South

Criteria snow fell in the northern and southwest mountains of Utah. A weak upper-level shortwave moved over the region in a moist southwest flow. Deer Valley measured 13" and Brian Head had 4".

UTZ001>010-012-014>018-020-023-025 **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 - Western Unita Mountains - Wasatch Plateau/Book Cliffs - Castle Country/Price/Castle/Dale/Emery - Sanpete/Sevier Valleys - West Central Utah/Delta - Southwest Utah/Cedar City/Milford - Central And Southwest Mountains - Southeast Mountains/Canyonlands - South Central Utah/Kanab/Escalante - Eastern Uinta Mountains - Tavaputs Plateau**

04	2200MST		0	6	30K		Winter Storm
05	1700MST						

A strong pacific coast trough moved through the state. Gusty northwest-north winds 40-50 mph developed behind the cold front. The highest reported gust was in American Fork at 50 mph (43 kts). Brian Head had 28" (mountains) and Tooele had 11" (valleys) for the highest storm snow totals.

UTZ004>007-009>010-016>017-020 **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 - Western Unita Mountains - Wasatch Plateau/Book Cliffs - Southwest Utah/Cedar City/Milford - Central And Southwest Mountains - South Central Utah/Kanab/Escalante**

10	0400MST		0	0	5K		Heavy Snow
11	0800MST						

This was snow in the moist southwest flow out ahead of an approaching broad pacific trough. The highest snow totals during this time were Snowbird 14" (mountains) and 3" in Parowan and Spanish Fork (valleys).

UTZ002>004-006>012-016>017-023>025 **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 Unita Mountains - Wasatch Plateau/Book Cliffs - Western Unita Basin - Castle Country/Price/Castle/Dale/Emery - Southwest Utah/Cedar City/Milford - Central And Southwest Mountains - Eastern Uinta Mountains - Eastern Uinta Basin - Tavaputs Plateau**

11	1400MST		4	8	140K	20K	Winter Storm
14	0800MST						

A broad Pacific trough moved through the region. High winds occurred with the cold front on the 11th. Some of the highest gusts included: Mt. Ogden 107 mph (93kts), Hidden Peak 71 mph (62kts), Bountiful 50 mph (43kts), NWSFO SLC 47 mph (41kts) and Logan 43 mph (37kts). Criteria snow fell in all listed zones with Alta 30" (mountains) and Spanish Fork 6" (valleys) leading the way. Late on the 11th, a University of Utah Airmed helicopter crashed in Little Cottonwood Canyon killing 4 people. The Airmed chopper was attempting to rescue a critically injured avalanche victim and impacted at about 8500' ASL. Numerous other slides in the Wasatch mountains resulted in other injuries during this storm. M32VE, M43VE, M45VE, M48VE

Cache County
Wellsville

11	1500MST		0	0	30K		Urban/Sml Stream Fld
	2300MST						

Minor flooding occurred in the Mendon (1.09" of rain) and Wellsville (1.50") areas late on the 11th. Several roads were closed and basements flooded.

UTZ001>004-006>010-017 **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 Unita Mountains - Wasatch Plateau/Book Cliffs - Central And Southwest Mountains**

15	0200MST		2	18	200K	20K	Heavy Snow
18	0800MST						

A moist west-northwest flow with embedded shortwaves was over the region during this time. Avalanches continued to occur in the Wasatch mountains. The highest snow totals were at Alta 30" and Trenton 7" (valleys). 2 snowmobilers were killed in separates slides. The first fatality occurred in the Pleasant Creek area of northern San Pete county. The other death resulted from an avalanche about 8 miles southeast of Coalville. Other injuries, damage and road closures occurred during this time due to all of the Avalanches. Snow levels rose on the 17th with snow changing to rain in the valleys. Minor flooding once again occurred in Cache county in the Wellsville and Mendon areas. M21OT, M23OT

UTZ001>004-006>010-016>017 **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 Unita Mountains - Wasatch Plateau/Book Cliffs - Southwest Utah/Cedar City/Milford - Central And Southwest Mountains**

19	0600MST		0	2	30K	5K	Winter Storm
20	0400MST						

Storm Data and Unusual Weather Phenomena

January 1998

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

UTAH, North, Central and South

One final cold front moved through Utah late on the 19th. High pressure then developed over the region ending the very active mid January storm pattern. Some of the higher wind gusts associated with this frontal passage were: Stansbury Park 65 mph (56kts), Mt. Ogden 68 mph (59kts), Jupiter Peak 66 mph (57kts) and 45 mph (39kts) at the U of U. Top snow totals were Alta 27" and Bountiful 8" (valleys).

UTZ003-006>010-017 Salt Lake And Toole Valleys - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Western Unita Mountains - Wasatch Plateau/Book Cliffs - Central And Southwest Mountains

30	0500MST		0	0	15K	Heavy Snow
	2200MST					

A weak trough brought criteria snow to several spots. Snowbird received the most with 12".

UTAH, Northeast

NONE REPORTED.

VERMONT, North and Central

VTZ001>002-005 Grand Isle - Franklin - Chittenden

04	2000EST		0	0	150K	Freezing Rain
06	0900EST					

A cold front moved south out of Canada Sunday (January 4) and Monday (January 5). This front resulted in a low level flow of cold air across northern Vermont. Moist air riding over this front resulted in freezing rain across the area Sunday night and Monday with freezing drizzle Monday night into Tuesday morning. Power failures due to down trees and power lines resulted with numerous traffic accidents and a number of roads closed due to icy conditions.

VTZ001>002-005-009 Grand Isle - Franklin - Chittenden - Addison

06	2100EST		0	1	5.8M	Ice Storm
09	1200EST					

A storm system moved from the Tennessee Valley on Wednesday (January 7) and Thursday (January 8) into New England thereafter. A cold front across New England and New York associated with an Arctic High Pressure system across Canada resulted in a flow of low level cold air into northern Vermont. Warm moist air riding over this low level cold air resulted in a major ice storm across northwest Vermont. During Friday afternoon (January 9), a few thunderstorms with gusty winds and small hail moved across the Champlain Valley of Vermont.

Ice accumulations during this event were generally between 1 and 2 inches with locally greater accumulations over portions of Grand Isle county Vermont. The impact on the region was dramatic. The ice accumulations resulted in damage to tens of thousands of trees. Trees and power lines snapped due to the weight of the ice with 60 to 80 thousand with out power for several days. Damage to the utility companies ran in the millions. The economic impact ranged from stores and shopping malls closed, banks closed with ATMs not working due to lack of power. With no electricity, the agricultural community was unable to milk cows with loss of income and damage to cows. Automobile and air travel was dramatically impacted with Burlington International Airport closed and many roads and bridges closed due to ice and fallen trees. There were numerous traffic accidents. Several radio stations were knocked off the air.

There was one DIRECT injury when an ice laden tree fell on a pickup truck, in Chittenden county on Thursday, January 8. Other INDIRECT injuries were due to carbon monoxide poisoning while improperly using generators. One person died from a heart attack after the storm while cleaning up debris. The National Guard assisted with cleanup operations after the storm. Falling tree limbs and other debris was a significant hazard during and following the storm.

VTZ003>004-007-010>012 Orleans - Essex - Caledonia - Orange - Rutland - Windsor

06	2100EST		0	0	480K	Ice Storm
09	1200EST					

A storm system moved from the Tennessee Valley on Wednesday (January 7) and Thursday (January 8) into New England thereafter. A cold front across New England and New York associated with an Arctic High Pressure system across Canada resulted in a flow of low level cold air into Vermont. Warm moist air riding over this low level cold air resulted in icing across portions of this area. Significant icing was generally restricted between 1500 and 2500 foot level.

Ice accumulations during this event were generally 3/4 of an inch or less. The impact on the region ranged from ice accumulations damaging tens of thousands of trees. Downed power lines resulted from the weight of the ice with several thousands with out power. Farmers who lost electricity were unable to milk cows with loss of income and damage to cows. Automobile travel was negatively impacted with a number of roads closed due to ice and fallen trees. There were numerous traffic accidents.

INDIRECT injuries were reported due to carbon monoxide poisoning while improperly using generators. Falling tree limbs and other debris was a significant hazard during and following the storm.

Storm Data and Unusual Weather Phenomena

January 1998

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

VERMONT, North and Central

VTZ006-008

Lamoille - Washington

06	2100EST								
09	1200EST				0	0	50K		Freezing Rain

A storm system moved from the Tennessee Valley on Wednesday (January 7) and Thursday (January 8) into New England thereafter. A cold front across New England and New York associated with an Arctic High Pressure system across Canada resulted in a flow of low level cold air into Vermont. Warm moist air riding over this low level cold air resulted in icing across the area. Most of the icing occurred between the 1500 and 2500 foot level with less than 1/2 inch ice thickness.

The ice accumulations resulted in damage to many trees, with power lines snapped due to the weight of the ice resulting in many brief power outages. Automobile travel was negatively impacted with numerous accidents reported.

Washington County Countywide

08	0530EST								
09	0100EST				0	0	10K		Flood

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area during the week were 3 to 6 inches. The Winooski River flooded especially in the Middlesex area.

Franklin County Countywide

08	0820EST								
10	0500EST				0	0	10K		Flood

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area during the week were 3 to 6 inches. The Missisquoi River flooded especially from Richford to Enosburg Falls to Highgate Center.

Chittenden County Countywide

08	1300EST								
	2200EST				0	0	10K		Flood

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area during the week were 3 to 5 inches.

Addison County Countywide

08	1300EST								
09	1500EST				0	0	5K		Flood

Rutland County Countywide

08	1300EST								
09	1500EST				0	0	5K		Flood

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area during the week were 3 to 5 inches.

Caledonia County Countywide

08	1400EST								
09	1300EST				0	0	5K		Flood

Essex County Countywide

08	1400EST								
09	1300EST				0	0	5K		Flood

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area during the week were 3 to 5 inches.

Lamoille County Countywide

08	1800EST								
10	0800EST				0	0	5K		Flood

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area during the week were 3 to 6 inches. The Lamoille River flooded especially in the Johnson and Cambridge areas.

Orange County Countywide

08	1900EST								
09	1600EST				0	0	5K		Flood

Orleans County Countywide

08	1900EST								
09	1600EST				0	0	5K		Flood

A storm system moved from the Tennessee Valley Wednesday (January 7) and Thursday (January 8) then into New England Friday (January 9). Liquid precipitation amounts across the area during the week were 3 to 5 inches. The Black River in Orleans county and the Waits River in Orange county flooded.

Storm Data and Unusual Weather Phenomena

January 1998

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

VERMONT, North and Central

VTZ001>002-005-009-011>012 Grand Isle - Franklin - Chittenden - Addison - Rutland - Windsor

15	1000EST	0	0	55K	Winter Storm
16	1200EST				

An area of low pressure over the southeastern United States on Thursday, January 15th moved northeast to a position along the mid-atlantic coast late Thursday night and moved to a location east of New England later Friday afternoon, January 16th.

A few reports of snow accumulations were as follows:

Jericho	(Chittenden county).....	15 inches
St Albans	(Franklin county).....	10 inches
Ludlow	(Windsor county).....	7 inches
Shoreham	(Addison county).....	6 inches
Rutland	(Rutland county).....	4 inches.

VTZ003>004-006>008-010 Orleans - Essex - Lamoille - Caledonia - Washington - Orange

15	1400EST	0	0	55K	Winter Storm
16	1500EST				

An area of low pressure over the southeastern United States on Thursday, January 15th moved northeast to a position along the mid-atlantic coast late Thursday night (January 15) and moved to a location east of New England later Friday afternoon (January 16th).

A few reports of snow accumulations were as follows:

Eden	(Lamoille county).....	13 inches
Island Pond	(Essex county).....	13 inches
Albany	(Orleans county).....	12 inches
Sutton	(Caledonia county).....	12 inches
brookfield	(Orange county).....	9 inches
Waitsfield	(Washington county).....	8 inches.

VTZ001>002-005-008>012 Grand Isle - Franklin - Chittenden - Washington - Addison - Orange - Rutland - Windsor

23	0900EST	0	0	80K	Winter Storm
24	0100EST				

An area of low pressure over the Gulf of Mexico Thursday (January 22) moved to the Ohio Valley Friday morning (January 23) and weakened. A secondary storm developed in the mid-atlantric coastal region Friday (January 23) and moved northeast. Snow mixed with sleet and freezing rain Friday night.

A few snow and ice accumulations were as follows:

Brookfield	(Orange county).....	13 inches
Marshfield	(Washington county).....	11.5 inches
Bethel	(Windsor country).....	11 inches
Burlington	(Chittenden county).....	6.9 inches

VTZ003>004-006>007 Orleans - Essex - Lamoille - Caledonia

23	1100EST	0	0	35K	Winter Storm
24	0300EST				

An area of low pressure over the Gulf of Mexico Thursday (January 22) moved to the Ohio Valley Friday morning (January 23) and weakened. A secondary storm developed in the mid-atlantric coastal region Friday (January 23) and moved northeast. Snow mixed with sleet and freezing rain Friday night.

A few snow and ice accumulations were as follows:

West Danville	(Caledonia county).....	10 inches
East Haven	(Essex county).....	10 inches
Eden	(Lamoille county).....	10 inches
Newport	(Orleans county).....	10 inches

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VERMONT, North and Central</u>									
VTZ005		Chittenden							
	23	1600EST			0	0	5K		High Wind (G50)
		2000EST							
	Late afternoon and evening winds on January 23 equal to or greater than 50 knots reported by weather spotter in Huntington Center.								
VTZ009		Addison							
	23	1600EST			0	0	5K		High Wind (G62)
		2100EST							
	Late afternoon and evening winds on January 23 were reported by weather spotter in Lincoln to have equalled or exceeded 50 knots.								
VTZ006		Lamoille							
	23	1600EST			0	0	5K		High Wind (G56)
		2100EST							
	Weather spotter reported on January 23 late afternoon and evening winds equal to or in excess of 50 knots in Pleasant Valley.								
<u>VERMONT, South</u>									
VTZ013		Bennington							
	08	1400EST			0	0	60K		Flood
	10	1200EST							
	From January 8 to January 10, the Battenkill in Bennington County flooded, due to a combination of significant rain and snowmelt. The river rose over 8 feet at the new Arlington gage with substantial flooding reported. Flood stage has not been established yet at Arlington. The main impact from the flood waters was extensive flooding of fields and roadways. Route 7A north of Arlington was closed due to flooding.								
Bennington County Countywide		08	2000EST		0	0	80K		Flood
		09	2200EST						
	On January 8 and 9, mild weather along with significant rain and snowmelt resulted in small stream flooding across parts of Bennington County. The flooding small streams closed several roads throughout the county. Roads were closed in the Arlington area due to small stream flooding. The Walloomsac River crested nearly two feet above flood stage at Bennington. The Bennington Plaza and Paper Mill Village were hardest hit by the flooding Walloomsac River.								
VTZ014		Windham							
	15	1200EST			0	0			Winter Storm
	16	1200EST							
	On January 15 and 16, a winter storm moved from the southeast Atlantic coast north to the southern New Jersey coast and then out to sea. This storm dumped heavy snow across Windham County in southern Vermont. Throughout the duration of the storm the snow was occasionally mixed with sleet. In Bennington County snow totals only reached two to four inches. Some specific snowfall totals in Windham County included: 11 inches at West Wardsboro, 9 inches at Brattleboro and 7 inches at Ball Mountain.								
VTZ013>014		Bennington - Windham							
	23	0300EST			0	0			Winter Storm
	24	0100EST							
	On January 23 and 24, a winter storm tracked from the North Carolina coast to Cape Cod. This system produced heavy snow across southern Vermont. Some specific snowfall totals included: 12 inches at Peru and 6 inches at Sunderland in Bennington County and 13 inches at West Wardsboro in Windham County.								
<u>VIRGIN ISLANDS</u>									
St. Thomas County									
St. Thomas	07	1100AST			0	0			Urban/Sml Stream Fld
		1300AST							
	The remnants of a cold front produced heavy rainfall across the northern U.S. Virgin Islands. The Virgin Islands Territorial Emergency Management Agency reported flooding in Ft. Mylner.								
<u>VIRGINIA, East</u>									
Sussex County									
Stony Creek	08	1055EST			0	0	1K		Thunderstorm Wind
	Few trees down.								
Accomack County									
(Wal)Wallops Is	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Amelia County									
Amelia	27	1400EST			0	0			Heavy Rain
	28	2200EST							

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VIRGINIA, East</u>									
Brunswick County									
Brunswick	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Caroline County									
Bowling Green	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Charles City (C)									
Charles City	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Chesapeake (C)									
Chesapeake	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Chesterfield County									
Chesterfield	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Colonial Heights (C)									
Colonial Hgts	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Cumberland County									
Cumberland	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Dinwiddie County									
Dinwiddie	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Emporia County									
Emporia	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Essex County									
Tappahannock	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Fluvanna County									
Palmyra	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Franklin (C)									
Franklin	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Gloucester County									
Gloucester	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Goochland County									
Goochland	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Greensville County									
Skippers	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Hampton (C)									
Hampton	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Hanover County									
Ashland	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Henrico County									
Short Pump	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Hopewell (C)									
Hopewell	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Isle Of Wight County									
Isle Of Wight	27	1400EST			0	0			Heavy Rain
	28	2200EST							

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VIRGINIA, East</u>									
James City County									
Jamestown	27	1400EST			0	0			Heavy Rain
	28	2200EST							
King And Queen County									
King & Queen Church	27	1400EST			0	0			Heavy Rain
	28	2200EST							
King William County									
King William	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Lancaster County									
Lancaster	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Louisa County									
Louisa	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Lunenburg County									
Lunenburg	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Mathews County									
Mathews	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Mecklenburg County									
South Hill	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Middlesex County									
Church View	27	1400EST			0	0			Heavy Rain
	28	2200EST							
New Kent County									
New Kent	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Newport News (C)									
Newport News	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Norfolk (C)									
Norfolk	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Northampton County									
Willis Wharf	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Northumberland County									
Heathsville	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Nottoway County									
Blackstone	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Petersburg (C)									
Petersburg	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Portsmouth (C)									
Portsmouth	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Powhatan County									
Powhatan	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Prince Edward County									
Farmville	27	1400EST			0	0			Heavy Rain
	28	2200EST							

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VIRGINIA, East</u>									
Prince George County									
Prince George	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Richmond County									
Warsaw	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Richmond (C)									
Richmond	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Southampton County									
Courtland	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Suffolk (C)									
Suffolk	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Surry County									
Surry	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Sussex County									
Wakefield	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Virginia Beach (C)									
Virginia Beach	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Westmoreland County									
Westmoreland	27	1400EST			0	0			Heavy Rain
	28	2200EST							
Williamsburg (C)									
Williamsburg	27	1400EST			0	0			Heavy Rain
	28	2200EST							
York County									
Poquoson	27	1400EST			0	0			Heavy Rain
	28	2200EST							

A Nor'easter produced heavy rain and strong winds across central and eastern Virginia on Tuesday, January 27th and Wednesday, January 28th. Rainfall totals generally ranged from 2 to 4 inches. This rainfall caused street flooding and flooding of poor drainage areas throughout the region.

VAZ077>078-084-086-091-094>095-098>100 Northumberland - Lancaster - Gloucester - Mathews - York - Newport News - Norfolk - Virginia Beach - Accomack - Northampton

27	1400EST	0	0	1.5M	Coastal Flooding
28	2200EST				

A Nor'easter battered eastern Virginia on Tuesday, January 27th and Wednesday, January 28th. The slow movement of the storm combined with the highest astronomical tides of the month resulted in an extended period of gale to storm force onshore winds which drove tides to 6.44 feet above Mean Lower Low Water (MLLW) at Sewells Point in Norfolk. These tide levels resulted in moderate coastal flooding throughout the Hampton Roads area and the Virginia Eastern Shore. Locally moderate coastal flooding was also reported across the middle peninsula and northern neck areas. One house collapsed into the Atlantic Ocean at Sandbridge Beach in Virginia Beach. Another home sustained severe damage. The rainfall combined with the gale and storm force winds resulted in scattered tree limbs downed across much of eastern Virginia. In addition, there were widely scattered power outages.

VIRGINIA, Extreme Southwest

Scott County									
Clinchport	08	2158EST			0	0			Hail (1.00)
Wise County									
Coeburn	08	2220EST			0	0			Hail (0.75)
VAZ001>002-005>006-008 Lee - Wise - Scott - Russell - Washington									
	27	1930EST			0	0			Winter Storm
	28	1130EST							

Heavy snow fell throughout southwest Virginia. Snowfall totals ranged from as little as 3-4 inches in the western part of Lee county to 2 feet in the high mountain elevations of Wise and Russell counties. The average was 10-18 inches.

Storm Data and Unusual Weather Phenomena

January 1998

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

VAZ021-025>031-036>042-050>057

Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Nelson - Albemarle - Greene - Madison - Rappahannock - Fauquier - Loudoun - Orange - Culpeper - Prince William - Fairfax - Arlington - Stafford - Spotsylvania - King George

06 0000EST 0 0 Unseasonably Warm
09 1200EST

A sprawling area of high atmospheric pressure became anchored over the western Atlantic for several days. Circulation around the high brought an unencumbered flow of tropical air from the Caribbean region into all of Virginia for a 2 1/2 day period beginning around midnight on the 6th and continuing until around noon on the 9th. New record high temperatures were set at Dulles Airport (VAZ042) on these days. More interestingly, temperatures remained above 60 degrees across much of western Virginia for over 48 hours, spanning two mornings when the normal low temperatures were some 40 degrees colder!

In fact, there was one cooling degree day recorded during the the period (January 8). After nine days, the mean temperatures across northern Virginia were between 15 and 20 degrees above normal - more like April than early January.

Augusta County									
East Portion	08	0530EST 1200EST			0	0	20K		Flash Flood
Highland County									
Countywide	08	0530EST 1100EST			0	0	5K		Flash Flood
Nelson County									
Countywide	08	0530EST 1200EST			0	0			Flash Flood
Albemarle County									
West Portion	08	0600EST 1200EST			0	0			Flash Flood
Greene County									
Countywide	08	0600EST 1200EST			0	0	10K		Flash Flood
Page County									
Countywide	08	0600EST 1200EST			0	0	5K		Flash Flood
Rockingham County									
East Portion	08	0600EST 1200EST			0	0	20K		Flash Flood
Shenandoah County									
Countywide	08	0600EST 1200EST			0	0	20K		Flash Flood
Clarke County									
Countywide	08	0700EST 1200EST			0	0	15K		Flash Flood
Culpeper County									
West Portion	08	0700EST 1200EST			0	0			Flash Flood
Loudoun County									
West Portion	08	0700EST 1200EST			0	0	20K		Flash Flood
Madison County									
Countywide	08	0700EST 1200EST			0	0	5K		Flash Flood
Rappahannock County									
Countywide	08	0700EST 1200EST			0	0	5K		Flash Flood
Warren County									
Countywide	08	0700EST 1200EST			0	0	5K		Flash Flood
Fauquier County									
North Portion	08	0800EST 1200EST			0	0			Flash Flood

Unseasonably warm and humid air plus developing low pressure over the Ohio Valley produced bands of heavy rain across much of

Storm Data and Unusual Weather Phenomena

January 1998

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

the Shenandoah Valley. The combination of tropical rainfall, saturated soil (due to recent snow melt) and time of year led to flash flooding of numerous small streams, creeks, and low lying areas. Two areas were hit particularly hard: the northern edge of the Blue Ridge and a small area just west of Skyline Drive.

In western Loudoun Co, over 3 inches of rain in a 5-hour period flooded between 25 and 30 roads, including state route 9 northwest of Leesburg, state route 7 near Purcellville, and state route 287. Each road was closed during the morning commute. Several cars were abandoned on local secondary roads, and one person had to climb to safety when his truck became nearly submerged. Some school buses were unable to reach students in rural areas. In Clarke Co, at least 20 secondary roads were closed, and federal highway 50 was down to 1 lane at the base of Paris Mountain. Gravel runoff from secondary roads caused minor property damage in the form of fouled springs and dirty ponds used for local drinking water.

In an area encompassing Page, eastern Rockingham, and eastern Augusta Cos, dozens of secondary roads were deemed impassable. Flooding was more acute in Sherando (Augusta Co) where a local dam neared its release point. In Craigsville, several homes were slightly inundated along the Little Calpasture River along state route 42. In Rockingham Co, 25 roads were closed, including one with pavement failure. Rainfall totals at the highest elevation along Skyline Drive were as much as 6 to 7 inches, with one report of 7.80 inches at Lewis Camp Mountain (Page Co). Adjacent counties such as Warren, Rappahannock, and Greene sustained varying amounts of flooding. Fifteen secondary roads closed in Rappahannock Co; in Greene Co, a few secondary roads which had been rebuilt in the wake of the 1996 floods were washed out once again. In Warren Co, several low-water bridges flooded.

Farther west, 39 secondary roads were closed in Shenandoah Co, where schools did not open. At least one low water bridge collapsed. In the other affected counties, closed roads numbered less than 10 on average.

The rain tapered off shortly before noon, and conditions improved rapidly during the afternoon as creeks and streams receded.

VAZ036>037-041-051>053

Nelson - Albemarle - Fauquier - Culpeper - Prince William - Fairfax

15	0700EST 1300EST	0	0	10K	Winter Weather
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VAZ025>031-038>040-042

Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Greene - Madison - Rappahannock - Loudoun

15	1000EST	0	0	50K	75K	Ice Storm
16	0200EST					

Warm moist air overrunning shallow polar surface air produced a variety of winter weather, starting around daybreak on the 15th and continuing just after midnight on the 16th. Precipitation began as a mix of sleet and snow but quickly changed to rain and freezing rain across much of the state.

The combination of quick action by Virginia Department of Transportation road crews, and the still above freezing subsoil temperatures, kept most main arteries and secondary roads free from accumulation. However, in the ice storm area, free standing structures such as trees, power poles/wires, and exposed bridges received between 1/4 and 1/2 inch of ice accretion. A small section of higher elevation areas along and just west of the Blue Ridge received the most icing. In these areas, spotty power outages were noted, and several large limbs and small trees snapped under the weight of the ice. In forested areas of the northern Shenandoah Valley, specifically between 500 and 1000 feet above sea level, hundreds of trees sustained limb damage. Portions of the following counties were hit hardest: western Loudoun (VAZ042), Clarke (VAZ031), northern Warren (VAZ030), northern Shenandoah (VAZ027), and Frederick (VAZ028). Other pockets of substantial ice accretion likely occurred in Page, eastern Rockingham, and eastern Augusta Cos (VAZ025>026; 029).

Power outages were rather scattered. In Clarke and Frederick Cos (VAZ028-031), three transformers blew due to ice accretion; several lines fell from the combination of fallen tree limbs and the weight of the ice. An estimated 200 Allegheny Power customers lost electricity.

In the winter weather area, mixed precipitation quickly changed to rain during the late morning and early afternoon hours, but not before causing a minor build up of ice, along with early morning light coatings on area roadways.

VAZ028

Frederick

22	2200EST	0	0	Winter Weather
23	0600EST			

Low pressure over the southeastern U.S., combined with weak polar high pressure moving east of New England, produced a small area of light snow and sleet which changed to freezing rain late at night. Accumulations of snow ranged from 1 to 2 inches across the county, with some icing on top of that. Minor road problems were noted. Precipitation changed to a cold rain around dawn on the 23rd.

Storm Data and Unusual Weather Phenomena

January 1998

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

VAZ025>026-029>031-036>037-040>042-051>054 **Augusta - Rockingham - Page - Warren - Clarke - Nelson - Albemarle - Rappahannock - Fauquier - Loudoun - Culpeper - Prince William - Fairfax - Arlington**

	23	0400EST 1300EST			0	0			Heavy Rain
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**Greene County
Countywide**

	23	0600EST 1000EST			0	0	2.5K		Flood
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**Madison County
Countywide**

	23	0600EST 1000EST			0	0	2.5K		Flood
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Low- and mid-level flow of deep moisture, overrunning a chilly surface air mass, produced a prolonged period of moderate to heavy rain across north central Virginia during the morning of the 23rd. Rainfall totals across the area ranged from 1 to 2 inches; a record daily total (1.46 inches) fell at Dulles Airport (VAZ042). The long duration allowed a slow rise among area streams and creeks. Most remained in their banks. However, several locations in Madison and Greene Co reported closed roads from high water and creek overflows. Elsewhere, nuisance ponding and local high standing water was observed.

VAZ021-025>027-029>030 **Highland - Augusta - Rockingham - Shenandoah - Page - Warren**

	27	1500EST			0	0	12K	10K	Winter Storm
	28	1400EST							

VAZ028-031

Frederick - Clarke

	27	1500EST			0	0			Winter Weather
	28	1400EST							

A winter storm developed along the Georgia coast on the 27th, then intensified as it moved slowly northward along the coast later on the 27th and 28th. The cyclone, which tracked to the Virginia capes by late afternoon on the 28th, spread a variety of winter weather across the northern and central Shenandoah Valley during a 24-hour period. As had been the case with other episodes during the 1997/98 winter, accumulations varied greatly with elevation. From the Skyline Drive to the Shenandoah Mountain and North Mountain range, accumulations ranged from around 4 inches in the valleys to 8 inches above 1500 feet. West of the Shenandoah Range, in the plateau region of Highland Co (VAZ021), accumulations ranged from 12 to 18 inches.

The weight of the snow caused numerous tree limbs and some trees to fall in areas where more than one foot of snow accumulated, mainly in Highland Co.

Warmer air circulating around the storm caused a rain/sleet/snow mix over the northern Shenandoah Valley, where between 1 and 3 inches of wet snow accumulated. Similar accumulations were noted along the foothills just east of the Blue Ridge.

VAZ053>054 **Fairfax - Arlington**

	28	0400EST 1600EST			0	0			Heavy Rain
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**Albemarle County
North Portion**

	28	0900EST 1600EST			0	0			Flood
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**Clarke County
Countywide**

	28	0900EST 1600EST			0	0			Flood
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**Fauquier County
Countywide**

	28	0900EST 1600EST			0	0			Flood
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**Frederick County
Countywide**

	28	0900EST 1600EST			0	0	2K		Flood
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**Greene County
Countywide**

	28	0900EST 1600EST			0	0			Flood
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**Loudoun County
West Portion**

	28	0900EST 1600EST			0	0	5K		Flood
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Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VIRGINIA, North</u>									
Madison County									
Countywide	28	0900EST 1600EST			0	0			Flood
Rappahannock County									
Countywide	28	0900EST 1600EST			0	0			Flood
Shenandoah County									
Countywide	28	0900EST 1600EST			0	0	5K		Flood
Warren County									
Countywide	28	0900EST 1600EST			0	0			Flood
Culpeper County									
Countywide	28	1000EST 1600EST			0	0			Flood
Orange County									
Countywide	28	1000EST 1600EST			0	0			Flood
Prince William County									
Countywide	28	1000EST 1600EST			0	0			Flood
King George County									
Countywide	28	1100EST 1700EST			0	0	2.5K		Flood
Spotsylvania County									
Countywide	28	1100EST 1700EST			0	0	2.5K		Flood
Stafford County									
Countywide	28	1100EST 1700EST			0	0			Flood
VAZ057									
		King George							
	28	1100EST 1700EST			0	0	2K		Gusty Winds
<p>A fairly intense and slow-moving nor'easter produced a large area of moderate to heavy rains across central and northeastern Virginia beginning late on the 27th and continuing through late afternoon on the 28th. The heaviest rains fell while the storm tracked along the South and North Carolina coastline. Storm totals ranged from 1 1/2 to 2 1/2 inches, with isolated totals of over 3 inches at higher elevations along the foothills, as well as portions of the Northern Neck region.</p> <p>Widespread minor to moderate flooding of small streams, creeks, and low-lying areas occurred over all of the Piedmont, stretching east to King George Co in the Northern Neck. The Virginia Department of Transportation reported over 150 roads closed in the area due to high standing water, or creeks that exceeded bankful. Some of the larger number of road closures included: Shenandoah Co (32 - a combination of runoff, poor drainage, and some river flooding); Loudoun Co (27); Frederick Co (15); Orange Co (13); Albemarle Co (12). Drainage flooding occurred in Waynesboro (Augusta Co) when the combination of slowly melting snow and runoff closed six roads.</p> <p>The storm also produced wind gusts in excess of 30 mph from the eastern Piedmont through the coastal plain. The combination of gusty winds and saturated soil caused isolated instances of trees, limbs, and power lines to come down. Two trees fell in a yard in Mt Vernon (VAZ053) during the afternoon of the 28th.</p>									
VAZ042-052>053									
		Loudoun - Prince William - Fairfax							
	29	0500EST 0900EST			0	0			Black Ice
<p>Residual moisture from rainfall of the previous evening combined with clear calm conditions to produce abundant black ice in the Virginia suburbs of Washington, DC, during the morning commute. Dozens of accidents occurred as motorists travelled at unsuitable rates of speed considering the untreated roads. No serious injuries were reported.</p>									
<u>VIRGINIA, Northwest</u>									
VAZ003>004									
		Dickenson - Buchanan							
	27	1000EST			0	0	1.5M		Heavy Snow
	28	0500EST							

Storm Data and Unusual Weather Phenomena

January 1998

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

VIRGINIA, Northwest

A surprise heavy wet snow fell from the late morning hours of Tuesday the 27th, to the predawn hours of Wednesday the 28th. Since the environment was near the freezing mark through a deep layer, a wide variation in snow depths were seen. The variation was based on elevation. At elevations about 2000 feet, 20 to 30 inches of snow was deposited. Meanwhile, in the river valleys and hollows, snow depths of 8 to 15 inches were measured. Grundy and Clintwood both reported 8 inches on the ground. The Breaks Interstate Park had 17 inches. The melted down water amount was 2.5 inches at Grundy.

The heaviest snow fell late in the afternoon and during the evening. Lightning and thunder were observed. The snow flakes were huge. Some residents described the flakes as the size of snowballs.

The main effects from the storm were electric power outages and transportation stoppages. A state of emergency was declared in Virginia, with Dickenson and Buchanan Counties being 2 of the hardest hit counties. The state emergency response operation center remained activated through the first week of February. The hollows looked like a war zone, with all the fallen trees. Roads were blocked by snow or fallen trees. Bulldozers were even used to clear trees off some roads. In Dickenson County, 99 percent of the county lost electricity during the storm. On the 3rd of February, 1000 Buchanan residents were still without power. Three shelters were open in Dickenson County and 2 were set up in Buchanan County. Yet, not many citizens used these shelters. In Dickenson County, 18 homes sustained damage from the fallen trees or the weight of the snow.

VIRGINIA, Southwest

Galax (C)

Galax	07	2355EST		0	0	0	Thunderstorm Wind
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Carroll County Countywide

08	0200EST 0400EST		0	0	500K	Flash Flood
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Giles County Northeast Portion

08	0200EST 0300EST		0	0		Flash Flood
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VAZ012>013

Wythe - Pulaski

08	0200EST 0300EST		0	0	10K	High Wind
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Montgomery County Countywide

08	0230EST 0630EST		0	0		Flash Flood
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Pulaski County South Portion

08	0230EST 0400EST		0	0		Flash Flood
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Wythe County 2 SSE Patterson to 2 NE Patterson

08	0230EST 0500EST		0	0		Flash Flood
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Craig County Southeast Portion

08	0300EST 0430EST		0	0		Flash Flood
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Roanoke County 3 S Bennett Spgs

08	0300EST 0645EST		0	0		Flash Flood
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Alleghany County Countywide

08	0320EST 0700EST		0	0		Flash Flood
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Botetourt County North Portion

08	0330EST 0645EST		0	0		Flash Flood
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Floyd County Countywide

08	0330EST 0700EST		0	0	225K	Flash Flood
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Bath County East Portion

08	0430EST 0630EST		0	0		Flash Flood
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Rockbridge County Countywide

08	0430EST 1700EST		0	0	350K	Flash Flood
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Heavy rain and isolated thunderstorms during the early morning hours on the 8th produced damaging winds and flash flooding.

Storm Data and Unusual Weather Phenomena

January 1998

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

VIRGINIA, Southwest

Thunderstorm winds knocked down power lines in Galax.

Flash flooding in Pulaski County resulted in the closing of route 693 near Allisonia and the flooding of Big Reed Island Creek and Little Reed Island Creek. Little Stoney and Big Stoney Creeks in Giles County, Little Reed Island Creek in Wythe County, Masons Creek 3 miles south of Bennett Springs in Roanoke County, Craig Creek in the southeastern portion of Craig County, and Crab Creek and the North Fork of the Roanoke River in Montgomery County were flooded. Two houses near Pearisburg in Giles County were flooded.

In Rockbridge County, numerous roads were flooded and people were evacuated in Kerrs Creek, Goshen, and Rockbridge Baths.

Numerous creeks and streams were flooded throughout Alleghany County. A family that lived along Wilsons Creek had to be evacuated. In Clifton Forge, Smith Creek left its banks and resulted in the occupants of a house being evacuated.

The flooding of Bullpasture River in Williamsville in Bath County resulted in the evacuation of one family. Several other creeks in the eastern portion of Bath County were flooded and resulted in roads being closed.

Heavy rains resulted in the flooding of Indian Creek about 2 miles southwest of Copper Valley which washed out a large portion of route 787. Several other roads throughout Floyd County were closed due to flood waters.

In Carroll County, flood waters damaged some roads, washed out a few bridges, and flooded roads. Flash flooding resulted in water over roads and bridges in the northern portion of Botetourt County.

High winds not associated with a thunderstorm knocked down some trees in Max Meadows and damaged a greenhouse at the Pulaski County High School in Dublin.

VAZ023>024

Botetourt - Rockbridge

08	0645EST	0	0		Flood
09	1045EST				

Heavy rainfall on the 7th resulted in minor flooding on portions of the James and Maury Rivers. The James River crested almost two and a half feet above flood stage at Lick Run at 1900 EST on the 8th and almost 3 feet above flood stage at Buchanan 0220 EST on the 9th. The Maury River crested around one and a half feet above flood stage at Rockbridge Baths at 1715 EST on the 8th.

VAZ034>035-045>046

Bedford - Amherst - Campbell - Appomattox

08	1230EST	0	0		Flood
09	1100EST				

Heavy rainfall on the 7th and the 8th resulted in minor to moderate flooding on the James River. The James River crested about 2 feet over flood stage at Holcomb Rock at 0000 EST on the 9th, just over flood stage at Lynchburg at 0000 EST on the 9th, and one foot over flood stage at Bent Creek at 0700 EST on the 9th.

Tazewell County

Tazewell

08	2212EST	0	0		Hail (0.75)
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An isolated severe thunderstorm during the late evening hours on the 8th produced hail up to dime size in Tazewell.

VAZ047

Buckingham

09	0200EST	0	0		Flood
10	1400EST				

Heavy rain on the 7th and the 8th resulted in minor to moderate flooding on the James River. The James River crested a little over a foot above flood stage at Scottsville at 1630 EST on the 9th and seven and a half feet over flood stage at Brems Bluff at 2100 EST on the 9th.

VAZ011-013>014-017-019-022>023-032-043>045

Giles - Pulaski - Montgomery - Floyd - Alleghany - Roanoke - Botetourt - Patrick - Henry - Pittsylvania - Campbell

15	0300EST 1400EST	0	0	2K	Ice Storm
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Freezing rain and freezing drizzle on the 15th resulted in ice buildup on trees in excess of one quarter inch in portions of Patrick, Henry, Floyd, Pulaski, Giles, Montgomery, Roanoke, Botetourt, Alleghany, Campbell, and Pittsylvania Counties. The weight of the ice broke off tree limbs and knocked down power lines. In Martinsville, a large ice covered tree severely damaged a car when the tree fell on it.

Montgomery County

Pilot

15	1805EST 2000EST	0	0		Flash Flood
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Heavy rainfall during the afternoon and early evening hours on the 15th resulted in the flooding of Bush Creek near Pilot.

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
VIRGINIA, Southwest									
VAZ058			Halifax						
	16	0700EST			0	0			Flood
	18	0330EST							
	Heavy rain several days prior to the 16th resulted in minor flooding on the Dan River at South Boston. The Dan River crested over 3 feet above flood stage at South Boston around 0900 EST on the 17th.								
VAZ016>017-032>033			Carroll - Floyd - Patrick - Franklin						
	23	0400EST			0	0			Ice Storm
		1500EST							
	Freezing rain and freezing drizzle along the Blue Ridge Parkway in Carroll, Patrick, Floyd, and Franklin Counties broke off tree numerous limbs.								
VAZ007-009>017			Tazewell - Smyth - Bland - Giles - Wythe - Pulaski - Montgomery - Grayson - Carroll - Floyd						
	27	0630EST			1	0	100K		Heavy Snow
	28	1000EST							
	Heavy wet snow developed during the morning hours on the 27th and continued until the morning hours on the 28th. The snow mixed with sleet and rain at times during the evening hours on the 27th. Snowfall amounts were mainly from 15 to 32 inches with maximum snow depths mainly from 8 to 20 inches.								
	The heavy wet snow closed schools, businesses, and church services and stranded people in homes and vehicles. There were numerous traffic accidents, some with injuries indirectly attributed to the storm. A charter bus overturned on interstate 81 near Marion, injuring 20 people. Interstate 81 was closed for several hours during the height of the storm. The weight of the snow knocked down utility lines, trees, and tree limbs, resulting in thousands of people without power. At one time, 75 percent of Tazewell County was without power. Awnings, carports, buildings, and a welding shop in Galax were damaged due to the weight of the snow. Shelters were set up and the National Guard was called out.								
	A 34 year old man in Boissevain in Tazewell County suffered an asthma attack at his residence shortly after midnight on the 28th. As a result of downed trees and tree limbs and extremely hazardous road conditions due to the snow, it took an extremely long time for help to safely reach the man. The man died prior to the arrival of help. M34PH								
VAZ018>020-022>024			Craig - Alleghany - Bath - Roanoke - Botetourt - Rockbridge						
	27	0930EST			0	0			Heavy Snow
	28	0830EST							
	Heavy wet snow developed during the morning hours on the 27th and continued until the morning hours on the 28th. The snow mixed with sleet and rain at times during the evening hours on the 27th. Snowfall amounts were mainly from 8 to 20 inches with maximum snow depths mainly from 4 to 12 inches.								
	The heavy wet snow closed schools, businesses, and church services and stranded people in homes and vehicles. There were numerous traffic accidents, some with injuries indirectly attributed to the storm. The weight of the snow knocked down utility lines, trees, and tree limbs, resulting in thousands of people without power.								
VAZ044-058			Pittsylvania - Halifax						
	28	0100EST			0	0			Flood
	31	1200EST							
	Heavy rain and snow melt resulted in minor to moderate flooding on the Dan River. The Dan River crested a little over two feet above flood stage at Danville at 1400 EST on the 28th, over four and a half feet above flood stage at Paces at 1500 EST on the 29th, and almost eight and a half feet above flood stage at South Boston around 0730 EST on the 30th.								
VAZ044>045			Pittsylvania - Campbell						
	28	0600EST			0	0			Flood
		2300EST							
	Heavy rain and snow melt resulted in minor flooding on the Roanoke River at Altavista. The Roanoke River crested just over a foot above flood stage at Altavista at 0800 EST on the 28th.								
VAZ058>059			Halifax - Charlotte						
	28	0700EST			0	0			Flood
	31	2359EST							
	Heavy rain and snow melt resulted in moderate flooding on lower portions of the Roanoke River. The Roanoke River crested almost five feet above flood stage at Brookneal at 1900 EST on the 28th and over six feet above flood stage at Randolph at 1900 EST on the 29th. Flooding continued into February.								
VAZ047			Buckingham						
	28	1100EST			0	0			Flood
	29	1900EST							
	Heavy rain and snow melt resulted in moderate flooding on the James River at Bremono Bluff. The James River crested five and a half feet above flood stage around 2330 EST on the 28th.								

Storm Data and Unusual Weather Phenomena

January 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VIRGINIA, Southwest</u>									
Rockbridge County Countywide	28	1145EST 1700EST			0	0			Flash Flood
Heavy rain and snow melt resulted in the flooding of numerous creeks and streams and the flooding of some roads in Rockbridge County.									
Appomattox County 4 WNW Oakville	28	1200EST 1430EST			0	0	100K		Flash Flood
Heavy rains resulted in Wreck Island Creek flooding route 666 about 4 miles west-northwest of Oakville. The bridge and adjacent road was damaged by the flooding.									
<u>WASHINGTON, Northeast</u>									
WAZ035-035>036-036-036-036>037-037-037			Northeast Mountains - Okanogan Valley - Douglas/Lower Chelan						
	05 23	0600PST 1758PST			1	7	100K	0	Heavy Snow
6 inches new snow at Williams Valley M56VE									
WAZ035-035>036			Northeast Mountains - Okanogan Valley						
	11 12	0714PST 0640PST			0	0	0	0	Extreme Cold
-2 at Deer Park									
<u>WASHINGTON, Northwest</u>									
WAZ005-009			Northwest Interior - Admiralty Inlet Area						
	01 02	2100PST 0300PST			0	0	0		Heavy Snow
Up to 7 inches of snow fell over Whidbey and Camano Islands overnight. Lesser amounts fell over western Skagit County. About 2000 people on the islands lost power and several roads were closed because of the snow.									
WAZ010			Hood Canal/Kitsap Peninsula						
	03 04	2100PST 0900PST			0	0	0		Heavy Snow
Around 5 inches of snow fell in the Hoodspout area overnight. The next morning Bellingham got 3 inches of new snow.									
WAZ008-011			Tacoma Area - Southwest Interior						
	11	0600PST 1400PST			0	0			Heavy Snow
Between 10 and 14 inches of snow fell in Lewis County. 4 to 8 inches fell in Thurston and Pierce Counties. No snow fell north of Tacoma. There were hundreds of accidents but no weather related injuries were reported. Schools were closed the next day (monday).									
WAZ006>008-010			Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Hood Canal/Kitsap Peninsula						
	12	1600PST 2000PST			0	0	0		Heavy Snow
2 to 4 inches of snow fell over much of the Seattle metro area. A large snow slide closed part of I-90 near North Bend. At one point there were about 30 metro Busses stuck in the snow.									
WAZ002			Western Whatcom						
	12 13	2200PST 0600PST			0	0	0		Heavy Snow
Freezing rain turned snow-covered Whatcom County roads into a slick mess. Anywhere from 3 to 7 inches of snow fell overnight followed by freezing rain the next morning. The airport was closed for about 4 hours and there were around 30 accidents on state highways, however, no one was injured. There weren't many power outages but schools were closed that day.									
WAZ016			Central Coast						
	16	2300PST 2330PST			0	0			High Wind (G47)
Sustained winds reached 45 mph on the coast with gusts to 54 mph. An estimated 1000 people lost power and there was minor damage to roofs and tree limbs down.									
<u>WASHINGTON, Southeast</u>									
WAZ027			Yakima Valley						
	03	0800PST 2300PST			0	0			Winter Storm
Snow covered and icy roads caused numerous cars to slip and spin off roads. Emergency crews spent much of the evening responding to cars in ditches, fender benders, and rollovers. No serious injuries were reported.									

Storm Data and Unusual Weather Phenomena

January 1998

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

WASHINGTON, Southeast

WAZ024>025-027>029-029>030 **East Columbia River Gorge - East Slopes Southern Cascades - Yakima Valley - Lower Columbia Basin - Blue Mountain Foothills - Northwest Blue Mountains**

10	1000PST	0	0		Heavy Snow
11	2000PST				

Up to 15 inches of snow fell along the east slopes of the Cascades. Up to six inches fell in the Yakima Valley with only a few traffic problems reported. The lower Columbia basin received up to 3 inches of snow. The Foothills of the Blue Mountains picked up as much as 5 inches of snow and blowing snow caused local white-out conditions. Sixteen inches of snow fell in the Blue Mountains.

WAZ025-027 **East Slopes Southern Cascades - Yakima Valley**

14	0500PST 2200PST	1	0		Winter Storm
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A 27 year old woman died after her car collided with a tractor-trailer rig on snow covered I-90 west of Cle Elum. The driver of the tractor-trailer was not hurt. Dozens of other vehicles, including a couple of tow trucks, were stranded along the interstate highway. A dozen early morning accidents were reported south of Goldendale on highway 97, including some that involved jackknifed semi-trucks and minor injuries.

F27VE

WAZ025 **East Slopes Southern Cascades**

16	2100PST 2330PST	0	0		Heavy Snow
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A weather spotter in Cle Elum reported 4 inches of snow in 2 and a half hours.

WAZ025 **East Slopes Southern Cascades**

18	1500PST	1	0		Avalanche
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A snowmobiler died Sunday afternoon in an avalanche near Blewett Pass. After riding up a relatively steep slope he was trying to turn his machine around when the slope above him gave way. He and his machine fell 400 to 500 feet and were buried under 2-3 feet of snow. Nearby snowmobilers used trail marker wands to probe for the victim but failed to find him. After avalanche control measures were taken Monday morning to protect rescuers, the victim was found Monday afternoon. He was located about 60 feet below and 20 feet across the slope from his machine.

M38OU

WASHINGTON, Southwest

WAZ023-039 **West Columbia River Gorge - Vancouver Area**

10	1500PST	0	0		Winter Storm
12	1200PST				

WAZ023-039 **West Columbia River Gorge - Vancouver Area**

11	1400PST	0	0	250K	Ice Storm
14	1200PST				

The area of Southwest Washington and western Columbia River Gorge experienced the same storm as described in the narrative for Oregon zones 001-004 and 006-009. See that narrative for details.

WEST VIRGINIA, East

WVZ051>053 **Morgan - Berkeley - Jefferson**

06	0700EST	0	0		Unseasonably Warm
09	1200EST				

A sprawling area of high atmospheric pressure became anchored over the western Atlantic for several days. Circulation around the high brought an unencumbered flow of tropical air from the Caribbean region into the eastern West Virginia panhandle for a 2 1/2 day period beginning around dawn on the 6th and continuing until around noon on the 9th. Interestingly, temperatures remained above 55 degrees for over 48 hours, spanning two mornings when the normal low temperatures were some 35 degrees colder!

After nine days, the mean temperatures across central and western Maryland were between 15 and 20 degrees above normal - more like April than early January.

**Jefferson County
Countywide**

08	0800EST 1200EST	0	0	5K	Flash Flood
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Unseasonably warm and humid air combined with developing low pressure over the Ohio Valley to produce bands of heavy rain across portions of the eastern panhandle. The combination of tropical rainfall, saturated soil (due to recent snow melt) and time of year led to flash flooding of several small streams, creeks, and low lying areas.

In Jefferson Co, several secondary roads were closed due to high water, and many creeks were at or just above bankful. A portion of federal highway 340 was closed briefly just west of Harpers Ferry. Rainfall totals in the affected area ranged from 2 to 3 inches.

Storm Data and Unusual Weather Phenomena

January 1998

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

WEST VIRGINIA, East

WVZ051>052	Morgan - Berkeley								
	15	0900EST							
		1300EST							

WVZ050-053-055	Hampshire - Jefferson - Hardy													
	15	1000EST								0	0	13K		Ice Storm
	16	0200EST												

Warm moist air overrunning a shallow polar surface air mass produced a variety of winter weather starting around daybreak on the 15th and continuing until just after midnight on the 16th. Precipitation began as a mix of sleet and snow but quickly changed to rain and freezing rain across much of the area.

The combination of still above freezing subsoil temperatures and low traffic volume kept most main arteries and secondary roads free from accumulation. However, in the ice storm area, free standing structures such as trees, power poles/wires, and exposed bridges received between 1/4 and 1/2 inch of ice accretion. A strip of higher elevation areas (roughly between 500 and 1000 feet above sea level) in Jefferson Co received the most icing. In this area, spotty power outages were noted, and a few large limbs and small trees snapped under the weight of the ice. Allegheny Power reported 150 customers were without power in Jefferson Co.

In the winter weather area, mixed precipitation quickly changed to rain during the late morning and early afternoon hours, but not before causing a minor build up of sleet and ice (up to 3/4 inches of sleet followed by some freezing rain), some of which coated area roadways.

WVZ049>051-055	Mineral - Hampshire - Morgan - Hardy													
	22	2200EST								0	0			Winter Weather
	23	0600EST												

Low pressure over the southeastern U.S., combined with weak polar high pressure moving east of New England, produced a small area of light snow and sleet which changed to freezing rain late at night across the POTomac Highlands. Accumulations of snow/sleet ranged from 2 to 3 inches across Mineral, Hampshire, and Morgan Co (WVZ049>051). Around 1 inch of snow fell in hardy Co (WVZ055) before a prolonged period of freezing rain and sleet caused some icing problems. Slushy roads were the main culprit of the precipitation before a changeover to cold rain occurred around dawn on the 23rd.

WVZ053	Jefferson													
	23	0500EST								0	0			Heavy Rain
		1200EST												

Low- and mid-level flow of deep moisture, overrunning a chilly surface air mass, produced a prolonged period of moderate to heavy rain across extreme eastern West Virginia during the morning of the 23rd. Rainfall totals across the area were approximately 1.5 inches. The relatively long duration allowed a slow rise among area streams and creeks, and all remained just below bankful. However, many areas reported high standing water due to ponding.

WVZ053	Jefferson													
	24	1800EST								0	0			Snow
		2200EST												

A band of light of moderate snow developed over the eastern panhandle of West Virginia during the evening, as a vigorous upper-level disturbance enhanced low- and mid-level lifting of residual moisture left behind from a previous system. The snow, which fell onto relatively warm ground, produced accumulations which varied greatly with elevation. In general, accumulations along the ridges near Harpers Ferry were around 3 inches. Areas to the west received a general accumulation of 1 or 2 inches.

WVZ051>053	Morgan - Berkeley - Jefferson													
	27	1500EST								0	0			Winter Weather
	28	1400EST												

WVZ048>050-054>055	Grant - Mineral - Hampshire - Pendleton - Hardy													
	27	1600EST								0	0	15K	10K	Winter Storm
	28	1300EST												

A winter storm developed along the Georgia coast on the 27th, then intensified as it moved slowly northward along the eastern seaboard later on the 27th and 28th. The cyclone, which tracked to the Virginia capes by late afternoon on the 28th, spread a variety of winter weather across eastern West Virginia during a 24-hour period. As had been the case with other episodes during the 1997/98 winter, accumulations varied greatly with elevation. In the eastern panhandle, 1 to 2 inches of mixed snow, sleet, and rain fell. Over the lower elevations of the Potomac Highlands, roughly 2 to 6 inches accumulated. Some of the highest accumulations were noted across western Pendleton, Grant, and Mineral Cos (WVZ048>049-054), where 8 to 16 inches were noted. The largest individual totals reported were in Elk Garden (Mineral Co - 15 inches) and Hardy Co (20 inches).

The weight of the snow likely caused tree limbs, some trees, and power lines to fall on the 28th, especially where more than 1 foot of snow accumulated.

Storm Data and Unusual Weather Phenomena

January 1998

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

WEST VIRGINIA, North

Wetzel County

2 NE Hundred

	07	2240EST			0	0			Flood
	08	0100EST							

Route 69, northeast of Hundred, was flooded by Cippo Run.

Marshall County

**1 SE Graysville to
1 S Limestone**

	09	0120EST	11	250	0	0	75K		Tornado (F1)
		0135EST							

A weak tornado tracked from south of Moundsville to just east of Moundsville in the early morning hours of January 9. The tornado began approximately at 120 am and travelled northeast at 30 to 40 mph. The tornado started around Fish Creek near Route 74. It moved between Route 44 and continued northeast crossing Route 17, Route 34 and ending just south of Limestone. The first 8-9 miles of the path had continuous light to occasionally moderate damage. The last few miles appeared to have fragmented damage.

The width of the tornado path was approximately 250 yards. About 17 homes were affected (mainly roof, chimney and siding damage). Most of the homes were single family wood frame homes with about 5 mobile homes damaged. There were at least 3 garages heavily damaged, 2 destroyed. These garages were mostly cinder block and wood construction. There was widespread tree damage along the path. Most trees were snapped with a few uprooted. Near Grave Creek, there were several acres on the side of a ridge that sustained major tree damage.

Winds with this tornado were estimated to generally range from 55 to 75 mph. However, in the Grave Creek area along Route 54, winds were estimated between 75 and 85 mph. Golfball hail that covered the ground was also reported with this storm.

One witness mentioned looking outside, only to see everything swirling about. Another witness heard the loud roar and immediately ran to the kitchen window. In a matter of seconds, his garage disappeared.

Tornadoes are rare, especially in the early morning hours of January.

Marshall County

**1 SE Graysville to
1 S Limestone**

	09	0120EST			0	0			Hail (1.75)
		0135EST							

Hail, up to golfball size, covered the ground along the path of the early morning F1 tornado through Marshall County, West Virginia.

Brooke County

Bethany

	09	0200EST			0	0			Flash Flood
		0400EST							

Several roads were flooded in Bethany.

Hancock County

Countywide

	09	0200EST			0	0			Flash Flood
		0400EST							

Several mudslides and rockslides were reported following heavy thunderstorm rains. Several roads were flooded.

Ohio County

Countywide

	09	0200EST			0	0			Flash Flood
		0400EST							

Roads were flooded throughout the county. Some mud and rockslides were also reported. Peter's Run was out of its banks and onto Peter's Run Road.

WVZ023-041

Preston - Tucker

	27	1200EST			0	0			Heavy Snow
	28	0800EST							

In Preston County, Terra Alta reported 8 inches, Big Bear Lake 12 inches, and Kingwood 6 inches.

A winter storm moved from the Carolinas to the Virginia coast and brought heavy snow to the mountains of West Virginia.

WEST VIRGINIA, Southeast

WVZ042

Mercer

	15	0300EST			0	0			Ice Storm
		1300EST							

Freezing rain and freezing drizzle on the 15th resulted in ice buildups on trees in excess of one quarter inch in portions of Mercer County. The weight of the ice broke off a few tree limbs.

WVZ042>045

Mercer - Summers - Monroe - Greenbrier

	27	0930EST			1	1	90K		Heavy Snow
	28	1200EST							

Heavy snow developed during the morning hours on the 27th and continued until the morning hours on the 28th. Snowfall amounts were mainly from 20 to 40 inches with maximum snow depths mainly from 12 to 25 inches. Between 10 AM on the 27th and 10 AM on the 28th, Flat Top in Mercer County recorded 35 inches of snow. This established a new state record 24 hour snowfall for West Virginia.

Storm Data and Unusual Weather Phenomena

January 1998

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

WEST VIRGINIA, Southeast

The heavy wet snow closed schools, businesses, and church services and stranded people in homes and vehicles. There were numerous traffic accidents, some with injuries indirectly attributed to the storm. The weight of the snow knocked down utility lines, trees, and tree limbs, resulting in numerous power outages. Some buildings were damaged due to the weight of the snow. Shelters were set up and the National Guard was called out. Summers, Greenbrier, Monroe, and Mercer were declared disaster areas. More than 11,000 customers were without power in the eastern half of Greenbrier County.

The heavy snow collapsed a barn which seriously injured a man near Keenan in Monroe County. A man from Ballard in Monroe County died after suffering a heart attack while attempting to start a generator. M68OU

WEST VIRGINIA, West

Tyler County Countywide

07	1830EST 2200EST			0	0	5K	Flash Flood
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Small streams flooded several roads. Earlier in the day, around 1630 EST, as the streams were rising, a vehicle stalled crossing a low water bridge. The bridge was across Pt. Pleasant Creek. The husband was able to get out of the vehicle and seek help. After about 90 minutes, fire departments and police used jaws of life to rescue the wife from the partially submerged vehicle. No one was injured.

Mason County Southside

08	2241EST			0	0		Hail (1.00)
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Putnam County Hurricane

08	2254EST			0	0		Hail (1.00)
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Jackson County Ravenswood

08	2305EST			0	0	175K	Thunderstorm Wind
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An estimated wind gust of 80 mph blew in windows on store fronts. Poles, power lines, and trees were knocked down. A few chimneys were damaged. Siding was ripped off a few homes. A lot of debris was scattered about the town.

Jackson County New Era

08	2309EST			0	0	20K	Hail (1.75)
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Cars and house siding were damaged.

Wood County Mineral Wells

08	2340EST			0	0	20K	Hail (1.75)
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Wood County Davisville

08	2345EST			0	0	5K	Hail (1.75)
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Wood County 2 SE Murphytown to .5 NE Murphytown

08	2350EST 2357EST	2	100	0	0	200K	Tornado (F2)
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One mobile home along Farrow Hill Road was completely destroyed. Luckily, the owner was not at home. One church sustained roof damage. A side to a barn was ripped off. An old farm house was damaged. Some bark from a tree went through a cars windshield. One van was pushed several yards. Numerous trees were knocked down. Nobody was injured.

Pleasants County Bellmont to Borland

09	0015EST 0020EST			0	0	80K	Thunderstorm Wind
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Trees and telephone poles were knocked down. A tree limb crashed through a house in Eureka. A large pine tree fell onto the middle school along Route 2.

Nicholas County Summersville

09	0148EST			0	0		Hail (0.75)
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WVZ007>008

Mason - Jackson
10 0000EST
11 1000EST

0	0	20K	Flood
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Rare January dew points, in the upper 50s and lower 60s on the 8th, along with strong winds aloft, helped trigger severe weather. The rains from the past few days were heavier in Ohio, and eventually caused minor river flooding along the mainstem of the Ohio River. The high water was from the mouth of the Hocking River to the mouth of the Kanawha River. The crest at Pt. Pleasant was 41.5 feet. These levels closed some roads, parks, and parking lots, but did not reach into the towns.

WVZ033>038-046>047 McDowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Pocahontas - Randolph

27	0900EST			2	1	12.5M	Heavy Snow
28	1100EST						

A surprise heavy wet snow fell over these mountainous counties. Since the environment was near the freezing mark, through a deep layer, a wide variation in snow depth was observed. The variation was based on elevation. Elevations above 2000 feet were impacted the most. At these elevations of Fayette, Raleigh, Wyoming, McDowell, and southern Nicholas Counties, a snow depth of 20 to 38 inches was left in the storm's wake. Meanwhile, in nearby river valleys and deep hollows, depths of 6 to 12 inches were

Storm Data and Unusual Weather Phenomena

January 1998

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

WEST VIRGINIA, West

more common. Further north, amounts of 6 to 12 inches were also more common across Randolph, Webster, Pocahontas, and northern Nicholas Counties. While the storm center was moving north, up the Interstate 95 corridor of North Carolina during Tuesday evening the 27th, the snow flakes and the snow rates increased. Snow flakes the size of flap jacks and frisbees were reported from McDowell County, and as big as your fist in Fayette County. During this same period, Beckley received 10 inches of snow in 3 hours. Lightning and thunder was noted around Beckley and Oak Hill.

The maximum snow depth was along Flat Top and Guyandotte Mountains. In this vicinity, snow depths of around 3 feet were seen. For example, the depth reached 38 inches on Flat Top Mountain by midday on the 28th, before settling began. At Beckley, a new 24 hours snowfall record of 31 inches was set. The snow depth of 32 inches at Beckley during the late morning on the 28th was their deepest on record. The emergency officials of Raleigh County were all in agreement. This storm was worst than the blizzard of March, 1993. One Beckley resident said, "Since I can remember, I've never seen it like this". Some of the other snow depths included 32 inches along the Wyoming/Mercer County line at 3000 feet, 25 inches at Paynesville of McDowell County, 18 to 24 inches around Oak Hill, 21 inches at Mt Lookout, 18 inches on higher terrain outside Welch, 16 inches at Mt Nebo, and 12 to 18 inches in Richwood. War, Welch, Mullens, Camden on Gauley, and Summersville all had 10 to 12 inches on the ground. To the west, just rain fell at Charleston, Madison, Logan, and Williamson. However, the extreme eastern portions of Kanawha, Boone, Logan, and Mingo County did receive some wet snow. Meanwhile, not a drop or flake of precipitation fell at Huntington.

The main effects of the storm were power outages and transportation stoppages. A state of emergency was declared by Governor Underwood for a total of 12 counties, including these 8. The emergency operation center remained activated until Sunday evening, the 8th of February. A state official summarized it best by saying the suddenness of the storm, as well as the nature of the snow, wet and heavy, were the prime reasons this storm was so devastating. Fayette County emergency dispatch received 20,000 calls on the 28th. A maximum of 415 National Guard troops were used in the relief effort, including 55 from the commonwealth of Kentucky.

Two deaths can be directly attributed to the storm. An awning collapsed onto a 72 year old woman as she walked out from her Midway home in Raleigh County. A 42 year old man became lost and disoriented while walking near Coal City of Raleigh County. His body was found on the 4th of February. Seven other people died indirectly from the storm. Two died from shovelling in Raleigh County and one from cutting fallen trees. In Fayette County, 2 elderly Oak Hill citizens died in their cold homes, but other medical reasons may have contributed to their deaths. In McDowell County, a Jaeger man was found dead on this porch. A strong odor of kerosene and smoke was coming from this house. An 82 year old Anawalt woman died from a house fire that was likely started by an alternate heat source. One National Guardsman was injured during the relief efforts.

An estimate 85,000 customers were without electricity in West Virginia. It took over a week to bring everyone back on line. The heavy wet snow took down both trees, power lines, and even snapped poles. National Guard troops delivered commercial generators to help run water treatment plants. One home improvement center sold 340 residential generators in just 3 days. One unique problem was the many retired coal miner that use oxygen generators. The extended electrical outage presented health concerns.

The Red Cross opened 21 shelters in West Virginia, but not many people utilized the centers. About 300 people used 10 of the centers. Temperatures were not that cold following the storm. Plus, most of these residents had alternate heat sources.

The heavy wet snow also caused porches, awnings, and even roofs to collapse. A small church had its roof collapse. This problem actually became worst in early February, after a second storm deposited rain then more snow.

Three major routes, Interstates 64, 77, and U.S. Route 19, cross the hard hit region around Beckley. Traffic was snarled from Tuesday night the 27th through Thursday morning the 29th. Several hundred truckers waited out the storm around Charleston. The weight of the snow, plus the stranded vehicles, made it even harder for the snowplow operators to perform their duties. Four CSX trains were stuck in the New River Gorge, not because of the snow, but as a result of fallen trees from the steep mountainsides. Rescue crews removed 150 trees per mile of track to free the stranded trains. Two men from one train were rescued by private helicopter, because one of the men was in need of his daily medication.

State forestry officials said large open grown trees were toppled. Meanwhile, poplar and hickory trees received heavy damage in their tops. Parts of Nicholas and Fayette Counties received heavy damage to hemlock and pine stands. Some of the steep hollows looked like a war zone from the fallen trees.

Raleigh County schools did not return to their normal schedule until Friday, February 13th. Damage estimates for the second storm are contained in the February report. However, even that damage can be indirectly related back to this heavier storm.

F72PH, M42OU

WISCONSIN, Extreme Southwest

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

January 1998

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

WISCONSIN, Northeast

WIZ011-035-039-045-048 Forest - Wood - Brown - Waushara - Winnebago

04	1700CST								
05	0600CST				0	0			Glaze

WIZ013-019>021-030>031-036>037 Marinette - Langlade - Menominee - Oconto - Marathon - Shawano - Portage - Waupaca

04	1700CST								
05	0600CST				0	0			Ice Storm

Nearly 12 hours of freezing rain and drizzle coated streets and sidewalks across central and northeast Wisconsin. Even though ice accumulations were near one-half inch in the hardest hit areas, little damage was reported, probably due to light winds. Only scattered power outages occurred. Many rural school districts were closed on the 5th. Icy roads resulted in numerous traffic accidents.

WIZ011>013-020>022-031-037>040-045-048>050 Forest - Florence - Marinette - Menominee - Oconto - Door - Shawano - Waupaca - Outagamie - Brown - Kewaunee - Waushara - Winnebago - Calumet - Manitowoc

08	1300CST								
09	1200CST				0	0			Winter Storm

The first heavy snowfall of the season for many locations in northeast Wisconsin occurred on January 8-9. Six to nine inches of snow was reported, with the heaviest totals falling in Florence and northern Marinette counties. Schools in numerous rural communities were closed, as strong winds whipped the new snow around.

WIZ005-010>011 Vilas - Oneida - Forest

12	0400CST								
	1800CST				0	0			Heavy Snow

A weak area of low pressure dropped snow across much of northern Wisconsin. The heaviest snow, in the range of 6 to 9 inches, fell in the far north-central part of the state.

WIZ005-010>013-018>022-030>031-036>040-045-048 Vilas - Oneida - Forest - Florence - Marinette - Lincoln - Langlade - Menominee - Oconto - Door - Marathon - Shawano - Portage - Waupaca - Outagamie - Brown - Kewaunee - Waushara - Winnebago

14	0400CST								
15	2300CST				0	0			Heavy Snow

The snowy January continued across northeast and central Wisconsin, as yet another heavy snow fell across much of the area. Six to nearly 12 inches fell over about the northeast third of the state. The heaviest total reported was 11.5 inches at Marinette (Marinette co.).

WISCONSIN, Northwest

WIZ008>009 Sawyer - Price

04	2015CST								
05	0430CST				0	0			Ice Storm

Up to a half inch of ice was deposited by freezing rain. No accidents or power outages were reported, although travel was very hazardous.

WIZ001>004 Douglas - Bayfield - Ashland - Iron

08	2200CST								
09	1530CST				0	0			Heavy Snow

Heavy snow fell across Wisconsin's Lake Superior snow belt. Some heavier amounts were 12.4 inches 6 miles north of Bayfield and 8 inches at Saxon and the Mouth of the Brule. The rest of the Bayfield peninsula received around 6 inches.

WIZ003>004-008>009 Ashland - Iron - Sawyer - Price

12	0700CST								
	1430CST				0	0			Heavy Snow

Parts of northwestern Wisconsin received heavy snowfall ranging from 6 inches at Winter and Park Falls to 7 inches at Saxon and 7 miles south of Ashland.

WIZ001>004-006>009 Douglas - Bayfield - Ashland - Iron - Burnett - Washburn - Sawyer - Price

13	1600CST								
15	1045CST				0	0			Heavy Snow

Heavy snow fell over much of northwestern Wisconsin. Phillips received 8 inches, with 7 inches at Minong and 8 miles south of Ashland. Six inches fell at Danbury and in the Spooner area.

WISCONSIN, Southeast

WIZ052-066-069 Sheboygan - Milwaukee - Rock

02	1200CST								
04	0200CST				0	0			Record Heat

Persistent southwest winds pulled warm air into southeast Wisconsin over a 2 day period of time, which was enough to set some new temperature records. The city of Sheboygan (Sheboygan Co.) set a new daily record high of 47 on the 2nd, and another new

Storm Data and Unusual Weather Phenomena

January 1998

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

WISCONSIN, Southeast

daily record high of 54 on the 3rd. The old record for the 3rd was 46. Janesville's (Rock Co.) high temperature of 54 on the 3rd broke the old daily maximum of 48 set back in 1952. The city of Milwaukee registered 53 degrees at 0200 CST on the 4th, breaking the old daily record of 50 set back in 1950. Normal maximum temperatures in early January are 26. Other locations in southcentral and southeast Wisconsin shared the warmth. Noteworthy was the fact that Lake Mendota and Lake Monona in Madison (Dane Co.) were still unfrozen. The Merrimac Ferry (Sauk Co.) broke its record late winter closing date by continuing trips across the unfrozen Wisconsin River into the first few days of January. The previous late closing date was December 23, 1948. The ferry eventually ceased operations on January 13th, thanks to El Nino.

WIZ046>047-056

Marquette - Green Lake - Sauk

04	1500CST	0	0			Ice Storm
05	0300CST					

An ice storm hit westcentral through northeast Wisconsin, just brushing three southcentral counties. The responsible low pressure tracked along a line from Dubuque, IA northeast through Fond du Lac county. Light to occasionally moderate rain combined with temperatures around 30 to produce ice accumulations of 1/4 to 1/2 inch. Icy road surfaces caused about 150 motor vehicle accidents, including several roll-overs. Only scattered power outages and downed tree limbs were noted thanks to light northeast winds of 5 to 10 mph. Consequently, there wasn't widespread wind stress on ice-covered power lines and tree limbs.

WIZ051>052-058>060-064>066-069>072

Fond Du Lac - Sheboygan - Dodge - Washington - Ozaukee - Jefferson - Waukesha - Milwaukee - Rock - Walworth - Racine - Kenosha

08	1330CST	0	0			Winter Storm
09	1200CST					

A major winter storm brought heavy snow and gusty winds to 40 mph to the eastern 1/3 of Wisconsin. The responsible low pressure moved north along the east shore of Lake Michigan. Snow accumulations of 8 to almost 14 inches were the greatest amounts to date for any single storm during the 1997-98 winter season. In spite of the high moisture content of the snow, gusty northeast winds caused considerable blowing and drifting snow which hampered plowing activities. The snowfall was occasionally moderate to heavy with accumulations of 1 to 2 inches per hour while visibilities were occasionally below 1/4 mile. Predictably, hundreds of motor vehicle accidents were reported due to icy or snow covered roads. A major multi-vehicle accident on I-43 in Ozaukee County closed the Interstate for about 10 hours. Many airline flights were delayed at Milwaukee's Mitchell Field. Many trees were damaged by the heavy snow, and several power lines were downed. About 4000 customers were without electrical power in Sheboygan, Ozaukee, and Milwaukee counties. Meanwhile, many schools closed in the early afternoon hours, while several shopping malls shut their doors by mid-afternoon. The 24 hours snowfall total of 12.4 inches in Milwaukee was the greatest 24 hour accumulation in the past 10 years. It was also the 14th greatest 24-hour snowfall on record for Milwaukee.

Specific snow totals were: 13.7 inches in Cedarburg (Ozaukee Co.), 12.4 inches in Milwaukee (Milwaukee Co.), 11.5 inches at the NWS Forecast Office southeast of Sullivan (Jefferson Co.), 10.8 inches in West Bend (Washington Co.), 10.5 inches in Sheboygan (Sheboygan Co.), 10.0 inches in Waukesha (Waukesha Co.), 9.5 inches in Burlington (Racine Co.), 9.0 inches in Lake Geneva (Walworth Co.), 8.4 inches in Janesville (Rock Co.), 8.0 inches in the northwest corner of Kenosha County, and 8.0 inches in the southeast corner of Fond du Lac county.

WIZ063

Dane

20	2200CST	0	0			Heavy Snow
21	1000CST					

A minimal heavy snow event affected parts of southcentral Wisconsin as an inverted trough of low pressure tracked east across Wisconsin. Maximum accumulations of 6.7 inches were reported in Middleton (Dane Co.), 6.2 inches in Madison (Dane Co.), and 6.0 inches in Lake Mills (Jefferson Co.). Otherwise, snow accumulations were generally in the 3 to 5 inch range across the remainder of southcentral and southeast Wisconsin. The snow was somewhat fluffy, but reduced visibilities to 1/4 to 1/2 mile at times. This led to about 100 motor vehicle accidents, including a few roll-overs.

WISCONSIN, Southwest

WIZ017-029-032>034-041>044-053>055

Taylor - Clark - Buffalo - Trempealeau - Jackson - La Crosse - Monroe - Juneau - Adams - Vernon - Crawford - Richland

04	1400CST	0	14	66.5K		Ice Storm
05	0200CST					

Ice accumulations of 1/4 to 3/4 of an inch resulted in numerous accidents, but no serious injuries were reported. Only localized power outages occurred since light winds accompanied the storm.

WISCONSIN, West

WIZ016-023>028

Rusk - St. Croix - Pierce - Dunn - Pepin - Chippewa - Eau Claire

04	1700CST	0	0			Ice Storm
05	0300CST					

Freezing rain produced ice accumulations ranging from one-quarter to three-quarters of an inch. Numerous car accidents were reported, and some roads were closed for a time. An above ground fiber optic phone cable broke during the storm, creating problems for customers in Eastern Minnesota trying to use long distance phone service.

STORM DAMAGE CATEGORIES

REFERENCE NOTES

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

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

Definition of Fujita Tornado Scale (F Scale)

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

(F1) Moderate tornado (73-112 mph): Moderate damage; The lower limit (73 mph) is the beginning of hurricane wind speed; peel surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads.

(F2) Significant tornado (113-157 mph): Considerable damage; Roofs torn from frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.

(F3) Severe tornado (158-206 mph): Severe damage; Roofs and some walls torn from well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

(F4) Devastating tornado (207-260 mph): Devastating damage; Well-constructed houses leveled; structure with weak foundations blown off some distance; cars thrown and large missiles generated.

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

(F6-F12) (319 mph to Mach 1, the speed of sound): The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

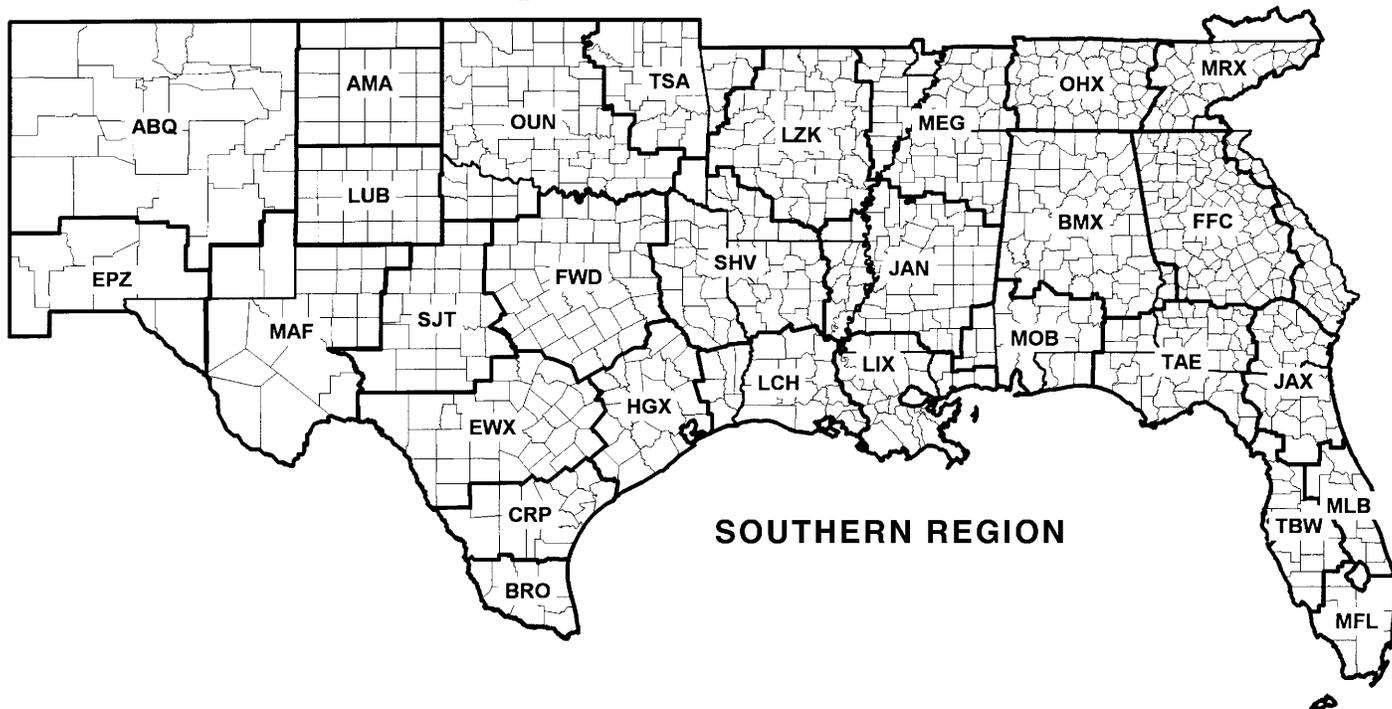
(F0+F1) Weak Tornado
(F2+F3) Strong Tornado
(F4+F5) Violent Tornado



COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS

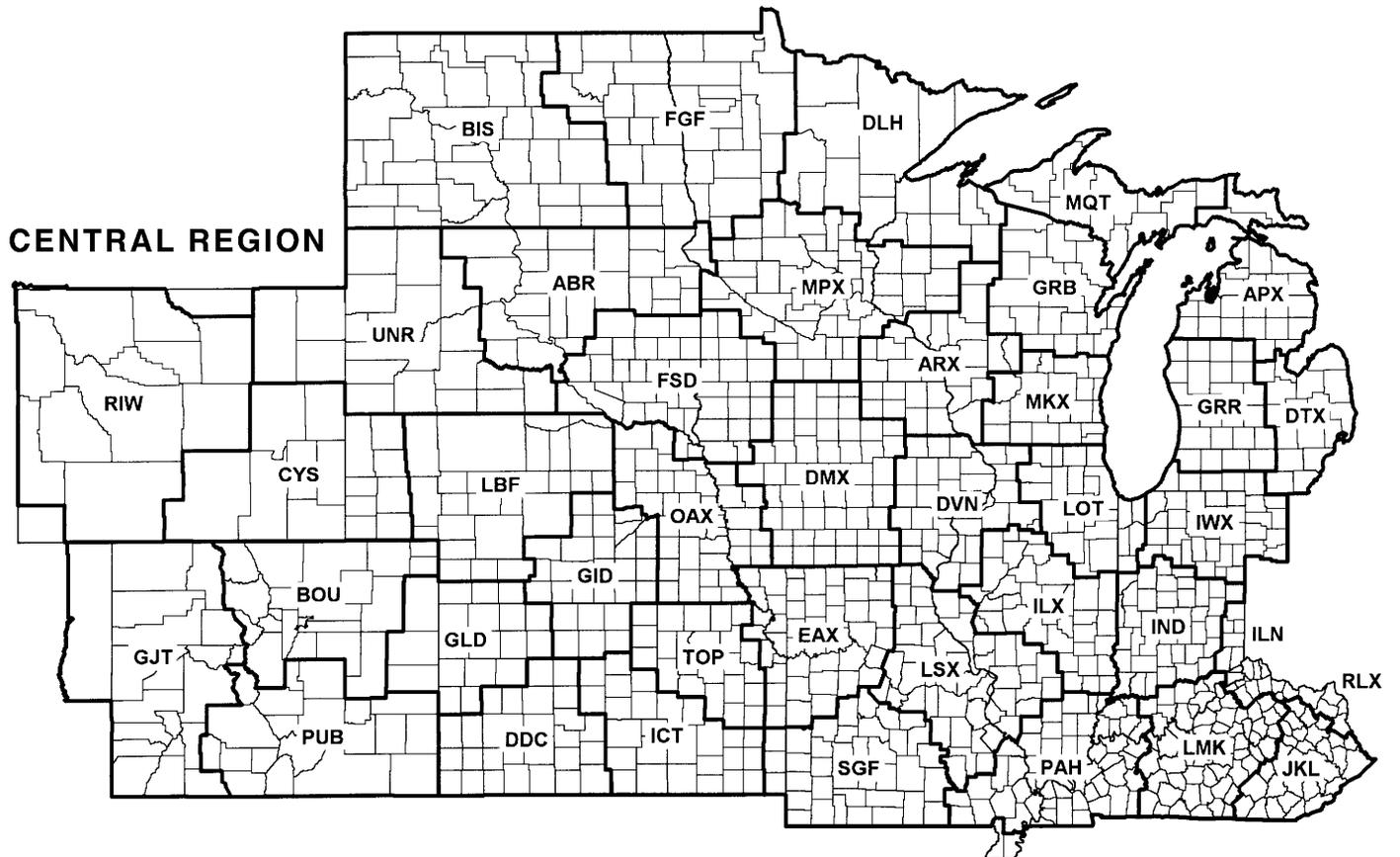
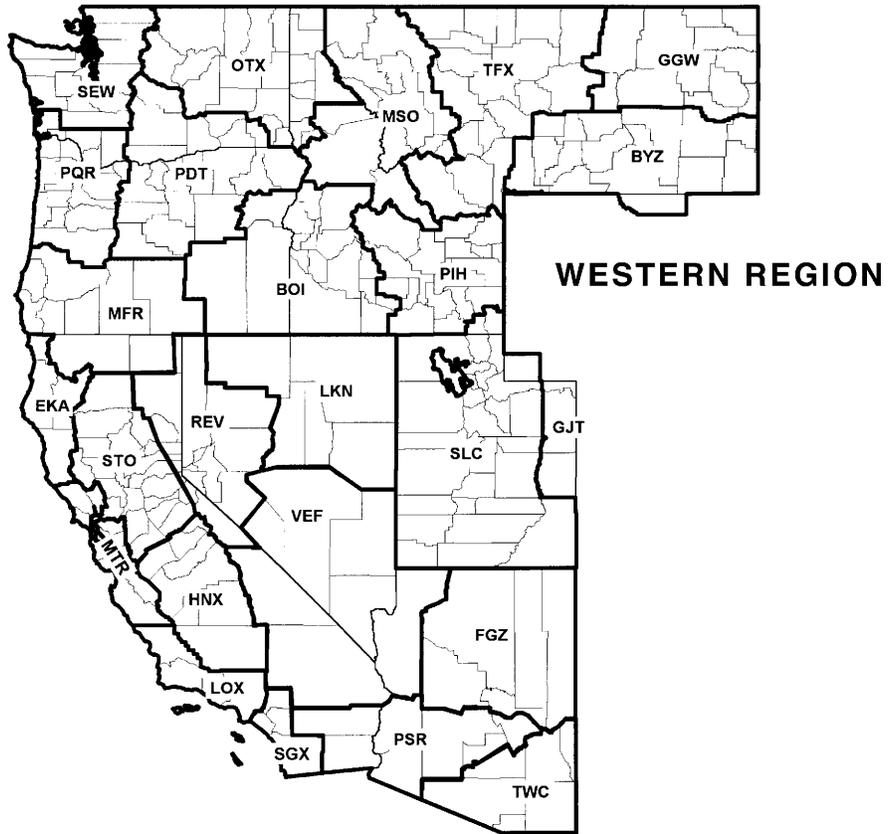


EASTERN REGION

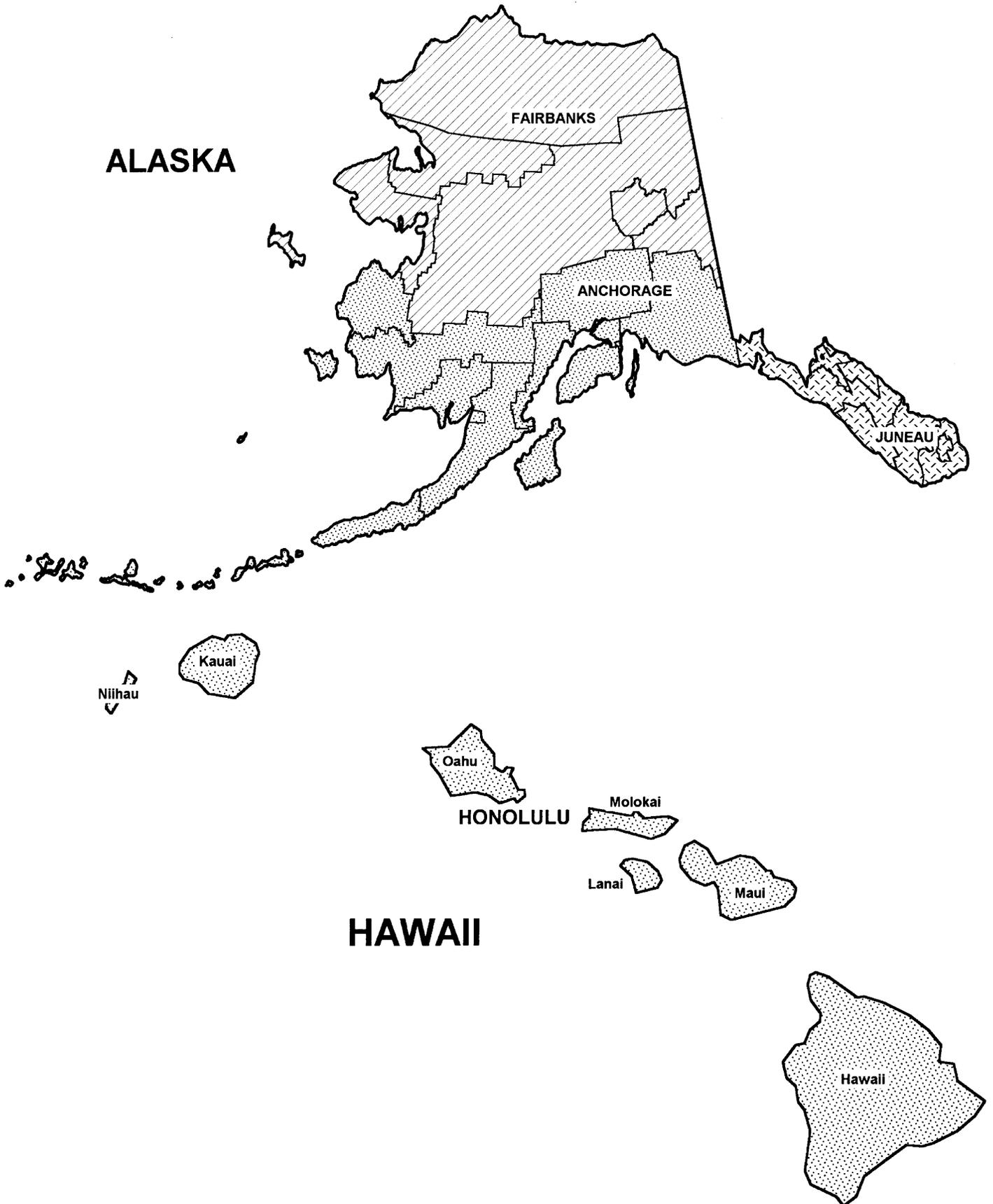


SOUTHERN REGION

COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS



MODERNIZED COUNTY WARNING AREAS



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