

**JANUARY 2003  
VOLUME 45  
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, NC

**Cover:** A strong winter storm moved south of the New England area and produced heavy snow in western, central, and northeast Massachusetts and significant coastline flooding on January 3 and 4<sup>th</sup>. Flooding was caused by a high astronomical tide with 15-foot seas. Pictured is a wave as it approached the Devereux Beach pavilion about 10 minutes after the time of high tide overlooking the Marblehead causeway to Marblehead Neck. (Photo courtesy and copyright: Tom Adams, Marblehead, MA.)

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### **STORM DATA**

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National Climatic Data Center

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**STORM DATA** contains all confirmed information on storms available to our staff at the time of publication. Late reports and corrections will be printed in each edition.

Except for limited editing to correct grammatical errors, the data in Storm Data are 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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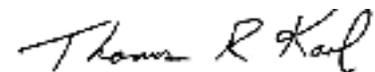
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The editor of **STORM DATA** solicit your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or severe weather events (past or present) for use in the "Outstanding Storms of the Month" section of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

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

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Thomas R. Karl  
Director,  
National Climatic Data Center

**CONFIRMED TORNADOES FOR JANUARY 2003**

**THERE ARE NO  
“CONFIRMED TORNADOES”  
REPORTED FOR JANUARY 2003.**

**OUTSTANDING STORMS OF THE MONTH**

**THERE IS NO  
“OUTSTANDING STORM OF THE MONTH”  
FOR THE MONTH OF JANUARY 2003.**



# Storm Data and Unusual Weather Phenomena

January 2003

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

**AKZ223**

**Deltana And Tanana**

03	1230AST				0	0			
08	1600AST								<b>Flood</b>

Ice Jam Flooding occurred in the Salcha Area along Piledriver Slough. High water made approximately 30 residences inaccessible and closed portions of the Old Richardson Highway, with over 2 feet of water crossing a section of that road on the afternoon of the 4th. The exact cause of the flooding is uncertain, but an unusually warm October and November delayed the freeze-up of the Tanana River. Late in December an ice jam probably formed on the main channel of the Tanana River, thus causing water to back up into Piledriver Slough off the Tanana River. Surface and ground water levels rose during the final days of 2002 and through January 2nd; but by January 3rd, overland flow had surrounded residences as noted above. During the event at least one home experienced water in the basement.

**AKZ209**

**Baldwin Pen. & Selawik Valley**

07	1410AST				0	0			
08	0315AST								<b>Extreme Cold/Wind Chill</b>

A strong Arctic High centered over the central Brooks Range helped to produce clear skies for several days. As a result, surface temperatures across northern Alaska continued to drop to well below zero. As a weak trough of low pressure over the northern Bering Strait moved slowly eastward toward the Baldwin Peninsula and Selawik Valley, a pressure gradient sufficient enough to cause winds of 20 to 35 mph developed. This, combined with the already frigid temperatures, created wind chills as low as 65 below zero at Kotzebue and Selawik.

**AKZ209>210-214**

**Baldwin Pen. & Selawik Valley - Nrn & Intr. Seward Peninsula - Yukon Delta**

08	0335AST				0	0			
	1624AST								<b>Blizzard</b>

**AKZ212**

**Ern Norton Sound Nulato Hills**

08	0735AST				0	0			
									<b>High Wind (G52)</b>

A 957mb low and associated occluded front located over the Bering Sea moved rapidly northward creating blizzard conditions first around Cape Romanzof, then across the Seward and Baldwin Peninsulas. Visibility was reduced to near zero in blowing snow for several hours as wind gusts reached 59 mph at Cape Romanzof. As this storm system moved north the communities of Kotzebue, Selawik, and Buckland also experienced blizzard conditions as the visibility at these locations dropped below 1/4 mile for several hours in blowing snow. In addition, this storm caused high winds up to 60mph at Unalakleet for a brief period.

**AKZ223**

**Deltana And Tanana**

17	1353AST				0	0			
18	0353AST								<b>High Wind (G50)</b>

Strong winds developed across the Tanana Flats and through the passes of the Alaska Range near Delta Junction as a result of a strong pressure gradient. A high pressure ridge extended eastward from a 1040mb high pressure center over the Yukon Territory of Canada, to the southern slopes of the Alaska Range. To the north of the mountain range, a deep trough of low pressure developed in advance of an approaching occluded front moving north from the Gulf of Alaska. These two features, combined with funneling through mountain passes, resulted in winds of 52 mph being recorded at the Delta Junction ASOS site.

**AKZ201-203**

**Western Arctic Coast - Central Beaufort Sea Coast**

19	0053AST				0	0			
20	0401AST								<b>Blizzard</b>

Blizzard conditions developed as a 1049mb high pressure system over the eastern Arctic Ocean moved southward. Strong easterly winds and blowing snow along the Arctic Coast near Deadhorse and Nuiqsut caused the visibility to be reduced to less than a 1/4 of a mile. These strong easterly winds extended as far west as Wainwright. Wind speeds up to 43mph were recorded at the Wainwright ASOS resulting in blowing snow that reduced visibility to less than 1/4 mile.

**AKZ223**

**Deltana And Tanana**

22	1053AST				0	0			
24	2053AST								<b>High Wind (G56)</b>

High winds persisted for over 48 hours as a building high of 1059mb over western Canada and a 978mb low pressure system over the eastern Gulf of Alaska approached one another. Between these two systems a very narrow, tight pressure gradient developed creating a low level jet stream of strong winds across the Tanana Flats and through the mountain passes near Delta Junction. A peak wind speed of 64 mph was recorded at the Delta Junction ASOS site, with numerous other observations in excess of 50 mph recorded over a two day period.

# Storm Data and Unusual Weather Phenomena

January 2003

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

## ALASKA, Southeast

**AKZ025>027>028**

### **Juneau Borough-Eastern Chichagof-Admiralty Island - Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area**

<b>03</b>	<b>2300AST</b>		<b>0</b>	<b>0</b>	<b>7K</b>	<b>High Wind (G69)</b>
<b>04</b>	<b>1800AST</b>					

A 958mb low tracked northward along the outer coast of Southeast Alaska Friday night, January 3 and Saturday, January 4. Advisory criteria winds (> 40 mph) occurred throughout the Panhandle. In a few areas peak wind gusts reached warning levels (> 60 mph) and caused some minor...mainly tree...damage. Peak wind gusts to 69 mph were measured on top of the Ketchikan airport terminal and on the roof of the Federal Building in downtown Juneau. The Hydaburg AWOS recorded a peak wind gust to 66 mph.

**AKZ023-026>028**

### **Cape Decision To Cape Fairweather-Coastal Area - Inner Channels From Kupreanof Island To Etolin Island - Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area**

<b>05</b>	<b>0800AST</b>		<b>0</b>	<b>0</b>	<b>2K</b>	<b>High Wind (G74)</b>
	<b>1300AST</b>					

The low that brought high winds to Southeast Alaska beginning on Friday night January 3, stalled off shore. A series of frontal waves rotating around the Low swept up through the Panhandle on Sunday January 5. One of these frontal waves moved up through the extreme Southern Panhandle in the morning. Once again advisory criteria winds (> 40 mph) occurred throughout the Panhandle. In a few areas peak wind gusts reached warning levels (> 60 mph) and caused some minor...mainly tree...damage. Peak wind gusts to 69 mph were measured on top of the Ketchikan airport terminal. The Hydaburg AWOS recorded a peak wind gust to 74 mph. On the remote southern part of Kuiu Island, peak wind gusts to 60 mph were also recorded.

**AKZ027>028**

### **Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area**

<b>05</b>	<b>2130AST</b>		<b>0</b>	<b>0</b>	<b>205K</b>	<b>High Wind (G81)</b>
<b>06</b>	<b>0100AST</b>					

The low that brought high winds to Southeast Alaska beginning on Friday night January 3, stalled off shore. A series of frontal waves rotating around the Low swept through the Panhandle on Sunday January 5. The strongest and last of these frontal waves moved northward through Southeast Alaska Sunday evening. Once again advisory criteria winds occurred throughout much of the Panhandle. Hurricane force wind gusts were measured in the Ketchikan area and caused significant tree damage, power outages and even caused some damage in the harbor. Peak wind gusts to 81 mph were measured on top of the Ketchikan airport terminal (about 4 stories above the ground). In the Ketchikan harbor, peak wind gusts reached 75 mph. The Hydaburg AWOS recorded a peak wind gust to 60 mph.

**AKZ024>026-029**

### **Northern Lynn Canal - Juneau Borough-Eastern Chichagof-Admiralty Island - Inner Channels From Kupreanof Island To Etolin Island - Misty Fjords**

<b>22</b>	<b>0900AST</b>		<b>0</b>	<b>0</b>	<b>62K</b>	<b>High Wind (G76)</b>
<b>24</b>	<b>0700AST</b>					

A fairly common weather pattern, from late fall through early spring, is when a strong off shore (east-northeast) pressure gradient develops across Southeast Alaska. This pattern often generates high winds, especially out of the eastern inlets and passes that dot the Canadian Border. This pattern also results in clear skies, very cold temperatures, dangerous wind chills and heavy freezing spray. It is an arctic outbreak. In the Juneau area, due to the mountainous terrain being perpendicular to Taku Inlet, a mountain wave/downslope high wind event is able to develop. This local, terrain induced event is known as the "Taku Winds." From Wednesday January 22 into Saturday morning January 25, a strong off shore pressure gradient developed across Southeast Alaska. The interior surface High peaked near 1058mb over the Northwest Territories. A low as deep as 986mb was over the North Pacific to create a synoptic scale pressure gradient of 72mb. At the onset of this three day high wind event, some damage occurred on the docks in downtown Juneau. The Taku winds lifted four 10,000 pound freight containers from a docked barge, breaking the chains that held them down, and dumped them into Gastineau Channel. Aside from that, only minor tree damage was reported during this time. Some measured peak wind gusts were 68 mph at both the Juneau Rock Dump (southern portion of downtown) and in Lynn Canal, and 76 mph on the Grey Islet sensor at the mouth of Portland Inlet. Mariners reported gusts in excess of 70 mph and heavy freezing spray at the mouth of Taku Inlet.

**AKZ025>026-029**

### **Juneau Borough-Eastern Chichagof-Admiralty Island - Inner Channels From Kupreanof Island To Etolin Island - Misty Fjords**

<b>24</b>	<b>0900AST</b>		<b>0</b>	<b>0</b>	<b>90K</b>	<b>Heavy Snow</b>
<b>27</b>	<b>0300AST</b>					

An overrunning heavy snow event developed in the interior of the Panhandle from Friday January 24 through Monday morning January 27. With an arctic airmass in place at low levels, a moist south-southwest flow developed off the Pacific. The snowfall was fairly steady during this three day period, though a few embedded upper levels waves would occasionally increase intensity. Some snowfall amounts included Hyder with a 3 day total of 35 inches, Petersburg with up to 20 inches, and the Mendenhall Valley in the Juneau area with 14-28 inches. The Eaglecrest ski resort, downtown Juneau and Douglas, did not receive as much snow with amounts varying from 8-16 inches. This was partly due to the Taku winds blowing the snow around so much.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**AKZ025**

### **Juneau Borough-Eastern Chichagof-Admiralty Island**

26	0430AST 0600AST				0	0	1K		<b>High Wind (G74)</b>
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On Sunday January 26, less than 48 hours after the main off shore wind event occurred across the interior of the Panhandle, a front swept inland. As the front tracked in off the Gulf, the pressure gradient was able to restrengthen and result in a 1-2 hour period of high winds. Taku winds were in down town Juneau and Douglas were the strongest measured during this event. Peak wind gusts of 74 mph were measured at the Juneau Rock Dump. Only minor damage resulted.

## ALASKA, Southern

**AKZ121**

### **Kenai Peninsula**

03	1730AST 2100AST				0	0			<b>Heavy Snow</b>
----	--------------------	--	--	--	---	---	--	--	-------------------

Heavy snow was reported along the Homer Bluff. 6 inches of snow fell in a short duration...3 hours. At one time, spotter reports indicated snowfall rates of close to 2 inches per hour. Precipitation near sea level was recorded as both rain and snow. Along East End Road, reports of lighter amounts (4 inches in a 12 hour period) were reported.

**AKZ155-161-181-191-195**

### **Kuskokwim Delta - Bristol Bay - Alaska Peninsula - Western Aleutians - Pribilof Islands**

06	0243AST				0	0			<b>Blizzard</b>
08	0815AST								

**AKZ185-191-195**

### **Eastern Aleutians - Western Aleutians - Pribilof Islands**

06	0243AST				0	0			<b>High Wind (G68) <sup>M</sup></b>
07	1730AST								

A strong low in the north Pacific moved toward the western Aleutians at 970 mbs Sunday morning. By Monday morning the low evolved into multiple centers, one southwest of Attu and the other south of Adak. A moderate front extended from the western center in a long arc into the western Gulf of Alaska. By Tuesday morning, one 964 mb low was located northwest of Adak with the second center at 966 mbs south of Dutch Harbor. The front continued to connect both lows, then extend in an eastward arc into the Gulf of Alaska.

Very cold, modified arctic air was in place across the entire Bering Sea and Aleutians prior to the onset of strong winds and precipitation. Snowfall first began with light intensities. Snow intensities then increased markedly as the front approached. As the front moved into areas, snow turned to rain.

Easterly winds also increased significantly in advance of the front, whipping falling and ground based loose snow into a blizzard. Peak gusts reached at least 78 mph in advance of the front at the Dutch Harbor airport between 9 and 10 am Tuesday. The change in precipitation state from frozen to liquid abruptly ended the blizzard conditions.

Across the Pribilofs, blizzard conditions, accompanied by peak winds of 67 mph at the Saint George ASOS, began very early Tuesday just after 2:30 am.

In the Bristol Bay zone, a blizzard was reported along the western capes between 7 pm and midnight Tuesday.

Along the Kuskokwim Delta, blizzard conditions were recorded at Mekoryuk from 11:15 pm Tuesday until 8:15 am Wednesday.

**AKZ101**

### **Anchorage Muni To Bird Creek**

17	2130AST 2216AST				0	0			<b>Ice Storm</b>
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Warm, moist air associated with an occluded front moving north across the Kenai Peninsula and Prince William Sound, produced widespread rains. As the front moved across the arctic airmass, cold air eroded from higher levels downward, leaving pools of below freezing air at the surface...and rain fell as freezing rain.

Police reported 34 "fender benders", 2 major accidents and 39 cars in the ditch due to slick roads.

**AKZ125**

### **Wrn P.W. Snd & Kenai Mtns**

25	2230AST 2359AST				0	0			<b>Ice Storm</b>
----	--------------------	--	--	--	---	---	--	--	------------------

Freezing rain, locally accumulating around a quarter of an inch, was reported around eastern Turnagain Arm. Rain, associated with a frontal system moving in from the east, combined with still undisturbed cold air at ground level to produce ideal conditions for ice.

## AMERICAN SAMOA

**ASZ002>004**

### **Tutuila - Manu'A - Rose**

01	1100SST				0	0			<b>High Wind (G40) <sup>M</sup></b>
02	0200SST								

# Storm Data and Unusual Weather Phenomena

January 2003

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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## AMERICAN SAMOA

A low pressure area which has been quasi -stationary to the north of Samoa moved to the south of the islands during New Years Day , spreading showers and gusty winds across the territory. Winds to 40 mph were recorded at Cape Matatula on eastern tip of Tutuila, while the Manua islands experienced winds to 35 mph with winds to 37 mph were registered at the International Airport at Tafuna. No significant damages were reported across the territory.

## ARIZONA, Central and Northeast

**AZZ015**

### **Western Mogollon Rim**

01	0000MST								
31	2300MST			0	0				Excessive Heat

January 2003 was the warmest January on record for Flagstaff since records began in 1898. This month had an average temperature of 37.2 degrees (7.5 degrees above normal) which breaks the old warm record of 37.0 degrees set in 1986. The normal average temperature for the month of January is 29.7 degrees. January 2003 was also the 6th driest on record. Normally, Flagstaff would receive 2.18 inches. This month, only 0.14 inches were recorded. This is 2.04 inches below normal.

**AZZ006>007-015**

### **Grand Canyon Country - Coconino Plateau - Western Mogollon Rim**

05	2200MST								
06	1000MST			0	0				Winter Storm

A winter storm moved across northern Arizona late in the day and overnight with areas of heavy snow and strong wind. Some snowfall totals were: Tusayan Ranger Station 10 inches, Sunset Crater 10 inches, Doney Park 9 inches, Hart Prairie 8 inches, Grand Canyon South Rim 7 inches, Walnut Canyon 7 inches, Parks 6 inches, and Winona 6 inches. Peak wind gusts were Grand Canyon Airport 37 MPH and Flagstaff Airport 35 MPH.

## ARIZONA, Northwest

**AZZ036**

### **Lake Mead National Recreation Area**

05	2230PST								
				0	0	15K			High Wind (G52)

High winds estimated at 60 mph caused several power lines and trees to be blown over in Bullhead City, AZ. Several cars sustained damage from falling trees and power was out for several hours.

## ARIZONA, South

**AZZ035**

### **Cochise County**

06	1015MST								
	1100MST			1	25	64K	0		Dust Storm

Strong winds caused a dust storm around 10:40 am along Interstate 10 near San Simon. The near zero visibilities caused an eight vehicle pile up on westbound Interstate 10 at mile post 371.8 near San Simon. The vehicles involved in the accident included two cars, a tractor trailer rig, a motorcycle, a motor home, and a truck. This tragic accident due to reduced visibilities caused the fatality of a 10 month year old girl, as well as injuring 25 others.

FIVE

**AZZ035**

### **Cochise County**

06	1545MST								
	1630MST			1	4	32K	0		Dust Storm

Strong winds throughout the day caused another accident due to blowing dust on Interstate 10 around 4:15 pm MST. This accident, which was a result of reduced visibilities, caused a 3 vehicle pile up on Grant Road, 10 miles north of Willcox. This tragic accident caused the fatality of a 5 year old girl, as well as 4 minor injuries.

High pressure was building over the west coast on the 5th of January, as a low pressure system was moving over the Four Corners region. The tightened pressure gradients between the two systems created strong winds across Southeast Arizona with sustained winds of 30 to 40 mph and gusts up to 50 mph. These strong winds also caused dust storms in areas prone to blowing dust, especially along Interstate 10 between Benson and San Simon. Two different accidents occurred during the 6th in Cochise county which resulted in deaths of a child and an infant. F5VE

## ARIZONA, Southwest

**AZZ023**

### **Greater Phoenix Area**

09	0600MST								
	1000MST			0	0				Fog

Widespread dense fog developed before sunrise and persisted through mid morning. The dense fog reduced the visibility to less than 1/4 mile, and in some locations the visibility was near zero. Numerous flights arriving and departing from Phoenix Sky Harbor airport were either delayed or cancelled.

## ARKANSAS, Central and North Central

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

## ARKANSAS, East

**ARZ008>009-017>018- Randolph - Clay - Lawrence - Greene - Craighead - Mississippi  
026-028**

	16	0500CST 1100CST			0	0	0.06K		<b>Heavy Snow</b>
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Heavy snow fell on parts of northeast Arkansas with some locations receiving five inches.

## ARKANSAS, Northwest

NONE REPORTED.

## ARKANSAS, Southeast

NONE REPORTED.

## ARKANSAS, Southwest

NONE REPORTED.

## CALIFORNIA, Extreme Southeast

NONE REPORTED.

## CALIFORNIA, North Central

NONE REPORTED.

## CALIFORNIA, Northeast

**CAZ073**

**Mono**

10 2030PST

11 1000PST

0      0

**Dense Fog**

Visibilities were reduced to below 1/4 mile due to fog from Mono Lake south to Tom's Place.

**CAZ072**

**Greater Lake Tahoe Area**

23 2130PST

24 1000PST

0      0

**Dense Fog**

CALTRANS and other sources reported visibilities below 1/4 mile due to fog throughout the Lake Tahoe basin and surrounding mountain valleys.

**CAZ071**

**Lassen/Eastern Plumas/Eastern Sierra**

24 0700PST

1000PST

0      0

**Dense Fog**

Spotters reported visibilities of only a few hundred feet due to fog in Sierra Valley. The fog produced black ice on area roadways as well.

**CAZ072**

**Greater Lake Tahoe Area**

25 0630PST

0930PST

0      0

**Dense Fog**

CALTRANS reported areas of dense fog along Interstate 80 between Donner Lake and the Nevada state line.

**CAZ071**

**Lassen/Eastern Plumas/Eastern Sierra**

25 0630PST

0930PST

0      0

**Dense Fog**

Spotters reported areas of dense fog along California State Highway 70 through the north end of Sierra Valley. Most fog was reported in the Vinton area.

**CAZ072**

**Greater Lake Tahoe Area**

28 0330PST

0930PST

0      0

**Dense Fog**

## CALIFORNIA, Northwest

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>CAZ090-092-096</b>	<b>E Central S.J. Valley - Se S.J. Valley - S Sierra Mtns</b>								
	01	0000PST			0	0			<b>Drought</b>
	31	2359PST							

Rainfall for the month of January was much below normal for Interior Central California as well as much of the state of California. The rainfall for this critical rain/snowfall month was only 58% of normal over the northern portion of the state. In the center portion of the state, Fresno received only 0.40" thereby ending 1.76" below normal for the month (19% of normal). Bakersfield had only 0.01" of rain and that was 1.17" below its normal. Comparable poor amounts of rain/snow were received in the adjacent mountains for water storage for the upcoming summer.

<b>CAZ089&gt;092</b>	<b>W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley</b>								
	03	0500PST			0	6	400K		<b>Dense Fog</b>
	05	1200PST							

Rain that occurred at the last part of December led to the development of extensive fog at the first part of January...and continued through much of January with just a few breaks. By the morning of January 3rd, widespread dense fog developed by sunrise throughout the Central and Southern San Joaquin Valley with aviation weather reporting stations all less than 1/4 statute mile visibility. The mornings of the 3rd, 4th, and 5th had dense fog in all areas of the Valley floor to the extent that the Highway Patrol implemented "pacing" to keep traffic speeds proper for the limited visibility. On the 4th, over 30 accidents were reported in the Central and South San Joaquin Valley due to the dense fog.

<b>CAZ096&gt;097</b>	<b>S Sierra Mtns - Tulare Cty Mtns</b>								
	05	1821PST			0	0			<b>High Wind (G92)</b>
	06	1600PST							

<b>CAZ095-098&gt;099</b>	<b>Kern Cty Mtns - Indian Wells Vly - Se Kern Cty Desert</b>								
	05	2000PST			0	0	3K		<b>Strong Wind</b>
	06	2200PST							

Cold frontal passage through Interior Central California and subsequent building of high pressure strongly over the Great Basin region at the surface led to significant northeast wind, Mono Wind, through the mountains and passes of the area. Ski towers measured wind gusts from 80-106 MPH during the evening of the 5th and very early morning hours of the 6th in the Southern Sierra Nevada. Many other mountain and desert locations had sustained wind often greater than 30 MPH with gusts into the 55-70 MPH range in the Kern County Mountains and Deserts.

<b>CAZ089&gt;092</b>	<b>W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley</b>								
	06	2300PST			0	0			<b>Dense Fog</b>
	09	1000PST							

Dense fog formation with widespread visibilities less than 1/4 statute mile during the late evening hours of the 6th and again on the 8th led to "pacing" of traffic on Central and South San Joaquin Valley roads by the Highway Patrol during the morning hours of the 7th and 9th. Dense fog did occur also on the morning of the 8th but was patchy rather than widespread.

<b>CAZ089&gt;092</b>	<b>W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley</b>								
	11	0100PST			0	6	145K		<b>Dense Fog</b>
	17	1200PST							

Widespread and dense morning fog continued throughout the Central and Southern San Joaquin Valley from the morning of the 11th through the morning of the 17th of January. The morning of the 15th had lighter fog but was still widespread throughout the Central and South Valley. Accidents were reported on the 7th, and 14th in Kings County, and 16th in Tulare County due to very poor visibilities in dense fog.

### **Fresno County**

<b>1.7 WNW (Fch) Chandler</b>	11	0400PST			0	0	2.5M		<b>Wildfire</b>
	31	2359PST							

The Marks-Nielson Fire began in the early morning hours of the 11th of January and continued to burn until February 14th. The fire was spread through 3 acres of woodchips and other debris piled over 20-feet high in spots. It began by spontaneous combustion and caused a health problem due to its soot for much of the Fresno metropolitan area. With a number of agencies involved along with the Federal EPA intervention, the cost of putting the fire out is estimated to be over \$2.5M.

<b>CAZ089&gt;092</b>	<b>W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley</b>								
	27	0445PST			0	3	30K		<b>Dense Fog</b>
	31	2359PST							

Little change in the weather pattern over California brought consistently good conditions for overnight dense fog formation for the period of the 27th through the 31st (into the morning of the 1st of February) in the Central and Southern San Joaquin Valley. On the morning of the 27th dense fog contributed to a fatality and 3 injuries in an accident in Kern County southeast of Bakersfield.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>CAZ095</b>	<b>Kern Cty Mtns</b>				0	0			<b>Dense Fog</b>
	<b>28</b>	<b>0640PST</b>							
		<b>1014PST</b>							

Like its counterpart the San Joaquin Valley, the Tehachapi Valley in the Kern Mountains had dense fog formation around dawn on the 28th. Visibilities were reported less than 100 feet in this infrequent occurrence.

## CALIFORNIA, Southeast

NONE REPORTED.

## CALIFORNIA, Southwest

<b>CAZ042&gt;043-048&gt;050-055&gt;058-061</b>	<b>Orange County Coastal Plain - San Diego County Coasts - San Bernardino County Valley/The Inland Empire - Riverside County Valley/The Inland Empire - San Diego County Valleys - San Bernardino County Mountains - Riverside County Mountains - Santa Ana Mountains And Foothills - San Diego County Mountains - Coachella Valley</b>				2	11	3.3M	28M	<b>High Wind (G87) <sup>M</sup></b>
	<b>05</b>	<b>2016PST</b>							
	<b>07</b>	<b>1240PST</b>							
		<b>M52VE, F49OU</b>							

### **Riverside County**

<b>Norco</b>	<b>06</b>	<b>0639PST</b>			0	1	75K		<b>Wild/Forest Fire</b>
		<b>1200PST</b>							

### **CAZ049**

	<b>Riverside County Valley/The Inland Empire</b>				0	0	45K		<b>Dust Storm</b>
	<b>06</b>	<b>1342PST</b>							
	<b>07</b>	<b>0600PST</b>							

Throughout this three day Santa Ana wind event, numerous trees and power poles were blown down. At least 60 communities were affected. Interstates 8, 10, and 15 were blocked for several hours by large trucks blown over. Blowing dust and sand reduced visibility to zero, closing Interstate 215. Planes were diverted from landing at Ontario International airport as winds gusted to 90 mph. One large commercial transport plane sustained damage. A commuter train was delayed for several hours in Orange County when power poles were blown down onto the track. A brush fire whipped by the winds, damaged 5 houses and burned 150 acres. Sparks from downed power lines started numerous small brush fires, but these were quickly contained. Many houses and at least 300 parked automobiles were damaged by falling trees. In Riverside, wind flung debris smashed into a vehicle, killing the front seat passenger. In San Diego, a woman was killed when a tree fell onto her. Three others outdoors in San Diego County were also struck by falling trees and sustained broken bones. Six people riding in a commuter bus were injured when a tree fell onto it. The avocado crop in San Diego County lost about 20 million pounds of fruit.

### **San Diego County**

<b>Encinitas to Cardiff By The Sea</b>	<b>06</b>	<b>0800PST</b>			0	25			<b>Rip Currents</b>
	<b>07</b>	<b>1400PST</b>							

Lifeguards had to rescue 25 surfers from rip currents. The surf was breaking between 8 and 12 feet.

### **Riverside County**

<b>Palm Spgs</b>	<b>08</b>	<b>1000PST</b>			0	0			<b>Urban/Sml Stream Fld</b>
		<b>1015PST</b>							

### **San Bernardino County**

<b>Apple Vly</b>	<b>08</b>	<b>1430PST</b>			0	0			<b>Urban/Sml Stream Fld</b>
		<b>1436PST</b>							

A band of heavy showers moved from east to west across Southwest California. Street flooding was observed around mid morning in Palm Springs, and mid afternoon over Apple Valley.

### **Riverside County**

<b>Cathedral City to Palm Spgs</b>	<b>09</b>	<b>0800PST</b>			0	0	40K		<b>Urban/Sml Stream Fld</b>
		<b>0930PST</b>							

Thunderstorms with heavy downpours caused normally dry washes to overflow and flood streets during the morning commute hours.

## CALIFORNIA, Upper

<b>CAZ080</b>	<b>Western Siskiyou County</b>				0	0			<b>Heavy Snow</b>
	<b>01</b>	<b>1615PST</b>							

Spotter SY100 near Happy Camp reported 4 inches of new snow between 1100 PST and 1600 PST. The above report barely met Heavy Snow Warning criteria for this area. However, no warning was in effect at this time.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**CAZ080-082**

**Western Siskiyou County - South Central Siskiyou County**

11 1007PST

0 0

Winter Storm

12 0840PST

See below.

A Winter Storm Warning for heavy snow was issued for the above zones above 5500 feet effective at the above times. Snow did fall this day, but no reports were heavy enough to verify the warning.

## CALIFORNIA, West South Central

**CAZ044>047**

**Ventura County Interior Valleys - Ventura County Coastal Valleys - Santa Monica Mountains Recreation Area - Los Angeles County Valleys**

06 0340PST

0 0

High Wind (G65)

0420PST

**Los Angeles County**

3 N Malibu

06 0700PST

0 0

Wildfire

07 0600PST

Powerful Santa Ana winds buffeted Ventura and Los Angeles counties. Northeast winds gusting up to 75 mph knocked down numerous trees and power lines across the area. On Highway 126 in Ventura county, road closures were reported due to downed trees. In the Santa Monica mountain area, north of Malibu, the Santa Ana winds fueled a 2,200 acre brush fire which destroyed two structures.

## CALIFORNIA, Western

NONE REPORTED.

## CARIBBEAN SEA AND TROPICAL ATLANTIC

**Deerfield Beach To**

**Ocean Reef Fl**

8 SE Government Cut

03 0300EST

0 0

Marine Tstm Wind

Fowey Rocks Light observed a wind gust to 36 knots in a thunderstorm.

**Carib Waters E Cst Pr**

**Thru Usvi**

Punta Tuna

12 1115AST

0 0

Waterspout

1130AST

Two waterspouts were reported just off the Humacao and Naguabo coast.

**Deerfield Beach To**

**Ocean Reef Fl 20 To**

**60Nm**

25 E Port Everglades

24 1420EST

0 0

Waterspout

Several waterspouts were reported in the Atlantic.

**Carib Waters E Cst Pr**

**Thru Usvi**

Vieques

28 1645AST

0 0

Waterspout

1700AST

Four waterspouts were reported by a mariner approximately 5 miles southwest of Vieques. The waterspouts were moving west to northwest..

## COLORADO, Central and Northeast

**COZ038-042-048**

**Larimer County Below 6000 Feet / Nw Weld County - Ne Weld County - Logan County**

15 1245MST

0 0

High Wind (G55)

1440MST

High winds developed early in the afternoon across portions of the northeast plains. Peak wind reports included: 63 mph (55 kts) at Merino and 60 mph (52 kts) at Fort Collins and 21 miles north of New Raymer and 58 mph (50 kts), 4 miles east of Haxtun.

**COZ039**

**Boulder & Jefferson Counties Below 6000 Feet / W Broomfield County**

19 0600MST

0 0

0 0

High Wind (G65)

The National Wind Technology Center registered a peak wind gust to 75 mph (65 kts).

# Storm Data and Unusual Weather Phenomena

January 2003

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

**COZ034>036-038>039-042** S & Se Grand / W Central & Sw Boulder / Gilpin / Clear Creek / Summit / N & W Park Counties Above 9000 Feet - Larimer & Boulder Counties Between 6000 & 9000 Feet - Jefferson & W Douglas Counties Above 6000 Feet / Gilpin / Clear Creek / Ne Park Counties Below 9000 Feet - Larimer County Below 6000 Feet / Nw Weld County - Boulder & Jefferson Counties Below 6000 Feet / W Broomfield County - Ne Weld County

30	0100MST 1600MST				0	0			High Wind (G75)
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Peak wind reports included: 86 mph (75 kts), 3 miles south of Rollinsville, 84 mph (73 kts), 4 miles south of Livermore, 82 mph (71 kts), 2.5 miles northeast of Estes Park, 76 mph (66 kts) at Evergreen, 75 mph (65 kts) in central Boulder and 68 mph (59 kts) at Hereford. In Fort Collins, an empty tractor-trailer was blown over near the Anheuser-Busch brewery. The strong winds also downed several trees along with a telephone pole.

## COLORADO, East Central

**COZ090>091** Yuma County - Kit Carson County

01	0600MST 1400MST				0	0			Heavy Snow
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Moderate to heavy snow fell across portions of extreme eastern Colorado, northwest Kansas and Southwest Nebraska on New Year's Day. Total snow accumulations of 4 to 8 inches were common across Kit Carson and Yuma counties in Colorado. The combination of snow and wind reduced visibilities to one-half mile at times during the morning and early afternoon hours.

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

21	0300MST				0	0			Winter Weather/Mix
22	1200MST								

Light freezing drizzle and freezing fog resulted in hazardous travel due to a light accumulation of ice and poor visibility. Conditions persisted over 24 hours as a shallow Arctic airmass pushed slowly into the region.

## COLORADO, South Central and Southeast

**COZ058-060** Eastern Lake County / Western Mosquito Range Above 11000 Ft - Eastern Sawatch Mountains Above 11000 Ft

01	0000MST 0200MST				0	0			Heavy Snow
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A weather system brought snow to the central mountains, which ended a few hours after the new year began. The heavier snow amounts were 6 inches near the summit of Monarch Pass in southwest Chaffee county...and 10 inches at Climax in Lake county.

**COZ094** Eastern Las Animas County

01	0900MST 1500MST				0	0			Winter Storm
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A potent winter storm centered over the Texas Panhandle brought snow and wind to southeast Colorado. While most areas did not receive winter storm criteria amounts...strong winds whipped the 1 to 4 inch accumulations in El Paso county and 2 to 5 inch amounts in the southeast plains...creating near blizzard conditions at times. The heaviest snow accumulations were in eastern Las Animas county...around Kim...where 8 to 10 inches was recorded.

**COZ060-067-074** Eastern Sawatch Mountains Above 11000 Ft - Upper Rio Grande Valley / Eastern San Juan Mountains Below 10000 Ft - Southern Sangre De Cristo Mountains Between 7500 & 11000 Ft

05	1200MST				0	0			Heavy Snow
06	0100MST								

A weather system brought a general 2 to 4 inch snowfall in the high country. However, 6 inches of snow fell in the higher elevations at Lily Pond in Conejos county, while 7 inches of snow fell at Monarch ski area in Chaffee county. Lastly, 8 inches of snow was noted in the higher elevations of Las Animas county at Whiskey Creek.

**COZ074-087** Southern Sangre De Cristo Mountains Between 7500 & 11000 Ft - Walsenburg Vicinity / Upper Huerfano River Basin Below 7500 Ft

11	0700MST 2000MST				0	0			Heavy Snow
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A weather system brought locally heavy snow to the southeast mountains and adjacent lower areas. Between 5 and 6 inches was reported near Fort Garland in Costilla county, and in La Veta in Huerfano county. Ten inches of fresh snow graced the Cuchara area in Huerfano county.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**COZ001>014-017>023 Lower Yampa River Basin - Central Yampa River Basin - Roan And Tavaputs Plateaus - Elkhead And Park Mountains - Upper Yampa River Basin - Grand Valley - Debeque To Silt Corridor - Central Colorado River Basin - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - Central Gunnison And Uncompahgre River Basin - West Elk And Sawatch Mountains - Flattop Mountains - Upper Gunnison River Valley - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains - Southwestern San Juan Mountains - Paradox Valley / Lower Dolores River Basin - Four Corners / Upper Dolores River Basin - Animas River Basin - San Juan River Basin**

01	0000MST				0	0			
31	2359MST								Drought

January consisted of below normal precipitation and above normal temperatures across much of western Colorado. This offered no relief to the extreme drought conditions that persisted across the area. For a continuation on this drought situation in western Colorado, see the February 2003 Storm Data publication.

**COZ006**

**Grand Valley**

01	0717MST				0	0			
	1130MST								Dense Fog

Widespread dense fog developed across the Grand Valley. Visibility at the Grand Junction airport ASOS was reduced to 1/4 mile.

**COZ002**

**Central Yampa River Basin**

01	1817MST				0	0			
02	0425MST								Dense Fog

A moist and stable lower atmosphere allowed dense fog to form in the central Yampa River Basin. The visibility was reduced to 1/4 mile at the Meeker and Craig ASOS sites.

**COZ006**

**Grand Valley**

01	2100MST				0	0			
02	0425MST								Dense Fog

Widespread dense fog redeveloped across the Grand Valley. The visibility was reduced to 1/4 mile at the Grand Junction airport ASOS.

**COZ002**

**Central Yampa River Basin**

05	0900MST				0	0			
	1400MST								Winter Weather/Mix

Three to six inches of snow fell across the central Yampa River Basin as an upper level disturbance moved across northwest Colorado. Numerous automobile accidents occurred in the Craig area due to icy and snowpacked road conditions.

**COZ007**

**Debeque To Silt Corridor**

05	1500MST				0	0			
	2030MST								Winter Weather/Mix

A band of moderate to heavy snow moved across the central Colorado River Basin. Accumulations of 3 to 5 inches occurred along the Interstate 70 corridor from Parachute to Rifle causing icy and snowpacked road conditions.

**COZ005**

**Upper Yampa River Basin**

05	2000MST				0	0			
06	0930MST								Dense Fog

The Routt County sheriff's office reported widespread dense fog across the upper Yampa River Basin.

**COZ001>002**

**Lower Yampa River Basin - Central Yampa River Basin**

05	2100MST				0	0			
06	1130MST								Dense Fog

Moist and stable conditions resulted in widespread dense fog across the lower and central Yampa River Basin. Visibilities of 1/4 mile were observed at the Craig, Meeker, and Hayden ASOS sites. Reports indicated the dense fog extended to Rangely.

**COZ002**

**Central Yampa River Basin**

06	1600MST				0	0			
07	0800MST								Dense Fog

Moist and stable conditions resulted in widespread dense fog across the central Yampa River Basin. Visibilities of 1/4 mile were observed at the Craig and Meeker ASOS sites.

# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b><u>COLORADO, West</u></b>									
<b>COZ001</b>			<b>Lower Yampa River Basin</b>						
	06	1700MST			0	0			Dense Fog
	07	0800MST							
	ASOS observations and satellite data indicated widespread dense fog across the lower Yampa River Basin.								
<b>COZ001</b>			<b>Lower Yampa River Basin</b>						
	08	0100MST			0	0			Dense Fog
		1130MST							
	The Colorado State Patrol and spotter information indicated widespread dense fog across the lower and central Yampa River Basin. Visibilities at or below 1/4 mile were reported along US Highway 40 from Craig to Dinosaur.								
<b>COZ001&gt;002</b>			<b>Lower Yampa River Basin - Central Yampa River Basin</b>						
	09	0300MST			0	0			Dense Fog
		0900MST							
	The Colorado State Patrol indicated widespread dense fog across the lower and central Yampa River Basin. The Craig ASOS reported visibilities down to 1/4 mile.								
<b>COZ005-010-017&gt;018</b>			<b>Upper Yampa River Basin - Gore And Elk Mountains/Central Mountain Valleys - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains</b>						
	10	2000MST			0	0			Winter Weather/Mix
	12	0800MST							
	An upper level disturbance moved across western Colorado and produced moderate snowfall in some mountains and high valleys. Accumulations averaged from 5 to 7 inches with locally higher amounts, including 14 inches at the Columbine Pass SNOTEL on the Uncompahgre Plateau and 10 inches at the Vail Mountain SNOTEL.								
<b>COZ004-009-012&gt;013</b>			<b>Elkhead And Park Mountains - Grand And Battlement Mesas - West Elk And Sawatch Mountains - Flattop Mountains</b>						
	10	2100MST			0	0			Heavy Snow
	12	0400MST							
	An upper level trough moved over the area and produced heavy snow across many central and northern mountain areas of western Colorado. Widespread accumulations around one foot were reported, especially on the Grand and Battlement Mesas where up to 15 inches was measured. The heaviest amounts were 20 inches at the Tower SNOTEL site in the Park Mountains and 18 inches at the Butte SNOTEL site in the West Elk Mountains.								
<b>COZ002</b>			<b>Central Yampa River Basin</b>						
	11	2153MST			0	0			Dense Fog
	12	0000MST							
	Widespread dense fog lowered visibilities to 1/4 mile or less in the Craig area. The visibility at the Craig ASOS was reduced to 1/4 mile for two hours.								
<b>COZ001</b>			<b>Lower Yampa River Basin</b>						
	11	2300MST			0	0			Dense Fog
	12	0500MST							
	The Colorado State Patrol reported widespread dense fog across the lower Yampa River Basin with visibilities at or below 1/4 mile.								
<b>COZ004-013</b>			<b>Elkhead And Park Mountains - Flattop Mountains</b>						
	15	0500MST			0	0			Winter Weather/Mix
		1900MST							
	A fast moving upper level disturbance produced moderate snowfall and windy conditions across the mountains of northwest Colorado. Snow accumulations ranged from 5 to 10 inches with west winds of 20 to 35 mph which caused blowing and drifting snow. The largest amounts were 10 inches at the Tower SNOTEL in the Park Mountains, and 8 inches at the Trapper Lake SNOTEL on the Flattops.								
<b><u>CONNECTICUT, Northeast</u></b>									
<b>CTZ002&gt;004</b>			<b>Hartford - Tolland - Windham</b>						
	03	1400EST			0	0			Winter Storm
	04	1100EST							
	A powerful winter storm tracked south of New England and dumped heavy snow over northern Connecticut. Totals of 6 to 10 inches were common in Hartford, Tolland, and Windham Counties. Aside from scattered power outages and dozens of minor accidents, little significant impact occurred from the storm since most residents avoided travel. No injuries or damage was directly attributable to the storm.								

# Storm Data and Unusual Weather Phenomena

January 2003

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

Officially, the storm total at Bradley International Airport in Windsor Locks was 7.6 inches. Other snowfall totals as reported by trained spotters include 10 inches in Granby and Thompson; 9 inches in Burlington and East Hartford; 8 inches in Wethersfield, West Hartford, Windsor Center, and Killingly; 7 inches in South Windsor, Storrs, and Ashford; and 6 inches in Newington, Glastonbury, Andover, and Pomfret.

## CONNECTICUT, Northwest

**CTZ001**

### **Litchfield**

**03 1800EST**

**0 0**

**Winter Storm**

**04 1200EST**

A low pressure area developed in the Mississippi Valley by late on January 2. The storm tracked northward into the southern Ohio Valley, then rapidly redeveloped along the Mid Atlantic seaboard on January 3. Slowly, it moved to just east of Cape Cod by late on January 4. With plenty of cold air in place, the stage was set for another snowstorm across northwestern Connecticut. Although this storm was not as powerful as the Christmas Day storm, by moving more slowly, it produced similar snowfall amounts. Light snow began falling early on the January 3, then it became heavier and steadier as the day wore on. Some sleet mixed in. Between 6 and 12 inches of snow fell, with 10 inches specifically reported in Bakersville and 8 inches at New Preston. In Litchfield county, some gusty winds and spotty power outages were reported with the storm.

## CONNECTICUT, Southern

**CTZ005>006-009**

### **Northern Fairfield - Northern New Haven - Southern Fairfield**

**03 2200EST**

**0 0**

**Winter Storm**

**04 0600EST**

A cold front moved across the region during the pre-dawn hours, early on Wednesday, January 1st before stalling just off the coast later that day. During the evening on January 1st, a developing area of low pressure began to move northeast from the Delmarva Peninsula along the frontal boundary. By morning, the center of the low moved well off to the northeast of the New England coast. During the day on Thursday, January 2nd, a second area of low pressure began to develop over Virginia. This low quickly intensified and took over as the primary storm as it moved slowly northeast Thursday night. The center of this low pressure system was south of Long Island by Friday afternoon, and just southeast of Nantucket by Saturday morning.

Light and spotty precipitation, generally in the form of snow, fell across Southwestern Connecticut just before midnight on the night of January 2nd into the 3rd. This light and intermittent snow continued for a few hours before tapering off to flurries before daybreak. Cloudy skies with an occasional flurry continued through the morning on January 3rd, before light snow began to fall around noon. The precipitation quickly changed over to freezing rain by mid afternoon. The freezing rain continued through the remainder of the afternoon and through the evening. At times, the freezing rain mixed with or briefly changed over to snow. The precipitation became more light in nature, after midnight on the night of January 3rd into the 4th, before ending in the form of light snow during the mid to late morning on Saturday, January 4th.

Storm total accumulations were as follows:

Northern Fairfield County: 4-6 inches of snow, with a significant accumulation of ice.

Southern Fairfield County: 1-3 inches of snow, with a significant accumulation of ice that downed numerous trees and power lines.

Northern New Haven County: 4-10 inches of snow, with a significant accumulation of ice in areas that received less snow.

## DELAWARE

**DEZ002>004**

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

**02 0600EST**

**0 0**

**0 Astronomical High Tide**

**03 1330EST**

The combination of a high pressure system over nearby Canada, a series of low pressure systems that passed southeast of Delaware and spring astronomical tides caused by the new moon produced widespread minor tidal flooding along the coast and Delaware Bay during the daytime high tide cycles on the second and third. The highest tides occurred on the 3rd. The highest tide at Breakwater Harbor (Sussex County) was 7.19 feet above mean lower low water at 848 a.m. EST on the 3rd. Minor tidal flooding begins at 6.7 feet above mean lower low water. High tide at Reedy Island (New Castle County) was 7.78 feet above mean lower low water at 1148 a.m. EST on the 3rd. Minor tidal flooding begins at 7.2 feet above mean lower low water.

The first low pressure system moved rapidly northeast from the Tennessee Valley on the morning of the 1st to southeast of Cape Cod on the morning of the 2nd. At the same time, another low pressure system formed in the western Tennessee Valley on the morning of the 2nd and moved more slowly northeast. It reached near Norfolk, Virginia during the morning of the 3rd and just southeast of Cape Cod during the morning of the 4th. Meanwhile, a large high pressure system moved slowly east from western Ontario Province the morning of the 1st to eastern Quebec Province the morning of the 4th. The high pressure system helped enhance the onshore flow throughout the week.

**DEZ001**

### **New Castle**

**03 1000EST**

**0 0**

**0 Astronomical High Tide**

**1500EST**

# Storm Data and Unusual Weather Phenomena

January 2003

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

## DELAWARE

The combination of a high pressure system over nearby Canada, a low pressure system that moved along the Eastern Seaboard and spring astronomical tides caused by the new moon produced widespread minor tidal flooding along the Delaware River and tidal sections of its tributary streams during the daytime high tide cycle on the 3rd. Localized tidal flooding occurred with the previous afternoon's high tide. High tide at Reedy Island was 7.78 feet above mean lower low water at 1148 a.m. EST on the 3rd. Minor tidal flooding begins at 7.2 feet above mean lower low water.

### DEZ001

#### **New Castle**

<b>05</b>	1100EST 2000EST				0	0	0		<b>Heavy Snow</b>
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### DEZ002

#### **Kent**

<b>05</b>	1100EST 2000EST				0	0	0		<b>Winter Weather/Mix</b>
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A potent Alberta Clipper produced heavy snow across New Castle County and measurable snow across Kent County. Snow fell at a lesser intensity and temperatures were warmer farther south across Sussex County with little or no accumulation. Snow began falling during the late morning and was the heaviest during the afternoon. It ended during the early evening. Many roads were slippery and snow covered in New Castle County. Even main roadways were slushy. Numerous accidents were reported. In Kent County, secondary and tertiary roads were partially snow covered. Main roads in Kent County were wet as were all the roads in Sussex County. Accumulations included 5.5 inches in Bear (New Castle County), 5.0 inches in Wilmington (New Castle County), 4.0 inches in Newark (New Castle County), 3.3 inches at the New Castle County Airport, 2.8 inches in Dover (Kent County), 2.0 inches in Woodside (Kent County) and just a trace in Milford (Sussex County).

The low pressure system formed in Saskatchewan Province on the third, moved southeast to Minnesota on the morning of the 4th, southern Indiana on the morning of the 5th and was well east of the Delmarva Peninsula during the morning of the 6th. Historically, Alberta type low pressure systems usually do not produce heavy snow. But the air at mid levels of the atmosphere was quite cold and this enhanced the instability with this low pressure system. While no thunderstorms occurred, the instability did produce heavier precipitation.

### DEZ003

#### **Inland Sussex**

<b>11</b>	0100EST 0300EST				0	0	0.10K	0	<b>Strong Wind</b>
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Gusty northwest winds accompanied a band of snow showers and snow flurries as they moved through Delaware. Peak wind gusts were mainly between 30 and 50 mph. The highest reported wind gusts were 51 mph in Lewes (Sussex County) and 44 mph at the Dover Air Force Base.

### DEZ001>004

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

<b>14</b>	0300EST				0	0			<b>Extreme Cold/Wind Chill</b>
<b>29</b>	0900EST								

A cold frontal passage on the 13th initiated about a two week run of unseasonably cold weather, even by January standards across the Delmarva Peninsula. The coldest mornings were the mornings of the 18th and 28th as low temperatures dipped into the single numbers. For many places, these were the coldest days in three years. Minimum temperatures for most days were no higher than the teens. The extreme cold filled homeless shelters to capacity. In addition the number of vehicle batteries dying and parking brakes freezing increased. Calls to heating oil firms and utilities rose dramatically. Several water mains broke because of the extreme cold. Service on the Cape May-Lewes Ferry was reduced to one vessel because of ice in Delaware Bay. Lowest temperatures included 5 degrees in Georgetown (Sussex County) and 6 degrees at the New Castle County Airport. This cold snap was a major contributor to the monthly mean temperature at the New Castle County Airport averaging 4.2 degrees below normal. The monthly mean temperature of 27.3 degrees at the New Castle County Airport was the coldest January and the coldest winter month since 1994 (26.3 degrees). In Georgetown, the monthly mean temperature of 30.4 degrees was 3.9 degrees colder than normal.

### DEZ003>004

#### **Inland Sussex - Delaware Beaches**

<b>16</b>	2100EST				0	0	0		<b>Heavy Snow</b>
<b>17</b>	0400EST								

A low pressure system that formed over the central Rockies on Wednesday the 15th rapidly moved east and spread heavy snow across southern sections of Sussex County in Delaware. Accumulations were lighter farther north in the county and were generally an inch or two in Kent County and an inch or less in New Castle County. The snow began during the evening of the 16th and was over by daybreak on the 17th. The timing of this event (mainly overnight) helped minimize the number of traffic accidents. Specific accumulations (all in Sussex County) included 7.0 inches in Gumboro, 4.0 inches in Georgetown, 3.5 inches in Laurel, 2 inches in Milford and 1.5 inches in Greenwood. The low pressure system went from the central Rockies the morning of the 15th, to the Ozark Mountains the morning of the 16th to about 250 miles east of the Delmarva Peninsula at sunrise on the 17th.

### DEZ002

#### **Kent**

<b>20</b>	1200EST 1800EST				0	0	0.10K	0	<b>Strong Wind</b>
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# Storm Data and Unusual Weather Phenomena

January 2003

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

Strong gusty winds buffeted Delaware during the afternoon of the 20th. Peak wind gusts averaged between 35 and 45 mph. The highest recorded wind gust was 46 mph at the Dover Air Force Base. The peak wind gust was 44 mph at the New Castle County Airport. The strong winds were caused by the difference in surface pressure between a rapidly deepening low pressure system over the Canadian Maritimes and a high pressure system building southeast from the Canadian Rockies. Winds peaked after a cold front moved through the state.

**DEZ001>004**

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

<b>29</b>	<b>0300EST 1900EST</b>	<b>0</b>	<b>Winter Weather/Mix</b>						
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A mixed bag of wintry precipitation fell across Delaware from the pre dawn through the early evening on the 29th. Precipitation began as light snow in the northern part of the state and a mixture of sleet and light freezing rain in the southern part of the state. Precipitation changed to plain rain across Sussex County by 10 a.m. EST. In Kent County, precipitation changed to light rain, sleet and snow during the late morning before going back to light snow during the middle of the afternoon. In New Castle County, a mixture of snow, sleet and freezing rain fell during the morning and precipitation changed back to light snow by early afternoon. Accumulations were one to two inches in New Castle County and just trace amounts in the rest of Delaware. But, a few hundredths of an inch of ice accrued to exposed surfaces. This caused untreated roads to become hazardous. In Sussex County, there were 48 black ice related accidents by 9 a.m. EST that included 16 injuries. Dozens of accidents were reported in Kent County. In New Castle County as precipitation changed back to snow during the early afternoon, 75 accidents occurred between Noon and 3 p.m. EST. At one time 10 separate accidents occurred within a ten minute time span. Vehicles were sliding into trees, stone walls, guard rails, ditches and telephone poles. The most serious accident involved an overturned van on the eastbound lanes of Interstate 295. A 72-year-old man was seriously injured and the interstate was closed for 90 minutes. Many public schools had two hour delayed openings and many after school activities were cancelled. Snow accumulated 1.3 inches at the New Castle County Airport.

Precipitation moved into the region ahead of a low pressure system's warm front. The low itself went northeast from the Ohio Valley into the Saint Lawrence Valley. Its cold front moved through the region during the early evening and ended the precipitation.

**DEZ002>004**

**Kent - Inland Sussex - Delaware Beaches**

<b>30</b>	<b>1500EST 2300EST</b>	<b>0</b>	<b>Winter Weather/Mix</b>						
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A weak low pressure system that moved from Georgia east off the South Carolina coast brought one to two inches of snow across southeastern parts of Kent and Sussex Counties during the late afternoon and evening of the 30th. The low pressure system was too weak, distant and quick to produce much snow farther north and west across the Delmarva Peninsula.

## DISTRICT OF COLUMBIA

**DCZ001**

**District Of Columbia**

<b>05</b>	<b>0600EST 1900EST</b>	<b>0</b>	<b>Winter Weather/Mix</b>						
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A weak area of low pressure moved through the region on the 5th. It dropped around 3 inches of snow on the District between 6 AM and 7 PM. The snow caused roads and bridges to become very slippery. Several traffic accidents were reported across the metropolitan area.

## FLORIDA, East Central

**FLZ041-044>047**

**Volusia - Lake - Orange - Seminole - Brevard**

<b>24</b>	<b>0700EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50K</b>	<b>0</b>	<b>Extreme Cold/Wind Chill</b>
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Early morning low temperatures on January 24th dropped well below freezing across east central Florida. Temperatures ranged from 24 degrees in Leesburg and 25 in Daytona Beach to 29 in Melbourne and 27 in Orlando. To the south, Ft. Pierce and Vero Beach reported lows near 30. Later that morning, winds shifted off the ocean producing a few snow flakes in the coastal communities from Daytona Beach to Ft. Pierce.

## FLORIDA, Extreme Southern

NONE REPORTED.

## FLORIDA, Northeastern

**Putnam County**

**Lake Como**

<b>09</b>	<b>1515EST 1700EST</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Wild/Forest Fire</b>
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Coals dumped from a burn barrel ignited a fire which was exacerbated by high winds and dry conditions. Fire endangered three homes in Lake Crescent Estates and caused the closure of Highway 17. One Crescent Lakes Estates resident was treated at an area hospital for smoke inhalation. Fire was declared a five alarm fire with mutual aid requested from several neighboring fire departments, and burned approximately thirty acres.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**FLZ040**

**Marion**

**24 0700EST**

**1 0**

**Extreme Cold**

67 year old woman found dead of hypothermia outdoors at 8131 NW 115th Ave, Ocala, Florida. Apparently she fell and could not get up, body was found Friday morning, Jan 24th. Report from Florida Dept. of Emergency Management State Warning Point. F67OU

## FLORIDA, Northwest

NONE REPORTED.

## FLORIDA, Southern

**FLZ067**

**Inland Palm Beach**

**08 0500EST  
0800EST**

**0 0**

**100K Frost/Freeze**

Scattered frost caused damage to beans near Belle Glade.

**FLZ063-066>067-070-073**

**Glades - Hendry - Inland Palm Beach - Inland Collier - Inland Dade**

**19 0500EST  
0800EST**

**0 0**

**2M Frost/Freeze**

Temperatures fell into the upper 20s and lower 30s across much of interior south Florida. Frost damaged beans and other crops, mainly in western Palm Beach County near Belle Glade.

**FLZ063-066>067-070-073**

**Glades - Hendry - Inland Palm Beach - Inland Collier - Inland Dade**

**24 0400EST  
0900EST**

**0 0**

**Frost/Freeze**

The coldest temperatures since 1989 affected all of south Florida. Minimum temperatures ranged from the upper 20s over interior sections to the mid 30s along the coasts. No crop damage was reported, probably because the cold weather earlier in the month had cold-hardened plants. Minor power outages were reported.

## FLORIDA, West Central

**FLZ051>052-055**

**Hillsborough - Polk - Manatee**

**01 0000EST  
04 0800EST**

**0 0**

**Flood**

Record rainfall in December of 2002 combined with a New Year's Eve heavy rain event lead to flash flood events for Hillsborough, Manatee, and Polk counties during the last day of the year. The resultant high water kept area rivers and streams above their banks until January 4th. The Alafia river near Lithia crested at 19.1 feet at 11:15 AM EST on January 2nd, which is 5 feet above flood stage. The Little Manatee river near Wimauma also crested on the 2nd at 16.4 feet at 3:00 AM EST, which was 5 feet above flood stage. The Peace River at Bartow remained about one foot above flood stage during the event. Note: Monetary damage from this event is listed in Storm Data for December 31, 2002 flash flood.

**FLZ039-042-048**

**Levy - Citrus - Hernando**

**05 0600EST  
1300EST**

**0 0**

**Frost/Freeze**

A cold front moved through the previous day, allowing cold and dry air to settle over the region. Overnight low temperatures ranged from 25 to 28.

**FLZ039-042>043-048>049-051>052-056>057**

**Levy - Citrus - Sumter - Hernando - Pasco - Hillsborough - Polk - Hardee - Highlands**

**07 2200EST  
08 0800EST**

**0 0**

**Frost/Freeze**

Canadian high pressure over the eastern Gulf of Mexico allowed cold dry air to drain across the Florida peninsula. A hard freeze occurred along a line from Williston south along the Withlachochee to Brooksville where overnight lows ranged from 23 to 25 degrees and temperatures remained below freezing for 8 to 10 hours. The rest of the inland counties had overnight lows of 28 to 32 which lasted two to four hours. Coastal areas from Clearwater south remained above freezing due to the relatively warm gulf waters.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**FLZ039-042>043-048>049-051>052-055>057-061**     **Levy - Citrus - Sumter - Hernando - Pasco - Hillsborough - Polk - Manatee - Hardee - Highlands - De Soto**

18	0100EST 0800EST		0	0			Frost/Freeze
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Areas from Bronson to Brooksville reported overnight lows in the mid to upper 20s while lows near freezing were reported across inland areas from Lakeland to Arcadia.

**FLZ039-042>043-048>049**     **Levy - Citrus - Sumter - Hernando - Pasco**

19	0200EST 0800EST		0	0		Extreme Cold
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**FLZ051>052-055>057-061**     **Hillsborough - Polk - Manatee - Hardee - Highlands - De Soto**

19	0200EST		0	0		Frost/Freeze
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Overnight low temperatures ranged from 23 to 28 degrees. Elsewhere, the inland areas of the counties to the south reported lows in the lower to mid 30s.

**FLZ039-042>043-048**     **Levy - Citrus - Sumter - Hernando**

20	0400EST 0800EST		0	0		Frost/Freeze
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Canadian high pressure settled over the Florida peninsula, allow overnight low temperatures to drop to into the upper 20s to lower 30s.

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

23	2200EST		0	0		8.5M Extreme Windchill
24	0800EST					

A strong cold front ushered in cold temperatures and gusty northwest winds into the Florida peninsula, which created some of the coldest weather in several years. Wind chill temperatures ranged from 10 to 15 in Bronson, around 20 in Tampa and Lakeland, to 20 to 25 degrees in Fort Myers. Overnight low temperatures ranged from near 20 north to the upper 20s in the inland counties south, to the lower 30s along the coast near Fort Myers. A hard freeze (temperatures of 27 degrees or less for three or more hours) reached south into northeast Hillsborough and northern Polk counties. Citrus crops fared well because the freeze did not last long enough but strawberries took a \$4.5 million loss and tropical fish a \$4 million loss.

**FLZ039-042>043-048**     **Levy - Citrus - Sumter - Hernando**

24	2100EST		0	0		Extreme Cold
25	0800EST					

**FLZ049>052-055>056-060>062-065**     **Pasco - Pinellas - Hillsborough - Polk - Manatee - Hardee - Sarasota - De Soto - Charlotte - Lee**

25	0100EST 0800EST		0	0		8.5M Extreme Windchill
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Arctic high pressure settled over the southeastern United States which maintained the clear and cold weather across the Florida peninsula. Overnight lows of 19 to 24 occurred from Bronson to Brooksville with temperatures in the 30s farther south. Northeast winds of 10 to 15 mph produced wind chills down to 25 degrees from Tampa to Lakeland to Fort Myers. Citrus crops fared well during the freeze but strawberries took an estimated \$4.5 million dollar loss and tropical fish an estimated \$4 million dollar loss.

## FLORIDA, West Panhandle

**FLZ001**     **Inland Escambia**

31	1800CST		0	0		Extreme Cold/Wind Chill
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The average temperature for the month of January in Pensacola was 47.2 degrees. This makes January 2003 the fourteenth coldest January on record. The coldest was 40.8 degrees in 1940. January of 2003 was the driest January on record in the Pensacola area. In January of 2003 we received 0.21 inch of precipitation. This broke the previous driest January on record of 0.60 in 1981.

## GEORGIA, East Central

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

NONE REPORTED.

## GEORGIA, North and Central

**GAZ001>009-011>016-019>025-027-030>039-041>062-066>076-078>086-089>098-102>113** Dade - Walker - Catoosa - Whitfield - Murray - Fannin - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Banks - Jackson - Madison - Polk - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - Haralson - Carroll - Douglas - South Fulton - De Kalb - Rockdale - Walton - Newton - Morgan - Greene - Taliaferro - Heard - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Hancock - Warren - Troup - Meriwether - Pike - Upson - Lamar - Monroe - Jones - Baldwin - Washington - Glascock - Jefferson - Harris - Talbot - Taylor - Crawford - Bibb - Twiggs - Wilkinson - Johnson - Emanuel - Muscogee - Chattahoochee - Marion - Schley - Macon - Peach - Houston - Bleckley - Laurens - Treutlen - Stewart - Webster - Sumter - Dooly - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery - Toombs

01	0000EST								
28	2359EST			0	0				Abnormally Dry

A large Polar vortex, anchored over the Hudson Bay region of Canada and the northeastern United States, dominated the eastern United States nearly the entire month. As a result, a cold, dry northwest flow prevailed into the southeastern United States throughout the month. Gulf moisture was virtually shut off from weather systems as disturbances moved down into the area from the Northern Plains and Ohio Valley. This pattern resulted in very little precipitation during the first 28 days of the month. During the last three days of the month, a stronger southern jet stream brought rain back into the area. Many locations in north and central Georgia were having their driest January in history prior to the 29th, when 1.00 to 2.00 inches of rain fell across much of the area. For the first 28 days of the month, many areas had not even received 0.50 inch of rain or liquid equivalent of snow. Nonetheless, the lack of rain during the first 28 days left most areas with a substantial rainfall deficit for the month, including Macon with a deficit of 3.55 inches, Atlanta with a deficit of 3.03 inches, Athens with a deficit of 2.95 inches, and Columbus with a deficit of 2.66 inches. January is normally a rainy month for north and central Georgia with normal rainfall amounts in the 4.00 to 5.00 inch range.

**GAZ001>009-011>016-019>025-027-030>039-041>062-066>076-078>086-089>098-102>113** Dade - Walker - Catoosa - Whitfield - Murray - Fannin - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Banks - Jackson - Madison - Polk - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - Haralson - Carroll - Douglas - South Fulton - De Kalb - Rockdale - Walton - Newton - Morgan - Greene - Taliaferro - Heard - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Hancock - Warren - Troup - Meriwether - Pike - Upson - Lamar - Monroe - Jones - Baldwin - Washington - Glascock - Jefferson - Harris - Talbot - Taylor - Crawford - Bibb - Twiggs - Wilkinson - Johnson - Emanuel - Muscogee - Chattahoochee - Marion - Schley - Macon - Peach - Houston - Bleckley - Laurens - Treutlen - Stewart - Webster - Sumter - Dooly - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery - Toombs

11	0000EST								
19	2359EST			0	0				Unseasonably Cold

An extended period of below normal temperatures was observed as a Polar vortex in the northeastern United States provided a cold northwest flow to the region. A series of Canadian/Arctic air masses invaded the region during the period. Temperatures averaged 10 to 20 degrees below normal during the period, with a hard freeze recorded at most location nearly every day between the 11th and the 19th. On the 18th, a strong Arctic high pressure system caused minimum temperatures to drop into the teens in most areas...with some single digit temperatures in the northeast mountains.

**GAZ001>005-007>009-011>013-015>016-021>024** Dade - Walker - Catoosa - Whitfield - Murray - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Lumpkin - White - Cherokee - Forsyth - Hall - Banks

16	1200EST								
17	0000EST			0	0				Snow

Light snow, mixed with some light pockets of sleet, fell across north central and northeast Georgia. The snow was the result of a strong arctic cold front moving through the region as a weak upper-level disturbance moved over the area. Snowfall was confined to areas generally northeast of a line from Lafayette, to Canton, to Cumming, to Gainesville. The heaviest snow fell in the northeast Georgia mountain counties of Fannin, Towns, Union, and White, where snowfall amounts up to 3 inches were common. Elsewhere, snowfall amounts were generally one inch or less. Many of the roads, especially at the higher elevations of the northeast mountains, became icy and hazardous. Some of the mountain roads in Union and White counties became impassable and had to be closed. Numerous accidents were also reported in these counties, as well as in Hall county where some sleet mixed with the snow. Strong, gusty 20 to 30 mph north winds caused blowing of the snow, especially in the areas that received more than one inch. The snow was followed by a period of extreme cold with temperatures in the teens.

# Storm Data and Unusual Weather Phenomena

January 2003

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

## GEORGIA, North and Central

### **Houston County**

5 S Warner Robins 22 0815EST 0 0 Hail (0.75)

An amateur radio operator reported dime size hail.

### **Dooly County**

Lilly 22 0908EST 0 0 Hail (0.75)

The public reported dime size hail.

### **Dodge County**

Eastman 22 0945EST 0 0 Tstm Wind/Hail

The Dodge county 911 center reported pea size hail.

### **Telfair County**

Jacksonville 22 1015EST 0 0 Tstm Wind/Hail

The Jacksonville Post Office reported pea size hail.

**GAZ001>009-011>016-019>023-030-032-034-041** Dade - Walker - Catoosa - Whitfield - Murray - Fannin - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Polk - Cobb - Gwinnett - Haralson

23 0000EST 0 0 Snow  
1200EST

Light snow fell across much of far north Georgia as a strong Arctic cold front moved through the region. Most of the snow fell north of a line from Buchanan, to Atlanta, to Cumming, to Homer. Snowfall amounts averaged from one-half to one inch in most of this area, with up to 2 inches common in the northeast Georgia mountain counties of Fannin, Union, and Towns. Cherokee and Murray county also reported amounts in excess of one inch. The snow combined with 20 to 30 mph and gusty north winds and temperatures in the teens and twenties to create slick and hazardous roads. However, no roads were reported to have been closed. Nonetheless, numerous accidents were reported, especially in Cherokee, Bartow, and Forsyth counties, several with minor injuries. Thirty-eight accidents were reported in Forsyth county alone, with 29 accidents in Bartow. The amount of accidents in Cherokee county was unspecified. Schools were closed in all of these counties and several surrounding counties because of the snow and extreme cold.

**GAZ001>009-011>016-019>025-027-030>039-041>062-066>076-078>086-089>098-102>113** Dade - Walker - Catoosa - Whitfield - Murray - Fannin - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Banks - Jackson - Madison - Polk - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - Haralson - Carroll - Douglas - South Fulton - De Kalb - Rockdale - Walton - Newton - Morgan - Greene - Taliaferro - Heard - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Hancock - Warren - Troup - Meriwether - Pike - Upson - Lamar - Monroe - Jones - Baldwin - Washington - Glascock - Jefferson - Harris - Talbot - Taylor - Crawford - Bibb - Twiggs - Wilkinson - Johnson - Emanuel - Muscogee - Chattahoochee - Marion - Schley - Macon - Peach - Houston - Bleckley - Laurens - Treutlen - Stewart - Webster - Sumter - Dooly - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery - Toombs

23 0800EST 0 0 Extreme Cold  
24 1200EST

A strong Arctic cold front sent temperatures to their lowest level in several years across north and central Georgia. As the cold front moved through temperatures dropped through the 20s during the day and into the teens by evening accompanied with northwest winds of 25 to 35 mph with higher gusts. By midnight several locations were already below 10 degrees. Minimum temperatures bottomed out in the single digits over nearly all of north Georgia Friday morning, January 24th, with lows mostly in the mid teens in central Georgia. Hiawassee in Towns county recorded the statewide low with -2 degrees F. Some locations in north Georgia failed to rise above the freezing mark for slightly over two days. Several county school districts across the north part of the state were closed on the 23rd and/or 24th because of the extreme cold

### **GAZ053**

#### **Coweta**

23 1000EST 0 0 3K Strong Wind

The Newnan Times Herald reported that wind gusts associated with a strong Arctic cold front moving through the area damaged a lighted business sign at the Pizza Hut on Jefferson Street.

## GEORGIA, Northeast

### **GAZ010**

#### **Rabun**

16 1800EST 0 0 Heavy Snow  
2200EST

Light snow began during the late afternoon across the far northern mountains of Georgia, and gradually intensified. By late evening, 3 to 4 inches had accumulated.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>GAZ017&gt;018</b>	<b>Habersham - Stephens</b>				0	0			Winter Weather/Mix
		16	1800EST						
			2200EST						

Light snow fell during the evening and accumulated to 1 to 2 inches. Some traffic accidents resulted.

## GEORGIA, Southeast

NONE REPORTED.

## GEORGIA, Southwest

NONE REPORTED.

## GULF OF MEXICO

<b>Corpus Christi To Baffin Bay</b>					0	0			Marine Tstm Wind
Corpus Christi	02	0054CST							

<b>Matagorda Ship Chnl To Pt Aransas Out 20Nm</b>					0	0			Marine Tstm Wind
Pltfm 17Se Prt Arnsas	02	0136CST							

<b>Matagorda Ship Chnl To Pt Aransas Tx 20 To 60Nm</b>					0	0			Marine Tstm Wind
Pltfm 17Se Prt Arnsas	02	0136CST							

<b>Pt Aransas To Baffin Bay Tx 20 To 60Nm</b>					0	0			Marine Tstm Wind
30 E Corpus Christi	02	0136CST							

<b>Pt Aransas To Baffin Bay Tx Out 20Nm</b>					0	0			Marine Tstm Wind
15 S Port Aransas	02	0136CST							

## HAWAII

<b>HIZ001&gt;003-005&gt;007</b>	<b>Kauai - Oahu - Maui - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona</b>				1	1			Heavy Surf/High Surf
		02	2000HST						
		07	2000HST						

A powerful storm low northwest of Hawaii generated surf of 15 to 30 feet along the northwest-facing shores of all the islands. One man, visiting Hookena Beach in the South Kona District on the Big Island of Hawaii, drowned as he was pulled out to sea by a strong current caused by the high surf on the 5th. A 20 year-old man from Switzerland suffered lacerations while boogie boarding in the high surf near The Pines in North Kona on the 6th of January. No other serious injuries were reported.

Some damage occurred along beaches and beach-front properties, especially on the west side of the Big Island and the North Shore of Oahu. However, no damage estimates were available. M51IW

<b>HIZ001&gt;008</b>	<b>Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona - South Hawaii Including Kau</b>				0	0			High Wind (G61)
		04	0600HST						
		05	2000HST						

An approaching cold front and its associated upper trough caused strong southwest and west winds across the Hawaiian Islands. The strongest gusts were near the summits of Haleakala in East Maui, and Mauna Kea and Mauna Loa on the Big Island of Hawaii. The high winds led to spotty power outages in the islands, trees and tree branches being blown down, and some roofs being torn from their structures. No damage estimates were available, however. There were no reports of serious injuries.

<b>HIZ001&gt;003-005&gt;007</b>	<b>Kauai - Oahu - Maui - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona</b>				0	0			Heavy Surf/High Surf
		09	2000HST						
		11	2100HST						

# Storm Data and Unusual Weather Phenomena

January 2003

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

A storm low far northwest of the state produced surf of 10 to 20 feet along the northwest-facing shores of all the islands. No serious property damage or injuries were reported.

<b>HIZ003&gt;004-008</b>	<b>Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - South Hawaii Including Kau</b>								
	14	1200HST			0	0			<b>High Wind (G61)</b>
	16	1200HST							

Southwest to west winds ahead of a cold front/upper trough gusted to 70 mph at low and high elevations on the Big Island of Hawaii and at high elevations in Maui. The winds were strong at the lower elevations in the Puna District on the Big Island, and near the summits of Mauna Kea and Mauna Loa. In the Valley Isle, strong winds occurred near the summit of Haleakala in East Maui. There were brief power outages and some trees were blown down on the Big Island. Although winds gusted to only about 50 mph on Oahu, some power outages and the downing of trees occurred there as well. No serious injuries or property damage were reported, however.

<b>HIZ001&gt;003-005&gt;007</b>	<b>Kauai - Oahu - Maui - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona</b>								
	16	0500HST			0	0			<b>Heavy Surf/High Surf</b>
	17	1800HST							

A storm low northwest of Hawaii generated surf of 10 to 20 feet along the northwest-facing shores of all the islands. No serious property damage or injuries were reported.

<b>HIZ001&gt;003-005&gt;007</b>	<b>Kauai - Oahu - Maui - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona</b>								
	19	0500HST			0	0			<b>Heavy Surf/High Surf</b>
	22	2000HST							

A storm low northwest of the state caused surf of 15 to 25 feet along the northwest-facing shores of all the Hawaiian Islands. However, there were no reports of serious injuries or property damage.

<b>HIZ003&gt;004-008</b>	<b>Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - South Hawaii Including Kau</b>								
	19	1330HST			0	0			<b>High Wind (G61)</b>
	21	1000HST							

An approaching cold front and its associated upper trough caused west to southwest winds of 45 to 60 mph, with gusts to 70 mph, near the summit of Haleakala in East Maui, and the summits of Mauna Kea and Mauna Loa on the Big Island of Hawaii. There were no reports of serious property damage or injuries.

<b>HIZ001&gt;003-005&gt;007</b>	<b>Kauai - Oahu - Maui - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona</b>								
	24	0500HST			0	0			<b>Heavy Surf/High Surf</b>
	26	1800HST							

A storm low far northwest of Hawaii produced surf of 10 to 20 feet along the northwest-facing shores of all the islands. There were no reports of serious injuries or property damage.

<b>Kauai County</b>									
.5 W Koloa	24	1200HST			0	0			<b>Thunderstorm Wind (G50)</b>
		1205HST							

A thunderstorm with gusty winds knocked down a tree and blew some shingles off a roof in an area west of Koloa on Kauai. No damage estimates were available, however. There were no reports of serious injuries.

<b>HIZ001&gt;003-005&gt;007</b>	<b>Kauai - Oahu - Maui - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona</b>								
	28	1200HST			0	0			<b>Heavy Surf/High Surf</b>
	29	2000HST							

A storm low northwest of the state caused surf of 10 to 20 feet along the northwest-facing shores of all the Hawaiian Islands. No serious injuries or property damage were reported, however.

<b>Maui County</b>									
Waiehu to	30	2215HST			0	0			<b>Heavy Rain</b>
Hana	31	0115HST							

Heavy trade wind showers caused minor stream and drainage ditch flooding, and ponding of roadways in windward coastal and windward-facing mauka and upslope sections of Maui. There were no reports of serious injuries or property damage.

## IDAHO, Extreme Southeast

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

### **IDZ005**

#### **Northern Clearwater Mountains**

02	2200MST				0	0			<b>Heavy Snow</b>
03	0800MST								

Heavy snow fell in the northern Clearwater Mountains of north central Idaho in a 12 hour period. About 6 inches of snow was reported at snotels and ski resorts in the region.

### **IDZ005>006-009**

#### **Northern Clearwater Mountains - Southern Clearwater Mountains - Western Lemhi County**

21	1900MST				0	0			<b>Heavy Snow</b>
22	0600MST								

Pacific moisture met up with an arctic cold front near the Montana border bringing heavy snow to the mountain regions. Snowfall amounts ranged from 8 inches at Cool Creek and Elk Butte, 10 inches at Shanghai Summit and Lolo Pass, 13 inches at Crater Meadows, and 15 inches at Hemlock Butte.

### **IDZ006**

#### **Southern Clearwater Mountains**

22	1600MST				0	0			<b>Heavy Snow</b>
23	0600MST								

Heavy snow fell in the southern Clearwater Mountains with 8 inches of snow reported at Dixie.

### **IDZ005>006**

#### **Northern Clearwater Mountains - Southern Clearwater Mountains**

30	0400MST				0	0			<b>Heavy Snow</b>
	1600MST								

Heavy mountain snow fell across north central Idaho as a pacific storm system moved through the region. Amounts ranged from 10 inches at Elk Butte, 12 inches at Dixie, 15 inches at Headquarters, and 16 inches at Elk River.

### **IDZ007**

#### **Orofino / Grangeville Region**

31	2100MST				0	0			<b>Flood</b>
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Heavy rainfall and snow melt lead to Pierce city officials to release water from a fresh water reservoir, resulting in flooding along Orofino Creek in Clearwater County. Two roads were closed near Weippe and many other roads experienced some water problems. Sandbagging was done to protect personal property in the region.

## IDAHO, Northwest

### **IDZ001-004**

#### **Northern Panhandle - Central Panhandle Mountains**

01	0001PST				0	0			<b>Heavy Snow</b>
03	1000PST								

A moist southwest flow, known as a Pineapple Express, developed over north Idaho on New Year's Eve. This flow pattern persisted through the holiday weekend with the heavy snow accumulating in the higher mountains. This two day snowfall totals included: Mosquito Creek SNOTEL...11.5" and Schwitzer Ski Area...13".

### **IDZ001>002-004**

#### **Northern Panhandle - Coeur D'Alene Area - Central Panhandle Mountains**

21	1200PST				0	0			<b>Heavy Snow</b>
23	0500PST								

With cold air trapped over much of north Idaho, a warm front lifted into the region and stalled. A warm southerly flow rode over the cold air at the surface and produced widespread heavy snow from the valleys to the mountains for over a day and a half. Some area snow totals included: Mosquito Creek SNOTEL...10", Athol...4", Sandpoint...7.7", Porthill...4.7", Bonners Ferry...5.2", Cataldo...5", Wallace...4", and Bovill...5".

### **Latah County**

#### **Troy**

31	1400PST				0	0	50K		<b>Heavy Rain</b>
	1500PST								

Up to 3 inches of heavy rain caused a cottonwood tree to fall and crush a Ford Pickup truck and cause a small fire. Power was also out for 4 hours for about 100 residents. The rain also caused minor flooding in the Community Park and the mobile park both in Troy and Bovill.

## IDAHO, Southeast

### **IDZ019**

#### **Upper Snake Highlands**

27	0500MST				0	0			<b>Heavy Snow</b>
28	0500MST								

9 inches of snow fell at the White Elephant SNOTEL site at elevation 7700 feet.

### **IDZ019**

#### **Upper Snake Highlands**

29	0800MST				0	0			<b>Heavy Snow</b>
30	0800MST								



# Storm Data and Unusual Weather Phenomena

January 2003

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

## ILLINOIS, South

**ILZ084**

**Jackson**

**01 1000CST**

**0 0**

**Flood**

**05 1200CST**

Minor flooding of the Big Muddy River occurred. The river crested at 16.9 feet, less than a foot above flood stage, on January 3. Some low-lying fields near the river were flooded.

**ILZ087**

**Gallatin**

**07 0300CST**

**0 0**

**Flood**

**09 1900CST**

The Ohio River exceeded the 33-foot flood stage at Shawneetown by just a few inches. Minor flooding of low-lying fields near the river occurred.

**ILZ088>090-092>094**

**Union - Johnson - Pope - Alexander - Pulaski - Massac**

**16 0500CST**

**0 0**

**Winter Storm**

**1600CST**

The storm hit during the morning commute time on a weekday, so it had a major impact on traffic. The snow fell at the rate of 1 to 2 inches per hour around the morning drive time. Many schools cancelled classes. By noon, most of the accumulating snow had ended, leaving a blanket of 3 to 4 inches in most places. Cold temperatures limited the effectiveness of salt used by road crews, and some minor blowing and drifting occurred. Temperatures were in the 20's during the snowstorm, and around 10 by the morning of the 17th. Refreezing of moisture occurred after dark, causing another round of accidents after the snow had ended. The snow was caused by a moderately strong upper level disturbance that moved east from the Plains, then across Tennessee. A weak low pressure system followed about the same path, passing just south of Missouri and Kentucky.

Some specific snowfall amounts included: 4 inches at Cairo and Mound City, and 3 inches at Anna (Union County) and Eddyville (Pope County). Only the southern tip of Illinois received these heavier snow totals. Carbondale and points north received 2 inches or less.

**ILZ075>078-080>094**

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

**22 1400CST**

**0 0**

**Winter Weather/Mix**

**2000CST**

One to three inches of snow fell across southern Illinois during the afternoon and early evening. Roads became very slick and hazardous.

**ILZ075>078-080>094**

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

**23 0400CST**

**0 0**

**Extreme Cold/Wind Chill**

**1200CST**

Wind chills fell to between minus 10 and minus 15 across southern Illinois during the morning. This cold snap was just one of many cases of harsh winter weather during January. At Paducah, KY, preliminary figures indicate January of 2003 was the eighth coldest January on record, and the coldest since 1985. After the relatively mild winters of the past several years, the bitter mid-winter cold came as a shock to many. Temperatures fell below zero at many locations for the first time in several years. At Carbondale, the low temperature on January 24 was minus 6. The prolonged cold weather resulted in numerous frozen pipes, as well as problems with heating systems. A number of house fires were blamed on overtaxed heating systems. At least one ice rescue was conducted when children fell through thin ice on a pond in Fort Massac State Park in Metropolis.

## ILLINOIS, Southwest

**ILZ064>065-095>097-**

**100**

**Bond - Fayette - Adams - Brown - Pike - Madison**

**01 2000CST**

**0 0**

**Winter Storm**

**02 1200CST**

A New Years Day winter storm made staying in and watching football the thing to do. Mainly snow fell across West Central Illinois with accumulations from 6 - 8 inches. A band of sleet fell initially across parts of Southwest Illinois, from the St. Louis area east to near Vandalia. Snow accumulations in this area totaled 4 - 6 inches.

**ILZ095>096**

**Adams - Brown**

**15 2000CST**

**0 0**

**Winter Storm**

**16 0400CST**

A narrow band of heavy snow fell across parts of West Central Illinois. Snow amounts ranged from 4 - 6 inches.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**INZ071**

**Jackson**

**01 0915EST**

**0 0**

**Flood**

**04 0600EST**

The East Fork White River crested at 15.29 feet on January 2, flooding lowland agricultural areas. The flood stage is 12.0 feet.

**Carroll - Warren - Tippecanoe - Clinton - Howard - Fountain - Montgomery - Parke**

**INZ021-028>031-035>036-044**

**02 1000EST**

**0 0**

**Winter Storm**

**03 0500EST**

An area of low pressure brought snow to parts of central Indiana. Snowfall amounts of 5 to 8 inches were common, with a few areas receiving 9 inches.

**INZ067**

**Knox**

**02 1900EST**

**0 0**

**Flood**

**09 0600EST**

Heavy rains caused flooding along the White River in Knox county. Mainly low agricultural land was flooded, and a few county roads were closed.

Site

Flood Stage

Crest/Date

Petersburg

16.0

17.15 / January 5

Hazleton

16.0

17.50 / January 6

**INZ070**

**Lawrence**

**04 2100EST**

**0 0**

**Flood**

**06 0800EST**

The East Fork White River crested at 20.75 feet, flooding agricultural lands and closing some roads in the flood plain. The flood stage is 20 feet.

## INDIANA, Northeast

**INZ003**

**La Porte**

**23 0700EST**

**0 0**

**Heavy Snow**

**24 1000EST**

Lake effect snow developed as a result of very cold air moving over the relatively warm waters of Lake Michigan. Away from the lake, amounts generally ranged from 2 to 5 inches. Rolling Prairie reported 8.8 inches total snow fall from lake effect.

**INZ004-014**

**St. Joseph - Marshall**

**26 1300EST**

**0 0**

**Heavy Snow**

**2300EST**

6.5 inches of lake effect snow fell in Simonton Lake.

## INDIANA, Northwest

**INZ019**

**Benton**

**02 0700CST**

**0 0**

**Winter Storm**

**1700CST**

A storm system moving across the Ohio Valley spread snow across northwest Indiana. Boswell in Benton County reported 7 inches of snowfall. Snowfall amounts rapidly decreased north of Benton County.

**INZ002-011**

**Porter - Jasper**

**17 0100CST**

**0 0**

**Heavy Snow**

**1400CST**

Very cold air moved south over Lake Michigan late on January 16th and during the morning hours of January 17th. Winds in the lower levels of the atmosphere were due north which allowed a narrow, persistent band of lake effect snow to form. This band of snow dumped over a foot of snow over much of central Porter County. Chesterton reported a storm total of 20 inches. The snow quickly tapered off to only a few inches east and west of Porter County. However, this band of lake effect snow made it into Jasper County where 7 inches of snowfall was reported in DeMotte. The snowfall caused several accidents on the Indiana Toll Road, which had to be closed between mile markers 35 and 39.

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

**Lake - Porter - Newton - Jasper - Benton**

**23 0100CST**

**0 0**

**Extreme Cold/Wind Chill**

**0900CST**

Strong high pressure moved across the northern plains on January 22 and 23rd. Low temperatures on the morning of January 23rd ranged from zero to five below across most of northwest Indiana. These cold temperatures along with northwest winds of 10 to 20 mph produced wind chills between 20 and 25 degrees below zero.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**INZ079**

**Jefferson**

**01 1300EST  
1600EST**

**0 0**

**Flood**

The Muscatatuck River at Deputy crested at 20.14 feet at 215 PM EST on January 1, 2003. Flood stage at Deputy is 20 feet. At this level, minor flooding occurs. County roads are under water in northeastern Jefferson County.

## INDIANA, Southeast

**INZ066**

**Franklin**

**16 1730EST  
2300EST**

**0 0**

**Winter Storm**

Low pressure tracking across the upper Tennessee valley produced snow across southeast Indiana. Up to four inches of snow fell through early evening.

**INZ075**

**Ohio**

**26 1600EST  
2000EST**

**0 0**

**Winter Storm**

An arctic cold front moved south across eastern Indiana during the morning hours. Brief periods of heavy snow occurred along the front, producing up to four inches.

## INDIANA, Southwest

**INZ081>082**

**Gibson - Pike**

**02 1900CST  
09 1000CST**

**0 0**

**Flood**

Minor flooding of the White River occurred. At Hazelton, where flood stage is 16 feet, the river crested at 17.5 feet. At Petersburg, where flood stage is also 16 feet, the crest was at 17.2 feet. Some low-lying fields near the river were flooded.

**INZ081>082-085>088**

**Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

**16 0500CST  
1800CST**

**0 0**

**Winter Weather/Mix**

Although the heaviest snow fell across western Kentucky, there was an inch or two of snow along and south of Interstate 64 in southwest Indiana. A series of accidents closed a portion of the Lloyd Expressway in Evansville during the evening commute.

**INZ081>082-085>088**

**Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

**18 1100CST  
1600CST**

**0 0**

**Winter Weather/Mix**

Around one inch of snow fell across southwest Indiana. The Indiana State Police investigated 18 vehicle accidents or slide-offs. Most of the wrecks occurred on Interstate 64 in Warrick County, between Lynnville and Dale. An accident with injuries occurred on the Ohio River bridge between Evansville, IN and Henderson, KY.

**INZ081>082-085>088**

**Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

**22 1400CST  
2000CST**

**0 0**

**Winter Weather/Mix**

Up to two inches of snow fell across southwest Indiana. Amounts ranged from one half inch along the White River to as much as two inches near the Ohio River. Roads became slick and very hazardous.

**INZ081>082-085>088**

**Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

**23 0400CST  
1200CST**

**0 0**

**Extreme Cold/Wind Chill**

Wind chills fell to 12 below zero across southwest Indiana during the morning hours. The extremely cold weather was a factor in the closing of schools in the Evansville area, and homeless shelters were filled beyond capacity. A southwest Indiana power company set a record for winter peak electric demand. This cold snap was just one of many cases of harsh winter weather during January. After the relatively mild winters of the past several years, the bitter mid-winter cold came as a shock to many. Temperatures fell below zero at some locations for the first time in several years. The low temperature at Evansville was zero, but some outlying areas were colder.

## IOWA, Central

**IAZ092**

**Taylor**

**15 1815CST  
16 0500CST**

**0 0**

**Heavy Snow**

The seasons first significant snowfall occurred as low pressure tracked southeast out of the northern Rockies. The track of the low was well to the southwest of Iowa, however the overrunning precipitation band was well to the northeast of the track. Snow fell over most of Iowa, however amounts were generally in the 1 to 4 inch range. Southwest Iowa received the most snow with heavy snowfall occurring over the far southwest part of the Des Moines CWA. The heaviest snow was in Taylor County, with a report of 6.4 inches. Little in the way of travel problems were reported with the storm as the snow was of the light and fluffy variety. There

# Storm Data and Unusual Weather Phenomena

January 2003

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

great deal of wind with the storm, so blowing snow as not much of a problem either.

**IAZ004>007-015>017-023>028-033>039-044>050-057>062-070>075-081>086**  
**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**

28	0500CST								
	1730CST				0	0			Freezing Rain

A cold front sank southeast across the state during the day on the 28th. Initially, surface temperatures were well below freezing while the 850 mb temperatures were between 5 and 10 degrees C. Precipitation began falling during the predawn hours over northern Iowa and spread south and east during the day. Initially, the precipitation fell as freezing rain. As evaporational cooling took hold, the freezing rain began to change to sleet and light snow. Parts of northeast Iowa received 1 to 3 inches of snow after the initial shot of freezing rain. Central and southwest Iowa received mostly freezing rain. Amounts were not all that heavy with most areas receiving one tenth inch or less of freezing rain. The icing did cause some travel problems as the highways became slick. Some events were postponed or canceled, however the icing was not a major problem.

## IOWA, East Central and Southeast

**IAZ098>099**  
**Van Buren - Lee**

15	2300CST								
	0900CST				0	0			Winter Storm

A vigorous winter storm developed over the plains during the evening and moved across northern Missouri and central Illinois on the 16th. A large area of snow developed to the north of this system and moved across portions of southeast Iowa, extreme northeast Missouri and west central Illinois depositing anywhere from 3 to 6 inches of snow. Classes were delayed 2 hours in the Fort Madison school district.

**IAZ040>042-051>054-063>066**  
**Buchanan - Delaware - Dubuque - Benton - Linn - Jones - Jackson - Iowa - Johnson - Cedar - Clinton**

28	1000CST								
	1700CST				0	0			Winter Storm

A strong winter storm tracked across the Mid Mississippi Valley. Following close on it's heels was an arctic cold front. The precipitation began around mid morning on the 28th. A layer of warm air aloft resulted in sleet and freezing rain at the onset. However, the cold front moved through during the afternoon eroding the warm layer, thus switching the freezing rain and sleet over to snow. Roads became slick and hazardous. Numerous accidents were reported with just a few minor injuries. Snow accumulations ranged from 2 to 5 inches with light ice accumulations of up to 1/8 inch. Schools in Iowa City, Cedar Rapids and West Branch closed early.

## IOWA, Northeast

NONE REPORTED.

## IOWA, Northwest

NONE REPORTED.

## IOWA, Southwest

**IAZ055-069-079>080-090>091**  
**Harrison - Pottawattamie - Mills - Montgomery - Fremont - Page**

15	1600CST								
	0430CST				0	0			Winter Storm

Light snow developed across northeast Nebraska Wednesday morning, 1/15/03, and slowly spread southeast reaching the Omaha and Lincoln areas by early Wednesday evening and then southwest Iowa shortly thereafter. The snow became moderate to heavy by early afternoon across northeast Nebraska with the intensity increasing farther southeast, including Omaha and Lincoln, by late evening. The snow continued into Thursday morning, but was mostly over by 500 am. North winds of 10 to 20 mph with gusts to 25 mph created drifting snow and some blowing in open areas. The snow closed or delayed many schools, especially around the Omaha area.

Heavier snow amounts included, 8 inches in Madison and Osmond, Nebraska and Randolph, Iowa, 7 inches in Lincoln, Prague, David City, Gretna, Howells, Seward, and Friend, Nebraska and Little Sioux, Iowa. Most other locations from northeast Nebraska around Neligh and Bloomfield, southeast through Omaha and into southwest Iowa had around 6 inches.

# Storm Data and Unusual Weather Phenomena

January 2003

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, Southwest**

**IAZ043-055>056-069-079>080-090>091 Monona - Harrison - Shelby - Pottawattamie - Mills - Montgomery - Fremont - Page**

22	1800CST				0	0			Extreme Windchill
23	1100CST								

Bitter cold wind chills spread over eastern Nebraska and southwest Iowa during late Wednesday afternoon 1/22/03 continuing into late Thursday morning the 23rd. Temperatures fell into the single digits below zero by Wednesday evening as north winds of 10 to 20 mph prevailed over the area. This combination resulted in wind chill values of 20 below to 30 below zero over all of eastern Nebraska and southwest Iowa. Actual temperatures finally bottomed out around 8 below to 15 below Thursday morning. Although winds also subsided as readings fell overnight...wind chill values continued around 20 below or a little colder until late Thursday morning.

A homeless man in the Omaha, Nebraska area suffered severe frostbite because of the extreme cold, eventually dying 3 days later in an Omaha hospital.

**KANSAS, East**

**KSZ008-010>012-023>024-026-037>040-054>056-058 Republic - Marshall - Nemaha - Brown - Pottawatomie - Jackson - Jefferson - Morris - Wabaunsee - Shawnee - Douglas - Lyon - Osage - Franklin - Coffey**

10	0800CST				0	0			Dense Fog
	1000CST								

Dense fog reduced visibilities to a quarter mile or less for a time during the morning hours.

**KSZ008>012-020>024-026-034>036-038>040-055>056 Republic - Washington - Marshall - Nemaha - Brown - Cloud - Clay - Riley - Pottawatomie - Jackson - Jefferson - Ottawa - Dickinson - Geary - Wabaunsee - Shawnee - Douglas - Osage - Franklin**

15	1400CST				0	0	23K		Winter Storm
16	0900CST								

A winter storm spread west to east over north central and northeast Kansas beginning the afternoon of the 15th before ending the morning of the 16th. Over north central Kansas snow was preceded by freezing rain which caused icy roads. The icy conditions caused a number of vehicle accidents resulting in a few injuries and fatalities (discussed separately). Snow accumulations varied from 3 to 8 inches in most areas. The greatest amount reported was 11 inches at Centralia in Nemaha county. In areas north of Interstate 70 many schools were closed for a time. Total damage to vehicles from collisions and slide offs was estimated at 22,500 dollars with another 500 dollars estimated damage in Manhattan when a vehicle collided with a power pole damaging the pole and vehicle.

**KSZ056**

**Franklin**

16	0405CST				0	1			Heavy Snow
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Snow caused slippery road conditions and led to a 56 year old male driver of a tractor-trailer to lose control on Interstate 35 1 mile northwest of Homewood. The male driver was injured when the tractor-trailer overturned.

**KSZ034**

**Ottawa**

16	1625CST				1	2			Ice Storm
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Icy roads resulted in slick conditions and caused the driver of a van to lose control. The van slid into a ditch 2 miles northeast of Minneapolis and rolled over killing the female driver and injuring 2 female passengers.

F42VE

**KSZ034**

**Ottawa**

16	1640CST				1	0			Ice Storm
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Icy roads caused the driver of a vehicle to lose control 1 mile east of Minneapolis. The vehicle rolled down the embankment and killed the female driver.

F47VE

**KSZ020**

**Cloud**

16	1645CST				0	2			Ice Storm
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Icy roads caused the driver of a vehicle to lose control 18 miles south of Concordia resulting in injuries to the female driver and a male passenger.

**KSZ034**

**Ottawa**

16	1725CST				0	1			Ice Storm
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Icy road conditions caused the driver of a vehicle to lose control 1 mile east of Minneapolis and collide with a tractor-trailer. The 32 year old female driver of the vehicle was injured.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>KSZ010&gt;012-024-026</b>	<b>Marshall - Nemaha - Brown - Jackson - Jefferson</b>								
		22	0900CST		0	0			Winter Storm
			1600CST						

A winter storm spread snow across far northeast Kansas during the daytime of the 22nd. The heaviest snowfall occurred in Marshall county where between 2 and 3 inches was reported.

## KANSAS, Extreme Southeast

<b>KSZ073-097</b>	<b>Bourbon - Crawford</b>								
		02	0000CST		0	0			Winter Storm

The third significant winter storm to affect extreme southeast Kansas during the 2002-2003 cool season, brought six to seven inches of snow over portions of Crawford and Bourbon counties. The heaviest accumulations fell over northern Bourbon County, where seven inch amounts were common. Accumulations quickly tapered down to less than one inch over extreme southern Cherokee county. Three inches fell over the Pittsburg area.

## KANSAS, North Central

NONE REPORTED.

## KANSAS, Northeast

<b>KSZ060</b>	<b>Linn</b>								
		02	0020CST		0	0			Winter Storm
			2000CST						

A storm system on January 2nd produced 6 to 9 inches of snow in Mound City.

<b>KSZ025-103&gt;105</b>	<b>Atchison - Leavenworth - Wyandotte - Johnson</b>								
		15	2220CST		0	0			Winter Storm
		16	1600CST						

A winter storm producing 3 to 8 inches of snow, moved across east central Kansas late on January 15th and ended on January 16th. Snowfall totals of 7 inches were reported in Effingham and Leavenworth, with 6 inches on the ground in Overland Park.

## KANSAS, Northwest

<b>KSZ001-013</b>	<b>Cheyenne - Sherman</b>								
		01	0600MST		0	0			Heavy Snow
			1400MST						

Moderate to heavy snow fell across portions of extreme eastern Colorado, northwest Kansas and Southwest Nebraska on New Year's Day. Total snow accumulations of 4 to 8 inches were common across Sherman and Cheyenne counties in Kansas. The combination of snow and wind reduced visibilities to one-half mile at times during the morning and early afternoon hours.

<b>KSZ001&gt;002-013&gt;014-027&gt;028-041&gt;042</b>	<b>Cheyenne - Rawlins - Sherman - Thomas - Wallace - Logan - Greeley - Wichita</b>								
		21	0300MST		0	0			Winter Weather/Mix
		22	1200MST						

Light freezing drizzle and freezing fog resulted in hazardous travel due to a light accumulation of ice and poor visibility. Conditions persisted over 24 hours as a shallow Arctic airmass pushed slowly into the region.

## KANSAS, Southeast

<b>KSZ071&gt;072-093&gt;096</b>	<b>Woodson - Allen - Cowley - Elk - Wilson - Neosho</b>								
		01	2300CST		0	0			Heavy Snow
		02	0300CST						

A strong winter storm crossing Oklahoma and Southern Kansas spread convective snows across a small part of southeast Kansas New Year's night. A 30-40 mile wide swath of 5-7 inch accumulations stretched from southeast Cowley County east-northeast to Allen and Neosho Counties. The snow was preceded by a brief period of sleet, with both contributing greatly to hazardous travel across these areas. Although the majority of reports came from law enforcement officials, cooperative observers also provided valuable information regarding accumulations as well as road and highway reports.

## KANSAS, Southwest

<b>KSZ064-078</b>	<b>Hodgeman - Ford</b>								
		31	0040CST		0	0			High Wind (G54)
			0121CST						

Measured by a weather lab instrument.

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## KENTUCKY, Central

NONE REPORTED.

## KENTUCKY, Eastern

**KYZ058-068>069-079>080-083>088-107>120**    **Estill - Rockcastle - Jackson - Pulaski - Laurel - Wayne - Mccreary - Whitley - Knox - Bell - Harlan - Johnson - Wolfe - Magoffin - Floyd - Lee - Breathitt - Knott - Owsley - Perry - Clay - Leslie - Letcher - Martin - Pike**

16	1545EST	0	0	0	0	Heavy Snow
17	0000EST					

A maximum of 4 inches of snow were reported.

A winter storm slammed into eastern Kentucky during the afternoon of Thursday, January 17, 2003 and dumped heavy amounts of snow over the region. The culprit for the snow was a low pressure system which blazed a trail across the Tennessee Valley and moved to the Mid-Atlantic Coast by midnight.

The hardest hit areas were the south central and southeastern parts of Kentucky. Generally speaking, 4 to 8 inches were received south of a line from Somerset to Jackson to Pikeville, with 1 to 4 inches received north of this line. Snowfall rates of about 1 inch per hour were reported in many areas of southeastern Kentucky.

**KYZ084-087>088-109-115-120**    **Mccreary - Bell - Harlan - Magoffin - Perry - Pike**

23	0120EST	0	0	0	0	Heavy Snow
	0200EST					

A maximum of 4 inches of snow were received from a cooperative observer in Stearns.

Heavy snow fell over portions of southeastern Kentucky due to an upper level disturbance. Much of this heavy snow occurred in higher elevations.

## KENTUCKY, Northeast

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

14	0700EST	0	0	Prolong Cold
28	1300EST			

Temperatures were well below normal levels for a 2 week period. Daily high temperatures were mostly in the 20s and lower 30s, with low readings in the single digits and teens. The coldest readings were just after dawn on Monday the 27th. Some preliminary temperatures included 7 below zero from Warnock of Greenup County and minus 4 from Grayson of Carter County. Single digit readings were more common along the rivers. Outdoor work and construction were slowed.

## KENTUCKY, Northern

**KYZ100**

**Lewis**

26	1700EST	0	0	Winter Storm
	2100EST			

An arctic cold front dropped south across northern Kentucky during the early afternoon. Brief periods of heavy snow occurred along the front, producing up to four inches of snow.

## KENTUCKY, Southwest

**KYZ021**

**Muhlenberg**

01	1600CST	0	0	Flood
04	2000CST			

Minor flooding of the Green River occurred. At Paradise, where flood stage is 380 feet, the river crested at 381.7 feet on the 3rd. Some low-lying fields near the river were flooded.

**KYZ001>013-016>017-021>022**    **Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell - Hopkins - Christian - Muhlenberg - Todd**

16	0400CST	0	0	Winter Storm
	1800CST			

The storm hit during the morning commute time on a weekday, so it had a major impact on traffic. The snow fell at the rate of 1 to 2 inches per hour around the morning drive time. Many schools cancelled classes. By noon, most of the accumulating snow had ended, leaving a blanket of 3 to 4 inches in most places. Cold temperatures limited the effectiveness of salt used by road crews, and some minor blowing and drifting occurred. Temperatures were in the 20's during the snowstorm, and around 10 by the morning of the 17th. Refreezing of moisture occurred after dark, causing another round of accidents after the snow had ended. The snow was caused by a moderately strong upper level disturbance that moved east from the Plains, then across Tennessee. A weak low pressure system followed about the same path, passing just south of Missouri and Kentucky.

Some specific snowfall amounts included: 4 inches at Mayfield and Murray, 3.5 inches at Paducah, 3 inches at Princeton, and 2.5 inches at Hopkinsville and Benton. The Henderson and Owensboro areas, which were north of the main snow area, received just an inch or two.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>KYZ001&gt;022</b>	<b>Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson - Daviess - Mclean - Muhlenberg - Todd</b>								
	22	1400CST 2000CST			0	0			<b>Winter Weather/Mix</b>

One to two inches of snow fell across western Kentucky during the afternoon and evening. Roads became very slick and hazardous. Many schools were closed or dismissed early. Near Hopkinsville, a couple of persons were injured in vehicle accidents, including one whose car plunged into the Little River.

## **KYZ001>022**

<b>KYZ001&gt;022</b>	<b>Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson - Daviess - Mclean - Muhlenberg - Todd</b>								
	23	0400CST 1200CST			0	1			<b>Extreme Cold/Wind Chill</b>

Wind chills fell to 10 below zero across western Kentucky during the morning hours. The extremely cold weather was a factor in the closing of some schools. Homeless shelters were filled well beyond capacity in Owensboro and Paducah. This cold snap was just one of many cases of harsh winter weather during January. The prolonged cold weather resulted in numerous frozen pipes, as well as problems with heating systems. A number of house fires were blamed on overtaxed heating systems. An elderly woman in the Hopkinsville area was hospitalized with hypothermia after she fell in her home and was unable to summon help. At Paducah, January of 2003 was the eighth coldest January on record, and the coldest since 1985. At Evansville, where records date back into the late 1800's, January did not fall into the ten coldest winters. After the relatively mild winters of the past several years, the bitter mid-winter cold came as a shock to many. Temperatures fell below zero at many locations for the first time in several years. For example, at Paducah, the low of minus 3 on January 24 was the coldest temperature since the winter of 1996-97.

## LOUISIANA, Northeast

NONE REPORTED.

## LOUISIANA, Northwest

NONE REPORTED.

## LOUISIANA, Southeast

NONE REPORTED.

## LOUISIANA, Southwest

NONE REPORTED.

## MAINE, North

### **MEZ029>030**

**Coastal Hancock - Coastal Washington**

	04	1000EST			0	0			<b>Blizzard</b>
	05	0300EST							

Rapidly intensifying low pressure tracking along the New England coast...through the Gulf of Maine to the maritimes...brought snow and blizzard conditions to the Downeast coast. Total snow accumulations ranged from 10 to 18 inches. Sustained winds of 25 to 35 mph...with gusts to around 45 mph...were common with peak gusts to around 60 mph.

### **MEZ004-011-015>017-031>032**

**Northern Piscataquis - Central Penobscot - Southern Penobscot - Interior Hancock - Central Washington - Southern Piscataquis - Northern Washington**

	04	1200EST			0	0			<b>Winter Storm</b>
	05	0300EST							

Rapidly intensifying low pressure tracking along the New England coast...through the Gulf of Maine to the maritimes...brought general snow accumulations of 8 to 14 inches. However...localized accumulations to around 18 inches were also reported. Sustained winds of 20 to 30 mph produced considerable blowing and drifting snow...along with significantly reduced visibilities.

### **MEZ005>006-010**

**Northern Penobscot - Southeast Aroostook - Central Piscataquis**

	04	1800EST			0	0			<b>Heavy Snow</b>
	05	0300EST							

Rapidly intensifying low pressure tracking along the New England Coast...through the Gulf of Maine to the maritimes...brought



# Storm Data and Unusual Weather Phenomena

January 2003

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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**MAINE, South**

**MEZ007>009-  
012>014-018>028**

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

27	2100EST		0	0		<b>Cold Wind Chill Temperatures</b>
28	0300EST					

Low pressure intensifying late on the 27th over the Canadian Maritimes brought a continuation of cold temperatures along with northwest winds to the area, and caused a brief period of cold wind chill temperatures overnight before the winds diminished. Generally, wind chill temperatures were between 10 and 25 degrees below zero.

**MARYLAND, Central**

**MDZ002>004-009**

**Allegheny - Washington - Frederick - Montgomery**

01	1520EST		0	0		<b>Flood</b>
	2200EST					

Heavy rainfall during the afternoon and evening of the 1st caused flooding across Western and North Central Maryland. In Allegheny County, high water caused basement flooding and a handful of mud slides and rock slides. In Cumberland, a total of 1.30 inches of rain was recorded. In Washington County, State Route 63 and Highway 40 were flooded near Hagerstown. Rainfall totals included 1.80 inches of rain in Smithsburg, 1.54 inches in Sharpsburg, and 1.48 inches in Williamsport. In Frederick County, 2 to 3.5 inches of rain fell. A total of 3.4 inches was recorded at the Frederick Municipal Airport. Flooding occurred on Interstate 70 one mile east of the Monocacy River. Other flooded roads included Opossumtown Pike at Bloomsfield Road, Willowbrook Road, Ball Road at Reels Mill Road, Hollow Road at Alt. Route 40, and Blacks Mill Road at Hessong Bridge Road. The storm also downed a tree onto a power line in Thurmont along Route 15. In Montgomery County, about 2.5 inches of rain fell in the Poolesville area. Route 28 was closed by high water near town. An observer in Damascus reported a total of 1.71 inches.

**MDZ003>004-004-009**

**Washington - Frederick - Montgomery**

01	1845EST		0	0		<b>Flood</b>
03	0600EST					

Heavy rainfall on the 1st caused minor flooding on rivers and creeks in Central and Western Maryland. In Montgomery County, Seneca Creek near Dawsonville reached 8.55 feet. Flood stage is 7.5 feet. Low lying areas right along the river were covered by water. In Frederick County, the Potomac River at Point of Rocks rose to 16.22 feet. Flood stage is 16 feet. A low water road in Point of Rocks was flooded. Several boat ramps in the Chesapeake and Ohio Canal National Historical Park were inundated by water. In addition, the Monocacy River in Frederick reached a stage of 15.17 feet. Flood stage is 15 feet. A fish hatchery and sewage treatment plant near the river gauge experienced minor flooding. A portion of Gashouse Pike was covered by water. In Buckeystown, Michaels Mill Road was closed by Monocacy River overflow. South of Thurmont, the Monocacy River flooded Creagerstown Park off Route 550. Back water flooding was also reported along Carroll Creek near Frederick and Little Hunting Creek near Thurmont. In Washington County, Conococheague Creek reached a stage of 10.3 feet. Flood stage is 8 feet. Wishard, Independence, and Crees Pond roads were flooded by the creek. In Hagerstown, West Memorial Boulevard was temporarily flooded.

**MDZ002**

**Allegheny**

03	0200EST		0	0		<b>Winter Weather/Mix</b>
	2200EST					

An upper level disturbance dropped light snow across Allegheny County between 2 AM and 10 PM on the 3rd. Snowfall totals included 5.1 inches in Frostburg and 5.5 inches in Eckert Mines. Two inches or less were reported from Cumberland eastward.

**MDZ003-005>007-  
010>011-013>014**

**Washington - Carroll - Northern Baltimore - Harford - Howard - Southern Baltimore - Prince Georges - Anne Arundel**

05	0600EST		0	0		<b>Winter Weather/Mix</b>
	1900EST					

**MDZ004-009**

**Frederick - Montgomery**

05	0600EST		0	0		<b>Winter Storm</b>
	1900EST					

A weak area of low pressure moved through the region on the 5th. It dropped 2 to 5 inches of snow across Central and Western Maryland between 6 AM and 7 PM. The snow caused roads to become very slippery and hundreds of traffic accidents were reported. In Montgomery County, two people were killed in a car crash near Olney. In Washington County, a 19 year old woman was killed when her car crashed into a tree. In Baltimore County, a 19 car pileup and a 35 car pileup were reported on Interstate 695. In Frederick County, a man was seriously injured when he was struck by a fire truck that slid down a steep hill in Braddock Heights.

**MDZ002**

**Allegheny**

08	2200EST		0	0	5K	<b>High Wind (G50)</b>
09	0800EST					

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					Killed	Injured	Property	Crops	

## MARYLAND, Central

**MDZ003>004-009**

**Washington - Frederick - Montgomery**

<b>08</b>	2200EST				<b>0</b>	<b>0</b>	<b>1.5K</b>		<b>Strong Wind</b>
<b>09</b>	0800EST								

A rare downslope wind event similar to "Chinook Winds" experienced east of the Rockies occurred just east of the Appalachian Mountain ridges early on the 9th. Winds between 40 and 60 MPH blew down the east side of the mountains and numerous trees and power lines were downed. In Allegany County, a wind gust of 58 MPH was recorded in Cumberland. A billboard in town was toppled. Several trees and power lines were downed countywide. In few rural areas, trees blocked roads. In Washington County, measured wind gusts included 51 MPH in Hagerstown and 49 MPH at Williamsport. Scattered tree limbs were downed. In Frederick County, a wind gust of 43 MPH was recorded in Frederick. Tree limbs were downed near Brunswick. Wires were downed in Walkersville and Mt. Pleasant. In Montgomery County, measured wind gusts included 45 MPH in Clarksburg and 41 MPH in Gaithersburg.

**MDZ002**

**Allegany**

<b>10</b>	0000EST				<b>0</b>	<b>0</b>			<b>Winter Weather/Mix</b>
<b>11</b>	0200EST								

An upper level disturbance dropped 4 inches of snow west of Cumberland between midnight on the 10th and 2 AM on the 11th. In Frostburg, 3.7 inches was recorded. An observer in Eckert Mines recorded 4.0 inches. Less than an inch of snow fell in Cumberland.

**MDZ017**

**St. Mary'S**

<b>16</b>	1400EST				<b>0</b>	<b>0</b>			<b>Winter Storm</b>
<b>17</b>	0200EST								

Low pressure moving just south of the region brought light snow to Southern Maryland between the afternoon of the 16th and the early morning hours of the 17th. In St. Mary's County, snowfall totals ranged from 2 inches in the northern part of the county to just over 5 inches at the southern tip. Snowfall totals included 5.2 inches at Ridge, 3 inches in Hollywood, and 2 inches in Leonardtown. Two inches or less fell across the rest of Southern Maryland. In Prince George's County, someone shoveling snow in Fort Washington died of a heart attack.

**MDZ002**

**Allegany**

<b>20</b>	0000EST				<b>0</b>	<b>0</b>			<b>Winter Weather/Mix</b>
	1500EST								

An upper level disturbance dropped 2-5 inches of snow west of Cumberland between midnight and 3 PM on the 20th. Snowfall reports included 5 inches at Eckert Mines, 4.3 inches in Frostburg, and 4 inches in Westernport. Less than an inch of snow fell in Cumberland.

## MARYLAND, Northeast

**MDZ008-012**

**Cecil - Kent**

<b>05</b>	1000EST				<b>0</b>	<b>0</b>	<b>0</b>		<b>Heavy Snow</b>
	2000EST								

**MDZ015**

**Queen Annes**

<b>05</b>	1000EST				<b>0</b>	<b>0</b>	<b>0</b>		<b>Winter Weather/Mix</b>
	2000EST								

A potent Alberta Clipper produced heavy snow across extreme northeastern Maryland and measurable snow across central sections of the Eastern Shore. Snow fell at a lesser intensity and temperatures were warmer farther south across the Eastern Shore with little or no accumulation. Snow began falling during the morning and was the heaviest during the afternoon. It ended during the early evening. Numerous accidents were reported in Cecil County and the frequency increased as the day wore on. Most were only fender benders. Accumulations included 4.5 inches in Betterton and Galena (Kent County), 3.5 inches in Elkton (Cecil County) and 2.4 inches in Stevensville (Queen Anne's County).

The low pressure system formed in Saskatchewan Province on the third, moved southeast to Minnesota on the morning of the 4th, southern Indiana on the morning of the 5th and was well east of the Delmarva Peninsula during the morning of the 6th. Historically, Alberta type low pressure systems usually do not produce heavy snow. But the air at mid levels of the atmosphere was quite cold and this enhanced the instability with this low pressure system. While no thunderstorms occurred, the instability did produce heavier precipitation.

**MDZ012**

**Kent**

<b>10</b>	2300EST				<b>0</b>	<b>0</b>	<b>0.10K</b>	<b>0</b>	<b>Strong Wind</b>
<b>11</b>	0100EST								

Gusty northwest winds accompanied a band of snow showers and snow flurries as they moved through New Jersey. Peak wind gusts were mainly between 30 and 45 mph. The highest reported wind gusts were 46 mph at Tolchester Beach (Kent County) and the Baltimore-Washington International Airport.

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## MARYLAND, Northeast

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

	14	0500EST			0	0			<b>Extreme Cold/Wind Chill</b>
	28	0900EST							

A cold frontal passage on the 13th initiated about a two week run of unseasonably cold weather, even by January standards across the Delmarva Peninsula. The coldest morning was the morning of the 18th as low temperatures dipped into the single numbers. For many places, this was the coldest day in three years. Minimum temperatures for most days were in the teens. The extreme cold filled homeless shelters to capacity. In addition the number of vehicle batteries dying and parking brakes freezing increased. Calls to heating oil firms and utilities rose dramatically. Several water mains broke because of the extreme cold. Lowest temperatures included 5 degrees at the Baltimore-Washington International Airport and 13 degrees in Stevensville (Queen Anne's County). This cold snap was a major contributor to the monthly mean temperature at Baltimore-Washington International Airport averaging 4.0 degrees below normal. The monthly mean temperature of 28.3 degrees was the coldest January and the coldest winter month since 1994 (27. 1 degrees).

**MDZ012-015-019>020 Kent - Queen Annes - Talbot - Caroline**

	16	2000EST			0	0	0		<b>Winter Weather/Mix</b>
	17	0300EST							

A low pressure system that formed over the central Rockies on Wednesday the 15th rapidly moved east and spread snow across the Maryland Eastern Shore during the night of the 16th. The heaviest snow fell toward Dorchester County with the lightest accumulations (less than 2 inches) in Cecil County. The snow began during the evening of the 16th and was over by daybreak on the 17th. The timing of this event (overnight) helped minimize the number of traffic accidents. Schools were closed on the 17th in Caroline County. Specific accumulations included 3 inches in Federalsburg (Caroline County), 2.5 inches in Stevensville (Queen Anne's County), 2.0 inches in Easton (Talbot County), 1.4 inches at the Conowingo Dam in Cecil County and 1.0 inch in Denton (Caroline County). The low pressure system went from the central Rockies the morning of the 15th, to the Ozark Mountains the morning of the 16th to about 250 miles east of the Delmarva Peninsula at sunrise on the 17th.

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

	29	0300EST 1800EST			0	0	0		<b>Winter Weather/Mix</b>
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A mixed bag of wintry precipitation fell across the Eastern Shore from the pre dawn through the day on the 29th. Precipitation began as light snow and then mixed with and changed to sleet and light freezing rain around sunrise. A mixture of light rain and sleet with pockets of freezing rain across northern parts of the Eastern Shore continued into the middle of the afternoon. Precipitation then changed back to light snow. Accumulations were less than one inch, but a few hundredths of an inch of ice accrued to exposed surfaces. This caused untreated roads to become hazardous. Precipitation moved into the region ahead of a low pressure system's warm front. The low itself went northeast from the Ohio Valley into the Saint Lawrence Valley. Its cold front moved through the region during the early evening and ended the precipitation.

## MARYLAND, South

**MDZ022>025 Wicomico - Somerset - Inland Worcester - Maryland Beaches**

	15	0000EST 0500EST			0	0			<b>Winter Weather/Mix</b>
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A weak winter storm produced around one half (0.5) inch of snow across portions of the Lower Maryland Eastern Shore. A specific snow total in Princess Anne in Somerset county was 0.5".

**MDZ021>025 Dorchester - Wicomico - Somerset - Inland Worcester - Maryland Beaches**

	16	2100EST			0	0			<b>Winter Storm</b>
	17	0300EST							

A winter storm produced 3 to 5 inches of snow across the Lower Maryland Eastern Shore. Some specific higher snow totals included: Princess Anne in Somerset county 5", Pocomoke in Worcester county 5", Countywide in Dorchester county 4", and Countywide in Wicomico county 4". Local law enforcement agencies reported numerous accidents. Most, if not all schools in the area, were closed Friday, January 17th due to very slippery road conditions.

**MDZ021 Dorchester**

	30	1200EST 2100EST			0	0			<b>Winter Weather/Mix</b>
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A winter storm produced around one inch of snow across portions of Dorchester county. Local law enforcement agencies reported several accidents.

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## MARYLAND, West

**MDZ001**

**Garrett**

**06 1800EST**

**0 0**

**Heavy Snow**

**07 0700EST**

Six inches of snow accumulated by 6 PM on the 6th, with a total of 10 inches by 7 AM on the 7th.

**MDZ001**

**Garrett**

**11 0700EST**

**0 0**

**Heavy Snow**

Eleven inches of snow fell upon the highest elevations.

## MASSACHUSETTS, Central and East

**MAZ002>012-014**

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

**03 1400EST**

**0 0**

**50K**

**Winter Storm**

**04 1100EST**

**MAZ007-015>016-019-022**

**Eastern Essex - Suffolk - Eastern Norfolk - Eastern Plymouth - Barnstable**

**04 1100EST**

**0 0**

**550K**

**Storm Surge**

**1400EST**

A powerful winter storm which tracked south of New England dumped heavy snow on western, central, and northeast Massachusetts and produced significant coastal flooding along the eastern Massachusetts coastline.

As much as 1 to 2 feet of snow fell over a large area, from the east slopes of the Berkshires across Worcester County and into the Merrimack Valley and North Shore communities. Amounts tapered off dramatically from Boston to the South Shore, where only an inch or two of accumulation was reported before the snow changed to rain. Aside from scattered power outages and dozens of minor accidents, the heavy snow had little significant impact on the state, as most residents chose not to travel.

Official storm totals include 14.0 inches at Worcester Airport, 5.0 inches at Blue Hill Observatory in Milton, 0.4 inch at Logan International Airport in Boston, and 0.2 inch at the National Weather Service office in Taunton. Other snowfall totals as reported by trained spotters include 24 inches in Chesterfield and Worthington; 21 inches in Ashfield; 17 inches in Goshen and Greenfield; 16 inches in Tolland, Townsend, and Haverhill; 12 inches in Westfield, North Amherst, Sterling, Shrewsbury, Hopkinton, Billerica, and Bradford; 10 inches in Whately, Wilbraham, Hopedale, Framingham, and Andover; and 8 inches in Douglas and Reading.

The more significant impact of this storm was widespread coastal flooding. A high astronomical tide combined with 15-foot seas to cause flooding along most of the eastern Massachusetts coastline. In Marblehead, the downtown area was closed off after being flooded, and waves swept over the road to Marblehead Neck, shutting it down. The storm surge also shut down sections of Route 129, throwing mud, rock, and a section of boardwalk across the road. In Swampscott, a 60-foot section of sea wall along Blodgett Avenue collapsed, forcing the evacuation of several homes. The Nahant Causeway was closed for almost four hours due to flooding, cutting off access to the peninsula. Damage was most severe in Winthrop. Waves crashed over the sea wall protecting Point Shirley during the midday high tide, inundating streets with up to 5 feet of water and flooding scores of cars and basements. In all, about 50 homes were flooded. In Scituate, another hard hit area, about 40 houses along Turner Road were left without power. Residents estimated that 8 to 10 feet of water flooded Seventh Avenue, requiring evacuation. In Humarock, a narrow strip of land in Scituate that often gets the worst of coastal storms, residents used front-end loaders and backhoes to clear mud and rocks from Central Avenue. The road was closed with some sections flooded with several feet of water. Mounds of rocks, brought in by the tide, were piled as high as 10 feet along the side of the road. In all, as many as 10 roads in Scituate were fully or partly closed during high tide. In Marshfield, several feet of water flooded roads in Brant Rock and police blocked off Hewitt's Point and the esplanade for several hours. Waves crested over sea walls in Plymouth and left several areas submerged in 2 to 3 feet of water. A portion of Route 3A was flooded. Flooding was also reported on Cape Cod in Chatham, but was less severe than in other areas.

**MAZ022**

**Barnstable**

**22 1955EST**

**0 0**

**High Wind (G52)**

Pocasset

A wind gust to 60 mph was reported by a trained spotter in Pocasset. There were no reports of damage.

**MAZ022**

**Barnstable**

**23 2200EST**

**0 0**

**Heavy Snow**

**24 0700EST**

Ocean Effect Snow Squalls

An ocean storm passing southeast of Georges Bank created a persistent northeast wind over Cape Cod and Nantucket, resulting in bands of ocean effect snow squalls. Accumulations ranged from 2 to 7 inches, with the greatest amounts

# Storm Data and Unusual Weather Phenomena

January 2003

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

on the outer Cape. Travel became difficult on Cape Cod, as the combination of falling snow and gusty winds created near whiteout conditions at times.

Some specific snowfall totals, as reported by trained spotters, include 7 inches in Wellfleet and East Harwich; 6 inches in Eastham and Chatham; 5 inches in Barnstable; 4 inches in Dennis, Orleans, Brewster, and on Nantucket; 3 inches in Osterville and Mashpee; and 2 inches in Marstons Mills and Sandwich.

## MASSACHUSETTS, West

**MAZ001**

**Berkshire**

**01 2200EST**

**0 0**

**Winter Storm**

**02 0400EST**

A low pressure area formed along a stationary front in the Ohio Valley, early on New Years Day. The storm deepened as it tracked northeastward, reaching east of Cape Cod shortly after midnight. This storm initially brought rain to the Berkshires. However, as a shallow arctic airmass slowly bled southward from a high in eastern Canada, the rain changed to freezing rain across the higher terrain, then the valley locations, by late New Year's Day. As the colder air became more entrenched, the precipitation gradually switched to sleet and finally to snow after midnight. Snowfall amounts were minor, only 1 to 4 inches. However, sleet and especially freezing rain, produced ice accretions up to one half inch thick. No unusual problems were reported to the National Weather Service in Albany with this storm.

**MAZ001**

**Berkshire**

**03 1800EST**

**0 0**

**Winter Storm**

**04 1800EST**

A low pressure area developed in the Mississippi valley by late on January 2. The storm then tracked northward into the southern Ohio Valley, then rapidly redeveloped along the Mid Atlantic seaboard on January 3. Slowly, it moved to just east of Cape Cod by late on January 4. With plenty of cold air in place the stage was set for another snowstorm across the Berkshires. Although this storm was not as powerful as the Christmas Day storm, it moved very slowly and actually produced some heavier snowfall across Berkshire County. Light snow began falling early on the January 3, then it became heavier and steadier as the day wore on. A general one to two foot mantle of fresh snow was reported across the county. Dalton reported 13.9 inches and Savoy reported 23.2. Despite the heavy snow, no unusual problems were reported to the National Weather Service.

## MICHIGAN, East

**MIZ076-083**

**Wayne - Monroe**

**02 1300EST**

**0 0**

**Heavy Snow**

**03 0600EST**

An upper level disturbance passed across the northern Ohio Valley and southern Great Lakes during the afternoon and evening of the 2nd. This system caused snowfall across eastern Michigan, the heaviest of which occurred across Monroe and Wayne counties. Snowfall began during the afternoon near the Ohio border, then lifted northward during the course of the evening. Light snowfall then persisted into the early morning hours on the 3rd. Snowfall amounts across Monroe and Wayne Counties totaled 5 to 7 inches. The highest reports were; 7 inches in Monroe, 6 inches in Dundee, 5.3 inches at Detroit Metro airport, and 5.3 inches in Wyandotte. Much of the northern and western suburbs of Detroit received 2 to 4 inches, while the rest of eastern Michigan received less than an inch. Since the heaviest snowfall occurred during the late afternoon and evening, during rush hour, hundreds of traffic accidents were reported. This led to nearly a dozen reported injuries.

**MIZ075**

**Washtenaw**

**06 0800EST**

**0 0**

**1K**

**Strong Wind**

High winds blew a tree onto live electric wires in the city of Ann Arbor.

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

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

**10 0800EST**

**0 0**

**Extreme Cold/Wind Chill**

**30 1200EST**

Temperatures averaged well below normal across the Great Lakes region for much of January. In fact, for a three week period, the temperature never rose above freezing. Temperatures fell below zero for several nights during this period. Frozen pipes and water main breaks occurred in many areas of Detroit and its suburbs. The cities of Flint and Saginaw also had several reports of water main breaks. Several area schools had to cancel classes due to frozen pipes. Many area homeless shelters were filled to capacity and area hospitals reported dozens of cases of frostbite. Three deaths were also attributed to this cold spell.

**MIZ076**

**Wayne**

**21 1200EST**

**1 0**

**Extreme Cold**

A 50-year old homeless man died in a Detroit alley. Hypothermia was the suspected cause.  
M50OU

# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>MICHIGAN, East</u></b>									
<b>MIZ070</b>		<b>Macomb</b>							
	26	1200EST			1	0			Extreme Cold
		A 51-year old homeless man was found dead in the city of Roseville. An autopsy revealed that exposure to cold was the cause of the mans death. M51OU							
<b>MIZ076</b>		<b>Wayne</b>							
	27	1100EST			1	0			Extreme Cold
		A 70-year old woman suffering from Alzheimer's disease wandered from her home and was found frozen to death behind her garage. F70OU							
<b><u>MICHIGAN, Extreme Southwest</u></b>									
<b>MIZ077&gt;078</b>		<b>Berrien - Cass</b>							
	23	0305EST			0	0			Heavy Snow
	24	0900EST							
		Lake effect snow developed as a result of very cold air moving over the relatively warm waters of Lake Michigan. Away from the lake, amounts generally ranged from 2 to 5 inches. Reports of 6 to 7 inches of lake effect snow was received from Bridgman, with Niles reporting 4 to 6 inches.							
<b>MIZ077&gt;078</b>		<b>Berrien - Cass</b>							
	26	1300EST			0	0			Heavy Snow
		2300EST							
		Bands of lake effect snow dropped around 6 inches in both Berrien Springs and Buchanan.							
<b><u>MICHIGAN, North</u></b>									
<b>MIZ008-015-022</b>		<b>Chippewa - Mackinac - Otsego</b>							
	10	0900EST			0	0			Heavy Snow
	11	0600EST							
		An area of low pressure moved through the Great Lakes region on the 10th. This system brought 8 to 10 inches of snow to eastern Upper Michigan, with isolated reports of 5 to 9 inches of snow to portions of northwest Lower Michigan.							
<b>MIZ020&gt;021-026</b>		<b>Leelanau - Antrim - Grand Traverse</b>							
	22	2000EST			0	0			Heavy Snow
	23	1600EST							
		Lake effect snow off Lake Michigan produced an area of 6 to 12 snowfalls over far northwest Lower Michigan. The snows started during the night on the 22nd and continued through the day on the 23rd.							
<b>MIZ008-019-021&gt;022-027&gt;028</b>		<b>Chippewa - Charlevoix - Antrim - Otsego - Kalkaska - Crawford</b>							
	25	1900EST			0	0			Heavy Snow
	26	1200EST							
		An area of low pressure moved just north of the Great Lakes region early on the 25th. Heavy lake effect snows off Lake Superior and Lake Michigan broke out on the back side of the low later on the 25th and continued into the morning on the 26th. Widespread snowfall totals of 8 to 12 inches were reported across northeast Upper Michigan and northwest Lower Michigan.							
<b>MIZ015</b>		<b>Mackinac</b>							
	27	1800EST			0	0			Heavy Snow
	28	1000EST							
		An area of low pressure moved into the Great Lakes region on the 27th. Lake enhanced snows off Lake Michigan produced 12 inches of snow across portions of western Mackinac County.							
<b>MIZ016&gt;017-019-021</b>		<b>Emmet - Cheboygan - Charlevoix - Antrim</b>							
	31	2000EST			0	0			Heavy Snow
		2300EST							
		An area of low pressure moved across lower Michigan during the evening hours of the 31st. This system produced 6 to 8 inches of snow across portions of northwest Lower Michigan.							
<b><u>MICHIGAN, Upper</u></b>									
<b>MIZ002-006&gt;007-014</b>		<b>Ontonagon - Alger - Luce - Schoolcraft</b>							
	10	0800EST			0	0			Heavy Snow
	13	0600EST							

# Storm Data and Unusual Weather Phenomena

January 2003

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

**MIZ003**

**Houghton**

10 1500EST  
13 0600EST

0      0

**Winter Storm**

The passage of a Canadian low pressure system's attendant cold front overnight on January 8th and 9th brought arctic air into Michigan's Upper Peninsula. The cold air flowing across the relatively warmer waters of Lake Superior produced heavy lake effect snow, especially at those locations favored by a northwest low level wind. The lake effect snow that started on 9th did not end until a ridge of arctic high pressure arrived on the 13th. Some snow totals during this storm include 32 inches at McMillan, 25 inches at Pelkie, 23 inches at Newberry, 19 inches at Shingleton, 17 inches at Munising, and 12 inches at Painesdale and White Pine. Strong northwest wind with gusts as high as 40 mph caused considerable blowing and drifting snow, with whiteout conditions observed over open areas. Slippery snow covered roads and near zero visibilities in blowing snow contributed to a number of traffic accidents across the area.

**MIZ003-006>007-014**

**Houghton - Alger - Luce - Schoolcraft**

14 0500EST  
15 1500EST

0      0

**Heavy Snow**

As a strong cold front passed over Upper Michigan during the afternoon on January 12th, lake effect snow showers developed over the west by late in the day and in the eastern lake shore counties that night. The snow belts favored by a northwest wind recorded the most snow. By the time the snow showers diminished on the 15th, snowfall totals amounted to 21 inches at Shingleton, 17 inches at Melstrand, 14 inches at Two Heart in Luce County, and 12 inches in Painesdale.

**MIZ001>003**

**Keweenaw - Ontonagon - Houghton**

19 1400EST  
23 1200EST

0      0

**Winter Storm**

A sharp cold front on the back side of a deep trough over eastern North America crossed Upper Michigan on January 18th. Rockland received almost 8 inches of lake effect snow, with Houghton and Phoenix recording 6 inches and 5 inches respectively. While the snow over northwest Upper Michigan diminished a bit during the day on the 19th, there were near blizzard conditions as northwest winds gusted to more than 30 mph and caused near zero visibility in blowing and drifting snow.

**MIZ007-014**

**Luce - Schoolcraft**

27 1700EST  
2230EST

0      0

**Heavy Snow**

A quick moving upper level disturbance that passed east through Ontario brought increasing clouds and a period of overrunning snow to almost all of Upper Michigan on January 27th. Most places picked up an inch or two of snow as south winds gusted up to 30 to 35 mph. Lake enhanced snow showers off Lake Michigan battered Schoolcraft and Luce counties with locally heavy snow. As much as 11 inches fell near Blaney Park and 9 inches accumulated at Germfask and near Newberry. The gusty winds and blowing snow resulted in whiteout conditions along highways US-2 and M-117 east of Manistique. Michigan State Police closed sections of highway US-2 due to near zero visibility and snow drifting over the roadway.

## MICHIGAN, West

**MIZ037-043-056**

**Mason - Oceana - Ottawa**

18 1000EST  
2200EST

0      0

**Heavy Snow**

A combination lake effect enhanced synoptic system produced locally heavy snowfall across a few counties of western lower Michigan. Eight to eleven inches of snow fell across most of eastern Mason and Oceana counties. The second area of heavy snow occurred across eastern Ottawa county, where six to seven inches of snow was reported. All of the snow fell between 10 a.m. and 10 p.m. The maximum snowfall reports were received from Walkerville and Ferry, where eleven inches of snow fell.

**MIZ056-064-071**

**Ottawa - Allegan - Van Buren**

22 0000EST  
1800EST

0      0

**Heavy Snow**

Heavy lake effect snow developed across the lakeshore counties of Ottawa, Allegan and Van Buren. Since winds were primarily out of the north, the heaviest snow was confined to the immediate lake shore areas, generally west of US 31. 12 to 16 inches of snow fell from just south of Grand Haven, to the west side of the city of Holland, to near South Haven. The heaviest snowfall report was received from the west side of the city of Holland, where 16 inches of snow fell.

## MINNESOTA, Central and South Central

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

NONE REPORTED.

## MINNESOTA, Northwest

**MNZ004-007**

**Kittson - West Marshall**

26    1553CST  
27    0409CST

0       0

**Winter Storm**

A strong low pressure system moved across southern Canada, and brought 4 to 5 inches of snow and 25 to 35 mph winds to the northern Red River Valley.

## MINNESOTA, Southeast

NONE REPORTED.

## MINNESOTA, Southwest

NONE REPORTED.

## MINNESOTA, West

NONE REPORTED.

## MINNESOTA, West Central

NONE REPORTED.

## MISSISSIPPI, Central

NONE REPORTED.

## MISSISSIPPI, North

**MSZ024**

**Monroe**

24    1100CST

1       0       0

**Extreme Cold/Wind Chill**

A man was found dead on his front porch. The cause of death was hypothermia.  
M84OU

## MISSISSIPPI, South

NONE REPORTED.

## MISSISSIPPI, Southeast

NONE REPORTED.

## MISSOURI, East

**MOZ026>027-  
034>035-041-047-  
049>052-059>061-063**

**Shelby - Marion - Monroe - Ralls - Boone - Moniteau - Osage - Callaway - Montgomery - Lincoln - Gasconade  
- Warren - St. Charles - St. Louis**

01    2000CST  
02    2000CST

0       0

**Winter Storm**

A New Years Day winter storm made staying in and watching football the thing to do. Sleet started during the evening hours and accumulated to about 1 inch in a narrow band from the Columbia area east into St. Louis. The sleet changed to snow and was primarily all snow across Northeast Missouri. 6 to 8 inches of snow fell in a band from Central to Northeast Missouri. 4 to 6 inches fell in remaining areas to the south.

**MOZ018>019**

**Knox - Lewis**

15    2000CST  
16    0400CST

0       0

**Winter Storm**

A narrow band of heavy snow fell across parts of Northeast Missouri. Snow amounts across Knox and Lewis counties ranged from 4 to 6 inches.

# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>MISSOURI, Lower</u></b>									
<b>MOZ113-115</b>			<b>Dunklin - Pemiscot</b>						
	16	0600CST 1200CST			0	0	0.02K		<b>Heavy Snow</b>
			Heavy snow fell across the Missouri bootheel with as much as 6 inches of accumulation.						
<b><u>MISSOURI, Northeast</u></b>									
<b>MOZ009&gt;010</b>			<b>Scotland - Clark</b>						
	15 16	2300CST 0900CST			0	0			<b>Winter Storm</b>
			A vigorous winter storm developed over the plains during the evening and moved across northern Missouri and central Illinois on the 16th. A large area of snow developed to the north of this system and moved across portions of southeast Iowa, extreme northeast Missouri and west central Illinois depositing anywhere from 3 to 6 inches of snow.						
<b><u>MISSOURI, Northwest</u></b>									
<b>MOZ053&gt;054</b>			<b>Bates - Henry</b>						
	02	0020CST 2000CST			0	0			<b>Winter Storm</b>
			A storm system brought a band of heavy snow across west central Missouri on January 2nd. Snowfall totals of 5 to 9 inches, were reported from Butler to Clinton.						
<b>MOZ045&gt;046</b>			<b>Pettis - Cooper</b>						
	02	0520CST 2200CST			0	0			<b>Winter Storm</b>
			A storm system on January 2nd, brought a band of heavy snows across southern portions of Pettis and Cooper counties. Snowfall amounts ranged from 5 to 8 inches.						
<b>MOZ028</b>			<b>Platte</b>						
	15 16	2220CST 2000CST			0	0			<b>Winter Storm</b>
			A storm system moved across Platte county in west central Missouri, late on January 15th and ending on January 16th. Snowfall amounts were as high as 7 inches along the Missouri river.						
<b>MOZ002&gt;003- 005&gt;006-016</b>			<b>Nodaway - Worth - Harrison - Mercer - Sullivan</b>						
	16	0420CST 2200CST			0	0			<b>Winter Storm</b>
			A winter storm moved across portions of northwest and north central Missouri on January 16th. The storm produced a swath of 3 to 8 inch snows, from Maryville east to Princeton.						
<b>MOZ007&gt;008-017</b>			<b>Putnam - Schuyler - Adair</b>						
	16	0520CST 2200CST			0	0			<b>Winter Storm</b>
			A winter storm moved across portions of northern Missouri on January 16th. Snowfall amounts ranged from 3 to 7 inches.						
<b><u>MISSOURI, Southeast</u></b>									
<b>MOZ076-086&gt;087-100- 107-109&gt;112-114</b>			<b>Perry - Bollinger - Cape Girardeau - Wayne - Carter - Butler - Stoddard - Scott - Mississippi - New Madrid</b>						
	16	0300CST 1400CST			0	0			<b>Winter Storm</b>
			The storm hit during the morning commute time on a weekday, so it had a major impact on traffic. The snow fell at the rate of 1 to 2 inches per hour around the morning drive time. Many schools cancelled classes. By noon, most of the accumulating snow had ended, leaving a blanket of 3 to 4 inches in most places. Cold temperatures limited the effectiveness of salt used by road crews, and some minor blowing and drifting occurred. Temperatures were in the 20's during the snowstorm, and around 10 by the morning of the 17th. Refreezing of moisture occurred after dark, causing another round of accidents after the snow had ended. The snow was caused by a moderately strong upper level disturbance that moved east from the Plains, then across Tennessee. A weak low pressure system followed about the same path, passing just south of Missouri and Kentucky. Some specific snowfall totals included: 4 inches at New Madrid, 3.5 inches at Cape Girardeau, 3 inches at Sikeston, Perryville, and Van Buren, and 2 inches at Doniphan.						

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>MOZ076-086&gt;087-100-107&gt;112-114</b>	<b>Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid</b>	22	1400CST 2000CST		0	0			<b>Winter Weather/Mix</b>
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Up to 2 inches of snow fell across southeast Missouri during the afternoon and early evening. Roads became slick and very hazardous.

<b>MOZ076-086&gt;087-100-107&gt;112-114</b>	<b>Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid</b>	23	0400CST 1200CST		0	0			<b>Extreme Cold/Wind Chill</b>
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Wind chills fell to around minus 10 across southeast Missouri during the morning. This cold snap was just one of many cases of harsh winter weather during January. After the relatively mild winters of the past several years, the bitter mid-winter cold came as a shock to many. Temperatures fell below zero at many locations for the first time in several years. At Cape Girardeau, the low temperature fell below zero on four days in January, including lows of minus 3 on the 23rd and 24th. The prolonged cold weather resulted in numerous frozen pipes, as well as problems with heating systems. A number of house fires were blamed on overtaxed heating systems. There were no reports of deaths or injuries related to hypothermia.

## MISSOURI, Southwest

<b>MOZ055&gt;057-066&gt;069-077&gt;079-089</b>	<b>Benton - Morgan - Miller - Vernon - St. Clair - Hickory - Camden - Barton - Cedar - Polk - Dade</b>	02	0100CST 0300CST		0	0			<b>Winter Storm</b>
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The third significant winter storm of the 2002-2003 cool season, blanketed areas of west central and central Missouri with seven inches of snow. Accumulations tapered down to less than an inch across extreme southern Missouri.

## MONTANA, Central

<b>MTZ009&gt;010</b>	<b>North Rocky Mountain Front - Eastern Glacier</b>	02	1315MST 1800MST		0	0			<b>High Wind (G66) <sup>M</sup></b>
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A high wind event occurred over the northern Rocky Mountain Front and across Eastern Glacier County. Wind gusts over 60 mph were reported throughout the region. A wind gust of 76 mph occurred at Two Medicine at 1315 MST and a wind gust to 62 mph occurred at Cut Bank at 1456 MST.

<b>MTZ009&gt;011-044&gt;047-051</b>	<b>North Rocky Mountain Front - Eastern Glacier - Hill - Toole - Liberty - Eastern Pondera - Blaine - Fergus</b>	03	0430MST 1800MST		0	0			<b>High Wind (G69) <sup>M</sup></b>
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A high wind event occurred over much of North Central Montana on the 3rd. Winds gusted to over 60 mph during the early morning hours over the Rocky Mountain Front, and then continued through the late afternoon hours over the Plains of North Central Montana.

Here is a list of the peak wind speeds reported:

Chinook 11S 80 mph at 1321 MST; Sweetgrass 64 mph at 1047 MST; Pendroy 62 mph at 1100 MST; Roy 15NE 62 mph at 1545 MST; East Glacier 2E 59 mph at 0430 MST; Cut Bank 58 mph at 0818 MST. Inverness reported sustained winds of 40 mph around 1300 MST.

<b>MTZ009&gt;010</b>	<b>North Rocky Mountain Front - Eastern Glacier</b>	07	1540MST 1552MST		0	0			<b>High Wind (G51) <sup>M</sup></b>
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A high wind event occurred over the northern Rocky Mountain Front and across Eastern Glacier County. Wind gusts near 60 mph were reported throughout the region. A wind gust of 59 mph occurred at Browning at 1540 MST and a wind gust to 59 mph occurred at Cut Bank at 1552 MST.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**MTZ008-012-015-050>051-054>055**      **Beaverhead - Cascade - Madison - Judith Basin - Fergus - Meagher - Gallatin**

14	0000MST 1800MST				0	0			<b>Winter Storm</b>
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A winter storm moved through a portion of Southwest and North Central Montana from the 21st to the 22nd. Significant blowing and drifting of the snow occurred in many areas.

Here is a list of some of snowfall amounts received:

10 inches at Bozeman 18NE; 6 inches at Ennis 10NW, Garneil, and Wisdom; and 5 inches at White Sulphur Springs and Neihart 10S.

**MTZ009**      **North Rocky Mountain Front**

19	2221MST				0	0			<b>High Wind (G57) <sup>M</sup></b>
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Strong winds developed over the northern Rocky Mountain Front during the afternoon hours on the 19th. Sustained winds over 40 mph and wind gusts to near 60 mph were common near the U.S. and Canadian border.

**MTZ014>015-052>055**      **Southern Lewis And Clark - Madison - Jefferson - Broadwater - Meagher - Gallatin**

22	0500MST 1600MST				0	0			<b>Winter Storm</b>
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A winter storm moved across portions of Southwest Montana during the overnight hours of the 21st and the morning hours of the 22nd. Heavy snow fell in many mountain locations, with many of the valley locations reporting over 4 inches of snow. Significant blowing and drifting of the snow occurred as well.

Here is a list of some of the snowfalls reported:

12 inches at Jefferson City, Toston, and White Sulphur Springs; 10 inches at Marysville and Norris 5S; and 6 inches at Maudlow.

**MTZ009**      **North Rocky Mountain Front**

23	0740MST 1500MST				0	0			<b>High Wind (G38) <sup>M</sup></b>
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Strong winds developed over the northern Rocky Mountain Front during the early morning hours of the 23rd. Sustained winds over 40 mph and wind gusts to near 60 mph were common over the region. East Glacier 2E had sustained winds of 44 mph at 0740 MST.

**MTZ009>010-013-044-046-048>049**      **North Rocky Mountain Front - Eastern Glacier - Chouteau - Toole - Eastern Pondera - Southern Rocky Mountain Front - Eastern Teton**

26	1240MST				0	0			<b>High Wind (G57) <sup>M</sup></b>
27	0100MST								

A high wind event occurred over the western half of North Central Montana on the 26th. Strong winds developed over the northern Rocky Mountain Front during the morning hours, and then moved eastward over the Plains during the late morning and early afternoon hours. The winds began to diminish in strength during the late evening hours of the 26th. Most areas reported wind gusts near 60 mph, with sustained winds between 35 and 45 mph.

Here is a list of some of the peak wind gusts reported:

East Glacier 2E 66 mph at 1240 MST; Choteau 62 mph at 1445 MST; Sweetgrass 60 mph at 1906 MST; Cut Bank 59 mph at 1538 MST; Pendroy 59 mph at 1820 MST; and Loma had sustained winds of 44 mph at 1315 MST. Gold Butte 7N 61 mph at 0055 MST on 1/27/03.

**MTZ009>010**      **North Rocky Mountain Front - Eastern Glacier**

29	2000MST 2359MST				0	0			<b>High Wind (G35) <sup>M</sup></b>
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A high wind event occurred over the northern Rocky Mountain Front and across Eastern Glacier County. Wind gusts near 60 mph occurred, with sustained winds over 40 mph reported throughout the region. Both East Glacier 2E and Cut Bank had sustained winds near 40 mph between 2000 MST and 2300 MST.

## MONTANA, East

**MTZ016>017-022>023-025>026-059>061**      **Central And Se Phillips - Central And Southern Valley - Garfield - Mccone - Dawson - Prairie - Northern Phillips - Little Rocky Mountains - Northern Valley**

03	1245MST				0	0			<b>High Wind (G63) <sup>M</sup></b>
04	0145MST								

A cold front combined with a strong upper level disturbance brought high winds to parts of northeast Montana. The peak wind speed was 73 mph at Whitewater. Other high wind reports included 19 miles northwest of Vida 70 mph, King Coulee and Glasgow 67 mph, Bluff Creek RAWS 63 mph, Glendive 61 mph, Manning Corral RAWS 60 mph, South Sawmill RAWS and Big Sheep RAWS

# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<b><u>MONTANA, East</u></b>									
			59 mph, and Malta 58 mph.						
<b>MTZ018</b>	<b>08</b>	<b>1627MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G52)</b> <sup>M</sup>
			60 mph wind gust reported 6 miles east of Scobey.						
<b><u>MONTANA, South</u></b>									
<b>MTZ040</b>	<b>02</b>	<b>0335MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G54)</b> <sup>M</sup>
<b>MTZ040</b>	<b>02</b>	<b>1115MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G50)</b> <sup>M</sup>
<b>MTZ040</b>	<b>02</b>	<b>2155MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G51)</b> <sup>M</sup>
<b>MTZ033</b>	<b>03</b>	<b>2356MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G44)</b> <sup>M</sup>
<b>MTZ033</b>	<b>04</b>	<b>1250MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G68)</b> <sup>M</sup>
<b>MTZ029</b>	<b>15</b>	<b>0600MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
<b>MTZ041</b>	<b>15</b>	<b>0730MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
<b>MTZ034</b>	<b>15</b>	<b>0800MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
<b>MTZ040</b>	<b>19</b>	<b>0148MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G51)</b> <sup>M</sup>
<b>MTZ040</b>	<b>19</b>	<b>1053MST</b>			<b>0</b>	<b>0</b>			<b>High Wind (G57)</b> <sup>M</sup>
<b>MTZ030</b>	<b>22</b>	<b>0430MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
<b>MTZ035</b>	<b>22</b>	<b>0500MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
<b>MTZ056</b>	<b>22</b>	<b>0600MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
			12 inches of new snow in Joliet						

# Storm Data and Unusual Weather Phenomena

January 2003

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

MTZ038			<b>Southern Big Horn</b>		0	0			Heavy Snow
	22	0700MST							
			12 inches of new snow at Yellowtail Dam						
MTZ034			<b>Stillwater</b>		0	0			Heavy Snow
	22	0830MST							
			9 inches of new snow 18 miles northwest of Columbus						
MTZ041			<b>Sweet Grass</b>		0	0			Heavy Snow
	22	0830MST							
			12 inches of new snow in Big Timber						
MTZ034			<b>Stillwater</b>		0	0			Heavy Snow
	22	0830MST							
			8 inches of new snow in Reed Point						
MTZ040			<b>Park</b>		0	0			Heavy Snow
	22	0830MST							
			8 inches of new snow in Livingston						
MTZ042			<b>Golden Valley</b>		0	0			Heavy Snow
	22	0830MST							
			8 inches of new snow 10 miles southwest of Ryegate						
MTZ028			<b>Wheatland</b>		0	0			Heavy Snow
	22	0830MST							
			7 inches of new snow 13 miles east of Judith Gap						
MTZ030			<b>Treasure</b>		0	0			Heavy Snow
	22	0830MST							
			7 inches of new snow in Hysham						
MTZ042			<b>Golden Valley</b>		0	0			Heavy Snow
	22	0830MST							
			6 inches of new snow in Ryegate						
MTZ056			<b>Western Carbon</b>		0	0			Heavy Snow
	22	1515MST							
			10 inches of new snow in Bridger						
MTZ057			<b>Northern Big Horn</b>		0	0			Heavy Snow
	22	1530MST							
			6 inches of new snow 10 miles north of Hardin						
MTZ041			<b>Sweet Grass</b>		0	0			Heavy Snow
	22	1800MST							
			12 inches of new snow in Melville						
MTZ035			<b>Yellowstone</b>		0	0			Heavy Snow
	22	1845MST							
			12 inches of new snow at Chief Plenty Coups State Park						
MTZ035			<b>Yellowstone</b>		0	0			Heavy Snow
	22	1845MST							
			7 inches of new snow at Billings International Airport						
MTZ056			<b>Western Carbon</b>		0	0			Heavy Snow
	22	1845MST							
			6 inches of new snow at Red Lodge Mountain						

# Storm Data and Unusual Weather Phenomena

January 2003

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

**MTZ038**

**Southern Big Horn**

22	1845MST				0	0			Heavy Snow
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6 inches of new snow at Little Bighorn Battlefield

**MTZ040**

**Park**

26	1017MST				0	0			High Wind (G56) <sup>M</sup>
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56 mph sustained wind in Livingston

## MONTANA, West

**MTZ003>007-043**

**Flathead/Mission Valleys - Lower Clark Fork Region - Missoula / Bitterroot Valleys - Bitterroot / Sapphire Mountains - Butte / Pintlar Region - Blackfoot Region**

22	0000MST				0	0			Winter Storm
	0600MST								

An arctic cold front moved across the Continental Divide bringing heavy snow and gusty winds to the region. Emergency travel was reported by the Montana Department of Transportation Tuesday night and early Wednesday morning across sections of the Mission and Flathead Valleys as well as areas near the Divide while the front moved through. Snowfall amounts ranged from 5 to 8 inches at Alberton and St. Ignatius southward across Missoula, Lolo, and Darby. Heavier snow of 10 to 12 inches was reported at Lolo Hot Springs, Warm Springs, and Peterson Meadows. Gusty northeast winds of 20 to 40 mph were common during the event. Peak gusts included, 38 mph at Kalispell, 36 mph at Columbia Falls, and 34 mph at Thompson Falls.

**MTZ001>002-004-043**

**Kootenai/Cabinet Region - West Glacier Region - Lower Clark Fork Region - Blackfoot Region**

22	1600MST				0	0			Heavy Snow
	0600MST								

A pacific storm system brought heavy snow to the western Montana with 6 to 8 inches from Libby to Eureka and Bull Lake to Troy, as well as Lookout Pass, and 8 to 10 inches was reported from Coram to Essex in the West Glacier Region.

**MTZ004-006**

**Lower Clark Fork Region - Bitterroot / Sapphire Mountains**

30	0400MST				0	0			Heavy Snow
	1500MST								

Heavy mountain snow fell as a pacific storm system passed through western Montana. Amounts ranged from 8 inches at Pike Creek, Essex, and Lolo Pass, to 10 to 12 inches at Warm Springs and Nez Perce Camp.

## NEBRASKA, Central

NONE REPORTED.

## NEBRASKA, East

**NEZ011>012-016>018-030>034-042>045-050>053-065>068-078-088-090-092>093**

**Knox - Cedar - Antelope - Pierce - Wayne - Boone - Madison - Stanton - Cuming - Burt - Platte - Colfax - Dodge - Washington - Butler - Saunders - Douglas - Sarpy - Seward - Lancaster - Cass - Otoe - Saline - Jefferson - Johnson - Pawnee - Richardson**

15	1400CST				0	0			Winter Storm
	0430CST								

Light snow developed across northeast Nebraska Wednesday morning, 1/15/03, and slowly spread southeast reaching the Omaha and Lincoln areas by early Wednesday evening and then southwest Iowa shortly thereafter. The snow became moderate to heavy by early afternoon across northeast Nebraska with the intensity increasing farther southeast, including Omaha and Lincoln, by late evening. The snow continued into Thursday morning, but was mostly over by 500 am. North winds of 10 to 20 mph with gusts to 25 mph created drifting snow and some blowing in open areas. The snow closed or delayed many schools, especially around the Omaha area.

Heavier snow amounts included, 8 inches in Madison and Osmond, Nebraska and Randolph, Iowa, 7 inches in Lincoln, Prague, David City, Gretna, Howells, Seward, and Friend, Nebraska and Little Sioux, Iowa. Most other locations from northeast Nebraska around Neligh and Bloomfield, southeast through Omaha and into southwest Iowa had around 6 inches.

**NEZ011>012-015>018-030>034-042>045-050>053-065>068-078-088>093**

**Knox - Cedar - Thurston - Antelope - Pierce - Wayne - Boone - Madison - Stanton - Cuming - Burt - Platte - Colfax - Dodge - Washington - Butler - Saunders - Douglas - Sarpy - Seward - Lancaster - Cass - Otoe - Saline - Jefferson - Gage - Johnson - Nemaha - Pawnee - Richardson**

22	1800CST				1	0			Extreme Windchill
	1100CST								

Bitter cold wind chills spread over eastern Nebraska and southwest Iowa during late Wednesday afternoon 1/22/03 continuing into



# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b><u>NEVADA, West</u></b>									
<b>NVZ002</b>		<b>Greater Lake Tahoe Area</b>							
	23	2130PST			0	0			Dense Fog
	24	1000PST							
	Weather spotters and other sources reported low visibilities due to fog on the east side of Lake Tahoe. Visibility dropped to only a few hundred feet at Stateline, NV for a time.								
<b>NVZ004</b>		<b>Western Nevada Basin And Range</b>							
	24	0030PST			0	0			Dense Fog
		1000PST							
	Spotters and other sources reported visibilities below 1/4 mile through the area, with 1/8 mile visibility reported in Fernley and Fallon.								
<b>NVZ004</b>		<b>Western Nevada Basin And Range</b>							
	28	0530PST			0	0			Dense Fog
		0930PST							
	The Fallon Naval Air Station reported local dense fog with visibilities at times down to 1/8 of a mile.								
<b><u>NEW HAMPSHIRE, North and Central</u></b>									
<b>NHZ001&gt;010-013&gt;014</b>		<b>Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham</b>							
	03	1400EST			0	0			Heavy Snow
	05	0000EST							
<b>NHZ014</b>		<b>Coastal Rockingham</b>							
	04	1100EST			0	0			Coastal Flooding
		1300EST							
	Low pressure developed off the Virginia coast on the morning of the 3rd and intensified as it moved slowly northeastward through the Gulf of Maine on the 4th. The storm brought heavy snow to all of New Hampshire with 15 to 20 inches across much of the southern part of the state. Over most of the remainder of the state, 10 to 15 inches of snow fell, except in the lower elevations of the northern Connecticut River valley where snowfall amounts were in the 5 to 10 inch range. Strong northeasterly winds accompanied the storm causing a storm surge which combined with high astronomical tides to cause coastal flooding along the seacoast. Route 1A was closed in North Hampton when the ocean began to cover the road at about 11 am. The peak gust at Isles of Shoals was 56 kts.								
<b>NHZ001&gt;010-013&gt;014</b>		<b>Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham</b>							
	21	1900EST			0	0			Cold Wind Chill Temperatures
	23	0900EST							
	An area of low pressure moved across New England on the 20th, then intensified rapidly on the 21st and 22nd over the Canadian Maritimes as a large area of high pressure moved from western Canada into the north-central United States. The area of high pressure continued to move south into the southern United States through the 24th. The pressure gradient between the low over the Maritimes and the area of high pressure produced west to northwest winds across the area and brought cold temperatures into the region. The cold temperatures and west to northwest winds combined to produce an extended period of cold wind chill temperatures. Wind chill temperatures during the period generally ranged from 15 to 30 degrees below zero.								
<b>NHZ001&gt;010-013&gt;014</b>		<b>Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham</b>							
	27	2100EST			0	0			Cold Wind Chill Temperatures
	28	0300EST							
	Low pressure intensifying late on the 27th over the Canadian Maritimes brought a continuation of cold temperatures along with northwest winds to the area, and caused a brief period of cold wind chill temperatures overnight before the winds diminished. Generally, wind chill temperatures were between 10 and 25 degrees below zero.								
<b><u>NEW HAMPSHIRE, Southern</u></b>									
<b>NHZ011&gt;012</b>		<b>Cheshire - Hillsborough</b>							
	03	1400EST			0	0			Winter Storm
	04	1100EST							
	A powerful winter storm tracked south of New England and dumped heavy snow over southern New Hampshire. Totals of 1 to 2 feet were common in Cheshire and Hillsborough Counties. Aside from scattered power outages and dozens of minor accidents, little significant impact occurred from the storm since most residents avoided travel. No injuries or damage was directly attributable to the storm.								
	Some snowfall totals from the storm, as reported by trained spotters, include 21 inches in Jaffrey, 18 inches in Frankestown, 14 inches in Dublin and Nashua, 12 inches in Manchester and Wilton, and 10 inches in Hudson.								

# Storm Data and Unusual Weather Phenomena

January 2003

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

**NJZ002>005**

**Western Passaic - Bergen - Eastern Passaic - Essex**

**03 1900EST**

**0 0**

**Winter Storm**

**04 0200EST**

A cold front moved across the region during the pre-dawn hours, early on Wednesday, January 1st before stalling just off the coast later that day. During the evening on January 1st, a developing area of low pressure began to move northeast from the Delmarva Peninsula along the frontal boundary. By morning, the center of the low moved well off to the northeast of the New England coast. During the day on Thursday, January 2nd, a second area of low pressure began to develop over Virginia. This low quickly intensified and took over as the primary storm as it moved slowly northeast Thursday night. The center of this low pressure system was south of Long Island by Friday afternoon, and just southeast of Nantucket by Saturday morning.

Light and spotty precipitation, generally in the form of snow fell across Northeastern New Jersey just before midnight on the night of January 2nd into the 3rd. This intermittent light snow continued through the night. On the morning of Thursday, January 3rd, a steady light precipitation began to fall. This precipitation continued through the afternoon and evening, before tapering off to flurries shortly after midnight on the night of January 3rd into the 4th. These flurries ended around daybreak early on the morning of January 4th. The bulk of the precipitation for this event southeast of the Elizabeth to Newark corridor fell as rain. Along this corridor, rain occasionally mixed with sleet and/or freezing rain. To the west of this corridor, most of the precipitation fell in the form of sleet and freezing rain. Snow also mixed in with the sleet and freezing rain, yielding snowfall amounts from 1 to 4 inches. However, significant ice accumulated on trees, power lines, and roads.

## NEW JERSEY, South and Northwest

**NJZ001**

**Sussex**

**01 1330EST**

**0 0**

**0 Winter Weather/Mix**

**1900EST**

Freezing rain fell over higher terrain sections of Sussex County during the afternoon and early evening of the 1st. Warmer air then moved in at the surface and raised temperatures above the freezing mark overnight as precipitation fell as plain rain. There were ice accretions on exposed surfaces (trees), but not enough to tear down any limbs or wires. Untreated secondary and tertiary roads were slippery.

**NJZ010**

**Somerset**

**01 2126EST**

**0 0**

**Flood**

**04 2238EST**

Rain from a low pressure system on the 1st and mixed precipitation from another low pressure system from the evening of the 2nd into the 3rd produced flooding in Somerset County. Along the Millstone River, the Griggstown Causeway between Franklin and Montgomery Townships and Blackwells Mills Road between Franklin and Hillsborough Townships were closed. The Millstone River at Griggstown was above its 9 foot flood stage from 926 p.m. EST on the 1st through 1038 p.m. EST on the 4th. It crested at 10.86 feet at 445 p.m. EST on the 2nd. The North Branch of the Raritan River at South Branch briefly crested above its 6.9 foot flood stage (7.00 feet maximum crest) from 446 a.m. EST through 634 a.m. EST on the 2nd. The storm total from the first event in Somerville was 1.24 inches and the second event 0.52 inches.

**NJZ012>014-020>027**

**Middlesex - Western Monmouth - Eastern Monmouth - Western Ocean - Cumberland - Western Atlantic -**

**Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean - Southeastern Burlington**

**02 0500EST**

**0 0**

**0 Astronomical High Tide**

**04 1200EST**

The combination of a high pressure system over nearby Canada, a series of low pressure systems that passed southeast of New Jersey and spring astronomical tides caused by the new moon produced widespread minor to locally moderate tidal flooding along the coast as well as in Raritan and Delaware Bays during the daytime high tide cycle on the third. Widespread minor tidal flooding occurred with the daytime high tide on the second in all areas. Minor tidal flooding also occurred during the evening high tide on the third and the daytime high tide on the fourth in Middlesex and Monmouth Counties. The highest tides in all areas occurred on the 3rd. For a majority of the region, this tide was slightly lower than the coastal flooding that occurred on Christmas Day 2002. But, because the onshore flow persisted for a couple of days, beach erosion was more extensive than what occurred with the previous northeaster.

In Cumberland County, the Downe Avenue Bridge was closed leaving Fortescue during the daytime high tide on the 3rd. Several homeowners could not leave their houses because of the tidal flooding. Gandys Beach and Money Island were also flooded. In Cape May County, New Jersey State Routes 47, 52 and 147 were closed on the 3rd. In North Wildwood, tides eroded the seawall, savaged the bulkhead and undermined the deck's foundation. Beach entrances were blocked to prevent tidal flooding from reaching the city's streets. Outfall pipes were exposed and dunes turned into cliffs. Sea Isle City was made vulnerable to further erosion. In Atlantic County, both the Black and White Horse Pikes (U.S. Routes 40 and 30) were closed on the 3rd. Beach erosion tore away a couple of stairways and walkways. In Ventnor, half of the dunes disappeared and the high tides reached under the boardwalk.

In Ocean County, beach erosion in Long Beach Township was described as moderate. In Beach Haven Borough, the rocks at

# Storm Data and Unusual Weather Phenomena

January 2003

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

Holyoke Avenue were exposed. The borough's southern beaches were eroded from Holyoke Avenue south. In Harvey Cedars, erosion occurred at both the north and south ends of the borough. Many dunes were cut. In Seaside Park, the bay side roads were flooded including Bayview Avenue. Runoff from the rain exacerbated the problem. In Monmouth County, three persons were rescued from flooded vehicles in Manasquan Borough. Brielle Avenue and East Main Street were barricaded. Second through Fourth Avenues were flooded. Stockton Lake also flooded. The worst flooding damage occurred in Union Beach Borough on Raritan Bay. About 500 sandbags were deployed to halt flooding from reaching several houses. About 20 to 25 streets were closed in the borough including the East End Avenue Bridge. Beach erosion caused the formation of four foot cliffs. Tidal flooding also forced several roadway closures along Raritan Bay in Middlesex County including the Victory Circle and Bridge in Sayreville.

The highest tides included 8.38 feet above mean lower low water in Keansburg (Monmouth County), 7.83 feet above mean lower low water in Sandy Hook (Monmouth County), 7.54 feet above mean low water in Cape May Harbor (Cape May County), 7.30 feet above mean lower low water in Atlantic City (Atlantic County), 7.28 feet above mean lower low water in North Wildwood (Cape May County), 7.24 feet above mean lower low water in Stone Harbor (Cape May County), 7.02 feet above mean lower low water in Absecon (Atlantic County) and 6.16 feet above mean lower low water in Sea Bright (Monmouth County).

The first low pressure system moved rapidly northeast from the Tennessee Valley on the morning of the 1st to southeast of Cape Cod on the morning of the 2nd. At the same time, another low pressure system formed in the western Tennessee Valley on the morning of the 2nd and moved more slowly northeast. It reached near Norfolk, Virginia during the morning of the 3rd and just southeast of Cape Cod during the morning of the 4th. Meanwhile, a large high pressure system slowly moved east from western Ontario Province the morning of the 1st to eastern Quebec Province the morning of the 4th. The high pressure system helped enhance the onshore flow throughout the week.

**NJZ001-007>009**

**Sussex - Warren - Morris - Hunterdon**

**02 1900EST**  
**04 0600EST**

**0 0**

**Winter Storm**

**NJZ010-010-015**

**Somerset - Mercer**

**02 2230EST**  
**04 0300EST**

**0 0**

**Winter Weather/Mix**

A large high pressure system over nearby Canada and a low pressure system that passed south of the region set the stage for a protracted winter storm for northwest New Jersey and a winter weather event for Mercer and Somerset Counties. Precipitation began as light snow during the evening of the 2nd in the higher terrain of far northwest New Jersey and a mixture of light snow, light rain and light freezing drizzle elsewhere. Precipitation changed exclusively to light sleet and light freezing rain over Mercer and Somerset Counties and parts of Hunterdon County before sunrise on the 3rd. Steadier precipitation moved into the region around daybreak on the 3rd. By then warmer air aloft caused precipitation to fall as mainly freezing rain and sleet. Only in Sussex County did precipitation fall mainly as light snow. Eventually enough warm air moved in near the surface for precipitation to change to plain rain in Mercer and Somerset Counties and parts of Hunterdon, Warren and Morris Counties before Noon EST on the 3rd. Ice accretions were generally one tenth of an inch or less. In Sussex County, precipitation continued to fall as snow during heavier precipitation bursts and mixed with freezing rain and sleet at other times. As the low pressure system moved farther offshore and the winds shifted to the north, precipitation changed to all snow in Sussex County during the late afternoon of the 3rd and fell heavy at times that night. In Warren, Morris, Somerset and Hunterdon Counties precipitation reversed itself and went from a freezing rain and light rain mixture to sleet and then snow during the evening of the 3rd. The snow ended before daybreak on the 4th. Across Warren, Hunterdon and Morris Counties, total ice accretions averaged between one quarter and three-eighths of an inch. In addition one to three inches of snow accumulated on top of the ice. In Sussex County, ice accretions were generally less than one-quarter of an inch, but snow accumulations reached between 6 and 12 inches.

It did not take long for traffic problems to begin once the freezing precipitation started on the second. In Morris County, scores of vehicles were spinning out of control. Spin outs and minor accidents were common on Interstate 287. New Jersey State Route 10 in Denville was at a standstill for more than one hour as vehicles could not get up the hill. Mount Olive Police reported 25 accidents as both U.S. Routes 206 and 46 were closed in the township. Many accidents were also reported along Interstate 80 in Warren County and within Byram Township (Sussex County). Vehicles skidded into poles, guard rails and ditches. On the third, several school districts were closed in Morris and Hunterdon Counties. Schools had delayed openings in Somerset County. Many extracurricular activities were canceled. Scores of accidents occurred throughout this event in Sussex County. During the evening of the third as precipitation went from rain to freezing rain, many additional accidents occurred. In Somerset County, there were 65 collisions on Interstates 287 and 78 and Route 440. In Morris County, there were forty accidents on Interstates 80 and 287.

Specific accumulations included 12 inches in Wantage and Vernon (Sussex County), 11.9 inches in Barry Lakes (Sussex County), 6.2 inches in Newton (Sussex County), 4 inches in Netcong (Morris County), 3 inches in Hope and Belvidere (both Warren County), 2 inches in Long Valley (Morris County), 1.1 inches in Chatham (Morris County) and 1 inch in Flemington (Hunterdon County).

The low pressure system responsible for the wintry weather developed in the Southern Plains on January 1st and moved into the Tennessee Valley during the morning of the 2nd. By the morning of the 3rd, it moved into North Carolina where a secondary formed

# Storm Data and Unusual Weather Phenomena

January 2003

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

this low passed south of the area, a high pressure system remained nearly stationary over nearby Canada and provided and helped entrench cold air near the surface. This causes precipitation to fall as freezing rain even though it was warm enough aloft for the falling snow to change to plain rain.

**NJZ016>019**

**Salem - Gloucester - Camden - Northwestern Burlington**

<b>03</b>	<b>1100EST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>Astronomical High Tide</b>
	<b>1700EST</b>						

The combination of a high pressure system over nearby Canada, a low pressure system that moved along the Eastern Seaboard and spring astronomical tides caused by the new moon produced widespread minor tidal flooding along the Delaware River and tidal sections of its tributary streams during the daytime high tide cycle on the 3rd. Localized tidal flooding occurred with the previous afternoon's high tide. High tide at Reedy Island, Delaware (New Castle County) was 7.78 feet above mean lower low water at 1148 a.m. EST on the 3rd. Minor tidal flooding begins at 7.2 feet above mean lower low water. High tide at Pier 12 in Philadelphia was 8.9 feet above mean lower low water at 220 p.m. EST on the 3rd. Minor tidal flooding begins at 8.2 feet above mean lower low water. High tide in Burlington was 9.90 feet above mean lower low water at 300 p.m. EST on the 3rd. Minor tidal flooding begins at 9.00 feet above mean lower low water.

**NJZ016>017**

**Salem - Gloucester**

<b>05</b>	<b>1200EST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>Heavy Snow</b>
	<b>2100EST</b>						

**NJZ015-018>022-025>027**

**Mercer - Camden - Northwestern Burlington - Western Ocean - Cumberland - Western Atlantic - Eastern Atlantic - Eastern Ocean - Southeastern Burlington**

<b>05</b>	<b>1300EST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>Winter Weather/Mix</b>
	<b>2200EST</b>						

A potent Alberta Clipper produced heavy snow across extreme southwestern New Jersey and an accumulating snow of two to four inches across much of the rest of the southern half of southern New Jersey. Accumulations farther north were less than two inches. The largest accumulations were in Salem and Gloucester Counties. Snow began falling during the early afternoon and was the heaviest during the afternoon. It ended during the evening. Many roads in the southwestern part of the state became slippery and snow covered. Accumulations included 5.3 inches in Quinton (Salem County), 4.5 inches in Williamstown (Gloucester County) and Chesilhurst (Camden County), 4.2 inches in Glassboro (Gloucester County), 4.0 inches in Sewell (Gloucester County), 3.7 inches in Tabernacle (Burlington County), 3.5 inches in Northfield (Atlantic County), Lindenwold and Erial (Camden County), 3.1 inches in Mount Holly (Burlington County), 3.0 inches in Newport (Cumberland County) and Mount Laurel (Burlington County), 2.8 inches in Somers Point (Atlantic County) and Somerdale (Camden County), 2.5 inches in Hammonton (Atlantic County) and Delran (Burlington County) and 2.0 inches in Ewing (Mercer County).

The low pressure system formed in Saskatchewan Province on the third, moved southeast to Minnesota on the morning of the 4th, southern Indiana on the morning of the 5th and was well east of the Delmarva Peninsula during the morning of the 6th. Historically, Alberta type low pressure systems usually do not produce heavy snow. But the air at mid levels of the atmosphere was quite cold and this enhanced the instability with this low pressure system. While no thunderstorms occurred, the instability did produce heavier precipitation.

**NJZ015-022**

**Mercer - Western Atlantic**

<b>11</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>	<b>0.20K</b>	<b>0</b>	<b>Strong Wind</b>
	<b>0200EST</b>							

Gusty northwest winds accompanied a band of snow showers and snow flurries as they moved through New Jersey. Peak wind gusts were mainly between 30 and 45 mph. The highest reported wind gusts were 51 mph at Mercer County Airport and 46 mph at the Atlantic City International Airport.

**NJZ001-007>010-012>027**

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

<b>14</b>	<b>0300EST</b>			<b>1</b>	<b>7</b>			<b>Extreme Cold/Wind Chill</b>
	<b>0900EST</b>							

A cold frontal passage on the 13th initiated about a two week run of unseasonably cold weather, even by January standards across New Jersey. There was one cold related death and a few others that were indirectly caused by the cold weather. There were several cases of either frostbite or hypothermia throughout the state. The coldest mornings were on the 18th and 28th as low temperatures dipped into the single numbers or below zero. For many locales, they were the coldest days in three years. Minimum temperatures on most days were no higher than the teens. The extreme cold filled homeless shelters to capacity. In addition the number of vehicle batteries dying and parking brakes freezing increased. Calls to heating oil firms and utilities rose dramatically. On January 18th, Public Service Electric and Gas logged 13,000 calls, twice their normal number. Several water mains broke because of the extreme cold. The Coast Guard had to break the ice in the Delaware River to make heavy shipping possible. Because of ice in Raritan Bay

# Storm Data and Unusual Weather Phenomena

January 2003

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

and around New York City, a few ferry services were stopped and ferry service between Cape May and Lewes was also restricted. On January 23rd, Public Service Electric and Gas set a usage record for both natural gas (2,425 million dekatherms) and winter time electricity usage (6,877 megawatts).

In Sussex County, the cold weather caused the postponement of outdoor work projects. The non-profit assistance program in the county reported a 250 percent increase in people requesting help. In Middlesex County, a 20-year-old man was found frozen to death at a Garden State Parkway rest stop in Woodbridge. Elsewhere in Woodbridge, a 77-year-old man and a 50-year-old woman died in a fire caused by a portable electric heater that tipped over. Elsewhere in Middlesex County, water main breaks occurred in Metuchen (State Route 27) Middlesex Borough and Perth Amboy (State Route 35). In Monmouth County, ferry service between the county and New York City was suspended from January 23rd through the 26th because of ice in Raritan Bay and around the piers in New York City. About 70 percent of Raritan Bay was frozen. This was the first time since 2000 that ferry service was suspended. About 4,000 commuters who took the ferries in Highlands, Atlantic Highlands, the Belford section of Middletown Township and South Amboy (Middlesex County) had to scramble to find alternate ways to get to and from Manhattan. In Freehold, a 12 inch water main burst on U.S. Route 9 on the 30th flooded and closed the southbound lanes of the roadway. The northbound traffic was backed up for hours. In Ocean County, freezing spray problems caused fishing boats to stay in port. Too much ice accumulating on one side can cause the boat to list and capsize. Shelters in Trenton (Mercer County) were setting records. Along coastal New Jersey (Ocean, Cumberland, Cape May and Atlantic Counties), homeowners' pipes were bursting and included vacant summer homes which were not properly winterized. In Cumberland County, a 49-year-old woman was found dead on the street in Bridgeton. She suffered from asthma and it was believed the cold weather triggered an attack. The Cape May-Lewes Ferry service was reduced to one working vessel because of the ice in Delaware Bay. While the extended cold weather was expected to reduce the pest problem this upcoming growing season, wineries feared the unseasonably cold weather may kill or damage grape vines.

Lowest temperatures included 9 degrees below zero in Walpack (Sussex County), 6 degrees below zero in Hainesville (Sussex County), 2 degrees below zero in Newton (Sussex County), Estell Manor (Atlantic County) and Long Valley (Morris County), zero in Chatham (Morris County) and Somerville (Somerset County), 2 degrees in Flemington (Hunterdon County) and Seabrook (Cumberland County), 3 degrees in Phillipsburg (Warren County) and the Atlantic City International Airport, 4 degrees in Freehold (Monmouth County), New Brunswick (Middlesex County) and Hightstown (Mercer County) 5 degrees in Trenton (Mercer County) and Mount Holly (Burlington County), 7 degrees in Pennsauken (Camden County), 8 degrees in Beach Haven (Ocean County), 9 degrees in West Deptford (Gloucester County) and 10 degrees at the Marina within Atlantic City. This cold snap cemented January as being unseasonably cold. The preliminary statewide monthly mean temperature of 26.3 degrees was the coldest January and winter month since 1994 (24.1 degrees). Normal is 30.6 degrees. The monthly mean temperature of 27.9 degrees at the Atlantic City International Airport was also the coldest January and the coldest winter month since 1994 (27.6 degrees). The monthly mean temperature of 31.4 degrees at the Atlantic City Marina was the coldest January and the coldest winter month since 1994 (29.5 degrees). In Trenton, the monthly mean temperature of 26.0 degrees was 5.8 degrees colder than normal. M20VE

NJZ023>024

### **Western Cape May - Eastern Cape May**

<b>16</b>	<b>2000EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Winter Weather/Mix</b>
<b>17</b>	<b>0500EST</b>				

A low pressure system that formed over the central Rockies on Wednesday the 15th rapidly moved east and spread snow across New Jersey during the night of the 16th. The heaviest snow fell in Cape May County. Elsewhere in the state, accumulations were less than two inches. The snow began during the evening of the 16th and was over by daybreak on the 17th. The timing of this event (overnight) helped minimize the number of traffic accidents. Specific accumulations (all in Cape May County) were 4.1 inches in Cape May City, 3.0 inches at the Cape May Ferry Terminal, 2.8 inches in Green Creek and 2.0 inches in Ocean City. The low pressure system went from the central Rockies the morning of the 15th, to the Ozark Mountains the morning of the 16th to about 250 miles east of the Delmarva Peninsula at sunrise on the 17th. Its location and fast forward speed prevented much snow from falling north and northwest of Cape May County.

NJZ013-019-024-026

### **Western Monmouth - Northwestern Burlington - Eastern Cape May - Eastern Ocean**

<b>20</b>	<b>1000EST</b>	<b>0</b>	<b>0</b>	<b>51K</b>	<b>0</b>	<b>Strong Wind</b>
	<b>1800EST</b>					

Strong gusty winds buffeted New Jersey during the late morning and afternoon of the 20th. Peak wind gusts averaged between 30 and 45 mph inland and averaged between 35 and 55 mph along coastal areas. A confluence of events including the strong winds caused damage to several boats in Rancocas Creek (Burlington County). The strong upstream winds and incoming tide forced ice up the creek. The ice built along the docks of a marina and the dock pylons were torn loose. The torn dock and six vessels were carried upstream. Three boats and part of the dock became wedged against the Delanco-Riverside Bridge. One boat suffered significant damage. The highest recorded wind gust was 54 mph in Keansburg (Monmouth County). Other peak wind gusts included 52 mph in Barnegat (Ocean County), 49 mph in Cape May Harbor, 48 mph in Belmar (Monmouth County), 46 mph in Point Pleasant (Ocean County), 43 mph at the Atlantic City International Airport and 41 mph in Wrightstown (Burlington County). The strong winds were caused by the difference in surface pressure between a rapidly deepening low pressure system over the Canadian Maritimes and a high pressure system building southeast from the Canadian Rockies. Winds peaked after a cold front moved through the state.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>NJZ009&gt;010-012&gt;027</b>	<b>Hunterdon - Somerset - Middlesex - Western Monmouth - Eastern Monmouth - Mercer - Salem - Gloucester - Camden - Northwestern Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean - Southeastern Burlington</b>								
<b>29</b>	<b>0400EST</b>				<b>0</b>	<b>0</b>	<b>0</b>		<b>Winter Weather/Mix</b>
	<b>2100EST</b>								

Light snow fell across most of central and southern New Jersey from the pre dawn through the first half of the evening on the 29th. Precipitation mixed with sleet and freezing rain at times across Salem, Cumberland and Cape May Counties during the daylight hours. Accumulations averaged between one and three inches. Untreated roads were hazardous. Emergency personnel were busy all day responding to fender benders on major highways and side streets. Several nasty accidents occurred in Somerset and Burlington Counties. In Somerset County, at 845 a.m. EST a 20-year-old male was seriously injured in South Plainfield when he lost control of his car and collided with an oncoming Mack truck. Because of the accident, access to Interstate 78 and U.S. Route 22 was blocked. At the same time in Green Brook, a cement mixing truck skidded through a U.S. Route 22 intersection, overturned and knocked down a pole. At 1230 p.m. EST, a commuter van exiting Interstate 78 in Watchung could not make the turn and crashed into a tree. A 53-year-old passenger died and four other passengers in the vehicle were injured. In Burlington County, a 74-year-old woman passenger died at 1123 a.m. EST in Westampton Township at mile marker 42 on the New Jersey Turnpike after her husband lost control of the car, spun off the road and struck a tree. In Edgewater Park, southbound lanes of U.S. Route 130 were closed through the evening because of a three vehicle crash.

Specific accumulations included 3 inches in Pennsauken (Camden County), 2.5 inches in New Lisbon (Burlington County) and Camden (Camden County), 2.3 inches in Mount Laurel (Burlington County), 2.0 inches in Ewing (Mercer County), Maple Shade (Burlington County), Beach Haven (Ocean County) and West Deptford (Gloucester County), 1.5 inches in Cream Ridge (Monmouth County), Hightstown (Mercer County), and Hammonton (Atlantic County), 1.3 inches in New Brunswick (Middlesex County), 1.0 inch in Flemington (Hunterdon County) and Somerville (Somerset County), 0.5 inches in Woodstown (Salem County) and Seabrook (Cumberland County).

Precipitation moved into the region ahead of a low pressure system's warm front. The low itself went northeast from the Ohio Valley into the Saint Lawrence Valley. Its cold front moved through the region during the early evening and ended the precipitation.

## NEW MEXICO, Central and North

<b>NMZ001&gt;021-026</b>	<b>Northwest Plateau - Northwest Mountains Including Jemez - Upper Rio Grande Valley - Sangre De Cristo Mountains - Northeast Highlands - Harding - Far Northeast Plains - Westcentral Mountains - Middle Rio Grande Valley - Sandia/Manzano Mountains - Central High Plains/Estancia Valley County - Conchas Lake/Guadalupe - Quay - Southwest Mountains/Upper Gila Region - Lower Rio Grande Valley - Lincoln County High Plains/Hondo Valley - Capitan/Northern Sacramento Mountains - De Baca - Chaves County Plains - Roosevelt - Curry - Guadalupe Mountains Of Chaves County</b>								
<b>01</b>	<b>0000MST</b>				<b>0</b>	<b>0</b>			<b>Drought</b>
<b>31</b>	<b>2359MST</b>								

A warm and unusually dry month was noted across much of north and central New Mexico. Although some of the ski areas located in the high elevations of the northern mountains recorded regular light to moderate snow amounts during the month, many of the lower valleys, the central highlands and the eastern plains went several weeks between episodes of light precipitation. Conditions were especially warm and dry throughout the middle Rio Grande Valley and the adjacent western higher plateau regions. Albuquerque Airport at 7.8 degrees above normal had its warmest January since official records began 1893, while precipitation for the month was limited to just a trace. Conditions only aggravated concerns for an early and intense forest fire season and threats of irrigation cuts later in the spring and early summer.

## NEW MEXICO, South Central and Southwest

NONE REPORTED.

## NEW MEXICO, Southeast

NONE REPORTED.

## NEW YORK, Central

<b>NYZ023&gt;025-044&gt;046-055&gt;057</b>	<b>Schuyler - Chemung - Tompkins - Cortland - Chenango - Otsego - Tioga - Broome - Delaware</b>								
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<b>01</b>	<b>2200EST</b>				<b>0</b>	<b>0</b>	<b>1.1M</b>		<b>Ice Storm</b>
<b>02</b>	<b>0200EST</b>								

A low pressure system in Mississippi, New Year's Eve, moved northeast to the Tennessee/North Carolina border the morning of the 1st. The storm then picked up speed to be in northeast Pennsylvania the evening of New Year's Day. The next morning it was off

# Storm Data and Unusual Weather Phenomena

January 2003

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

the coast of Maine. A cold front with rain passed southeast of the area New Year's Eve. This allowed a north to northeast wind to set up at the surface which brought in cold air during most of the 1st. Precipitation well ahead of the storm started around 10 AM on the 1st. Precipitation started as mostly rain but as colder air moved in the rain began to freeze. The freezing rain was heavy at times in the evening before ending in the early morning of the 2nd. Ice amounts were the thickest at the higher elevations with mostly a quarter to a half inch. There were a few higher amounts reported. Melted precipitation amounts were an inch or more. The ice caused trees and wires to come down. Around 15,000 customers lost power in the area. The hardest hit area with 2,000 customers without power was northern Broome County and southern Cortland County. The ice remained on the trees and wires through the January 3rd snowstorm causing more wires to come down.

**NYZ009-015>018-022>025-036>037-044>046-055>057-062**     **Northern Oneida - Yates - Seneca - Southern Cayuga - Onondaga - Steuben - Schuyler - Chemung - Tompkins - Madison - Southern Oneida - Cortland - Chenango - Otsego - Tioga - Broome - Delaware - Sullivan**

<b>03</b>	1500EST								
<b>04</b>	1000EST				0	0	6M		Heavy Snow

A slow moving nor'easter moved from the southeast United States early on the 3rd to the Delmarva peninsula that evening. The storm then moved to the southeast New England coast the morning of the 4th. Snow spread well ahead of the storm into central New York the evening of the 2nd. The snow was heavy at times on the 3rd during the day into the evening. Snowfall amounts were 8 to 14 inches in the central southern tier, Finger Lakes region, and northern Oneida County and 10 to 20 inches elsewhere. The highest amounts of up to 25 inches were in Broome, Tioga, southern Cortland and southern Chenango Counties. Water equivalents were mostly half an inch in the western areas to an inch and a half in eastern areas. The weight of the snow combined with the weight of ice from the New Year's day storm caused additional power outages. At least 20,000 customers were without power at some time. Some customers were without power for up to a week. Emergency shelters were set up in some areas. The worst hit areas were again in northern Broome and southern Cortland Counties. These areas were without power after the ice storm on the first of the month. Tompkins County was also hard hit. All of the major roads had motor vehicle accidents. Some were serious enough to close the interstate highways.

**NYZ009**

**Northern Oneida**

<b>11</b>	0700EST								
<b>12</b>	0700EST				0	0			Heavy Snow

A cold front crossed central New York the morning of the 10th. This brought in cold air which set off lake effect snow east of Lake Ontario. The steady bands of snow started around 9 PM the evening of the 10th. By the next morning some locations had over a foot of new snow. The snow continued into the morning of the 12th but the west to east bands of lake effect did not remain stationary. Most snow total amounts across the northern third of Oneida County were between 1 and 2 feet. A snow spotter in Point Rock reported 28.5 inches of snow for the period. The highest amounts were probably in the extreme northwest corner of Oneida County. The heavy snow combined with 15 to 25 miles an hour wind caused whiteout conditions and drifting snow.

**NYZ009**

**Northern Oneida**

<b>16</b>	0400EST								
	0700EST				0	0			Heavy Snow

A weak low pressure system crossed upstate New York during the 15th. After the low moved through, colder air from the west northwest set off lake effect snow showers. A west to east band of lake effect snow moved into northern Oneida County the evening of the 15th. Snowfall rates in this band were 1 to 3 inches an hour. Strong winds of 20 to 30 mph created blowing and drifting snow. Snowfall amounts were mostly 6 to 10 inches across the northern third of the county. The highest amounts were probably in the extreme northwest corner of the county.

**NYZ009**

**Northern Oneida**

<b>20</b>	0700EST								
	1500EST				0	0			Heavy Snow

A cold front with heavy snow moved through central New York early on the 20th. Behind the front, arctic air set off lake effect snow. These bands, also with heavy snow, set up soon after the front went through. Snowfall amounts were 6 to 10 inches. Snowfall rates were 1 to 2 inches an hour. Strong winds sustained over 20 mph with gusts over 30 mph created drifting and blowing snow. White-out conditions caused many multiple vehicle accidents. No serious accidents were reported in northern Oneida County. In the rest of Oneida County many accidents occurred. One man died the morning of the 20th in Bridgewater when a tractor trailer slid out of his lane on Route 8. The New York State Thruway was closed in both directions for most of the afternoon. The east bound lanes were closed for 8 hours. The first accident involved 20 vehicles with 21 injuries. 2 out of 6 tractor trailers caught on fire. A second accident, also in the town of Whitestown, involved 5 vehicles and 9 injuries.

## NEW YORK, Coastal

**NYZ067>071**

**Orange - Putnam - Rockland - Northern Westchester - Southern Westchester**

<b>03</b>	1800EST								
<b>04</b>	0400EST				0	0			Winter Storm

A cold front moved across the region during the pre-dawn hours, early on Wednesday, January 1st before stalling just off the coast

# Storm Data and Unusual Weather Phenomena

January 2003

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

later that day. During the evening on January 1st, a developing area of low pressure began to move northeast from the Delmarva Peninsula along the frontal boundary. By morning, the center of the low moved well off to the northeast of the New England coast. During the day on Thursday, January 2nd, a second area of low pressure began to develop over Virginia. This low quickly intensified and took over as the primary storm as it moved slowly northeast Thursday night. The center of this low pressure system was south of Long Island by Friday afternoon, and just southeast of Nantucket by Saturday morning.

Light and spotty precipitation, generally in the form of snow fell across Southeastern New York just before midnight on the night of January 2nd into the 3rd. This light and intermittent snow continued through the night before developing into a steady light snow around daybreak. The snow continued through the morning on January 3rd, before becoming heavy at times in the afternoon. During the afternoon, warmer air off the ocean started to protrude inland. As a result, the snow changed over to freezing rain over portions of northern Westchester county and southeast Rockland county. Further north and west, over Putnam and Orange counties, the precipitation continued to fall as snow. The precipitation became more light in nature, but remained steady during the evening hours on January 3rd. The precipitation continued to fall as snow over Orange and Putnam counties, with a mix of snow, sleet and freezing rain over portions of Rockland and Westchester counties, and primarily freezing rain over the southern portion of Rockland county and central and northern Westchester county. The precipitation tapered off after midnight on the night of January 3rd into the 4th, before ending in the form of light snow and flurries everywhere around daybreak on Saturday, January 4th.

Storm total accumulations were as follows:

Orange County: 10-16 inches of snow

Putnam County: 5-8 inches of snow, with a light accumulation of ice

Rockland County: 2-3 inches of snow, with a significant accumulation of ice

Westchester County: 4-8 inches of snow, with a significant accumulation of ice

## NEW YORK, East

**NYZ047>054-058-063>066**

**Schoharie - Western Schenectady - Eastern Schenectady - Southern Saratoga - Western Albany - Eastern Albany - Western Rensselaer - Eastern Rensselaer - Western Greene - Western Ulster - Eastern Ulster - Western Dutchess - Eastern Dutchess**

<b>01</b>	<b>2200EST</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
<b>02</b>	<b>0400EST</b>			

A low pressure area formed in the Ohio Valley, along a stationary front, early on New Years Day. The storm deepened as it tracked northeastward, reaching east of Cape Cod shortly after midnight. This storm initially brought rain to most of eastern New York. However, as a shallow arctic airmass slowly bled southward from a high in eastern Canada, the rain changed to freezing rain across the higher terrain, then the valley locations, by late New Year's Day. As the colder air became more entrenched, the precipitation gradually switched to sleet and finally to snow after midnight. Snowfall amounts were minor, only 1 to 3 inches. However, sleet and especially freezing rain, produced ice accretions up to half an inch thick. The ice buildup did produce some spotty power outages. About 2500 customers were without power in the Mid Hudson Valley and a few more elsewhere. The combination of ice and a little wind, brought down a few trees and large limbs as well.

**NYZ032>033-038>043-047>054-058>061-063>066**

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

<b>03</b>	<b>1800EST</b>	<b>0</b>	<b>0</b>	<b>430K</b>	<b>Winter Storm</b>
<b>04</b>	<b>1800EST</b>				

A low pressure area developed in the Mississippi valley by late on January 2. The storm tracked northward into the southern Ohio Valley, then rapidly redeveloped along the Mid Atlantic seaboard on January 3. From there, it moved northeast to just off the coast of Cape Cod by late on January 4. With plenty of cold air in place the stage was set for another snowstorm across eastern New York. Although this storm was not as powerful as the Christmas Day storm, it moved very slowly allowing for a longer duration of snow and another blockbuster snowstorm across eastern New York. Light snow began falling early on the January 3, then it became heavier and steadier as the day wore on. A heavy band of snow formed over the Mohawk Valley, in a similar location to the storm on Christmas Day. This band weakened, but other more migratory ones over eastern New York produced bursts of heavy snow, up to 3 inches per hour, followed by lulls of lighter snow. Thundersnow was reported in the city of Gloversville. A lightning strike wiped out the electricity good part of the Gloversville-Johnstown Wastewater Treatment Facility. By the time the snow ended, a general 1 to 2 foot mantle of fresh snow covered eastern New York. Specific snowfall amounts included 20.8 inches at Albany, which made it the second greatest January snowstorm on record, and the 10th all time heaviest snowstorm ever. Also, it was the first season since 1887-88 that two storms of more than 20 inches were recorded at Albany during the same season. Other localities included 20.5 inches at Stuyvesant, Columbia County, 15.8 inches at Poughkeepsie, Dutchess County, 17.0 inches at Indian Lake, Hamilton County, and 17.0 inches at North Creek, Warren County. Alcove Dam in Albany County, reported the highest amount with 24.6 inches. The heavy snow combined with the ice leftover from the previous storm, to bring down many large evergreen limbs and whole trees. The towns of Clifton Park, Guilderland, New Scotland and Delmar suffered the most tree damage. The large limbs and trees brought down many power lines, resulting in power losses to as many as 30,000 Capital District residents. An additional 1500 customers were without power in Greene County. The weight of the snow also caused some roofs to collapse. A portion of a factory



# Storm Data and Unusual Weather Phenomena

January 2003

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

**NYZ026-029**

### **Northern St. Lawrence - Southeastern St. Lawrence**

<b>25</b>	<b>1200EST</b>				<b>0</b>	<b>0</b>	<b>2K</b>		<b>Winter Weather/Mix</b>
<b>26</b>	<b>0100EST</b>								

An arctic cold front moved across the eastern Great Lakes during the night of January 25th and early morning of January 26th. Ahead of the front, southwest winds resulted in lake effect snow across St Lawrence county. Accumulations ranged from 1 inch out side the snow bands, up to around 5 inches within the snow bands. A few very locally higher amounts occurred under the core of the band. The heaviest snow was generally south of a line through Potsdam.

## NEW YORK, West

**NYZ006**

### **Oswego**

<b>03</b>	<b>1945EST</b>				<b>0</b>	<b>0</b>	<b>15K</b>		<b>Heavy Snow</b>
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Low pressure over North Carolina moved northeast to Cape Cod and brought a general four to six inch snowfall to the entire region. Over the higher elevations of the eastern Lake Ontario region, snowfall accumulations ranged from eight to ten inches.

**NYZ006>008-010-012-019>020**

### **Oswego - Jefferson - Lewis - Erie - Wyoming - Chautauqua - Cattaraugus**

<b>11</b>	<b>0300EST</b>				<b>0</b>	<b>0</b>	<b>130K</b>		<b>Heavy Snow</b>
	<b>1850EST</b>								

A sharp cold front crossed western and central New York late on the 10th. Lake effect snow developed overnight in the cold, westerly flow. The activity began in a fairly broad area at first covering southern Erie and Wyoming counties off Lake Erie and southern Jefferson and northern Lewis counties off Lake Ontario. Very intense single bands set up during the morning of the 11th. Accumulations of two to four inches an hour were common off Lake Erie and three to five inches an hour off Lake Ontario. The snows weakened during the evening of the 11th. Specific snowfall reports received were: off Lake Erie--Perrysburg 26"; Sinclairville 22"; Bennington 20"; and off Lake Ontario--Highmarket and North Osceola 51 inches.

**NYZ008**

### **Lewis**

<b>13</b>	<b>1800EST</b>				<b>0</b>	<b>0</b>	<b>8K</b>		<b>Heavy Snow</b>
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A cold front brought a general four to six inch snowfall to much of the region. Across the higher elevations of the Tug Hill, snowfalls of seven to nine inches were reported.

**NYZ005>006-006-008-010-019**

### **Northern Cayuga - Oswego - Lewis - Erie - Chautauqua**

<b>15</b>	<b>0200EST</b>				<b>0</b>	<b>0</b>	<b>90K</b>		<b>Heavy Snow</b>
	<b>2000EST</b>								

A weak low approached from the upper Great Lakes and slowly passed to our north during Wednesday the 15th. Lake effect snows began to develop off Lake Erie during the evening hours of the 14th. The snows did not extend too far inland in a weak westerly flow however along the lakeshore and adjacent ridges of southern Erie and Chautauqua counties up to ten inches fell by daybreak. Off Lake Ontario, the wind flow became more aligned during the morning of the 15th and a band of snow set up over Oswego county. Almost two feet of snow fell in the City of Oswego in less than nine hours during the day. Winds increased during the day allowing the band to extend in to southern Lewis county. Snowfall reports received off Lake Erie: Sinclairville 14"; Perrysburg 11"; Boston, Arkwright, and Colden 10"; and Sherman 9". Off Lake Ontario: West Leyden 40"; North Osceola 29"; Scriba 17"; Highmarket 16"; and Sandy Creek 14".

**NYZ002>004**

### **Orleans - Monroe - Wayne**

<b>21</b>	<b>0600EST</b>				<b>0</b>	<b>0</b>	<b>45K</b>		<b>Heavy Snow</b>
	<b>0915EST</b>								

A persistent west to northwest flow produced lake effect snows along the south shore of Lake Ontario. The heaviest snows fell during the early morning hours of the 21st. This caused considerable problems for the morning commute in the Rochester Metro area. The activity broke up by mid-day. Snowfall reports included: Ontario 12"; Webster 11"; Kendall 9"; and Lyndonville 7".

**NYZ006**

### **Oswego**

<b>25</b>	<b>0700EST</b>				<b>0</b>	<b>0</b>	<b>10K</b>		<b>Heavy Snow</b>
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Lake effect snows developed off Lake Ontario in a light westerly flow. Although the snows did not extend very far inland, the extremely cold temperatures resulted in very fluffy, low density snow that accumulated eight to ten inches.

**NYZ012>013-019**

### **Wyoming - Livingston - Chautauqua**

<b>26</b>	<b>1830EST</b>				<b>0</b>	<b>0</b>	<b>30K</b>		<b>Heavy Snow</b>
	<b>2240EST</b>								

A broad area of lake effect snows continued off both Lakes Erie and Ontario in a cold westerly flow. The lake effect snows were enhanced over the higher elevations of the southern tier and Finger Lakes region where snowfall totals on the 26th ranged from eight to twelve inches.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**NCZ007>009-021-026-038** Person - Granville - Vance - Forsyth - Franklin - Davidson

23	0600EST 1200EST				0	0			Winter Storm
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Snow accumulated to three to five inches across portions of the northern Piedmont and northwest Piedmont on the morning of the 23rd. The snow began to fall shortly after midnight, and continued to fall into the late morning hours. An area of three to four inches accumulated in the northern Piedmont from Person to Franklin counties, and four to five inches were reported in Davidson and Forsyth counties. Less than three inches of snow was reported elsewhere in Central North Carolina.

## NORTH CAROLINA, Central Coastal

**NCZ029-044>047-080>081-090>095-098-103>104** Martin - Pitt - Washington - Tyrrell - Western Dare - Beaufort - Western Hyde - Duplin - Lenoir - Jones - Craven - Pamlico - Carteret - Onslow - Eastern Dare - Eastern Hyde

23	0900EST 1500EST				0	0			Winter Storm
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A major winter storm affected eastern North Carolina on January 23, 2003. The storm dumped the highest amounts of snow east of highway 17 across the area known as the Outer Banks, where 8 to 12 inches of snow fell with isolated amounts up to 14 inches, including the counties of eastern Carteret, Dare and, and Hyde counties. This was the largest one day snowfall on the Outer Banks in over a decade. The greatest storm total snowfall occurred on December 23rd and 24th in 1989. Snowfall amounts from 4 to 8 inches fell across central sections of the county warning area including Craven, Pamlico, Beaufort, and Tyrrell counties. Other western counties received 2 to 4 inch snowfall amounts.

## NORTH CAROLINA, Extreme Southwest

**NCZ060>061** Cherokee - Clay

05	0400EST 1200EST				0	0			Heavy Snow
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Snows of 4 to 6 inches fell across extreme southwest North Carolina.

**NCZ060>061** Cherokee - Clay

16	1400EST 2300EST				0	0			Winter Storm
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A storm system moved east from the Southern Plains across the Tennessee Valley of Alabama into the Southern Appalachians bringing snowfall totals ranging from 2 to 4 inches across Cherokee and Clay counties of extreme southwest North Carolina.

## NORTH CAROLINA, North Coastal

**NCZ012>014-030** Northampton - Hertford - Gates - Bertie

16	2100EST				0	0			Winter Storm
17	0300EST								

A winter storm produced 1 to 2 inches of snow along with a light coating of freezing rain and sleet across portions of northeast North Carolina. Specific snow totals included: Margarettsville in Northampton county 2", and Jackson in Northampton county 1". Local law enforcement agencies reported several accidents.

**NCZ012>017-030>032-102** Northampton - Hertford - Gates - Pasquotank - Camden - Western Currituck - Bertie - Chowan - Perquimans - Eastern Currituck

23	0100EST 1200EST				0	0			Winter Storm
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A winter storm produced 2 to 6 inches of snow across northeast North Carolina, with the highest amounts occurring over the counties adjacent to the Albemarle Sound and Atlantic Coast. Some specific higher snow totals included: Elizabeth City in Pasquotank county 4.5", Southern Perquimans county 6", Edenton in Chowan county 4-4.5", Camden in Camden county 4", Corolla in Currituck county 4", and Windsor in Bertie county 4". Local law enforcement agencies reported numerous accidents. Most, if not all schools in the area, were closed Thursday, January 23rd due to very slippery road conditions.

## NORTH CAROLINA, Northwest and North Central

**NCZ001>002-018** Ashe - Alleghany - Watauga

08	0130EST 1100EST				0	0	2K		High Wind (G65)
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High winds during the morning of the 8th downed trees and some power lines. A house near Sparta had shingles blown off the roof.

# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>NORTH CAROLINA, Northwest and North Central</u></b>									
<b>NCZ001&gt;003-018&gt;020</b>		<b>Ashe - Alleghany - Surry - Watauga - Wilkes - Yadkin</b>							
	22	2200EST			0	0	0		<b>Heavy Snow</b>
	23	0700EST							
	Snow late during the night of the 22nd through early in the morning of the 23rd accumulated 5 to 9 inches in the North Carolina northern mountains, with 4 to 6 inches in Wilkes, Surry, and Stokes counties.								
<b>NCZ001&gt;002-018</b>		<b>Ashe - Alleghany - Watauga</b>							
	23	1900EST			0	0	0		<b>High Wind (G65)</b>
	24	0300EST							
	High winds during the evening of the 23rd and morning of the 24th downed trees and power lines across Ashe, Alleghany, and Watauga counties. The AWOS at Boone in Watauga County measured a wind gust of 63 miles an hour.								
<b><u>NORTH CAROLINA, South Coastal</u></b>									
<b>NCZ087-096&gt;097-099&gt;101</b>		<b>Robeson - Bladen - Pender - Columbus - Brunswick - New Hanover</b>							
	23	0500EST 1600EST			0	0	150K		<b>Winter Storm</b>
	Snow blanketed eastern North Carolina. The coastal counties of Brunswick, New Hanover and Pender received between 2 to 3 inches, with around 1 to 2 inches inland. Hampstead, in Pender county, and the Masonboro area in New Hanover county had the most snowfall, coming in between 3.5 and 4 inches. The snowstorm caused most business to close, and all school districts closed their doors for the day. Damages were a result of traffic accidents, with nearly 100 wrecks reported the southeast portion of the state. Record cold air plunged into the state that evening, causing numerous reports of frozen water pipes .								
<b><u>NORTH CAROLINA, Southwest</u></b>									
<b>NCZ033-048&gt;050</b>		<b>Avery - Madison - Yancey - Mitchell</b>							
	03	1800EST			0	0			<b>Winter Weather/Mix</b>
	04	0200EST							
	Mainly light snow fell during the evening of the 3rd, and the early morning hours on the 4th across the northern mountains of North Carolina. Snow accumulations of 1 to 3 inches caused some slick roads. Heavier accumulations were reported in the highest elevations along the Tennessee border.								
<b>NCZ033-048&gt;053-058&gt;059</b>		<b>Avery - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Graham - Northern Jackson</b>							
	06	0800EST 2000EST			0	0			<b>Winter Weather/Mix</b>
	Light snow fell for much of the day across the western mountains of North Carolina. By evening, 1 to 3 inches had accumulated, mainly in areas above 3000 feet. The snow was accompanied by wind gusts of up to 50 mph.								
<b>NCZ033-048&gt;053-058&gt;059-062&gt;065</b>		<b>Avery - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania - Henderson</b>							
	16	1800EST			0	0			<b>Heavy Snow</b>
	17	0300EST							
	Light snow began across the mountains of North Carolina during the afternoon of the 16th, and gradually intensified with time. By early morning of the 17th, 4 to 8 inches of snow had accumulated. As much as a foot was reported on some of the highest peaks.								
<b>NCZ036&gt;037-056&gt;057-066&gt;072-082</b>		<b>Iredell - Davie - Catawba - Rowan - Polk - Rutherford - Cleveland - Lincoln - Gaston - Mecklenburg - Cabarrus - Union</b>							
	16	1800EST 2200EST			0	0			<b>Winter Weather/Mix</b>
	Light snow fell during the evening across portions of the foothills and piedmont of North Carolina, and accumulated to 1 to 2 inches. Numerous traffic accidents ensued.								
<b>NCZ034&gt;035-054&gt;055</b>		<b>Caldwell - Alexander - McDowell - Burke</b>							
	16	2000EST			0	0			<b>Heavy Snow</b>
	17	0000EST							
	Light snow began across the northern foothills during the early evening of the 16th, and gradually intensified with time. By midnight, 4 to 5 inches had accumulated. Near Marion, 2 people drowned when their vehicle slid off of a snow covered road into a creek								
<b>NCZ033-048&gt;053-058&gt;059-062&gt;063</b>		<b>Avery - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Graham - Northern Jackson - Macon - Southern Jackson</b>							
	19	0000EST 0800EST			0	0			<b>Winter Weather/Mix</b>

# Storm Data and Unusual Weather Phenomena

January 2003

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, Southwest

Mainly light snow produced accumulations of 1 to 2 inches across much of the North Carolina mountains, although some high elevation areas along the Tennessee border received 3 to 6 inches, while locations near the Blue Ridge received little more than a dusting. In addition, gusty winds resulted in blowing snow across a portion of the area, with some snow drifts to one-and-a-half feet.

**NCZ049**  
**Yancey**  
 20 0615EST 0 0 High Wind (G50)

High winds blew the tin roof off of a store in Burnsville. A few trees and power lines were blown down in the same area.

**NCZ033>037-048>057-066>069**  
**Avery - Caldwell - Alexander - Iredell - Davie - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Mcdowell - Burke - Catawba - Rowan - Polk - Rutherford - Cleveland - Lincoln**  
 23 0400EST 0 0 Heavy Snow  
 1000EST

Snow began at around midnight across the mountains of North Carolina, and intensified as it spread into the foothills and the western piedmont. The hardest hit area was the foothills, where 8 to 12 inches of snow had fallen by mid morning. Otherwise, snow accumulations were generally in the 3 to 6 inch range.

**NCZ070>072-082**  
**Gaston - Mecklenburg - Cabarrus - Union**  
 23 0600EST 0 0 Heavy Snow  
 0800EST

Light snow began around midnight in the southwest piedmont of North Carolina. A burst of heavy snow during the pre-dawn hours resulted in total accumulations of 3 to 8 inches by mid morning.

**NCZ034-048-053-059-063>066**  
**Caldwell - Madison - Buncombe - Northern Jackson - Southern Jackson - Transylvania - Henderson - Polk**  
 23 2000EST 0 0 16K High Wind (G60)  
 24 0400EST

High winds resulted in numerous trees and power lines being blown down across the mountains and foothills. In Mars Hill, the roof of a store was badly damaged. In Columbus, store signs were blown out.

**NCZ033-048>050-053**  
**Avery - Madison - Yancey - Mitchell - Buncombe**  
 23 2100EST 0 0 Extreme Cold/Wind Chill  
 24 0900EST

Air temperatures near zero and sustained winds as high as 40 mph combined to produce dangerous wind chills of -20 or less across portions of the North Carolina mountains.

**NCZ033-048>053-065**  
**Avery - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Henderson**  
 26 2000EST 0 0 Winter Weather/Mix  
 27 0200EST

Light snow fell across the North Carolina mountains during the evening of the 26th, and by early morning on the 27th, up to 3 inches of snow had accumulated. The heaviest amounts occurred in the highest elevations along the Tennessee border, while locations near the Blue Ridge received little more than a dusting.

## NORTH DAKOTA, Central and West

**NDZ002>005-010>013-031-043>044**  
**Burke - Renville - Bottineau - Rolette - Mountrail - Ward - Mchenry - Pierce - Golden Valley - Bowman - Adams**  
 17 0345CST 0 0 Winter Storm  
 2015CST

A strong cold front moved across the region producing gusty northwest winds to 35 mph and scattered snow showers. The front moved quickly through western and central North Dakota exiting the region in the evening. As a result the system did not produce the winter weather conditions earlier forecast. The winter storm warning was cancelled Friday evening of the 17th.

## NORTH DAKOTA, East

**NDZ008-016**  
**Pembina - Eastern Walsh**  
 26 1553CST 0 0 Winter Storm  
 27 0409CST

A strong low pressure system tracked across southern Canada, and brought 4 to 5 inches of snow and 25 to 35 mph winds to the northern Red River Valley.

## OHIO, East

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

### **OHZ011-013-020>021 Cuyahoga - Geauga - Medina - Summit**

06	0600EST 2100EST				0	0	325K		<b>Heavy Snow</b>
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Cold northerly winds blowing across Lake Erie caused bands of lake effect snow to develop during the morning. The snow intensified during the afternoon and finally dissipated during the evening. Maximum snowfall totals ranged from 8 to 9 inches in Cuyahoga, Medina and Summit Counties to 10 inches in Geauga County.

### **OHZ030**

#### **Ashland**

10	1300EST				0	0	25K		<b>Heavy Snow</b>
11	0000EST								

Arctic air moving across Lake Erie caused lake effect snow showers to develop around midday. Between 6 and 7 inches of snow was reported across inland sections of Ashtabula County by late evening.

### **OHZ012-014**

#### **Lake - Ashtabula**

15	0000EST 1900EST				0	0	150K		<b>Heavy Snow</b>
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Cold westerly winds blowing across Lake Erie caused lake effect snow showers to develop around midnight. These snow showers intensified during the morning hours and continued through the afternoon. This activity finally dissipated during the evening hours. Total accumulations ranged from 6 to 8 inches in western Lake County to around a foot in eastern Lake County and northern Ashtabula County. Wind gusts as high as 25 mph caused some blowing and drifting with visibilities reduced to near zero at times.

### **OHZ010>014**

#### **Lorain - Cuyahoga - Lake - Geauga - Ashtabula**

26	0200EST				0	0	325K		<b>Heavy Snow</b>
27	0200EST								

Cold north to northwest winds blowing across Lake Erie caused lake effect snow showers to develop during the early morning hours. These snow showers intensified after daybreak and persisted through the evening hours. Snowfall totals ranged from 6 to 9 inches across Lorain, Cuyahoga, Lake, Geauga and northern Ashtabula Counties. Most of the accumulation occurred during the late morning and early afternoon hours.

## OHIO, Northwest

NONE REPORTED.

## OHIO, Southeast

### **OHZ066>067-075>076- Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence**

**083>087**

14	0700EST				0	0			<b>Prolong Cold</b>
28	1300EST								

Two weeks of subfreezing temperatures occurred from the Hocking River Valley on north. This included Marietta and the lower Muskingum River Valley. Meanwhile, further south, some counties rose briefly above 32 degrees on the 20th. Several light snow events occurred, maintaining a snow cover. The coldest temperatures came just after dawn on Monday the 27th. Some preliminary readings included 18 degrees below zero from New Lexington of Perry County and minus 11 from McConnelsville of Morgan County. Carpenter and Athens registered minus 8. Outdoor work and construction were slowed.

## OHIO, Southwest

**OHZ035**

#### **Auglaize**

02	1540EST 2000EST				0	0			<b>Winter Storm</b>
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A series of low pressure systems tracked through the Ohio River valley, producing up to four inches of snow across west central Ohio.

**OHZ070-078-082-088**

#### **Butler - Clermont - Pike - Scioto**

16	1730EST 2300EST				0	0			<b>Winter Storm</b>
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Low pressure tracking across the upper Tennessee valley, produced a swath of snow across the southern half of Ohio. Two to three inches fell across the region, with isolated amounts up to four inches.

**OHZ046-055-070-079-081**

#### **Delaware - Franklin - Butler - Brown - Adams**

26	1700EST 2200EST				0	0			<b>Winter Storm</b>
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An arctic cold front dropped south across the Ohio valley during the morning and into the early afternoon. Brief periods of heavy snow occurred along the front, producing up to four inches.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>OHZ026-034-043&gt;045</b>	<b>Hardin - Mercer - Shelby - Logan - Union</b>				<b>0</b>	<b>0</b>			<b>Winter Storm</b>
		<b>29</b>	<b>0145EST</b>						
			<b>1300EST</b>						

A cold front tracking east across the region during the early morning, producing brief periods of heavy snow. The heaviest snow fell across west central Ohio, where four to six inches occurred.

## OKLAHOMA, Eastern

NONE REPORTED.

## OKLAHOMA, Extreme Southeast

NONE REPORTED.

## OKLAHOMA, Panhandle

NONE REPORTED.

## OKLAHOMA, Western, Central and Southeast

<b>OKZ027&gt;032-036&gt;048-050&gt;052</b>	<b>Grady - McClain - Cleveland - Pottawatomie - Seminole - Hughes - Jackson - Tillman - Comanche - Stephens - Garvin - Murray - Pontotoc - Coal - Cotton - Jefferson - Carter - Johnston - Atoka - Love - Marshall - Bryan</b>				<b>0</b>	<b>0</b>			<b>Fog</b>
		<b>14</b>	<b>0500CST</b>						
			<b>1100CST</b>						

Dense fog developed over the southern one half of Oklahoma during the early morning of the 14th and gradually dissipated by mid and late morning. Visibilities were reported less than one quarter of a mile in many areas. Numerous vehicle accidents were reported, including one in Sulphur (Murray County), and another three miles west of Davis (Garvin County).

<b>OKZ008-013-019&gt;020-025&gt;031-039&gt;041-046</b>	<b>Kay - Noble - Logan - Payne - Oklahoma - Lincoln - Grady - McClain - Cleveland - Pottawatomie - Seminole - Stephens - Garvin - Murray - Carter</b>				<b>0</b>	<b>0</b>			<b>Fog</b>
		<b>30</b>	<b>0600CST</b>						
			<b>0900CST</b>						

Areas of dense fog developed during the early and mid morning of the 30th, with visibilities below one quarter of a mile at times. Sub-freezing temperatures also allowed frost to form on some bridges and overpasses.

## OREGON, Central and East

NONE REPORTED.

## OREGON, Northwest

<b>ORZ001</b>	<b>Northern Oregon Coast</b>				<b>0</b>	<b>0</b>			<b>High Wind (G64)</b>
		<b>01</b>	<b>1200PST</b>						
		<b>02</b>	<b>0800PST</b>						

A Pacific weather system brought high winds to the North Oregon Coast. Cannon Beach reported gusts to 62 mph and Sunset Beach near Seaside gusts to 74 mph.

<b>ORZ001&gt;002</b>	<b>Northern Oregon Coast - Central Oregon Coast</b>				<b>0</b>	<b>0</b>			<b>Heavy Surf/High Surf</b>
		<b>02</b>	<b>0700PST</b>						
			<b>2200PST</b>						

<b>ORZ001</b>	<b>Northern Oregon Coast</b>				<b>0</b>	<b>0</b>			<b>Astronomical High Tide</b>
		<b>02</b>	<b>0900PST</b>						
			<b>1300PST</b>						

A potent Pacific storm churned up huge seas that pounded the Northern and Central Oregon Coast. Off shore buoys reported heaviest seas in the mid to upper 20 foot range. The high surf arrived at the time of one of the highest tides of the year, with high tides reported almost 3.5 feet above predicted high tides. This resulted in some minor flooding on Highway 202 in Clatsop County, and on other secondary roads near estuaries.

<b>ORZ001&gt;002</b>	<b>Northern Oregon Coast - Central Oregon Coast</b>				<b>0</b>	<b>0</b>			<b>High Wind (G58)</b>
		<b>02</b>	<b>1700PST</b>						
			<b>2200PST</b>						

Sunset Beach near Seaside reported gusts to 63 mph, Sea Lion Caves gusts to 67 mph, and Florence gusts to 58 mph.

# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b>OREGON, Northwest</b>									
<b>ORZ001&gt;002 Northern Oregon Coast - Central Oregon Coast</b>									
	22	0200PST			0	0			High Wind (G52)
	23	1200PST							
Sunset Beach near Seaside and Sea Lion Caves reported gusts to 60 mph. Florence reported gusts to 58 mph, Garibaldi gusts to 47 mph and Newport Jetty gusts to 44 mph.									
<b>Benton County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Clackamas County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Clatsop County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Columbia County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Hood River County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Lane County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Lincoln County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Linn County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Marion County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Multnomah County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Polk County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Tillamook County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Washington County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Yamhill County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							

Heavy rains associated with a strong Pacific weather system brought 2 days of heavy rains to the area. Lees Camp received 9.49

# Storm Data and Unusual Weather Phenomena

January 2003

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

inches of rain, Jewell 6.75 inches, Falls City 6.71 inches, Mapleton 6.51 inches, and Carlton 6.26 inches. Scappoose and Scotts Mills 5 to 6 inches; Troutdale, Astoria, Grande Ronde, Summit, Forest Grove, Gresham and Three Lynx 4 to 5 inches; Portland International Airport, Aurora, Hillsboro, Newport, and Detroit 3 to 4 inches. Numerous locations reported 1 to 3 inches. These heavy rains filled many small streams, 2 feet of water covered Highway 101 between Seaside and Cannon Beach and near Garibaldi. Rivers that flooded included the Clatskanie, Nehalem, Wilson, and Necanicum. A landslide temporarily closed Highway 101 at Cape Cove, midway between Florence and Yachats.

**ORZ001-006**

### **Northern Oregon Coast - Greater Portland Metro Area**

31	1300PST 2300PST				0	0			<b>Flood</b>
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Very heavy rain resulted in flooding along the Northern Oregon coast and parts of the Northern Willamette Valley. Fortunately, river levels were abnormally quite low due to dry conditions during the fall and December, so the resultant flooding was not extensive. The Wilson River near Tillamook crested 2 feet above flood stage. The local Dairy Queen store reported 4 feet of water caused extensive damages, while about 15 homes in low lying areas reported water up to their porches. The Nehalem River near Foss crested 2.5 feet above flood stage, but no damages were reported. The Tualatin River near Dilley and the Pudding river near Aurora crested around a foot above flood stage, with no reported damages. Johnson Creek, in the Portland metropolitan area, crested at 2 feet above flood stage. This is the highest Johnson Creek had risen in years, and although no damages were reported, the rising river prompted the evacuation of approximately 25 nearby houses. Heavy rain resulted in standing water on many streets in the Portland metro area, resulting in some road closures. A small slide resulted in the temporary closure of a ramp leading to the St Johns Bridge.

## OREGON, Southeast

NONE REPORTED.

## OREGON, Southwest

**ORZ021**

### **South Central Oregon Coast**

01	0000PST 0025PST				0	0			<b>Flood</b>
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See below.

A Flood Warning was issued for the Coquille River at Coquille and the South Fork of the Coquille River at Myrtle Point effective at the above times. The actual warning was issued at 1122 PST on 12/30/02 and extended into the new year. The warning was cancelled at 0720 PST on 01/01 for the South Fork and at 1044 PST on 01/01 for the Coquille. This warning verified at both locations. The South Fork of the Coquille river at Myrtle Point exceeded the flood stage of 38.0 feet from 0712 PST on 12/31 until 0333 PST on 1/1/03 PST. The crest of 40.02 feet occurred at 1439 PST on 12/31. The Coquille River exceeded flood stage from 1645 PST on 12/31/20 until 0730 PST on 01/01/03. The crest of 21.11 feet occurred at 1945 PST on 12/31/02.

**ORZ021>022**

### **South Central Oregon Coast - Curry County Coast**

01	0459PST				0	0			<b>High Wind (G35)</b>
02	0225PST								

See below.

A High Wind Warning was issued for the headlands of ORZ021/022 effective at the above times, but no verifying observations were recorded.

**ORZ023**

### **Central Douglas County**

02	1550PST 2242PST				0	0			<b>Flood</b>
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See below.

A Flood Warning was issued for Deer Creek near Roseburg. The river stage approached but did not reach flood stage, so this warning did not verify.

**Coos County**

Countywide

02	1603PST				0	0			<b>Urban/Sml Stream Fld</b>
03	0440PST								

See below.

**Douglas County**

Countywide

02	1603PST				0	0			<b>Urban/Sml Stream Fld</b>
03	0440PST								

See below.

An Urban/Small Stream Flood Warning was issued for eastern Coos county and Douglas county effective at the above times. Heavy rain did occur, but no reports of flooding problems were received. So, this warning did not verify.

**ORZ021**

### **South Central Oregon Coast**

04	0900PST				0	0			<b>High Wind (G64)</b>
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Cape Arago recorded a gust to 64 mph. Sustained winds of 43 mph were recorded at 0820 PST.

A High Wind Warning was issued for the headlands of Oregon zones ORZ021/022 at 0308 PST on 01/04/03 and expired at 0915 PST on 01/04/03. The above observation verified the warning for ORZ021; winds likely exceeded warning criteria in ORZ022 as

# Storm Data and Unusual Weather Phenomena

January 2003

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

well.

### ORZ021>022

**South Central Oregon Coast - Curry County Coast**

11	0540PST 2100PST				0	0			<b>High Wind (G40)</b>
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See below.

A High Wind Warning was issued for the coastal headlands of Oregon zones ORZ021/022 effective at the times listed above, but no verifying observations were recorded.

### ORZ021-021-021>022

**South Central Oregon Coast - Curry County Coast**

22	0500PST 1400PST				0	0			<b>High Wind (G89) <sup>M</sup></b>
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Cape Blanco exceeded high wind warning criteria during this time span except for one observation. Peak sustained wind was 50 mph, the peak gusts was 63 mph.

The above reports met the criteria for a High Wind Warning, but most of them occurred during a 9 hour gap between two High Wind Warnings. The first of these was issued at 1251 PST on 01/21 and cancelled at 0320 PST on 01/22. The second warning was issued at 1215 PST on 01/22 and cancelled at 1826 PST on 01/22. The first warning did not verify. The second warning verified in zone ORZ021 and likely verified in ORZ022.

Unfortunately, the spotter report was not relayed to the NWS until nearly a day later.

### ORZ021-021

**South Central Oregon Coast**

30	2240PST				0	0			<b>High Wind (G59)</b>
31	0030PST								

Cape Arago recorded sustained winds in excess of 40 mph during this time stretch. The highest sustained wind was 43 mph.

No High Wind Warning was in effect during this short-lived episode, but the above observations at Cape Arago met warning criteria.

## PACIFIC

NONE REPORTED.

## PENNSYLVANIA, Central

**PAZ005>006-010>012-041>042-045>046-053** **Mckean - Potter - Elk - Cameron - Northern Clinton - Northern Lycoming - Sullivan - Southern Clinton - Southern Lycoming - Columbia**

01	0300EST				0	0			<b>Ice Storm</b>
02	2000EST								

A low pressure system moved northeast along the mid Atlantic coast during Wednesday, January 1st, spreading a large swath of precipitation across Central Pennsylvania. The precipitation fell mainly in the form of rain south of Interstate 80, with a mixture of rain, freezing rain and sleet to the north. Across higher elevations of north central Pennsylvania, significant ice accretions of one quarter to locally one inch occurred, leading to numerous downed tree limbs and power lines, and resulting in widespread power outages. Elevations above 1800 feet were particularly hard hit.

### PAZ034

**Bedford**

01	1700EST				0	0			<b>Flood</b>
02	0100EST								

A low pressure system moved northeast along the mid Atlantic coast during Wednesday, January 1st, spreading a large swath of moderate to heavy rain across south central Pennsylvania. This heavy rainfall, combined with snow melt to produce flooding across portions of Bedford County early Wednesday evening, January 1st. Emergency Management officials reported 6 roads closures due to flooding of several small streams and creeks, including Lower Level Road. In addition, 6 hunting cabins were affected, with 1 cabin sustaining water damage.

### PAZ026

**Huntingdon**

01	2230EST				0	0			<b>Flood</b>
02	0545EST								

Rising waters in the Little Juniata River at Spruce Creek caused the river gauge to exceed its flood stage of 8.0 feet, cresting at 8.5 feet.

### PAZ026

**Huntingdon**

02	0100EST 1630EST				0	0			<b>Flood</b>
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Rising waters on Aughwick Creek at Shirleysburg caused the river gauge to exceed its flood stage of 10.0 feet, cresting at 10.9 feet.

### PAZ025

**Blair**

02	0230EST 1400EST				0	0			<b>Flood</b>
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Rising waters on the Frankstown Branch of the Juniata River at Willamsburg caused the river gauge to exceed its flood stage of 12.0

# Storm Data and Unusual Weather Phenomena

January 2003

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

feet, cresting at 13.49 feet.

**PAZ006-012-017>019-024>025-033-037-041>042-045>046-049-051-053** **Potter - Northern Clinton - Clearfield - Northern Centre - Southern Centre - Cambria - Blair - Somerset - Tioga - Northern Lycoming - Sullivan - Southern Clinton - Southern Lycoming - Union - Montour - Columbia**

02	1700EST				0	0			<b>Heavy Snow</b>
03	2000EST								

Low pressure moved into the Ohio Valley during Thursday evening, January 2nd, bringing a light coating of snow and freezing rain to the region. As the storm redeveloped along the East coast, the snow became steadier and heavier. Most of the snow fell from late morning to early evening on Friday, January 3rd. Total snowfall accumulations generally ranged from 6 to 8 inches across central and northern Pennsylvania.

**PAZ064>066**

**Adams - York - Lancaster**

02	1700EST				0	0			<b>Ice Storm</b>
03	2000EST								

Low pressure moved into the Ohio Valley during Thursday evening, January 2nd, bringing a light coating of snow and freezing rain to the region. As the low redeveloped along the East Coast early on Friday, January 3rd, a steadier mixture of snow and freezing rain overspread Adams, Lancaster and York Counties. Ice accretions in excess of one quarter inch, in addition to snowfall accumulations of 1 to 3 inches resulted in hazardous travel conditions during much of Friday across much of the lower Susquehanna Valley and adjacent southeast portions of Pennsylvania.

**PAZ063**

**Cumberland**

03	0800EST				0	0			<b>Flood</b>
	0900EST								

Rising waters on Conodoguinet Creek at Hogestown caused the river gauge to reach its flood stage of 8.0 feet briefly between 8 and 9 pm.

## PENNSYLVANIA, East

**PAZ055**

**Monroe**

01	1330EST				0	0	0		<b>Winter Weather/Mix</b>
	1900EST								

Freezing rain fell over sections of Monroe County during the afternoon and early evening of the 1st. Warmer air then moved in at the surface and raised temperatures above the freezing mark overnight as precipitation fell as plain rain. There were ice accretions on exposed surfaces (trees), but not enough to tear down any limbs or wires. Untreated secondary and tertiary roads were slippery.

**PAZ054>055-060>062**

**Carbon - Monroe - Berks - Lehigh - Northampton**

02	1730EST				0	0			<b>Winter Storm</b>
04	0400EST								

**PAZ067-067>068-068>069-069**

**Chester - Montgomery - Bucks**

02	2200EST				0	0			<b>Winter Weather/Mix</b>
04	0400EST								

A large high pressure system over nearby Canada and a low pressure that passed south of the region set the stage for a protracted winter storm from Berks County and the Lehigh Valley northward and a winter weather event elsewhere across Eastern Pennsylvania. Precipitation began as light freezing rain during the late afternoon and evening of the 2nd. Precipitation changed to light snow in the Poconos, Berks County and the Lehigh Valley overnight. Some sleet also fell. In the Philadelphia northwest suburbs, precipitation fell as a mixture of light freezing rain, sleet and snow. Throughout the area, precipitation amounts overnight were light, generally just a couple of hundredths of an inch. Steadier precipitation moved into the region toward daybreak on the 3rd. By then warmer air aloft caused precipitation to fall as mainly freezing rain. Only in the Poconos did precipitation change back and forth between snow and freezing rain. Eventually enough warm air moved in near the surface for precipitation to change to plain rain in the Philadelphia northwest suburbs during the morning (before Noon EST). Ice accretions were generally one tenth of an inch or less. Farther north, temperatures struggled to reach near freezing during the daylight hours. As a result a mixed bag of wintry precipitation occurred in Berks County, the Lehigh Valley and the Poconos. Some valley locations changed to rain, while higher terrain locations in Berks County and the Lehigh Valley continued to have freezing rain. In the Poconos precipitation continued to fall as snow during heavier precipitation bursts and freezing rain at other times. As the low pressure system moved farther offshore and the winds shifted to the north, precipitation changed to all snow in the Poconos during the late afternoon of the 3rd and in Berks County and the Lehigh Valley during the evening of the 3rd. In far northern sections of Philadelphia's northern suburbs precipitation changed to freezing rain during the evening of the 3rd and then over to snow toward midnight. The snow ended before daybreak on the 4th. Across the far northern Philadelphia suburbs, an additional one tenth of an inch accrued on most exposed surfaces with little if any snow accumulation except for higher terrain toward Allentown. In Berks County and the Lehigh Valley, around one-quarter of an inch of ice accrued on exposed surfaces and then between 1 to 3 inches of snow accumulated on top of the ice. In the Poconos, around one quarter of an inch of ice accrued on exposed surfaces and then between 3 and 8 inches of snow accumulated on top of the

# Storm Data and Unusual Weather Phenomena

January 2003

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

ice. Commuting on untreated surfaces was treacherous throughout this event.

Specific accumulations included 8 inches in Mount Pocono (Monroe County), 5.8 inches in East Stroudsburg (Monroe County), 5.5 inches in Bossardsville (Monroe County), 4.3 inches in Lehighton (Carbon County), 3 inches in Jim Thorpe (Carbon County), 2.5 inches in Reading (Berks County), 2.2 inches in Hamburg (Berks County) and Springtown (Bucks County) and 0.5 inches at the Lehigh Valley International Airport.

The low pressure system responsible for the wintry weather developed in the Southern Plains on January 1st and moved into the Tennessee Valley during the morning of the 2nd. By the morning of the 3rd, it moved into North Carolina where a secondary formed near Norfolk, Virginia. The low then moved northeast and passed just to the south of Cape Cod during the morning of the 4th. While this low passed south of the area, a high pressure system remained nearly stationary over nearby Canada and provided and helped entrench cold air near the surface. This causes precipitation to fall as freezing rain even though it was warm enough aloft for the falling snow to change to plain rain.

### PAZ069>071

#### **Bucks - Delaware - Philadelphia**

<b>03</b>	<b>1200EST 1700EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Astronomical High Tide</b>
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The combination of a high pressure system over nearby Canada and a low pressure system that moved along the Eastern Seaboard and spring astronomical tides caused by the new moon produced widespread minor tidal flooding along the Delaware River and tidal sections of its tributary streams during the afternoon of the 3rd. Localized tidal flooding occurred with the previous afternoon's high tide. High tide at Pier 12 in Philadelphia was 8.9 feet above mean lower low water at 220 p.m. EST on the 3rd. Minor tidal flooding begins at 8.2 feet above mean lower low water.

### PAZ060-067>071

#### **Berks - Chester - Montgomery - Bucks - Delaware - Philadelphia**

<b>05</b>	<b>1200EST 2100EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Winter Weather/Mix</b>
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A potent Alberta Clipper produced two to four and a half inches of snow across Berks County and southeastern Pennsylvania. Accumulations farther north were less than two inches. The largest accumulations were in Chester County. Snow began falling around Noon EST and was the heaviest during the afternoon. It ended during the evening. Many roads became slippery and snow covered. Many minor accidents were reported in Bucks County. Both U.S. Route 202 in Chester County and U.S. Route 422 in Montgomery County were both described as being in poor shape. Accumulations included 4.6 inches in Kennett Square (Chester County), 4.5 inches in Thorndale (Chester County), 4 inches in Honeybrook (Chester County), 3.7 inches in Newtown Square (Delaware County), 3.6 inches in West Chester (Chester County), 3.0 inches in Ambler (Montgomery County), Birdsboro (Berks County) and Reading (Berks County), 2.9 inches in Clifton Heights (Delaware County), 2.6 inches at the Philadelphia International Airport, 2.5 inches in Wynnewood (Montgomery County), 2.1 inches in Furlong (Bucks County) and 2.0 inches in New Hope and Southampton (Bucks County) and Norristown and Green Lane (Montgomery County)

The low pressure system formed in Saskatchewan Province on the third, moved southeast to Minnesota on the morning of the 4th, southern Indiana on the morning of the 5th and was well east of the Delmarva Peninsula during the morning of the 6th. Historically, Alberta type low pressure systems usually do not produce heavy snow. But the air at mid levels of the atmosphere was quite cold and this enhanced the instability with this low pressure system. While no thunderstorms occurred, the instability did produce heavier precipitation.

### PAZ068

#### **Montgomery**

<b>06</b>	<b>1700EST 2300EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Winter Weather/Mix</b>
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A 37-year-old woman died from injuries sustained in a traffic accident during the evening of January 6th in Horsham Borough. A light dusting of snow (0.5 inches measured at Neshaminy Falls in Bucks County) accumulated on the roadways. The vehicle she was driving crossed the center line on a bridge over the Pennypack Creek and struck another vehicle heading in the opposite direction. The driver of the other vehicle was hospitalized, but survived. The woman died the next day.

### PAZ054>055-060>062-067>071

#### **Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia**

<b>14 29</b>	<b>0300EST 0900EST</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>Extreme Cold/Wind Chill</b>
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A cold frontal passage on the 13th initiated about a two week run of unseasonably cold weather, even by January standards across Eastern Pennsylvania. There were four cold related deaths in Southeastern Pennsylvania. All were found in unheated homes. The coldest mornings were the mornings of the 18th and 28th as low temperatures dipped into the single numbers or below zero. For many places, these were the coldest days in three years. Minimum temperatures for most days were no higher than the teens. The extreme cold filled homeless shelters to capacity. In addition the number of vehicle batteries dying and parking brakes freezing increased. Calls to heating oil firms and utilities rose dramatically. Several water mains broke because of the extreme cold. In Philadelphia, the rate of water main breaks increased by 800 percent. Even gas companies were reporting two to three times the average rate of gas line breaks. The Coast Guard had to break the ice in the Delaware River to make heavy shipping possible.

# Storm Data and Unusual Weather Phenomena

January 2003

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

In Philadelphia, three persons died from hypothermia. A 77-year-old man, a 70 year-old woman and a 66-year-old woman were all found dead in their unheated homes. In Montgomery County, a 78-year-old man was found dead from hypothermia in the front hallway of his home. Counties and the city of Philadelphia enact code blues during unseasonably cold weather. This sets into motion care managers and other agencies to help place and provide space for homeless individuals and families. Montgomery County was under code blue from the 10th through the 29th. In Philadelphia, a 52-year-old man was killed by a fire started by a kerosene heater. One of the worst water main breaks occurred in the Manayunk section of Philadelphia. A water main break at the intersection of Levering and Silverwood Streets sent water cascading down one of the steepest hills in the city. Twelve homes suffered major damage; seven families were forced from their homes. The worst flood damage occurred on Grape Street as water reached to the top of basements.

Lowest temperatures included 11 degrees below zero in Mount Pocono (Monroe County), 2 degrees below zero in Perkasio (Bucks County) and Valley Forge (Chester County), 1 degree below zero in Lehigh (Carbon County), zero in Morgantown (Berks County), 1 degree in Reading (Berks County), Bath (Northampton County) and the Lehigh Valley International Airport, 5 degrees in Green Lane (Montgomery County), 6 degrees in Neshaminy Falls (Bucks County) and 8 degrees at the Philadelphia International Airport. This cold snap cemented January as being unseasonably cold. The monthly mean temperature of 28.6 degrees at the Philadelphia International Airport was the coldest January and the coldest winter month since 1994 (27.4 degrees). The monthly mean temperature of 23.6 degrees at the Lehigh Valley International Airport was the coldest January and the coldest winter month since 1994 (20.7 degrees). In Mount Pocono, the monthly mean temperature of 16.4 degrees was 4.9 degrees colder than normal. In Reading, the monthly mean temperature of 25.0 degrees was 4.1 degrees colder than normal. M78PH, M77PH, F70PH, F66PH

**PAZ060-067>071**

### **Berks - Chester - Montgomery - Bucks - Delaware - Philadelphia**

29	0400EST 1800EST								0	0	0	Winter Weather/Mix
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Light snow fell across southeastern Pennsylvania from the pre dawn through the day on the 29th. Accumulations averaged between 1 and 3 inches. Untreated roads were slippery, especially during the morning commute and again toward evening as temperatures fell well below freezing. Specific accumulations included 3 inches in Thorndale (Chester County), 2.8 inches in Ambler (Montgomery County), 2.7 inches in West Chester (Chester County), 2.6 inches in Green Lane (Montgomery County), 2.5 inches in Reading (Berks County), Newtown Square (Delaware County), Exton (Chester County) and Southampton (Bucks County), 2.2 inches at the Philadelphia International Airport, 2.1 inches at the Kimmel Center in Philadelphia and 2.0 inches in Perkasio (Bucks County).

The snow moved into the region ahead of a low pressure system's warm front. The low itself went northeast from the Ohio Valley into the Saint Lawrence Valley. Its cold front moved through the region during the early evening and ended the precipitation.

## PENNSYLVANIA, Northeast

**PAZ038-039**

### **Bradford - Susquehanna**

01	2200EST								0	0	100K	Ice Storm
02	0200EST											

A low pressure system in Mississippi, New Year's Eve, moved northeast to the Tennessee/North Carolina border the morning of the 1st. The storm then picked up speed to be in northeast Pennsylvania the evening of New Year's Day. The next morning it was off the coast of Maine. A cold front with rain passed southeast of the area New Year's Eve. This allowed a north to northeast surface wind to set up which brought in cold air during most of the 1st. Precipitation well ahead of the storm started around 10 AM on the 1st. Precipitation started as mostly rain but as colder air moved in the rain began to freeze. The freezing rain was heavy at times in the evening before ending in the early morning of the 2nd. Ice amounts were the thickest at the higher elevations with mostly a quarter to a half inch. Above 1500 feet elevation an inch or more of ice was coating surfaces in Bradford County. Melted precipitation amounts were an inch or more. The ice caused trees and wires to come down. Around 3,000 customers lost power in the area. The hardest hit area with 1000 customers without power was around Canton in Bradford County. The ice remained on the trees and wires through the January 3rd snowstorm causing more wires to come down.

**PAZ038>040-043>044-047>048**

### **Bradford - Susquehanna - Wayne - Wyoming - Lackawanna - Luzerne - Pike**

03	1500EST								0	0	2.5M	Heavy Snow
04	1000EST											

A slow moving nor'easter moved from the southeast United States early on the 3rd to the Delmarva peninsula that evening. The storm then moved to the southeast New England coast the morning of the 4th. Snow spread well ahead of the storm into central New York the evening of the 2nd. The snow was heavy at times on the 3rd during the day into the evening. Snow spread well ahead of the storm into northeast Pennsylvania the evening of the 2nd. The snow was heavy at times on the 3rd during the day into the evening. Snowfall amounts were 4 to 9 inches in Lackawanna and Luzerne Counties. Elsewhere amounts were mostly between 8 and 14 inches. A few higher amounts up to 20 inches were in Susquehanna and northern Wayne Counties. Water equivalents were mostly half an inch to an inch. The weight of the snow combined with the weight of ice from the New Year's day storm caused additional power outages. A few thousand customers lost power across the northern tier. All of the major roads had motor vehicle accidents. Some were serious enough to close the interstate highways.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>PAZ002&gt;003</b>	<b>Southern Erie - Crawford</b>								
	10	1300EST			0	0	60K		Heavy Snow
	11	1300EST							

Arctic air moving across Lake Erie caused lake effect snow showers to develop around midday. Accumulations of 6 to 9 inches were reported across inland sections of Erie County and northern portions of Crawford County by late evening.

<b>PAZ001</b>	<b>Northern Erie</b>								
	11	0200EST			0	0	150K		Heavy Snow
	12	0100EST							

After a brief lull, lake effect snow activity picked up again during the early morning hours as cold winds blowing across Lake Erie became more westerly. The snow peaked in intensity during the middle part of the day. Westerly winds gusting to 30 mph caused considerable blowing and drifting and up to 10 inches of snow fell along the Erie County lakeshore during the day. Officially, 9.2 inches of snow was recorded at Erie International Airport. 6.6 inches of this total fell between daybreak and 1 pm.

<b>PAZ002</b>	<b>Southern Erie</b>								
	15	0000EST 1900EST			0	0	100K		Heavy Snow

Cold westerly winds blowing across Lake Erie caused lake effect snow showers to develop around midnight. These snow showers intensified during the morning hours and continued through the afternoon. This activity finally dissipated during the evening hours. As much as a foot of snow fell in southern Erie County by early afternoon. Total accumulations of up to 18 inches were reported. Wind gusts as high as 25 mph caused considerable blowing and drifting with visibilities reduced to near zero at times.

<b>PAZ001</b>	<b>Northern Erie</b>								
	26	0100EST 1700EST			0	0	35K		Heavy Snow

Cold north to northwest winds blowing across Lake Erie caused lake effect snow showers to develop during the early morning hours. These snow showers intensified after daybreak and persisted into the early evening hours. Snowfall totals in northern Erie County ranged from 5 to 7 inches with most areas seeing at least 6 inches of accumulation. Most of the accumulation occurred during the late morning and early afternoon hours.

## PENNSYLVANIA, West

<b>PAZ020</b>	<b>Beaver</b>								
	01	1538EST			0	0			Flood

BRADYS RUN CREEK AND TWO MILE RUN WENT OUT OF THEIR BANKS IN BRIGHTON TWP.

<b>PAZ007</b>	<b>Mercer</b>								
	11	0900EST			0	0			Heavy Snow

7 inches of snow fell in Mercer Pa.

## PUERTO RICO

<b>Northeast</b>									
<b>Fajardo</b>	20	1210AST 1225AST			0	0			Funnel Cloud

NWS employee reported funnel cloud east of Fajardo.

<b>Northeast</b>									
<b>Fajardo</b>	20	1303AST 1318AST			0	0			Funnel Cloud

A funnel cloud was sighted about 10 miles east of Fajardo's coast. No movement was reported, but doppler radar detected showers in the area moving southwest at 15 to 20 mph.

<b>PRZ005</b>	<b>North Central</b>								
	25	1230AST 1830AST			0	0			Flood

Large northwest swells did not allow water from the Arecibo river to discharge out to sea. Caño Santiago in Arecibo was reported backing up and flooding the Rodriguez Olmo park area.

<b>PRZ001</b>	<b>San Juan And Vicinity</b>								
	25	1630AST 2230AST			0	0			Flood

Large northwest swells combined with an onshore wind flow was piling water upon the north coast and not allowing water from the Loiza River to discharge out to sea, causing flooding of low lying areas along the river basin between the mouth of the river in Loiza

# Storm Data and Unusual Weather Phenomena

January 2003

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## PUERTO RICO

and the Carraizo water reservoir.

## RHODE ISLAND

### RIZ001

#### **Northwest Providence**

**03 1400EST**  
**04 1100EST**

**0 0**

**Winter Storm**

A powerful winter storm tracked south of New England and dumped heavy snow over northwest Rhode Island. Totals of 5 to 10 inches were common in northwest Providence County. Aside from scattered power outages and dozens of minor accidents, little significant impact occurred from the storm since most residents avoided travel. No injuries or damage was directly attributable to the storm.

Some snowfall totals from the storm, as reported by trained spotters, include 11 inches in Burrillville, 8 inches in North Foster, and 5 inches in Cumberland. Amounts tapered off dramatically farther south, where snow changed to rain. Only 1.5 inches of snow was reported in downtown Providence, and a trace was reported officially at T.F. Green State Airport in Warwick.

## SOUTH CAROLINA, Central

NONE REPORTED.

## SOUTH CAROLINA, North Coastal

### **SCZ017-023>024-033-039-046** **Marlboro - Darlington - Dillon - Marion - Williamsburg - Georgetown**

**23 0500EST**  
**1400EST**

**0 0 100K**

**Winter Weather/Mix**

Snow fell over most of northeast South Carolina, with between a half inch to near 2 inches reported by spotters, coop observers and law enforcement. The snowstorm caused most business to close, and all school districts decided to close their doors for the day. Damages were a result of traffic accidents, with nearly 60 wrecks reported the northeast portion of the state. Record cold air plunged into the state that evening, causing numerous reports of frozen water pipes. The local electric company reported record power usage the following morning due to temperatures in the teens in most areas with wind chills near or below zero.

## SOUTH CAROLINA, Northwest

### **SCZ001>003**

#### **Oconee Mountains - Pickens Mountains - Greenville Mountains**

**16 1800EST**  
**2200EST**

**0 0**

**Heavy Snow**

Light snow began over the South Carolina mountains during the late afternoon of the 16th, and gradually intensified with time. By late evening, 3 to 4 inches had accumulated.

### **SCZ004>008-010**

#### **Greater Oconee - Greater Pickens - Greater Greenville - Spartanburg - Cherokee - Anderson**

**16 1800EST**  
**2200EST**

**0 0**

**Winter Weather/Mix**

Light snow fell during the evening across upstate South Carolina, and accumulated to 1 to 2 inches. Numerous traffic accidents ensued.

### **SCZ006>009-013>014**

#### **Greater Greenville - Spartanburg - Cherokee - York - Union - Chester**

**23 0600EST**  
**0800EST**

**0 0**

**Heavy Snow**

Light snow began around midnight across upstate South Carolina, and continued through the early morning hours. A burst of heavy snow around sunrise resulted in total snow accumulations of 3 to 8 inches by mid morning.

## SOUTH CAROLINA, South Coastal

NONE REPORTED.

## SOUTH DAKOTA, Central and North

### **SDZ033>035-045-048-051** **Stanley - Sully - Hughes - Jones - Lyman - Buffalo**

**15 0600CST**  
**2200CST**

**0 0**

**Heavy Snow**

Heavy snow of 6 to 11 inches fell across much of central South Dakota from the morning and into the evening hours. Many schools were closed early and there were a few vehicle accidents. Some snowfall amounts included, 6 inches at Kennebec, 8 inches at Lake Sharpe, 9 inches at Murdo, 10 inches at Pierre, and 11 inches 15 miles west of Fort Pierre.

# Storm Data and Unusual Weather Phenomena

January 2003

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

<b>SDZ050-063&gt;064-068</b>	<b>Gregory - Charles Mix - Douglas - Bon Homme</b>								
	15	1200CST 2359CST			0	0			<b>Heavy Snow</b>

Widespread snow accumulated 6 to 12 inches. The snowfall was accompanied by little wind and caused minimal disruption. The greatest accumulation of 12 inches was reported at the towns of Gregory and Burke.

## SOUTH DAKOTA, West

<b>SDZ001&gt;002-012&gt;014-026-031&gt;032-072&gt;074</b>	<b>Harding - Perkins - Butte - Northern Meade Co Plains - Ziebach - Rapid City - Pennington Co Plains - Haakon - Sturgis / Piedmont Foothills - Southern Meade Co Plains - Hermosa Foothills</b>								
	04	0009MST 0700MST			0	0	0		<b>High Wind (G73)</b>

A strong cold front moved through western South Dakota early in the morning. As the front passed through, a tight pressure gradient developed and strong winds aloft were able to reach the surface. This resulted in very strong and gusty winds across northwestern South Dakota, where winds were sustained at 40 to 50 mph and gusts reached 60 to 70 mph. The strongest winds were recorded at Buffalo in Harding County, which had a maximum sustained wind speed of 64 mph and a peak gust of 84 mph.

<b>SDZ001&gt;002-013&gt;014-032-046-049</b>	<b>Harding - Perkins - Northern Meade Co Plains - Ziebach - Haakon - Mellette - Tripp</b>							
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	15	0000MST			0	0	0	0	<b>Winter Storm</b>
	16	0800MST			0	0	0	0	

A slow moving low pressure system moved across the Central Plains and brought heavy snow to much of western South Dakota. Northwestern South Dakota received 8 to 10 inches of snow and a few locations in Perkins and Harding Counties measured 12 inches of snow. Gusty northwest winds accompanied the snow, causing some blowing and drifting snow, and visibilities less than a mile.

<b>SDZ001&gt;002-012&gt;014-024&gt;025-031-072&gt;073</b>	<b>Harding - Perkins - Butte - Northern Meade Co Plains - Ziebach - Northern Black Hills - Northern Foot Hills - Pennington Co Plains - Sturgis / Piedmont Foothills - Southern Meade Co Plains</b>							
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	17	1800MST			0	0	0	0	<b>Winter Storm</b>
	18	0421MST			0	0	0	0	

A strong cold front raced across the Northern Plains during the late afternoon and evening. Although very little snow fell with the cold front, four to twelve inches of fresh snow cover from a previous storm combined with sustained winds 25 to 40 mph and gusts over 50 mph to produce blowing and drifting snow. The blowing snow led to white-out and ground blizzard conditions with visibilities near zero at times. Wind chill values fell to 15 below zero. Several automobile accidents occurred as a result of the hazardous conditions.

## TENNESSEE, Central

<b>TNZ005&gt;010-022&gt;031-056&gt;057-059&gt;060-062&gt;064-077</b>	<b>Stewart - Montgomery - Robertson - Sumner - Macon - Clay - Benton - Houston - Humphreys - Dickson - Cheatham - Davidson - Wilson - Trousdale - Smith - Jackson - Perry - Hickman - Williamson - Maury - Rutherford - Cannon - Dekalb - Coffee</b>							
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	16	1100CST 1600CST			0	0			<b>Heavy Snow</b>
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Heavy snow moved into Middle Tennessee faster and heavier than forecasters thought. There was as much as 8 inches of snow in Gallatin and 7 inches at the NWS Office at Old Hickory. Specific amounts as of 4 PM were:

GALLATIN      8 INCHES (SPOTTER)

GAINESBORO    5 INCHES (SPOTTER)

CLARKSVILLE    4 INCHES (SPOTTER)

CROSSVILLE   3-5 INCHES WITH A FEW 5-6 INCHES. (LAW ENFORCEMENT)

ALLARDT        2.8 INCHES (CO-OP OBSERVER)

DICKSON        5.0 INCHES (CO-OP OBSERVER)

SPARTA         2.8 INCHES (CO-OP OBSERVER)

NWS OLD HICKORY 7.0 INCHES. This amount at NWS OLD HICKORY ties the record snowfall for January 16.

Downtown Nashville had 7 inches of snow by 145 PM CST. 7 inches of snowfall was recorded in Nashville on January 16, 1948.

# Storm Data and Unusual Weather Phenomena

January 2003

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

The snow began to fall in the Metro Nashville area around 8 AM. The snow shut down the city with schools, businesses and government agencies shutting down early. Motorists were stranded in slow-moving or non-moving traffic. It took hours to get cross town. Tracker trailer trucks could not move on the interstates or jack-knifed, which resulted in grid lock. Since schools let out early, parents rushed to pick them up. Schools closed at 9 AM, right in the middle of the storm. Many school buses were stranded in the snow and some students didn't get home until 10 PM. At one point, 60 buses were stranded throughout the city. Also, some students were kept in schools with food, heat and water. Other students were sent home with teachers or school officials with 4 wheel drive vehicles. Parents were angry because students were either kept at school or because their child had to ride in 4 wheel drive vehicles with strangers.

I-65 was backed up for 5 hours from Nashville to the Kentucky border. A newspaper story stated that many motorists had to relieve themselves in their vehicles because of the grid lock.

**TNZ011-032>034-065>066**

**Pickett - Putnam - Overton - Fentress - White - Cumberland**

16	1600CST 2300CST				0	0			Heavy Snow
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3 to 6 inches of snow was common across the Cumberland Plateau.

**TNZ032>033**

**Putnam - Overton**

22	1600CST				0	0			Heavy Snow
23	0400CST								

3 inches fell in Livingston and 4 inches in Monterey.

## TENNESSEE, East

**TNZ012>018-036>047-072-074-087-102**

**Scott - Campbell - Claiborne - Hancock - Hawkins - Sullivan - Johnson - Anderson - Union - Grainger - Hamblen - Northwest Cocke - Cocke/Smoky Mountains - Northwest Greene - Southeast Greene - Washington - Unicoi - Northwest Carter - Southeast Carter - Blount/Smoky Mountains - Sevier/Smoky Mountains - Southeast Monroe - East Polk**

05	0400EST 1200EST				0	0			Heavy Snow
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Widespread snows over northern East Tennessee...and all of the mountain regions brought 4 to 6 inches of snow between 4 A.M. and noon.

**TNZ012>018-035>047-067>074-081>087-098>102**

**Scott - Campbell - Claiborne - Hancock - Hawkins - Sullivan - Johnson - Morgan - Anderson - Union - Grainger - Hamblen - Northwest Cocke - Cocke/Smoky Mountains - Northwest Greene - Southeast Greene - Washington - Unicoi - Northwest Carter - Southeast Carter - Roane - Loudon - Knox - Jefferson - Northwest Blount - Blount/Smoky Mountains - North Sevier - Sevier/Smoky Mountains - Sequatchie - Bledsoe - Rhea - Meigs - McMinn - Northwest Monroe - Southeast Monroe - Marion - Hamilton - Bradley - West Polk - East Polk**

16	1300EST 2300EST				0	0			Winter Storm
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A storm system moved from the southern plains across the Tennessee Valley of Alabama into the southern Appalachians bringing snowfall amounts ranging from 2 to 8 inches across eastern Tennessee. The higher accumulations were concentrated across extreme northeast sections of the state.

**TNZ012>018-035>047-067>074**

**Scott - Campbell - Claiborne - Hancock - Hawkins - Sullivan - Johnson - Morgan - Anderson - Union - Grainger - Hamblen - Northwest Cocke - Cocke/Smoky Mountains - Northwest Greene - Southeast Greene - Washington - Unicoi - Northwest Carter - Southeast Carter - Roane - Loudon - Knox - Jefferson - Northwest Blount - Blount/Smoky Mountains - North Sevier - Sevier/Smoky Mountains**

22	1900EST				0	0			Winter Storm
23	0600EST								

A strong upper level disturbance moved southeast from the northern plains and midwest states across eastern Tennessee producing significant snowfall amounts. Snowfall amounts ranged from 2 to 5 inches in the lower elevations while higher elevations across the region picked up totals ranging from 5 to 8 inches.

## TENNESSEE, West

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

NONE REPORTED.

## TEXAS, Central Southeast

NONE REPORTED.

## TEXAS, Extreme West

NONE REPORTED.

## TEXAS, Mid - South

NONE REPORTED.

## TEXAS, North

NONE REPORTED.

## TEXAS, North Panhandle

NONE REPORTED.

## TEXAS, Northeast

NONE REPORTED.

## TEXAS, South

**TXZ248>255**

**Zapata - Jim Hogg - Brooks - Kenedy - Starr - Hidalgo - Willacy - Cameron**

01	0000CST	0	0		Drought
31	2359CST				

Soil moisture values remain above normal. However, the region still remains in a long-term drought, with local reservoirs at well-below normal levels.

## TEXAS, South Central

NONE REPORTED.

## TEXAS, South Panhandle

**TXZ021>023-028-035>036-042**

**Parmer - Castro - Swisher - Lamb - Lubbock - Crosby - Garza**

01	1100CST	0	0		High Wind (G56) <sup>M</sup>
	1600CST				

A strong upper level disturbance and associated cold front moved into West Texas. Surface winds increased during the late morning hours as the cold front moved into the extreme southern Panhandle and as a result of mixing of higher momentum air above the ground to the surface. Wind on the Caprock increased to 40 to 50 mph in seven counties. Wind gusts of 59 mph were measured at the West Texas Mesonet stations near Hart in Castro County, at Reese Center in Lubbock County, and near Dimmitt in Castro County; wind gusts of 60 mph were measured near Olton in Lamb County; wind gusts of 61 mph were measured near Tulia in Swisher County; wind gusts of 62 mph were measured near Friona in Parmer County; and wind gusts of 64 mph were measured at White River Lake in Crosby County.

**TXZ022>023-031**

**Castro - Swisher - Motley**

15	1800CST	0	0		High Wind (G54) <sup>M</sup>
	2200CST				

A strong cold front moved into the South Plains during the evening hours. The pressure gradient along and behind the front resulted in sustained 25 to 35 mph wind over much of the region for several hours. Three-hour pressure rises associated with the front were measured at over 11 mb at Borger, over 10 mb at Amarillo, and over 7 mb at Lubbock. The wind gusted to 62 mph at the West Texas Mesonet station 3N Roaring Springs in Motley County, 59 mph at the station 2NE Tulia in Swisher County, and 58 mph at the station 3N Hart in Castro County.

# Storm Data and Unusual Weather Phenomena

January 2003

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

NONE REPORTED.

## TEXAS, West

NONE REPORTED.

## TEXAS, Western North

**TXZ083>090**

**Hardeman - Foard - Wilbarger - Wichita - Knox - Baylor - Archer - Clay**

<b>14</b>	<b>0500CST</b>				<b>0</b>	<b>0</b>			<b>Fog</b>
	<b>1100CST</b>								

Areas of dense fog, with visibilities below one quarter of a mile a times, developed over much of western north Texas during the early morning of the 14th, and gradually dissipated during the mid and late morning.

## UTAH, East

**UTZ022>025-027>029**

**Southeast Utah - Eastern Uinta Mountains - Eastern Uinta Basin - Tavaputs Plateau - Grand Flat And Arches - La Sal & Abajo Mountains - Canyonlands / Natural Bridges**

<b>01</b>	<b>0000MST</b>				<b>0</b>	<b>0</b>			<b>Drought</b>
<b>31</b>	<b>2359MST</b>								

January consisted of below normal precipitation and above normal temperatures across much of extreme eastern Utah. This offered no relief to this drought stricken area. For a continuation on this drought situation, see the February 2003 Storm Data publication.

**UTZ027**

**Grand Flat And Arches**

<b>01</b>	<b>0003MST</b>				<b>0</b>	<b>0</b>			<b>Dense Fog</b>
	<b>1100MST</b>								

The Grand County sheriff's office reported widespread dense fog around Moab, while the Canyonlands Airport ASOS observed visibilities down to 1/4 mile.

**UTZ024**

**Eastern Uinta Basin**

<b>01</b>	<b>0553MST</b>				<b>0</b>	<b>0</b>			<b>Dense Fog</b>
	<b>1130MST</b>								

A moist and stable lower atmosphere resulted in the formation of dense fog across the eastern Uinta Basin. The Vernal Airport ASOS observed visibilities down to 1/4 mile.

**UTZ024**

**Eastern Uinta Basin**

<b>01</b>	<b>1900MST</b>				<b>0</b>	<b>0</b>			<b>Dense Fog</b>
<b>02</b>	<b>0930MST</b>								

A moist and stable lower atmosphere again resulted in the formation of widespread dense fog across the eastern Uinta Basin. The visibility was reduced to 1/4 mile at the Vernal ASOS.

**UTZ027**

**Grand Flat And Arches**

<b>02</b>	<b>0400MST</b>				<b>0</b>	<b>0</b>			<b>Dense Fog</b>
	<b>0425MST</b>								

Satellite and ASOS data indicated widespread dense fog across extreme east-central Utah. The visibility was reduced to 1/4 mile at the Canyonlands Airport ASOS.

**UTZ024**

**Eastern Uinta Basin**

<b>05</b>	<b>2000MST</b>				<b>0</b>	<b>0</b>			<b>Dense Fog</b>
<b>06</b>	<b>1130MST</b>								

Moist and stable conditions resulted in widespread dense fog across the eastern Uinta Basin. The Vernal ASOS reported visibilities down to 1/4 mile.

**UTZ024**

**Eastern Uinta Basin**

<b>06</b>	<b>1700MST</b>				<b>0</b>	<b>0</b>			<b>Dense Fog</b>
<b>07</b>	<b>0800MST</b>								

A moist and stable lower atmosphere again resulted in widespread dense fog across the eastern Uinta Basin. Visibilities down to 1/4 mile were observed at the Vernal ASOS.

**UTZ024**

**Eastern Uinta Basin**

<b>07</b>	<b>2300MST</b>				<b>0</b>	<b>0</b>			<b>Dense Fog</b>
<b>08</b>	<b>0830MST</b>								

# Storm Data and Unusual Weather Phenomena

January 2003

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

## UTAH, East

Widespread dense fog redeveloped across the eastern Uinta Basin. The Vernal ASOS reported visibilities down to 1/4 mile.

**UTZ024**

**Eastern Uinta Basin**

09	0000MST				0	0			
	0900MST								Dense Fog

The Utah Highway Patrol indicated widespread dense fog across much of the eastern Uinta Basin. Visibilities were estimated to be around 1/4 mile.

**UTZ024**

**Eastern Uinta Basin**

16	0023MST				0	0			
	1000MST								Dense Fog

The Utah Highway Patrol reported widespread dense fog along US Highway 40 from Vernal to Roosevelt.

**UTZ024**

**Eastern Uinta Basin**

29	2230MST				0	0			
	0830MST								Dense Fog

The Uinta County sheriff's office reported widespread dense fog with visibilities around 1/4 mile in the Vernal and Roosevelt areas.

## UTAH, West and Central

**UTZ019**

**Utah'S Dixie And Zion National Park**

05	1500MST				0	0	100K	0	
	1900MST								High Wind (G63)

A strong cold front brought high winds to Washington County. The worst hit were the Hurricane and Pintura areas, where shingles blew off roofs and several carports were damaged. Wind gusts reached speeds of 72 mph (63 kts) at White Reef and 70 mph (61 kts) in Ivins.

**UTZ003**

**Salt Lake And Toole Valleys**

08	0500MST				0	14	500K	0	
	0800MST								Dense Fog

Dense fog formed along the Great Salt Lake during the morning commute, causing a 59 car pileup between the Salt Lake International Airport and Saltair. Amazingly, there were no fatalities, but 14 people were injured and taken to local hospitals.

**UTZ001-006>007**

**Cache Valley/Utah Portion - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North**

10	0900MST				0	0	0	0	
	0900MST								Heavy Snow

A decent storm brought snow to portions of Northern Utah. Snowfall amounts included 11 inches in Farmington Canyon, 9 inches at Alta, 6 inches at Snowbird, and 5 inches in Logan and Deweyville.

**UTZ003**

**Salt Lake And Toole Valleys**

10	2100MST				2	1	200K	0	
	0900MST								Dense Fog

A Life Flight helicopter crashed in thick fog that shrouded much of the Wasatch Front on the evening of the 10th. The crash occurred just southwest of the Salt Lake City International Airport, killing the pilot, a paramedic, and seriously injuring a flight nurse. M47OT, M38OT

**UTZ006>009**

**Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Western Uinta Mountains**

27	1500MST				0	0	0	0	
	0600MST								Heavy Snow

A wet and mild storm brought good rains to the valleys and mountain snow to the north. Solitude checked in with a foot of new powder, Alta had 10 inches, Snowbird 8 inches, Monte Cristo and Snowbasin 6 inches, and Trial Lake in the Uintas had 5 inches.

## VERMONT, North and Central

**VTZ010>012**

**Orange - Western Rutland - Windsor**

04	0200EST				0	0	60K		
	1400EST								Winter Storm

A storm system over Virginia Friday morning (1/3/03) moved to coastal New Jersey Friday evening and then to near Cape Cod Saturday morning (1/4/03). Snow spread across the area Friday afternoon, and was heavy at times overnight Friday into Saturday morning. Accumulations were generally between 10 and 20 inches. East Wallingford (Rutland county) received 15 inches, Springfield (Windsor county) received 20 inches, while Brookfield (Orange county) reported 13 inches. Roads were treacherous. A few power outages were reported in Windsor county.

# Storm Data and Unusual Weather Phenomena

January 2003

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

### **VTZ005>006-008>009 Western Chittenden - Lamoille - Washington - Western Addison**

<b>04</b>	<b>0400EST 1500EST</b>				<b>0</b>	<b>1</b>	<b>160K</b>		<b>Winter Storm</b>
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A storm system over Virginia Friday morning (1/3/03) moved to coastal New Jersey Friday evening and then to near Cape Cod Saturday morning (1/4/03). Snow spread across the area late Friday afternoon, and became heavy at times late Friday night into Saturday morning. Accumulations were generally between 12 and 20 inches. South Lincoln (Addison county) reported 18 inches, Shelburne (Chittenden county) received 19 inches. Stowe (Lamoille county) reported 20 inches, while Waitsfield (Washington county) received 17 inches. Roads were treacherous. Numerous minor traffic accidents were reported. One accident resulting in a serious injury in Chittenden county.

### **VTZ003>004-007 Orleans - Essex - Caledonia**

<b>04</b>	<b>0700EST 1500EST</b>				<b>0</b>	<b>0</b>	<b>60K</b>		<b>Winter Storm</b>
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A storm system over Virginia Friday morning (1/3/03) moved to coastal New Jersey Friday evening and then to near Cape Cod Saturday morning (1/4/03). Snow spread across the area late Friday afternoon, and was heavy at times late Friday night into Saturday morning. Accumulations were generally between 8 and 14 inches. Island Pond (Essex county) received 9 inches, with 12 inches reported in both East Burke (Caledonia county) and East Albany (Orleans county). Roads were treacherous.

### **VTZ001>002 Grand Isle - Western Franklin**

<b>04</b>	<b>0800EST 1500EST</b>				<b>0</b>	<b>0</b>	<b>40K</b>		<b>Winter Storm</b>
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A storm system over Virginia Friday morning (1/3/03) moved to coastal New Jersey Friday evening and then to near Cape Cod Saturday morning (1/4/03). Snow spread across the area by Friday evening. The snow was heavy for a time late Friday night and Saturday morning. Accumulations were generally between 4 and 9 inches. Sheldon Springs (Franklin county) received 9.3 inches with lesser amounts north and west. Travel was very difficult.

### **VTZ008>012 Washington - Western Addison - Orange - Western Rutland - Windsor**

<b>09</b>	<b>0100EST 0600EST</b>				<b>0</b>	<b>0</b>	<b>5K</b>		<b>Winter Weather/Mix</b>
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An area of low pressure moved across central portions of New York state during the late night of January 8th and early morning of January 9th. The storm system reached the southern New England coast during the morning of the 9th. Light snow fell across central portions of Vermont...with accumulations generally around 4 inches. The highest report was 6 inches in the city of Rutland.

## VERMONT, South

### **VTZ013>014 Bennington - Windham**

<b>01</b>	<b>2100EST</b>				<b>0</b>	<b>0</b>			<b>Winter Storm</b>
<b>02</b>	<b>0500EST</b>								

A low pressure area formed in the Ohio valley, along a stationary front, early on New Years Day. The storm deepened and as it tracked northward, reaching Cape Cod shortly after midnight. This storm initially brought rain to southern Vermont. However, as a shallow arctic airmass slowly bled southward from a high in eastern Canada, the rain changed to freezing rain across the higher terrain, then the valley locations, by late New Year's Day. As the colder air became more entrenched, the precipitation gradually switched to sleet and finally to snow after midnight. Snowfall amounts were relatively minor, only 2 to 5 inches. However, sleet and especially freezing rain, produced ice accretions to around one half inch thick. No unusual problems were reported the National Weather Service at Albany, NY with this winter storm.

### **VTZ013>014 Bennington - Windham**

<b>03</b>	<b>1900EST</b>				<b>0</b>	<b>0</b>			<b>Winter Storm</b>
<b>04</b>	<b>1800EST</b>								

A low pressure area developed in the Mississippi valley by late on January 2. The storm then tracked northward into the southern Ohio Valley, then rapidly redeveloped along the Mid Atlantic seaboard on January 3. Slowly, it moved to just east of Cape Cod by late on January 4. With plenty of cold air in place the stage was set for another snowstorm across extreme southern Vermont. Although this storm was not as powerful as the Christmas Day storm, it was a larger storm and inflow moisture was fueled by a strong high pressure over eastern Canada. Also, this storm moved very slowly. Light snow began falling early on the January 3, then it became heavier and steadier as the day wore on. Snowfall amounts were generally around a foot. No real problems were reported to the National Weather as a result of this snowstorm.

## VIRGIN ISLANDS

NONE REPORTED.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**VAZ048>049-060>100** Fluvanna - Louisa - Prince Edward - Cumberland - Goochland - Hanover - Caroline - Mecklenburg - Lunenburg - Nottoway - Amelia - Powhatan - Chesterfield - Henrico - King William - King And Queen - Essex - Westmoreland - Richmond - Northumberland - Lancaster - Brunswick - Dinwiddie - Prince George - Charles City - New Kent - Gloucester - Middlesex - Mathews - Greenville - Sussex - Surry - James City - York - Southampton - Isle Of Wight - Newport News - Norfolk - Suffolk - Chesapeake - Virginia Beach - Accomack - Northampton

06	1800EST				0	0			Winter Weather/Mix
	1930EST								

A weak winter storm produced only a dusting to 1 inch of snow across portions of central and eastern Virginia. Some specific snow totals included: City of Hampton 1", Eastern Newport News 1", City of Suffolk 1", City of Norfolk 0.5", Pembroke area of Virginia Beach 0.5", Gloucester in Gloucester county 0.5", and Ruther Glen in Caroline county 0.5". Accumulations from this storm were mostly on cars and grassy areas, with roadways remaining generally wet although some slush was reported.

**VAZ064-072>078-083>086-090>091-094>095-099>100** Caroline - King William - King And Queen - Essex - Westmoreland - Richmond - Northumberland - Lancaster - New Kent - Gloucester - Middlesex - Mathews - James City - York - Newport News - Norfolk - Accomack - Northampton

14	2200EST				0	0			Winter Weather/Mix
	0500EST								

A weak winter storm produced one half (0.5) to one and one half (1.5) inches of snow across portions of the Virginia northern neck, middle peninsula, and Hampton Roads area. Some specific snow totals included: Kilmarnock in Lancaster county 1.5", Saluda in Middlesex county 1.5", King and Queen in King and Queen county 1-1.5", City of Newport News 1", City of Williamsburg 1", Ruther Glen in Caroline county 0.75", and Wallops Island in Accomack county 0.5".

**VAZ064-068-070>078-080>086-088>094-099>100** Caroline - Amelia - Chesterfield - Henrico - King William - King And Queen - Essex - Westmoreland - Richmond - Northumberland - Lancaster - Dinwiddie - Prince George - Charles City - New Kent - Gloucester - Middlesex - Mathews - Sussex - Surry - James City - York - Southampton - Isle Of Wight - Newport News - Accomack - Northampton

16	2100EST				0	0			Winter Storm
	0300EST								

A winter storm produced 4 to 8 inches of snow across portions of central and eastern Virginia. Some specific higher snow totals included: Toano in James City county 8", Northern portion of York county 8", Gloucester in Gloucester county 7", Deltaville in Middlesex county 6.5", Mathews in Mathews county 6.5", Chincoteague in Accomack county 6", City of Newport News 6", Eastville in Northampton county 5.5", City of Hampton 5", City of Williamsburg 5", Surry in Surry county 5", West Point in King and Queen county 5", and Mangohick in King William county 5". Local law enforcement agencies reported numerous accidents. Most, if not all schools in the area, were closed Friday, January 17th due to very slippery road conditions.

**VAZ048>049-060>063-065>067-069-079-087-095>097** Fluvanna - Louisa - Prince Edward - Cumberland - Goochland - Hanover - Mecklenburg - Lunenburg - Nottoway - Powhatan - Brunswick - Greenville - Norfolk - Suffolk - Chesapeake

16	2100EST				0	0			Winter Storm
	0300EST								

A winter storm produced 1 to 3 inches of snow across portions of central and southeast Virginia. Some specific higher snow totals included: South Hill in Mecklenburg county 3.5", City of Emporia 3", Mechanicsville in Hanover county 3", Western Branch in Chesapeake 3", City of Suffolk 3", Palmyra in Fluvanna county 2.5", Powhatan in Powhatan county 2.5", Cumberland in Cumberland county 2", Victoria in Lunenburg county 2", City of Norfolk 2", and Farmville in Prince Edward county 2". Local law enforcement agencies reported numerous accidents. Most, if not all schools in the area, were closed Friday, January 17th due to very slippery road conditions.

**VAZ095-097>098** Norfolk - Chesapeake - Virginia Beach

23	0100EST				0	0			Winter Storm
	1200EST								

A winter storm produced 2 to 7 inches of snow across portions of the Virginia Hampton Roads. Some specific higher snow totals included: Sandbridge in Virginia Beach 7", Princess Anne in Virginia Beach 5", Oceana in Virginia Beach 4", Virginia Beach oceanfront 4", Great Bridge in Chesapeake 3", Deep Creek in Chesapeake 3", West Norfolk 3", and the City of Portsmouth 2". Local law enforcement agencies reported numerous accidents. Most, if not all schools in the area, were closed Thursday, January 23rd due to very slippery road conditions.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**VAZ065>079-087>094-096-100** Mecklenburg - Brunswick - Greensville - Sussex - Surry - James City - York - Southampton - Isle Of Wight - Newport News - Suffolk - Northampton

23	0100EST 1200EST				0	0			Winter Weather/Mix
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A winter storm produced around one inch of snow across portions of south central and southeast Virginia. Local law enforcement agencies reported several accidents.

**VAZ048>049-060>064-067>069** Fluvanna - Louisa - Prince Edward - Cumberland - Goochland - Hanover - Caroline - Nottoway - Amelia - Powhatan

30	1200EST 2100EST				0	0			Winter Storm
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A winter storm produced 3 to 5 inches of snow across portions of central Virginia. Some specific higher snow totals included: Crewe in Nottoway county 5", Farmville in Prince Edward county 4", Trenholm in Powhatan county 4", Gum Spring in Louisa county 4", Montpelier in Hanover county 4", Fife in Goochland county 4", Ashby in Cumberland county 4", and Ruther Glen in Caroline county 4". Local law enforcement agencies reported numerous accidents. Most, if not all schools in the area, were dismissed early on Thursday, January 30th due to very slippery road conditions.

**VAZ070>076-080>083** Chesterfield - Henrico - King William - King And Queen - Essex - Westmoreland - Richmond - Dinwiddie - Prince George - Charles City - New Kent

30	1200EST 2100EST				0	0			Winter Weather/Mix
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A winter storm produced around one inch of snow across portions of central Virginia. Local law enforcement agencies reported several accidents.

## VIRGINIA, Extreme Southwest

**VAZ001>002-005>006-008** Lee - Wise - Scott - Russell - Washington

05	0400EST 1200EST				0	0			Heavy Snow
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Heavy snow of 4 to 6 inches fell over southwest Virginia beginning around 4 A.M. and ending around noon.

**VAZ001>002-005>006-008** Lee - Wise - Scott - Russell - Washington

16	1900EST 2300EST				0	0			Winter Storm
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A storm system moved east from the southern plains across the Tennessee Valley of Alabama into the southern Appalachians bringing snowfall amounts ranging from 2 to 4 inches across Southwest Virginia.

**VAZ001>002-005>006-008** Lee - Wise - Scott - Russell - Washington

22	1800EST				0	0			Winter Storm
23	0600EST								

A strong upper level disturbance moved southeast from the northern plains and midwest states and produced significant snowfall across Southwest Virginia. Snowfall amounts in association with this system ranged from 4 to 10 inches across Southwest Virginia.

## VIRGINIA, North

**VAZ027-029>030-038-042-053** Shenandoah - Page - Warren - Greene - Loudoun - Fairfax

01	1450EST 2000EST				0	1			Flood
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**Albemarle County**  
Countywide

01	1500EST 2000EST				0	0			Heavy Rain
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**Augusta County**  
Countywide

01	1500EST 2000EST				0	0			Heavy Rain
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# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>VIRGINIA, North</u></b>									
<b>Augusta County</b>									
Countywide	01	1500EST 2000EST			0	0			Heavy Rain
<b>Madison County</b>									
Countywide	01	1500EST 2000EST			0	0			Heavy Rain
<b>Nelson County</b>									
Countywide	01	1500EST 2000EST			0	0			Heavy Rain
<b>Rappahannock County</b>									
Countywide	01	1500EST 2000EST			0	0			Heavy Rain
<b>Rockingham County</b>									
Countywide	01	1500EST 2000EST			0	0			Heavy Rain
<b>Rockingham County</b>									
Countywide	01	1500EST 2000EST			0	0			Heavy Rain

Low pressure moved from southwest Virginia to the southern Delmarva Peninsula on the 1st. The low dropped 1 to 3 inches of rainfall across the region which caused flooding in several locations. In Greene County, a 31 year old woman was injured when her SUV was washed into the Swift Run River. She was washed 30 feet downstream and it took rescuers 90 minutes to reach her. Several other roads in the county were flooded by high water. In Shenandoah County, urban flooding was reported. Several roads were closed by high water across the county. In Warren County, two roads were covered by high water. In Page County, high water covered several roads in Shenandoah and Luray. Route 603 was also flooded. In the central portion of the county, one road was partially washed out. In Loudoun County, high water covered Route 50 and Belmont Ridge Road southeast of Leesburg. Two people had to be rescued from flood waters in Leesburg. Widespread flooding of low lying areas and basements was also reported countywide. In Fairfax County, high water covered Centreville Road.

**VAZ021-025>031-037>041-050>052 Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Albemarle - Greene - Madison - Rappahannock - Fauquier - Orange - Culpeper - Prince William**

05	0600EST 1900EST			0	0			Winter Weather/Mix
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**VAZ042-053>054 Loudoun - Fairfax - Arlington**

05	0600EST 1900EST			0	0			Winter Storm
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A weak area of low pressure moved through the region on the 5th. It produced light snow across the northern half of Virginia between 6 AM and 7 PM. Snowfall totals ranged from 1.5 to 3 inches except in Loudoun, Fairfax, Fauquier, and Prince William counties where 4 to 6 inches was reported. The snow caused roads to become very slippery and numerous traffic accidents were reported. In Warren County, a 70 year old woman died in a crash on Route 522.

**VAZ021-025>031-036>040 Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Nelson - Albemarle - Greene - Madison - Rappahannock**

08	2200EST			0	0			High Wind (G63)
09	0800EST							

A rare downslope wind event similar to "Chinook Winds" experienced east of the Rockies occurred just east of the Appalachian Mountain ridges early on the 9th. Winds between 40 and 70 MPH blew down the side of the mountain and numerous trees and power lines were downed. In Augusta County, downed trees blocked the intersection of routes 11 and 654 and along Route 730. In Nelson County, numerous trees were downed along Route 151 and a downed tree blocked Route 666. In Albemarle County, scattered trees were downed. A wind gust of 52 MPH was recorded in Crozet. In Rockingham County, a wind gust of 72 MPH was recorded in Harrisonburg. In Madison County, scattered trees were downed. In Rappahannock County, trees were downed onto routes 628 and 603. In Shenandoah County, scattered trees were downed. A 41 MPH gust was recorded in Woodstock. In Clarke County, trees were downed across the western portion of the county. In Frederick County, trees and power lines were downed west of I-81. A storm door was ripped from a home in Stephens City. The airport in Winchester recorded a gust of 45 MPH.

# Storm Data and Unusual Weather Phenomena

January 2003

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

**VAZ003>004**

**Dickenson - Buchanan**

16 1400EST  
17 0100EST

0 0

Heavy Snow

Snow accumulated 3 to 7 inches, before diminishing to scattered snow showers.

## VIRGINIA, Southwest

**VAZ012>014-019-022>024**

**Wythe - Pulaski - Montgomery - Alleghany - Roanoke - Botetourt - Rockbridge**

05 0900EST  
1800EST

0 0 0

Winter Storm

Snow accumulated 1 to 3 inches during the 5th, and resulted in nearly 100 automobile accidents. Several minor injuries were reported.

**VAZ011-014>016-018>019-022>023-032>035**

**Giles - Montgomery - Grayson - Carroll - Craig - Alleghany - Roanoke - Botetourt - Patrick - Franklin - Bedford - Amherst**

08 0230EST  
1100EST

0 0 80K

High Wind (G50)

High winds during the morning of the 8th downed trees and power lines. Numerous trees downed across Grayson County caused damage to several homes.

**VAZ012-014-016-018-022-032>033-035**

**Wythe - Montgomery - Carroll - Craig - Roanoke - Patrick - Franklin - Amherst**

09 0145EST  
0530EST

0 0 0

High Wind (G60)

High winds during the early morning of the 9th downed trees and power lines.

**VAZ045**

**Campbell**

16 2100EST  
17 0500EST

0 0 0

Winter Storm

Snow accumulated 3 to 6 inches across northern Campbell County and Lynchburg, with over 60 automobile accidents reported.

**VAZ015>016-043>044-058**

**Grayson - Carroll - Henry - Pittsylvania - Halifax**

22 2200EST  
23 0700EST

0 0 0

Heavy Snow

Snow late during the night of the 22nd through early morning of the 23rd accumulated 5 to 8 inches in Grayson and Carroll counties, with 4 to 6 inches in Henry, Pittsylvania, and Halifax counties.

**VAZ012>018-020-022>023-032**

**Wythe - Pulaski - Montgomery - Grayson - Carroll - Floyd - Craig - Bath - Roanoke - Botetourt - Patrick**

23 2000EST  
24 0330EST

0 0 50K

High Wind (G100)

High winds during the night of the 23rd through the early morning of the 24th downed trees and power lines across the Alleghany Highlands, parts of the foothills, the Southern Shenandoah, Roanoke, and New River valleys of Virginia. Law enforcement reported 6 tractor trailer trucks blown off of Interstate Route 77 near Fancy Gap in Carroll County, during the evening of the 23rd.

**VAZ034-045-047**

**Bedford - Campbell - Buckingham**

30 0800EST  
1800EST

0 0 0

Heavy Snow

Snow during the morning and afternoon of the 30th accumulated 4 to 7 inches across Bedford, Campbell, and Buckingham counties.

## WASHINGTON, Northeast

**WAZ037>038-041>042-044**

**Northeast Mountains - Okanogan Highlands - Wenatchee Area - East Slopes Northern Cascades - Waterville Plateau**

01 0001PST  
03 1000PST

0 0

Heavy Snow

A moist southwest flow, known as a Pineapple Express, developed over eastern Washington New Year's Eve. Even though snow levels were on the rise through the holiday, cold air was trapped in some of the northern valleys from the lee of the Cascades to northeast Washington. Some valley snow totals included: Chewelah...9.5", Williams Lake...7", Chelan...7.8", Entiat...11", Mazama...19", Lake Wenatchee...16.5", Holden Village...24", Waterville...4.5". Some mountain snow totals included: 49 Degrees



# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<b>WASHINGTON, Southeast</b>									
<b>WAZ027</b>		<b>Yakima Valley</b>							
	22	0400PST 1143PST			0	0			Heavy Snow
		5.5 inches of snow fell two miles east of Cowiche.							
<b>WAZ026</b>		<b>Kittitas Valley</b>							
	22	0500PST 1800PST			0	0			Heavy Snow
		Six inches of snow fell nine miles north of Ellensburg, WA. Very light snow accumulations began occurring around 6:00 PM on the 21st, but the majority of the snowfall fell between 5:00 AM and 6:00 PM on the 22nd.							
<b>WAZ025</b>		<b>East Slopes Southern Cascades</b>							
	31	0915PST 2359PST			0	0			Flood
		The Naches River near Naches, with a flood stage of 17.0 feet, peaked at a level of 17.6 feet at 8:00 PM. As a result, minor flooding occurred along the river.							
<b>WAZ025&gt;026</b>		<b>East Slopes Southern Cascades - Kittitas Valley</b>							
	31	1345PST 2359PST			0	0	3K		Flood
		The Yakima River at Easton, with a flood stage of 51.1 feet, peaked at 51.7 feet at 6:00 PM. Minor flooding occurred in West Ellensburg and the Elk Meadows development west of Cle Elum. Water went under a few homes, and also a bedroom which was located in a garage. Erosion to roads, shoulders, and driveways occurred in the Elk Meadows area.							
<b>WAZ025</b>		<b>East Slopes Southern Cascades</b>							
	31	1345PST 2359PST			0	0			Flood
		The Klickitat River near Pitt passed the flood stage of 9.0 feet at 1:45 PM, with no reports of damage.							
<b>WAZ027</b>		<b>Yakima Valley</b>							
	31	2215PST 2359PST			0	0			Flood
		The Yakima River near Parker reached a flood stage of 10.0 feet at 10:15 PM, which resulted in minor flooding of orchards and fields near the river.							
<b>WASHINGTON, Southwest</b>									
<b>WAZ021</b>		<b>South Coast</b>							
	01	1200PST			0	0			High Wind (G61)
	02	0200PST							
		A Pacific weather system brought high winds to the Southwest Washington Coast. Coast Guard Station Cape Disappointment reported sustained winds at 60 mph with gusts to 70 mph. Elsewhere on the peninsula wind gusts were estimated at 50 to 60 mph. The Long Beach "Chinook Observer" reported 3000 North Peninsula homes lost power when power lines were downed by falling trees and limbs.							
<b>WAZ021</b>		<b>South Coast</b>							
	02	0700PST 2200PST			0	0			Heavy Surf/High Surf
<b>WAZ021</b>		<b>South Coast</b>							
	02	0900PST 1300PST			0	0			Astronomical High Tide
		The new year started with a very potent Pacific storm that churned up huge seas along the South Washington Coast. Buoys just off shore reported heaviest seas in the mid to upper 20 foot range. The heavy surf arrived at the time of one of the highest tides of the year, with tides reported at over 3 feet above the predicted high tides. This resulted in significant flooding along estuaries and low lying areas of Pacific County. Highway 101 was flooded near Potter Slough, Nemah, and from McGowan to Megler, just north of the Astoria Bridge. There was also flooding and property damage reported at and around the Port of Ilwaco. No damage estimates are available.							
<b>WAZ021</b>		<b>South Coast</b>							
	02	1000PST 1500PST			0	0			Astronomical High Tide
		Tidal overflow during one of the highest tides of the year resulted in significant flooding along estuaries and low-lying coastal area. There was 4 feet of water over Highway 101 in Raymond and significant flooding of Highway 101 near Potter Slough and Nemah. The Pacific County Emergency Manager reported significant flooding and property damage at the Port of Ilwaco. Waves and high water were also reported on Highway 101 from McGowan to Megler. Neither injuries nor an estimate of damage was reported.							

# Storm Data and Unusual Weather Phenomena

January 2003

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b>WASHINGTON, Southwest</b>									
<b>Clark County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Cowlitz County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Lewis County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Pacific County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Skamania County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
<b>Wahkiakum County</b>									
Countywide	29	1200PST			0	0			Heavy Rain
	31	1800PST							
Heavy rains associated with a strong Pacific weather system brought 2 days of heavy rains to the area. Cougar recorded 6.74 inches, Castle Rock 6.31 inches, Merwin Dam 5.81 inches, Brush Prairie 6.33 inches, and Camas 4.87 inches. Many other locations reported amounts in excess of an inch. A landslide in Camas crushed a garage and prompted the evacuation of 5 homes. In Woodland, the swollen Lewis River flooded roads and some homes. No injuries or value of damage was reported.									
<b>WAZ022 Lower Columbia</b>									
	31	0700PST 2200PST			0	0			Flood
The Lewis River near Woodland crested about 3 feet above flood stage, resulting in significant flooding. The airport and roads near the river were under water, and numerous homes and buildings suffered damages. The Cowlitz River near Kelso crested 1.5 feet above flood stage.									
<b>WEST VIRGINIA, East</b>									
<b>WVZ052&gt;053 Berkeley - Jefferson</b>									
	02	0500EST			0	0			Flood
	03	0130EST							
Heavy rainfall on the 1st caused minor flooding on rivers and creeks in Berkeley and Jefferson counties. In Martinsburg, the Opequon Creek reached a stage of 11.41 feet. Flood stage is 10 feet. Culverts along the creek flooded. In Shepherdstown, the Potomac River reached a stage of 16.57 feet. Flood stage is 15 feet. The road to a housing development was flooded and several other low lying areas along the river were inundated by water.									
<b>WVZ048-050&gt;055 Grant - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy</b>									
	05	0600EST 1900EST			0	0			Winter Weather/Mix
A weak area of low pressure moved through the region on the 5th. It dropped 2 to 4 inches of snow across the Eastern Panhandle between 6 AM and 7 PM. The snow caused roads to become very slippery and a handful of traffic accidents were reported.									
<b>WVZ048&gt;049 Grant - Mineral</b>									
	08	0000EST 0800EST			0	0	2.1K		Strong Wind
A strong low pressure system just east of the region produced strong winds in the higher elevations of Grant and Mineral counties during the early morning hours of the 8th. In Mineral County, a wind gust of 54 MPH was recorded at 1:35 AM. In Grant County, the gusty winds damaged a utility pole and small building in Petersburg.									
<b>WVZ048&gt;052-054&gt;055 Grant - Mineral - Hampshire - Morgan - Berkeley - Pendleton - Hardy</b>									
	08	2200EST			0	0			High Wind (G58)
	09	0800EST							

# Storm Data and Unusual Weather Phenomena

January 2003

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

**WVZ053**

**Jefferson**

**08 2200EST**  
**09 0800EST**

**0 0 0.10K**

**Strong Wind**

A rare downslope wind event similar to "Chinook Winds" experienced east of the Rockies occurred just east of the Appalachian Mountain ridges early on the 9th. Winds between 40 and 70 MPH blew down the east side of the mountains and numerous trees and power lines were downed. In Pendleton County, a tree was downed onto a house in Upper Tract. In Grant County, a carport was blown off a trailer home in Petersburg. Several trees and power lines were also downed across the county. In Hardy County, trees and power poles were downed in and around Moorefield. In Hampshire County, a tree was downed near the Mineral County line. In Mineral County, a wind gust of 67 MPH was recorded at the top of a 75 foot tower near Keyser. At the ground, a wind gage in Keyser reported a wind gust of 55 MPH. Hundreds of trees and several power lines were downed countywide. Trees blocked several roads and a few windows and storm doors were shattered by wind blown debris. A total of 3300 county customers lost power as a direct result of the wind. In Morgan County, a few trees were downed. In Berkeley County, measured wind gusts included 53 MPH in Martinsburg and 46 MPH in Falling Waters. Multiple trees were downed countywide. In Jefferson County, a wind gust of 42 MPH was recorded at Shepherdstown. Large tree limbs were downed.

## WEST VIRGINIA, North

**WVZ023-041**

**Preston - Tucker**

**06 1800EST**  
**07 0700EST**

**0 0**

**Heavy Snow**

Six inches of snow accumulated by 6 PM on the 6th. Totals by 7 AM on the 7th ranged from 8 to 14 inches in Preston County, and 9 to 18 inches in Tucker county.

**WVZ023-041**

**Preston - Tucker**

**11 0700EST**  
**0900EST**

**0 0**

**Heavy Snow**

6 inches of snow fell at Terra Alta, and 8 inches at Davis.

## WEST VIRGINIA, Southeast

**WVZ042**

**Mercer**

**05 1200EST**  
**2300EST**

**0 0 0**

**Heavy Snow**

Snow during the afternoon and evening of the 5th accumulated 5 to 8 inches across Mercer County.

## WEST VIRGINIA, West

**WVZ034>037-046**

**Wyoming - Raleigh - Fayette - Nicholas - Pocahontas**

**06 0800EST**  
**2200EST**

**0 0**

**Snow**

Snow accumulated 1 to 6 inches.

**WVZ038-040-047**

**Webster - Barbour - Randolph**

**06 0800EST**  
**2300EST**

**0 0**

**Heavy Snow**

Snow accumulations of 4 to 8 inches were widespread. Accumulations of new snow were near a foot around Kumbrabow State Forest, while their total snow depth reached 20 inches.

A northwest wind flow, combined with an upper air disturbance, to squeeze-out an upslope snow event.

**WVZ005>011-013>020-024>040-046>047**

**Wayne - Cabell - Mason - Jackson - Wood - Pleasants - Tyler - Lincoln - Putnam - Kanawha - Roane - Wirt - Calhoun - Ritchie - Doddridge - Mingo - Logan - Boone - Clay - Braxton - Gilmer - Lewis - Harrison - Taylor - Mcdowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Upshur - Barbour - Pocahontas - Randolph**

**14 0600EST**  
**28 1300EST**

**0 0**

**Prolong Cold**

Many counties remained below freezing for 2 weeks, while southern counties rose briefly above 32 degrees only on the 20th. Several light snow events occurred, maintaining a snow cover. The airport at Elkins reached 14 degrees below zero on the morning of 18th. At the same time, Gladys registered minus 11 and Dailey had minus 9. Temperatures dropped below zero over the north central lowlands early on Wednesday morning the 22nd. Belington and Stonewall Jackson Lake near Weston both recorded 8 degrees below zero. Middlebourne of Tyler County was minus 7. Grafton and Philippi had a minimum temperature of minus 6. Clarksburg saw a minus 4 temperature. During the daylight hours on Thursday the 23rd, the high temperature on the mountain top at Snowshoe was 5 degrees below zero. The low temperature that night was 10 below zero at Snowshoe. On Monday the 27th, the coldest readings came from the western lowlands, away from the rivers. Along Lockhart Fork near Sandyville of Jackson County, the thermometer dropped to 17 degrees below zero just after dawn. Other preliminary readings for that morning were minus 9 at Cairo, minus 8 at Creston, minus 7 at Grantsville, minus 6 from Clarksburg, and minus 5 from both Glenville and Parkersburg.

The monthly average temperature for January was 4 to 6.5 degrees colder than normal. It was the coldest January for many counties

# Storm Data and Unusual Weather Phenomena

January 2003

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

in 9 years, or since 1994. Outdoor work and construction were slowed.

**WVZ033>036**

**Mcdowell - Wyoming - Raleigh - Fayette**

16	1500EST								
17	0100EST			0	0				Heavy Snow

Snow accumulated 3 to 6 inches before diminishing to scattered snow showers.

**WVZ017>019-**

**Wirt - Calhoun - Ritchie - Braxton - Gilmer - Lewis - Harrison - Taylor - Nicholas - Webster - Upshur -**

**028>032-037>040-047**

**Barbour - Randolph**

26	1400EST								
27	0200EST			0	0				Snow

Snow accumulated 2 to 5 inches, before arctic air took control.

## WISCONSIN, Northeast

**WIZ013-037>039-045-  
049>050**

**Northern Marinette - Waupaca - Outagamie - Brown - Waushara - Calumet - Manitowoc**

31	0000CST								
	1200CST			0	0				Heavy Snow

Low pressure that moved from the Dakotas into southern Wisconsin brought heavy snow to central, east central and parts of northeast Wisconsin. The highest snowfall totals included 7.0 inches at Coloma (Waushara co.), 6.7 inches at New London (Outagamie co.), 6.5 inches at Fremont (Waupaca co.), 6.4 inches at Green Bay (Brown co.) and 6.2 inches at Peshtigo (Marinette

## WISCONSIN, Northwest

**WIZ004**

**Iron**

08	0100CST								
	1200CST			0	0				Heavy Snow

Lake effect snow fell over northern Iron County bringing snow amounts of six to eleven inches. Pence had a total of 11 inches, Saxon reported 6.5 inches, and Montreal had 6 inches.

## WISCONSIN, Southeast

NONE REPORTED.

## WISCONSIN, Southwest

NONE REPORTED.

## WISCONSIN, West

NONE REPORTED.

## WYOMING, Central and West

NONE REPORTED.

## WYOMING, Extreme Southwest

NONE REPORTED.

## WYOMING, North Central

**WYZ099**

**Sheridan Foothills**

22	0830MST								
				0	0				Heavy Snow

12 inches of new snow in Sheridan

**WYZ099**

**Sheridan Foothills**

22	0830MST								
				0	0				Heavy Snow

6 inches of new snow in Dayton

**WYZ098**

**Northeast Bighorn Mountains**

22	1530MST								
				0	0				Heavy Snow

8 inches of new snow in Burgess Junction

# Storm Data and Unusual Weather Phenomena

January 2003

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

## WYOMING, North Central

<b>WYZ099</b>	<b>Sheridan Foothills</b>				<b>0</b>	<b>0</b>			<b>Heavy Snow</b>
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7 inches of new snow in Clearmont

## WYOMING, Northeast

<b>WYZ057</b>	<b>Wyoming Black Hills</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Winter Storm</b>
---------------	----------------------------	--	--	--	----------	----------	----------	----------	---------------------

A strong and fast moving cold front raced across the northern plains during the late afternoon and evening hours. Very little snow fell as the cold front passed, however, two to five inches of fresh snowcover was present across the area from a storm that moved through a few days earlier. Also, behind this cold front strong northwest winds of 25 to 40 mph, with gusts to over 50 mph were common. The strong winds combined with the snow cover to produce blowing and drifting snow. The blowing snow led to white-out and ground blizzard conditions at times. Visibilities were reduced to near zero at times with several automobile accidents across the area during the late afternoon and evening hours. The strong winds also produced wind chill values as low as 15 degrees below zero.

## WYOMING, Southeast

<b>WYZ066-069</b>	<b>Laramie Range - Cheyenne Foothills</b>				<b>0</b>	<b>0</b>	<b>20K</b>		<b>High Wind (G65)</b>
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High winds were reported across parts of southeast Wyoming with gusts as high as 75 mph measured at Dodge Creek. A gust to 69 mph was measured in Cheyenne with gusts of 70 to 80 mph estimated by spotters over the higher terrain west of Cheyenne, WY. Interstate 25 was closed for a short time just south of Cheyenne due to a few semi-trailers being blown over.

## Reference Notes:

### Storm Data Disclosure

**Storm Data** is an official publication of the National Oceanic and Atmospheric Administration (NOAA) which documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce. In addition, it is a partial record of other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occurs in connection with another event.

Some of the information appearing in Storm Data may have been provided by or gathered from sources outside the National Weather Service (NWS), such as the media, law enforcement and/or other government agencies, private companies, individuals, etc. An effort is made to use the best available information, but because of time and resource constraints, information from these sources may be unverified by the NWS. Therefore, when using information from Storm Data, customers should be cautious as the NWS does not guarantee the accuracy or validity of the information. Further, when it is apparent information appearing in Storm Data originated from a source outside the National Weather Service (frequently credit is provided), Storm Data customers requiring additional information should contact that source directly. In most cases, NWS employees will not have the knowledge to respond to such requests. In cases of legal proceedings, under Department of Commerce regulations and/or rules of the court, NWS employees are not legally obligated to provide written or verbal testimony.

**Fatality Codes:** For events that include a fatality, there is a code containing the gender, age and fatality location at the end of the event narrative.

1<sup>st</sup> letter: Gender (M/F) – 2<sup>nd</sup> numbers: Age – 3<sup>rd</sup> letters Fatality location (see table below)

Example: M51IW – Male, 51 years of age, fatality occurred In Water.

### Fatality Location Abbreviations:

BF	Ball Field	MH	Mobile Home
BO	Boating	OT	Other
BU	Business	OU	Outside/Open Areas
CA	Camping	PH	Permanent Home
EQ	Heavy Equipment/Construction	SC	School
GF	Golfing	TE	Telephone
IW	In Water	UT	Under Tree
LS	Long Span Roof	VE	Vehicle

### List of Acronyms:

NWS	- National Weather Service
NOAA	- National Oceanic and Atmospheric Administration
WCM	- Warning Coordination Meteorologist – The meteorologist at each NWS Office responsible for reporting severe weather events
LST	- Local Standard Time      Storm Data attempts to always use “Standard Time”
EST	- Eastern Standard Time
EDT	- Eastern Daylight Time

CST - Central Standard Time  
CDT - Central Daylight Time  
PST - Pacific Standard Time  
PDT - Pacific Daylight Time

**Other Notes:**

An “Episode” is an entire storm system and can contain many different types of events.

An “Event” is an individual type of storm event.

When listing wind speed values under “Character of Storm”, ex. High Wind (G81), the G indicates a “Gust” which is a peak 5-second averaged wind speed in Knots (kts). 1 kt. = 1.152 mph. This number can be either E (estimated) by damage caused, or M (measured) by known calibrated anemometers. Ex. (M61) = measured 61 knots or E(75) = estimated at 75 knots.

All wind speeds listed are estimated by NWS personnel by the amount and type of damage unless otherwise noted with an “M” which represents an actual wind speed as measured by official NWS approved anemometer.

When listing hail size under “Character of Storm”, ex. Hail (2.25), the hail size is given in inches and hundredths of inches.

When listing property and crop damage, the figures indicated are the best guess made by the NWS from the available sources of information at the time of the printing.

The fatalities, injuries, and damage amounts appearing in tropical cyclone events are attributed only to wind damage experienced in the coastal counties/parishes listed. Other tropical cyclone related events such as tornadoes and flooding are listed within their separate event types.

## **The Saffir-Simpson Scale**

### **Category One Hurricane:**

Winds 74-95 mph (64-82 kt or 119-153 kph). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

### **Category Two Hurricane:**

Winds 96-110 mph (83-95 kt or 154-177 kph). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.

### **Category Three Hurricane:**

Winds 111-130 mph (96-113 kt or 178-209 kph). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Flooding near the coast destroys smaller structures with larger structures damaged by battering of floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.

### **Category Four Hurricane:**

Winds 131-155 mph (114-135 kt or 210-249 kph). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km).

### **Category Five Hurricane:**

Winds greater than 155 mph (135 kt or 249 kph). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required.

## The Fujita Scale

F-Scale	Intensity	Wind Speed (mph)	Typical Damage (Suggested)
F0	Gale Tornado	40 - 72	Tree branches broken, chimneys damaged, shallow-rooted trees pushed over; sign boards damaged or destroyed, outbuildings and sheds destroyed
F1	Moderate	73 - 112	Roof surfaces peeled off, mobile homes pushed off foundations or overturned, moving autos pushed off the roads, garages may be destroyed. Category 1-2 hurricane wind speed
F2	Significant	113 - 157	Roofs blown off frame houses; mobile homes rolled and/or destroyed, train boxcars pushed over; large trees snapped or uprooted; airborne debris can cause damage. Category 3-4 hurricane wind speed
F3	Severe	158 - 206	Roofs and walls torn off well constructed houses; trains overturned; large trees uprooted, can knock down entire forest of trees. Category 5 hurricane wind speed
F4	Devastating	207 - 260	Well-constructed frame houses leveled; structures with weak foundations blown off some distance; automobiles thrown, large airborne objects can cause significant damage.
F5	Incredible	261 - 318	Brick, stone and cinderblock buildings destroyed, most debris is carried away by tornadic winds, large and heavy objects can be hurled in excess of 100 meters, trees debarked, asphalt peeled off of roads, steel reinforced concrete structures badly damaged.
F6	Inconceivable	319 - 379	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the damage produced by F4 and F5 wind speeds that would surround the F6 winds.



### Typical F0 Tornado Damage

Note the trees are stripped of leaves, but the trees remain standing. Only light roof damage and a few missing shingles.



### Typical F1 Tornado Damage

Note the uprooted trees and missing shingles from the roof. There is significant roof damage.



### **Typical F2 Tornado Damage**

This home is missing its entire roof but the exterior walls remain intact. Some of the stronger hardwood trees remain standing.



### **Typical F3 Tornado Damage**

This home is missing the entire roof as well as some of the exterior walls. Trees are blown over or snapped near the base and outbuildings are destroyed.



### **Typical F4 Tornado Damage**

This home is almost completely obliterated, with no walls standing. The debris from the home is where the house once stood.



### **Typical F5 Tornado Damage**

These homes have been completely removed from their original locations. The debris field has been scattered some distance from their foundation.



### **Typical F5 Tornado Damage**

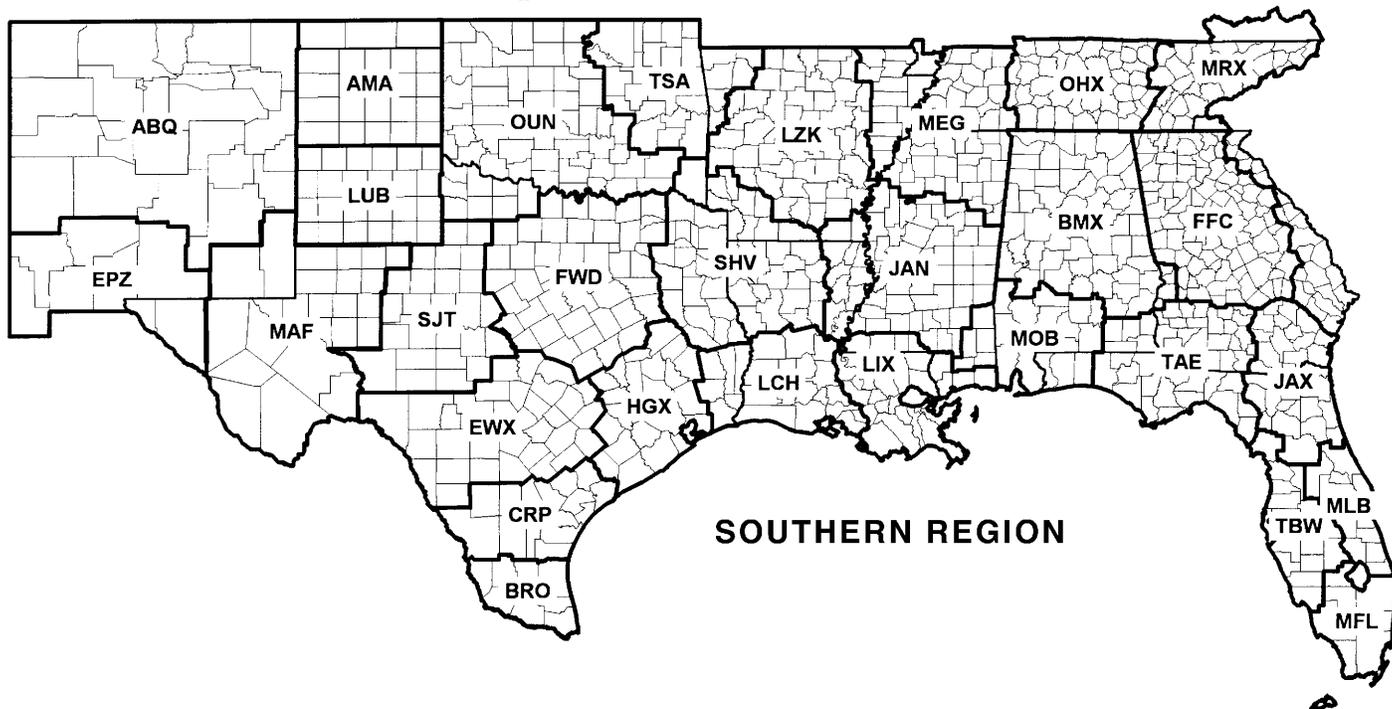
The asphalt surface has been peeled off of this road.

(All photographs courtesy of Brian Smith, Meteorologist, National Weather Service, Valley NE.)

# COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS

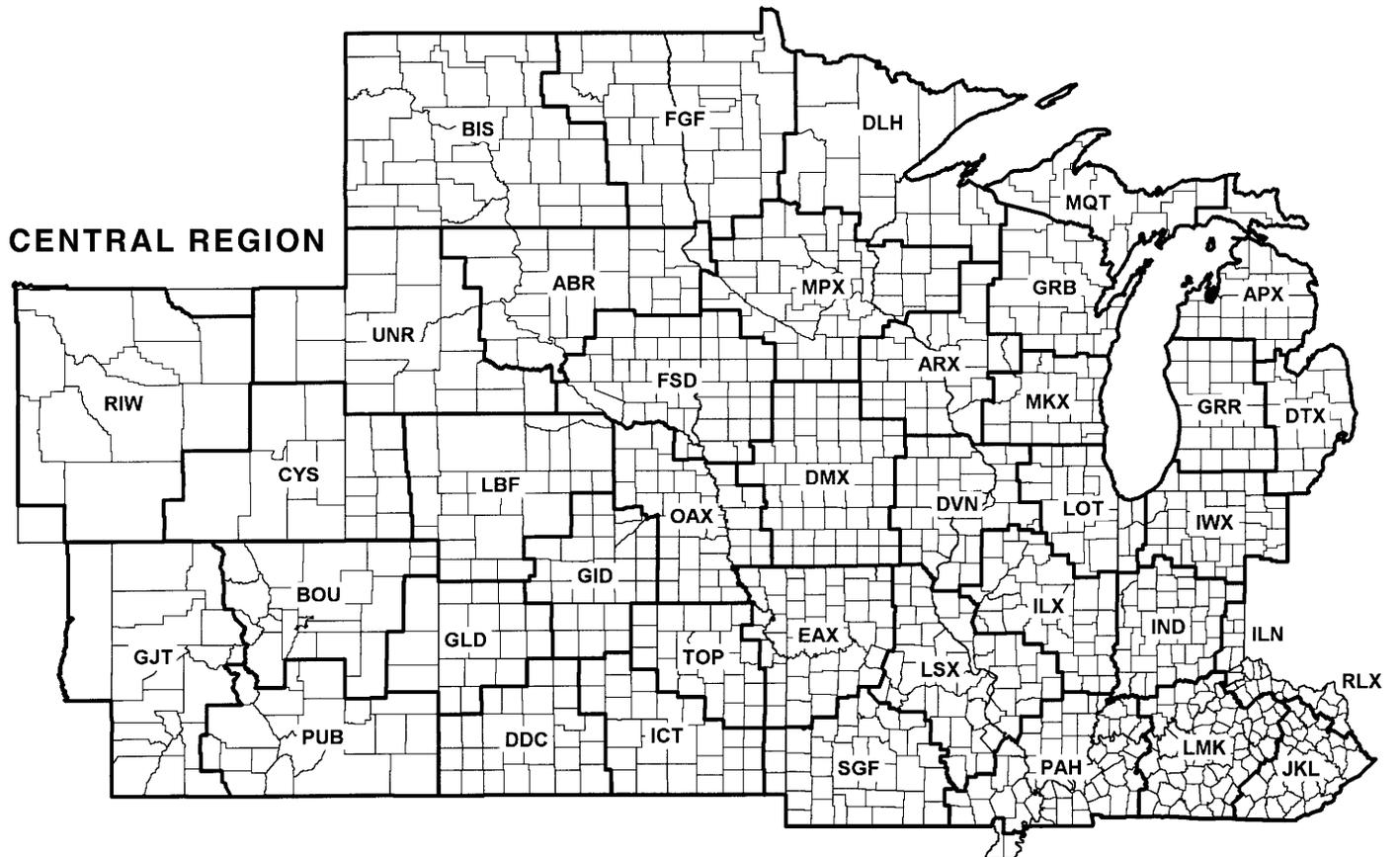
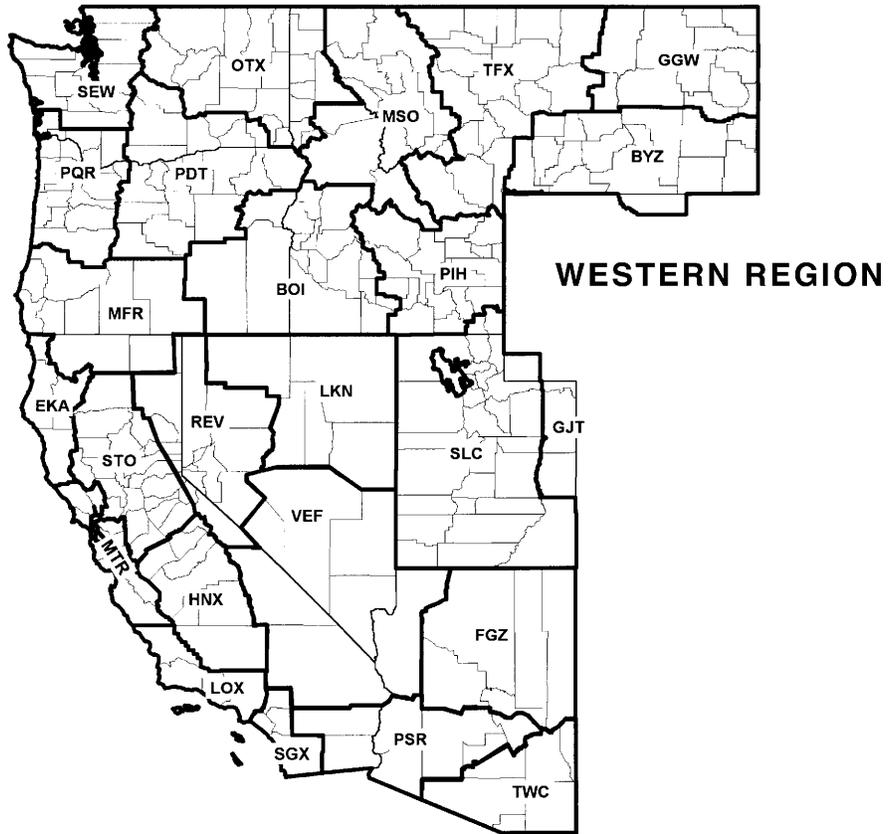


**EASTERN REGION**

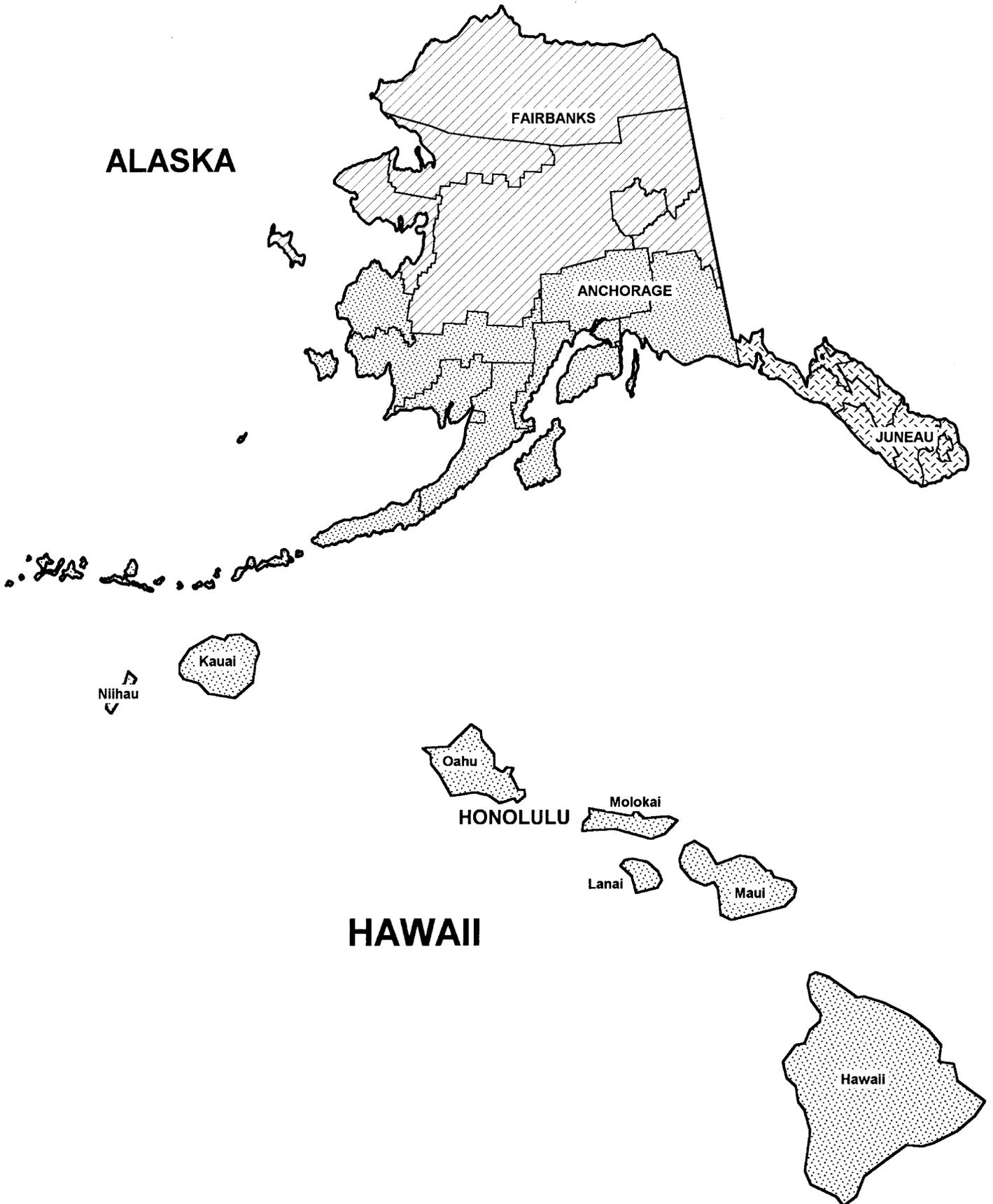


**SOUTHERN REGION**

# COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS



# MODERNIZED COUNTY WARNING AREAS



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

### **Hourly Precipitation Data**

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

### **Climatological Data**

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

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

### **Storm Data**

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

### **Monthly Climatic Data for the World**

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

### **Local Climatological Data**

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

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