JANUARY 2004
VOLUME 46
NUMBER 1

STORM DATA

RARE TORNADO TOUCHDOWN IN HAWAII

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 rare tornado touched down on the island of Oahu in a pineapple field near Kunia, about 7 miles northwest of downtown Honolulu, on January 25, 2004. The F0 tornado, as defined by the Fujita Tornado Scale, stayed on the ground for about 5 minutes moving very slowly through the field. *(Photo courtesy: Twain Newhart, Honolulu Advertiser, Hawaii.)*

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

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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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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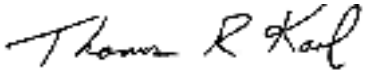


Thomas R. Karl
Director,
National Climatic Data Center

January 2004 Confirmed Tornadoes

F Scale	F0	F1	F2	F3	F4	F5	Total
Number	2	0	1	0	0	0	3

One F0 tornado in Hawaii

OUTSTANDING STORMS OF THE MONTH

THERE IS NO

“OUTSTANDING STORM OF THE MONTH”

FOR THE MONTH OF JANUARY 2004.

Storm Data and Unusual Weather Phenomena

January 2004

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

ALABAMA, Central

ALZ024 — **Jefferson**

Date	Time	Killed	Injured	Character of Storm
03	**1500CST**	**0**	**0**	**Excessive Heat**

The afternoon high temperature measured at the Birmingham International Airport was 72 degrees. This reading tied the previous record high which last occurred in 2000.

ALZ044 — **Montgomery**

Date	Time	Killed	Injured	Character of Storm
03	**1500CST**	**0**	**0**	**Excessive Heat**

The afternoon high temperature reading at Dannelly Field reached 77 degrees. This high temperature tied the previous record last set in 2000.

ALABAMA, North

NOT RECEIVED.

ALABAMA, Southeast

NONE REPORTED.

ALABAMA, Southwest

Escambia County

	Date	Time	Killed	Injured	Property	Character of Storm
Appleton	**26**	**0500CST** **0502CST**	**0**	**0**	**8K**	**Thunderstorm Wind (G50)**

Trees were blown down by high winds from a thunderstorm near Appleton.

Escambia County

	Date	Time	Killed	Injured	Property	Character of Storm
Brewton	**26**	**0540CST** **0542CST**	**0**	**0**	**5K**	**Thunderstorm Wind (G50)**

High winds from a thunderstorm blew down several power lines in Brewton.

ALASKA, Northern

AKZ201 — **Western Arctic Coast**

Date	Time	Killed	Injured	Character of Storm
03	**1235AST** **1955AST**	**0**	**0**	**High Wind (G53)**

A slow-moving low pressure center over Far East Russia caused a moderate pressure gradient over the Chukchi Sea. On the afternoon and evening of the 3rd, this gradient was tighter and caused strong south winds to occur at the Cape Lisburne AWOS, where southerly gusts reached 53 knots (61 mph).

AKZ203>204 — **Central Beaufort Sea Coast - Eastern Beaufort Sea Coast**

Date	Time	Killed	Injured	Character of Storm
05	**1500AST**	**0**	**0**	**Blizzard**
06	**0500AST**			

A large low pressure center moved from the high Arctic Ocean southeast over Banks Island in Canada, and brought northwest winds to the eastern half of the Arctic Coast on the 5th and 6th. These winds created blizzard conditions in blowing snow. Blizzard conditions were observed at:
Zone 203: Deadhorse (ASOS)
Zone 204: Kaktovik (Commercial Air Carrier Pilot).

AKZ207-210-212>213-217-225 — **Chukchi Sea Coast - Nrn & Intr. Seward Peninsula - Ern Norton Sound Nulato Hills - St Lawrence Is. Bering Strait - Upper Kobuk And Noatak Vlys - Denali**

Date	Time	Killed	Injured	Character of Storm
07	**1452AST**	**0**	**0**	**High Wind (G71)**
10	**0615AST**			

AKZ212>213-217 — **Ern Norton Sound Nulato Hills - St Lawrence Is. Bering Strait - Upper Kobuk And Noatak Vlys**

Date	Time	Killed	Injured	Character of Storm
08	**1255AST**	**0**	**0**	**Blizzard**
09	**0123AST**			

AKZ217 — **Upper Kobuk And Noatak Vlys**

Date	Time	Killed	Injured	Character of Storm
08	**1723AST** **2023AST**	**0**	**0**	**Extreme Cold/Wind Chill**

AKZ211 — **Srn Seward Peninsula Coast**

Date	Time	Killed	Injured	Character of Storm
08	**1922AST** **2202AST**	**0**	**0**	**Winter Weather/Mix**

Strong high pressure which developed early in the month over interior Alaska and Canada migrated to northwest Alaska and the Chukchi Sea on the 5th then continued north slowly to cover the Chukchi and Beaufort Seas on the 7th, maintaining it's strength of 1050 to 1055 millibars into the 8th. Low pressure centers moved along the Aleutian Islands or into the Gulf of Alaska through the 10th helping to slowly weaken the High fursther, but not before producing strong pressure gradient in areas across Northern Alaska...resulting in Blizzard conditions, High winds, and Extreme Wind Chills in various locations.
Strong winds were reported at:
Zone 207: Point Hope AWOS peak gust 65 knots (75 mph) at 1035 AST on the 9th, and 59 knots (68 mph) at 0455 AST on the

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

ALASKA, Northern

10th.
Zone 210 - Hoodoo Hill Remote Automated Weather System (RAWS):gust near 52 knots (60 mph).
Zone 212 - Unalakleet AWOS: peak gust 58 knots (67 mph).
Zone 213 - Tin City AWOS peak gust 59 knots (68 mph).
Zone 217: Noatak River Remote Automated Weather System (RAWS): sustained wind 63 knots (72 mph) and peak gust 71 knots (82 mph).
Zone 225 - Wonder Lake Remote Automated Weather System (RAWS): sustained winds 35 to 39 knots (40 to 45 mph) mph with a peak gust to 54 knots (62 mph).

Blizzard Conditions reported or likely occurred at:
Zone 213 - Tin City
Zone 212 - Unalakleet - AWOS visibility was 1/4 mile then stopped reporting.
Zone 217 - Due to high winds such as at the Noatak River Remote Automated Weather System (RAWS).
Near-blizzard conditions (Winter Weather Mix) occurred at:
Zone 210 - Nome

Extreme Wind Chill occurred at:
Zone 217 - Noatak River Remote Automated Weather System (RAWS): -62

AKZ201-206	**Western Arctic Coast - N. Brooks Rng E Of Colville R**								
	16	**1520AST**			**0**	**0**			**Extreme Cold/Wind Chill**
	18	**1236AST**							

Moderate winds combined with cold temperatures from a large high pressure center covering the Arctic Ocean, resulted in dangerous wind chills. Hours of events are for wind chills colder than -65F. Coldest Wind chills:
Zone 201: Point Lay: -71F.
Zone 206: Anaktuvuk Pass: -76F.

AKZ207-212	**Chukchi Sea Coast - Ern Norton Sound Nulato Hills**								
	19	**1436AST**			**0**	**0**			**High Wind (G58)**
	20	**2136AST**							
AKZ223	**Deltana And Tanana**								
	19	**2220AST**			**0**	**0**	**0.50K**		**Strong Wind**
	20	**0653AST**							

Strong high pressure over the Arctic Ocean and over the Yukon Territory of Canada combined with a low pressure center just south of the Alaska Peninsula and another center in the Gulf of Alaska produced locally strong winds.
High winds were reported at:
Zone 207: Point HopeAWOS peak gust 57 knots (66 mph).
Zone 212: Unalakleet AWOS peak gust 58 knots (67 mph).
Zone 223: At Dry Creek, the Co-operative Observer reported damaging winds as some siding was blown off of an aircraft hanger. The Delta Junction ASOS reported a peak gust of 51 knots (59 mph).

AKZ201-211>212-214-219-223	**Western Arctic Coast - Srn Seward Peninsula Coast - Ern Norton Sound Nulato Hills - Yukon Delta - Upper Koyukuk Valley - Deltana And Tanana**								
	24	**2155AST**			**0**	**0**			**High Wind (G63)**
	27	**1353AST**							
AKZ214	**Yukon Delta**								
	26	**2355AST**			**0**	**0**			**Blizzard**
	27	**0655AST**							
AKZ221	**Wrn Tanana Vly Wrn Yukon Vly**								
	27	**0000AST**			**0**	**0**	**150K**		**Strong Wind**
		0955AST							

Strong high pressure over the Arctic Ocean on the 24th moved southeast to the Yukon Territory of Canada on the 25th. On the 27th and 28th, broad low pressure over the Aleutian Islands and Southern Bering Sea strengthened and an associated weather front moved north a bit in the Bering Sea before weakening late on the 27th. This caused strong easterly winds to develop over channeled areas across northern Alaska, such as:
Zone 201: Cape Lisburne AWOS peak gust 63 knots (73 mph).
Zone 211: Golovin AWOS peak gust 56 knots (64 mph).
Zone 212: Unalakleet AWOS: peak gust 54 knots (62 mph) occasionally through the entire 2 and one-half days.
Zone 214: Cape Romanzof AWOS peak gust 57 knots (66 mph).
Zone 223: Delta Junction ASOS peak gust 52 knots (60 mph).

Strong winds were reported at:
Zone 221: Nenana: A 70 ft. by 120 ft. Quonset Hut owned by Toghotthele,a Native Investment Corporation a few miles north of Nenana, was entirely blown down. Nenana ASOS reported peak wind of 45 knots (52 mph).

Storm Data and Unusual Weather Phenomena

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

ALASKA, Northern

Blizzard conditions likely occurred at:
Zone 214: Cape Romanzof AWOS

ALASKA, Southeast

NOT RECEIVED.

ALASKA, Southern

AKZ135 **Sern P.W. Snd**

02	**0200AST**	**0**	**0**			**High Wind (G69)**
03	**1500AST**					

A strong high pressure system over interior Alaska combined with moderate low pressure in the Gulf of Alaska indicated that winds were gusting an estimated 80 mph out of the Copper River. Satellite analysis also supports wind estimates of approximately 80 mph in ths data void area.

AKZ101-111-131-135 **Anchorage Muni To Bird Creek - Matanuska Valley - Nern P.W. Snd - Sern P.W. Snd**

06	**0400AST**	**0**	**0**	**10K**		**High Wind (G78)**
07	**2100AST**					

AKZ171 **Kodiak Peninsula**

07	**1230AST**	**0**	**0**			**Blizzard**
	1600AST					

Strong high pressure over interior Alaska combined with a rapidly deepening low in the Gulf of Alaska resulted in strong northerly wind across the south central region and northern gulf coast of Alaska. Strong wind is estimated to have reached around 90 mph out of the Copper River Delta based upon satellite interpretation and the magnitude of the wind observations in and around the north gulf coast. The north wind reached 86 mph in the Palmer and Wasilla area as a result of the channeling down the Matanuska Valley. Drifting snow and sand resulted in the derailment of the Alaska Railroad train at the junction of the Parks Highway resulting in closing the Parks Highway for several hours. The northerly wind peaked at 64 mph over Fire Island, just west of Anchorage International Airport. As the low in the Gulf of Alaska moved to the west it brought moderate to heavy snow to Kodiak island along with winds gusting 30 to 40 mph causing a blizzard over the Island for over 3 hours on the afternoon of the 7th.

AKZ161 **Bristol Bay**

06	**1430AST**	**0**	**0**	**40K**		**Strong Wind**
07	**0516AST**					

Gusty north wind to 48 mph in the Bristol Bay community of Dillingham blew airline freight "igloo" containers into two parked aircraft causing an estimated $40,000 in damage.

AKZ181 **Alaska Peninsula**

09	**0620AST**	**0**	**0**			**Blizzard**
	1900AST					

A storm moved north of the eastern Alaska Peninsula Friday morning. Moderate snow along with northwest winds resulted in a blizzard across the western portions of the Alaska Peninsula.

AKZ131 **Nern P.W. Snd**

09	**2100AST**	**0**	**0**			**Heavy Snow**
10	**2100AST**					

A storm over southern Cook Inlet and persistent southwest flow into northern Prince William Sound resulted in Heavy snow over the Valdez area. Snow fell at a rate of 5 inches per hour for several hours. Storm total snow fall was 44 inches for Valdez from Friday evening through Saturday evening.

AKZ131 **Nern P.W. Snd**

13	**1715AST**	**0**	**0**			**High Wind (G69)**
15	**0200AST**					

Building high pressure over interior Alaska combined with moderate low pressure in the Gulf of Alaska resulted in the typically strong outflow winds along the Chugach mountains. Winds are estimated to have peaked around 80 mph out of the channeled terrain of northern Prince William sound based upon surface observations and satellite interpretation. Valdez Airport measure winds gusts peaking at 70 mph.

AKZ121 **Kenai Peninsula**

26	**0300AST**	**0**	**0**			**Heavy Snow**
	2353AST					

A storm southwest of the Gulf of Alaska pushed moist air over the arctic front in the Homer area. This produced 12 inches of snow for the peak of the snow event over Seldovia by noon Monday. In Homer, snowfall accumulated to 8 inches before tapering off in the afternoon.

Storm Data and Unusual Weather Phenomena

January 2004

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

AMERICAN SAMOA

ASZ001>004 — **Swains - Tutuila - Manu'A - Rose**

04	**2300SST**	**0**	**20**	**50M**		**Hurricane/Typhoon**
05	**0600SST**					

Tropical Cyclone Heta was at its closest to American Samoa within 150 miles west-southwest of Tutuila on January 4th. Maximum winds recorded was 65 knots at 1242Z on January 5th over the Island of Tutuila. Peak winds reported at the Weather station was 100 knots on January 5th at 1205Z. Over 600 homes were destroyed, 1000 homes suffered major damages, and 3000 residences experienced minor damages. Many trees were uprooted, downed lines, damaged vehicles, and demolished public roads at north facing villages of all Islands. Surf heights reached 30 to 44 feet mainly along the north and west facing shores of the Islands.

There were 20 people with injuries. No fatality reported. Over 2500 people were sheltered and over 140 were evacuated from their homes. Federal Emergency Management (FEMA) continues to assist the islanders with their claims. An estimate of $150 million was announced by the American Samoa government after their assessment with T.C. Heta, but a FEMA representative reported an estimate between $40 and $50 million in funds, approved in federal assistance for victims. All vertical based crops, like bananas and breadfruits, were demolished by strong winds. An estimate of crop damages was unknown to date.

Swains Island suffered huge waves and high winds. An unaccountable number of boats were lost when the Island's boat shed was washed off-shore, and a lot of debris were seen along the shores of this remote Island.

ARIZONA, Central and Northeast

AZZ004 — **Kaibab Plateau**

03	**0600MST**	**0**	**0**			**Heavy Snow**
	1600MST					

A winter storm brought heavy snow to the Kaibab Plateau from the first to the third of January. Local storm totals exceeded fifteen inches. The heaviest snow fell during the day on the second. Eight inches of snow fell at Jacob Lake (7900 feet) between 600 AM and noon. The snow was falling at a rate of 2 1/2 inches an hour during the mid morning.

AZZ015>017 — **Western Mogollon Rim - Eastern Mogollon Rim - White Mountains**

20	**2000MST**	**0**	**0**			**Heavy Snow**
21	**1800MST**					

A strong low pressure center moved across the southern portions of Arizona and produced heavy snowfall along the southern part of Mogollon Rim and White Mountains. The heaviest snowfall amounts were: Munds Park 8 inches, Heber 9 inches, and Alpine 9 inches.

ARIZONA, Northwest

NONE REPORTED.

ARIZONA, South

NOT RECEIVED.

ARIZONA, Southwest

AZZ028 — **Central Deserts**

05	**0500MST**	**0**	**0**			**Frost/Freeze**
	0800MST					

Minimum temperatures dropped into the 20s across some areas of south-central Arizona. One of the coldest locations was Coolidge, with a low temperature of 24 degrees.

ARKANSAS, Central and North Central

NONE REPORTED.

ARKANSAS, East

NONE REPORTED.

ARKANSAS, Northwest

NONE REPORTED.

ARKANSAS, Southeast

NONE REPORTED.

ARKANSAS, Southwest

NONE REPORTED.

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

CALIFORNIA, Extreme Southeast

NONE REPORTED.

CALIFORNIA, North Central

NONE REPORTED.

CALIFORNIA, Northeast

CAZ071 **Lassen/Eastern Plumas/Eastern Sierra**

01 0300PST **0** **0** **Heavy Snow**
02 0500PST

A strong winter storm moved through the Sierra Nevada on January 1-2...depositing over 3 feet of snow in the higher elevations. Up to a half-foot of snow fell in the valleys east of the Sierra. Some snowfall totals reported:

Susanville	4 inches
Janesville	8 inches
Chilcoot	10 inches
Eagle Lake	12 inches
Portola	12 inches
Fredonyer Pass	24 inches

CAZ073 **Mono**

01 0300PST **0** **0** **Heavy Snow**
02 0500PST

A strong winter storm moved through the Sierra Nevada on January 1-2...depositing over 3 feet of snow in the higher elevations. Up to a half-foot of snow fell in the valleys east of the Sierra. Some snowfall totals reported:

Mammoth Mountain (at 8200 ft.)	28 inches
Mammoth Mountain (above 8500 ft.)	40 inches

CAZ072 **Greater Lake Tahoe Area**

01 0300PST **0** **0** **Heavy Snow**
02 0500PST

A strong winter storm moved through the Sierra Nevada on January 1-2...depositing over 3 feet of snow in the higher elevations. Up to a half-foot of snow fell in the valleys east of the Sierra. Some snowfall totals reported:

South Lake Tahoe	15-20 inches
Truckee	24 inches
Squaw Valley Ski Resort (6200 ft.)	22 inches
(8200 ft.)	30 inches
Sierra-at-Tahoe Ski Resort	26-32 inches
Heavenly Valley Ski Resort	27-33 inches
Alpine Meadows Ski Resort (7000 ft.)	24 inches
(8600 ft.)	40 inches
Northstar Ski Resort (6500 ft.)	23-36 inches
(8600 ft.)	42 inches
Boreal Ski Resort	48 inches

CAZ071 **Lassen/Eastern Plumas/Eastern Sierra**

01 0640PST **0** **0** **High Wind (G52)**

52 knot (60 mph) wind gust at Doyle RAWS.

CAZ071 **Lassen/Eastern Plumas/Eastern Sierra**

02 1300PST **0** **0** **Heavy Snow**
03 0600PST

24-hour snowfall totals:

Sattley	6 inches
4 S Susanville	7 inches
3 W Graeagle	11 inches
Portola	12 inches
Sloat	13 inches

CAZ073 **Mono**

02 1300PST **0** **0** **Heavy Snow**
03 0600PST

10 inches of snow reported past 24 hours above 8500 feet at Mammoth Mountain Ski Resort.

Storm Data and Unusual Weather Phenomena

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

CALIFORNIA, Northeast

CAZ072 **Greater Lake Tahoe Area**

02	**1300PST**			**0**	**0**			**Heavy Snow**
03	**0600PST**							

Snowfall reports:

Heavenly Valley Ski Resort (7200 ft.)	6 inches
Meyers (6340 ft.)	6-8 inches
South Lake Tahoe	8 inches
Echo Summit	10 inches
Northstar-at-Tahoe Ski Resort	15 inches
Squaw Valley Ski Resort (6200 ft.)	14 inches
(8200 ft.)	16 inches
Alpine Meadows Ski Resort (7000 ft.)	12 inches
(8600 ft.)	17 inches
Homewood Ski Area (6200 ft.)	12 inches
(7900 ft.)	22 inches

CAZ072 **Greater Lake Tahoe Area**

19	**1800PST**			**0**	**0**			**Heavy Snow**
20	**0800PST**							

10 inches of snow fell overnight 2 miles west of Topaz Lake.

CAZ072 **Greater Lake Tahoe Area**

27	**2000PST**			**0**	**0**			**Heavy Snow**
28	**0600PST**							

A fast-moving winter storm brought up to a foot of snow to the Sierra Nevada. Some 24-hour snowfall totals:

Squaw Valley Ski Resort (6200 ft.)	4 inches
(8200 ft.)	6 inches
Northstar-at-Tahoe (8300 ft.)	5 inches
Boreal Ski Resort (7200 ft.)	6 inches
Donner Pass	8 inches
Sierra-at-Tahoe Ski Resort (7300 ft.)	8 inches
Alpine Meadows Ski Resort (6900 ft.)	8 inches
(Mid-mountain)	11 inches

CAZ071 **Lassen/Eastern Plumas/Eastern Sierra**

30	**0542PST**			**0**	**0**			**High Wind (G56)**

56 knot (64 mph) wind gust reported by Doyle RAWS.

CALIFORNIA, Northwest

CAZ003>004 **North Coast Interior - Upper Trinity River**

01	**0000PST**			**0**	**0**			**Heavy Snow**
	0900PST							

6" snow accumulation near Covington Mill at 2,500 feet. 8" snow accumulation near Dinsmore at 3,800 feet.

CAZ003>004 **North Coast Interior - Upper Trinity River**

02	**0000PST**			**0**	**0**			**Heavy Snow**
03	**0900PST**							

15" snow accumulation near Dinsmore. 8" snow accumulation near Hayfork. 13" snow accumulation near Ruth Lake.

CAZ001 **Redwood Coast**

02	**1200PST**			**2**	**0**			**Heavy Surf/High Surf**

Family passing through area stopped for lunch. While playing near the water a large wave pulled several family members into the water. 38 year old was attempting to rescue the 8 year old boy. M8IW, M38IW

CAZ002 **Mendocino Coast**

11	**1430PST**			**2**	**0**			**Heavy Surf/High Surf**

A basketball team from Lake Tahoe were about to leave when they made one last trip to beach. A large wave pulled two boys into water. The 56 year old male attempted a rescue and got the boys to a large rock, when another large wave pulled him and one of the boys back into the sea. M14IW, M56IW

CALIFORNIA, South Central

CAZ096>097 **S Sierra Mtns - Tulare Cty Mtns**

01	**0300PST**			**0**	**0**			**Winter Storm**
03	**0400PST**							

Typical winter storm for the higher elevations of the Southern Sierra Nevada with the following estimated snowfall in generally less than 24 hours on the 1st: Chilkoot Meadow 41 inches; Wet Meadows 40"; Paradise Meadow and Kaiser Point 37"; Crabtree Meadow 22"; Tamarack Summit 21"; and, Huntington Lake 20". Another storm system on the 2nd and 3rd followed the stronger

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

CALIFORNIA, South Central

system of the 1st continuing to deposit lessor amounts of snow. For the foothills elevations as low as 3000 feet a couple of inches were reported from Mariposa to the Kern County Mountains with up to 15" of new snow at the higher elevations into the morning of the 3rd.

CAZ089>090-093 **W Central S.J. Valley - E Central S.J. Valley - S Sierra Foothills**

01	**1000PST**	**0**	**0**	**3K**		**Strong Wind**
	1528PST					

Pre-frontal southeast wind turned quite gusty and strong late in the morning of the 1st for portions of the Central San Joaquin Valley and immediately adjacent foothill locations.

CAZ089>092 **W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley**

03	**0300PST**	**0**	**0**			**Frost/Freeze**
06	**0800PST**					

In a cold post-frontal air mass, temperatures dipped to the mid 20s at several agricultural locations in the Central San Joaquin Valley during the hours around dawn from the 3rd through the 6th of the month. The coldest morning was that of the 4th when several locations dipped to 26F requiring protective measures be taken for area citrus crops.

CAZ098>099 **Indian Wells Vly - Se Kern Cty Desert**

03	**0413PST**	**0**	**0**	**2K**		**Strong Wind**
	1000PST					

Post-frontal wind buffeted the Kern County Desert locations during the morning hours of the 3rd.

CAZ092 **Se S.J. Valley**

09	**1035PST**	**0**	**0**	**25K**		**High Wind (G60)**

Localized but strong, southeast, pre-frontal wind in the extreme south portion of the San Joaquin Valley blew two tractor-trailer rigs over on Interstate-5 at the base of the Tehachapi Mountains.

CAZ091>092-095 **Sw S.J. Valley - Se S.J. Valley - Kern Cty Mtns**

09	**1035PST**	**0**	**2**	**40K**		**High Wind (G50)**
	2000PST					

Strong southeast wind in the extreme Southern San Joaquin Valley resulted in overturned trucks at the base of the Grapevine.

CAZ089>092 **W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley**

10	**2330PST**	**0**	**0**			**Dense Fog**
13	**1030PST**					

During the late night and early morning hours of the 11th and 12th dense fog formed in the Central San Joaquin Valley with the lowest visibilities down to 200 feet on the morning of the 11th at several locations. In the South San Joaquin Valley dense fog was present on the mornings from the 11th through the 13th. On the 13th indirect results of the dense fog resulted in $50K damage and 2 injuries in automobile accidents 15 miles ESE of Bakersfield.

CAZ089>092 **W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley**

22	**0330PST**	**0**	**0**			**Frost/Freeze**
23	**0900PST**					

Temperatures briefly lowered to 29F at a few locations in the Valley's agricultural areas on the morning of the 22nd and 23rd with the coldest reading of 26F at Delano on the 22nd.

CAZ089>092 **W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley**

22	**0700PST**	**0**	**0**			**Dense Fog**
24	**0630PST**					

On the mornings of the 22nd through the 24th, dense fog developed in the Central and South San Joaquin Valley. Visibilities varied from 200 to 500 feet on the mornings of the 22nd and 23rd. The evening of the 23rd, just before midnight, had some of the most dense fog with driving visibilities less than 100 feet from Visalia south to the Shafter area in Kern County on the Valley east side.

CAZ090>092 **E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley**

26	**0453PST**	**0**	**0**			**Dense Fog**
	1053PST					

Fog was primarily located along the east side of the Central and north portions of the South San Joaquin Valley this morning.

CAZ089>090 **W Central S.J. Valley - E Central S.J. Valley**

26	**0535PST**	**0**	**0**			**Frost/Freeze**
	0800PST					

Minimum temperatures briefly dipped to 32F at several locations on the morning of the 26th in the Central San Joaquin Valley.

CALIFORNIA, Southeast

CAZ026 **Owens Valley**

01	**1000PST**	**0**	**0**			**Heavy Snow**
	2145PST					

A strong Pacific storm dropped a foot of snow on Aspendell, CA. Snowfall was occurring at 1 inch per hour.

Storm Data and Unusual Weather Phenomena

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
CALIFORNIA, Southeast									
CAZ026	**Owens Valley**								
	30	**1040PST**			**0**	**0**			**High Wind (G57)**
		1455PST							
	A spotter in Aspendell, CA reported several wind gusts of 65 mph.								
CALIFORNIA, Southwest									
CAZ055	**San Bernardino County Mountains**								
	02	**1630PST**			**0**	**0**	**20K**		**Landslide**
		1700PST							
	Mud, rocks, and debris flowed across Highway 18, just south of Waterman Canyon Road.								
CAZ061>062	**Coachella Valley - San Diego County Deserts**								
	05	**0000PST**			**0**	**0**			**Extreme Cold/Wind Chill**
		0800PST							
	Temperatures fell to 25 degrees Fahrenheit over the Coachella Valley and Anza-Borrego Desert.								
CAZ048	**San Bernardino County Valley/The Inland Empire**								
	05	**0357PST**			**0**	**0**			**High Wind (G60)**
		1054PST							
	Tree branches torn off below Cajon Pass.								
CAZ043	**San Diego County Coasts**								
	13	**0226PST**			**0**	**0**	**30K**		**Heavy Surf/High Surf**
		0814PST							
	Runup from breaking surf, combined with high tide, and flooded the south bound lanes State Highway 75, between Coronado and Imperial Beach.								
CAZ050	**San Diego County Valleys**								
	21	**0026PST**			**0**	**0**	**30K**		**Landslide**
		0109PST							
	Mud and debris flowed across Valley Center road just south of Morales Lane.								
CAZ048-057	**San Bernardino County Valley/The Inland Empire - Santa Ana Mountains And Foothills**								
	22	**0030PST**			**0**	**1**	**150K**		**High Wind (G52)**
		1000PST							
	A semi-tractor trailer was blown over at the Interstate 210 and Interstate 15 connection.								
CALIFORNIA, Upper									
CAZ081	**Central Siskiyou County**								
	01	**0245PST**			**0**	**0**			**Blizzard**
		1245PST							
	The Weed RAWS recorded wind gusts 44-53 mph on nearly every observation in this time interval. This, combined with the heavy snow reported by spotters, indicates that blizzard conditions likely did occur during this time interval.								
CAZ080-080>082-082-082	**Western Siskiyou County - Central Siskiyou County - South Central Siskiyou County**								
	01	**0934PST**			**0**	**0**			**Heavy Snow**
	02	**1200PST**							
	Spotter SY100 at Happy Camp recorded 7 inches of snow in 24 hours.								
CAZ085	**Modoc County**								
	01	**1000PST**			**0**	**0**			**High Wind (G40)**
		1100PST							
	Spotter MO39 at Calpines recorded winds 40g50 mph at 1100 PST.								

An extraordinary winter storm struck Oregon and Northern California on January 1, 2004. A multitude of warnings and advisories were issued to cover this event. The California warnings are summarized below. Verifying observations are listed above.

CAZ080 Winter Storm Warning 12/30/03 at 2100 PST until 01/01/04 at 1445 PST. Initial elevation was above 2000 feet, raised to 2500 feet at 2000 PST on 12/31/03.

CAZ081 Winter Storm Warning issued at 12/31/03 at 0501 PST, changed to Blizzard Warning at 01/01/04 at 0514 PST, expired at 0958 PST on 01/01/04.

CAZ082 Winter Storm Warning issued at 12/31/03 at 2100 PST, changed to a Heavy Snow Warning at 01/01/04 at 0514 PST, expired at 01/01/04 at 0958 PST. Initial elevation was above 2000 feet, raised to 2500 feet at 2000 PST on 12/31/03, expanded to entire zone at 01/01/04 at 0514 PST.

CAZ083/084/085 Winter Storm Warning issued at 12/31/03 at 0501 PST, changed to a Blizzard Warning at 01/01/04 at 0807 PST, expired at 01/01/04 at 1445 PST.

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

CALIFORNIA, Upper

CAZ080-080 — **Western Siskiyou County**

02	**1335PST**		**0**	**0**			**Heavy Snow**
	1608PST						

Spotter SY89 in Sawyer's Bar reported 9 inches of snow overnight.
A Heavy Snow Warning was issued for California zones CAZ080 at 1122 PST on 01/02/04 and downgraded to an advisory at 1501 PST on 01/02/04. The two verifying reports above indicate that this warning was issued late.

CAZ081-081-081 — **Central Siskiyou County**

09	**0745PST**		**0**	**0**			**High Wind (G65)**
	0945PST						

The Weed RAWS winds met High Wind Warning criteria briefly during this interval. The peak sustained wind was 45 mph at 0845 on 01/09.
The above observations, all recorded at the Weed RAWS, met High Wind Warning criteria. No warning was in effect, but a Wind Advisory was in effect for this zone. The Weed RAWS is located in the windiest part of the zone, so the Wind Advisory was likely the most appropriate action for this event.

CALIFORNIA, West South Central

NONE REPORTED.

CALIFORNIA, Western

CAZ007 — **Alameda / Contra Costa Counties**

01	**0835PST**		**0**	**0**			**High Wind (G71)**
	0840PST						

Winds gusted to 71 mph at Las Trampas (elevation 1760 ft) in the East Bay Hills.

CAZ006 — **San Francisco County**

01	**1023PST**		**0**	**0**			**High Wind (G65)**
	1028PST						

Strong winds blew through the Bay Area, including a 65 mph wind gust at Twin Peaks in San Francisco county.

Santa Cruz County

Scotts Vly	**01**	**1115PST**	**0**	**0**			**Flash Flood**
		1225PST					

Heavy rains caused the Carbonera Creek in Scotts Valley to overflow its banks, causing localized flash flooding, mudslides and road closures.

Napa County

Napa	**01**	**1141PST**	**0**	**0**			**Flash Flood**
		1400PST					

Heavy rains caused the Napa Creek at Highway 29 to rise over flood stage, causing flooding of highways, underpasses and country roads and farmlands along the banks of the creek.

CARIBBEAN SEA AND TROPICAL ATLANTIC

Deerfield Beach To Ocean Reef Fl

6 SE Government Cut	**07**	**1700EST**	**0**	**0**			**Marine Tstm Wind**

Thunderstorm wind gust at Fowey Rocks Light.

COLORADO, Central and Northeast

COZ032-035-037 — **Grand & Summit Counties Below 9000 Feet - Larimer & Boulder Counties Between 6000 & 9000 Feet - C & Se Park County**

03	**0000MST**		**0**	**0**	**0**	**0**	**Winter Storm**
	1600MST						

Scattered reports of heavy snow were reported across Middle and South Parks as well as the foothills of Larimer and Boulder Counties. Snowfall totals included 14.5 inches at Tabernash and 11 inches, 4 miles south-southwest of Estes Park and Fairplay, and 9 inches, 3 miles southwest of Jamestown.

COZ039>040-043>044-049 — **Boulder & Jefferson Counties Below 6000 Feet / W Broomfield County - N Douglas County Below 6000 Feet / Denver / W Adams & Arapahoe Counties / E Broomfield County - C & S Weld County - Morgan County - Washington County**

03	**1200MST**		**0**	**0**	**0**	**0**	**Winter Storm**
	2000MST						

Bands of heavy snow fell across parts of the Urban Corridor and Northeastern Plains. Storm totals included: 12 inches at Brush, 6.5 inches at Broomfield, 6 inches at Akron, Arvada, 4 miles south of Fort Morgan, 4 miles northwest of Hudson, and Westminster.

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

COLORADO, Central and Northeast

COZ036-040>041-043 — **Jefferson & W Douglas Counties Above 6000 Feet / Gilpin / Clear Creek / Ne Park Counties Below 9000 Feet - N Douglas County Below 6000 Feet / Denver / W Adams & Arapahoe Counties / E Broomfield County - Elbert / C & E Douglas Counties Above 6000 Feet - C & S Weld County**

25	**1400MST**	**0**	**0**	**0**	**0**	**Winter Storm**	
	2200MST						

Locally heavy snow fell across parts of the Front Range Foothills, Monument Ridge and Urban Corridor. Storm totals included: 9 inches, 3 miles south of Indian Hills, 8.5 inches, 4 miles north of Franktown and 9 miles southwest of Sedalia, 8 inches, 7 miles southwest of Aurora and 6 inches at Highlands Ranch.

COZ037 — **C & Se Park County**

31	**1200MST**	**0**	**0**	**0**	**0**	**Winter Storm**	
	2359MST						

Very heavy snow fell across parts of Park County as a storm system moved through the state. Storm totals included: 15 inches, 12 miles south of Hartsel, 12.5 inches, 21 miles south of Fairplay, 11 inches, 3 miles north of Alma and 2 miles northwest of Fairplay and 8.5 inches at Antero Reservoir.

COLORADO, East Central

COZ090 — **Yuma County**

03	**1200MST**	**0**	**0**			**Winter Storm**	
	2000MST						

A localized band of 6-8 inch of snow occurred across the northern half of Yuma county during the day on January 3rd, creating difficult travel conditions.

COLORADO, South Central and Southeast

COZ084>085-085-087 — **Northern El Paso County / Monument Ridge / Rampart Range Below 7500 Ft - Colorado Springs Vicinity / Southern El Paso County / Rampart Range Below 7500 Ft - Walsenburg Vicinity / Upper Huerfano River Basin Below 7500 Ft**

01	**2155MST**	**0**	**0**			**High Wind (G67)**	
	2325MST						

Some strong and damaging winds were noted during the evening over portions of El Paso and Huerfano counties ahead of a strong winter storm. Strong wind gusts noted in the region included...64 mph 6 miles west-southwest of Ft. Carson...66 mph 5 miles northeast of the Air Force Academy...and a 67 mph measurement at La Veta in Huerfano county.

COZ084>085-085>086-086-088 — **Northern El Paso County / Monument Ridge / Rampart Range Below 7500 Ft - Colorado Springs Vicinity / Southern El Paso County / Rampart Range Below 7500 Ft - Pueblo Vicinity / Pueblo County Below 6300 Ft - Trinidad Vicinity / Lower Huerfano River Basin & Western Las Animas County Below 7500 Ft**

02	**0000MST**	**0**	**0**	**50K**		**High Wind (G86)**	
	0224MST						

A developing winter storm over southern Colorado continued to produce high wind gusts over mainly El Paso and Las Animas counties into the early morning hours of the 2nd. Some of the higher wind gusts are as follows...71 mph in the vicinity of the Air Force Academy...75 mph 8 miles to the south-southwest of downtown Colorado Springs...79 mph in Pueblo West...80 mph 12 miles west of Trinidad. Finally...a 98 mph gust was experienced approximately 5 miles to the south of downtown Colorado Springs...in the Broadmoor Bluffs area. This high wind caused two homes under construction to collapse and also caused light poles to snap...fences to be blown over windows to be blown out...and tiles roofs to be damaged.

COZ060-067>068 — **Eastern Sawatch Mountains Above 11000 Ft - Upper Rio Grande Valley / Eastern San Juan Mountains Below 10000 Ft - Eastern San Juan Mountains Above 10000 Ft**

02	**0100MST**	**0**	**0**			**Heavy Snow**	
03	**1800MST**						

A strong winter storm produced copious amounts of snow as well as gusty winds across the mountains of southern Colorado. Some of the higher snow amounts are as follows...24 inches 3 miles southwest of South Fork in Rio Grande county...over 30 inches near the summit of Monarch Pass in Chaffee county...42 inches inundated the region around Cumbres Pass in Conejos county...48 inches was measured at the summit of Wolf Creek Pass in Mineral county.

COZ059-072-076>077-079-081-083-087 — **Leadville Vicinity / Lake County Below 11000 Ft - Northern Sangre De Cristo Mountains Between 8500 & 11000 Ft - Northwest Fremont County Above 8500 Ft - West / Central Fremont County Below 8500 Ft - Wet Mountains Between 8500 And 10000 Ft - Teller County / Rampart Range Above 7500 Ft / Pikes Peak Between 7500 & 11000 Ft - Canon City Vicinity / Eastern Fremont County - Walsenburg Vicinity / Upper Huerfano River Basin Below 7500 Ft**

02	**1800MST**	**0**	**0**			**Heavy Snow**	
03	**2100MST**						

A strong winter storm moving across southern Colorado caused areas of heavy snow. The highest reported snow totals with this event are as follows. In the vicinity of Leadville in Lake county 6 to 10 inches of snow was reported. 6 inches of snow was also measured at Rye and 3 miles to the southwest of Rosita. 7 to 8 inches of snow covered Florence and Canon City in Fremont

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

COLORADO, South Central and Southeast

county. 7 inches of snow was also noted some 7 miles west of Westcliffe in Custer county. 10 inches of snow graced the community of Divide in Teller county and 10 inches of snow was also observed some 7 miles to the southwest of Gardner in Huerfano county. 11 inches of snow fell some 12 miles to the northeast of Texas Creek in Fremont county. Finally...14 inches of snow was seen approximately 11 miles to the south of Guffey in Fremont county.

COZ062-074-079-084 **Central Chaffee County Below 9000 Ft - Southern Sangre De Cristo Mountains Between 7500 & 11000 Ft - Wet Mountains Between 8500 And 10000 Ft - Northern El Paso County / Monument Ridge / Rampart Range Below 7500 Ft**

20	**0030MST**	**0**	**0**		**Heavy Snow**
	1300MST				

A storm system produced some moderate snow amounts to select areas of southern Colorado. Some of the higher reported snow totals include 6 inches 6 miles east of Monument in El Paso county...7 inches in Rye in Pueblo county and Cuchara in Huerfano county...and an isolated amount of 8 inches 6 miles north-northwest of Black Forest in El Paso county...and 6 miles west of Poncha Springs in Chaffee county.

COLORADO, West

COZ006 **Grand Valley**

01	**0000MST**	**0**	**0**		**Dense Fog**
	0800MST				

A strong inversion over the Grand Valley created very moist and stable conditions resulting in a prolonged period of dense fog which began the morning of December 31. Visibilities of 1/4 mile or less continued to plague much of the Grand Valley through the early morning hours of January 1, which resulted in interruptions of flights at Walker Field Airport. The dense fog gradually dissipated around daybreak.

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**		**Drought**
31	**2359MST**				

A number of storms moved across western Colorado during the month resulting in a continued slow improvement in the region's protracted drought situation. Drought severity ranged from "abnormally dry" across the central and northern mountains near the continental divide, to "extreme" near the Utah border. See the February, 2004 Storm Data publication for a continuation on this drought situation.

COZ003>004-009>010-012>013-017>019 **Roan And Tavaputs Plateaus - Elkhead And Park Mountains - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - West Elk And Sawatch Mountains - Flattop Mountains - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains - Southwestern San Juan Mountains**

01	**1800MST**	**0**	**0**		**Winter Storm**
04	**0430MST**				

A very moist and powerful low pressure system moved across western Colorado and generally produced 1 to 4 feet of snow in the mountains. Some of the heaviest snowfall amounts were measured at SNOTEL platforms and included 52 inches at Park Reservoir on the Grand Mesa, 59 inches at Columbine Pass on the Uncompahgre Plateau, and 70 inches at Schofield Pass in the Elk Mountains. Wind gusts in excess of 40 mph resulted in extensive blowing and drifting snow. Snow drifts up to 10 feet deep were measured at the Douglas Pass FAA radar site. A peak gust of 78 mph was clocked at the top of Telluride Ski Area. This winter storm resulted in major disruptions of travel through the mountains and also prompted the issuance of avalanche warnings.

COZ002-005>008-011-014-020>023 **Central Yampa River Basin - Upper Yampa River Basin - Grand Valley - Debeque To Silt Corridor - Central Colorado River Basin - Central Gunnison And Uncompahgre River Basin - Upper Gunnison River Valley - Paradox Valley / Lower Dolores River Basin - Four Corners / Upper Dolores River Basin - Animas River Basin - San Juan River Basin**

01	**1800MST**	**0**	**0**		**Heavy Snow**
03	**2300MST**				

A very moist and potent Pacific storm produced 6 to 12 inches of snow in most lower elevation areas of western Colorado. Some heavier amounts included 25 inches three miles west of Pagosa Springs, 19 inches near Doyleville, 17 inches one mile southeast of Steamboat Springs, and 16 inches six miles southeast of Norwood.

COZ003>004-013 **Roan And Tavaputs Plateaus - Elkhead And Park Mountains - Flattop Mountains**

07	**1200MST**	**0**	**0**		**Winter Weather/Mix**
	2000MST				

An upper level disturbance moved across western Colorado in a northwest flow and produced 4 to 10 inches of snow across the

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

COLORADO, West

northern mountains. Local amounts up to 16 inches were measured in the Park Mountains. Winds gusting to around 40 mph produced areas of blowing and drifting snow.

COZ006-011 **Grand Valley - Central Gunnison And Uncompahgre River Basin**

08	**0100MST**	**0**	**0**		**Dense Fog**
	1230MST				

High pressure over the area and a deep snow cover produced a strong inversion over the lower valleys of west-central Colorado. This resulted in widespread visibilities reduced to less than 1/4 mile. Traffic flow on major highways was impacted, including Interstate 70.

COZ006-011 **Grand Valley - Central Gunnison And Uncompahgre River Basin**

08	**1600MST**	**0**	**0**		**Dense Fog**
09	**0900MST**				

High pressure over the area and deep snow cover maintained a strong inversion over the lower valleys of west-central Colorado which resulted in visibilities less than 1/4 mile. The reduced visibilities hampered travel across the area, including flight operations at Walker Field Airport.

COZ006-014 **Grand Valley - Upper Gunnison River Valley**

09	**1530MST**	**0**	**0**		**Dense Fog**
12	**2000MST**				

High pressure over the area and snow cover continued to hold a strong inversion over many of the central valleys of western Colorado which resulted in a prolonged period of dense fog. Law enforcement and automated sensors indicated widespread visibilities below 1/4 mile much of the time. The fog in the Grand Valley was the most persistent. Travel was hampered by the poor visibility. Flight operations at Walker Field Airport were disrupted with numerous flights cancelled or delayed. Freezing temperatures and precipitation of snow grains from the fog resulted in patches of ice and slick spots to form on roadways.

COZ006 **Grand Valley**

13	**0500MST**	**0**	**0**		**Dense Fog**
	1130MST				

Widespread visibilities below 1/4 mile in dense fog plagued the western half of the Grand Valley, primarily west of 25 Road.

COZ006 **Grand Valley**

14	**0415MST**	**0**	**0**		**Dense Fog**
	1030MST				

Trapped low level moisture and stable conditions continued to result in visibilities below 1/4 mile across the western portion of the Grand Valley, mainly west of 25 Road.

COZ021>023 **Four Corners / Upper Dolores River Basin - Animas River Basin - San Juan River Basin**

15	**2030MST**	**0**	**0**		**Dense Fog**
16	**1030MST**				

Low level moisture and stable conditions produced widespread dense fog across the lower elevations of southwest Colorado. Law enforcement agencies reported visibilities below 1/4 mile throughout the lower elevation roadways of their jurisdictions.

COZ012-018>019 **West Elk And Sawatch Mountains - Northwestern San Juan Mountains - Southwestern San Juan Mountains**

19	**2230MST**	**0**	**0**		**Winter Weather/Mix**
20	**1500MST**				

A slow moving storm system moved across the Four Corners area and produced 5 to 9 inches of snow across the high elevations of southwest Colorado.

COZ022>023 **Animas River Basin - San Juan River Basin**

20	**0100MST**	**0**	**0**		**Winter Weather/Mix**
	1500MST				

A storm system moved across the Four Corners area and produced 3 to 4 inches of snow across many lower elevation areas of southwest Colorado.

COZ009 **Grand And Battlement Mesas**

24	**2300MST**	**0**	**0**		**Heavy Snow**
25	**2130MST**				

An upper level low pressure system brought heavy snow to much of the Grand and Battlement Mesas. Up to 19 inches was measured at Powderhorn Ski Area.

COZ004-010-013-017>019 **Elkhead And Park Mountains - Gore And Elk Mountains/Central Mountain Valleys - Flattop Mountains - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains - Southwestern San Juan Mountains**

24	**2300MST**	**0**	**0**		**Winter Weather/Mix**
25	**2300MST**				

An upper level low pressure system moved across western Colorado and produced 5 to 12 inches of snow across most mountain areas. Blowing and drifting snow occurred in some exposed areas with wind gusts up to 30 mph.

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

COLORADO, West

COZ003>004-009>010-012>013-017>019 — **Roan And Tavaputs Plateaus - Elkhead And Park Mountains - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - West Elk And Sawatch Mountains - Flattop Mountains - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains - Southwestern San Juan Mountains**

30	**1000MST**	**0**	**0**		**Winter Weather/Mix**
31	**2359MST**				

A storm system and associated cold front moved from northwest to southeast across western Colorado resulting in 5 to 12 inches of new snow across the mountains. Locally heavier amounts included 18 inches at Powderhorn Ski Area, 15 inches at Silverton Mountain Ski Area, and 13 inches at Steamboat Springs Ski Area.

COZ001 — **Lower Yampa River Basin**

30	**1200MST**	**0**	**0**		**Heavy Snow**
31	**1600MST**				

A Pacific storm system produced 6 to 12 inches of snow in the area. A local amount of 18 inches was reported just west of Massadona.

COZ002-011 — **Central Yampa River Basin - Central Gunnison And Uncompahgre River Basin**

30	**1500MST**	**0**	**0**		**Winter Weather/Mix**
31	**2000MST**				

A storm system and associated cold front moved from northwest to southeast across western Colorado and produced 3 to 6 inches of new snow across some northern and central valleys.

COZ021>023 — **Four Corners / Upper Dolores River Basin - Animas River Basin - San Juan River Basin**

31	**0430MST**	**0**	**0**		**Winter Weather/Mix**
	2145MST				

A storm system and associated cold front moved from northwest to southeast across western Colorado and produced 3 to 6 inches of snowfall across the lower elevations of southwest Colorado.

CONNECTICUT, Northeast

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

27	**1900EST**	**0**	**0**		**Winter Storm**
28	**1300EST**				

A winter storm tracking south of New England brought heavy snow to southern New England, from western Massachusetts into much of Connecticut and southern Rhode Island. In northern Connecticut, snowfall totals of 5 to 10 inches were widely observed with locally as much as one foot in the higher elevations.

Officially, the snowfall total at Bradley International Airport in Windsor Locks was 5.6 inches.

Other snowfall totals, as reported by trained spotters, included 13 inches in Storrs; 10 inches in Manchester, Union, Eastford, Plainfield, and Pomfret; 9 inches in Farmington, South Windsor, Vernon, and East Killingly; 8 inches in North Granby, West Hartford, Burlington, Enfield, Wethersfield, Mansfield, and Ashford; 7 inches in Avon, Windsor, and Woodstock; and 6 inches in Stafford Springs and Putnam.

CONNECTICUT, Northwest

CTZ001-013 — **Northern Litchfield - Southern Litchfield**

15	**1900EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**1100EST**				

An extremely cold airmass moved out of Siberia, then plunged southward through Canada and across the northeast by January 15. At the same time, a powerful storm developed off the Canadian Maritimes. The pressure gradient between the intense storm and the arctic high pressure, extending from central Canada southward through the Ohio Valley, produced gusty north to northwest winds in the 15 to 30 mph range, with higher gusts. This wind, combined with ambient temperatures ranging from zero to 10 below zero, resulted in dangerous wind chills across northwestern Connecticut during the night of January 15 through the morning of the 16th. Equivalent wind chill readings ranged from 25 to 35 below zero.

CTZ001-013 — **Northern Litchfield - Southern Litchfield**

28	**0000EST**	**0**	**0**		**Winter Storm**
	0400EST				

A complex low pressure area moved into the Ohio Valley on January 27. Energy from this storm transferred across the Appalachians to form a secondary storm, off the mid Atlantic coast by midnight. This second storm moved northeast, south of Long Island. The two systems combined to produce a marginal winter storm event across northwest Connecticut as a band of moderate to heavy snow moved over the area from around midnight into the early morning hours of the 28th. The temperature profile was cold enough for mainly snow, mixed with a little sleet. An average of 7 inches fell in Litchfield County with Barkhamsted reporting 7 inches and Colebrook Lake reporting 8.

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

CONNECTICUT, Southern

CTZ005>012 — **Northern Fairfield - Northern New Haven - Northern Middlesex - Northern New London - Southern Fairfield - Southern New Haven - Southern Middlesex - Southern New London**

15 1800EST 0 0 Extreme Cold/Wind Chill
16 0800EST

An arctic cold front swept southeast across the region during Tuesday afternoon, January 13th. The extremely cold air that followed, resulted in a new record low temperature of 1 degree at Sikorsky Airport in Bridgeport on Wednesday, January 14th.

As an Alberta Clipper passed south of Long Island Wednesday night, it rapidly intensified as it moved northeast of Long Island Thursday. The large difference in pressure between a strong low pressure system northeast of New England and a strong arctic high pressure system in Southeast Canada resulted in the combination of extremely low temperatures, high winds, and extremely low wind chill index values from sunset Thursday evening through sunrise Friday morning, January 16th.

A record low temperature of zero degrees was tied at Sikorsky Airport in Bridgeport on January 16th. Low temperatures ranged from 0 in Bridgeport to 5 degrees below 0 at Meriden. The lowest Wind Chill Index temperature values ranged from 19 degrees below 0 at Groton with a sustained wind speed of 23 mph to 25 degrees below 0 at Meriden with a sustained wind speed of 14 mph. Peak wind gusts were between 25 and 35 mph.

CTZ009>010 — **Southern Fairfield - Southern New Haven**

18 1730EST 0 0 Winter Storm
1800EST

With just enough cold air in place, as a low pressure system moved east of the upper Great Lakes, another low formed over the Southeast U.S. This second low gradually intensified as it moved northeast. It passed south then east of Long Island Sunday evening, January 18th.

Light snow developed by 5 am across the region, which was occasionally mixed with sleet through the morning. Snowfall increased in intensity and became heavy by 10 am. By the time the snow ended around 6 pm, the Storm Total Snowfall Amounts ranged from 6 to 8 inches.

Here are selected snowfall amounts for:
Southern Fairfield County, amounts ranged from 6.5 inches at Bridgeport to 7.1 inches at New Canaan. At Stamford, 7.0 inches was measured.
Southern New Haven County, 8.0 inches was measured at both North Branford and Milford.

CTZ005>012 — **Northern Fairfield - Northern New Haven - Northern Middlesex - Northern New London - Southern Fairfield - Southern New Haven - Southern Middlesex - Southern New London**

28 0100EST 0 0 Heavy Snow
0600EST

A cold high pressure ridge extended southeast from James Bay across New England. As the primary low moved northeast toward the Eastern Great Lakes, a secondary low developed off the Mid Atlantic Coast during Tuesday morning, January 27th. This secondary low rapidly intensified as it moved northeast.

Light snow developed and spread north during Tuesday evening. It became heavy at times by 11 pm and lasted until 5 am. The Storm Total Snowfall amounts ranged from around 6 to 11 inches. The highest amounts occurred across Fairfield County.

Here are selected snowfall amounts for:
Fairfield County - from 6.1 inches at Westport to 11.0 inches at Stamford and Cos Cob. An lower isolated amount of 5.0 inches was measured at Sikorsky Memorial Airport in Bridgeport.
New Haven County - from 6.0 inches at Milford and Naugatuck to 8.0 inches at Waterbury.
Middlesex County - 6.8 inches was measured at both Haddam and Old Saybrook.
New London County - from 6.0 inches at Norwich to 7.0 inches at Jewitt City.

DELAWARE

DEZ001>004 — **New Castle - Kent - Inland Sussex - Delaware Beaches**

09 1800EST 0 0 Extreme Cold/Wind Chill
11 1200EST

An arctic air mass brought some of the coldest weather in years to the Delmarva Peninsula from the evening of the 9th through the morning of the 11th. The low temperature of 4 degrees at the New Castle County Airport on the 10th was the coldest day of the winter and the lowest reading since February 5, 1996. What made this even more unusual was that the brutally cold air mass occurred with no snow cover. Winds around the center of the arctic high pressure system were from the north and by-passed the warming effects normally received from the Great Lakes and subsidence from the Appalachian Mountains. The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who could not afford to heat their homes. There was a dramatic increase in phone calls to social services by individuals who have run out of heat or could not afford to pay their bills. Additional schools and community centers were opened as shelters. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze

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

DELAWARE

and burst both inside and outside of structures as well as a higher occurrence of water main breaks. Hospitals were not immune. A sprinkler pipe burst at the Bayhealth-Kent General Hospital in Kent County. The cold weather also led to an increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood developed. Many vehicles were not starting because of dead batteries. Specific low temperatures included 4 degrees at the New Castle County Airport, 6 degrees in Greenwood (Sussex County) and 8 degrees in Georgetown (Sussex County) and Milford (Kent County). The arctic cold front which ushered in the colder air moved through Delaware during the day on the 9th. The high pressure system, or the core of the arctic air mass, moved from just west of James Bay on the morning of the 9th, to along the Ontario/Quebec Province border on the morning of the 10th to Virginia and North Carolina on the morning of the 11th.

DEZ001>004 **New Castle - Kent - Inland Sussex - Delaware Beaches**

15 1200EST 0 0 Extreme Cold/Wind Chill
16 1200EST

Following an Alberta Clipper low pressure system, another arctic air mass invaded Delaware. While temperatures were slightly higher than the previous outbreak on the 10th and 11th, winds were stronger and the wind chill factors were lower. Most low temperatures were around 10 degrees and the lowest hourly wind chill factors averaged around ten degrees below zero.

The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who could not afford to heat their homes. There was another dramatic increase in phone calls to social services by individuals who have run out of heat or could not afford to pay their utility bills. The cold weather caused additional schools and community centers to be opened as shelters. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. Plumbers and heating repair services had twenty-four hours worth of work. The Red Clay School District (New Castle County) cancelled classes on the 16th. The cold weather also led to another increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood. Many vehicles were not starting because of dead batteries.

Specific low temperatures included 7 degrees in Wilmington (New Castle County), 8 degrees at the New Castle County Airport, 12 degrees in Dover (Kent County) and 13 degrees in Georgetown and Greenwood (Sussex County). The arctic air mass came barreling behind the departing Alberta Clipper low pressure system on the 15th. The low deepened explosively as it moved offshore and the pressure gradient between it and the building high pressure system brought the lowest wind chill factors of the winter into Delaware. The high pressure ridge moved from the Red River and Upper Mississippi Valleys on the morning of the 15th, to the Great Lakes and nearby Canada on the morning of the 16th and into Pennsylvania and New York on the morning of the 17th. The core of the coldest air moved through the region during the night of the 15th with the lowest temperatures occurring between Midnight EST and 6 a.m. EST on the 16th. Lowest hourly wind chill factors included 12 degrees below zero at the New Castle County Airport (New Castle County) and 7 degrees below zero in Dover (Kent County) and Georgetown (Sussex County).

This second arctic outbreak cemented January as an unseasonably cold month. At the New Castle County Airport, the monthly mean temperature of 25.4 degrees was 6.1 degrees colder than normal. It was the 10th coldest January on record and the coldest January since 1984.

DEZ001>004 **New Castle - Kent - Inland Sussex - Delaware Beaches**

17 1900EST 0 0 Winter Weather/Mix
18 0700EST

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across Delaware during the evening and overnight on the 17th. Precipitation began as snow across the northern part of the state and a mixture of freezing rain, sleet and snow across southern parts of the state. As warmer air moved in aloft, precipitation changed to freezing rain in all areas by around 3 a.m. EST. Warmer air also moved in near the surface and the freezing rain changed to plain rain from south to north across the state between 3 a.m. and 7 a.m. EST. Snowfall accumulations in New Castle County averaged around one inch. Lesser amounts fell farther south. Ice accretions across the state were generally less than one-tenth of an inch. Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through the state during the late afternoon of the 18th to wring moisture from the atmosphere onto the region.

DEZ001>004 **New Castle - Kent - Inland Sussex - Delaware Beaches**

25 2100EST 0 0 Heavy Snow
26 1200EST

Heavy snow fell from the second half of the evening on the 25th through Monday morning the 26th across Delaware. Accumulations averaged between 4 and 6 inches. After the snow ended, some spotty freezing drizzle or light freezing rain fell for the rest of the day across southern sections of the state. Most schools were closed on the 26th, especially in the southern part of the state. State and county government offices were also closed. Delaware State Police reported around 100 accidents, half of them

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

DELAWARE

involved vehicles sliding into ditches.

Specific accumulations included 6.5 inches in Smyrna (Kent County), 5.0 inches in Woodside (Kent County), Laurel and Milford (Sussex County), 4.5 inches in Dover (Kent County) and Wilmington (New Castle County) and 4.0 inches in Georgetown (Sussex County) and at the New Castle County Airport.

The snow was caused by a low pressure system that developed in the lower Tennessee Valley during the morning of the 25th. A second low pressure system then developed off the South Carolina coast that evening. The second low pressure system became the primary low and moved northeast. It passed close to Wilmington, North Carolina around 1 a.m. EST on the 26th and just east of Hatteras, North Carolina around 7 a.m. EST on the 26th before it moved farther offshore.

DEZ001>004 **New Castle - Kent - Inland Sussex - Delaware Beaches**

27	**1800EST**	**0**	**0**		**Winter Weather/Mix**
28	**0100EST**				

The combination of a high pressure system over nearby Canada and a pair of low pressure systems - one that moved into the Great Lakes before dissipating and another that formed over the Virginia coastal waters gave Delaware a wintry mix of freezing rain, sleet and snow. Light freezing drizzle fell throughout most of the day on the 27th in New Castle and Kent Counties. Daytime temperatures in Sussex County were above freezing and temperatures in Kent County rose to the freezing mark late in the afternoon on the 27th. Late that same afternoon as a low pressure system was forming over the Virginia coastal waters, precipitation intensity increased and freezing rain and sleet began falling across New Castle County and rain elsewhere in the state. As colder air moved in from the north, the rain changed to freezing rain and sleet during the evening in Kent and Sussex Counties. Precipitation then changed to snow from north to south before it ended around midnight EST. Accumulations ranged from a trace in Sussex County to up to 3 inches in New Castle County.

Untreated roads were slippery. Delaware State Police reported about 160 crashes, most of them single vehicle crashes. Three poles were knocked down in Sussex County. Two overtured dump trucks on ramps to Delaware State Route 1 in Smyrna and Dover snarled traffic in Kent County. State and county offices worked on two hour delayed openings on the 27th and New Castle County followed the same procedure on the 28th.

Specific accumulations included 3.0 inches in Wilmington (New Castle County), 2.5 inches at the New Castle County Airport, 2.2 inches in Bear (New Castle County), 1 inch in Smyrna (Kent County) and traces in Milford and Greenwood (Sussex County).

While the first low pressure system was heading off the North Carolina coast around sunrise on the 26th, another low pressure system was already in Arkansas. This low pressure system moved northeast into the lower Ohio Valley during the afternoon of the 26th and reached Ohio around sunrise on the 27th. The low moved north into Michigan during the afternoon of the 27th and remained nearly stationary as it slowly weakened during the evening and overnight. This low pressure system brought a wedge of warmer air aloft across the region. What made precipitation fall as either freezing rain or sleet in New Castle County was a large high pressure system over nearby Canada that fed cold air south near the surface. The high pressure system's influence weakened farther south in Delaware. During the late afternoon of the 27th, a second low pressure system formed over the Virginia coastal waters. By 7 p.m. EST when it was located near the Virginia Capes, its central pressure was already as strong as the Michigan low pressure system. The Virginia low pressure system moved northeast and intensified and by 1 a.m. EST on the 28th, was located about 120 miles east of Atlantic City, New Jersey and by 7 a.m. EST it was about 240 miles east of Atlantic City, New Jersey. As this second low pressure system intensified and its upper air support moved across the Middle Atlantic States, precipitation intensity increased and the precipitation changed to snow.

DISTRICT OF COLUMBIA

DCZ001 **District Of Columbia**

08	**1700EST**	**0**	**0**		**Winter Weather/Mix**
09	**1400EST**				

An area of low pressure moved across Central Virginia and produced one to two inches of snow over Northern Virginia with lesser amounts over the District of Columbia and North Central Maryland. The dusting of snow caused widespread traffic problems throughout the District as a light glaze formed on the streets. Numerous automobile accidents were reported, and schools either closed or opened two hours late.

DCZ001 **District Of Columbia**

10	**0100EST**	**0**	**0**		**Extreme Cold/Wind Chill**
	1100EST				

Very cold Arctic air settled over the Washington DC metropolitan area. The minimum temperatures ranged from the single digits to the lower teens, and north winds averaged 10 to 15 mph. The combination produced wind chills of 10 degrees below zero. There were dozens of reports of broken water mains and pipes due to the extremely cold temperatures.

DCZ001 **District Of Columbia**

15	**2300EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**1100EST**				

A fast moving storm system brought light snow to the region on the 14th and 15th. The District and the surrounding suburbs only

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

DISTRICT OF COLUMBIA

reported a trace of snowfall. There was some very cold air behind this system. Minimum temperatures across the region were in the single digits and teens. Strong northwest and west winds (20 to 25 mph with gusts to 35 mph) produced wind chills of 5 to 10 below zero on the night of the 15th and the early morning of the 16th.

DCZ001 **District Of Columbia**

17 1800EST 0 0 Winter Weather/Mix
18 1600EST

Two areas of low pressure merged over the region, and produced a mix of snow and freezing rain. Snowfall amounts for the Metropolitan area ranged from one quarter to two inches. There were also reports of one tenth inch of ice accumulation. Glazed pavements caused several accidents around the District.

DCZ001 **District Of Columbia**

25 1200EST 0 0 Winter Storm
26 1000EST

An area of low pressure developed off the coast of North Carolina and tracked north. This storm produced widespread snow, sleet and freezing drizzle over the region. Four to five inches of snow fell in the District. The snow mixed with sleet and finally changed over to freezing drizzle before ending. Several minor accidents were reported to Law Enforcement and Emergency personnel. Many schools closed due to the inclement weather.

DCZ001 **District Of Columbia**

26 1530EST 0 0 Winter Weather/Mix
27 2230EST

A weak area of low pressure moved across the region on the 26th and 27th. This brought a second round of freezing rain and snow to the area. One tenth inch of ice accumulated in portions of the District. Some schools were closed on the 27th and Federal agencies closed three hours early.

FLORIDA, East Central

Brevard County
Melbourne 19 1340EST 0 0 0 0 Hail (1.00)

Indian River County
Sebastian 19 1529EST 0 0 0 0 Hail (1.00)

One inch hail was reported at Sebastian Inlet.

Indian River County
Blue Cypress Lake 19 1555EST 0 0 0 0 Hail (0.75)

FLORIDA, Extreme Southern

NONE REPORTED.

FLORIDA, Northeastern

NONE REPORTED.

FLORIDA, Northwest

NONE REPORTED.

FLORIDA, Southern

NONE REPORTED.

FLORIDA, West Central

FLZ039 **Levy**

08 0230EST 0 0 Frost/Freeze
0730EST

Clear skies and light winds allowed temperatures to drop to 31 degrees for five hours in Bronson while Inverness stayed above freezing with a low of 37 degrees.

FLZ039 **Levy**

11 0200EST 0 0 Frost/Freeze
0830EST

Unseasonably cold air behind a cold front allowed temperatures to reach 28 degrees in both Bronson and Chiefland.

FLORIDA, West Panhandle

NONE REPORTED.

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

GEORGIA, East Central

GAZ040-063>065-077 **Lincoln - Mcduffie - Columbia - Richmond - Burke**

26	**0645EST**	**0**	**4**		**0**	**Ice Storm**
27	**1400EST**					

An ice storm developed over the CSRA late Sunday night and Monday and produced 1/4-3/4 inch of ice. The heaviest ice accumulations occurred in Lincoln, Columbia, and McDuffie counties. Many trees and powerlines were down causing scattered power outages. About 100,000 homes were without power for several days. Four people were injured in traffic related accidents and one person was killed in Loncoln county when a tree fell on his vehicle.

GEORGIA, Lower

Jeff Davis County

Hazelhurst	**26**	**1400EST**	**0**	**0**			**Lightning**

Lightning struck Jeff Davis Primary School causing damage to the media center hallway, gymnasium, classrooms and backdoor area. Students and teachers were in session in the school during the strike. Damage amount unknown. Source, Jeff Davis County Ledger, Hazlehurst, Ga. 1/28/04.

Echols County

Statenville	**26**	**1559EST**	**0**	**0**			**Thunderstorm Wind (G50)**

Large trees blown down on power lines along Highway 129 north.

Charlton County

1 S Racepond	**26**	**1730EST**	**0**	**0**			**Thunderstorm Wind (G50)**

Tin roof blown off Big John Trailers building on US Highway 1. Tin roof blown off outbuilding and swing set onto a car on Carter Circle Rd. Pine trees blown down onto power lines on US Highway 1.

GEORGIA, North and Central

GAZ007-009-013>016-021>025-027-032>039-045>051-055>057-059>060-073 **Gilmer - Towns - Pickens - Dawson - Lumpkin - White - Cherokee - Forsyth - Hall - Banks - Jackson - Madison - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - De Kalb - Rockdale - Walton - Newton - Morgan - Greene - Taliaferro - Clayton - Spalding - Henry - Jasper - Putnam - Baldwin**

25	**0500EST**	**0**	**1**	**925K**		**Ice Storm**
27	**0900EST**					

An extensive and formidable wedge of cold air associated with a back door cold front invaded the area during the late morning and afternoon of the 25th and moved west toward the Alabama border by the morning of the 26th. The wedge of cold air remained in place until a cold front moved the persistent wedge of cold air out of the area during the morning hours of the 27th. Temperatures within the wedge area ranged from the upper 20s in northeast Georgia near Danielsville and Homer to around freezing in Atlanta and surrounding areas. In general, all areas north and east of a line from Dahlonega, to Atlanta, to Milledgeville were below freezing during this period. Meanwhile, several upper-level disturbances passed over the area while the wedge was in place creating periods of light freezing rain and freezing drizzle. The most significant icing occurred overnight on the 25th and during the morning hours of the 26th. During this time, several areas in northeast and east central Georgia experienced glaze ice accumulations of 1/4 to 1/2 inch, mainly on trees and power lines, as ground surfaces were too warm to support ice accumulation. Some bridges and overpasses in the northeast and east central became ice coated and some accidents were reported, but by far the main problem was with ice accumulations on trees and power lines. The east central portion of the state was especially hard hit, where hundreds of trees and power lines fell from the weight of the ice. The worst icing occurred in an area bounded by Homer, Athens, Watkinsville, Greensboro, Crawfordville, and Washington, especially across Oglethorpe, Wilkes, Taliaferro, and Warren counties. Approximately 23,000 electric customers were left without power for up to two days in this area. Some residents in the Wilkes, Taliaferro, and Warren county areas were quoted as saying it was the worst ice storm they had seen in many years. A fireman was injured when a large ice laden oak tree limb fell from 60 feet above as he responded to a potential house fire. Although the fireman was wearing protective gear, he suffered a fracture to his right scapula. In the Atlanta area, however, ice accumulations were generally 1/8 inch or less, and little to no significant problems were reported.

GEORGIA, Northeast

GAZ010-017>018-026-028>029 **Rabun - Habersham - Stephens - Franklin - Hart - Elbert**

25	**1800EST**	**0**	**0**			**Ice Storm**
26	**0600EST**					

Freezing rain developed across extreme northeast Georgia during the early evening and persisted for much of the overnight hours. The freezing rain mixed with sleet at times. By the morning of the 26th, up to 1/2 inch of ice and sleet had accumulated. Widespread power outages resulted, especially in Rabun County, where thousands were without power for several hours. Numerous injuries also occurred as a result of falls.

GAZ018-026-028>029 **Stephens - Franklin - Hart - Elbert**

26	**2100EST**	**0**	**0**			**Ice Storm**
27	**0000EST**					

Freezing rain redeveloped during the late evening of the 26th across extreme northeast Georgia, resulting in an additional 1/4 inch

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

GEORGIA, Northeast

or so of ice across the area. This resulted in further power outages. The glaze of ice caused numerous traffic accidents on the morning of the 27th.

GEORGIA, Southeast

GAZ087>088 **Jenkins - Screven**

26 1230EST 2330EST **0** **0** **Ice Storm**

A strong wedge was in place over the Carolinas and Georgia. An area of low pressure developed off the coast and tracked to the northeast on the 26th and into the early morning hours of the 27th, producing freezing rain and freezing drizzle. Ice accretion was generally around 1/4 inch. There were large limbs and power lines down that disrupted the power over the northern portions of Jenkins and Screven Counties.

GEORGIA, Southwest

Grady County

Rocky Hill **26** **1243EST** **0** **0** **2K** **Thunderstorm Wind (G50)**

A resident reported several trees and a light pole blown down in her front yard.

GULF OF MEXICO

Sw Pass Of The Ms R To Atchafalaya R La Out 20Nm

Grand Isle **17** **1026CST** **0** **0** **Marine Tstm Wind**

Lake Ponchartrain And Lake Maurepas

Lkfrnt Arpt New **17** **1057CST** **0** **0** **Marine Tstm Wind**

Sw Pass Of The Ms R To Atchafalaya R La Out 20Nm

20 S Venice **17** **1152CST** **0** **0** **Marine Tstm Wind**

Sw Pass Of The Ms R To Atchafalaya R La Out 20Nm

20 S Venice **17** **1225CST** **0** **0** **Marine Tstm Wind**

Sw Pass Of The Ms R To Atchafalaya R La Out 20Nm

20 S Venice **17** **1343CST** **0** **0** **Marine Tstm Wind**

Sw Pass Of The Ms R To Atchafalaya R La Out 20Nm

20 S Venice **17** **1455CST** **0** **0** **Marine Tstm Wind**

Sw Pass Of The Ms R To Atchafalaya R La Out 20Nm

20 S Venice **17** **1534CST** **0** **0** **Marine Tstm Wind**

Sw Pass Of The Ms R To Atchafalaya R La Out 20Nm

20 S Venice **17** **1607CST** **0** **0** **Marine Tstm Wind**

Pascagoula Ms To Sw Pass Of Ms R 20 To 60Nm

45 E Venice **17** **1731CST** **0** **0** **Marine Tstm Wind**

Pascagoula Ms To Sw Pass Of Ms R 20 To 60Nm

45 E Venice **17** **2029CST** **0** **0** **Marine Tstm Wind**

Storm Data and Unusual Weather Phenomena

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
GULF OF MEXICO									
Apalachicola To Destin Fl Out 20Nm									
6 W Mexico Beach	**17**	**2158EST**			**0**	**0**			**Waterspout**
A waterspout was reported by a Panama City TV meteorologist.									
Englewood To Tarpon Springs Fl Out 20Nm									
Clearwater Beach	**18**	**0645EST**			**0**	**0**			**Marine Tstm Wind**
The gust was measured by the COMPS station but the time of the wind gust was estimated by radar.									
Tampa Bay									
Middle Tampa Bay	**18**	**0740EST**			**0**	**0**			**Marine Tstm Wind**
The wind gust was measured at the Albert Whitted Airport.									
Englewood To Tarpon Springs Fl Out 20Nm									
10 NNW Longboat Key	**18**	**0742EST**			**0**	**0**			**Marine Tstm Wind**
The wind was measured by the COMPS station on Anna Maria Island.									
High Is To Freeport Tx Out 20Nm									
13 W Galveston	**25**	**0336CST**			**0**	**0**			**Marine Tstm Wind**
Measured at Jamaica Beach.									
Pensacola Fl To Pascagoula Ms Out 20Nm									
2 S Gulf Shores	**26**	**0605CST**			**0**	**0**			**Marine Tstm Wind**
		0607CST							
Mobile Bay									
Bon Secour	**26**	**0615CST**			**0**	**0**			**Marine Tstm Wind**
		0617CST							
Destin To Pensacola Fl 20 To 60Nm									
25 S Destin to	**26**	**0920CST**			**0**	**0**			**Marine Tstm Wind**
35 S Destin		**0925CST**							
Mobile Bay									
2 SE Alabama Port	**26**	**1200CST**			**0**	**0**			**Marine Tstm Wind**
		1205CST							
Pensacola Fl To Pascagoula Ms Out 20Nm									
15 S Dauphin Island	**26**	**1203CST**			**0**	**0**			**Marine Tstm Wind**
		1206CST							
Pensacola Fl To Pascagoula Ms 20 To 60Nm									
20 S Dauphin Island to	**26**	**1215CST**			**0**	**0**			**Marine Tstm Wind**
30 S Dauphin Island		**1220CST**							
Key W To Dry Tortugas Waters									
70 W Key West	**30**	**2011EST**			**0**	**0**			**Marine Tstm Wind**
Wind gust 37 knots (43 mph) measured at Dry Tortugas C-MAN Station.									
Key W To Dry Tortugas Waters									
10 SW Key West	**30**	**2158EST**			**0**	**0**			**Marine Tstm Wind**
Wind gust 36 knots (41 mph) measured at Sand Key C-MAN Station.									

Storm Data and Unusual Weather Phenomena

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
GULF OF MEXICO									
W End Of The 7 Mile Bridge To Key W Out 20Nm									
Key West	**30**	**2159EST**			**0**	**0**			**Marine Tstm Wind**
Wind gust 34 knots (39 mph) measured at Key West International Airport.									
Key W To Dry Tortugas Waters									
10 SW Key West	**30**	**2200EST**			**0**	**0**			**Marine Tstm Wind**
Wind gust 35 knots (40 mph) measured at Sand Key C-MAN Station.									
W End Of The 7 Mile Bridge To Key W Out 20Nm									
10 WSW Big Pine Key	**30**	**2235EST**			**0**	**0**			**Marine Tstm Wind**
Wind gust 50 mph measured in Southern Cudjoe Key along Cudjoe Bay.									
HAWAII									
Kauai County									
1.5 ENE Hanalei	**01**	**0742HST**			**0**	**0**			**Flash Flood**
		0903HST							
Heavy rain over the mountains in central Kauai caused many streams and rivers to become swollen and overflow their banks. The Hanalei River flooded near the Hanalei Bridge and forced the closure of the bridge and roadway for a time on the morning of the 1st. There were no reports of serious property damage or injuries, however.									
Maui County									
Lahaina to	**01**	**1220HST**			**0**	**0**			**Heavy Rain**
Lanai City		**1645HST**							
Heavy showers and isolated thunderstorms produced ponding of roadways, and small stream and drainage ditch flooding in parts of West Maui and in Lanai. No serious property damage or injuries were reported.									
Maui County									
16.5 E Kaunakakai	**01**	**1400HST**			**0**	**0**			**Flash Flood**
		1645HST							
Heavy showers, rain, and isolated thunderstorms forced the closure of Kamehameha V Highway near mile post 2 in East Molokai, near Waialua. However, there were no reports of serious injuries or property damage.									
Maui County									
Maunaloa to	**01**	**1745HST**			**0**	**0**			**Heavy Rain**
15 E Kalaupapa	**02**	**0015HST**							
Heavy rain and showers caused small stream and drainage ditch flooding, and ponding of roadways across the isle of Molokai. No serious property damage or injuries were reported.									
Honolulu County									
Countywide	**02**	**0954HST**			**0**	**0**			**Heavy Rain**
	03	**0500HST**							
Intermittent heavy rain, showers, and isolated thunderstorms caused occasional mudslides that forced lane closures on some roadways across Oahu, most particularly Pali Highway near Kamehameha Highway, and Kaneohe Bay Drive. Power outages also occurred from time to time in many parts of the island. Backups of sewer lines, as well, caused raw sewage to be spilled into a few streets and streams. No serious injuries or property damage were reported.									
Maui County									
Maunaloa to	**02**	**1003HST**			**0**	**0**			**Heavy Rain**
15 E Kalaupapa	**03**	**1230HST**							
Intermittent heavy rain, showers, and isolated thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways over most of Molokai. There were no reports of serious property damage or injuries.									
Maui County									
10 NW Lanai City to	**02**	**1655HST**			**0**	**0**			**Heavy Rain**
5.5 S Lanai City	**03**	**1530HST**							
Intermittent heavy rain, showers, and isolated thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding across the island of Lanai. The very damp conditions also forced the closure of the Lanai airport during the later afternoon hours on the 2nd. However, no serious injuries or property damage were reported.									
Maui County									
Lahaina to	**02**	**1655HST**			**0**	**0**			**Heavy Rain**
Hana	**03**	**1830HST**							
Intermittent heavy rain, showers, and isolated thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding on the island of Maui. Power outages were not uncommon as the inclement weather persisted for more than 24 hours.									

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

HAWAII

However, there were no reports of serious injuries or property damage.

Hawaii County

Countywide **03** **0630HST** **1830HST** **0** **0** **Heavy Rain**

Intermittent heavy rain, showers, and isolated thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways on the Big Island of Hawaii. Isolated power outages also occurred across the isle. No serious injuries or property damage were reported.

HIZ001>005-007 **Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - Molokai - West Hawaii Including Leeward Kohala And Kona**

05 **0700HST** **0** **0** **Heavy Surf/High Surf**
06 **0900HST**

A low 800 miles northwest of the state generated surf of 10 to 20 feet along the west- and north-facing shores of all the isles except Lanai. There were no reports of serious property damage or injuries.

HIZ001>007 **Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona**

10 **0400HST** **0** **0** **Heavy Surf/High Surf**
11 **1400HST**

A storm low far northwest of Hawaii produced surf of 15 to 25 feet along the north-facing shores, and 10 to 15 feet along the west-facing shores, of all the islands. No serious injuries or property damage were reported.

HIZ004-007>008 **North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - West Hawaii Including Leeward Kohala And Kona - South Hawaii Including Kau**

12 **0640HST** **0** **0** **High Wind (G70)**
15 **0400HST**

Southwest to west winds sustained at 80 mph buffeted areas at and near the summits of Mauna Kea and Mauna Loa on the Big Island of Hawaii. There were no reports of serious injuries or property damage.

HIZ003 **Maui**

12 **0640HST** **1600HST** **0** **0** **High Wind (G61)**

Southwest to west winds that gusted to 70 mph affected areas at and near the summit of Haleakala in East Maui. No serious property damage or injuries were reported, however.

HIZ001>003-005-007 **Kauai - Oahu - Maui - Molokai - West Hawaii Including Leeward Kohala And Kona**

14 **0400HST** **1600HST** **1** **0** **High Wind (G63)**

A fast-moving cold front brought strong winds to much of the Aloha State on the 14th. A significant number of trees and power lines were blown down, closing roads on Oahu and Kauai for several hours. Media reports indicated that over 100 homes on Oahu suffered roof damage. At least three homes on the Big Island of Hawaii and one on Maui also had roof damage. Power outages affected Kauai, Oahu, Maui, and the Big Island. Around 69,000 customers were without power on Oahu, several thousands on Maui and Kauai, and nearly 10,000 on the Big Island. Nine schools on Oahu closed early due to power failures and/or roof damage. One man was killed on Kauai while apparently camping. A portion of a tree blown down by high winds fell on his campsite and caused his death. No serious injuries were reported. The cost of damages across the state was not available. M?CA

HIZ003 **Maui**

14 **0400HST** **0** **0** **High Wind (G61)**
15 **0400HST**

Strong west to southwest winds that gusted to 70 mph occurred at and near the summit of Haleakala in East Maui. No serious injuries or property damage were reported.

HIZ001>007 **Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona**

15 **0500HST** **0** **0** **Heavy Surf/High Surf**
16 **2200HST**

A storm low far northwest of the state generated surf of 15 to 25 feet along the north-facing shores, and 10 to 15 feet along the west-facing shores, of all the Hawaiian Islands. However, no serious property damage or injuries were reported.

HIZ001>007 **Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona**

19 **0800HST** **0** **0** **Heavy Surf/High Surf**
23 **0200HST**

A deep low far northwest of the Aloha State produced surf of 15 to 20 feet along the north-facing shores, and 8 to 12 feet along the west-facing shores, of all the islands. There were no reports of serious injuries or property damage.

Storm Data and Unusual Weather Phenomena

January 2004

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
HAWAII									
Honolulu County									
Countywide	**22** **23**	**2322HST** **0030HST**			**0**	**0**			**Heavy Rain**
Heavy showers and thunderstorms caused small stream and drainage ditch flooding, and ponding of roadways across the island of Oahu. There were no reports of serious property damage or injuries.									
Honolulu County									
Central Portion	**22** **23**	**2358HST** **0010HST**			**0**	**0**			**Thunderstorm Wind (G52)**
A severe thunderstorm generated wind gusts to about 60 mph at and near Wheeler Army Airfield in central Oahu. However, there were no reports of serious injuries or property damage.									
Maui County									
Maunaloa to Lanai City	**23**	**0130HST** **0430HST**			**0**	**0**			**Heavy Rain**
Heavy rain, showers, and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding over the islands of Molokai and Lanai. No serious injuries or property damage were reported.									
Maui County									
Maalaea	**23**	**0210HST** **0430HST**			**0**	**0**			**Flash Flood**
Heavy showers and thunderstorms forced the closure of Honoapiilani Highway near Maalaea Bay and the town of Maalaea. The heavy rain also caused small stream and drainage ditch flooding, and ponding of roadways in other parts of Maui. No serious property damage or injuries were reported.									
Maui County									
Spreckelsville	**23**	**0210HST** **0215HST**			**0**	**0**			**Lightning**
Lightning struck a tree near a residence in Spreckelsville on the island of Maui. The electrical energy from the strike then ran along the ground and damaged a fence and deck railing. The electrical charge also slightly stunned two men who were near the strike. The cost of the damages was not available. No serious injuries were reported.									
Hawaii County									
4 N Pahala	**23**	**0900HST** **0945HST**			**0**	**0**			**Flash Flood**
Heavy rain and thunderstorms washed out a portion of Wood Valley Road between Pahala and Kapapala Ranch in the Kau District on the Big Island of Hawaii. However, no serious injuries or property damage were reported.									
Hawaii County									
Hawi to Naalehu	**23**	**0930HST** **1745HST**			**0**	**0**			**Heavy Rain**
Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in eastern parts of the Big Island of Hawaii. There were no reports of serious property damage or injuries.									
Hawaii County									
9 SW Kamuela to 12 SW Kamuela	**23**	**1600HST** **1730HST**			**0**	**0**			**Flash Flood**
Heavy showers and thunderstorms caused enough flooding to close a portion of Queen Kaahumanu Highway in West Hawaii for a time, and to damage some homes in Waikoloa Village. The cost of damages to the homes was not available. There were no reports of serious injuries.									
Hawaii County									
9.5 NW Laupahoehoe	**24**	**1420HST** **1630HST**			**0**	**0**			**Heavy Rain**
Heavy showers and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding in the communities of Paauilo and Kukaiau in the Hamakua District on the Big Island of Hawaii. There were no reports of serious injuries or property damage.									
HIZ001>006	**Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - Molokai - Lanai**								
	24 **25**	**1500HST** **1200HST**			**0**	**0**			**Heavy Surf/High Surf**
A low northwest of the state generated surf of 10 to 15 feet along the north- and northwest-facing shores of all the Hawaiian Islands. There were no reports of serious injuries or property damage.									
Maui County									
8.5 NW Hana to 6 NW Hana	**24**	**1530HST** **1700HST**			**0**	**0**			**Heavy Rain**
Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways from Nahiku to Ulaino in windward East Maui. No serious injuries or property damage were reported.									

Storm Data and Unusual Weather Phenomena

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
HAWAII									
Maui County									
Kalaupapa to 15 E Kalaupapa	**24**	**1600HST**			**0**	**0**			**Heavy Rain**
		2000HST							

Heavy rain and thunderstorms caused ponding or roadways, and small stream and drainage ditch flooding in central and eastern parts of Molokai, i.e., east of a line from Kalaupapa to Kamalo. No serious property damage or injuries were reported.

Hawaii County									
9 NW Laupahoehoe to Hilo	**24**	**1900HST**			**0**	**0**			**Heavy Rain**
		2030HST							

Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in windward sections of the Big Island of Hawaii, that included portions of the Hamakua, and North and South Hilo districts. No serious injuries or property damage were reported.

Maui County									
Spreckelsville to Hana	**24**	**2320HST**			**0**	**0**			**Heavy Rain**
	25	**0220HST**							

Heavy rain, showers, and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding in windward parts of East Maui. There were no reports of serious property damage or injuries.

Honolulu County									
Mililani Town to Pearl City	**25**	**1330HST**			**0**	**0**			**Heavy Rain**
		1455HST							

Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in central and south-central parts of Oahu. No serious injuries or property damage were reported.

Honolulu County									
Wahiawa to 4 SSE Aiea	**25**	**1335HST**			**0**	**0**			**Funnel Cloud**
		1410HST							

Several funnel clouds were reported by airplane pilots and a weather observer from near Wheeler Army Airfield to the Honolulu International Airport in the early afternoon of the 25th. Apparently, none of these funnels became tornadoes. There were no serious disruptions in air traffic caused by these phenomena.

Honolulu County									
3 NW Waipahu	**25**	**1345HST**	**1**	**25**	**0**	**0**			**Tornado (F0)**
		1350HST							

A tornado touched down about 1 mile northwest of Royal Kunia, or 3 miles northwest of Waipahu, on the island of Oahu. However, no serious injuries or property damage were reported.

Maui County									
Lahaina to Hana	**25**	**1440HST**			**0**	**0**			**Heavy Rain**
		1715HST							

Heavy showers and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding across the island of Maui. No serious injuries or property damage were reported.

Hawaii County									
Hilo	**25**	**1515HST**			**0**	**0**			**Hail (0.75)**
		1520HST							

An off duty National Weather Service employee reported three-quarter inch hail in the afternoon of the 25th in North Hilo on the Big Island of Hawaii. However, no serious injuries or property damage were reported.

Hawaii County									
8 WSW Honokaa	**25**	**1630HST**			**0**	**0**			**Flash Flood**
	26	**0030HST**							

Heavy showers and thunderstorms flooded a section of Highway 19 (Mamalahoa Highway) from mile post 15 to 19. This effectively shut down the road between Kamuela and Honokaa for several hours. However, no serious property damage or injuries were reported.

Maui County									
Kalaupapa to Kaunakakai	**25**	**1630HST**			**0**	**0**			**Heavy Rain**
		1930HST							

Heavy rain, showers, and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in central parts of Molokai. There were no reports of serious injuries or property damage.

Hawaii County									
7 NE Kailua Kona to 8 SSE Kailua Kona	**25**	**1850HST**			**0**	**0**			**Heavy Rain**
		2030HST							

Heavy showers and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding in parts of the North Kona District on the Big Island of Hawaii. No serious property damage or injuries were reported.

Storm Data and Unusual Weather Phenomena

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

HAWAII

Honolulu County

2 N Kahaluu — **25** — **2015HST** / **2325HST** — **0** killed — **0** injured — **Flash Flood**

Heavy rain and thunderstorms produced flash flooding conditions along Kamehameha Highway near the Waikane Bridge. The highway had to be closed for a time to allow the flooding waters to subside. There were no reports of serious injuries or property damage.

Hawaii County

Hawi to Kamuela — **26** — **1615HST** / **1740HST** — **0** killed — **0** injured — **Heavy Rain**

Heavy rain, showers, and thunderstorms produced ponding of roadways, and small stream and drainage ditch flooding in portions of the North and South Kohala districts on the Big Island of Hawaii. No serious property damage or injuries were reported.

Hawaii County

10 W Volcano to Pahala — **27** — **1425HST** / **1630HST** — **0** killed — **0** injured — **Heavy Rain**

Heavy showers and thunderstorms caused small stream and drainage ditch flooding, and ponding of roadways in parts of the Kau District on the Big Island of Hawaii. There were no reports of serious property damage or injuries.

Hawaii County

Honokaa to Hilo — **29** — **0730HST** / **1030HST** — **0** killed — **0** injured — **Heavy Rain**

Heavy showers and thunderstorms produced small stream and drainage ditch flooding, and ponding of roadways in windward sections of the Big Island of Hawaii, that included parts of the Hamakua, and North and South Hilo districts. No serious injuries or property damage were reported.

HIZ001-004-008 — **Kauai - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - South Hawaii Including Kau**

30 — **1400HST** — **0** killed — **0** injured — **Heavy Surf/High Surf**
31 — **2359HST**

A trade wind swell generated surf of 6 to 8 feet along the east-facing shores of Kauai and the Big Island of Hawaii. No serious injuries or property damage were reported.

Hawaii County

Pahoa to Volcano — **31** — **0245HST** / **0445HST** — **0** killed — **0** injured — **Heavy Rain**

Heavy showers and thunderstorms caused ponding of roadways, and small stream and drainage ditch flooding in the Puna District on the windward side of the Big Island of Hawaii. No serious injuries or property damage were reported.

IDAHO, Extreme Southeast

NONE REPORTED.

IDAHO, North

IDZ005>006-010 — **Northern Clearwater Mountains - Southern Clearwater Mountains - Eastern Lemhi County**

01 — **0800MST** — **0** killed — **0** injured — **Winter Storm**
02 — **0800MST**

An arctic cold front moved through western Montana and into north central Idaho, producing widespread heavy snow and strong gusty northeast winds. Storm total snowfall ranged from 4 to 9 inches at the lower elevations to 10 to 12 inches in the mountains. Strongest wind gusts occurred during the evening hours of January 1st, where gusts between 33 to 53 MPH were recorded between 700 PM to 1030 PM MST.

IDZ005>006 — **Northern Clearwater Mountains - Southern Clearwater Mountains**

03 — **0000MST** — **0** killed — **0** injured — **Heavy Snow**
04 — **0700MST**

An arctic frontal boundary moved from western Montana into north central Idaho and stalled, producing heavy snow for 36 hours. Heavy snow fell at Headquarters which received a storm total of 20 inches. Other storm total snowfall amounts were 15 inches at Pierce, 8.5 inches at Powell Ranger Station, with the mountains receiving up to two feet of new snow.

IDZ005>007-009>010 — **Northern Clearwater Mountains - Southern Clearwater Mountains - Orofino / Grangeville Region - Western Lemhi County - Eastern Lemhi County**

23 — **0400MST** — **0** killed — **0** injured — **Heavy Snow**
25 — **1000MST**

Warm Pacific moisture pushed into north central Idaho with cold air residing in the valleys, to produce widespread heavy snow for two days. By mid day of January 23, 6 to 8 inches of heavy wet snow had already fallen over the lower valleys, causing power lines to fall with power outages near Kooskia. Heavy snowfall continued the next 24 hours with 16 to 18 inches of new snow reported at Orofino and Kamiah. As the moisture moved eastward into Lemhi County, Salmon received 9 inches of new snow, Shoup 12 inches, and 18 inches reported at Gibbonsville.The Clearwater Mountains received 10 to 20 inches of new snow.

Storm Data and Unusual Weather Phenomena

January 2004

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

IDAHO, North

IDZ007 **Orofino / Grangeville Region**

30	**0730MST**	**0**	**0**			**High Wind (G52)**
	0830MST					

A strong west to east oriented jet stream moved over north central Idaho during the morning hours of January 30th. Isolated thunderstorms and a strong pressure gradient allowed strong winds aloft to mix to the valley floors, producing damaging winds from Grangeville to Harpster. Wind gusts up to 60 MPH were reported at the Grangeville Airport. The Idaho Free Press Newspaper reported downed trees onto power lines caused numerous power outages from 630 AM to 1030 AM throughout the area.

IDAHO, Northwest

IDZ001>004-026 **Northern Panhandle - Coeur D'Alene Area - Idaho Palouse - Central Panhandle Mountains - Lewiston Area**

01	**0800PST**	**0**	**0**	**0**		**Heavy Snow**
03	**1800PST**					

A winter storm dropped heavy snow over the Idaho Panhandle from the morning of January 1st through the day of January 3rd. A spotter in Rathdrum reported 5 inches of new snow on the 1st and another 9 inches by the morning of the 2nd. Elsewhere, Athol received 12 inches during the day of January 1st, Sandpoint got 6.5 inches. The city of Couer D'Alene received 11 inches in the first 24 hours of the storm. An emergency manager reported the following...Bovill received 15 inches through the 2nd and another 3 inches on the 3rd, Deary had 10 inches through the 2nd and another 6 inches on the 3rd, Troy had 8 inches through the 2nd and another 6 inches on the 3rd, and Genesee had 6 inches on the 2nd and another 6 inches on the 3rd. Several other reports were received ranging from 6 to 10 inches.

IDZ001>002 **Northern Panhandle - Coeur D'Alene Area**

04	**0100PST**	**0**	**0**			**Extreme Cold/Wind Chill**
06	**1200PST**					

The morning of January 4, 5, and 6 brought extreme cold to northern Idaho. The morning low temperature on the coldest morning, January 5, was minus 24 at Coeur D'Alene. At Sandpoint the official low temperature was minus 18 but at a nearby school a low temperatures of minus 22 was reported. This cold weather resulted in numerous broken water pipes and scattered power outages.

IDZ001>004 **Northern Panhandle - Coeur D'Alene Area - Idaho Palouse - Central Panhandle Mountains**

22	**2100PST**	**0**	**0**	**0**		**Heavy Snow**
23	**0900PST**					

A winter storm dumped heaved snow over the Idaho Panhandle during the overnight hours from January 22 into the morning of January 23rd. Spotter reports received included 5 inches of new snow near Moscow, 6 inches in Sandpoint, 7 inches in northern Benewah county and 6 inches in Shoshone county.

IDZ001>004 **Northern Panhandle - Coeur D'Alene Area - Idaho Palouse - Central Panhandle Mountains**

26	**0800PST**	**0**	**0**	**0**		**Heavy Snow**
	1800PST					

A winter storm moved across the Idaho Panhandle during the day of January 26th. Spotters reported 8 inches of new snow near Naples, 4 inches in Coeur D'Alene, 5 inches in Wallace, and 5 inches in St Maries.

IDAHO, Southeast

IDZ017>023-031>032 **Eastern Magic Valley - Sawtooth Mountains - Upper Snake Highlands - Upper Snake River Plain - Lower Snake River Plain - South Central Highlands - Caribou Highlands - Big And Little Wood River Region - Lost River / Pahsimeroi**

01	**0800MST**	**0**	**1**	**242K**		**Blizzard**
02	**0100MST**					

An incredible storm concluded a very active holiday weather week in southeast Idaho with widespread snow and wind beginning Christmas and continuing almost without interruption through New Year's Day. The Pocatello airport received 23.4 inches of total snowfall during the week. The final storm during January 1st was the highlight of the week with a widespread blizzard affecting all of southeastern Idaho from the central mountains extending east and south to the Utah and Wyoming borders. An intense pacific storm system caused the event with a strong surface low pressure moving rapidly through the Idaho panhandle late in the day. The blizzard came in two waves with very strong southerly winds ahead of the cold front during the day. At the National Weather Service office at the Pocatello airport...blizzard conditions occurred from around 11 am through 3 pm with visibilities zero miles in heavy snow and sustained 40 mph winds with gusts over 50 mph. The peak measured wind at the airport in this time were sustained 48 mph with a gust of 56 mph. By early afternoon, all major interstates were closed including I-15 throughout the whole state...I-84 from Burley to the Utah border and I-86 from Burley to Pocatello. By 7 pm nearly every state and US highway was closed as well in all of the region. All roads in Blaine, Bingham and Power County were closed. It was estimated that by the morning of the 2nd, 25 major roads in eastern and central Idaho were closed. The blizzard peaked with the passage of the strong cold front trailing south from the low which moved west to east through the forecast area from approximately 6 pm through 9 pm. Extensive cloud to ground lightning occurred along the front and snowfall rates just behind the front were in the 2 to 4 inch per hour range. The strongest winds of the storm occurred just ahead of the front with sustained wind speeds of 35 to 45 mph and gusts of 55 to 65 mph common in the frontal region. These winds were recorded by several mesonet sites at the Idaho National Environment and Engineering Laboratory north and northwest of Pocatello. The Pocatello airport had sustained 38 mph winds with gusts up to 53 mph along the cold front. Several travelers were stranded including 750 to 850 in Rockland in Power County. A school and three churches were opened for shelter. A train accident occurred as containers blown off the train. Costs to Power

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

IDAHO, Southeast

County were $280,000. Extensive damage to trailers and mobile homes were noted mainly in Bingham County with damages in excess of $200,000. Widespread power outages occurred but for the most part were brief. Snowfall amounts were difficult to gauge. From spotters, snowfall estimates were 5.5 inches at the Pocatello airport with generally 6 to 9 inches reported in town and on the benches, 6 inches fell in Idaho Falls, 6 inches in Blackfoot, 4 inches in Ashton, 30 inches at Island Park, 8 inches at Hailey, 18 inches at Galena Lodge, 10 inches at Stanley, 4 inches at Challis, 12 inches at Arco, and 8 inches at Mink Creek. Some of the significant SNOTEL estimates were 30 inches at Bear Canyon, 19 inches at Mill Creek, 33 inches at Crab Creek, 37 inches at White Elephant, 9 inches at Bostetter, 14 inches at Oxford Springs, 21 inches at Sedgewick Peak, 24 inches at Galena, 31 inches at Lost Wood Divide, 32 inches at Swede Peak, 27 inches at Vienna Mine, 24 inches at Hilts Creek, and 9 inches at Somsen Ranch.

IDZ031 — **Big And Little Wood River Region**

01	**2230MST**	**2**	**0**		**Avalanche**
02	**0230MST**				

Several avalanches occurred in the Ketchum and Galena area casing road closures. One avalanche in the evening occurred near Soldier Mountain and destroyed a cabin killing two people on the bottom floor of the cabin. Other family members above the ground level survived. F55OT, M58OT

IDZ018-018>023-031 — **Sawtooth Mountains - Upper Snake Highlands - Upper Snake River Plain - Lower Snake River Plain - South Central Highlands - Caribou Highlands - Big And Little Wood River Region**

24	**1700MST**	**0**	**0**		**Winter Storm**
25	**0900MST**				

A winter storm brought localized blizzard conditions to the Snake River Plain. Snow amounts were not heavy with generally 2 to 4 inches of snow from American Falls to Rexburg but the winds in excess of 25 miles per hour caused interstate 84 to be closed at 11 pm and interstate 86 to be closed from the Salt Lake interchange to American Falls at 2 am. The only heavy snow was reported at Island Park with 12 inches. 6 inches fell at Galena, 3 inches in Blackfoot, 2 inches in Rexburg and Rigby and 1 inch at Malad.

IDZ019 — **Upper Snake Highlands**

28	**0400MST**	**0**	**0**		**Winter Storm**
	1800MST				

Localized heavy snow fell in the Upper Snake Highlands. Strong winds accompanied the snow with extensive drifting. Reports were 9 inches in victor, 10 inches in Swan Valley, 3 inches in Palisades, 3 inches in Island Park, 4 inches in Tetonia

Minidoka County

Minidoka	**30**	**1130MST**	**0**	**0**	**Thunderstorm Wind (G63)**
		1136MST			

Butte County

22 SE Arco	**30**	**1155MST**	**0**	**0**	**Thunderstorm Wind (G50)**

Cassia County

Burley	**30**	**1159MST**	**0**	**0**	**Thunderstorm Wind (G60)**
		1205MST			

3 semi-tractor trucks blown off of interstate 84 in Burley.

Bonneville County

9 NW Idaho Falls	**30**	**1230MST**	**0**	**0**	**Thunderstorm Wind (G50)**
		1235MST			

IDAHO, Southwest

IDZ011-013-029 — **West Central Mountains - Boise Mountains - Owyhee Mountains**

01	**1000MST**	**0**	**0**		**Heavy Snow**
	1900MST				

A major Pacific system moved eastward across Eastern Oregon and Southwestern Idaho on new years day. This system brought with it up to a foot of new snow and strong gusty winds to the mountains of Southwestern Idaho and Baker County Oregon.

IDZ028 — **Camas Prairie**

02	**0100MST**	**2**	**2**		**Avalanche**
	0200MST				

The Avalanche was located about 10 miles north of Fairfield and 1 mile south of the Soldier Mountain Ski Resort. The snow slide was 500 to 700 feet long. Snow from the Avalanche destroyed a two story cabin, filling the first floor with snow, and killing two occupants who were asleep. Five other occupants on the second floor of the cabin escaped without major injuries. F55PH, M58PH

IDZ013 — **Boise Mountains**

03	**2300MST**	**0**	**0**		**Heavy Snow**
04	**0800MST**				

A secondary cold front that moved across Eastern Oregon into Southern Idaho Sunday evening brought with it wide spread snow. Up to a foot of new snow fell in the Boise Mountains as this system passed through the area.

IDZ012-014-016 — **Lower Treasure Valley - Upper Treasure Valley - Western Magic Valley**

07	**1000MST**	**0**	**0**		**Heavy Snow**
	1700MST				

Storm Data and Unusual Weather Phenomena

January 2004

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

IDAHO, Southwest

A Pacific storm system that moved into Southern Idaho during the early morning of January 7 2004, left behind wide spread snow with heavy snow in the lower valleys as it moved across the region. Lower Treasure Valley, Trained Spotter 7 miles north of Melba 7 inches, 3 miles NNE of Greenleaf 6 inches, and 6 miles NNW of Middleton 6 inches, Broadcast Media Nampa 5 inches and 11 miles NW of Caldwell 7 inches. : Upper Treasure Valley, NWS Employee Garden City 5 inches and West Boise 4 inches, Official NWS Observer Boise Airport 5 inches. : Magic Valley NWS Co-op Observer 6 inches.

IDZ011>013 **West Central Mountains - Lower Treasure Valley - Boise Mountains**

	23	**1700MST**	**0**	**0**			**Heavy Snow**
	25	**0300MST**					

A vigorous Pacific Storm system moved across Eastern Oregon and Southwestern Idaho durning the night of the 23rd and during the day of 24th of January. This system brought with it heavy snow to Baker County Oregon, Lower Treasure Valley of Oregon and Idaho and the Central and Boise Mountains of Idaho. Snow amounts in Baker County ranged from 2 inches in Baker City to 7 inches in the mountains. In the Lower Treasure Valley snow amounts ranged from 2 inches up to 8 inches, with areas of freezing rain also. In the mountains of Idaho snow fall amounts ranged from 4 to 8 inches below 5000 feet and up to 16 inches above 5000 feet.

Canyon County

Countywide	**30**	**0800MST**	**0**	**0**			**Thunderstorm Wind (G60)**
		0840MST					

Owyhee County

Countywide	**30**	**0800MST**	**0**	**0**			**Thunderstorm Wind (G60)**
		0845MST					

Ada County

Countywide	**30**	**0830MST**	**0**	**0**			**Thunderstorm Wind (G60)**
		0905MST					

Elmore County

Countywide	**30**	**0855MST**	**0**	**0**			**Thunderstorm Wind (G60)**
		0920MST					

During the morning of January 30th a fast moving cold front produced several severe thunderstorms, very strong winds and snow showers as it moved eastward across Eastern Oregon and Southwestern Idaho. Fairly large trees were blown down in Payette in Payette County and in Nampa in Canyon County. There were also reports of trees down in Baker and Malheur counties in Oregon. Power was briefly knocked out in northern Owyhee County as the line of thunderstorms moved across the county..

IDZ016 **Western Magic Valley**

	30	**1000MST**	**0**	**0**			**High Wind (G67)**
		1100MST					

A strong fast moving cold front produced very strong winds as it pasted across the Magic Valley of Idaho.

ILLINOIS, Central

ILZ027>028-030 **Knox - Stark - Marshall**

	04	**1300CST**	**0**	**0**			**Winter Storm**
		1512CST					

ILZ038 **Mclean**

	04	**1400CST**	**0**	**0**			**Ice Storm**
		1512CST					

A winter storm moved into northern portions of Central Illinois late on January 3rd and into the 4th. Heavy snow was reported in Knox, Stark and Marshall, while in McLean County significant ice accumulations around a third of an inch were reported. Between 5 and 6 inches of snow was reported in Knox, Stark and Marshall counties with significant blowing and drifting of the snow causing near whiteout conditions in numerous locations. Meanwhile in McLean county, the heavy coating of ice caused power outages in Normal, LeRoy, Downs and Lexington.

ILZ061>063-066>068-071>073 **Shelby - Cumberland - Clark - Effingham - Jasper - Crawford - Clay - Richland - Lawrence**

	25	**1200CST**	**0**	**0**			**Ice Storm**
		2100CST					

A strong winter storm moved out of Southern Plains and into the Ohio River Valley. This system brought significant icing to the southeastern portions of Central Illinois on January 25th. Also, significant sleet accumulation was reported in numerous locations along and south of Interstate 70. Effingham County reported an inch of sleet as well as over a quarter inch of ice accumulation. There were numerous reports of power outages, downed tree limbs and traffic accidents in all of these counties. There were no reports of serious injuries or fatalities.

ILLINOIS, Northeast

ILZ010-012>014-022 **Lee - Kane - Du Page - Cook - Will**

	04	**0700CST**	**0**	**0**			**Heavy Snow**
	05	**0700CST**					

Storm Data and Unusual Weather Phenomena

January 2004

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

ILLINOIS, Northeast

Heavy snow fell over north-central and northeast Illinois. Some snow reports include; 7 inches in Paw Paw (Lee County), 6.5 inches in Aurora (Kane County), 6.4 inches in Burbank (Cook County), 5.7 inches in Winfield (Du Page County), 5.6 inches at O'Hare Airport (Cook County) and 5.6 inches in Dixon (Lee County). There was 3 indirect deaths, a 76 year old man suffered a heart attack while shoveling his driveway in New Lenox (Will County) and 2 (18 and 19 years old) were killed in a weather related automobile accident near Glen Ellyn (Du Page County).

ILZ033 **Iroquois**

06	**1400CST**	**1**	**0**			**Extreme Cold/Wind Chill**

91 year old man found frozen to death in car in a ditch between Iroquois and Kankakee counties. No other cars involved. M91VE

ILZ014 **Cook**

06	**1500CST**	**1**	**0**			**Extreme Cold/Wind Chill**

An 82 year old woman was found dead in her mobile home. The furnace in her home was turned off. The low temperature the morning she was found was -3F. F82PH

ILZ012 **Kane**

07	**1000CST**	**1**	**0**			**Extreme Cold/Wind Chill**

Man, age estimated between 40-60 years, may have frozen to death. Body discovered at 10:25am near a bike path in Aurora. The low temperature the morning of 01/07/04 was 3F at Aurora/Sugar Grove airport. M50OU

ILZ014 **Cook**

15	**0700CST**	**1**	**0**			**Extreme Cold/Wind Chill**

75 year old man found dead in his home in Oak Lawn, Cook County. Overnight low temperature was 13F. M75PH

ILZ014 **Cook**

18	**0700CST**	**1**	**0**			**Extreme Cold/Wind Chill**

52 year old man found dead under a bridge over North Branch of the Chicago River, Cook County. Overnight low temperature was 6F. M52OU

ILZ014 **Cook**

19	**1200CST**	**1**	**0**			**Extreme Cold/Wind Chill**

47 year old man found dead in Portage Park, Cook County, due to hypothermia. Overnight low temperature was 3F. M47OU

ILZ014 **Cook**

25	**1200CST**	**1**	**0**			**Extreme Cold/Wind Chill**

33 year-old man found dead in Bank One Plaza, Chicago, Cook County, due to hypothermia. Low temperature the morning of 01/25/04 was 13F. M33OU

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

29	**1800CST**	**0**	**0**			**Extreme Cold/Wind Chill**
30	**2300CST**					

A cold arctic airmass with temperatures as low as -5F to -10F and winds of 10 to 15mph produced widespread wind chill readings from -20F to -34F.

ILZ014 **Cook**

31	**0700CST**	**1**	**0**			**Extreme Cold/Wind Chill**

86 year old woman found dead in home in Sauk Village, Cook County. House was not heated, although furnace was in working order. Pipes were frozen. Overnight low temperature was -6F. F86PH

ILZ014 **Cook**

31	**0700CST**	**1**	**0**			**Extreme Cold/Wind Chill**

82 year old woman found dead in unheated mobile home in Hodgkins, Cook County. Overnight low temperature was -6F. F86PH

ILLINOIS, Northwest

ILZ015>017 **Rock Island - Henry - Bureau**

04	**1430CST**	**0**	**0**	**15K**		**Heavy Snow**
	2300CST					

The first major winter storm of the season began during the evening hours of 3 January 2004 and ended by 2300 CST 4 January 2004. A majority of the heavy snow fell across Eastern Iowa and north of U.S. 34, but mesoscale banding produced heavy snow in some Illinois counties along Interstate 80. Total snow amounts for this storm were generally 6 to 8 inches with the resultant mesoscale banding producing amounts of 8 to 10 inches across the Iowa counties of Washington, Muscatine, Keokuk, Louisa, and Jones. Mesoscale banding of the snow during the day on 4 January 2004 resulted in some areas receiving heavy snow while others did not. A perfect example was in Delaware County Iowa. A mesoscale heavy snow band deposited 7 inches of snow over the southeast corner of the county while the remainder of the county saw amounts in the 4 to 6 inch range.

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

ILLINOIS, Northwest

ILZ001>002-007 — **Jo Daviess - Stephenson - Carroll**

16	**1900CST**	**0**	**0**	**15K**		**Winter Weather/Mix**
17	**0500CST**					

A mixture of freezing rain and sleet developed during the evening hours of 16 January 2004 and ended before dawn on 17 January 2004 as surface temperatures climbed above freezing. Ice accumulations of one or two tenths of an inch were reported with the heaviest accumulation along the U.S. 20 corridor. The areas affected were mainly along and north of U.S. 30 in Eastern Iowa and Northwest Illinois. Numerous traffic accidents occurred that involved minor (indirect) injuries. The Iowa State Patrol reported many vehicles in the ditches along Interstate 80 in Iowa and Johnson counties, while county sheriff offices indicated that accident calls were double the usual numbers for the time of day. In Jackson County Iowa, an ambulance went off the road as it was responding to a call.

ILZ015 — **Rock Island**

28	**0000CST**	**1**	**0**			**Extreme Cold/Wind Chill**
29	**2359CST**					

A period of abnormally cold weather settled across the Midwest in late January. In Hampton, Illinois, an 82 year old man slipped and fell between his house and garage and was not found until the 29th of January. The coroner report indicated death was a result of hypothermia. Just prior the the bitter cold, another fatality (indirect) occurred. A 75 year old Milan, Illinois man suffering from alzheimers left his house on the night of January 25th, and became even more confused when he could not find the gate on the fenced in property. He attempted to climb over the fence and became hung up and was not discovered until the morning of January 26th. M82OU

ILLINOIS, South

ILZ078-083 — **Wabash - White**

05	**0900CST**	**0**	**0**			**Flood**
19	**1600CST**					

The Wabash River was above flood stage during most of the first half of the month. At Mount Carmel, where flood stage is 19 feet, the river crested at 28.1 feet late on the 12th. This resulted in moderate flooding, with considerable inundation of low-lying woodlands and fields. Most roads along the river were impassable. Cattle and farm equipment were moved to higher ground. The Wabash River was more than 2 miles wide at Interstate 64. Some mobile homes had to be moved, and the city of Mount Carmel had to install flood gates A, B, and C. At New Harmony, Indiana, the river crested at 19.56 feet early on the 14th. This is almost 5 feet above flood stage.

ILZ087-090>094 — **Gallatin - Pope - Hardin - Alexander - Pulaski - Massac**

05	**1700CST**	**0**	**0**			**Flood**
20	**1200CST**					

The Ohio River rose above flood stage in response to heavy rains from Illinois to Ohio at the end of December. These heavy rains continued into the first days of January. The Ohio River first reached flood stage on the 5th at Shawneetown, and last fell below flood stage on the 20th at Shawneetown. Other points in Illinois that rose above flood stage were Golconda, Brookport, Grand Chain, and Cairo. The river crested at all these points on the 14th and 15th. Shawneetown crested at 44.7 feet, well above the flood stage of 33 feet. The crests were two to three feet above flood stage from Golconda to Grand Chain, and just inches above flood stage at Cairo. These river stages resulted in minor flooding. The flooding was confined mostly to low-lying woods and fields near the river. Several county roads were closed in the Shawneetown area.

ILZ075>078-080>094 — **Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac**

25	**0700CST**	**0**	**0**			**Ice Storm**
	1800CST					

The areas hardest hit by this ice storm were along and north of a line from Harrisburg to Carbondale, where about one half inch of ice glazed all surfaces. Numerous accidents were reported. At least one overturned vehicle and a jackknifed semi were reported on Interstate 57 between West Frankfort and Mount Vernon. Scattered power outages occurred as brisk winds downed ice-laden trees and power lines. One of the largest utility companies in southern Illinois reported about 1,500 customers without power. In Saline County, a downed power line blocked Illinois Route 34 near West End and U.S. Route 45 near Ledford. Most schools were closed for at least a day following the ice storm, which occurred on a Sunday. To the south of a line from Carbondale to Harrisburg, around one quarter inch of ice coated trees and power lines, but roads were mainly wet with scattered icy spots. There were some ice-laden tree limbs and power lines brought down by gusty winds. Illinois Route 145 in Massac County was one of a number of roads partially blocked by downed limbs.

ILZ075>078-080>087 — **Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin**

27	**0100CST**	**0**	**0**			**Winter Weather/Mix**
	1100CST					

One to two inches of snow fell across parts of southern Illinois, mainly along and north of a line from Carbondale to Harrisburg and Shawneetown. The snow began as a period of freezing drizzle that left a thin coating of ice on most surfaces. Secondary roads were reportedly very slick. Main roads, which received attention from road crews sooner, were mainly wet with some slick spots. Some icing of trees and power lines was reported in Saline County.

Storm Data and Unusual Weather Phenomena

January 2004

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

ILLINOIS, South

ILZ075>078-080>087-089>091 — **Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Johnson - Pope - Hardin**

29	**1500CST**		**0**	**0**		**Winter Weather/Mix**
	2300CST					

One to two inches of snow fell across most of southern Illinois, except for the southern tip from Metropolis to Cairo and Anna. A thin layer of ice formed on some surfaces just prior to the snowfall. Roads were reportedly very slick and hazardous.

ILLINOIS, Southwest

ILZ095>096 — **Adams - Brown**

03	**2330CST**		**0**	**0**		**Ice Storm**
04	**1200CST**					

A narrow band of freezing rain hit parts of West Central Illinois. Broken tree limbs fell on power lines causing power outages across the southeast half of Adams County into Brown County.

ILZ095>096 — **Adams - Brown**

05	**2200CST**		**0**	**0**		**Extreme Cold/Wind Chill**
06	**1000CST**					

Temperatures dropping into the single digits combined with a 10 to 20 mph wind produced wind chill readings across parts of West Central Illinois of 15 to 20 below zero.

ILZ058>060-064>065-069>070-074-079-095>102 — **Greene - Macoupin - Montgomery - Bond - Fayette - Clinton - Marion - Washington - Randolph - Adams - Brown - Pike - Calhoun - Jersey - Madison - St. Clair - Monroe**

25	**0600CST**		**0**	**0**		**Winter Storm**
	2200CST					

A combination of freezing rain, sleet and snow fell bringing the region to a standstill. The event started with a period of freezing rain early Sunday morning. Some places received 1/4 to 1/.2 inch of freezing rain. The freezing rain changed to sleet by mid-morning with some locations in Southwest Illinois receiving 1 to 2 inches of sleet. By afternoon, the sleet changed to snow and accumulated another 1 to 2 inches. Luckily it was a Sunday, as transportation was brought to a halt across the region. Many schools across the region were closed into mid-week as another fast moving storm brought another inch or two of snow Monday night and early Tuesday.

INDIANA, Central

INZ028>029-035 — **Warren - Tippecanoe - Fountain**

01	**0000EST**		**0**	**0**		**Flood**
02	**1300EST**					

The December flooding ended in early January along the upper portion of the Wabash River.

INZ043>044-051-060 — **Vermillion - Parke - Vigo - Sullivan**

01	**0000EST**		**0**	**0**		**Flood**
17	**0700EST**					

The December flooding continued into January 2004 along the middle and lower portion of the Wabash. 2 to 5 inches of rain fell across the basin from the 1st through the 5th creating a higher crest and also prolonged flooding into the middle of the month.

Location:	FS:	Crest:	Date of crest:
Montezuma	14.0	23.3	January 6
Terre Haute	14.0	20.4	January 6
Hutsonville	16.0	22.3	January 9
Riverton	15.0	20.2	January 10

INZ064-069>071 — **Bartholomew - Martin - Lawrence - Jackson**

02	**2030EST**		**0**	**0**		**Flood**
13	**1628EST**					

2 to 5 inches of rain fell from the 1st through the 5th on top of already saturated ground caused moderate river flooding along the East Fork White River. This was the worst flooding along the East Fork White since May 1996. There were numerous roads closed and many evacuations.

Location:	FS in feet:	Crest in feet:	Date of Crest:
Columbus	9.0	13.8	January 6
Seymour	12.0	19.0	January 5
Rivervale	20.0	32.8	January 8
Bedford	20.0	29.0	January 8
Williams	8.0	16.5	January 9
Shoals	20.0	27.9	January 10

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

INDIANA, Central

INZ039>041-047-053>055-061>062-067>068 — **Hamilton - Madison - Delaware - Marion - Owen - Morgan - Johnson - Greene - Monroe - Knox - Daviess**

03	**2300EST**			**0**	**0**			**Flood**
18	**1411EST**							

2 to 5 inches of rain fell along the White River Basin from the 1st through the 5th causing the worst flood along the lower White River since May 2002. Extensive river flooding closed numerous local river roads and several state roads across south central Indiana.

Location:	FS:	Crest:	Date of Crest:
Muncie	9.0	10.9	January 5
Anderson	10.0	13.6	January 6
Noblesville	14.0	17.0	January 6
Nora	11.0	13.4	January 6
Ravenswood	6.0	7.9	January 6
Centerton	12.0	16.0	January 5
Spencer	14.0	22.2	January 6
Elliston	18.0	27.3	January 7
Newberry	13.0	22.8	January 8
Edwardsport	15.0	23.5	January 9
Petersburg	16.0	25.1	January 11
Hazleton	16.0	25.9	January 12

INZ067 — **Knox**

04	**0853EST**			**0**	**0**			**Flood**
18	**0925EST**							

2 to 5 inches of rain fell on the 1st through the 5th causing minor river flooding along the lower Wabash.

Location:	FS:	Crest:	Date of Crest:
Vincennes	16.0	20.0	January 10
Red Skelton Bridge	17.5	21.2	January 10
Mount Carmel	19.0	28.1	January 13

INZ021-028>031-035>049-051>057-060>065-067>072 — **Carroll - Warren - Tippecanoe - Clinton - Howard - Fountain - Montgomery - Boone - Tipton - Hamilton - Madison - Delaware - Randolph - Vermillion - Parke - Putnam - Hendricks - Marion - Hancock - Henry - Vigo - Clay - Owen - Morgan - Johnson - Shelby - Rush - Sullivan - Greene - Monroe - Brown - Bartholomew - Decatur - Knox - Daviess - Martin - Lawrence - Jackson - Jennings**

04	**1100EST**			**3**	**0**			**Flood**
06	**1100EST**							

The grounds were still rather saturated at the start of the New Year from the December heavy rain episodes when from the 1st to the 5th of January another 2-2.5 inches of rain fell across most locales north of Interstate 70 and as much as 5 inches of rain fell south of Interstate 70 (many locations recorded new daily rainfall records for January 4). This caused widespread flooding of streams and creeks especially across south central Indiana. There were also 3 fatalities all associated with people trying to drive through flooded roadways and being swept into higher water. 2 were killed in Jackson county near the Scott county line and along the Muscatatuck River. Meanwhile, a 16 year old female was killed as her car crossed high flowing water and hydroplaned upside down into a ditch filled with 4-5 feet of water. There were also numerous successful rescues of people trapped in cars in high water especially across south central Indiana. M77IW, M22IW, F16IW

INZ028>029-035 — **Warren - Tippecanoe - Fountain**

04	**1608EST**			**0**	**0**			**Flood**
12	**0557EST**							

Around 2 inches of rain fell from the 1st through the 5th on already saturated ground causing minor flooding along the upper Wabash.

Location:	FS:	Crest:	Crest Date:
Lafayette	11.0	17.9	January 6
Covington	16.0	22.0	January 6

INDIANA, Northeast

INZ003>004 — **La Porte - St. Joseph**

19	**1505EST**			**0**	**0**	**0**		**Heavy Snow**
20	**1100EST**							

Heavy lake effect snow accumulated around 12 inches across Laporte county with 13.5 inches in the city of Laporte and 11.7 inches in Rolling Prairie. Snow accumulated around 8 inches in parts of St Joseph county with 8.5 inches reported in North Liberty.

Storm Data and Unusual Weather Phenomena

January 2004

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
INDIANA, Northeast									
INZ017>018-020-022>027-032>034	**Whitley - Allen - White - Cass - Miami - Wabash - Huntington - Wells - Adams - Grant - Blackford - Jay**								
	26	**0100EST**			**0**	**0**	**0**		**Winter Storm**
		0500EST							
	Snow accumulated 2 to 5 inches across the area with with east to northeast winds of 20 to 30 mph causing extensive blowing and drifting snow. Snow drifts were as high as 4 feet across some county roads.								
INZ004>007	**St. Joseph - Elkhart - Lagrange - Steuben**								
	27	**2100EST**			**0**	**0**	**0**		**Heavy Snow**
	28	**0400EST**							
	A combination of snow from an area of low pressure moving across Ohio and lake enhancement from northwest flow behind this storm caused heavy snow across the area with general accumulations of 8 to 10 inches and over 12 inches in some locations.								
INDIANA, Northwest									
INZ001	**Lake**								
	04	**0700CST**			**0**	**0**			**Heavy Snow**
	05	**0700CST**							
	Heavy snow fell over portions of northwestern Indiana. Some snowfall amounts include; 6.8 inches in Whiting and 5.5 inches in Highland (Lake County).								
INZ001>002-010>011-019	**Lake - Porter - Newton - Jasper - Benton**								
	29	**1800CST**			**0**	**0**			**Extreme Cold/Wind Chill**
	30	**2300CST**							
	A cold arctic airmass with temperatures as low as -5F to -10F and winds of 10 to 15mph produced widespread wind chill readings from -20F to -34F.								
INDIANA, South Central									
INZ079	**Jefferson**								
	04	**1300EST**			**0**	**0**			**Flood**
	05	**1630EST**							
	The Muscatatuck River at Deputy crested at 28.9 feet around 3 AM EST on January 5. Flood stage at Deputy is 20 feet. Minor flooding occurs at this level. County roads are under water in northeastern Jefferson County, Indiana.								
INZ089	**Perry**								
	05	**1300EST**			**0**	**0**			**Flood**
	13	**1200EST**							
	The Ohio River at Tell City crested at 42.6 feet around 7 AM EST on January 10. Flood stage at Tell City is 38 feet. At this level, minor flooding occurs. Indiana 66 is flooded between Rome and Derby. The river begins to overflow both banks above and below the gage.								
INZ089	**Perry**								
	07	**0100EST**			**0**	**0**			**Flood**
	12	**0730EST**							
	The Ohio River at Cannelton crested around 43.6 feet at noon EST on January 9. Flood stage at Cannelton is 42 feet. Minor flooding occurs at this stage. Flooding of agricultural lands begins near Cloverport and Cannelton.								
INZ083	**Dubois**								
	25	**1100EST**			**0**	**0**			**Ice Storm**
		1830EST							
	Ice accumulations of around an inch prompted the county to declare a state of emergency. This closed all roads in the county, except for emergency vehicles or individuals with personal emergencies.								
INDIANA, Southeast									
INZ050-050-058-058>059-059-066-066-073>074-074	**Wayne - Fayette - Union - Franklin - Ripley - Dearborn**								
	04	**1245EST**			**0**	**0**			**Flood**
		2330EST							
	A nearly stationary front produced widespread heavy rain across much of east central and southeast Indiana throughout the day. Many locations received two to four inches of rain, causing widespread flooding of roads and low-lying areas. Numerous creeks and streams rose out of their bank and many homes sustained basement flooding.								
INZ050-058>059-066-073>075-080	**Wayne - Fayette - Union - Franklin - Ripley - Dearborn - Ohio - Switzerland**								
	25	**1530EST**			**0**	**0**			**Winter Storm**
		2100EST							

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

INDIANA, Southeast

Low pressure overspread the Ohio Valley and produced significant icing along and south of the Ohio River. North of the river, snowfall totals averaged 4 to 6 inches.

INZ066 **Franklin**

29	**2115EST**		**0**	**0**		**Winter Storm**

Low pressure tracked over the Ohio Valley and created widespread snowfall of 1 1/2 to 3 inches. One report from Brookville was 3.5 inches.

INDIANA, Southwest

INZ081>082 **Gibson - Pike**

04	**0900CST**		**0**	**0**		**Flood**
17	**2200CST**					

Moderate flooding occurred along the White River, which was above flood stage for most of the first half of January. At both Petersburg and Hazelton, where the flood stage is 16 feet, the river crested between 25 and 26 feet. The crest dates were the 11th at Petersburg and the 12th at Hazelton. River cabins were evacuated, and livestock were moved. A number of rural county roads were flooded. Extensive bottomland flooding affected agricultural and rural residential areas. State Road 257 was completely flooded.

INZ085>088 **Posey - Vanderburgh - Warrick - Spencer**

05	**0900CST**		**0**	**1**		**Flood**
17	**1700CST**					

The Ohio River rose above flood stage in response to heavy rains from Illinois to Ohio at the end of December and into the first days of January. The river flooding was moderate, consisting of extensive bottomland flooding of fields and woodlands. A number of lesser travelled county roads were closed. Some families in flood-prone areas had to find alternate routes to and from their homes. One man was swept into the floodwaters in southern Vanderburgh County as he tried to walk to dry land. Two men were driving through the flooded area when their pickup truck stalled in waist-deep water. They spent the night in a river camp that they broke into, then decided to try crossing the floodwaters to dry land. Although one of the men turned back, the second continued into the cold water and was swept away by the current. He was able to grab onto a tree, and he spent three hours wedged between its limbs before he was found. The man was airlifted to a local hospital where he was treated for hypothermia with a body temperature of 90 degrees. The river first rose above flood stage at Newburgh on the 5th and last fell below flood stage at Mount Vernon on the 17th. At Newburgh, where flood stage is 38 feet, the river crested at 45.0 feet on the 10th. Evansville crested just inches above its 42-foot flood stage. Mount Vernon crested at 42.8 feet on the 12th, nearly 8 feet over flood stage. The river was 3300 feet wide at Evansville. Basements along the riverfront began to fill, and Pigeon Creek was flooded by backwater. Near Evansville, several gravel secondary roads were closed, mostly across from Henderson, KY where there is a bend in the river.

INZ081-085 **Gibson - Posey**

05	**0900CST**		**0**	**0**		**Flood**
19	**1800CST**					

The Wabash River was above flood stage during most of the first half of the month. At Mount Carmel, where flood stage is 19 feet, the river crested at 28.1 feet late on the 12th. This resulted in extensive lowland flooding in western Gibson County. Most roads along the river were impassable. Cattle and farm equipment were moved to higher ground. The Wabash River was more than 2 miles wide at Interstate 64. Some mobile homes had to be moved, and residents of East Mount Carmel began to be affected. At New Harmony, Indiana, the river crested at 19.56 feet early on the 14th. This is almost 5 feet above flood stage. Harmonie State Park was closed.

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

25	**0500CST**		**0**	**0**		**Ice Storm**
	1700CST					

Between one quarter and one half inch of ice coated all surfaces. Roads were dangerous and locally impassable. Hundreds of accidents were reported across southwest Indiana, including jackknifed tractor trailers. Some roads were closed. A State of Emergency was declared in Spencer and Pike Counties, which banned all travel except for emergencies. State highway crews were pulled off the roads in Spencer County after three salt trucks overturned on icy roads and a fourth went into a ditch. A fatal accident occurred on Interstate 64 on the Wabash River bridge at the Illinois state line. A van heading eastbound spun out of control on the bridge. A Mexican man and woman in the van died shortly after the wreck when a tractor-trailer rig struck them and the van (indirect fatalities). Several others in the van were not injured. In Chandler, a man was found dead in his vehicle after he had been spreading ice melt on his driveway (indirect fatality). The coroner suspected weather may have contributed to his death. Scattered power outages were reported throughout southwest Indiana as brisk winds brought down ice-laden tree limbs. Thousands of homes were without power. About 12,000 customers were without power on the east side of Evansville for about 90 minutes when ice brought down a transformer line. Another large power outage was in Boonville, where about 2,000 utility customers were affected. Evansville Regional Airport was closed for about three hours. Hospital emergency rooms reported numerous slip-and-fall injuries on the ice. The volume of accident calls was so great that towing companies were unable to keep up with the demand for help. An accident on Indiana 66 east of Grandview backed up traffic for quite a distance. The storm occurred on a Sunday. Churches cancelled services, and many retail stores were closed. Schools were cancelled on the day following the ice storm.

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

27	**0100CST**		**0**	**0**		**Winter Weather/Mix**
	1100CST					

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

INDIANA, Southwest

One to two inches of snow fell across southwest Indiana. The snow began as a brief period of freezing rain that left a thin coating of ice on most surfaces. Secondary roads were reported slick and hazardous. Main roads were reported to be wet with slick spots.

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

29	**1500CST**	**0**	**0**			**Winter Weather/Mix**
	2300CST					

One to two inches of snow fell across southwest Indiana. No major travel problems were reported.

IOWA, Central

IAZ059>062-070>075-081>086-092>097 **Dallas - Polk - Jasper - Poweshiek - Cass - Adair - Madison - Warren - Marion - Mahaska - Adams - Union - Clarke - Lucas - Monroe - Wapello - Taylor - Ringgold - Decatur - Wayne - Appanoose - Davis**

04	**0500CST**	**0**	**0**	**110K**		**Heavy Snow**
	1700CST					

The seasons first push of Arctic air took place during the weekend of the 3rd and 4th. A strong high pressure was located over northwest Canada and nosed southeast into the central U.S. At the same time, a vigorous upper air system lifted northeast out of the southwest U.S. during the day on the 4th. Low pressure formed over Colorado into the Texas panhandle during the afternoon and evening of the 3rd. This low pushed east-northeast across southern Missouri on the 4th and to northern Kentucky by the evening of the 4th. A strong thermal contrast was in place across the stationary front that the low moved along. Temperatures were in the 30s to low 40s just north of the front, with 70s to the south of it along with dew points in the low to mid 60s in the warm air. This provided a rich source of moisture for the system. Overrunning took place over a large part of the central U.S. Snow broke out over Iowa during the predawn hours of the 4th and continued through the day. The snow was of the light and fluffy variety with 850 mb temperatures in the -5 to -10 degree C. in most of the snow area. The snow caused quite a few accidents across the state, however it did not present a serious travel problem. Fortunately, winds were not strong during the event. They were generally in the 10 to 20 MPH range, resulting in considerable drifting of the snow along with some blowing snow. A sharp cut-off of the heavy snow accumulations took place nearly along Interstate 80. South of the Interstate, most areas received from 6 to 10 inches of snow. Amounts tapered off rapidly to the north and by the time you were 15 to 20 miles north of the heavy snow area little more than an inch was common. The heaviest snowfall occurred in south central into the east central parts of the state. Ten inches of snow was recorded in Decatur County at Leon as well as in Wapello County at Ottumwa. A 50 mile wide band of 8 to 10 inch snows was found between these two locations.

IAZ004>006-015-023>024-033>034-044>045-047>048-057-059-070 **Emmet - Kossuth - Winnebago - Palo Alto - Pocahontas - Humboldt - Sac - Calhoun - Crawford - Carroll - Boone - Story - Audubon - Dallas - Cass**

26	**0700CST**	**0**	**0**			**Heavy Snow**
	2100CST					

A long lived snow event took place in Iowa during the day on the 25th into the day on the 26th. The seasons first significant push of Arctic air was underway as a strong cold front sagged south across the area on the 24th. Initially the airmass was quite shallow, with a layer of above freezing air located over south central and southwest Iowa. Snow began in earnest shortly after sunrise on the 25th. The accumulation rate was slow, but continuous through the 25th into the 26th. During the initial stages of the snow event, freezing rain was reported over the southwest part of the state. Roads became icy quite quickly, resulting in 4 traffic related deaths. The freezing rain changed over to snow within a couple of hours. From that point on, snow spread northeast across the CWA through the day on the 25th into the evening hours. The heaviest snow occurred over the west third of Iowa where a significant north to south deformation zone became established. The upper air flow was from the southwest as an upper level closed low approached from the southwest. Snowfall of a foot or more was recorded in a few locations. Nearly 12 inches fell in Cass County at Atlantic. In Crawford County at Denison, 12 inches of snow was recorded with 10 inches reported in Sac County at Sac City. These were the heaviest totals in the DMX CWA. Reports indicated somewhat heavier amounts occurred just to the west with upwards of 14 inches reported in Glenwood. Late in the storm, a mesoscale feature developed over southwest Iowa and moved into the central counties. Heavy snow fell at the triple-point as it lifted northeast. A narrow band of 8 inch snow fell from around Dallas Center in Dallas County, northeast into the Ames area of Story County. Total snowfall over much of the remainder of northwest and central Iowa was in the 4 to 7 inch range. Following the snow, gusty northwest winds of 20 to 35 MPH swept southeast across the state. This caused considerable drifting snow and patchy blowing snow. Wind chill indices fell into the -25 to -40 degree range over the northwest two thirds of the state.

IOWA, East Central and Southeast

IAZ041-053-063>064-067>068-076>078-087 **Delaware - Jones - Iowa - Johnson - Muscatine - Scott - Keokuk - Washington - Louisa - Jefferson**

04	**0700CST**	**0**	**0**	**50K**		**Heavy Snow**
	2300CST					

The first major winter storm of the season began during the evening hours of 3 January 2004 and ended by 2300 CST 4 January 2004. A majority of the heavy snow fell across Eastern Iowa and north of U.S. 34, but mesoscale banding produced heavy snow in some Illinois counties along Interstate 80. Total snow amounts for this storm were generally 6 to 8 inches with the resultant mesoscale banding producing amounts of 8 to 10 inches across the Iowa counties of Washington, Muscatine, Keokuk, Louisa, and Jones. Mesoscale banding of the snow during the day on 4 January 2004 resulted in some areas receiving heavy snow while others

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

IOWA, East Central and Southeast

did not. A perfect example was in Delaware County Iowa. A mesoscale heavy snow band deposited 7 inches of snow over the southeast corner of the county while the remainder of the county saw amounts in the 4 to 6 inch range.

IAZ040>042-051>054-063>064 **Buchanan - Delaware - Dubuque - Benton - Linn - Jones - Jackson - Iowa - Johnson**

16 1900CST 0 0 45K Winter Weather/Mix
17 0500CST

A mixture of freezing rain and sleet developed during the evening hours of 16 January 2004 and ended before dawn on 17 January 2004 as surface temperatures climbed above freezing. Ice accumulations of one or two tenths of an inch were reported with the heaviest accumulation along the U.S. 20 corridor. The areas affected were mainly along and north of U.S. 30 in Eastern Iowa and Northwest Illinois. Numerous traffic accidents occurred that involved minor (indirect) injuries. The Iowa State Patrol reported many vehicles in the ditches along Interstate 80 in Iowa and Johnson counties, while county sheriff offices indicated that accident calls were double the usual numbers for the time of day. In Jackson County Iowa, an ambulance went off the road as it was responding to a call.

IAZ042-051>053-066 **Dubuque - Benton - Linn - Jones - Clinton**

30 0000CST 0 0 Extreme Cold/Wind Chill
0600CST

Bitter cold temperatures of 10 to 15 below zero combined with winds of 10 to 12 knots (10 to 15 mph) produced dangerous wind chills of 30 to 35 below zero across parts of Eastern Iowa. The arrival of clouds and lowering wind speeds just prior to dawn allowed wind chills to climb into the 25 to 30 below zero range.

IOWA, Northeast

IAZ008>009-030 **Mitchell - Howard - Clayton**

26 0300CST 0 0 Winter Storm
27 0600CST

A winter storm produced heavy snow across parts of northeast Iowa. Specific reports included 6.3 inches at Edgewood (Clayton County). Accumulations of 6 to 7 inches were common near the Minnesota-Iowa border from near Osage (Mitchell County) toward Lime Springs (Howard County).

IOWA, Northwest

IAZ001>003-012>014-020>022-031>032 **Lyon - Osceola - Dickinson - Sioux - O'Brien - Clay - Plymouth - Cherokee - Buena Vista - Woodbury - Ida**

25 1000CST 0 0 Winter Storm
26 2300CST

Snowfall of 6 to 13 inches was accompanied by winds strong enough to reduce visibilities to a quarter mile or less at times in blowing snow. The heaviest snow accumulations occurred in the Sioux City area. The winds also caused drifting snow, which contributed to making travel very difficult. In addition, dangerous wind chills developed late in the storm as actual temperatures fell. Numerous schools were closed and many school related activities were cancelled.

IOWA, Southwest

IAZ069-079>080-090>091 **Pottawattamie - Mills - Montgomery - Fremont - Page**

03 2300CST 0 0 Winter Storm
04 1400CST

Although periods of moderate snow fell across far southeast Nebraska and extreme southwest Iowa during the afternoon of the 3rd, the steadier, more widespread and accumulating snow moved into the region during the late evening hours on the 3rd. The snow continued into the mid afternoon hours on the 4th, shrinking to a band along Interstate-80 from Lincoln to Omaha before finally ending.

Snowfall of between 5 and 6 inches fell across the entire area, with some amounts a little higher. The higher totals included 8 inches in Oakland and Glenwood Iowa and 7 inches in La Platte, Gretna and the NWS in Valley, all in Nebraska.

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

05 1900CST 0 0 Extreme Cold/Wind Chill
06 1000CST

Bitterly cold temperatures followed a winter storm that struck parts of southeast Nebraska and southwest Iowa a few days prior. Temperatures fell to zero or a little colder by 700 pm on the 5th and bottomed out between 5 below and 10 below zero over much of the region during the early morning hours on the 6th. When combined with westerly winds around 10 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th through 1000 am on the 6th.

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

25 0500CST 0 0 Winter Storm
27 0000CST

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

IOWA, Southwest

Two different low pressure systems moving across the plains brought a prolonged winter storm event to much of eastern Nebraska and southwest Iowa, dropping as much as 15 inches of snow by the time the storm ended. The first system that moved out of the southwest U.S. brought moisture from the southern plains into the region resulting in freezing rain and sleet over parts of eastern Nebraska and southwest Iowa early on Sunday the 25th. The icing changed to snow and quickly spread northeast Sunday morning covering much of the region. A few heavy snow bands set up from southeast Nebraska northeast into western Douglas county Nebraska and Pottawattamie county Iowa Sunday afternoon.

The second low pressure system moved out of the northern Rockies Sunday night bringing Arctic air from Canada with it. The combination of Arctic air and left over moisture from the previous system resulted in heavy snowfall rates across most of the region much of Sunday night into Monday the 26th. The cold air was ushered in on north winds that gusted over 30 mph causing significant blowing and drifting snow Monday afternoon into Monday night. The strong winds and fluffy snow caused large drifts and reduced visibilities. As temperatures continued plunging Monday night, wind chills fell into the 20 below to 30 below zero range as actual temperatures fell below zero. The storm caused the cancellation of most schools Monday and many remained closed Tuesday due to the snow on the ground and the extremely cold wind chills that followed.

Higher snowfall totals in eastern Nebraska included 15 inches at Elkhorn and Bellevue, 14 inches at Plattsmouth, 13 inches at Omaha Eppley, the NWS in Valley and in northeast Lincoln, with 12 inches reported at Lyons, Fremont, Uehling, Bennington, southwest Lincoln, Hickman, Raymond, Papillion, Springfield, Friend and Fort Calhoun. Most other locations in eastern Nebraska received between 6 and 10 inches.

Heavier totals in southwest Iowa included 14 inches at Glenwood, 13 inches in Oakland, 12 inches in Little Sioux, Harlan and Castana and 11 inches at Mapleton and Underwood. Most other locations in southwest Iowa received 6 to 10 inches.

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

27	**0000CST** **1200CST**	**0**	**0**			**Extreme Cold/Wind Chill**

Extremely cold wind chills were observed over all of eastern Nebraska and southwest Iowa on the heels of the prolonged winter storm that dropped between 6 and 15 inches of snow across most of the region. North winds of 20 to 30 mph with higher gusts late Monday slowly subsided into Tuesday morning, 1/27/04. However, as temperatures fell into the single digits and then below zero, wind chill values of 20 below to 30 below were common throughout the region from around Midnight through noon on Tuesday. Most actual lows over the area by Tuesday morning were 5 below to 15 below zero. Slowly moderating temperatures and a somewhat decreased wind allowed some recovery in wind chill values toward noon Tuesday.

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

28	**0000CST** **1200CST**	**0**	**0**			**Extreme Cold/Wind Chill**

The second night in a row of extremely cold wind chill values were observed across eastern Nebraska and southwest Iowa as a another surge of Arctic air spilled south across the region. Temperatures by midnight on the 28th fell to around zero or below as north winds increased into the 10 to 20 mph range. The combination of the cold temperatures and brisk winds produced wind chill values of 15 below to 30 below zero over much of the area from midnight through noon on the 28th.

KANSAS, East

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

03 **04**	**1530CST** **1300CST**	**0**	**0**	**20K**		**Winter Storm**

A winter storm brought 2 to 5 inches of snow to areas along and north of an Abilene to Manhattan to Horton line. South of that line freezing rain and sleet produced glazing of 1/4 to 1/2 inch except in an area from Carbondale to Big Springs and Williamstown where 1/2 to 1 inch of glazing was reported. Downed power lines in the glazing area produced power outages for a time.

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

25 **26**	**0005CST** **1000CST**	**0**	**0**	**15K**		**Winter Storm**

A winter storm produced slick roads and streets leading to numerous school closings and event postponements. Glazing accumulated 1/4 to 1/2 inch thick on power lines and trees in the area. Power line damage in the area caused power outages to about 30,000 customers. The icy roads lead to 3 vehicle accidents (discussed separately). The sleet and freezing rain was followed by snow which accumulated from around 1 inch south of Interstate 70 up to 6 to 8 inches in Republic and Washington counties. In addition strong winds produced considerable blowing and drifting of snow which led to whiteout conditions at times mainly near

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

KANSAS, East

the Nebraska border.

KSZ020 **Cloud**

25 0025CST 0 2 Ice Storm

A car struck 2 emergency vehicles pulling another vehicle out of a ditch. two people in the car were injured; the 54 year old female driver and her 54 year old husband who was a passenger in the car. The incident occurred on U.S. Highway 81 1 mile south of Concordia.

KSZ038 **Wabaunsee**

25 1800CST 0 1 Ice Storm

Icy conditions on Interstate 70 near the Paxico exit caused a pickup to slide into a stopped vehicle. The pickup flipped over and seriously injured the 48 year old female driver.

KSZ040 **Douglas**

26 0855CST 0 2 Ice Storm

Three vehicles collided on an icy U.S Highway 40 6 miles west of Lawrence injuring two women. One was 24 years old and the other was 25 years old. The injuries were minor.

KSZ036 **Geary**

26 2315CST 0 0 5K Ice Storm

An ice coated tree from an ice storm earlier in the day fell through a trailer house in Junction City damaging the trailer house and a computer inside.

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

29 1700CST 0 0 Winter Storm
31 2359CST

Another winter storm moved across the area producing another round of sleet and freezing rain before changing over to snow. Once again roads became slick and hazardous resulting in numerous accidents. The changeover to snow produced an additional 1 to 3 inches accumulation south of Interstate 35 up to an additional 10 to 12 inches of accumulation near the Nebraska border. Schools were closed once again and meetings were cancelled. The storm persisted into the early part of February.

KANSAS, Extreme Southeast

NONE REPORTED.

KANSAS, North Central

NONE REPORTED.

KANSAS, Northeast

KSZ103>105 **Leavenworth - Wyandotte - Johnson**

25 0730CST 0 0 Winter Storm
1200CST

A widespread freezing rain event hit the area with ice totals of 1/4" inch reported.

KSZ057-060 **Miami - Linn**

25 0800CST 0 0 Winter Storm
1200CST

Widespread freezing rain with ice accumulations up to 1/4 of an inch.

KSZ025-102 **Atchison - Doniphan**

25 0930CST 0 0 Winter Storm
1300CST

Widespread freezing rain reported in Atchison and Doniphan counties. Ice accumulations reached 1/4 of an inch.

KANSAS, Northwest

NONE REPORTED.

KANSAS, Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

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

KANSAS, Southwest

KSZ030>031-043>046-061>066-074>081-084>090

Trego - Ellis - Scott - Lane - Ness - Rush - Hamilton - Kearny - Finney - Hodgeman - Pawnee - Stafford - Stanton - Grant - Haskell - Gray - Ford - Edwards - Kiowa - Pratt - Morton - Stevens - Seward - Meade - Clark - Comanche - Barber

	25	**1800CST**			**0**	**0**			**Heavy Snow**
	26	**1200CST**							

Snow started falling during the evening in the Hays, Ness City and Wakeeney areas early on. The snow spread quickly across the remainder of the area during the night. Wind speeds reached 20 to 30 mph dropping visibilities to under 1/4 of a mile at times. Snowfall amounts of 3 to 4 inches fell across most of the area. Less amounts of less than 2 inches fell across mainly the south central part of the area but winds did produce much blowing and drifting.

KENTUCKY, Central

Taylor County

Campbellsville	**02**	**0900EST**			**0**	**0**	**100K**		**Flash Flood**
		1150EST							

Trace, Wilson, and Buckhorn Creeks were out of their banks. Several residences along Buckhorn Creek were flooded and had to be evacuated. Burress Hollow Road was washed out. Water was over a bridge on South Jackson Street. Numerous streets and roads were covered by a foot or more of water.

KYZ026 **Ohio**

	02	**1900EST**			**0**	**0**			**Flood**
	03	**1915EST**							

The Rough River at Dundee crested at 25.6 feet around 8 AM EST on January 3. Flood stage at Dundee is 25 feet. Minor flooding occurs at this level. A section of Kentucky 69 about half a mile long on the right bank near the bridge begins to flood.

KYZ042 **Bourbon**

	03	**1100EST**			**0**	**0**			**Flood**
	04	**0100EST**							

The Stoner Creek at Paris, Kentucky, crested at 19.0 feet around 7 PM EST on January 3. Flood stage at Paris is 18 feet. At this level minor flooding occurs and the creek is at bank full.

KYZ062 **Edmonson**

	03	**2200EST**			**0**	**0**			**Flood**
	04	**2030EST**							

The Green River at Brownsville crested at 18.7 feet around 10 AM EST on January 4. Flood stage at Brownsville is 18 feet. Minor flooding occurs at this level. The river begins to overflow the lock walls and some of the lower banks, creeks, and sloughs.

KYZ045 **Nelson**

	03	**2320EST**			**0**	**0**			**Flood**
	04	**1445EST**							

The Rolling Fork Salt River at Boston, Kentucky crested around 35.3 feet at 6 AM EST on January 4. Flood stage at Boston is 35 feet. Minor flooding occurs at this level. Agricultural bottomland is covered by water.

KYZ061 **Butler**

	04	**0100EST**			**0**	**0**			**Flood**
	06	**0000EST**							

The Green River at Woodbury crested at 34.1 feet around 630 AM EST on January 5. Flood stage at Woodbury is 33 feet. Minor flooding of lowlands around the town of Woodbury begins at this level.

KYZ061 **Butler**

	05	**0700EST**			**0**	**0**			**Flood**
	06	**2100EST**							

The Green River at Rochester crested at 17.4 feet around 7 AM EST on January 6. Flood stage at Rochester is 17 feet. Minor flooding occurs at this level and the ferry is shut down.

KYZ030-030 **Jefferson**

	06	**0700EST**			**0**	**0**			**Flood**
	11	**0000EST**							

The Ohio River at Louisville, above the McAlpine Lock, crested at 24.6 feet around 3 PM EST on January 8. Flood stage is 23 feet. Below the lock, the river crested at 55.1 feet around 5 AM EST on January 8. Flood stage for the lower gage is 55 feet. At these levels, sections of River Road are closed near Cox's Park. River Front Park in downtown Louisville floods.

KENTUCKY, Eastern

Montgomery County

Mt Sterling	**02**	**0630EST**			**0**	**0**	**0**	**0**	**Flash Flood**
		0930EST							

Water was over United States Highway 460 at Town Branch Road. Water was also over the road at Hinkston Pike and West Locust Street.

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
KENTUCKY, Eastern									
Whitley County									
Corbin	**02**	**0925EST** **1230EST**			**0**	**0**	**0**	**0**	**Flash Flood**
Eight to ten inches of water were flowing over Fifth Street, downtown.									
Knox County									
2 N Girdler	**02**	**0925EST** **1230EST**			**0**	**0**	**0**	**0**	**Flash Flood**
Several homes were completely surrounded by flood water with water within inches of them, stranding the occupants inside and water was over Kentucky Highway 11 North.									
KYZ115	**Perry**								
	02	**1030EST** **1730EST**			**0**	**0**	**0**	**0**	**Flood**
Water was covering Route 550, near Hazard.									
Letcher County									
Whitesburg	**02**	**1050EST** **1630EST**			**0**	**0**	**0**	**0**	**Flash Flood**
Roads were closed due to high water, including: Kentucky Route 160 at Smoot Creek (about 2 miles west of Whitesburg), Kentucky Route 931 South (Whitesburg), and Route 2034 (northeast of Whitesburg). Water was also over the road on Kentucky Route 15 at Maryland Drive and Jenkins Road in Whitesburg.									
Pulaski County									
Nancy to Somerset	**02**	**1120EST** **1530EST**			**0**	**0**	**0**	**0**	**Flash Flood**
Roberts Port Road, southwest of Nancy, was closed due to high water. Highway 1956 at Kentucky Highway 80 was closed and a family was evacuated due to high water. In and around Somerset, several roads were closed due to high water, including: Highway 635 at Kentucky Route 39, Route 1247 at Bodie Road, Kentucky Highway 80 East (at Pumphouse Road), and Kentucky Highway 70 at Goochtown Road.									
KYZ120	**Pike**								
	02	**1305EST**			**0**	**0**	**0**	**0**	**Landslide**
One lane was closed on Route 805 near Dorton due to a mud slide.									
Pike County									
1 NE Virgie to 1 NE Elk Horn City	**02**	**1305EST** **1700EST**			**0**	**0**	**0**	**0**	**Flash Flood**
United States Route 119 was closed due to high water at Penny Bottom. There were road closures due to high water at Five Forks and Harold's Branch Road. Water was over a bridge in Elkhorn City at the grade school.									
Knott County									
Hindman	**02**	**1449EST** **1700EST**			**0**	**0**	**0**	**0**	**Flash Flood**
More than a foot of water covered Kentucky Highway 550 West and Kentucky Highway 160.									
KYZ111-114	**Lee - Owsley**								
	03 **04**	**0400EST** **0430EST**			**0**	**0**	**0**	**0**	**Flood**
KYZ059>060-087>088-106>107-109>110-117>118-120	**Powell - Menifee - Bell - Harlan - Morgan - Johnson - Magoffin - Floyd - Leslie - Letcher - Pike**								
	09	**0530EST** **1700EST**			**0**	**0**	**0**	**0**	**Heavy Snow**
Seven inches of snow were reported in Stanton on higher ridges. An upper level disturbance dumped heavy snow across portions of eastern Kentucky, with up to seven inches of snow reported on some ridges.									
KYZ044-050>052-058>060-068>069-079>080-083>086-088-104-106>120	**Fleming - Montgomery - Bath - Rowan - Estill - Powell - Menifee - Rockcastle - Jackson - Pulaski - Laurel - Wayne - Mccreary - Whitley - Knox - Harlan - Elliott - Morgan - Johnson - Wolfe - Magoffin - Floyd - Lee - Breathitt - Knott - Owsley - Perry - Clay - Leslie - Letcher - Martin - Pike**								
	25	**0700EST** **2100EST**			**0**	**0**			**Ice Storm**
A storm system moved out of the plains and into the southern Ohio Valley. Before the storm arrived, arctic air flooded into eastern Kentucky. As the storm system approached, warm air rose up and over the cold air. A brief period of snow and sleet started the event for some, but the overwhelming bulk of precipitation was freezing rain. Ice accumulations of one quarter to one half inch occurred for most areas, with Pike, Floyd, Martin, Knott, and Rowan Counties receiving up to an inch of ice accumulation. Electric									

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

companies across the area reported that about 17, 850 people were without power, but for only a short period of time.

KENTUCKY, Eastern

KENTUCKY, Northeast

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

25 1100EST 0 0 Winter Storm
2100EST

Snow and sleet accumulated 1 to 2 inches before changing to freezing rain in the afternoon. The ice from freezing rain accumulated a quarter to a half inch during the late afternoon and early evening. Temperatures rose above freezing overnight. Besides treacherous roads, no major power outages were reported.

KENTUCKY, Northern

KYZ089>100 **Carroll - Gallatin - Boone - Kenton - Campbell - Owen - Grant - Pendleton - Bracken - Robertson - Mason - Lewis**

25 1530EST 0 0 Winter Storm
2000EST

Low pressure overspread the Ohio Valley and produced significant icing along and south of the Ohio River. North of the river, snowfall totals averaged 4 to 6 inches.

KYZ093 **Campbell**

29 2200EST 0 0 Winter Storm

Low pressure tracked over the Ohio Valley and created widespread snowfall of 1 1/2 to 3 inches. One report from the Highland Heights area was 3.8 inches.

KENTUCKY, Southwest

KYZ021 **Muhlenberg**

03 0800CST 0 0 Flood
09 1800CST

The Green River rose above flood stage at TVA's Paradise fossil plant, cresting at 384.7 feet on the 6th. Flood stage at Paradise is 380 feet. This resulted in minor flooding of low-lying fields and other bottomlands.

KYZ014-018>019 **Union - Henderson - Daviess**

06 0900CST 0 0 Flood
18 1400CST

The Ohio River rose above flood stage in northwest Kentucky due to heavy rains from Illinois to Ohio at the end of December. The heavy rains lasted into the first days of January. This resulted in moderate flooding. Low-lying woodlands and fields in the river bottomlands were flooded. In Daviess County, about a dozen roads near the river were closed by high water. The closed roads included Lower River Road from U.S. Route 60 to Griffith Station, Rockport Ferry Road, Crooked Creek Road, and other secondary county roads. Backwater from the Ohio River caused flooding near the mouth of the Green River, which flooded roads in Henderson County. On one of the flooded roads near Hebbardsville, a postal worker on his route became stranded in five-foot deep floodwaters. A dump truck from the county road department towed the man's vehicle about 3/4 mile through 5-foot floodwaters to safety. Although the 35-degree water was nearly up to the ignition of the vehicle, the postal worker refused treatment for hypothermia. At J.T. Myers Lock and Dam near Uniontown, the river rose above flood stage on the 6th and fell back below flood stage on the 18th. The river crested near 44.5 feet on the 13th, which was about 7.5 feet above flood stage.

KYZ019>021 **Daviess - Mclean - Muhlenberg**

08 1400CST 0 0 Winter Weather/Mix
2300CST

One to two inches of snow fell across the Green River basin, including most of Muhlenberg County and the Owensboro area. Schools were closed the following day in Mclean and Muhlenberg Counties. A number of vehicle wrecks were reported in Muhlenberg County. The only one involving any injuries was a rollover accident on U.S. 431 near Belton that resulted in a minor injury.

KYZ004>005-007>008-010>022 **Ballard - Mccracken - Livingston - Marshall - Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson - Daviess - Mclean - Muhlenberg - Todd**

25 0500CST 0 0 Ice Storm
1700CST

The areas of western Kentucky hardest hit by this ice storm were close to the Indiana border, including the Henderson and Owensboro regions, where about one half inch of ice coated trees, power lines, and roads. Sporadic power outages occurred as wind brought down ice-laden tree limbs and power lines. At the height of the outages, about 2500 customers were without power. Power was restored to all but 175 homes by the end of the day following the ice storm. Cell phone towers were damaged, causing widespread cell phone outages. Numerous vehicle wrecks occurred, but none with serious injuries. Some of the wrecks involved salt trucks and tow trucks losing control on the ice. A four-vehicle wreck on an Audubon Parkway ramp at Kentucky 1554 involved a tow truck that slid into a wreck scene it was sent to clear. One person was slightly injured in that wreck. The state police post at Henderson worked about 55 accidents in its area, while the Henderson County Sheriff Department responded to 20 accidents. A spokesman for the state police post at Henderson reported the worst road conditions he had seen in years. Henderson County road crews were pulled off the roads due to "impassable" conditions for a time during the ice storm. Some schools cancelled classes on

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

KENTUCKY, Southwest

the day after the ice storm because power was not fully restored, and some tree limbs were still on roadways. The ice may have caused a house fire in Henderson. An ice-covered tree limb fell on a power line, causing a power surge that started a fire in the basement and spread up to the kitchen. South of the Owensboro and Henderson areas, ice accumulations were around one quarter inch as far south as a Paducah to Hopkinsville line. Most of the ice in this more southern area was on trees and power lines, resulting in fewer accidents, but there were still a number of tree limbs falling on power lines. In rural Hopkins County, about 3,000 customers lost power in the Dawson Springs, Earlington, Hanson, and St. Charles areas. In Madisonville, about 400 customers lost power. Only three weather-related accidents were reported to the state police post at Madisonville. Two people received minor injuries in a one-car crash on Highway 1668, a rural secondary road in Crittenden County.

KYZ004>005-007>008-010>011-013>016-018>020 — **Ballard - Mccracken - Livingston - Marshall - Crittenden - Lyon - Caldwell - Union - Webster - Hopkins - Henderson - Daviess - Mclean**

	26	**0500CST** **1200CST**			**0**	**0**			**Dense Fog**

Widespread dense fog enveloped much of western Kentucky, mainly along and north of a Paducah to Madisonville line. The fog formed over areas that received an ice storm the previous day. Visibilities were one quarter mile or less. The thick fog prevented any flights from departing or arriving at Owensboro-Daviess County Regional Airport for six hours.

Livingston County

Smithland	**26**	**2030CST**			**0**	**0**			**Lightning**

A lightning bolt struck a house, blowing a six-foot hole in the wall and starting a fire. The house was extensively damaged. A neighboring house caught fire, but it was not significantly damaged.

Lyon County

Eddyville	**26**	**2130CST**			**0**	**0**			**Lightning**

Lightning struck the water tower at the Kentucky State Penitentiary near Eddyville. The lightning strike caused a break in a 12-inch supply line, which emptied the tower of more than 350,000 gallons of water. The rupture forced the facility to go without running water for a while. Boilers that heat the facility were temporarily out of service.

KYZ014-018>019 — **Union - Henderson - Daviess**

	27	**0100CST** **1200CST**			**0**	**0**			**Winter Weather/Mix**

On the heels of a significant ice storm on the 25th, about an inch of snow fell early on the 27th. A woman was seriously injured in a two-vehicle accident on the Pennyrile Parkway near Kentucky 425, the Henderson by-pass. The woman was headed northbound on the parkway when she lost control on the ice, crossed the median into the southbound lanes, and struck a tractor-trailer rig. Both the north and southbound lanes of the parkway were closed for about 45 minutes. Another head-on collision on a rural secondary road in Henderson County resulted in less serious injuries. Kentucky State Police reported working only a handful of accidents. Schools were cancelled for much of the area. Ice on the runways cancelled morning flights at the Owensboro-Daviess County Regional Airport.

KYZ014>015-018>021 — **Union - Webster - Henderson - Daviess - Mclean - Muhlenberg**

	29	**1200CST** **2100CST**			**0**	**0**			**Winter Weather/Mix**

One to two inches of snow fell across northwest Kentucky, from Henderson and Owensboro south across Webster and Muhlenberg Counties. Although road conditions were reported to be hazardous, only a few minor accidents occurred.

LOUISIANA, Northeast

Concordia Parish

2 NE Clayton	**25**	**0235CST**			**0**	**0**	**2K**		**Thunderstorm Wind (G55)**

Several trees were blown down.

LOUISIANA, Northwest

NONE REPORTED.

LOUISIANA, Southeast

Jefferson Parish

Terrytown	**17**	**1030CST**			**0**	**0**	**20K**		**Thunderstorm Wind (G50)**

A metal canopy at a gas station was blown down.

Jefferson Parish

Metairie	**17**	**1515CST** **1530CST**			**0**	**0**	**350K**		**Thunderstorm Wind (G55)**

Thunderstorm winds ripped the roof off of two apartments, partially removed the roof of another apartment, damaged eight houses, and snapped trees and utility poles.

Storm Data and Unusual Weather Phenomena

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
LOUISIANA, Southwest									
Calcasieu Parish									
5 S Sulphur	**17**	**1550CST**			**0**	**0**	**5K**		**Thunderstorm Wind (G50)**
A mobile home had its roof torn off during a severe thunderstorm.									
Lafayette Parish									
7 SW Lafayette to	**25**	**0647CST**	**1**	**10**	**0**	**3**	**1M**		**Tornado (F2)**
6 SW Lafayette		**0649CST**							
A short-lived tornado destroyed two brick homes and two mobile homes, and damaged at least another 15 homes and businesses. One lady broke her shoulder when the mobile home she was in flipped over, trapping her. The other two injuries were minor - cuts and bruises.									
MAINE, North									
MEZ001>006-010>011-031>032	**Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Central Piscataquis - Central Penobscot - Southern Piscataquis - Northern Washington**								
	07	**2200EST**			**0**	**0**			**Extreme Cold/Wind Chill**
	10	**1100EST**							
Low pressure intensifying across the maritime provinces drew arctic air across the region. Winds between the intense slow moving maritimes low and arctic high pressure across Ontario province remained strong enough to combine with sub-zero temperatures to produce an extended interval of dangerous wind chills. The winds combined with sub-zero temperatures to frequently produce wind chills of 30 to 50 below zero.									
MEZ015>017	**Southern Penobscot - Interior Hancock - Central Washington**								
	08	**1600EST**			**0**	**0**			**Extreme Cold/Wind Chill**
	10	**1100EST**							
Low pressure intensifying across the maritime provinces drew arctic air across the region. Winds between the intense slow moving maritimes low and arctic high pressure across Ontario province remained strong enough to combine with sub-zero temperatures to produce an extended interval of dangerous wind chills. The winds combined with sub-zero temperatures to frequently produce wind chills of 25 to 45 below zero.									
MEZ001>006-010>011-015>017-029>032	**Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Central Piscataquis - Central Penobscot - Southern Penobscot - Interior Hancock - Central Washington - Coastal Hancock - Coastal Washington - Southern Piscataquis - Northern Washington**								
	14	**0100EST**			**0**	**0**			**Extreme Cold/Wind Chill**
	16	**1200EST**							
Low pressure intensifying across the maritime provinces drew arctic air across the region. Sustained winds of 20 to 30 mph...with gusts to 40 mph at times...developed between the intense maritimes low and arctic high pressure to the west drawing the arctic air across the region and producing dangerous wind chills. The winds combined with low temperatures of 15 to 30 below zero across northern areas and lows of 10 to 20 below zero Downeast to frequently produce wind chills of 45 to 65 below zero across northern areas with wind chills of 35 to 55 below zero Downeast. Temperatures remained below zero across northern areas during this time. High temperatures on the 15th only reached 10 to 15 below zero across northern areas...barely reaching zero along the Downeast coast. The extreme wind chills prompted many schools to close and resulted in the cancellation of events...particularly across northern portions of the region.								
MEZ011-017-032	**Central Penobscot - Central Washington - Northern Washington**								
	19	**0400EST**			**0**	**0**			**Heavy Snow**
		1900EST							
Low pressure tracking across eastern portions of the Gulf of Maine combined with a second low crossing the state to bring heavy snow to the region. Snow began during the evening of the 18th...continuing through the evening of the 19th. Storm total snow accumulations ranged from 7 to 11 inches.									
MEZ001>006	**Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook**								
	19	**0600EST**			**0**	**0**			**Heavy Snow**
		1900EST							
Low pressure tracking across eastern portions of the Gulf of Maine combined with a second low crossing the state to bring heavy snow to the region. Snow began during the evening of the 18th...continuing through the evening of the 19th. Storm total snow accumulations generally ranged from 10 to 16 inches...with localized totals to around 22 inches.									
MEZ001-003>004-010	**Northwest Aroostook - Northern Somerset - Northern Piscataquis - Central Piscataquis**								
	23	**2000EST**			**0**	**0**			**Extreme Cold/Wind Chill**
	24	**1000EST**							
Winds of 10 to 20 mph combined with temperatures falling into the teens below zero to produce wind chills of 30 to 50 below zero.									

Storm Data and Unusual Weather Phenomena

January 2004

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

MAINE, North

MEZ001>006-010>011-031>032 — **Northwest Aroostook - Northeast Aroostook - Northern Somerset - Northern Piscataquis - Northern Penobscot - Southeast Aroostook - Central Piscataquis - Central Penobscot - Southern Piscataquis - Northern Washington**

24	**1800EST**	**0**	**0**		**Extreme Cold/Wind Chill**
27	**1100EST**				

An intense slow moving low across the northern maritime provinces combined with arctic high pressure to the west to maintain sustained 10 to 20 mph winds which continued to transport arctic air across the region. The winds combined with the cold temperatures to produce an extended interval of dangerous wind chills frequently ranging from 35 to 60 below zero.

MEZ015>017-029>030 — **Southern Penobscot - Interior Hancock - Central Washington - Coastal Hancock - Coastal Washington**

24	**1800EST**	**0**	**0**		**Extreme Cold/Wind Chill**
27	**0500EST**				

An intense slow moving low across the northern maritime provinces combined with arctic high pressure to the west to maintain sustained 10 to 20 mph winds which continued to transport arctic air across the region. The winds combined with the cold temperatures to produce an extended interval of dangerous wind chills frequently ranging from 25 to 50 below zero.

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**

08	**0100EST**	**0**	**0**		**Extreme Cold/Wind Chill**
10	**1100EST**				

Low pressure in Eastern Canada funneled bitter arctic air into Northern New England on very strong and gusty northwest winds beginning on the night of Wednesday, Jan. 7, and continuing through the morning of Saturday, Jan. 10. Temperature and wind chill values of 20 to 49 degrees below zero where observed at the peak of this outbreak during the early morning hours of Friday, Jan. 9.

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**

13	**0000EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**1100EST**				

An arctic cold front moved through Northern New England on the afternoon of Jan. 13. Arctic high pressure settled southeast from Central Canada Jan. 14 through Jan. 16. Wind chill values of 33 to 50 degrees below zero were recorded during the peak of this outbreak on the morning of Jan. 15.

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**

24	**0600EST**	**0**	**0**		**Extreme Cold/Wind Chill**
25	**1200EST**				

A strong area of low pressure over Eastern Canada resulted in strong northwest winds and bitter temperatures as arctic air spilled into the Northeast on Jan. 24 and Jan. 25. Wind chill values of 22 to 42 degrees below zero were recorded across the region on the morning of Jan. 25.

MARYLAND, Central

MDZ009-013 — **Montgomery - Prince Georges**

08	**1700EST**	**0**	**0**		**Winter Weather/Mix**
09	**1400EST**				

An area of low pressure tracked across Central Virginia on the 8th and 9th. This system produced up to two inches of snow across Northern Virginia and lesser amounts over North Central Maryland and the Baltimore Metropolitan area. The dusting of snow caused widespread traffic problems as a light glaze formed on the roads. Numerous automobile accidents were reported, and schools either closed or opened two hours late on the 9th.

MDZ002>006-011-013>014 — **Allegany - Washington - Frederick - Carroll - Northern Baltimore - Southern Baltimore - Prince Georges - Anne Arundel**

10	**0100EST**	**0**	**0**		**Extreme Cold/Wind Chill**
	1100EST				

Very cold Arctic air settled over Western Maryland, North Central Maryland and the Baltimore Metropolitan area. The minimum temperatures ranged from the single digits to the lower teens, and north winds measured 10 to 15 mph. This produced wind chills on the average of 10 degrees below zero. The City of Baltimore issued a "Code Blue and opened the Federal Street shelter because of the bitter cold air. There were dozens of cases of broken water mains and pipes.

Storm Data and Unusual Weather Phenomena

January 2004

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

MARYLAND, Central

MDZ002>006-011-013>014 — **Allegany - Washington - Frederick - Carroll - Northern Baltimore - Southern Baltimore - Prince Georges - Anne Arundel**

15	2300EST	0	0		Extreme Cold/Wind Chill
16	1100EST				

A fast moving storm system brought light snow to the region on the 14th and 15th. Western Maryland counties received one to two inches of snow, while only a trace of snowfall was reported in North Central Maryland, the Baltimore Metropolitan area, and Lower Southern Maryland. There was some very cold air behind this system. Minimum temperatures across the region were in the single digits and teens. Strong northwest and west winds (20 to 25 mph with gusts to 35 mph) produced wind chills of 5 to 10 below zero on the night of the 15th and the early morning of the 16th. On a different note the winds also downed power lines in Baltimore County. Reports from a local power company show 5 thousand customers in the eastern part of Baltimore County were without heat and electricity for about 3 hours during this cold spell.

MDZ002>007-011-013>014-016>018 — **Allegany - Washington - Frederick - Carroll - Northern Baltimore - Harford - Southern Baltimore - Prince Georges - Anne Arundel - Charles - St. Mary'S - Calvert**

17	1800EST	0	0		Winter Weather/Mix
18	1600EST				

Two areas of low pressure merged over the region and produced a wintry mix of snow and freezing rain. Snow amounts from one quarter to two inches were recorded across Maryland from Allegany down to St. Mary's County. There were also reports of ice accumulations up to two tenths inch. Law Enforcement officers and Emergency personnel responded to several automobile accidents.

MDZ002>004 — **Allegany - Washington - Frederick**

23	0500EST	0	0		Extreme Cold/Wind Chill
	1000EST				

An arctic front ushered more cold air into the area on the 22nd and 23rd. Minimum temperatures were in the lower to mid teens. Strong north winds of 15 to 25 mph with gusts near 30 mph helped to produce wind chills of 5 to 10 below zero.

MDZ002 — **Allegany**

23	0500EST	0	0		Extreme Cold/Wind Chill
	1000EST				

An arctic front ushered more cold air into the area on the 22nd and 23rd. Minimum temperatures were in the lower to mid teens. Strong North winds of 15 to 25 mph with gusts near 30 mph helped to produce wind chills of 5 to 10 below zero.

MDZ002>005 — **Allegany - Washington - Frederick - Carroll**

23	1900EST	0	0		Winter Storm
24	1200EST				

An area of low pressure developed over the Lower Great Lakes brought more snow to the region on the 23rd and the 24th.
The low tracked across West Virginia, Virginia and Maryland. Snowfall totals were highest along the Maryland/Pennsylvania border. Five to six inches of snow was reported across North Central and Western Maryland. Lesser amounts of 2 to 3 inches were recorded in Harford, Northern Baltimore, Southern Baltimore and the City of Baltimore.

MDZ002>007-009>011-013>014 — **Allegany - Washington - Frederick - Carroll - Northern Baltimore - Harford - Montgomery - Howard - Southern Baltimore - Prince Georges - Anne Arundel**

25	1200EST	1	0		Winter Storm
26	1000EST				

An area of low pressure developed off the coast of North Carolina and moved north. This storm produced widespread snow, sleet and freezing drizzle over the region. Six to eight inches of snow fell across Maryland from Allegany to Anne Arundel County. The snow mixed with sleet and finally changed over to freezing drizzle before tapering off. A Harford County man died on the 26th after being struck by an automobile as he cleared his driveway. Several other accidents with minor injuries were reported to Emergency Operations Centers. Many school districts closed due to the inclement weather. M57OU

MDZ016>018 — **Charles - St. Mary'S - Calvert**

25	1200EST	0	0		Winter Weather/Mix
26	1000EST				

An area of low pressure developed off the coast of North Carolina and moved north. This system produced widespread snow, sleet and freezing drizzle over the region. Three to four inches of snow fell over Lower Southern Maryland. The snow mixed with sleet and finally changed over to freezing drizzle before tapering off. Several other minor accidents occurred according to Emergency Operations Centers. Most school districts closed.

MDZ002-006 — **Allegany - Northern Baltimore**

26	1530EST	0	0		Winter Storm
27	2230EST				

An area of low pressure moved across the region on the 26th and 27th. This storm produced a second round of freezing rain and snow. Five additional inches of snow fell across Allegany County in Western Maryland. Further east one quarter inch of ice accumulated in Northern Baltimore Due to the inclement weather, Federal agencies in the Washington DC Metropolitan area closed three hours early on the 27th. Several minor accidents were blamed on the ice as well as scattered power outages. 70,000 customers in Maryland were without power at some point in the storm. Some schools were closed again on the 27th.

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

MARYLAND, Central

MDZ005-007-009>011 **Carroll - Harford - Montgomery - Howard - Southern Baltimore**

26	**1530EST**	**1**	**0**			**Winter Weather/Mix**
27	**2230EST**					

An area of low pressure moved across the region on the 26th and 27th. This system produced a second round of freezing rain and snow. One to two additional inches of snow fell across the Baltimore Metropolitan area as well as one tenth inch of ice. Ice covered sidewalks and roadsides were blamed for the death of a pedestrian near Baltimore City. The man was struck and killed by a vehicle as he walked in the street because the sidewalks were slick and dangerous. Scattered power outages and other minor injuries were also blamed on the ice. Federal agencies in the Washington DC Metropolitan area closed three hours early on the 27th due to the inclement weather. Schools were closed again on the 27th. M52OU

MDZ007 **Harford**

28	**1200EST**	**0**	**0**	**7.5K**		**Strong Wind**
	1700EST					

High winds and ice laden power lines led to wide spread outages across Harford County on the 28th. Nearly 70 thousand customers were without power. Wind gusts up to 40 mph were reported across Northeast Maryland. Emergency shelters were opened, and power was finally restored late in the evening.

MDZ002>007 **Allegany - Washington - Frederick - Carroll - Northern Baltimore - Harford**

31	**0300EST**	**0**	**0**			**Extreme Cold/Wind Chill**
	1000EST					

Very cold arctic air combined with strong Northwest winds to produce dangerous wind chills. Minimum temperatures were in the lower teens. Wind speeds averaged 20 mph. Gusts of 30 mph were observed. This produced wind chill values of five to ten degrees below zero.

MARYLAND, Northeast

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

09	**1800EST**	**0**	**0**			**Extreme Cold/Wind Chill**
11	**1200EST**					

An arctic air mass brought some of the coldest weather in years to the Delmarva Peninsula from the evening of the 9th through the morning of the 11th. What made this even more unusual was that the brutally cold air mass occurred with no snow cover. Winds around the center of the arctic high pressure system were from the north and by-passed the warming effects normally received from the Great Lakes and subsidence from the Appalachian Mountains. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. The cold weather led to an increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood developed. Many vehicles were not starting because of dead batteries. Specific low temperatures included 6 degrees at the Baltimore-Washington International Airport, 7 degrees in Easton (Talbot County) and Salisbury (Wicomico County) and 10 degrees in Stevensville (Queen Anne's County). The arctic cold front which ushered in the colder air moved through the Eastern Shore during the day on the 9th. The high pressure system, or the core of the arctic air mass, moved from just west of James Bay on the morning of the 9th, to along the Ontario/Quebec Province border on the morning of the 10th to Virginia and North Carolina on the morning of the 11th.

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

15	**1200EST**	**0**	**0**			**Extreme Cold/Wind Chill**
16	**1200EST**					

Following the departing Alberta Clipper low pressure system, another arctic air mass invaded Maryland. While temperatures were slightly higher than the previous outbreak on the 10th and 11th, winds were stronger and the wind chill factors were lower. Most low temperatures were in the teens and the lowest hourly wind chill factors averaged around five degrees below zero.

The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. Plumbers and heating repair services had twenty-four hours worth of work. The cold weather also led to another increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood. Many vehicles were not starting because of dead batteries.

Specific low temperatures included 13 degrees at the Baltimore-Washington International Airport and 15 degrees in Stevensville (Queen Anne's County) and Easton (Talbot County). The arctic air mass came barreling behind the departing Alberta Clipper low pressure system on the 15th. The low deepened explosively as it moved offshore and the pressure gradient between it and the building high pressure system brought the lowest wind chill factors of the winter into Maryland. The high pressure ridge moved from the Red River and Upper Mississippi Valleys on the morning of the 15th, to the Great Lakes and nearby Canada on the morning of the 16th and into Pennsylvania and New York on the morning of the 17th. The core of the coldest air moved through the region during the night of the 15th with the lowest temperatures occurring between Midnight EST and 6 a.m. EST on the 16th.

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

MARYLAND, Northeast

Lowest hourly wind chill factors included 6 degrees below zero at the Baltimore-Washington International Airport and 3 degrees below zero in Salisbury (Wicomico County).

This second arctic outbreak cemented January as an unseasonably cold month. At the Baltimore-Washington International Airport, the monthly mean temperature of 27.8 degrees was 4.5 degrees colder than normal. For the state of Maryland, the average monthly temperature of 27.7 degrees was the 15th coldest January on record since 1895.

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

17	**1800EST**	**0**	**0**		**Winter Weather/Mix**
18	**0700EST**				

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across the Eastern Shore during the evening and overnight on the 17th. Precipitation began as snow across the northern part of the Eastern Shore and a mixture of freezing rain, sleet and snow across southern parts of the Eastern Shore. As warmer air moved in aloft, precipitation changed to freezing rain in all areas shortly after midnight EST on the 18th. Warmer air also moved in near the surface and the freezing rain changed to plain rain from south to north across the Eastern Shore between 4 a.m. and 7 a.m. EST. Snowfall accumulations from Queen Anne's County north averaged between 1 and 2 inches. Ice accretions across the Eastern Shore were generally less than one-tenth of an inch. Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through the Eastern Shore during the afternoon of the 18th to wring moisture from the atmosphere onto the region.

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

25	**2000EST**	**0**	**0**		**Heavy Snow**
26	**1100EST**				

Heavy snow fell from the evening of the 25th through Monday morning the 26th across the Eastern Shore. Accumulations averaged between 4 and 6 inches. After the snow ended, some spotty freezing drizzle fell across mainly southern sections of the Eastern Shore through the afternoon and into the night of the 26th. Schools were closed on the 26th and they were also closed on the 27th in Caroline County. Untreated roads were slippery.

Specific accumulations included 5.8 inches in Stevensville (Queen Anne's County), 5.0 inches in Denton and Federalsburg (Caroline County), 4.5 inches in Easton (Talbot County) and 4.0 inches in Conowingo (Cecil County).

The snow was caused by a low pressure system that developed in the lower Tennessee Valley during the morning of the 25th. A second low pressure system then developed off the South Carolina coast that evening. The second low pressure system became the primary low and moved northeast. It passed close to Wilmington, North Carolina around 1 a.m. EST on the 26th and just east of Hatteras, North Carolina around 7 a.m. EST on the 26th before it moved farther offshore.

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

27	**1700EST**	**0**	**0**		**Winter Weather/Mix**
	2200EST				

The combination of a high pressure system over nearby Canada and a pair of low pressure systems - one that moved into the Great Lakes before dissipating and another that formed over the Virginia coastal waters gave the Maryland Eastern Shore a wintry mix of freezing rain, sleet and snow. Light freezing drizzle fell throughout most of the day on the 27th. Late in the afternoon as the low pressure system was forming over the Virginia coastal waters, precipitation intensity increased and freezing rain began falling across most of the Eastern Shore. As colder air moved in from the north and precipitation intensity increased, the freezing rain changed to sleet and then snow from north to south before it ended before midnight EST. Accumulations ranged from a trace in Caroline and Talbot Counties where precipitation changed to snow just as it was ending to up to 4 inches in parts of Cecil and Kent Counties. Untreated roads were slippery.

Specific accumulations included 4.0 inches in Port Deposit (Cecil County) and Rock Hall (Kent County), 3.5 inches in Elkton (Cecil County), 3.0 inches in Conowingo (Cecil County), 1.5 inches in Chestertown (Kent County), 1.0 inch in Stevensville (Queen Anne's County) and traces in both Cordova (Talbot County) and Greensboro (Caroline County).

While the first low pressure system was heading off the North Carolina coast around sunrise on the 26th, another low pressure system was already in Arkansas. This low pressure system moved northeast into the lower Ohio Valley during the afternoon of the 26th and reached Ohio around sunrise on the 27th. The low moved north into Michigan during the afternoon of the 27th and remained nearly stationary as it slowly weakened during the evening and overnight. This low pressure system brought a wedge of warmer air aloft across the region. What made precipitation fall as either freezing rain or sleet was a large high pressure system over nearby Canada that fed cold air south near the surface. During the late afternoon of the 27th, a second low pressure system formed over the Virginia coastal waters. By 7 p.m. EST when it was located near the Virginia Capes, its central pressure was already as

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

MARYLAND, Northeast

strong as the Michigan low pressure system. The Virginia low pressure system moved northeast and intensified and by 1 a.m. EST on the 28th, was located about 120 miles east of Atlantic City, New Jersey and by 7 a.m. EST it was about 240 miles east of Atlantic City, New Jersey. As this second low pressure system intensified and its upper air support moved across the Middle Atlantic States, precipitation intensity increased and the precipitation changed to snow.

MARYLAND, South

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

25 2100EST 0 0 Winter Storm
26 1100EST

Two to four inches of snow and sleet fell across portions of the Lower Maryland Eastern Shore. Some higher amounts included: Princess Anne in Somerset county 4.3", Salisbury in Wicomico county 3.8", Snow Hill in Worcester county 3.8", and Hurlock in Dorchester county 3". The snow and sleet produced very slippery roadways, which resulted in numerous accidents and school closings for a few days.

MARYLAND, West

MDZ001 **Garrett**

24 0500EST 0 0 Heavy Snow
0800EST

A total of 8 to 9 inches of snow fell from the evening of the 23rd into the morning of the 24th. Initially, the snow was caused by a northwest flow of air over Lake Erie, but a low pressure center developed in Ohio and moved east, enough to enhance the snows over the highest elevations.

MDZ001 **Garrett**

26 0300EST 0 0 Heavy Snow
1200EST

Snow began the afternoon of the 25th. Oakland reported 6 inches of snow before 7 AM on 26th.

MDZ001 **Garrett**

27 1400EST 0 0 Heavy Snow
2200EST

Snow began the afternoon of the 27th. Oakland reported 8 inches by 3 PM; Friendsville 8 inches by 9 PM.

MASSACHUSETTS, Central and East

MAZ003>004-008>009-024 **Eastern Franklin - Northern Worcester - Western Hampshire - Western Hampden - Nantucket**

27 1900EST 0 0 Winter Storm
28 1600EST

A winter storm tracking south of New England brought heavy snow to southern New England, from western Massachusetts into much of Connecticut and southern Rhode Island. In Massachusetts, heavy snow fell across the higher elevations of western and north central Massachusetts. Heavy snow also fell on Nantucket, which was on the northern edge of the heavy snow associated with the storm. Snowfall totals of 4 to 8 inches were common in these areas.

Amounts were significantly lower across much of eastern Massachusetts. High pressure over the Gulf of Maine provided enough dry air at low levels to cause precipitation to evaporate as it headed toward Boston. Eventually, the dry air eroded and allowed for 2 to 5 inches of snow to accumulate, mostly during the tail end of the storm.

Official snowfall totals included 4.9 inches at Worcester Airport, 3.4 inches at the National Weather Service office in Taunton, 2.7 inches at Blue Hill Observatory in Milton, and 1.5 inches at Logan International Airport in Boston.

Other snowfall totals, as reported by trained spotters, included 9 inches in Leverett, 7 inches in Montague; Colrain, Greenfield, South Hadley, Amherst, Easthampton, Brimfield, Granville, Wilbraham, West Brookfield, and Nantucket; and 6 inches in Ware, Huntington, Southwick, Westfield, Fitchburg, and Hopedale.

MASSACHUSETTS, West

MAZ001-025 **Northern Berkshire - Southern Berkshire**

15 1900EST 0 0 Extreme Cold/Wind Chill
16 1100EST

An extremely cold air mass moved out of Siberia, then plunged southward through Canada and across the northeast by January 15. At the same time, a powerful storm developed off the Canadian Maritimes. The pressure gradient between the intense storm and the arctic high pressure, extending from central Canada southward through the Ohio Valley, produced gusty north to northwest winds in the 15 to 30 mph range, with higher gusts. This wind, combined with ambient temperatures ranging from zero to 10 below zero, resulted in dangerous wind chills across Berkshire County during the night of January 15 through the morning of the 16th. Equivalent wind chill readings ranged from 30 to 40 below zero.

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

MASSACHUSETTS, West

MAZ001-025 — **Northern Berkshire - Southern Berkshire**

Date	Time	Killed	Injured	Character of Storm
28	0000EST	0	0	Winter Storm
	0400EST			

A complex low pressure area moved into the Ohio Valley on January 27. Energy from this storm transferred across the Appalachians to form a secondary storm, off the mid Atlantic coast by midnight. This second storm moved northeast, south of Long Island. The two systems combined to produce a marginal winter storm event across western Massachussetts as a band of moderate to heavy snow moved over the area from around midnight into the early morning hours of the 28th. The temperature profile was cold enough for all snow. Around 7 inches of snow fell across Berkshire County with Dalton reporting 7.5 inches and Savoy 7.3 inches.

MICHIGAN, East

MIZ049 — **Huron**

Date	Time	Killed	Injured	Character of Storm
09	0500EST	0	0	Heavy Snow
10	0500EST			

A Lake Huron lake effect band produced up to eight inches of snow over parts of northern Huron County.

MIZ047>048-053>054-060>063-068>070 — **Midland - Bay - Saginaw - Tuscola - Shiawassee - Genesee - Lapeer - St. Clair - Livingston - Oakland - Macomb**

Date	Time	Killed	Injured	Character of Storm
14	0600EST	0	0	Heavy Snow
15	1100EST			

An Alberta Clipper tracked from Minnesota on January 14th, across southern Lake Michigan to near Toledo, then east to the eastern Seaboard on January 15th. While this system tracked across southern Lake Michigan, a persistent moderate to heavy snow band occurred along and north of M-59. Twelve hour snowfall with this system was generally between 6 and 11 inches across much of southeast Michigan, with the heaviest snow falling between M-59 and I-69. These high snowfall amounts are unusual for an Alberta Clipper, as these systems generally produce much less snow. This event lingered into the morning of the 15th as a Lake effect contribution off of Lake Huron helped Port Huron and Saint Clair record the highest total snowfall of 12 inches. Here are a few other specific higher amounts throughout southeast Michigan (in inches): 10.9 in White Lake (Oakland county), 10.5 in Flushing (Genesee county), 10 in Troy (Oakland county) and Burton (Genesee county), 9.5 in Clinton Township (Macomb county) and Almont (Lapeer county), 9.0 in Rochester (Oakland county), 8.5 in Owosso (Shiawassee county), 8.2 in West Saginaw (Saginaw county), 8.1 in Filion (Huron county), 8.0 in Midland (Midland county), 7.5 in Caro (Tuscola county) and Brighton (Livingston county), 7 in Bay City (Bay county) and northwest Detroit (Wayne county).

MIZ047>049-053>055-060>062-068>069-075 — **Midland - Bay - Huron - Saginaw - Tuscola - Sanilac - Shiawassee - Genesee - Lapeer - Livingston - Oakland - Washtenaw**

Date	Time	Killed	Injured	Character of Storm
26	1900EST	0	0	Winter Storm
28	0700EST			

A strong storm system lifted from the southern Plains and moved through southeast Michigan on Tuesday January 27th. Areas of snow developed across the region Monday evening. The snow was mixed with sleet, especially form M59 south. An inch or two of snow was reported in scattered locations from M59 north. This precipitation was replaced by widespread freezing drizzle overnight, with an 1/8 of an inch of ice reported in some locations from I 69 south. By Tuesday morning, the surface low tracking from Ohio moved into far southeast Michigan. Heavy freezing rain and sleet crossed the Michigan border shortly after 6 am EST. This precipitation changed to all snow during the morning, with accumulations of 1 to 2 inches per hour common, with even a couple reports of thunder. A dry slot moved into Southeast Michigan during the afternoon hours, before snow picked up again late in the day and continued into the early morning hours of Wednesday. By the time the snow ended Wednesday morning, total snowfall accumulations ranged from 5 to 10 inches. Here are a few specific snowfall totals from the storm (in inches): 10.5 in Sebewaing (Huron county), 9.2 in Otisville (Genesee county), 8.0 in Vassar (Tuscola county) and Linwood (Bay county), 7.5 in Brighton (Livingston), 7.0 in Sandusky (Sanilac county) and Chelsea (Washtenaw county), 6.7 in Owosso (Shiawassee), 6.1 in White Lake (Oakland county), 6.0 in Midland (Midland county) and Saginaw (Saginaw county).

MICHIGAN, Extreme Southwest

MIZ077>078 — **Berrien - Cass**

Date	Time	Killed	Injured	Property	Character of Storm
19	1505EST	0	0	0	Heavy Snow
20	1100EST				

Heavy lake effect snow accumulated 8 to 9 inches across northern Berrien county into Cass county with 8 inches at Watervliet and 9 inches at Dowagiac.

MIZ078>081 — **Cass - St. Joseph - Branch - Hillsdale**

Date	Time	Killed	Injured	Property	Character of Storm
27	2100EST	0	0	0	Heavy Snow
28	0400EST				

A combination of snow from an area of low pressure moving across Ohio and lake enhancement from northwest flow behind this storm caused heavy snow across the area with general accumulations of 8 to 10 inches and over 12 inches in some locations.

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

MICHIGAN, North

MIZ021 **Antrim**

05	**2315EST**		**0**	**0**		**Winter Storm**
07	**1400EST**					

MIZ027 **Kalkaska**

06	**0015EST**		**0**	**0**		**Heavy Snow**
	1000EST					

A band of heavy lake effect snow produced six to twelve inch accumulations from central Antrim County to northern Kalkaska County, including Bellaire and the Twin Lakes area. In Antrim County, the lake effect would continue into the next day (see following event), accompanied by stronger winds, significant blowing and drifting, and wind chills well below zero.

MIZ008-016>017-019>020-022 **Chippewa - Emmet - Cheboygan - Charlevoix - Leelanau - Otsego**

06	**1715EST**		**0**	**0**		**Winter Storm**
07	**1400EST**					

A passing cold front reinvigorated lake effect snow on the evening of the 6th. The airmass was too cold to support very heavy snow, but 3 to 6 inches of new accumulation combined with strong winds and earlier snowfall to produce dangerous travel conditions. Significant blowing and drifting led local law enforcement to recommend against travel, and wind chills dropped well below zero. The highest snowfall totals, around 6 inches, fell from East Jordan to Elmira in northwest Lower Michigan, and near Paradise in eastern Upper Michigan.

On the night of the 7th, an isolated lake effect snow band dumped over a foot of snow at Tahquamenon Falls on the Chippewa/Luce County line in eastern Upper Michigan.

MIZ016 **Emmet**

10	**1300EST**		**0**	**0**		**Heavy Snow**
11	**0400EST**					

A general light snow across northern Michigan was enhanced by southwest winds off of Lake Michigan. A narrow band of heavy snow dumped over a foot of new snow on Cross Village and Bliss in Emmet County. St Ignace in Mackinac County picked up 8 inches in 14 hours, just short of winter storm warning criteria.

MIZ031>036-041>042 **Manistee - Wexford - Missaukee - Roscommon - Ogemaw - Iosco - Gladwin - Arenac**

14	**1300EST**		**0**	**0**		**Heavy Snow**
	2000EST					

An Alberta Clipper low pressure system passed across southern Michigan. Snow spread north of the low on the 14th, with a band of enhanced snowfall producing 6 to 12 inches of accumulation south of a line from Frankfort to Tawas City. The heaviest snowfall was in Wexford and Missaukee Counties, where 10 to 12 inches fell.

MIZ020-025>026-031 **Leelanau - Benzie - Grand Traverse - Manistee**

19	**0500EST**		**0**	**0**		**Heavy Snow**
20	**0400EST**					

Heavy lake effect snow came in off of Lake Michigan, accompanied by gusty northwest winds and blowing and drifting. The most persistent band of snow settled in from central Leelanau County to western Grand Traverse County. Around 20 inches of snow fell near Interlochen, with drifts of 5 to 6 feet across M-72 in Leelanau County. Elsewhere, 4 to 8 inch amounts were common in Benzie and Manistee Counties.

MIZ008-015>016-019>022-025>028-031>032 **Chippewa - Mackinac - Emmet - Charlevoix - Leelanau - Antrim - Otsego - Benzie - Grand Traverse - Kalkaska - Crawford - Manistee - Wexford**

21	**1345EST**		**0**	**0**		**Heavy Snow**
23	**0300EST**					

Low pressure moved east across northern Lake Superior, pushing a cold front into and through the northern Great Lakes on the night of the 21st. Out ahead of the the front, widespread snow fell, which was enhanced by southwest winds off of Lake Michigan. This contributed to heavy snow over Eastern Upper Michigan, and near the Lake Michigan shoreline in Northwest Lower Michigan, during the day on the 21st. Four to twelve inches of snow fell in these areas, with the highest amounts near Lake Ann, Arcadia, Interlochen, and Petoskey. Winds gusted up to 40 mph, producing substantial blowing and drifting snow, and at times zero visibility. US-2 was closed west of St Igance due to the snowy and windy conditions.

After the cold front went through, winds turned northwest and ushered in a more classic lake effect snow event. Another six inches of wind-blown snow fell from Charlevoix to Grayling and Gaylord, as well as from Paradise to DeTour Village.

MIZ016>030-032>036-041>042 **Emmet - Cheboygan - Presque Isle - Charlevoix - Leelanau - Antrim - Otsego - Montmorency - Alpena - Benzie - Grand Traverse - Kalkaska - Crawford - Oscoda - Alcona - Wexford - Missaukee - Roscommon - Ogemaw - Iosco - Gladwin - Arenac**

26	**2100EST**		**0**	**0**		**Heavy Snow**
28	**0400EST**					

An extended period of heavy snow affected almost all of Northern Lower Michigan, as a strong low pressure system over the

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

MICHIGAN, North

southern plains gradually moved toward the state. An initial burst of snow, enhanced by east winds from Lake Huron, produced 6 to 10 inch amounts from Cheboygan to Alpena on the 26th. A brief lull followed in the early morning hours of the 27th before snow reintensified. Heavy snow was more widespread during the daylight hours of the 27th, with another 6 to 10 inches east of I-75, and 3 to 5 inches to the west. The snow continued into the night, gradually transitioning to lake effect snow overnight (see next event). Total snowfall amounts during this period ranged from around 10 inches near Traverse City and Cadillac, to just over 20 inches near Rogers City and Alpena. The latter area was certainly the hardest hit, with widespread school, government and business closings during the multi-day storm.

MIZ008-022 **Chippewa - Otsego**

28	**1900EST**	**0**	**0**			**Heavy Snow**
	2100EST					

Heavy lake effect snow showers developed during the morning of the 28th. In the snowbelts of Northwest Lower Michigan, around 6 inches of snow fell in the Elmira area before things tapered off in the evening. In Chippewa County in Upper Michigan, 6 to 12 inches of new snow fell at Paradise and Point Iroquois.

MIZ008-019-021>022-027>028 **Chippewa - Charlevoix - Antrim - Otsego - Kalkaska - Crawford**

30	**1700EST**	**0**	**0**			**Heavy Snow**
31	**1400EST**					

Another round of heavy lake effect snow, as cold northwest winds crossed the upper Great Lakes. Another 6 to 12 inches of snow fell in the snowbelts, with isolated amounts as high as 18 inches near Bellaire.

This was the last heavy snow event of a very snowy January. Several sites in Northern Michigan set all-time monthly snowfall records. Gaylord was one of them, where around 74 inches of snow fell during the month, exceeding the old record 68 inches in November of 1893.

MIZ017 **Cheboygan**

31	**0600EST**	**0**	**0**	**3K**		**Flood**
	1600EST					

An ice jam developed on the Sturgeon River, backing up water into the flood plain near Wolverine. One home was inundated, with damage to a big screen television among other items. Local officials manually cleared the ice jam later in the day.

MICHIGAN, Upper

MIZ001-003 **Keweenaw - Northern Houghton**

06	**1700EST**	**0**	**0**			**Blizzard**
07	**0525EST**					

MIZ001-001>002-002>004-004>007-007-009>014-084>085 **Keweenaw - Ontonagon - Northern Houghton - Baraga - Marquette - Alger - Luce - Gogebic - Iron - Dickinson - Menominee - Delta - Southern Schoolcraft - Southern Houghton - Northern Schoolcraft**

07	**0000EST**	**0**	**0**			**Winter Storm**
08	**0600EST**					

Arctic high pressure building in the northern plains pushed cold air across Lake Superior and Upper Michigan. In the lake effect snow belts of the Keweenaw Peninsula, blizzard conditions developed as strong gusty winds along with falling and blowing snow frequently reduced visibilities to near zero. Temperatures fell below zero and wind chills dropped to as low as 35 below zero during the morning on 6th. Snow accumulations of up to a foot were common over the Keweenaw Peninsula and Ontonagon County, and Phoenix measured 14 inches during this two day blizzard. An additional 6 inches of snow fell at Phoenix on the 7th and 8th to boost the storm total to 20 inches. Over areas east of Marquette, the lake effect snow intensity picked up on the 6th and continued into the 8th. Most places near Lake Superior east of Munising saw at least 6 inches of new snow, and as much as 20 inches buried Two Heart in Luce County. Travel across much of northern Upper Michigan was hampered by low visibilities in blowing and drifting snow. Numerous schools and businesses were closed in the affected areas.

MIZ001-003-005>006 **Keweenaw - Northern Houghton - Marquette - Alger**

18	**0000EST**	**0**	**0**			**Winter Storm**
19	**1800EST**					

A quick moving Alberta Clipper storm system brought lake effect snows to the western Upper Peninsula late in the day on the 17th and over the east overnight after the clipper's cold front barreled through. More cold air poured across the Upper Great Lakes on northwest winds gusting as high as 45 mph. The strong gusty winds caused considerable blowing and drifting snow and occasional "white-out" conditions. This round of lake effect snows continued from the 18th into the 20th. As much as 13.0 inches of the white stuff piled up at Wetmore in Alger County. Ironwood measured 12 inches, and Mohawk, Newberry and the Marquette NWS each had 6 to 7 inches with low visibilities in blowing and drifting snow.

MIZ001-003 **Keweenaw - Northern Houghton**

22	**0000EST**	**0**	**0**			**Blizzard**
	0800EST					

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

MICHIGAN, Upper

MIZ002-006>007-085 **Ontonagon - Alger - Luce - Northern Schoolcraft**

22	**0800EST**	**0**	**0**		**Winter Storm**
	1800EST				

Another Alberta Clipper storm dove across Upper Michigan on the 21st. Once the wind turned northwest behind the associated cold front and another bone chilling airmass invaded the Upper Great Lakes, lake effect snow became widespread and heavy at times, especially in areas favored by a northwest wind. Wind gusts as high as 35 mph caused extensive blowing and drifting of the fine powdery snow, and frequent "white-out" conditions were common over the Keweenaw Peninsula until late in the day on the 22nd. Highway M-28 was closed across Alger and Schoolcraft Counties because of occasional near zero visibility and extensive drifting snow. By the time lake effect snow began to wind down late in the day on the 23rd, storm total snowfall reached around 16 inches at Pelkie near the Baraga and Houghton County line, 13 inches at Two Heart, 12 inches at Phoenix, 11 inches at Wetmore and 10 inches at Newberry. Temperatures fell below zero by dawn on the 22nd, and wind chills reached as low as 30 to 40 below zero.

MIZ002-006>007 **Ontonagon - Alger - Luce**

28	**1600EST**	**0**	**0**		**Winter Storm**
31	**0700EST**				

As a storm system moved northeast into Canada from the central plains, cold air poured across Lake Superior in the wake of the low pressure system. Heavy snow showers fell over the favored snow belts downwind of Lake Superior from the 27th into the 31st. Areas from Ontonagon north through the Keweenaw Peninsula bore the brunt of this extended winter onslaught. Northwest winds frequently gusting between 30 and 40 mph caused extensive blowing and drifting snow with an extended period of frequent "white-out" conditions from the 28th into the 30th. Even though the intensity of the lake effect snow diminished over western Upper Michigan on the 30th, the visibility was still frequently reduced to one quarter mile in exposed locations by the gusty winds and blowing snow. Some noteworthy snow accumulations from the storm include 20 inches at White Pine and Munising, 17 inches at Newberry, and 15 inches at Phoenix. The combination of the strong and gusty northwest wind and well below normal temperatures caused bitterly cold wind chills as low as 40 to 45 below zero on the 30th.

MICHIGAN, West

MIZ050-056>057-064>065 **Muskegon - Ottawa - Kent - Allegan - Barry**

06	**1200EST**	**0**	**0**		**Blizzard**
	1900EST				

Blizzard conditions occurred across the area from around noon on the 6th through 7 pm. In this time frame, six to nine inches of snow fell across Muskegon, Ottawa, Kent, Allegan and Barry counties combined with sustained winds of 20 to 30 m.p.h. with gusts of 35 to 44 m.p.h. This caused visibility to be reduced to a quarter of a mile or less through this time period. Total snowfall up to thirteen inches was reported across parts of western Kent county from the 6th through the 8th. The blizzard conditions caused hundreds of car accidents across the area.

MIZ037>040-043>046-051>052-059 **Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Montcalm - Gratiot - Clinton**

14	**0400EST**	**0**	**0**		**Heavy Snow**
	1900EST				

An Alberta clipper moved across the area, producing heavy snow across central lower Michigan. Snowfall amounts of ten to twelve inches were common primarily north of a line from Big Rapids to Alma. The heaviest snowfall report came from Winn, in Isabella county, where twelve inches of snow was reported. Lighter snow accumulations were reported across the remainder of the area, and wind speeds were rather low (5 to 15 m.p.h.), so blowing and drifting of snow was not a problem.

MIZ037-043-064-071 **Mason - Oceana - Allegan - Van Buren**

18	**0700EST**	**0**	**0**		**Heavy Snow**
20	**0700EST**				

Lake effect snow developed and affected areas only west of US-31, close to the Lake Michigan shoreline. A foot of snow was reported within ten miles of Lake Michigan across Van Buren county by the Van Buren County Road Commission, from near South Haven to south of Covert. This area of heavy snow extended north into southwestern Allegan county. Up to seven inches of snow fell across the westernmost portions of Mason and Oceana counties, including Big and Little Sable Points.

MIZ056-064-071 **Ottawa - Allegan - Van Buren**

23	**0700EST**	**0**	**0**		**Heavy Snow**
24	**0000EST**				

An Alberta Clipper system dropped southeast to near Chicago, causing moderate to heavy snow to break out across far southwestern lower Michigan. Approximately four to six inches of snow fell mainly west of a line from Grand Haven to Battle Creek. A maximum snowfall report of eight inches was received in southern Allegan county.

MIZ037>040-043>046-050>052-056>059-064>067-071>074 **Mason - Lake - Osceola - Clare - Oceana - Newaygo - Mecosta - Isabella - Muskegon - Montcalm - Gratiot - Ottawa - Kent - Ionia - Clinton - Allegan - Barry - Eaton - Ingham - Van Buren - Kalamazoo - Calhoun - Jackson**

27	**0700EST**	**0**	**0**		**Winter Storm**
28	**0800EST**				

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

MICHIGAN, West

A low pressure system developed over the gulf coast states and moved northeast to southern Lake Huron, bringing a combination of moderate to heavy snow and strong gusty winds that caused blowing and drifting of snow across the area. The snow developed around sunrise on the 27th across extreme southwest lower Michigan and expanded northeast to cover most of central and southern lower Michigan by 10 a.m. This was the heaviest general snowfall across our area for the 2003-2004 winter season. A general six to ten inch snowfall occurred across the area with up to 14 inches of snow just east of Grand Rapids, in Montcalm county. Up to twelve inches of snow was reported across parts of Allegan and Van Buren counties.

MIZ056-064-071 **Ottawa - Allegan - Van Buren**

29	**1900EST**	**0**	**0**		**Heavy Snow**
30	**1900EST**				

Arctic air poured into lower Michigan as a strong arctic high pressure area moved into the northern Plains states. Heavy lake effect snow developed over a narrow area across extreme southwestern Ottawa county and far western Allegan and Van Buren counties, mainly west of US-31. Up to ten inches of snow fell from near South Haven to Paw Paw, in Van Buren county. Eight to ten inches of snow fell in Saugatuck (Allegan county), and seven to ten inches of snow was reported in Grand Haven (Ottawa county).

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

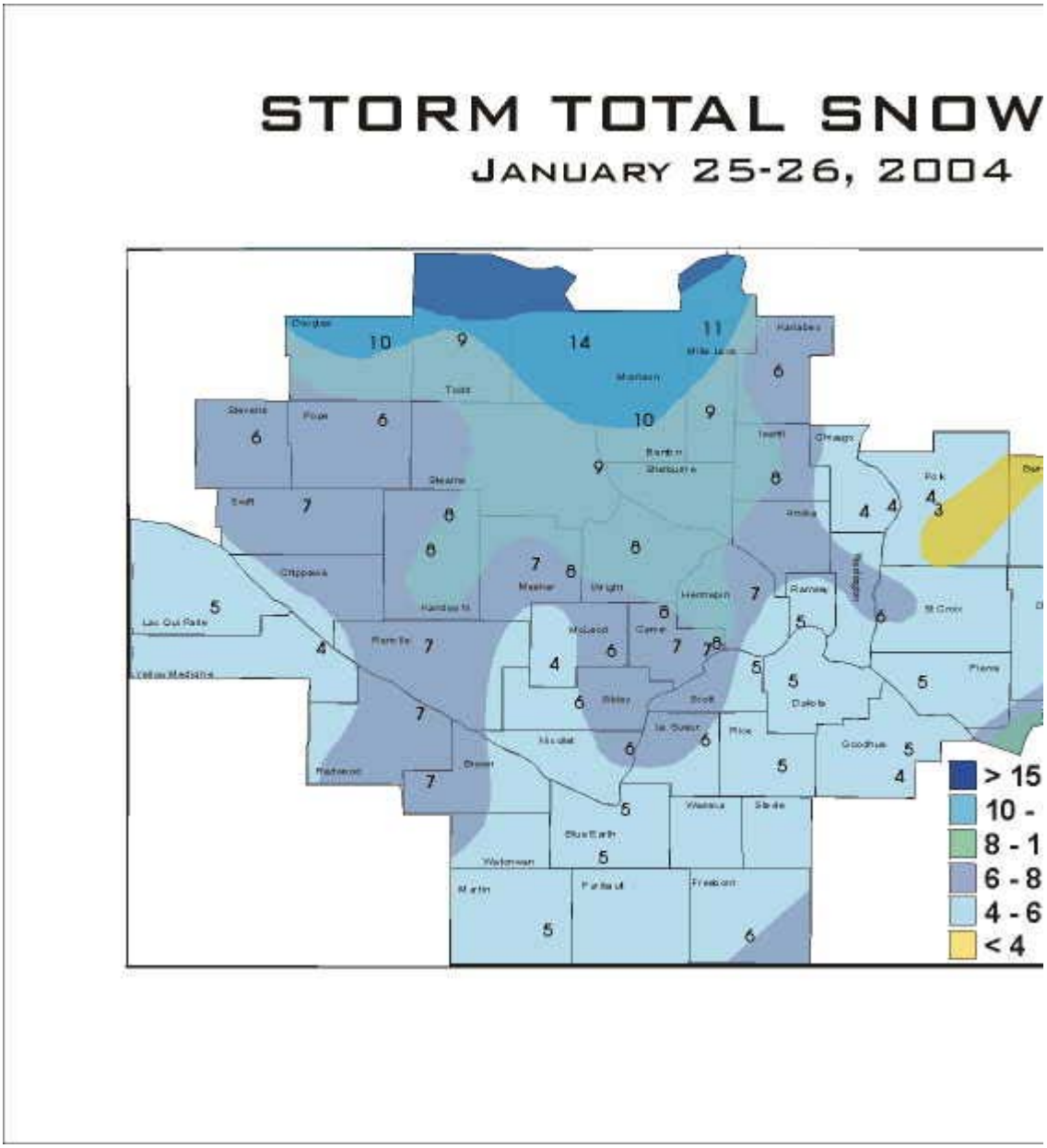
MINNESOTA, Central and South Central

MNZ041>045-047>052-054>070-073>078-082>085-091>093

Douglas - Todd - Morrison - Mille Lacs - Kanabec - Stevens - Pope - Stearns - Benton - Sherburne - Isanti - Lac Qui Parle - Swift - Chippewa - Kandiyohi - Meeker - Wright - Hennepin - Anoka - Ramsey - Washington - Yellow Medicine - Renville - Mcleod - Sibley - Carver - Scott - Dakota - Redwood - Brown - Nicollet - Le Sueur - Rice - Goodhue - Watonwan - Blue Earth - Waseca - Steele - Martin - Faribault - Freeborn

24 2100CST 0 0 Winter Storm

26 1600CST



Low pressure that formed over the Southern Great Plains moved across southeast Minnesota early on the 26th. This storm dropped moderate to heavy snow across central and south central Minnesota between late afternoon on the 24th and early afternoon on the 26th. Snowfall totals ranged from 18 to 20 inches in Todd County and northern Morrison County to around 6 inches in an area extending from Redwood Falls to the western Twin Cities suburbs (see attached graphic). The highest totals included 18 to 20 inches in Staples, 14 inches in Little Falls, 11 inches in Onamia, and 10 inches in Alexandria, Milaca, and Long Prairie. Four to 5 inches of snow fell south and east of the Redwood Falls to Twin Cities line but wind gusts to 25 MPH during this storm caused low visibility.

Storm Data and Unusual Weather Phenomena

January 2004

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

MINNESOTA, Northeast

MNZ010>012-019>021-037 — **Koochiching - Northern St. Louis - Northern Cook / Northern Lake - Central St. Louis - Southern Lake - Southern Cook - Southern St. Louis / Carlton**

13	**2000CST**	**0**	**0**		**Heavy Snow**
14	**1100CST**				

Six to 10.5 inches of snow fell across the Minnesota Arrowhead. The highest amounts were just inland from Lake Superior. Finland had 10". International Falls set a new record for daily snowfall after receiving 5.5 inches. They ended up with a total of 8 inches.

MNZ010>012-018>021-026-037 — **Koochiching - Northern St. Louis - Northern Cook / Northern Lake - Northern Itasca - Central St. Louis - Southern Lake - Southern Cook - Southern Itasca - Southern St. Louis / Carlton**

21	**2000CST**	**0**	**0**		**Extreme Cold/Wind Chill**
22	**0800CST**				

Temperatures dipped to as low as -30 F while winds were blowing at 15 to 30 mph, creating wind chills of -40 to -50.

MNZ012-019>021-025>026-033>037 — **Northern Cook / Northern Lake - Central St. Louis - Southern Lake - Southern Cook - Northern Cass - Southern Itasca - Southern Cass - Crow Wing - Northern Aitkin - Southern Aitkin - Southern St. Louis / Carlton**

25	**0300CST**	**0**	**0**		**Heavy Snow**
27	**0400CST**				

Heavy snow fell over much of northeastern Minnesota. The heavy snow area of eight or more inches was in an eighty-mile-wind swath from Pillager in southern Cass County to the tip of the Arrowhead. The most snow fell a few miles inland from Lake Superior from Duluth up the north shore where amounts ranged from a foot to just over 30 inches. The Duluth NWS had 27.1 inches, Finland DNR had 26 inches, Adolph had 25 inches while a spotter 2 miles east of Wales (southern Lake County) had 21 inches.

MINNESOTA, Northwest

MNZ001-004>009-013 — **West Polk - Kittson - Roseau - Lake Of The Woods - West Marshall - East Marshall - North Beltrami - Pennington**

02	**0440CST**	**0**	**0**		**Winter Storm**
03	**0347CST**				

A surface low over western South Dakota friday morning tracked into eastern South Dakota by late friday morning. It then tracked northeast along its inverted trough, roughly from Wahpeton, ND, at noon, to Lake of the Woods, MN, by early evening. Arctic high pressure built in quickly behind the departing low, creating a tight surface pressure gradient and gusty northwest winds. Wind speeds were steady at 20 to 30 mph with gusts to 35 mph. Wind speeds were a bit higher across the extreme northern Red River Valley. At Hallock, MN, winds gusted up to 45 mph. Blowing snow resulted in visibilities below a half-mile in open areas, and near zero at times in the northern Red River Valley. Eight inches of snow fell across portions of Roseau, East Marshall, and Northern Beltrami counties, with 4 to 6 inches elsewhere. Several schools cancelled classes and evening activities on friday.

MNZ001>002-004>009-013>017-022>023 — **West Polk - Norman - Kittson - Roseau - Lake Of The Woods - West Marshall - East Marshall - North Beltrami - Pennington - Red Lake - East Polk - North Clearwater - South Beltrami - Mahnomen - South Clearwater**

04	**1900CST**	**0**	**0**		**Extreme Cold/Wind Chill**
06	**0700CST**				

High pressure extended from eastern Montana into central South Dakota, with a decent surface pressure gradient over northwest Minnesota. This kept a steady west to northwest wind at 10 to 20 mph and wind chills from 40 below to 60 degrees below zero over portions of northwest Minnesota. The coldest morning lows on monday (January 5th) were 32 below at Baudette and 29 below at Humboldt.

MNZ006 — **Lake Of The Woods**

13	**1600CST**	**0**	**0**		**Heavy Snow**
14	**0400CST**				

An Alberta Clipper tracked from southeast Saskatchewan to Fargo, and then to the Minneapolis area. Light snow fell along and north of this low track. Most of the snow fell in the warm air ahead of the low. Angle Inlet, in northwest Lake of the Woods county, reported 6 inches of snow.

MNZ001-004>009-013>017 — **West Polk - Kittson - Roseau - Lake Of The Woods - West Marshall - East Marshall - North Beltrami - Pennington - Red Lake - East Polk - North Clearwater - South Beltrami**

21	**1500CST**	**0**	**0**		**Extreme Cold/Wind Chill**
22	**0424CST**				

Surface high pressure built into central North Dakota, with a tight pressure gradient over northwest Minnesota. Northwest winds at 10 to 20 mph and temperatures from 15 below to 25 below zero created wind chills around 40 below zero. Baudette posted the coldest wind chill, at -42 degrees below zero. Roseau had the coldest morning temperature (on the 22nd), at 22 below zero.

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

MINNESOTA, Northwest

MNZ001>009-013>017-022>024-027>032-040 — **West Polk - Norman - Clay - Kittson - Roseau - Lake Of The Woods - West Marshall - East Marshall - North Beltrami - Pennington - Red Lake - East Polk - North Clearwater - South Beltrami - Mahnomen - South Clearwater - Hubbard - West Becker - East Becker - Wilkin - West Otter Tail - East Otter Tail - Wadena - Grant**

24	**1525CST**	**0**	**0**		**Winter Storm**
26	**0315CST**				

An inverted trough extended into the northern plains from an area of surface low pressure over the central plains. Much of the area received over 6 inches of snow. A heavy snow band set up from Cooperstown to Mayville (North Dakota) and toward Wadena, Minnesota. Up to 2 feet of snow fell along this line. Wind chills of 20 below to 30 below zero also occurred during the day sunday (January 25th). 17 inches of snow fell at Hillsboro, ND, and 21 inches fell at Ada, MN. Many sunday church services and other activities were cancelled. Most schools were closed on monday, or started late. A 15 to 20 car pileup occurred on the Interstate 94 bridge between Fargo and Moorhead, with only minor injuries reported. Because of the snow, many areas only had partial mail service on monday. Such heavy amounts of snow had not been seen since the record setting winter of 1996/97. Many counties across Minnesota welcomed the heavy snow, as recent years had been tough for outdoor recreational activities.

MNZ001>009-013>017-022>024-027>032-040 — **West Polk - Norman - Clay - Kittson - Roseau - Lake Of The Woods - West Marshall - East Marshall - North Beltrami - Pennington - Red Lake - East Polk - North Clearwater - South Beltrami - Mahnomen - South Clearwater - Hubbard - West Becker - East Becker - Wilkin - West Otter Tail - East Otter Tail - Wadena - Grant**

26	**0330CST**	**0**	**0**		**Extreme Cold/Wind Chill**
31	**2359CST**				

Arctic high pressure built into the northern plains in the wake of the January 24th-26th snowstorm, which dropped heavy snow over all of northwest Minnesota. With subzero temperatures and wind speeds of 10 to 20 mph, wind chills dropped to 40 below to 65 below zero on the afternoon of the 27th. Therefore, a wind chill warning was issued from the afternoon of the 27th through the afternoon of the 28th. Dalton, MN, reported a wind chill of 62 below zero. Wind speeds dropped off enough that the wind chill warning was not extended beyond the afternoon of the 28th. However, with the arctic high pressure over the area, extremely cold temperatures abounded. On the morning of the 27th, Perley fell to 36 below zero. The coldest morning occurred on the 30th, when the temperature at Fosston fell to 50 degrees below zero, Ada fell to 48 below, Park Rapids fell to 45 below, and Thorhult fell to 43 below. These were the coldest temperatures recorded during this stretch of subzero weather. On the morning of the 31st, both Perley and Roseau reported lows of 34 degrees below zero. Auto repair shops were kept busy jumping stalled cars, installing block heaters, repairing flat tires, and fixing batteries and spark plugs. Residents around Moran Lake and Two Inlets Lake (near Park Rapids) reported brief power outages.

MINNESOTA, Southeast

MNZ079-086>088-094>096 — **Wabasha - Dodge - Olmsted - Winona - Mower - Fillmore - Houston**

26	**0300CST**	**0**	**0**		**Winter Storm**
27	**0600CST**				

Snow accumulations of 6 to 8 inches were common across southeast Minnesota as a winter storm hit the area. Snowfall totals included 8.4 inches at Stewartville (Olmsted County), 8 inches at Austin (Mower County), 7.2 inches at Preston (Fillmore County) and 7 inches at Wabasha (Wabasha County).

MINNESOTA, Southwest

MNZ071>072-080>081-089>090-097>098 — **Lincoln - Lyon - Murray - Cottonwood - Nobles - Jackson - Pipestone - Rock**

25	**1100CST**	**0**	**0**		**Winter Storm**
26	**1600CST**				

Snowfall of 5 to 10 inches was accompanied by winds strong enough to reduce visibilities to a quarter mile or less at times in blowing snow. The winds also caused drifting snow, which contributed to making travel very difficult. In addition, dangerous wind chills developed late in the storm as actual temperatures fell. Numerous schools were closed and many school related activities were cancelled.

MINNESOTA, West

NONE REPORTED.

MINNESOTA, West Central

MNZ039-046 — **Traverse - Big Stone**

25	**1300CST**	**0**	**0**		**Heavy Snow**
26	**0400CST**				

Heavy snow of 6 to 10 inches fell across Big Stone and Traverse counties. Some snowfall amounts included, 6 inches at Artichoke Lake and Ortonville, 7 inches at Browns Valley, 9 inches at Tintah, and 10 inches at Wheaton.

Storm Data and Unusual Weather Phenomena

January 2004

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

MISSISSIPPI, Central

Adams County

Natchez **25** **0255CST** **0** **0** **2K** **Thunderstorm Wind (G50)**

A few trees were blown down on power lines.

MISSISSIPPI, North

NONE REPORTED.

MISSISSIPPI, South

NONE REPORTED.

MISSISSIPPI, Southeast

NONE REPORTED.

MISSOURI, East

MOZ027-034>035 **Marion - Monroe - Ralls**

03 **2330CST** **0** **0** **Ice Storm**
04 **1200CST**

A narrow band of freezing rain hits parts of Northeast Missouri causing numerous power outages and several auto accidents on ice covered highways. Electric companies had to restore power to parts of Monroe, Marion and Ralls counties. Officials in Hannibal called it the worst ice they had seen since 1991.

MOZ018>019-026>027 **Knox - Lewis - Shelby - Marion**

05 **2200CST** **0** **0** **Extreme Cold/Wind Chill**
06 **1000CST**

Temperatures dropping into the single digits along with 10 to 20 mph winds produced wind chill readings from 15 to 20 below zero.

MOZ018>019-026>027-034>036-041>042-047>052-059>065-072>075-084>085-099 **Knox - Lewis - Shelby - Marion - Monroe - Ralls - Pike - Boone - Audrain - Moniteau - Cole - Osage - Callaway - Montgomery - Lincoln - Gasconade - Warren - St. Charles - Franklin - St. Louis - St. Louis (C) - Jefferson - Crawford - Washington - St. Francois - Ste. Genevieve - Iron - Madison - Reynolds**

25 **0600CST** **0** **0** **Winter Storm**
2200CST

A combination of freezing rain, sleet and snow fell bringing the region to a standstill. The event started with a period of freezing rain early Sunday morning. Some places received 1/4 to 1/.2 inch of freezing rain. The freezing rain changed to sleet by mid-morning with some locations in Central and East Central Missouri receiving 1 to 2 inches of sleet. By afternoon, the sleet changed to snow and accumulated another 1 to 2 inches. Luckily it was a Sunday, as transportation was brought to a halt across the region. Some power outages were also reported in Central Missouri. Many schools across the region were closed into mid-week as another fast moving storm brought another inch or two of snow Monday night and early Tuesday.

MISSOURI, Lower

NONE REPORTED.

MISSOURI, Northeast

NONE REPORTED.

MISSOURI, Northwest

MOZ003-005>006-012 **Worth - Harrison - Mercer - Andrew**

04 **0600CST** **0** **0** **Winter Storm**
1100CST

A winter storm produced 6 to 7 inches of snow across the area.

MOZ044-046-054 **Johnson - Cooper - Henry**

18 **0200CST** **0** **0** **Flood**
2300CST

Heavy rains on the 18th caused minor flooding on creeks and rivers in west central and central Missouri. The Blackwater River near Valley City crested at 23.60 feet, or 1.6 feet above flood stage. The Petite Saline Creek near Boonville crested at 17.15 feet, or 1.2 feet above flood stage. The South Grand River near Urich crested at 25.37 feet, or 1.4 feet above flood stage.

Storm Data and Unusual Weather Phenomena

January 2004

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

MISSOURI, Northwest

MOZ037-039>040-043>046 — **Jackson - Saline - Howard - Cass - Johnson - Pettis - Cooper**

25	**0530CST**		**0**	**0**		**Winter Storm**
	1100CST					

A widespread freezing rain event left a general 1/4" of ice, with 3 to 4 tenths reported from Cass county eastward through Cooper county.

MOZ021>022-028>032-038 — **Clinton - Caldwell - Platte - Clay - Ray - Carroll - Chariton - Lafayette**

25	**0730CST**		**0**	**0**		**Winter Storm**
	1200CST					

Widespread freezing rain event hit the area on the 25th, with ice accumulations up to 1/4 of an inch reported.

MOZ053>054 — **Bates - Henry**

25	**0800CST**		**0**	**0**		**Winter Storm**
	1200CST					

Widespread freezing rain with accumulations up to 1/4 of an inch.

MOZ011>014-020 — **Holt - Andrew - De Kalb - Daviess - Buchanan**

25	**0930CST**		**0**	**0**		**Winter Storm**
	1300CST					

Widespread freezing rain event on the 25th, with ice accumulations up to 1/4 of an inch.

MISSOURI, Southeast

MOZ076-086>087-100 — **Perry - Bollinger - Cape Girardeau - Wayne**

25	**0700CST**		**0**	**0**		**Ice Storm**
	1300CST					

The areas of southeast Missouri hardest hit by this ice storm were north and west of Cape Girardeau, including Perryville, where around one half inch of ice glazed surfaces. Numerous vehicle wrecks occurred, including two fatalities in the Perryville area. Officials in Bollinger County reported eight traffic crashes, none with serious injuries. Sporadic power outages were reported in Bollinger County, none lasting more than two or three hours. About one quarter inch of ice was observed as far south as a line from Greenville (Wayne County) to Cape Girardeau. The ice tended to be mostly on trees and power lines in the more southern areas. Some ice-laden tree limbs and power lines were brought down. About 1,100 customers were without power due to 21 separate outages in the city of Cape Girardeau. The public works department in Cape Girardeau reported six streets needed to be cleared of fallen limbs. Schools were closed in Greenville the day after the ice storm, which occurred on a Sunday.

MISSOURI, Southwest

MOZ055>058-067>071-079>083-091>092-098 — **Benton - Morgan - Miller - Maries - St. Clair - Hickory - Camden - Pulaski - Phelps - Polk - Dallas - Laclede - Texas - Dent - Webster - Wright - Shannon**

25	**0200CST**		**0**	**0**		**Ice Storm**
	0700CST					

A strong upper level storm system approached southern and central Missouri during the overnight hours of January 24th. Low level temperature fields assumed a structure conducive for significant accumulations of freezing rain. Accumulations ranged from less than a quarter of an inch from Joplin to West Plains, and up to an inch near the Houston and Salem areas. Numerous vehicle accidents were observed, however, no significant monetary losses can be directly related to the ice.

MONTANA, Central

MTZ008>009-012>014-047>048-050-052>055 — **Beaverhead - North Rocky Mountain Front - Cascade - Chouteau - Southern Lewis And Clark - Blaine - Southern Rocky Mountain Front - Judith Basin - Jefferson - Broadwater - Meagher - Gallatin**

01	**1200MST**		**0**	**0**		**Winter Storm**
02	**1800MST**					

A strong winter storm rang in the new year with heavy snow, gusty winds and cold temperatures across a large portion of north central Montana. Reported snow fall amounts included: 13 inches at Augusta 22SE, 11 inches at Martinsdale, 9 inches at West Yellowstone, 9 inches at the Augusta Agriculture Station, 8 inches at Carter 14W, 7 inches at Canyon Creek 4SSW, 6 inches at Marias Pass and 5 inches at Moccasin, Chinook, Helena 1S, and Malmstrom Air Force Base. In addition to the snow, gusty winds caused areas of blowing and drifting snow forcing some passes and highways to close.

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

22	**0930MST**		**0**	**0**		**High Wind (G52)**
	1540MST					

High winds developed over the Northern Rocky Mountain front and adjacent plains during daylight hours of January 22. Reports of high winds include: sustained winds of 45 mph at the Two Medicine DOT site and a gust of 60 mph at Browning.

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

MONTANA, Central

MTZ009-048 — **North Rocky Mountain Front - Southern Rocky Mountain Front**

25	**1200MST**	**0**	**0**		**Winter Storm**
30	**1700MST**				

A winter storm developed over the Rocky Mountain Front midday on January 25 and continued for several days. Reported snow fall amounts include: 30 inches at St Mary 14W, 26 inches at Marias Pass, 10 inches at Choteau 24W, 9 inches at Browning and 5 inches at Choteau 18W.

In addition to the heavy snow, strong winds developed over portions of North Central Montana during the late morning hours of January 30. Some of the winds were associated with convective activity that developed over southwest Cascade county on the 30th of January. Reported wind speeds include: a thunderstorm gust of 60 mph at Cascade 10SW, a gust of 55 mph at Great Falls, a gust of 54 mph at Silver City and a gust of 46 mph at Helena. Sleet (accumulating to a quarter of an inch) was also reported at Marysville.

MONTANA, East

MTZ016>020-022>023-059-061>062 — **Central And Se Phillips - Central And Southern Valley - Daniels - Sheridan - Western Roosevelt - Garfield - Mccone - Northern Phillips - Northern Valley - Eastern Roosevelt**

01	**1900MST**	**0**	**0**		**Winter Storm**
02	**1200MST**				

An area of low pressure tracked across northeast Montana late on the evening of the 1st, and exited the area during the morning hours of the 2nd. 2 to 4 inches fell across northeast Montana, with isolated amounts of 4 to 6 inches in central Phillips and southern Valley counties. In addition to the snow, northeast winds of 15 to 25 mph produced areas of blowing and drifting snow which reduced the visibility to a quarter of a mile in spots.

MTZ016>027-059>062 — **Central And Se Phillips - Central And Southern Valley - Daniels - Sheridan - Western Roosevelt - Petroleum - Garfield - Mccone - Richland - Dawson - Prairie - Wibaux - Northern Phillips - Little Rocky Mountains - Northern Valley - Eastern Roosevelt**

04	**2000MST**	**0**	**0**		**Extreme Cold/Wind Chill**
05	**1200MST**				

Temperatures of 15 to 30 below combined with winds of 10 to 20 mph to produce widespread wind chills of between 40 and 60 below zero. The following is a list of the lowest wind chills from across northeast Montana during the late evening hours of the 4th into the morning hours of the 5th.

Daniels county: 47 below
Dawson county: 45 below
Garfield county: 52 below
McCone county: 50 below
Petroleum county: 45 below
Phillips county: 50 below
Prairie county: 44 below
Richland county: 48 below
Roosevelt county: 57 below
Sheridan county: 47 below
Valley county: 45 below
Wibaux county: 45 below

MTZ016>027-059>062 — **Central And Se Phillips - Central And Southern Valley - Daniels - Sheridan - Western Roosevelt - Petroleum - Garfield - Mccone - Richland - Dawson - Prairie - Wibaux - Northern Phillips - Little Rocky Mountains - Northern Valley - Eastern Roosevelt**

24	**0600MST**	**0**	**0**		**Winter Storm**
31	**1200MST**				

A series of storm systems moved in off the Pacific during the last week of January and affected all of northeast Montana. In addition to snow, strong wind combined with very cold temperatures to produce wind chill readings of 40 to 60 below zero at times. Most of northeast Montana received between one and two feet of snow. The strong wind produced considerable blowing and drifting snow at times. The first storm moved into the area on the 24th, and continued into the morning hours of the 25th, producing 3 to 8 inches of snow across the area. The heaviest amounts of snow fell across Valley, Roosevelt, Daniels and Sheridan Counties where locally up to 8 inches of snow fell. Northeast winds, which gusted to 35 mph at times, created blizzard conditions, and produced numerous reports from spotters of snowdrifts several feet deep. The strong wind also caused the wind chill to drop to between 20 and 30 below across much of the area on the night of the 24th into the morning hours of the 25th. The next storm system moved into the area on the 26th, and snow developed across northeast Montana during the evening hours of the 26th and continued through the 27th. 3 to 6 inches of of snow accumulated across northeast Montana, with local amounts of up to 8 inches. In addition, the combination of temperatures of between 10 and 25 below zero and northwest winds of 20 to 30 mph with gusts to around 40 mph produced wind chills of between 40 and 60 below across all of northeast Montana. The strong wind produced considerable blowing and drifting of the snow which created blizzard conditions at times. The wind chills remained between 40 and 60 below during much of the night of the 27th into the early morning of the 28th. Another storm system quickly followed on the

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

MONTANA, East

28th, spreading snow back across northeast Montana during the day, and produced another 2 to 6 inches of snow. The combination of the snowfall and 15 to 25 mph winds produced considerable blowing and drifting snow. In addition, sub-zero temperatures combined with 15 to 25 mph winds to produce wind chills of 30 to 50 below zero. Many roads were again closed or open to emergency travel only. Yet another storm quickly followed late on the 29th into the 30th, producing several inches of additional snow across northeast Montana. By the evening of the 30th, most roads across northeast Montana were closed or open to emergency travel only. Winds of 10 to 25 mph produced considerable blowing and drifting snow, and produced wind chills of 30 to 50 below zero. The snow diminished during the night of the 30th, but strong wind and snow lingered along the North Dakota border into the morning hours of the 31st. By the time the last storm system moved out of the area by the morning of the 31st, there were numerous reports of snowdrifts several feet deep with reports of snowdrifts of up to 20 to 25 feet in the vicinity of Plentywood. Below are some selected snowfall totals during the last week of January.

Glasgow: 23.9 inches
Malta: 20.0 inches
Plentywood: 16.3 inches
Nashua: 16.0 inches
Port of Morgan: 11.0 inches

MONTANA, South

MTZ029-042 **Musselshell - Golden Valley**

25	**0830MST**	**0**	**0**		**Heavy Snow**

Heavy snow fell across northwest portions of the county warning area. The following snowfall amounts were observed:

8 inches 7SSE Klein; 6 inches 5ESE Klein; 6 inches in Ryegate.

MONTANA, West

MTZ001>004-043 **Kootenai/Cabinet Region - West Glacier Region - Flathead/Mission Valleys - Lower Clark Fork Region - Blackfoot Region**

01	**0800MST**	**0**	**0**		**Winter Storm**
02	**0800MST**				

An arctic cold front passed through northwest Montana producing widespread heavy snow and strong gusty northeast winds. Storm total snowfall ranged from 6 to 8 inches with higher amounts in the favored upslope areas, such as 12 to 16 inches from Plains to Elmo; 14 inches at Noxon; 10 inches at Polson, Big Fork and Seeley Lake; and 16 inches at Blacktail Ski Area. Strongest winds occurred the evening of January 1st, where Columbia Falls recorded gusts from the northeast at 41MPH, and Kalispell 32 MPH.

MTZ002>004-043 **West Glacier Region - Flathead/Mission Valleys - Lower Clark Fork Region - Blackfoot Region**

03	**0700MST**	**0**	**0**		**Winter Storm**
04	**0000MST**				

A reinforcing shot of cold arctic air brought dangerous winter weather conditions to northwest Montana. Arctic air spilled over the Continental Divide during the early morning hours of January 3, with northeast wind gusts between 40 to 50 MPH recorded between Kalispell and Columbia Falls, causing whiteout conditions from blowing snow. Wind Chill temperatures dropped to 25 to 30 degrees below zero, with a wind chill temperature of 52 degrees below zero reported from a weather spotter in Columbia Falls. By 1000 AM, whiteout conditions developed over the Mission Valley south of Flathead Lake, as the arctic front moved southward. Snow drifts of 5 to 7 feet were reported in Columbia Falls and in the Mission Valley. Snowfall totals for the storm were 4 to 8 inches in the valleys, and up to 10 inches in the mountains. Highway 200 between Bonner and Greenough Hill was declared emergency travel only, as well as US-93 in the Mission Valley throughout the day from poor visibility in blowing snow.

MTZ001>007-043 **Kootenai/Cabinet Region - West Glacier Region - Flathead/Mission Valleys - Lower Clark Fork Region - Missoula / Bitterroot Valleys - Bitterroot / Sapphire Mountains - Butte / Pintlar Region - Blackfoot Region**

05	**0600MST**	**0**	**0**		**Extreme Cold/Wind Chill**
06	**1000MST**				

As skies cleared and winds diminished behind a strong arctic cold front, record cold temperatures were experienced across all of western Montana. On both the 5th and 6th of January, minimum temperatures dropped to 20 to 50 degrees below zero. The Polebridge and Libby areas in northwest Montana, experienced the coldest readings with minimums of 42 to 50 degrees below zero on both the 5th and 6th. Water pipes in portions of northwest Montana froze and/or broke from the extreme cold. Discovery Ski Resort in southwest Montana closed for the day on the 5th due to extreme cold temperatures. Numerous automobiles had to be jump started. Official record lows on the 5th and 6th included: Eureka, 35 below zero on the 5th, and 31 below zero on the 6th; Olney, 34 below zero on the 5th; Polebridge, 45 below zero on the 5th; Hamilton, 28 below zero on the 5th; Anaconda, 27 below zero on the 5th, and 28 below zero on the 6th; Drummond, 36 below zero on the 5th; and Seeley Lake, 40 below zero on the 6th.

MTZ002>003 **West Glacier Region - Flathead/Mission Valleys**

07	**0800MST**	**1**	**6**		**Winter Weather/Mix**
	1800MST				

Freezing rain turned to moderate snow over Flathead County causing numerous car accidents throughout the county from very slick roads. One fatality and six injuries were reported from automobile accidents to due icy roads. F39VE

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
MONTANA, West									
MTZ002-006-043	**West Glacier Region - Bitterroot / Sapphire Mountains - Blackfoot Region**								
	24	**0700MST**			**0**	**0**			**Winter Storm**
	25	**1600MST**							
MTZ005	**Missoula / Bitterroot Valleys**								
	25	**1200MST**			**0**	**0**			**Heavy Snow**
		1600MST							

The combination of warm Pacific moisture clashing with cold arctic air spilling over the Continental Divide, produced dangerous winter weather conditions over portions of western Montana. As the cold air spilled over the Continental Divide from late evening of the 24th through the early morning hours of the 25th, temperatures dropped into the single digits with wind gusts from the east up to 30 MPH in the West Glacier Region. Wind chill temperatures also fell to 15 degrees below zero. 24 hour storm total snowfall in the West Glacier and Blackfoot Regions ranged from 6 inches in the valleys up to 11 inches in the mountains. The Bitterroot and Sapphire Mountains received 8 to 10 inches of new snow. During the day of the 25th, heavy snow fell along the I-90 corridor and Highway 93 near Missoula, causing numerous automobile accidents from icy, slick roads. Near East Missoula, a 10 vehicle accident occurred. Portions of I-90 and Highway 93 were temporarily closed with emergency travel only for several hours during the afternoon, due to poor visibility in heavy snow and very slick roads.

MTZ001	**Kootenai/Cabinet Region**								
	26	**1600MST**			**0**	**0**			**Winter Storm**
	27	**1600MST**							
MTZ002	**West Glacier Region**								
	26	**1600MST**			**0**	**0**			**Blizzard**
	27	**1600MST**							

A strong arctic cold front pushed over the Continental Divide late on January 26th into the 27th, causing blizzard conditions in the West Glacier Region and local whiteout conditions in the northern portions of northwest Montana. In a two hour period between 200 AM and 400 AM the temperature dropped 50 degrees at Logan Pass in Glacier National Park, from 16 degrees above zero to 34 degrees below zero. Heavy wind driven snow created zero visibility and forced the closure of of U.S. 2 around the southern corner of Glacier National Park over a 50-mile stretch between West Glacier and East Glacier. As the arctic front moved westward, the Department of Transportation advised emergency travel only from Columbia Heights to West Glacier, and near whiteout conditions were reported at the Canadian border at Port of Rooseville. Glacier Park personnel were ordered home early due to the poor weather conditions. 24 hour storm total snowfall ranged from 6 to 8 inches in portions of the Kootenai/Cabinet Region, to 16 to 30 inches in the West Glacier Region. Snow drifts of 3 to 4 feet were reported in the West Glacier Region.

MTZ002-043	**West Glacier Region - Blackfoot Region**								
	27	**1800MST**			**0**	**0**			**Heavy Snow**
	28	**0800MST**							
MTZ002	**West Glacier Region**								
	28	**0800MST**			**0**	**0**			**Avalanche**
	29	**0800MST**							

Heavy snowfall continued along and near the Continental Divide as an arctic frontal boundary remained stationary over the area. 24 hour storm total snowfall reports were 6 inches at Seeley Lake, 15 inches at West Glacier, 16 inches at Marias Pass and 42 inches at Noisy Basin. The arctic frontal boundary that moved through the region on January 26th, loaded the area with up to five feet of heavy wet snow by January 28th. Wide temperature fluctuations made for an unstable snowpack in the West Glacier Region to produce eight avalanches from Essex to Marias Pass, two of which hit an east bound freight train near Essex. These two avalanches knocked 15 cars off the rails, closing the tracks used by Amtrak's Empire Builder. U.S. 2 was closed for several days as crews tried to clear the snow from the tracks and highway, and avalanche danger continued to be high.

MTZ005-007	**Missoula / Bitterroot Valleys - Butte / Pintlar Region**								
	30	**0937MST**			**0**	**0**			**High Wind (G52)**
		1015MST							

A strong west to east oriented jet stream moved into western Montana during the morning hours of January 30th. Isolated thunderstorms allowed strong winds aloft to mix down into the Missoula, northern Bitterroot and Upper Clark Fork River Valleys. At the Missoula Airport, wind gusts to 60 MPH occurred at 937 AM. Shortly thereafter, estimated wind gusts of 55 to 60 MPH occurred in the northern Bitterroot Valley and at Gold Creek in Powell County, where downed trees and power lines caused power outages.

NEBRASKA, Central									
NEZ069>071	**Chase - Hayes - Frontier**								
	04	**0400CST**			**0**	**0**			**Winter Storm**
		0600CST							

An upper level trough moved eastward out of the Rockies into the High Plains of Nebraska and with abundant moisture created a favorable situation for moderate to occasionally heavy snow over the southern counties of western Nebraska. Along with the strong low level winds, snow...drifting and blowing...created hazardous conditions for travelers. Snowfall totals for this event were 8 inches at Lamar in Chase County...6 to 8 inches at Curtis in Frontier County and 6 inches at Hayes Center in Hayes County. Numerous secondary roads were closed due to snow drifts and blowing snow. At least one non-injury accident occurred in Keith

Storm Data and Unusual Weather Phenomena

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

NEBRASKA, Central

County in which weather conditions contributed.

NEBRASKA, East

NEZ050>053-065>068-091-093 — **Butler - Saunders - Douglas - Sarpy - Seward - Lancaster - Cass - Otoe - Nemaha - Richardson**

03	**2300CST**	**0**	**0**		**Winter Storm**
04	**1400CST**				

Although periods of moderate snow fell across far southeast Nebraska and extreme southwest Iowa during the afternoon of the 3rd, the steadier, more widespread and accumulating snow moved into the region during the late evening hours on the 3rd. The snow continued into the mid afternoon hours on the 4th, shrinking to a band along Interstate-80 from Lincoln to Omaha before finally ending.

Snowfall of between 5 and 6 inches fell across the entire area, with some amounts a little higher. The higher totals included 8 inches in Oakland and Glenwood Iowa and 7 inches in La Platte, Gretna and the NWS in Valley, all in Nebraska.

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**

05	**1900CST**	**1**	**0**		**Extreme Cold/Wind Chill**
06	**1000CST**				

Bitterly cold temperatures followed a winter storm that struck parts of southeast Nebraska and southwest Iowa a few days prior. Temperatures fell to zero or a little colder by 700 pm on the 5th and bottomed out between 5 below and 10 below zero over much of the region during the early morning hours on the 6th. When combined with westerly winds around 10 to 15 mph, wind chill values of 20 below to 25 below were common throughout the region from around 700 pm on the 5th through 1000 am on the 6th.

The extreme cold was responsible for the death of a 72-year-old Omaha woman who died of hypothermia on her own porch. The lightly dressed woman apparently went out to check on her car sometime after midnight and slipped on her way back into the house, possibly incapacitating her. F72OU

NEZ015-018-032>034-042>045-050>053-065>068-078-088>093 — **Thurston - Wayne - Stanton - Cuming - Burt - Platte - Colfax - Dodge - Washington - Butler - Saunders - Douglas - Sarpy - Seward - Lancaster - Cass - Otoe - Saline - Jefferson - Gage - Johnson - Nemaha - Pawnee - Richardson**

25	**0500CST**	**0**	**0**		**Winter Storm**
27	**0000CST**				

Two different low pressure systems moving across the plains brought a prolonged winter storm event to much of eastern Nebraska and southwest Iowa, dropping as much as 15 inches of snow by the time the storm ended. The first system that moved out of the southwest U.S. brought moisture from the southern plains into the region resulting in freezing rain and sleet over sections of eastern Nebraska and southwest Iowa early on Sunday the 25th. Some ice accumulations of 1/4 to 1/2 inch were reported from Jefferson county east through Gage county and north into Butler county. The icing changed to snow and quickly spread northeast Sunday morning covering much of the region. A few heavy snow bands set up from southeast Nebraska northeast into western Douglas county Nebraska and Pottawattamie county Iowa Sunday afternoon.

The second low pressure system moved out of the northern Rockies Sunday night bringing Arctic air from Canada with it. The combination of Arctic air and left over moisture from the previous system resulted in heavy snowfall rates across most of the region much of Sunday night into Monday the 26th. The cold air was ushered in on north winds that gusted over 30 mph causing significant blowing and drifting snow Monday afternoon into Monday night. The strong winds and fluffy snow caused large drifts and reduced visibilities. As temperatures continued plunging Monday night, wind chills fell into the 20 below to 30 below zero range as actual temperatures fell below zero. The storm caused the cancellation of most schools over the region Monday. Many schools remained closed Tuesday due to a combination of the snow on the ground and the extremely cold wind chills that followed.

Higher snowfall totals in eastern Nebraska included 15 inches at Elkhorn and Bellevue, 14 inches at Plattsmouth, 13 inches at Omaha Eppley, the NWS in Valley and in northeast Lincoln, with 12 inches reported at Lyons, Fremont, Uehling, Bennington, southwest Lincoln, Hickman, Raymond, Papillion, Springfield, Friend and Fort Calhoun. Most other locations in eastern Nebraska received between 6 and 10 inches.

Heavier totals in southwest Iowa included 14 inches at Glenwood, 13 inches in Oakland, 12 inches in Little Sioux, Harlan and Castana and 11 inches at Mapleton and Underwood. Most other locations in southwest Iowa received 6 to 10 inches.

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

NEBRASKA, East

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

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

Date	Time	Killed	Injured	Property	Crops	Character of Storm
27	**0000CST**	**0**	**0**			**Extreme Cold/Wind Chill**
	1200CST					

Extremely cold wind chills were observed over all of eastern Nebraska and southwest Iowa on the heels of the prolonged winter storm that dropped between 6 and 15 inches of snow across most of the region. North winds of 20 to 30 mph with higher gusts late Monday slowly subsided into Tuesday morning, 1/27/04. However, as temperatures fell into the single digits and then below zero, wind chill values of 20 below to 30 below were common throughout the region from around Midnight through noon on Tuesday. Most actual lows over the area by Tuesday morning were 5 below to 15 below zero. Slowly moderating temperatures and a somewhat decreased wind allowed some recovery in wind chill values toward noon Tuesday.

NEZ011>012-015-017>018-030>034-042>045-050>053-065>068-078-088>093

Knox - Cedar - Thurston - 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

Date	Time	Killed	Injured	Property	Crops	Character of Storm
28	**0000CST**	**0**	**0**			**Extreme Cold/Wind Chill**
	1200CST					

The second night in a row of extremely cold wind chill values were observed across eastern Nebraska and southwest Iowa as a another surge of Arctic air spilled south across the region. Temperatures by midnight on the 28th fell to around zero or below as north winds increased into the 10 to 20 mph range. The combination of the cold temperatures and brisk winds produced wind chill values of 15 below to 30 below zero over much of the area from midnight through noon on the 28th.

NEBRASKA, Extreme Northeast

NEZ013>014

Dixon - Dakota

Date	Time	Killed	Injured	Property	Crops	Character of Storm
25	**1000CST**	**0**	**0**			**Winter Storm**
26	**2300CST**					

Snowfall of 6 to 12 inches was accompanied by winds strong enough to reduce visibilities to a quarter mile or less at times in blowing snow. The winds also caused drifting snow, which contributed to making travel very difficult. In addition, dangerous wind chills developed late in the storm as actual temperatures fell. Most schools were closed and several school related activities were cancelled.

NEBRASKA, Extreme Southwest

NONE REPORTED.

NEBRASKA, South Central

NEZ061>064-072>077-082>085

Buffalo - Hall - Hamilton - York - Gosper - Phelps - Kearney - Adams - Clay - Fillmore - Furnas - Harlan - Franklin - Webster

Date	Time	Killed	Injured	Property	Crops	Character of Storm
03	**1800CST**	**0**	**0**	**0**	**0**	**Winter Storm**
04	**0900CST**					

After a balmy start to the year with temperatures in the 60s on New Year's Day, the region quickly plummeted into winter with the first widespread snowfall. The snow fell over the course of about 24 hours and in two separate bursts. The first snow swath fell from north of Minden to about York by midday on the 3rd. Snow then redeveloped by evening and continued overnight before ending by noon on the 4th. A wide swath of 6 to 8 inches fell along and either side of Interstate 80. Trumbull reported 9 inches of snow, Hastings about 8 inches, and Henderson 6 to 8 inches.

In the case of areas west of Holdrege, this snow was the first significant precipitation since early October. Specifically, Oxford had received precipitation on only 8 days since October 1st and just a trace during the month of December. So the 6 inches of fresh snow was certainly a welcome site in Oxford and other areas of drought stricken south-central Nebraska.

Once the snow had stopped, the coldest air of the season settled across the area. Temperatures fell well below zero by the 6th. Minden dropped to 19 degrees below zero and Lexington bottomed out at 26 degrees below zero.

NEZ048>049-062>064-075>077-085>087

Merrick - Polk - Hall - Hamilton - York - Adams - Clay - Fillmore - Webster - Nuckolls - Thayer

Date	Time	Killed	Injured	Property	Crops	Character of Storm
25	**1200CST**	**1**	**0**	**275K**	**0**	**Winter Storm**
26	**1600CST**					

A winter storm pounded a section of south-central Nebraska with heavy snow and strong winds. The storm primarily blasted areas along and east of U. S. Highway 281 from late Sunday evening into Monday.

Snow began in earnest by late Sunday afternoon, and turned heavy at times overnight. The snow lingered across eastern sections of

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

NEBRASKA, South Central

the area on Monday as the winds increased and temperatures dropped. The heaviest snow fell across York county where 12 inches of new snow was reported. Up to 10 inches were measured in Shickley and Nelson and 6 to 8 inches in the Grand Island area. The falling snow tapered off, but the blowing snow began. Snow, being whipped by 35 mph north winds, caused travel to become very treacherous. Many schools canceled classes as rural roads were almost impassable on the 26th. Temperatures took a nose dive and fell below zero over nearly the entire area the night of January 26th.

There were numerous accidents around the region, including over 40 in York county alone. In one accident near the town of York, the driver of a SUV lost control and hit a truck. A 5 year old girl riding in the SUV was thrown from the vehicle and died from her injuries. F5VE

NEBRASKA, West

NONE REPORTED.

NEVADA, North

NVZ031 **N Elko Cnty**

01 0000PST 0 0 Heavy Snow
0100PST

Wildhorse reported 6 inches of new snow which began during the early afternoon of the previous day.

NVZ031 **N Elko Cnty**

01 1100PST 0 0 Blizzard
1700PST

Winds estimated at 40 to 50 mph reduced visibility to less than 20 feet at times in blowing snow. The winds also caused five foot drifts of snow in residential areas in Wildhorse.

NVZ030-032>033-037 **Humboldt - Sw & Sc Elko - X E Elko - S Lander & S Eureka**

01 1100PST 0 0 High Wind (G59)
2000PST

A strong winter storm brought high winds to much of northern Nevada and portions of central Nevada. Reports included a gust to 68 mph at the Morey Creek RAWS site northeast of Winnemucca, 63 mph at Wells Summit on I-80 east of Wells, 65 mph at the Spring Gulch RAWS site in extreme eastern Elko county, and 62 mph at Austin Summit on highway 50.

NVZ031>032-037 **N Elko Cnty - Sw & Sc Elko - S Lander & S Eureka**

03 0300PST 0 0 Heavy Snow
0600PST

Heavy snow was reported across portions of northern and central Nevada. Reports included: 8 inches at Bob Scott Summit, 5 miles southeast of Austin, 8 inches at Tuscarora, and 6 inches at the National Weather Service office in Elko. Snow began around 10 pm the previous day.

NVZ031-034 **N Elko Cnty - Ruby Mountains/E Humboldt Range**

28 1100PST 0 0 Heavy Snow
1700PST

Snow began around 0700. Wildhorse ended up with 8 inches of new snow. The Hole-In-The-Mountain Snotel site on the northern end of the east Humboldt range reported 9 inches of new snow.

NEVADA, South

NONE REPORTED.

NEVADA, West

NVZ003 **Greater Reno/Carson City/Minden Area**

01 0200PST 0 0 High Wind (G52)

52 knot (60 mph) wind gust 2 miles south of Washoe City in Washoe Valley.

NVZ003 **Greater Reno/Carson City/Minden Area**

01 0300PST 0 0 Heavy Snow
02 0500PST

17 inches of snow reported at Virginia City.

NVZ002 **Greater Lake Tahoe Area**

01 0300PST 0 0 Heavy Snow
02 0500PST

Snowfall totals:

2 N Incline Village (7600 ft.)	30 inches
Mt. Rose Ski Area	28-36 inches

Storm Data and Unusual Weather Phenomena

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
NEVADA, West									
NVZ003	**Greater Reno/Carson City/Minden Area**								
	01	**0645PST**			**0**	**0**			**High Wind (G58)**
	58 knot (67 mph) wind gust 5 miles northwest of Virginia City.								
NVZ004	**Western Nevada Basin And Range**								
	01	**0700PST**			**0**	**0**			**High Wind (G52)**
	52 knot (60 mph) wind gust at Sutcliffe.								
NVZ003	**Greater Reno/Carson City/Minden Area**								
	01	**0715PST**			**0**	**0**			**High Wind (G55)**
	55 knot (63 mph) wind gust 5 miles north of Reno in Black Springs.								
NVZ004	**Western Nevada Basin And Range**								
	01	**0846PST**			**0**	**0**			**High Wind (G56)**
	56 knot (64 mph) wind gust at Pyramid Lake in Nixon.								
NVZ004	**Western Nevada Basin And Range**								
	01	**0903PST**			**0**	**0**			**High Wind (G56)**
	56 knot (65 mph) wind gust at Dead Camel Mountain RAWS.								
NVZ001	**Mineral/Southern Lyon**								
	01	**0915PST**			**0**	**0**			**High Wind (G64)**
	64 knot (74 mph) wind gust at Walker Lake.								
NVZ005	**Northern Washoe**								
	01	**0944PST**			**0**	**0**			**High Wind (G55)**
	55 knot (63 mph) wind gust at Catnip Mountain RAWS.								
NVZ005	**Northern Washoe**								
	01	**1057PST**			**0**	**0**			**High Wind (G64)**
	64 knot (74 mph) wind gust at Barrel Springs RAWS.								
NVZ001	**Mineral/Southern Lyon**								
	01	**1209PST**			**0**	**0**			**High Wind (G54)**
	54 knot (62 mph) wind gust at Hawthorne.								
NVZ005	**Northern Washoe**								
	01	**1352PST**			**0**	**0**			**High Wind (G52)**
	52 knot (60 mph) wind gust at Juniper Springs RAWS								
NVZ004	**Western Nevada Basin And Range**								
	01	**1530PST**			**0**	**0**			**High Wind (G54)**
	54 knot (62 mph) wind gust at Siard RAWS.								
NVZ002	**Greater Lake Tahoe Area**								
	02	**1300PST**			**0**	**0**			**Heavy Snow**
	03	**0600PST**							
	10 inches of snow at Mt. Rose ski area.								
NVZ001	**Mineral/Southern Lyon**								
	19	**1800PST**			**0**	**0**			**Heavy Snow**
	20	**0800PST**							
	7 inches of snow fell overnight in Smith Valley.								
NVZ003	**Greater Reno/Carson City/Minden Area**								
	19	**1800PST**			**0**	**0**			**Heavy Snow**
	20	**0800PST**							
	4 to 6 inches of snow fell overnight in Gardnerville.								
NVZ003	**Greater Reno/Carson City/Minden Area**								
	19	**1800PST**			**0**	**0**			**Heavy Snow**
	20	**0800PST**							
	5 to 6 inches of snow fell overnight in Virginia City Highlands.								
NVZ003	**Greater Reno/Carson City/Minden Area**								
	30	**0503PST**			**0**	**0**			**High Wind (G63)**
	63 knot (73 mph) wind gust reported by Galena RAWS.								
NVZ003	**Greater Reno/Carson City/Minden Area**								
	30	**0515PST**			**0**	**0**			**High Wind (G66)**
	66 knot (76 mph) wind gust reported 2 miles south of Washoe City in Washoe Valley.								

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

NEVADA, West

NVZ003 — **Greater Reno/Carson City/Minden Area**

30 0840PST 0 0 High Wind (G53)

53 knot (61 mph) wind gust reported 2 miles northwest of Carson City.

NVZ003 — **Greater Reno/Carson City/Minden Area**

30 0940PST 0 0 High Wind (G65)

65 knot (75 mph) wind gust reported by trained spotter 6 miles southwest of Gardnerville.

NEW HAMPSHIRE, North and Central

NHZ001>010-013>014 — **Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**

08 0100EST 0 0 Extreme Cold/Wind Chill
10 1100EST

Low pressure over Eastern Canada funneled arctic air into Northern New England. Wind chill values of 20 to 49 degrees below zero were recorded at the peak of the outbreak which lasted from Jan. 7 to Jan. 10.

NHZ001>010-013>014 — **Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**

13 0000EST 0 0 Extreme Cold/Wind Chill
16 1100EST

An arctic cold front moved through Northern New England on the afternoon of Jan. 13. Arctic high pressure settled southeast from Central Canada Jan. 14 through Jan. 16. Wind chill values of 33 to 50 degrees below zero were recorded during the peak of this outbreak on the morning of Jan. 15.

NHZ001>010-013>014 — **Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham**

24 0600EST 0 0 Extreme Cold/Wind Chill
25 1200EST

A strong area of low pressure over Eastern Canada resulted in strong northwest winds and bitter temperatures as arctic air spilled into the Northeast on Jan. 24 and Jan. 25. Wind chill values of 22 to 42 degrees below zero were recorded across the region on the morning of Jan. 25.

NEW HAMPSHIRE, Southern

NONE REPORTED.

NEW JERSEY, Northeast

NJZ005>006-011 — **Essex - Hudson - Union**

15 0600EST 0 0 Heavy Snow

With an arctic air mass in place, as a strong Alberta clipper moved south of Long Island, heavy snow occurred across parts of the region. Light snow developed during Wednesday evening, January 14th. It became heavy at times, mainly between midnight and 8 am on Thursday, January 15th. The Storm Total Snowfall amounts ranged from around 6 to 8 inches, as follows:

In Essex County, amounts ranged from 5.6 inches at Cedar Grove to 7.4 inches at Newark Airport.
In Hudson County, amounts ranged from 5.0 inches at Kearny to 7.1 inches at Harrison.
In Union County, amounts ranged from 5.0 inches at Garwood to 7.5 inches at Clark and Union Township.
In Bergen County, an average of 5.9 inches of snow fell. Amounts ranged from 4.5 inches at Saddle Brook to 7.3 inches at Lodi.
In Northwest Passaic County, an average of 5.9 inches fell. Amounts ranged from 5.0 inches at Greenwood Lake to 6.8 inches at Bloomingdale.

NJZ002>006-011 — **Western Passaic - Bergen - Eastern Passaic - Essex - Hudson - Union**

15 1800EST 0 0 Extreme Cold/Wind Chill
16 0800EST

An arctic cold front swept southeast across the region during Tuesday afternoon, January 13th. Extremely cold air followed this front through Wednesday, January 14th.

As an Alberta Clipper passed south of Long Island Wednesday night, it rapidly intensified as it moved northeast of Long Island Thursday. The large difference in pressure between a strong low pressure system northeast of New England and a strong arctic high pressure system in Southeast Canada resulted in the combination of extremely low temperatures, high winds, and extremely low wind chill index values from sunset Thursday evening through sunrise Friday morning, January 16th.

A record low temperature of zero degrees was set at Newark Airport at 2:53 am on January 16th. Low temperatures were around 0 (1 degree above 0 at Teterboro Airport and 1 degree below 0 at Caldwell Airport). The lowest Wind Chill Index (WCI) temperature values ranged from around 20 to 25 degrees below zero. The lowest WCI temperature was 21 degrees below 0 at Newark, Teterboro, and Caldwell Airports, where sustained wind speeds ranged from 16 to 22 mph. Peak wind gusts were between 25 and 35 mph.

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

NEW JERSEY, Northeast

NJZ002>004 — **Western Passaic - Bergen - Eastern Passaic**

Date	Time	Killed	Injured	Character of Storm
27	**2300EST**	**0**	**0**	**Heavy Snow**
28	**0100EST**			

NJZ005>006-011 — **Essex - Hudson - Union**

Date	Time	Killed	Injured	Character of Storm
28	**0100EST**	**0**	**0**	**Winter Storm**

A cold high pressure ridge extended southeast from James Bay across New England. As the primary low moved northeast toward the Eastern Great Lakes, a secondary low developed off the Mid Atlantic Coast during Tuesday morning, January 27th. This secondary low rapidly intensified as it moved northeast.

A light mixture of snow, sleet, and freezing rain spread north across Northeast NJ during Tuesday afternoon. As the precipitation rate increased during the evening, the mixture changed to a steady snow, which became heavy at times. The Storm Total Snowfall amounts ranged from around 6 to 12 inches. The highest amounts occurred across Western Passaic and Northern Bergen Counties, where less mixing occurred. The lightest amounts occurred across the urban areas of Essex, Hudson, and Union Counties where more mixing occurred.

Here are selected snowfall amounts for:
Passaic County - from 8.0 inches at Greenwood Lake to 12.2 inches at Bloomingdale.
Bergen County - from 6.8 inches at Rivervale to 11.0 inches at Elmwood Park.
Essex County - from 6.5 inches at Bloomfield and West Orange to 9.0 inches at South Orange.
Hudson County - from 5.5 inches at Kearny to 8.5 inches at Harrison.
Union County - from 5.5 inches at Garwood to 8.7 inches at Union Township.

NEW JERSEY, South and Northwest

NJZ001 — **Sussex**

Date	Time	Killed	Injured	Character of Storm
02	**0500EST**	**0**	**0**	**Winter Weather/Mix**
	0800EST			

A warm front moving northeast through northern New Jersey helped produce widely scattered pockets of light freezing rain during the early morning of the 2nd in Sussex County. The recent warm weather prevented roadways from icing. There were trace ice accretions on exposed surfaces such as trees and power lines and on untreated bridges and overpasses.

NJZ001 — **Sussex**

Date	Time	Killed	Injured	Character of Storm
04	**1800EST**	**0**	**0**	**Ice Storm**
05	**1000EST**			

Around half an inch of ice accrued on exposed surfaces in the higher terrain of Sussex County from the evening of the 4th into the morning of the 5th. Untreated roadways were extremely hazardous. The freezing rain was caused by the combination of a low pressure system that formed on a cold front in the Ohio Valley and a high pressure ridge that extended into Ontario Province, Canada. The low pressure system moved from near Paducah, Kentucky during the early afternoon of the 4th, to Cincinnati, Ohio during the evening of the 4th, into northern West Virginia during the morning of the 5th, to the southern Delaware coast during the afternoon of the 5th. While it was warm enough aloft for precipitation to fall as rain, enough cold air remained in place near the higher terrain surfaces for the rain to freeze on contact.

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**

Date	Time	Killed	Injured	Character of Storm
09	**1800EST**	**0**	**0**	**Extreme Cold/Wind Chill**
11	**1200EST**			

An arctic air mass brought some of the coldest weather in years to New Jersey from the evening of the 9th through the morning of the 11th. The low temperature of 4 degrees at nearby Philadelphia International Airport on the 10th was the coldest day of the winter and the lowest reading since February 5, 1996. What made this even more unusual was that the brutally cold air mass occurred with no snow cover. Winds around the center of the arctic high pressure system were from the north and by-passed the warming effects normally received from the Great Lakes and subsidence from the Appalachian Mountains.

The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who could not afford to heat their homes. There was a dramatic increase in phone calls to social services by individuals who have run out of heat or could not afford to pay their utility bills. Additional schools and community centers were opened as shelters. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. In Ocean County, a burst pipe and the subsequent flood ruined thousands of books at the county library in Toms River. The cold weather also led to an increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood developed. Many vehicles were not starting because of dead batteries.

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

NEW JERSEY, South and Northwest

Specific low temperatures included 10 degrees below zero in High Point (Sussex County), 8 degrees below zero in Sparta (Sussex County), 4 degrees below zero in Long Valley (Morris County), 1 degree below zero in Estell Manor (Atlantic County), Hope (Warren County) and Millville (Cumberland County), zero in Flemington (Hunterdon County) and Woodbine (Cape May County), 1 degree in New Brunswick (Middlesex County), Somerville (Somerset County) and Wrightstown (Burlington County), 2 degrees in Trenton (Mercer County), 4 degrees at the Atlantic City International Airport, West Deptford (Gloucester County) and Brant Beach (Ocean County), 5 degrees in Somerdale (Camden County), 7 degrees at the Marina within Atlantic City and 8 degrees in Cape May City. An arctic cold front cleared all of New Jersey on the 9th and cleared the way for the arctic air mass. The high pressure system, or the core of the arctic air mass, moved from just west of James Bay on the morning of the 9th, to along the Ontario/Quebec Province border on the morning of the 10th to Virginia and North Carolina on the morning of the 11th.

NJZ001-007>008-012>014-020-026 **Sussex - Warren - Morris - Middlesex - Western Monmouth - Eastern Monmouth - Western Ocean - Eastern Ocean**

14	**1800EST**	**0**	**0**		**Heavy Snow**
15	**1000EST**				

NJZ009>010-015-018>019-027 **Hunterdon - Somerset - Mercer - Camden - Northwestern Burlington - Southeastern Burlington**

14	**1800EST**	**0**	**0**		**Winter Weather/Mix**
15	**1000EST**				

An Alberta Clipper low pressure system dropped snow across all of New Jersey with the heaviest amounts in the northern half of the state. Snow began falling during the evening of the 14th and continued through the morning commute on the 15th. Accumulations ranged from one to three inches across much of the southern half of the state and from three to eight inches across Ocean County and much of the northern half of the state. The snow led to hazardous traveling conditions with many fender-benders and slip-sliding accidents. There were hundreds of spin-outs and minor accidents. Numerous minor accidents were reported on the Garden State Parkway. On the 15th, many schools in the northern half of the state were closed, most of the others had delayed openings.

Specific accumulations included 8.0 inches in Oakhurst (Monmouth County), 7.5 inches in Wantage (Sussex County), 7.0 inches in Holmdel (Monmouth County), 6.5 inches in Flanders (Morris County), 6.0 inches in Metuchen (Middlesex County), Branchville (Sussex County), Hope and Belvidere (Warren County) and Whippany (Morris County), 5.5 inches in Bound Brook (Somerset County), 5.1 inches in Belle Mead (Somerset County), 5.0 inches in Lebanon (Hunterdon County) and Toms River (Ocean County), 4.9 inches in New Brunswick (Middlesex County), 4.2 inches in Princeton (Mercer County), 4.0 inches at the McGuire Air Force Base (Burlington County) and Flemington (Hunterdon County), 3.0 inches in Pennsauken (Camden County) and Harvey Cedars (Ocean County) and 2.0 inches at the Atlantic City International Airport and Maple Shade (Burlington County).

The Alberta Clipper low pressure system moved from Alberta Province Canada on the morning of the 13th into Wisconsin on the morning of the 14th, to central Ohio during the early evening on the 14th, into Chesapeake Bay just after midnight EST on the 15th and about 300 miles east of the Delmarva Peninsula by 10 a.m. EST on the 15th. Precipitation amounts were light, generally less than one quarter of an inch. The unseasonably cold air caused the liquid equivalent to snow ratio to reach as high as 30 to 1 across parts of the northern half of New Jersey. It normally averages around a 10 to 1 ratio.

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**

15	**1200EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**1200EST**				

Following the departing Alberta Clipper low pressure system, another arctic air mass invaded New Jersey. While temperatures were slightly higher than the previous outbreak on the 10th and 11th, winds were stronger and the wind chill factors were lower. Most low temperatures were in the single numbers (They were some readings below zero in northwest New Jersey) and the lowest hourly wind chill factors averaged around twenty degrees below zero. This second arctic outbreak set some gas usage records for area utilities.

The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who could not afford to heat their homes. There was another dramatic increase in phone calls to social services by individuals who have run out of heat or could not afford to pay their utility bills. Public Service Electric and Gas set a new natural gas usage record of 2,429 million decatherm breaking the old record of 2,425 million decatherms on January 23, 2003. The cold weather caused additional schools and community centers to be opened as shelters. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. Plumbers and heating repair services had twenty-four hours worth of work. In Northwest New Jersey the cold weather caused many schools, universities and daycare centers to have delayed openings. The cold weather also led to another increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks.

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

NEW JERSEY, South and Northwest

Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood. Many vehicles were not starting because of dead batteries. Ferry service between Monmouth County and New York City had to be cancelled because of excessive ice in Raritan Bay and the Hudson River. Commuters had to take buses instead.

Specific low temperatures included 9 degrees below zero in High Point (Sussex County), 4 degrees below zero in Long Valley (Morris County), 3 degrees below zero in Allamuchy (Warren County) and Newton (Sussex County), 1 degree below zero in Flemington (Hunterdon County), Far Hills (Somerset County) and Chatham (Morris County), zero in Hightstown (Mercer County) and New Brunswick (Middlesex County), 1 degree in Freehold (Monmouth County) and Belle Mead (Somerset County), 2 degrees in Mount Holly (Burlington County), 4 degrees at the Atlantic City International Airport and Somerdale (Camden County), 5 degrees in Harvey Cedars (Ocean County), 7 degrees in Williamstown (Gloucester County), 8 degrees in Millville (Cumberland County) and Woodstown (Salem County) and 9 degrees in Woodbine (Cape May County). The arctic air mass came barreling behind the departing Alberta Clipper low pressure system on the 15th. The low deepened explosively as it moved offshore and the pressure gradient between it and the building high pressure system brought the lowest wind chill factors of the winter into New Jersey. The high pressure ridge moved from the Red River and Upper Mississippi Valleys on the morning of the 15th, to the Great Lakes and nearby Canada on the morning of the 16th and into Pennsylvania and New York on the morning of the 17th. The core of the coldest air moved through the region during the night of the 15th with the lowest temperatures occurring between Midnight EST and 6 a.m. EST on the 16th. Lowest hourly wind chill factors included 23 degrees below zero in Belmar (Monmouth County), 22 degrees below zero at the McGuire Air Force Base (Burlington County), 21 degrees below zero in Andover (Sussex County), 19 degrees below zero in Trenton (Mercer County) and 13 degrees below zero at the Atlantic City International Airport.

This second arctic outbreak cemented January as an unseasonably cold month. At the Atlantic City International Airport, the January monthly mean temperature was 26.8 degrees, 5.3 degrees colder than normal. It was not only the 9th coldest January on record, but also the coldest January since 1985.

NJZ012>027 **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**

17	**1900EST**	**0**	**0**	**Winter Weather/Mix**
18	**0800EST**			

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across central and southern New Jersey during the evening and overnight on the 17th. Precipitation began as snow across the region and started mixing with sleet from south to north around Midnight EST. As more warmer air moved in aloft, precipitation started mixing with and changing to freezing rain between 3 a.m. and 6 a.m. EST on the 18th. Warmer air also moved in near the surface and the freezing rain changed to plain rain between 5 a.m. and 9 a.m. EST. The change happened the quickest along the immediate coast and took the longest in interior central New Jersey. Snowfall accumulations were around one inch in central New Jersey and less than one inch in southern New Jersey. Ice accretions were generally less than one-tenth of an inch. Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through New Jersey during the afternoon of the 18th to wring moisture from the atmosphere onto the region.

NJZ001-007>010 **Sussex - Warren - Morris - Hunterdon - Somerset**

17	**2100EST**	**0**	**0**	**Winter Weather/Mix**
18	**1700EST**			

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across northwestern New Jersey from the evening of the 17th through the afternoon of the 18th. Precipitation began as snow across the region between 9 p.m. EST on the 17th and 1 a.m. EST on the 18th. Toward daybreak on the 18th, sleet started to mix in, especially toward New York City. As more warmer air moved in aloft, precipitation started mixing with and changing to freezing rain during the first half of the morning on the 18th. Toward New York City, enough warm air moved in near the surface to change the precipitation briefly to plain rain during the middle of the morning on the 18th. As a cold front approached the region and precipitation intensity increased, the changeover process reversed itself. Precipitation changed to all snow by Noon EST and ended during the afternoon of the 18th. Snowfall accumulations averaged between 2 and 4 inches and ice accretions averaged around one tenth of an inch.

Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. Many accidents occurred on the 18th. In Somerset County, a pedestrian suffered a serious back injury when a vehicle skidded out of control. Specific accumulations included 4.2 inches in Kenvil (Morris County), 4.0 inches in Budd Lake (Morris County) and Somerville (Somerset County), 3.8 inches in White House (Hunterdon County), 3.5 inches in Hackettstown (Warren County) 3.4 inches in Marcella (Morris County) and Pottersville (Somerset County), 3.1 inches in Stewartsville (Warren County), 2.5 inches in Flemington (Hunterdon County), 1.6 inches in Wantage (Sussex County) and 1.5 inches in Sussex (Sussex County).

The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure

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

NEW JERSEY, South and Northwest

system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through New Jersey during the afternoon of the 18th to wring moisture from the atmosphere onto the region.

NJZ008 **Morris**

25 0000EST 1 0 Extreme Cold/Wind Chill
2359EST

An elderly woman in Long Hill Township froze to death after she slipped on ice in her backyard and fell into a basement window well. Her body was found on the 26th. The overnight low temperature on the 25th in Long Valley (Morris County) was zero. F?OU

NJZ016-019-021>025-027 **Salem - Northwestern Burlington - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Southeastern Burlington**

25 2100EST 0 0 Heavy Snow
26 1200EST

NJZ017>018-020-026 **Gloucester - Camden - Western Ocean - Eastern Ocean**

25 2300EST 0 0 Winter Weather/Mix
26 0900EST

Snow fell from the second half of the evening of the 25th through Monday morning the 26th across the southern half of New Jersey. Accumulations averaged between 2 and 6 inches with the highest accumulations in the southern tier counties. Nearly all schools in the southern half of the state either closed for the day or had delayed openings. Even Ocean County College was closed. Untreated roads were slippery.

Specific accumulations included 6.0 inches in Margate (Atlantic County) and New port (Cumberland County), 5.5 inches in Woodbine (Cape May County) and Vineland (Cumberland County), 5.4 inches in Estell Manor (Atlantic County), 5.3 inches at the Cape May Courthouse (Cape May County), 4.8 inches in Pennsville (Salem County), 4.5 inches in Avalon (Cape May County), 4.2 inches in Cape May City (Cape May County), 4.0 inches in Toms River (Ocean County), Quinton Township (Salem County) and at the McGuire Air Force Base and Willingboro (Burlington County), 3.5 inches at the Atlantic City International Airport, 2.8 inches in Glassboro (Gloucester County), 2.6 inches in Somerdale, 2.5 inches in Pennsauken (Camden County) and West Deptford (Gloucester County) and 2.3 inches in Beachwood (Ocean County). Accumulations farther north in New Jersey were generally two inches or less.

The snow was caused by a low pressure system that developed in the lower Tennessee Valley during the morning of the 25th. A second low pressure system then developed off the South Carolina coast that evening. The second low pressure system became the primary low and moved northeast. It passed close to Wilmington, North Carolina around 1 a.m. EST on the 26th and just east of Hatteras, North Carolina around 7 a.m. EST on the 26th before it moved farther offshore.

NJZ015>027 **Mercer - Salem - Gloucester - Camden - Northwestern Burlington - Western Ocean - Cumberland - Western Atlantic - Western Cape May - Eastern Cape May - Eastern Atlantic - Eastern Ocean - Southeastern Burlington**

27 1600EST 0 0 Winter Weather/Mix
28 0700EST

NJZ001-007>010-012>014 **Sussex - Warren - Morris - Hunterdon - Somerset - Middlesex - Western Monmouth - Eastern Monmouth**

27 1700EST 0 0 Winter Storm
28 1000EST

The combination of a high pressure system over nearby Canada and a pair of low pressure systems - one that moved into the Great Lakes before dissipating and another that formed over the Virginia coastal waters gave New Jersey a wintry mix of freezing rain, sleet and snow. Heavy snow fell across the northern half of New Jersey. Some spotty light freezing drizzle or freezing rain fell throughout most of the day on the 27th. The only exception was in Atlantic, Cape May and Cumberland Counties where temperatures rose above the freezing mark. During the late afternoon as a low pressure system was forming over the Virginia coastal waters, precipitation intensity increased and heavier freezing rain and sleet began falling across the area. The exception was in far northwest New Jersey where precipitation started and continued as mainly snow. As colder air moved in from the north, the wintry mix changed to all snow in central and southwest New Jersey between 6 p.m. and 9 p.m. EST (From the northwest to the southeast). In Atlantic, Cape May and Cumberland Counties, the rain changed to snow between 8 p.m. and 10 p.m. EST. The heaviest snow fell across the state between 7 p.m. EST on the 27th and 1 a.m. EST on the 28th. Snowfall rates were averaging one to two inches per hour during the heavier snow in northern New Jersey. The snow ended from south to north between 1 a.m. and 10 a.m. EST. Accumulations averaged between 5 and 10 inches in the northern half of the state and 2 to 5 inches in the southern half of the state.

Untreated roads were slippery and numerous accidents occurred. There were many spin out accidents. During the freezing drizzle on the morning of the 27th in Burlington County, five cars skidded into each other in the southbound lanes of the New Jersey Turnpike. A couple skidded off the road and one overturned. A female passenger in the car died. The following day, a 48-year-old Mount Laurel (Burlington County) man died of a heart attack while shoveling the snow. Many schools dismissed early on the 27th and many schools were closed in the northern half of the state on the 28th. Drifting snow hampered road crews in the northern half of the state.

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

NEW JERSEY, South and Northwest

Specific accumulations included 11.5 inches in Butler (Morris County), 11.2 inches in Marcella (Morris County), 9.8 inches in Sparta (Sussex County), 9.0 inches in Vernon (Sussex County), 8.3 inches in Parsippany (Morris County), 8.0 inches in Morristown (Morris County), 7.5 inches in Wantage (Sussex County), 7.3 inches in Morris Plains (Morris County), 7.0 inches in North and South Brunswick (Middlesex County) and Blairstown and Hackettstown (Warren County), 6.2 inches in Belvidere (Warren County), 5.9 inches in Pottersville (Somerset County), 5.8 inches in Manasquan (Monmouth County) 5.5 inches in West Amwell Township (Hunterdon County) and Clarksburg (Monmouth County), 5.0 inches in Flemington (Hunterdon County), 4.8 inches in Hamilton Square (Mercer County), 4.5 inches in Mount Holly (Burlington County) and Belle Mead (Somerset County), 4.0 inches in Princeton, 3.5 inches in Beachwood (Ocean County), 3.4 inches in Maple Shade (Burlington County), 3.0 inches in Bridgeton (Cumberland County) and Turnersville (Gloucester County), 2.4 inches in Hammonton (Atlantic County), 2.2 inches in Somerdale (Camden County), 2.0 inches in Lindenwold (Camden County), Pennsville (Salem County), Glassboro (Gloucester County) and Seabrook (Cumberland County) and 1.5 inches at the Atlantic City International Airport.

While the first low pressure system was heading off the North Carolina coast around sunrise on the 26th, another low pressure system was already in Arkansas. This low pressure system moved northeast into the lower Ohio Valley during the afternoon of the 26th and reached Ohio around sunrise on the 27th. The low moved north into Michigan during the afternoon of the 27th and remained nearly stationary as it slowly weakened during the evening and overnight. This low pressure system brought a wedge of warmer air aloft across the region. What made precipitation fall as either freezing rain or sleet was a large high pressure system over nearby Canada that fed cold air south near the surface. This high pressure system's influence weakened in southeastern New Jersey where temperatures managed to rise above the freezing mark during the daylight hours and early evening on the 27th. During the late afternoon of the 27th, a second low pressure system formed over the Virginia coastal waters. By 7 p.m. EST when it was located near the Virginia Capes, its central pressure was already as strong as the Michigan low pressure system. The Virginia low pressure system moved northeast and intensified and by 1 a.m. EST on the 28th, was located about 120 miles east of Atlantic City, New Jersey and by 7 a.m. EST it was about 240 miles east of Atlantic City, New Jersey. As this second low pressure system intensified and its upper air support moved across the Middle Atlantic States, precipitation intensity increased further and the precipitation changed to snow.

NEW MEXICO, Central and North

NMZ005	**Northeast Highlands**							
	02	**0200MST**		**0**	**0**	**5K**		**Strong Wind**
		0300MST						

Gusty overnight winds in Cimarron damaged several signs and at least one carport covering.

NMZ017	**Capitan/Northern Sacramento Mountains**							
	02	**1500MST**		**0**	**0**	**8K**		**Strong Wind**
		1730MST						

Gusty winds resulted in about a half dozen damage reports in Ruidoso. Claims included tree limbs through a roof, a storage shed blown over and a roof blown off a walkway.

NMZ001	**Northwest Plateau**							
	15	**0900MST**		**0**	**0**			**Winter Weather/Mix**

A 73 year Navajo Nation resident was killed (indirect) when his vehicle slid off the road and rolled over during snowy conditions along U.S. 491 near Little Water in San Juan County.

NMZ008	**Westcentral Mountains**							
	20	**1400MST**		**0**	**0**			**Winter Weather/Mix**

A 22 year Navajo Nation resident died (indirect) from injuries when his truck hit a bridge during snowy conditions near Iyanbito in McKinley County and then rolled into the bottom of a ravine.

NEW MEXICO, South Central and Southwest

NONE REPORTED.

NEW MEXICO, Southeast

NONE REPORTED.

NEW YORK, Central

NYZ009	**Northern Onedia**							
	06	**2200EST**		**0**	**0**	**50K**		**Heavy Snow**
	07	**1700EST**						

A band of heavy lake effect snow set up to the east of Lake Ontario in Northern Oneida County around 4 PM on the 6th. Snowfall rates were 1 to 3 inches an hour at times. The initial burst of heavy snow lasted until around 7 PM when the lake effect snow band shifted north of the county. This band of heavy snow moved back south across the area between 5 and 7 AM the next morning, and then continued into the afternoon. The snow intensity decreased the afternoon of the 7th. Snowfall totals were a widespread 1 to 2 feet.

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

NEW YORK, Central

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

10	**0000EST**	**0**	**0**	**180K**		**Extreme Cold/Wind Chill**
	1000EST					

Arctic high pressure over central Ontario province, Canada brought record low temperatures to central New York the morning of the10th. Temperatures were well below zero during the early morning hours of the 10th. Some locations in the Syracuse and Utica areas did not get above zero the day before on the 9th. Record low temperatures were set at several cooperative observer and ASOS airport sites. Low temperatures the morning of the 10th were generally between 10 and 20 below zero. In Madison, Onondaga, Oneida, Chenango, and Cortland Counties some locations had low temperatures between 20 and 30 below zero. Sullivan County was not as cold with lows on the 10th between 0 and 10 below.

NYZ009-037 — **Northern Onedia - Southern Oneida**

13	**2300EST**	**0**	**0**	**20K**		**Extreme Cold/Wind Chill**
14	**0900EST**					

A cold front moved through the area the morning of the 13th ushering in another arctic air mass. A large area of high pressure was centered in the province of Ontario supplying the region with the bitter cold air. In addition to the cold, northwest winds were 15 to 25 mph the afternoon and evening of the 13th before becoming light early on the 14th. Temperatures fell to 20 to 30 below zero the morning of the 14th. The combination of wind and cold caused wind chill values to drop to 15 to 35 below zero on the 13th.

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

15	**1200EST**	**0**	**0**	**220K**		**Extreme Cold/Wind Chill**
16	**0900EST**					

A deep low pressure system in southeast Canada combined with a large area of high pressure in the province of Ontario Canada to create northwest winds of 15 to 25 mph across the area. The northwest winds brought more arctic air to the region with temperatures dropping to below zero. The wind and cold dropped wind chill values to 20 to 40 below zero. Some of the high temperatures during the 14th and 15th in the Syracuse and Utica areas were below zero. Many schools were closed due to the extreme cold. The cold air also caused problems with cars and buses starting. There were scattered instances of pipes freezing at residences and businesses.

NYZ009-018-036>037 — **Northern Onedia - Onondaga - Madison - Southern Oneida**

22	**2000EST**	**0**	**0**	**40K**		**Heavy Snow**
23	**1500EST**					

A cold front passed through the region midday on the 22nd bringing another round of Arctic air to central New York. This bitter cold air created more lake effect snow off the east end of Lake Ontario. The snow was best organized and most intense the night of the 22nd into the 23rd. Snowfall rates were 1 to 2 inches per hour. The main west to east snow band started across northern Oneida County before slowly moving south into southern Oneida, Madison, and Onondaga Counties during the evening. The lake effect snow band continued into the 23rd before becoming less intense late morning on the 23rd. Snowfall amounts were mostly 6 to 12 inches across northern Onondaga County, northern Madison County, and much of Oneida County. Some higher amounts of around 20 inches were isolated across extreme northern Onondaga, and northern and western Oneida Counties.

NYZ044>046-056>057-062 — **Cortland - Chenango - Otsego - Broome - Delaware - Sullivan**

27	**2200EST**	**0**	**0**	**300K**		**Heavy Snow**
28	**0500EST**					

A low pressure system moved northeast into the Ohio Valley early on the 27th. Another low pressure system developed on the east coast later that day then moved northeast to the New England coast. Snow ahead of the initial low became heavy the afternoon of the 27th. The snow tapered off to snow showers the morning of the 28th. Snowfall amounts were 6 to 10 inches with a few higher amounts.

NYZ009-037 — **Northern Onedia - Southern Oneida**

29	**0400EST**	**0**	**0**	**20K**		**Heavy Snow**
31	**1200EST**					

A major winter storm was centered off the New England coast on the 28th. This storm set up a strong west wind of Arctic air across Lake Ontario into Oneida County. A band of heavy lake effect snow started around 5 PM on the 28th. Snowfall rates were 1 to 3 inches an hour. The snow continued into the 31st. Snowfall amounts were 1 to 4 feet. The highest amounts were in northwest Oneida County. This was the longest and most intense lake effect snow event of the winter.

NYZ018 — **Onondaga**

31	**1400EST**	**0**	**0**	**50K**		**Heavy Snow**
	2200EST					

An intense band of lake effect snow moved south into extreme northern Onondaga County the morning of the 31st. Snowfall rates were as high as 5 inches an hour. Snowfall amounts were 10 to 20 inches across this area, which included Syracuse and Baldwinsville. The snow tapered off that evening.

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

NEW YORK, Coastal

NYZ067-073>081 **Orange - Bronx - Richmond (Staten Is.) - Kings (Brooklyn) - Queens - Nassau - Northwest Suffolk - Northeast Suffolk - Southwest Suffolk - Southeast Suffolk**

15	**0700EST**	**0**	**0**		**Heavy Snow**
	0900EST				

With an arctic air mass in place, as a strong Alberta clipper moved south of Long Island, heavy snow occurred across parts of the region. Light snow developed during Wednesday evening, January 14th. It became heavy at times, mainly between midnight and 8 am on Thursday, January 15th. The Storm Total Snowfall amounts ranged from around 6 to 8 inches, as follows:

In Orange County, amounts ranged from 5.0 inches at Montgomery, Cornwall-On-The-Hudson, and New Windsor to 7.4 inches at Chester.
In the Bronx, 7.0 inches was measured at Riverdale. In extreme Southern Westchester County, snowfall ranged from 6.0 inches at Bronxville to 6.5 inches at Yonkers.
In Manhattan, snowfall amounts ranged from 5.2 inches at Bryant Park to 5.7 inches at the Central Park Zoo.
In Staten Island, snowfall amounts ranged from 5.8 inches at Grasmere to 6.4 inches at Eltingville.
In Brooklyn, snowfall amounts ranged from 5.7 inches at Graves End to 6.3 inches at Brooklyn.
In Queens, amounts ranged from 5.8 inches at John F. Kennedy Airport to 7.0 inches at Far Rockaway. At LaGuardia Airport, 6.8 inches was measured.
In Nassau County, amounts ranged from 5.5 inches at Lynbrook to 7.0 inches at Farmingdale and West Hempstead.
In Suffolk County, most snowfall amounts ranged from 5.0 inches at Islip Airport, Islip Hamlet, and Manorville to 8.1 inches at Selden.

NYZ067>081 **Orange - Putnam - Rockland - Northern Westchester - Southern Westchester - New York (Manhattan) - Bronx - Richmond (Staten Is.) - Kings (Brooklyn) - Queens - Nassau - Northwest Suffolk - Northeast Suffolk - Southwest Suffolk - Southeast Suffolk**

15	**1700EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**0700EST**				

An arctic cold front swept southeast across the region during Tuesday afternoon, January 13th. Extremely cold air followed this front through Wednesday, January 14th.

As an Alberta Clipper passed south of Long Island Wednesday night, it rapidly intensified as it moved northeast of Long Island Thursday. The large difference in pressure between a strong low pressure system northeast of New England and a strong arctic high pressure system in Southeast Canada resulted in the combination of extremely low temperatures, high winds, and extremely low wind chill index values from sunset Thursday evening through sunrise Friday morning, January 16th.

Record low temperatures were set and tied on the following dates:

On January 15th:
A record low temperature of 2 degrees above 0 was set at John F. Kennedy Airport.
A record low temperature of 1 degree above 0 was set at Islip Airport.

On January 16th:
A record low temperature of 1 degree above 0 was set at John F. Kennedy Airport.
A record low temperature of 2 degrees above 0 was set at Islip Airport.
A record low temperature of 1 degree above 0 was tied at Central Park in New York City.

On January 16th, low temperatures ranged from 3 degrees below zero at Montgomery County Airport to 4 degrees above zero at Montauk Airport. The lowest Wind Chill Index temperature values ranged from 19 degrees below 0 at Montauk Airport with a sustained wind speed of 26 mph to 26 degrees below 0 at Westchester County Airport with a sustained wind speed of 30 mph. Peak wind gusts were between 30 and 40 mph.

NYZ071 **Southern Westchester**

18	**1610EST**	**0**	**0**		**Winter Storm**

With just enough cold air in place, as a low pressure system moved east of the upper Great Lakes, another low formed over the Southeast U.S. This second low gradually intensified as it moved northeast. It passed south then east of Long Island Sunday evening, January 18th.

Light snow developed by 5 am across the region, which was occasionally mixed with sleet and freezing rain through the morning. Snowfall increased in intensity and became heavy by 10 am. By the time the snow ended around 6 pm, the Storm Total Snowfall Amount was around 6 inches.

Here are selected snowfall amounts for Southern Westchester County: 6.0 inches was measured at both West Harrison and Scarsdale.

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

NEW YORK, Coastal

NYZ067>070 — **Orange - Putnam - Rockland - Northern Westchester**

28	**0000EST**	**0**	**0**		**Heavy Snow**
	0600EST				

NYZ071>081 — **Southern Westchester - New York (Manhattan) - Bronx - Richmond (Staten Is.) - Kings (Brooklyn) - Queens - Nassau - Northwest Suffolk - Northeast Suffolk - Southwest Suffolk - Southeast Suffolk**

28	**0000EST**	**0**	**0**		**Winter Storm**
	0700EST				

A cold high pressure ridge extended southeast from James Bay across New England. As the primary low moved northeast toward the Eastern Great Lakes, a secondary low developed off the Mid Atlantic Coast during Tuesday morning, January 27th. This secondary low rapidly intensified as it moved northeast.

A light mixture of snow, sleet, and freezing rain spread north across the area during Tuesday afternoon. A light coating of ice on area roads made traveling extremely hazardous toward evening. Many traffic accidents occurred across the NYC Metropolitan Area during this time. As the precipitation rate increased during the evening, the mixture changed to a steady snow, which became heavy at times. Most Storm Total Snowfall amounts ranged from around 6 to 12 inches. There were isolated lower amounts across the twin forks of Long Island, where more mixing occurred.

Here are selected snowfall amounts for:
Orange County - from 7.8 inches at Middletown to 10.6 inches at New Windsor.
Putnam County - from 7.0 inches at Carmel to 8.0 inches at Patterson.
Rockland County - from 6.0 inches at New City to 9.0 inches at Suffern.
Westchester County - from 8.0 inches at Ossining and Yorktown Heights to 10.0 inches at Thornwood and Hasting-On-Hudson.
Bronx - 10.4 inches at Parkchester.
Manhattan - 10.3 inches at Central Park.
Staten Island - from 5.5 inches at Westerleigh to 7.0 inches.
Brooklyn - from 7.5 inches at Sheepshead Bay to 8.3 inches at Graves End.
Queens - from 6.2 inches at JFK Airport to 10.5 inches at Far Rockaway.
Nassau County - from 6.5 inches at Lynbrook to 11.5 inches at Bellmore.
Western and Central Suffolk County - from 6.4 inches at East Setauket to 14.6 inches at Dix Hills.
Eastern Suffolk County - from 4.1 inches at Southampton to 6.0 inches at East Quogue.

NEW YORK, East

NYZ032>033-038>043-047>054-058>061-063>066-082>084 — **Northern Herkimer - Hamilton - Southern Herkimer - Southern Fulton - Montgomery - Northern Saratoga - Northern Warren - Northern 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 - Northern Fulton - Southeast Warren - Southern Washington**

15	**1800EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**1000EST**				

An extremely cold airmass moved out of Siberia, then plunged southward through Canada and across the northeast by January 15. At the same time, a powerful storm developed off the Canadian Maritimes. The pressure gradient between the intense storm and the arctic high pressure, extending from central Canada southward through the Ohio Valley, produced gusty north to northwest winds in the 15 to 30 mph range, with higher gusts. This wind, combined with ambient temperatures ranging from zero to 15 below zero, resulted in dangerous wind chills across eastern New York during the night of January 15 through the morning of the 16th. Equivalent wind chill readings ranged from 25 to 30 below zero in the Mid Hudson Valley, to as low as 50 below zero across the Western Adirondacks. The brutal cold spell resulted in many closed schools and businesses on the 16th. The cold also resulted in a scattering of frozen and broken water pipes.

NYZ038 — **Southern Herkimer**

22	**1600EST**	**0**	**0**		**Heavy Snow**
23	**0300EST**				

Intense low pressure, over the Canadian Maritimes drove arctic air across Lake Ontario on January 22. Due to a steep adiabatic lapse rate and persistently westerly fetch off the lake, a plume of heavy lake effect snow fell across the Mohawk Valley from the afternoon of the January 22 through early on the 23rd. The result was 7 inches of snow reported in the town of Poland, Herkimer County. Other areas to the west of this town might have received locally more. The snow was accompanied by wind, which produced blowing and drifting of the snow making travel very dangerous in places.

NYZ053>054-058-061-063-065>066-084 — **Western Rensselaer - Eastern Rensselaer - Western Greene - Eastern Columbia - Western Ulster - Western Dutchess - Eastern Dutchess - Southern Washington**

28	**0000EST**	**0**	**0**		**Winter Storm**
	0400EST				

A complex low pressure area moved into the Ohio Valley on January 27. Energy from this storm transferred across the Appalachians to form a secondary storm, off the mid Atlantic coast by midnight. This second storm moved northeast, south of

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

NEW YORK, East

Long Island. The two systems combined to produce a marginal winter storm event across portions of eastern New York as a band of moderate to heavy snow moved over the area from around midnight into the early morning hours of the 28th. The temperature profile was cold enough for the precipitation to be all snow. Seven to 11 inches of snow accumulated to the south and east of Albany. Specific amounts included 11.3 inches in Copake, Columbia, 10.6 inches at Platte Cove, Greene County and 9.0 inches in Sushan, Washington County. While slightly lesser amounts of snow fell from the Albany and areas to the north and west, the snow caused many vehicular accidents and delayed school openings throughout eastern New York.

NEW YORK, North

NYZ026 **Northern St. Lawrence**

11	**0200EST**	**0**	**0**	**10K**	**Flood**
	1000EST				

Ice and water on the St Regis River resulted in minor flooding in the Winthrop and Brasher areas.

NYZ026>031-034>035-087 **Northern St. Lawrence - Northern Franklin - Eastern Clinton - Southeastern St. Lawrence - Southern Franklin - Western Clinton - Western Essex - Eastern Essex - Southerwestern St. Lawrence**

13	**1800EST**	**0**	**0**		**Extreme Cold/Wind Chill**
14	**1200EST**				

Weak low pressure moved across northern portions of New York and New England during Monday, January 12th with 2 to 4 inches of snow. Colder air followed this storm. Then an arctic front moved through the area Tuesday, January 13th. Wind chills during Tuesday night, Jan 13th through around noon on Wednesday, January 14th were generally between 25 and 45 below zero. Arctic high pressure then settled across the area during Wednesday, January 14th.

NYZ027 **Northern Franklin**

14	**0600EST**	**0**	**0**	**30K**	**Flood**
16	**0600EST**				

Water and ice on the Salmon River in Malone, NY resulted in gradual flooding of low areas impacting a few houses. The water gradually rose and remained high for several days. Water damage to a few houses was reported.

NYZ026>031-034>035-087 **Northern St. Lawrence - Northern Franklin - Eastern Clinton - Southeastern St. Lawrence - Southern Franklin - Western Clinton - Western Essex - Eastern Essex - Southerwestern St. Lawrence**

15	**1200EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**1200EST**				

Arctic high pressure built southeast from Canada on Thursday, the 15th of January and Friday the 16th of January. Wind chills during Thursday, January 15th and Friday, January 16th were generally between 25 and 45 below zero. Thereafter, it remained cold with arctic high pressure over the area, but winds abated.

NYZ087 **Southerwestern St. Lawrence**

26	**0500EST**	**1**	**0**		**Extreme Cold/Wind Chill**
	0700EST				

A woman froze to death outside her home. She was 101 years old, and officials report her as not dressed for the cold. Early morning minimum temperatures on the 26th were between 12 and 24 degrees below zero in St Lawrence county. Autopsy reports indicate she died from hypothermia. F101OU

NEW YORK, West

NYZ002>003-003>008-010-012-019-019>020 **Orleans - Monroe - Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Northern Erie - Wyoming - Chautauqua - Cattaraugus**

06	**0830EST**	**0**	**0**	**210K**	**Heavy Snow**
08	**2300EST**				

This major lake effect storm began early on Tuesday the 6th following a sharp cold front. Off Lake Erie, a strong westerly flow ignited heavy lake snow bands over southern Erie and Wyoming counties. They migrated south and then north, reaching the Buffalo southtowns for awhile Tuesday evening before settling south into ski country later Tuesday night and most of Wednesday before weakening. Accumulations topped two feet over a large portion of northern Cattaraugus and Chautauqua counties with over 30" along the ridges. Specific snowfall reports included: Cassadaga 37"; Stockton 34"; Ellicottville 28"; Colden 22"; South Wales 20"; Jamestown 16"; Dunkirk 12"; and Orchard Park 8". Off Lake Ontario the activity began on a westerly flow across the northern Tug Hill into southern Jefferson county and settled south across Oswego county early on the 7th. One to two feet fell in this area. The band settled a bit further south and extended along the Lake Ontario shore from Orleans through Wayne counties. The band weakened some later Wednesday night into Thursday as it drifted south to about the Thruway. Snowfall totals reported with this activity included: 34" in North Osceola; 32" in Redfield; 20" in Pulaski, Hilton and Highmarket; 18" in Greece; 17" in Webster and Penfield; and 15" in Oswego.

NYZ001-010>012 **Niagara - Northern Erie - Genesee - Wyoming**

11	**2215EST**	**0**	**0**	**36K**	**Heavy Snow**
12	**0615EST**				

A storm system moved from the central Great Lakes across New York State and blanketed the Niagara Frontier with seven to twelve inches of snow. Specific snowfall totals included: 12" at Sanborn; 10" at North Tonawanda; 9" at Kenmore, Buffalo, Amherst, and Clarence; 8" at Grand Island, Tonawanda, Alden and Batavia; and 7" at Darien and Bennington.

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

NEW YORK, West

NYZ003>005-011-019>020 — **Monroe - Wayne - Northern Cayuga - Genesee - Chautauqua - Cattaraugus**

19	**0905EST**	**0**	**0**	**60K**		**Heavy Snow**
20	**1045EST**					

The lake effect event began the afternoon of the 18th in a cold northwest flow. The snow bands continued and oscillated down wind of Lakes Erie and Ontario for nearly 60 hours. Snowfalls of up to 17" were reported off both lakes. Off Lake Erie, 17" was recorded at Ellicottville; 13" at Perrysburg; 12" at South Dayton and Stockton; and 8" at Dunkirk. Off Lake Ontario, 17" was recorded at Cato; 16" at Phoenix; 14" at Rochester; 11" at Fulton; and 8" at Pembroke.

NYZ005>006-008-010-019 — **Northern Cayuga - Oswego - Lewis - Northern Erie - Chautauqua**

22	**0800EST**	**0**	**0**	**25K**		**Heavy Snow**
23	**0655EST**					

An arctic front crossed the area and lake effect snow bands developed in the northwest flow. Off Lake Erie, snow fall amounts were less than 10"--primarily due to the ice cover on the lake. Off Lake Ontario, the activity was more intense with a distinct connection to the upper Great Lakes. Snow fell at the rate of four to five inches an hour from Fair Haven to Fulton at times Thursday night and early Friday morning (22nd-23rd). Reported snowfall amounts included: 36" at Fair Haven and Hannibal; 33" at Fulton; 29" at West Monroe; 26" at Minetto; 24" at Wolcott; 21" at Constantia; and 18" at Cato.

NYZ004>005-005>008-010-012-019>020 — **Wayne - Northern Cayuga - Oswego - Jefferson - Lewis - Northern Erie - Wyoming - Chautauqua - Cattaraugus**

28	**0710EST**	**0**	**0**	**450K**		**Heavy Snow**
31	**2020EST**					

A strong trough crossed the lower Great Lakes region. The well-aligned northwest flow kicked off an intense band of lake effect snow over Oswego county. The band remained nearly stationary for 36 to 42 hours. Four to five feet of snow fell in a narrow section of central Oswego county by Friday afternoon (the 30th). The band drifted north into southern Lewis and extreme southern Jefferson counties for awhile Friday night, before drifting back south across Monroe, Wayne and northern Cayuga counties on Saturday the 31st. Specific snowfall totals included: 86" in Parish; 58" in Constantia; 56" in West Monroe; 51" in North Osceola; 48" in Oswego; and 40" in Fulton. The weight of this snow, as well as previous lake effect storms during the month, caused several buildings to collapse in Monroe and Wayne counties. In Wayne county, about 25 boats were damaged in Sodus Point when the roofed caved in on a large storage building. Because of the heavy lake effect snows throughout the month of January, Oswego, Jefferson and Cayuga counties were declared State and Federal Disaster areas. Off Lake Erie, snowfalls were limited by the ice cover on the lake. Lake effect snow prevailed over the higher elevations south of Buffalo from late Wednesday (28th) into Friday. Reported snowfall totals included: 18" at Orangeville; 14" at Warsaw and Arkwright; 12" at South Wales; and 8" at Perrysburg.

NORTH CAROLINA, Central

NCZ007>011-021>028-038>043-073>078-083>086-088>089 — **Person - Granville - Vance - Warren - Halifax - Forsyth - Guilford - Alamance - Orange - Durham - Franklin - Nash - Edgecombe - Davidson - Randolph - Chatham - Wake - Johnston - Wilson - Stanly - Montgomery - Moore - Lee - Harnett - Wayne - Anson - Richmond - Scotland - Hoke - Cumberland - Sampson**

26	**0430EST**	**0**	**0**			**Winter Storm**
	2300EST					

A winter storm occurred on January 25th and 26th when snow and sleet fell across central North Carolina. The precipitation fell as snow and sleet over much of the area on the 25th, then became freezing rain over the southeastern sections on the 26th. 3 to 6 inches of snow and sleet fell over the Piedmont on the 25th, with as much as 1/4 inch of freezing rain reported in the southern coastal plain on the 26th.

NORTH CAROLINA, Central Coastal

NCZ029-044>047-079>081-090>095-098-103>104 — **Martin - Pitt - Washington - Tyrrell - Western Dare - Greene - Beaufort - Western Hyde - Duplin - Lenoir - Jones - Craven - Pamlico - Carteret - Onslow - Eastern Dare - Eastern Hyde**

09	**1200EST**	**0**	**0**			**Winter Weather/Mix**
	1700EST					

One to three inches of snow was reported across the area during the afternoon hours.

NCZ029-044>047-079>081-090>095-098 — **Martin - Pitt - Washington - Tyrrell - Western Dare - Greene - Beaufort - Western Hyde - Duplin - Lenoir - Jones - Craven - Pamlico - Carteret - Onslow**

25	**1300EST**	**0**	**0**			**Winter Storm**
	1900EST					

A winter storm produced up to 2 inch ice accumulations mainly across the coastal plains of eastern North Carolina.

Storm Data and Unusual Weather Phenomena

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

NORTH CAROLINA, Central Coastal

NCZ029-044-079>080-090>092-098 **Martin - Pitt - Greene - Beaufort - Duplin - Lenoir - Jones - Onslow**

	26	**2000EST**			**0**	**0**			**Winter Storm**
	27	**0200EST**							

A winter storm caused up to one half inch ice accumulations mainly across the coastal plains of eastern North Carolina during the night.

NORTH CAROLINA, Extreme Southwest

NCZ060>061 **Cherokee - Clay**

	09	**0400EST**			**0**	**0**			**Winter Storm**
		1000EST							

trace-1 inch snowfall

A winter storm system moved across the region early in the morning January 9th producing light snowfall in Cherokee and Clay counties. Amounts were generally around an inch or less.

NORTH CAROLINA, North Coastal

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

	09	**0000EST**			**0**	**0**			**Winter Storm**
		1600EST							

One to three inches of snow fell across portions of northeast North Carolina. Some higher amounts included: Pasquotank county 3", Perquimans county 3", Gates county 2", and Currituck county 1.5-2". The snow produced very slippery roadways, which resulted in several accidents.

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

	25	**1400EST**			**0**	**0**			**Winter Storm**
	26	**1100EST**							

Two to four inches of snow and sleet fell across portions of northeast North Carolina. Some higher amounts included: Jackson in Northampton county 4", Ahoskie in Hertford county 4", Bertie county 3", and Currituck in Currituck county 2.5". The snow and sleet produced very slippery roadways, which resulted in numerous accidents and school closings for a few days.

NORTH CAROLINA, Northwest and North Central

NCZ001 **Ashe**

	12	**0201EST**			**0**	**0**			**High Wind (G64)**

Strong low pressure moving across the Ohio Valley brought a high wind gust to the airport at Jefferson, NC.

NCZ001 **Ashe**

	24	**1421EST**			**1**	**1**	**5K**		**Strong Wind**

Strong winds on the afternoon of the 24th, blew a tree, onto a vehicle, resulting in one fatality and one injury. F36VE

NCZ001>006-018>020 **Ashe - Alleghany - Surry - Stokes - Rockingham - Caswell - Watauga - Wilkes - Yadkin**

	25	**0630EST**			**0**	**0**			**Heavy Snow**
		2300EST							

A winter storm dumped 4 to 8 inches of snow across the northwestern North Carolina mountains, foothills, and piedmont during the day of the 25th. Some of the higher amounts fell in southern sections of the piedmont counties.

NCZ001-001-018-018 **Ashe - Watauga**

	28	**0500EST**			**0**	**0**			**High Wind (G55)**
		0605EST							

A strong cold front moved through the area late on the 27th, ushering in strong winds during the morning of the 28th. These high winds downed trees, which fell onto powerlines in Watauga County. Trees were also blown down in Ashe County.

NORTH CAROLINA, South Coastal

NCZ087-096 **Robeson - Bladen**

	25	**1400EST**			**0**	**0**	**2.5M**		**Ice Storm**
		2200EST							

Freezing rain began falling over the area the morning of Jan 25th, with ice accumulations reaching a quarter of an inch by the afternoon. Tree limbs snapped from the weight of the ice, causing widespread power outages. Much of the monetary damages were due to debris removal and utility company expenses. Many homes were also damaged when the tree limbs fell on them.

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

NORTH CAROLINA, South Coastal

NCZ087-096>097-099 **Robeson - Bladen - Pender - Columbus**

26	**1100EST**		**0**	**0**	**13M**		**Ice Storm**
27	**0330EST**						

Another round of frozen precipitation moved into the area on the heels of the storm of Jan 25th, bringing more freezing rain and sleet to areas that already had over a quarter inch of ice still in the trees. The total ice accumulations ranged from a trace near the coast to as much as three quarters of an inch over interior sections. The weight of the ice caused major power outages from falling limbs, as well as significant structural damage to many homes. There was some ice accumulations on the roads, especially on bridges and overpasses, with numerous traffic accidents reported. Many residences were without power for over a week. Monetary damages totaled over a million dollars per county in some parts of Nouth Carolina, due to cleanup of debris, utility expenses, and home repair.

NORTH CAROLINA, Southwest

NCZ033>037-048>055-057>058-072 **Avery - Caldwell - Alexander - Iredell - Davie - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Mcdowell - Burke - Rowan - Graham - Cabarrus**

09	**0000EST**		**0**	**0**			**Winter Weather/Mix**
	0900EST						

Light snow developed across much of western North Carolina during the early morning hours of the 9th. By mid morning, 1 to 2 inches had accumulated across much of the area. There were some isolated 3 inch amounts in the higher terrain along the Tennessee border. Many roads became slick and hazardous.

NCZ033>037-048>050-053>057-062>067 **Avery - Caldwell - Alexander - Iredell - Davie - Madison - Yancey - Mitchell - Buncombe - Mcdowell - Burke - Catawba - Rowan - Macon - Southern Jackson - Transylvania - Henderson - Polk - Rutherford**

25	**1200EST**		**0**	**0**			**Heavy Snow**
	1800EST						

Light snow developed early in the morning across the mountains, foothills, and northern piedmont of North Carolina. The snow intensified throughout the morning and afternoon, and by early evening 3 to 5 inches had accumulated across much of the area. Accumulations as high as 8 inches occurred in mountainous areas along the Tennessee border.

NCZ034>037-055>057-066>072-082 **Caldwell - Alexander - Iredell - Davie - Burke - Catawba - Rowan - Polk - Rutherford - Cleveland - Lincoln - Gaston - Mecklenburg - Cabarrus - Union**

25	**1400EST**		**0**	**0**			**Sleet Storm**
26	**0000EST**						

During the early afternoon, snow began to mix with sleet across the foothills and northern piedmont, before becoming all sleet later in the evening. In the southern piedmont, precipitation fell almost exclusively as sleet. Total sleet accumulations were generally between 1 and 2 inches across the area. A light freezing rain developed during the evening, which resulted in a thin glaze of ice on top of the layer of sleet. Very slick roads were responsible for hundreds of traffic accidents, some of which involved injuries and fatalaties. Numerous injuries also occurred due to falls.

NCZ066>068-070>072-082 **Polk - Rutherford - Cleveland - Gaston - Mecklenburg - Cabarrus - Union**

27	**0000EST**		**0**	**0**			**Winter Weather/Mix**
	0600EST						

Light freezing rain developed during the early morning hours of the 27th across the southern foothills and southwest piedmont. This added an additional layer of glaze to the mixture of sleet and ice that was already present. The layer of ice was as thick as 2 inches in some areas. Hundreds of traffic accidents occurred overnight and into the morning rush hour. Many of the accidents involved injuries and some fatalaties. The ice was slow to melt, and traffic accidents continued for another 2 days.

NCZ033-048>052-058 **Avery - Madison - Yancey - Mitchell - Swain - Haywood - Graham**

27	**1800EST**		**0**	**0**			**Winter Weather/Mix**
28	**0600EST**						

Light snow developed across the Tennessee border counties during the evening of the 27th, and continued into the early morning hours of the 28th. Accumulations of 1 to 3 inches occurred, mainly right along the state line.

NORTH DAKOTA, Central and West

NDZ001>005-009>013-017>023-025-031>037-040>048-050>051 **Divide - Burke - Renville - Bottineau - Rolette - Williams - Mountrail - Ward - Mchenry - Pierce - Mckenzie - Dunn - Mercer - Oliver - Mclean - Sheridan - Wells - Foster - Golden Valley - Billings - Stark - Morton - Burleigh - Kidder - Stutsman - Slope - Hettinger - Grant - Bowman - Adams - Sioux - Emmons - Logan - La Moure - Mcintosh - Dickey**

04	**1800CST**		**0**	**0**			**Extreme Cold/Wind Chill**
05	**1200CST**						

A strong arctic high pressure system over British Columbia Canada moved southeast into the northern plains Sunday, the 4th of January and brought extremely cold temperatures and gusty winds to western and central North Dakota. Temperatures reached 20 to 30 below zero Sunday night and remained between 10 and 20 below zero on Monday. West winds of 10 to 25 mph combined with the subzero temperatures created wind chills ranging from 45 to 58 below zero over western and central North Dakota. The winds

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

NORTH DAKOTA, Central and West

also created low visibilties in blowing snow in many areas of the region. Some roads were closed due to the blowing and drifting snow over parts of northern North Dakota. The frigid temperatures lead to power outages and water line breaks in several areas.

NDZ001>005-009>013-017>023-025-032-034>037-045>048-050>051

Divide - Burke - Renville - Bottineau - Rolette - Williams - Mountrail - Ward - Mchenry - Pierce - Mckenzie - Dunn - Mercer - Oliver - Mclean - Sheridan - Wells - Foster - Billings - Morton - Burleigh - Kidder - Stutsman - Sioux - Emmons - Logan - La Moure - Mcintosh - Dickey

24	0800CST	0	0		Winter Storm
25	1600CST				

Low pressure over the central Rockies intensified into a major winter storm impacting North Dakota on the weekend of January 24th and 25th. A persistent snow event produced 6 to 12 inches of snow over most of western and central North Dakota. The heaviest band of snow fell from the northwest through central North Dakota where snowfall amounts ranged from 9 to 12 inches. The storm began as freezing rain and sleet over north central North Dakota before turning over to all snow. Gusty winds of 15 to 25 mph accompanied the storm resulting in considerable blowing and drifting snow and wind chills to 30 below zero. Travel throughout the region was impacted due to reduced visibilities and blocked roads. Numerous vehicle accidents were reported with some minor injuries but no details on the injured.

NDZ001>005-009>013-017>023-025-031>037-040>048-050>051

Divide - Burke - Renville - Bottineau - Rolette - Williams - Mountrail - Ward - Mchenry - Pierce - Mckenzie - Dunn - Mercer - Oliver - Mclean - Sheridan - Wells - Foster - Golden Valley - Billings - Stark - Morton - Burleigh - Kidder - Stutsman - Slope - Hettinger - Grant - Bowman - Adams - Sioux - Emmons - Logan - La Moure - Mcintosh - Dickey

27	1800CST	0	0		Extreme Cold/Wind Chill
28	1130CST				

An approaching arctic high pressure system over southern Canada and exiting low pressure system over the northern plains brought extremely cold temperatures and bitter wind chills to western and central North Dakota. Ambient temperatures ranging 20 to 35 below zero combined with northwest winds to 30 mph resulted in widespread wind chill factors of 40 to 65 below zero. In southwest North Dakota, in Adams County, icy roads and reduced visibilities in blowing snow resulted in a fatality (indirect) when a 35 year old male lost control of his vehicle and rolled several times. The driver was ejected from the vehicle. The arctic high pressure system settled over the region late Wednesday morning on the 28th of January and brought diminishing winds to the area.

NDZ001>003-009>011-017

Divide - Burke - Renville - Williams - Mountrail - Ward - Mckenzie

30	1800CST	0	0		Winter Storm
31	0400CST				

Low pressure system over Montana intensified and moved into North Dakota Friday evening the 30th. The winter storm brought a band of heavy snow and wind to northwest and north central North Dakota. The heaviest snow fell from Williston to Minot where up to 8 inches of snow accumulated. Winds to 35 mph caused considerable blowing and drifting snow. Many roads became blocked by large snow drifts. Snow drifts up to 10 feet were reported over parts of the northwest. The North Dakota Highway Patrol advised no travel due to the drifting snow and blocked roads. Numerous travelers who ventured out became stranded.

NORTH DAKOTA, East

NDZ006>008-014>016-024-026>027-054

Towner - Cavalier - Pembina - Benson - Ramsey - Eastern Walsh - Eddy - Nelson - Grand Forks - Western Walsh

02	0440CST	0	0		Winter Storm
03	0347CST				

A surface low over western South Dakota friday morning tracked into eastern South Dakota by late friday morning. It then tracked northeast along its inverted trough, roughly from Wahpeton, ND, at noon, to Lake of the Woods, MN, by early evening. Arctic high pressure built in quickly behind the departing low, creating a tight surface pressure gradient and gusty northwest winds. Wind speeds were steady at 20 to 30 mph with gusts to 35 mph. Wind speeds were a bit higher across the extreme northern Red River Valley. At Hallock, MN, winds gusted up to 45 mph. Blowing snow resulted in visibilities below a half-mile in open areas, and near zero at times in the northern Red River Valley. Eight inches of snow fell across portions of Benson and Ramsey counties, with 4 to 6 inches elsewhere. Several schools cancelled classes and evening activities on friday. No travel was advised in Pembina county. Two semi trucks collided on Interstate 29 near Drayton, causing minor injuries to one of the drivers. U.S. Highway 281 near Minnewaukan was blocked by snowdrifts.

NDZ006>008-014>016-024-026>030-054

Towner - Cavalier - Pembina - Benson - Ramsey - Eastern Walsh - Eddy - Nelson - Grand Forks - Griggs - Steele - Traill - Western Walsh

04	1900CST	0	0		Extreme Cold/Wind Chill
06	0700CST				

High pressure extended from eastern Montana into central South Dakota, with a decent surface pressure gradient over eastern North Dakota. This kept a steady west to northwest wind at 10 to 20 mph and wind chills from 40 below to 60 degrees below zero over northeast North Dakota. The coldest sunday (January 4th) morning lows were Cando, at 32 below, and Baker, at 28 below. The coldest monday morning lows were Cando, at 35 below, and Langdon, at 32 below. The Grand Forks hospital reported one case of

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

NORTH DAKOTA, East

frostbite and one case of hypothermia.

NDZ006>008-014>016-024-026>027-054 **Towner - Cavalier - Pembina - Benson - Ramsey - Eastern Walsh - Eddy - Nelson - Grand Forks - Western Walsh**

21	**1500CST**	**0**	**0**			**Extreme Cold/Wind Chill**
22	**0424CST**					

Surface high pressure built into central North Dakota, with a tight pressure gradient over northeast North Dakota. Northwest winds at 10 to 20 mph and temperatures from 15 below to 25 below zero created wind chills around 40 below zero. Cando and Langdon reported lows of 22 below zero on the morning of the 22nd.

NDZ006>008-014>016-024-026>030-038>039-049-052>054 **Towner - Cavalier - Pembina - Benson - Ramsey - Eastern Walsh - Eddy - Nelson - Grand Forks - Griggs - Steele - Traill - Barnes - Cass - Ransom - Sargent - Richland - Western Walsh**

24	**1525CST**	**0**	**0**			**Winter Storm**
26	**0315CST**					

An inverted trough extended into the northern plains from an area of surface low pressure over the central plains. Much of the area received over 6 inches of snow. A heavy snow band set up from Cooperstown to Mayville (North Dakota) and toward Wadena, Minnesota. Up to 2 feet of snow fell along this line. Wind chills of 20 below to 30 below zero also occurred during the day sunday (January 25th). 17 inches of snow fell at Hillsboro, ND. Many sunday church services and other activities were cancelled. Most schools closed on monday, while others started late. Some areas only saw partial mail service on monday. Interstate 29 closed between Grand Forks and Fargo around 6:15 pm sunday, and remained closed until 8 am on monday. There was a 15 to 20 car pileup on the Interstate 94 bridge between Fargo and Moorhead, with only minor injuries reported. Snowfall amounts like these had not occurred since the record setting winter of 1996/97.

NDZ006>008-014>016-024-026>030-038>039-049-052>054 **Towner - Cavalier - Pembina - Benson - Ramsey - Eastern Walsh - Eddy - Nelson - Grand Forks - Griggs - Steele - Traill - Barnes - Cass - Ransom - Sargent - Richland - Western Walsh**

26	**0330CST**	**0**	**0**			**Extreme Cold/Wind Chill**
31	**2359CST**					

Arctic high pressure built into the northern plains in the wake of the January 24th-26th snowstorm, which dropped heavy snow over all of eastern North Dakota. With subzero temperatures and wind speeds of 10 to 20 mph, wind chills dropped to 40 below to 65 below zero on the afternoon of the 27th. Therefore, a wind chill warning was issued from the afternoon of the 27th through the afternoon of the 28th. Wind speeds dropped off enough that the wind chill warning was not extended beyond the afternoon of the 28th. However, with the arctic high pressure over the area, cold temperatures abounded. On the morning of the 26th, both Cando and Crary reported low temperatures of 28 below zero. On the morning of the 27th, Mayville reported a low temperature of 36 below. Fargo and Grand Forks both set record lows at 31 below. On the morning of the 28th, Cando reported a low temperature of 39 below. Baker, Crary, Michigan, and Mayville all reported morning lows of 38 below. Devils Lake set a record low of 36 below and the Grand Forks International Airport set a record low of 37 below. On the morning of the 29th, Walhalla dipped to 42 below and Mayville dropped to 41 below. A record low of 40 below was set at the Grand Forks International Airport. An all-time record low temperature (since 1941) was set at the Grand Forks International Airport on the 30th, when the temperature fell to 43 degrees below zero. Record lows were also set at the city of Grand Forks, at 39 below, and at Fargo, at 36 below. Also on the 30th, the temperature at Mayville fell to 45 below and Walhalla fell to 43 below. An unofficial thermometer along the Pembina River in the Pembina Gorge reportedly fell to 60 below. On the morning of the 31st, Hillsboro and St. Thomas dipped to 30 below. Auto repair shops were kept busy jumping cars, installing block heaters, repairing flat tires, and working on batteries and spark plugs. One case of frostbite was reported at Altru Hospital in Grand Forks. A Grand Forks housing complex had heat generation problems due to the severe cold, causing indoor temperatures to fall to the 50s. Many of its residents slept elsewhere until its heating system was fixed. 400 north Fargo residents lost power for 3 hours on the morning of the 30th, when a powerline burned down.

OHIO, East

OHZ059 **Belmont**

03	**2015EST**	**0**	**0**			**Flood**
04	**0630EST**					

Boggs Creek flooded Route 331 near Holloway. At 825 PM, Aults Run flooded Interstate 70 just east of St. Clairsville. During the night, other roads were flooded: County Rd 4 near Colerain, Rte 56 near Maynard, Route 331 near Flushing, and US Rte 40 near Brookside.

OHZ058 **Guernsey**

03	**2045EST**	**0**	**0**			**Flood**
	2300EST					

Crooked Creek flooded Phillips Rd, 4 miles southwest of Cambridge.

Storm Data and Unusual Weather Phenomena

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

OHIO, East

OHZ050 **Jefferson**

03 2045EST 0 0 50K Flood
04 0000EST

Near Rayland, Short Creek flooded county roads 1, 7. County Rd 8 near Smithfield was buckled by flood waters. County Rd 15 flooded near Connorsville; and SR 152 near Smithfield. There was basement flooding in 70 houses in Adena, Dillonvale, and Warrenton. People were stranded in their homes by 10 PM on the 3rd.

OHZ039-048-058 **Tuscarawas - Coshocton - Guernsey**

04 0600EST 0 0 100K Flood
10 0700EST

Rivers began to rise January 2 because of snow melt and temperatures 20 degrees above normal. Two to 3 inches of rain fell January 3 and 4, causing rivers in Eastern Ohio to rise. Numerous small streams flooded first, followed by the rivers: Muskingum River at Coshocton rose above flood stage (15 ft) 6 AM on 4th; crested 18 ft at 6 AM on 5th; fell below flood stage 7 AM on 10th. Wills Creek at Cambridge rose above flood stage (15 ft) 6 PM on 4th; crested 20.1 ft at 6 AM on 5th; fell below flood stage 1 PM on 8th. Stillwater Creek at Uhrichsville rose above flood stage (5 ft) 530 PM on 4th; crested 9.6 ft 9 AM on 6th; fell below flood stage 1 AM on 9th. Tuscarawas River at New Philadelphia rose above flood stage (7 ft) 930 PM on 4th; crested 7.3 ft at 2 AM on 5th; fell below flood stage at 12 noon on the 5th. The Tuscarawas River at Newcomerstown crested 10.3 ft the early evening of the 5th. Flood stage is 11 ft.

OHZ049 **Harrison**

04 1055EST 0 0 Flood
05 2200EST

Streams were reported out of their banks in Jewett and Scio. By 440 PM, SR 151 flooded in Bowerston; and near Freeport, SR 800 and County Rd 10 were closed by flooding; and SR 331 was closed northwest of Holloway. By 940 PM, SR 800 near Freeport was still flooded. SR 151 near Scio and SR 800 near Freeport were the last to be uncovered by flood waters.

OHZ058 **Guernsey**

04 1130EST 0 0 200K Flood
07 0600EST

This nearly 3-day flood began when Vocation Rd and Frankfort Rd flooded in East Cambridge. At 425 PM, numerous roads near Cambridge flooded. By 930 PM on the 4th, over 50 roads were flooded county-wide. State Routes 66 and 209 were still flooded at 6 AM on the 6th. After 12 noon on the 6th, water levels began to fall. Flooded ended the morning of the 7th.

OHZ050 **Jefferson**

04 1140EST 0 0 400K Flood
06 1200EST

This 2-day flood started with the flooding of County Rd 8 east of Adena, and other roads. By 1 PM, Beach Spring Rd flooded 4 miles north of Martins Ferry. By 325 PM, County Rd 150 near Dillonvale was closed by flooding. By 445 PM, numerous roads were flooded 10 miles west of Steubenville. By 941 PM on the 4th, Route 152 near Dillonvale was closed by flooding; and just west of Rayland and Tiltonsville, numerous roads flooded. As late as 6 AM on 6th, roads were still flooded in southern Jefferson County. During this flood, the following were flooded: county roads 1, 2, 7, 8, 14, 17, 18, 26, 28, 34, 43, 47, 53, 54, 68, 74, and 77; State Routes 150 and 152. County Rd 74 near Adena had a mud slide. On CR 74 near Mingo Junction, a mobile home was knocked off its foundation by a mud slide. A house was threatened by a mud slide on County Rd 8 near Dillonvale. In Wells Twp, near Brilliant, 22 homes were flooded. Some families were evacuated. Schools were closed for 2 days.

OHZ057 **Muskingum**

04 1140EST 0 0 20K Flood
06 1200EST

This 2-day flood started with numerous roads flooded near Zanesville. By 415 PM, SR 146 and Old Falls Rd flooded near Dillon; and in Gaysport (Blue Rock), a house was flooded so its occupants were evacuated. By 947 PM, Gaysport reported numerous roads flooded. At last as 6 AM on 6th, some roads were still flooded.

OHZ048 **Coshocton**

04 1145EST 0 0 Flood
05 1500EST

SR 79 flooded near New Guilford and SR 751 flooded near Bakersville. By 430pm, west of Nellie, State Routes 79, 206, and 715 flooded; and northwest of Coshocton, SR 60 and US Rte 36 flooded near Blissfield and Layland. By 925 pm, SR 715 was closed by flooding near Nellie; and County Rd 439 was closed southeast of Wakatomika.

OHZ039 **Tuscarawas**

04 1150EST 0 0 Flood
07 0800EST

The almost 3-day flood began when several roads were reported flooded in the New Philadelphia area. By 955 PM, numerous roads had flooded in the Uhrichsville and Dennison areas, and the flooding continued around New Philadelphia. As last as 6 AM on the 6th, some roads were still flooded.

Storm Data and Unusual Weather Phenomena

January 2004

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

OHIO, East

OHZ059 **Belmont**

04 1300EST 0 0 250K Flood
05 2100EST

It started with Tunnel Rd flooding near Belmont and County Rd 56 flooding near Maynard. By 340 PM, Wheeling Creek flooded from Flushing to Bridgeport. By 4 PM, McMahon Creek flooded SR 149 in Glencoe. By 855 PM, Twp Rd 220 was closed by mud slides and high water; plus, there were mud slides in Bridgeport. At the end of the flood, newspapers reported 23 mud slides. A house on Route 647, two miles west of Martins Ferry, was threatened by a mud slide, started 6 PM on the 4th. House was later demolished for safety. During the early morning of the 5th, there was a huge mud slide near Armstrong Mills. Mud slides were reported on County Rd 30 (Kirkwood Heights); CR 54 (4 mi west of SR 147), and on SR 331. Other roads closed by flooding: SR 147 (Baileys Mills), SR 148 (Powhatan Point), and County Rd 34.
Rivers began to rise January 2 because of snow melt and temperatures 20 degrees above normal. Two to 3 inches of rain fell January 3 and 4, causing rivers to rise. Numerous small streams flooded first, then the Ohio River crested inches below flood stage: The Ohio River at Powhatan Point crested 36.8 ft and Pike Island crested 36.4 ft the morning of the 6th. Both have flood stages of 37 ft.

OHZ040 **Carroll**

04 1430EST 0 0 Flood
05 1500EST

Just south of Carrollton, Antigua Rd, Canyon Rd, and Chapel Rd were flooded, as was SR 39. By 910 PM, flooding continued on these roads, plus SR33. And north of Carrollton, Bacon Rd and SR 43 flooded.

OHZ041 **Columbiana**

04 1630EST 0 0 Flood
05 1500EST

It started when numerous roads flooded 5 miles east of Lisbon. By 510 PM, Canfield Rd and Lisbon Rd were flooded in Salem, from Little Beaver Creek By 920 PM, there was a mud slide on Dewey Ave near East Liverpool.

OHZ068 **Noble**

05 0105EST 0 0 Flood
1530EST

Several state routes closed near Dexter City because of flooding: 54, 145, 247, 260, 513, 574.

OHZ069 **Monroe**

05 0105EST 0 0 Flood
2100EST

State Route 26 flooded near Rinald Mills, about 13 miles south of Woodsfield. There was a mud slide on SR 556, near Headley Ridge, time unknown.

OHZ058 **Guernsey**

17 2000EST 0 0 Ice Storm
2330EST

Sleet and freezing rain began the afternoon of the 17th. An ice glaze, at least one quarter inch thick, was reached before midnight, resulting in numerous accidents.

OHZ039-068 **Tuscarawas - Noble**

25 2100EST 0 0 Heavy Snow
26 0600EST

Snow began the afternoon of the 25th and ended before midnight. Caldwell and New Philadelphia reported 6 inches.

OHZ049 **Harrison**

27 2300EST 0 0 Heavy Snow
28 0700EST

Snow began the afternoon of the 27th. By 11 PM, Hopedale reported 6 inches of snow.

OHIO, North

OHZ003-006>009-017>018 **Lucas - Wood - Ottawa - Sandusky - Erie - Hancock - Seneca**

04 1300EST 0 0 1.1M Winter Storm
05 0500EST

An area of low pressure moved up the Ohio Valley spreading mixed precipitation across Northwest Ohio. The precipitation began as rain but quickly changed to freezing rain and sleet during the afternoon hours. The precipitation changed to snow during the evening hours with accumulations of 4 to 5 inches reported in Lucas and Wood counties by early morning. Snow accumulations further south and east were generally 1 to 3 inches. Some ice accumulation was also reported across the area. Many accidents and significant travel delays resulted from this storm.

Storm Data and Unusual Weather Phenomena

January 2004

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

OHIO, North

OHZ038 **Holmes**

04	**2000EST**	**0**	**0**	**250K**		**Flood**
07	**1100EST**					

Nearly two inches of rain fell on Holmes County on the 3rd and 4th of January. Widespread lowland flooding occurred across the county during the following days. Killbuck Creek went into flood during the early morning hours of the 5th and remained in flood until midday on January 7th. The creek crested at 16.5 feet during the afternoon of the 5th. Several homes along and near the creek were damaged by flooding. Many roads had to be closed in the county, including State Route 60 both north and south of Killbuck .

OHZ032 **Stark**

04	**2300EST**	**0**	**0**	**250K**		**Flood**
06	**0600EST**					

Nearly two inches of rain fell on portions of Wayne County on the 3rd and 4th of January. Officially, 1.46 inches fell at the Wayne County Airport with 1.61 inches at the Ohio Agricultural Experimental Station. Widespread stream and lowland flooding occurred across the county beginning late in the evening on January 4th. Three homes along Prairie Lane in Wooster had to be evacuated because of flooding on the 5th. Flood waters in this area were reported to be as much as four feet deep. Many roads across the county were closed because of flooding. State Route 302 just southwest of Wooster was closed for over a day.

OHZ032 **Stark**

05	**0200EST**	**0**	**0**	**200K**		**Flood**
06	**2200EST**					

Nearly two inches of rain fell on portions of Stark County on the 3rd and 4th of January. Officially, 1.52 inches of rain fell at the Akron-Canton Airport on those days. Widespread stream and lowland flooding occurred in the county on the 5th and 6th. Sandy Creek left it's banks in the southern part of the county causing minor damage to a couple homes. Other homes in the Navarre and Minerva areas also sustained minor flood damage. Several roads in the county had to be closed because of flooding.

OHZ012>014 **Lake - Geauga - Ashtabula**

06	**0300EST**	**0**	**0**	**1.1M**		**Heavy Snow**
08	**0800EST**					

Very cold westerly winds blowing across Lake Erie caused lake effect snow showers to develop during the early morning hours of January 6th. This activity intensified during the late afternoon and evening hours of the 6th and finally tapered off around daybreak on the 8th. Snowfall totals for this event ranged from 8 to 12 inches over much of Lake County to two to three feet in portions of Geauga and Ashtabula Counties. A maximum of 36 inches was reported in Montville Township (Geauga County). Over two feet of snow fell on portions of Interstate 90 in Ashtabula County. Westerly winds gusting to over 30 mph accompanied the snow and caused whiteout conditions and drifts over ten feet tall. Travel was nearly impossible during the peak of the storm and hundreds of accidents were reported.

OHZ012>014 **Lake - Geauga - Ashtabula**

14	**0800EST**	**0**	**0**	**650K**		**Winter Storm**
15	**1400EST**					

An area of low pressure over lower Michigan moved southeast across Ohio and into southwestern Pennsylvania on January 14th and 15th. A band of moderate to heavy snow developed to the north of the low as it moved through the region. This band of snow was enhanced by Lake Erie as it moved over the northeastern corner of Ohio. Total accumulations in this area ranged from 6 to 8 inches with the heaviest snow falling during the afternoon and evening hours of the 14th. Travel was hampered by this event and dozens of accidents were reported.

OHZ013 **Geauga**

19	**0200EST**	**0**	**0**	**100K**		**Heavy Snow**
	2200EST					

Cold northwest winds blowing across Lake Erie caused lake effect snow showers to develop early on the 19th. This activity persisted into the evening hours of the 19th and then dissipated. Accumulations ranged from 6 to 8 inches in northern Geauga County with lesser amounts to the south. Many accidents were reported.

OHZ017-027>030-036>038-047 **Hancock - Wyandot - Crawford - Richland - Ashland - Marion - Morrow - Holmes - Knox**

25	**1800EST**	**0**	**0**	**3.0M**		**Winter Storm**
26	**2300EST**					

Low pressure over the southern plains moved northeast across Ohio. Snow associated with this low spread into northern Ohio during the evening hours of the 26th. Light freezing rain began to mix with the snow during the early morning hours of the 27th. This light mixture continued through the middle part of the day. Snow accumulations through noon on the 27th ranged from 3 to 5 inches with the greatest amounts along and just south of U.S. Route 30. The precipitation intensified during the late afternoon hours with moderate to heavy freezing rain falling for around 90 minutes. Some sleet was also reported during this period. Ice accumulations of up to one half inch resulted from this period of heavy precipitation. This created extremely treacherous driving conditions and resulted in hundreds of accidents. Many downed power lines were also reported. The freezing rain diminished in intensity during the evening hours and finally ended just before midnight.

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

OHIO, North

OHZ003-006>007

Lucas - Wood - Ottawa

26	**1900EST**			**0**	**0**	**1M**		**Winter Storm**
27	**1200EST**							

An area of low pressure moved across Northwest Ohio early on January 27th and moved over the west end of Lake Erie during the middle part of the morning. Freezing rain associated with the low began during the evening of the 26th and continued into the 27th. Some snow mixed with the freezing rain beginning during the early morning hours. The precipitation tapered off around midday. Ice accumulations of at least one quarter inch along with one or two inches of snow were reported across much of Lucas, Wood and Ottawa counties. Many accidents resulted from this event. There were also a few reports of downed power lines.

OHIO, Northwest

OHZ015>016-024>025

Paulding - Putnam - Van Wert - Allen

26	**0100EST**			**0**	**0**	**0**		**Winter Storm**
	0500EST							

Snow accumulated 4 to 6 inches across Allen, Putnam, Van Wert, and Paulding counties with east to northeast winds of 20 to 30 mph causing extensive blowing and drifting snow. Snow drifts were as high as 4 feet across some county roads.

OHIO, Southeast

OHZ066>067-075>076-083>085

Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs

04	**1100EST**			**0**	**0**	**1.7M**		**Flood**
07	**1400EST**							

A strong frontal boundary pushed across southeast Ohio late on the 3rd. By dawn on the 4th, the frontal zone stalled just to the south. Late on the 4th and into the 5th, a low pressure wave lifted northeast, along this boundary, and through the Ohio River Valley.

Rains of 1.5 to 3.3 inches fell on saturated ground, during about a 36 hour time span. One rain maximum extended northeast from the Scioto River Valley, across the northern half of Perry County, then continued northeast into the Muskingum River Valley. Another maximum of rain extended out of central Vinton County, across central Athens County, and into central and northern Washington County. McArthur measured 3.3 inches of rain for the event. Other rain measurements from cooperative observers included 2.6 inches at Athens, 2.3 inches at McConnelsville, 2.2 inches from Nelsonville, 2 inches at Marietta, 1.9 inches at Beverly, 1.6 inches from both New Lexington and Jackson.

Widespread small stream flooding occurred on Sunday the 4th and Monday the 5th. In Jackson County, the stream flooding was limited to townships near the Vinton County border. Water was 2 to 3 feet deep in the streets of Glenford of northern Perry County. Water and debris forced numerous road closures. As the water receded, cleanup was complicated by some ice formation.

River flooding followed on the Muskingum, the Hocking, and on the Ohio. The swollen rivers also caused feeder streams to have backwater flooding. During the morning of the 5th, the Muskingum River crested at McConnelsville of Morgan County around 12.7 feet. Flood stage is 11 feet. This was the highest water level at McConnelsville since the 12.8 feet back in August, 1980. About 27 homes and 1 business along the river in Morgan County sustained at least major damage. All total, about 77 homes in Morgan County, were affected to some degree.

At Athens, the Hocking River crested around 21.3 feet about midday on the 6th. Flood stage is 20 feet. The floods of 1997 and 1998 were higher at Athens. The county engineer reported about a dozen road slippages and a dozen road washouts on roads in Athens County. Near dawn on the 6th, York Township firemen rescued a woman whose vehicle was washed into the Hocking River from County Route 4. She called 911 on her cell phone, while the water was rushing into her vehicle. She got outside and on to the roof, but was swept off the vehicle by the rushing water. She was in the water for nearly 45 minutes, with air temperatures in the 20s. When rescued by boat, her head was poking out of the water and one arm was hanging on to a brush pile. The fire chief commented, about how lucky she was. He said the spot where she drove into the water is usually a dead zone for cell phone service, but somehow she got a signal.

The Ohio River crested at Marietta at 36.8 feet during the afternoon of the 6th. Flood stage is 34 feet. The flood of January 1996 crested at 39.3 feet. Further down the Ohio River, the crest at Racine was 44.7 feet, plus near 47.3 feet at Pomeroy, both on the 7th.

In Washington County, the heaviest flood damage was along the Muskingum River, plus the usual low lying sections in the city of Marietta. Three occupied dwellings were destroyed in Washington County. Over 200 dwellings were affected to some degree. Local fire departments in Washington County performed several rescues, most of which were along County Route 32, known as the Muskingum River Road.

Athens, Morgan, Perry, and Washington Counties were included in a major federal disaster declaration. See FEMA disaster 1507 for the specifics.

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

OHIO, Southeast

OHZ066>067-075>076-083>087 — **Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence**

25	**1200EST**	**0**	**0**			**Winter Storm**
26	**0200EST**					

Snow and sleet spread north through southeast Ohio during Sunday afternoon, the 25th. The snow and sleet accumulations ranged from 1 to 2 inches in Lawrence and Gallia Counties, to as much as 3 to 5 inches across Washington, Morgan, Athens, Vinton, and Perry Counties. The snow and sleet changed to freezing rain during the late afternoon and evening. Ice accumulated a quarter to a half inch from the freezing rain. No major power outages occurred.

OHIO, Southwest

OHZ026-034>035-042-042>043-043>044-044>045-045>046-046-051-051>052-052>053-053>054-054-054>055-055-055>056-056-060-060>061-061>062-062>063-063-063>064-064-064>065-065-065-070-070-070>071-071-071>073> — **Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark - Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler - Warren - Clinton - Ross - Hocking - Hamilton**

04	**1250EST**	**0**	**0**			**Flood**
	2345EST					

A nearly stationary front produced widespread heavy rain across much of southwest, western and central Ohio throughout the day. Many locations received two to four inches of rain, causing widespread flooding of roads and low-lying areas. Numerous creeks and streams rose out of their banks and many homes sustained basement flooding.

OHZ026-034>035-042>046-051>056-060>065-070>074-077>082-088 — **Hardin - Mercer - Auglaize - Darke - Shelby - Logan - Union - Delaware - Miami - Champaign - Clark - Madison - Franklin - Licking - Preble - Montgomery - Greene - Fayette - Pickaway - Fairfield - Butler - Warren - Clinton - Ross - Hocking - Hamilton - Clermont - Brown - Highland - Adams - Pike - Scioto**

25	**1700EST**	**0**	**0**			**Winter Storm**
	2330EST					

Low pressure overspread the Ohio Valley and produced significant icing along and south of the Ohio River. North of the river, snowfall totals averaged 4 to 6 inches.

OKLAHOMA, Eastern

NONE REPORTED.

OKLAHOMA, Extreme Southeast

NONE REPORTED.

OKLAHOMA, Panhandle

NONE REPORTED.

OKLAHOMA, Western, Central and Southeast

OKZ019>020-025>026-028>032-038>039-042>043-046>048-051>052 — **Logan - Payne - Oklahoma - Lincoln - Mcclain - Cleveland - Pottawatomie - Seminole - Hughes - Comanche - Stephens - Pontotoc - Coal - Carter - Johnston - Atoka - Marshall - Bryan**

13	**2300CST**	**0**	**0**			**Dense Fog**
14	**1100CST**					

Dense fog reduced visibilities to a quarter mile or less across the area causing hazardous driving conditions. Many traffic accidents were reported due to foggy conditions. One man was injured when he was hit by a train in Lincoln county. Another person was injured in one of several accidents that occurred in the same area of Stephens county. The fog eventually burned off by midday.

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

OKLAHOMA, Western, Central and Southeast

OKZ007>008-012>013-016>020-022>031-035>042-044>046-050 — **Grant - Kay - Garfield - Noble - Custer - Blaine - Kingfisher - Logan - Payne - Washita - Caddo - Canadian - Oklahoma - Lincoln - Grady - Mcclain - Cleveland - Pottawatomie - Seminole - Kiowa - Jackson - Tillman - Comanche - Stephens - Garvin - Murray - Pontotoc - Cotton - Jefferson - Carter - Love**

16	**0700CST**	**0**	**0**			**Dense Fog**
	2000CST					

Patchy dense fog throughout the area caused numerous delays and cancellation of 49 flights. This day long fog eventually began to lift in the late afternoon to early evening hours from west to east across Oklahoma.

OKZ004>021-023>026-030 — **Harper - Woods - Alfalfa - Grant - Kay - Ellis - Woodward - Major - Garfield - Noble - Roger Mills - Dewey - Custer - Blaine - Kingfisher - Logan - Payne - Beckham - Caddo - Canadian - Oklahoma - Lincoln - Pottawatomie**

25	**2200CST**	**0**	**0**			**Winter Weather/Mix**
26	**2000CST**					

A strong cold front moved across the area causing precipitation that initially fell as rain or drizzle to freeze on roads and other surfaces. One to three inches of snow also fell across the area. Strong winds gusting above 40 mph caused visibility problems from the blowing snow. Temperatures behind the front continued to fall throughout the day eventually reaching single digits in some areas. With falling temperatures, strong north winds, and snow, numerous traffic accidents occurred across the area due to slick and hazardous roads. Two fatalities occurred a mile north of I-40 on Highway 377 in Pottawatomie county. Seven injuries were reported due to other accidents.

OREGON, Central and East

ORZ041>044-046 — **Eastern Columbia River Gorge - North Central Oregon - Central Oregon - Lower Columbia Basin - Blue Mountains**

01	**0100PST**	**0**	**0**			**Heavy Snow**
	1600PST					

A powerful winter storm hit the Pacific Northwest on New Years Day. A deep surface low tracked across central and northeast Oregon, as well as southeast Washington. This resulted in heavy snow on the northwest side of the surface low track. Here are some of the snow totals from this event...
Eastern Columbia River Gorge: The Dalles 6-8 inches
North Central Oregon: 1N Camp Polk 14 inches, Camp Sherman 10 inches, Warm Springs 7 inches, Mosier 6 inches, Maupin 6 inches
Central Oregon: Sisters 11 inches, Sunriver 9 inches, La Pine 7 inches
Lower Columbia Basin: 5 N Lexington 5 inches, Hermiston 4 inches
Blue Mountains: Ukiah 12 inches

ORZ045-047-049 — **Foothills Of The Blue Mountains - John Day Basin - Grand Ronde Valley**

01	**0200PST**	**0**	**0**			**Winter Weather/Mix**
	1700PST					

A powerful winter storm hit the Pacific Northwest on New Years Day. A deep surface low tracked across central and northeast Oregon, as well as southeast Washington. A band of moisture moved north out ahead of the low and dumped anywhere from 1-3 inches of snow in the Blue Mountain Foothills, as well as five inches in Monument. As the low tracked northeast of the Blue Mountain Foothills, a sudden surge of strong westerly winds developed. Brief blizzard conditions were reported on highway 206 between Heppner and Condon where four foot snow drifts occurred. At the Pendleton Airport, wind gusts over 30 knots persisted from 1:21 pm - 2:43 pm with a peak gust of 38 knots. In addition, visibilities lowered to between a quarter mile and a half mile between 1:21 pm - 1:58 pm due to snow and blowing snow. Reduced visibilities, slick roads, and blustery winds contributed to a 10-vehicle pile-up on Rieth Ridge west of Pendleton, which closed interstate 84 in both directions for more than two hours. Two minor indirect injuries resulted from the accident. As the low tracked north of the John Day Basin, strong south to southwesterly winds developed. This created brief blizzard conditions in Monument where the visibility was lowered to 20 feet. Snow and blowing snow were also observed in the Grande Ronde Valley, which prevented some residents from receiving newspapers from their carriers.

ORZ041 — **Eastern Columbia River Gorge**

03	**1300PST**	**0**	**0**			**Heavy Snow**
04	**1002PST**					

Heavy snow fell in the Eastern Columbia River Gorge, with 8 inches of snow reported in The Dalles.

ORZ041>050 — **Eastern Columbia River Gorge - North Central Oregon - Central Oregon - Lower Columbia Basin - Foothills Of The Blue Mountains - Blue Mountains - John Day Basin - Ochoco-John Day Highlands - Grand Ronde Valley - Wallowa County**

04	**2000PST**	**0**	**0**			**Extreme Cold/Wind Chill**
05	**1000PST**					

An arctic air mass moved south out of British Columbia, setting daily record low temperatures for January 5th. Meacham broke an all time record low temperature on the morning of January 5th, with a low temperature of -31 degrees Fahrenheit. Some other low temperatures, several of which were daily records, observed in degrees Fahrenheit included: -20 at Pendleton experimental station;

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

OREGON, Central and East

-16 in Elgin; -15 Pilot Rock; -14 in Union; -13 Boardman; -12 in Hermiston; -11 at the Pendleton Airport; -10 in Long Creek, Milton-Freewater, and Austin; -9 in La Grande, and Joseph; -7 in Heppner; -6 Arlington; -4 in Madras; and -2 in Bend. The cold temperatures and slick roadways resulted in several school closures and cancellations.

ORZ049 **Grand Ronde Valley**

05	**2000PST**	**1**	**0**		**Extreme Cold/Wind Chill**
06	**1000PST**				

A three year old toddler was found dead outside his home at approximately 3:30 am on January 6th. The boy had left his house without winter clothing during the middle of the night. M3OU

ORZ041>042-044>045 **Eastern Columbia River Gorge - North Central Oregon - Lower Columbia Basin - Foothills Of The Blue Mountains**

06	**0600PST**	**0**	**0**		**Heavy Snow**
07	**1200PST**				

Heavy snow fell across much of central and northern portions of Oregon. Snow reports from this event included:
Eastern Columbia River Gorge: The Dalles 8 inches
North Central Oregon: Tygh Valley 8-12 inches, Maupin 8 inches
Lower Columbia Basin: Irrigon 5-6 inches
Foothills of the Blue Mountains: Condon 8.5 inches

ORZ049 **Grand Ronde Valley**

06	**1452PST**	**0**	**0**		**Blizzard**
	2122PST				

A tight pressure gradient developed across the Grande Ronde Valley resulting in blizzard conditions. At 440 PM, interstate 84 was closed at Ladd Canyon due to near zero visibility, with sustained winds of 35-45 MPH and gusts between 45-60 MPH. Highway 30 near La Grande also closed due to whiteout conditions.

ORZ041-043>045 **Eastern Columbia River Gorge - Central Oregon - Lower Columbia Basin - Foothills Of The Blue Mountains**

08	**1600PST**	**0**	**0**		**Winter Weather/Mix**
09	**0800PST**				

A mix of sleet and freezing rain occurred with ice accumulations less than a quarter inch.

ORZ042-047 **North Central Oregon - John Day Basin**

08	**2000PST**	**0**	**0**		**Ice Storm**
09	**0800PST**				

Significant ice accumulations occurred across north central Oregon and the John Day Basin. In north central Oregon, ice accumulations included .75 inches near Warm Springs, .5 inches near Moody, and up to .25 inches in Madras. In the John Day Valley, .25-.50 inches of ice accumulated in Fossil, and .25 inches 12 miles north of Mitchell.

ORZ044>045 **Lower Columbia Basin - Foothills Of The Blue Mountains**

09	**1230PST**	**0**	**0**		**Dense Fog**
	1700PST				

Dense fog with visibilities less than 50 yards, as well as icy roadways contributed to a collision consisting of two semi-trailers at milepost 193 on interstate 84. Westbound lanes of interstate 84 were closed from Pendleton to Stanfield from 12:30 pm to 5:00 pm. Traffic was backed up for more than a mile behind the collision.

ORZ046-049 **Blue Mountains - Grand Ronde Valley**

15	**0400PST**	**0**	**0**		**Winter Weather/Mix**
	1000PST				

Freezing rain on interstate 84 led to several accidents, one involving a paint truck at milepost 259 just north of La Grande.

ORZ049 **Grand Ronde Valley**

22	**1100PST**	**0**	**0**		**High Wind (G51)**
23	**1407PST**				

An automated weather station at the base of Ladd Canyon recorded sustained winds between 39-46 MPH, with gusts to 58 MPH. A wind gust of 59 MPH was also recorded one mile southwest of Union.

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

OREGON, Central and East

ORZ046 **Blue Mountains**

23	**0156PST**	**0**	**0**			**Ice Storm**
24	**0700PST**					

Ice coating on power lines near Emigrant Springs.

A significant ice storm resulted in widespread power outages and considerable tree damage in Meacham and Emigrant Springs. Most residences lost power for about a day, but a few remained without power for as long as six days. Widespread ice accumulations of one inch, locally up to two inches, occurred in Meacham. Interstate 84 over the Blue Mountains was closed on several occasions due to the ice storm.

ORZ049 **Grand Ronde Valley**

23	**0335PST**	**0**	**0**			**Winter Storm**
24	**1300PST**					

A winter storm brought widespread freezing rain and snow to the Grande Ronde Valley. Six inches of snow fell in the town of Union with ice accumulations of .25-.50 inches. In addition, sustained wind speeds of 30-35 MPH caused blowing and drifting snow at the base of Ladd Canyon, resulting in treacherous driving conditions.

ORZ043 **Central Oregon**

26	**2100PST**	**0**	**0**			**Heavy Snow**
27	**0900PST**					

Heavy snow fell across central Oregon with nine inches in north Hampton, eight inches near La Pine and Sunriver, and five inches in Brothers.

ORZ048 **Ochoco-John Day Highlands**

27	**0000PST**	**0**	**0**			**Heavy Snow**
	1100PST					

Six inches of snow fell 18 miles southwest of Paulina.

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

OREGON, Central and East

ORZ046 **Blue Mountains**

28	**1800PST**			**0**	**0**		**Winter Weather/Mix**
29	**0900PST**						

Around 11 inches of snow, combined with sleet and freezing rain, fell above 4000 feet in the Blue Mountains. The weight of the snow and ice knocked trees down on highway 204, prompting the Oregon Department of Transportation to close the road at 5:30 am on January 29th. The road was open again at 4:45 pm. Night skiing on January 29th was cancelled at the Spout Springs Ski Resort from too much snow.

ORZ042 **North Central Oregon**

29	**2200PST**			**0**	**0**	**3K**	**High Wind (G52)**
30	**0200PST**						

A wind gust of 60 MPH was recorded five miles WSW of Shaniko by the Department of Highways. In addition, high winds blew the roof off a greenhouse in Ashwood. The property damage from this event is estimated at $3,000.

ORZ047 **John Day Basin**

30	**0200PST**			**0**	**0**	**0.50K**	**High Wind (G50)**
	0530PST						

Strong winds blew a portion of a tree onto Boyer's General Store in Monument.

High winds knocked down several trees in monument.

ORZ044>045 **Lower Columbia Basin - Foothills Of The Blue Mountains**

30	**0300PST**			**0**	**0**	**5K**	**High Wind (G65)**
	0430PST						

A line of convective showers associated with a strong surface cold front brought a brief period of high winds to the Lower Columbia Basin and the Blue Mountain Foothills. Wind gusts included 75 MPH four miles WSW of Umatilla, 64 MPH at the Pendleton Airport, 60 MPH in Condon, and 58 MPH in Hermiston, and 57 MPH in Helix. The winds knocked a tree down onto the side of a home in Heppner. Some roof damage to a small out building in Athena occurred due to the high winds. A locust tree was knocked down onto Echo's Main Street. Two UEC transmission poles fell across highway 207, which closed the highway for several hours. The winds also blew down a few road signs, and caused scattered power, cable, and internet outages. Tumbleweed accumulated to a height covering the first floor of a home in Umatilla. Property damage from this event is estimated at $4,000.

Storm Data and Unusual Weather Phenomena

January 2004

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

OREGON, Central and East

ORZ050 **Wallowa County**

30 0500PST 0 0 0.50K Strong Wind
0645PST

Strong winds blew a tree down in Enterprise.

ORZ042 **North Central Oregon**

30 0700PST 0 0 Heavy Snow
1618PST

A weather spotter one mile north of Camp Polk received six inches of snow, with four inches falling between 12:00 pm - 4:05 pm.

ORZ048 **Ochoco-John Day Highlands**

31 1800PST 0 0 Heavy Snow
2359PST

7.5 inches of snow fell nine miles northwest of Seneca. The snow accumulation occurred from 6:00 PM on January 31st through 7:25 AM on February 1st.

OREGON, Northwest

ORZ001>013 **Northern Oregon Coast - Central Oregon Coast - Coast Range Of Nw Oregon - Central Coast Range Of W Oregon - Lower Columbia - Greater Portland Metro Area - Central Willamette Valley - Southern Willamette Valley - Western Columbia River Gorge - North Oregon Cascades Foothills - Northern Oregon Cascades - Cascade Foothills In Lane County - Cascades In Lane County**

06 0600PST 0 0 Winter Storm
09 0900PST

ORZ009 **Western Columbia River Gorge**

06 1000PST 0 0 Blizzard
08 0800PST

A strong winter storm packing the powerful punch of a frigid arctic airmass, heavy snow, sleet and freezing rain, along with strong east winds through and near the Columbia River Gorge snarled travel, forced the closure of most schools and businesses, and resulted in widespread power outages and properly damage in Northwestern Oregon. Strong high pressure built up east of the Cascade Mountains by January 5th, which forced frigid air through the Columbia River Gorge into Northwest Oregon. A Pacific low pressure system brought moist Pacific air over the top of this cold dome, producing the widespread snow...sleet...and freezing rain throughout the area, and blizzard conditions in Columbia River Gorge. Snowfall totals ranged from 2 to 3 inches along the the North Oregon Coast to from 2 to 8 inches in the Willamette Valley and up to 27 inches in the Cascade Mountains. Accumulations of up to 2 inches of sleet and freezing rain followed the snowfall. The Portland metropolitan area received 5 to 8 inches of snow, followed by one to two inches of sleet and freezing rain, which limited or halted most forms of travel and resulted in cancellation of over 1300 flights at Portland International Airport, stranding 90,000 passengers. Portland's light rail train system was shut down during the peak of the freezing rain January 6th and 7th. Most businesses and schools were also closed on January 6th and 7th, longer in many areas. Blizzard conditions in the Columbia River Gorge resulted in the closure of Interstate 84 between Troutdale, Oregon and Hood River Oregon, and Washington State Route 14 between Washougal, Washington and White Salmon , Washington during the same period, halting east-west travel through the Gorge and stranding hundreds of trucks at both ends of the Gorge. Weight from the snow and ice buildup resulted in widespread downed trees and power lines, leaving 46,000 customers without power, and collapsed roofs at Portland's Gunderson Steel and Rail, Fred Meyer stores in Gateway and Clackamas, and a barn in Forest Grove that killed 4 horses. The roof over a boat marina in Scappoose collapsed, sinking 4 boats and damaging many others. Snowfall in the Cascades ranged from 8 inches at Blue Box Pass and Bennett Pass to 27 inches at Timberline Lodge and White River. President Bush declared Northwestern Oregon a Disaster Area, and Oregon Governor Kulongoski estimated the cost of damages to public property at $16 million. No deaths or serious injuries were attributed to the storm.

ORZ011 **Northern Oregon Cascades**

26 0900PST 0 0 Heavy Snow
2100PST

Heavy snows were received by the ski lodges. Timberline received 13 inches, Mt Hood Meadows 9 inches, and Hoodoo 3 inches.

ORZ011 **Northern Oregon Cascades**

27 0900PST 0 0 Heavy Snow
29 0900PST

A series of Pacific storms moved onshore bringing heavy snows to higher elevations. In 48 hours Timberline Lodge received 16 inches, Mt Hood Meadows 13 inches, Government Camp 5 inches, Santiam Pass, White River and Bennett Pass each 3 inches.

Benton County

Countywide **27 0900PST 0 0 Heavy Rain**
29 0900PST

Clackamas County

Countywide **27 0900PST 0 0 Heavy Rain**
29 0900PST

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
OREGON, Northwest									
Clatsop County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Columbia County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Hood River County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Lane County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Lincoln County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Linn County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Marion County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Multnomah County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Polk County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Tillamook County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Washington County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							
Yamhill County									
Countywide	**27**	**0900PST**			**0**	**0**			**Heavy Rain**
	29	**0900PST**							

A series of strong Pacific storm systems brought heavy rain to Northwest Oregon. Some of the heavier amounts include: Tillamook 6.78 inches, Lees Camp 6.80 inches, Mapleton 4.30 inches, the Astoria Airport 4.29 inches, Seaside 4.00 inches, Jewell 5.3 inches, Laurel Mt 4.88 inches, Detroit Dam and Scotts Mill 2.0 inches, Falls City 2.80 inches, Bonneville Dam 2.1 inches, Salem 0.87 inches and elsewhere from one-half inch at the Portland International Airport to 2 inches above the Willamette Valley floor.

ORZ001>003-007	**Northern Oregon Coast - Central Oregon Coast - Coast Range Of Nw Oregon - Central Willamette Valley**								
	29	**0200PST**			**0**	**0**			**High Wind (G75)**
	30	**0200PST**							

A strong Pacific low pressure system brought high winds to Northwest Oregon. Along the coast, Garibaldi reported sustained winds of 53 mph with gusts to 70 mph, Newport Jetty gusts to 62 mph, Cannon Beach gusts to 64 mph, Newport Jetty gusts to 62 mph, Newport Airport gusts to 53 mph, and Florence gusts to 50 mph. Numerous reports were received of downed tree limbs and trees in the Central Willamette Valley, resulting in power outages for 16,000 customers, as well as reports of damaged cars and homes in the Salem area. Laurel Mountain in the Coast Range reported a wind gust to 86 mph.

ORZ011-013	**Northern Oregon Cascades - Cascades In Lane County**								
	29	**1500PST**			**0**	**0**			**Heavy Snow**
	30	**2100PST**							

A Pacific cold front dumped heavy snows in the Cascade Mountains. Timberline Lodge reported 19 inches of new snow, Mt Hood Meadows 13 inches, Bennett Pass and Willamette Pass 12 inches, and Santiam Pass and Blue Box Pass 15 inches.

ORZ001	**Northern Oregon Coast**								
	29	**1500PST**			**0**	**0**			**Flood**
	30	**1000PST**							

The heavy rains December 27-29 caused numerous rivers in Northwestern Oregon to swell to above bankfull, with the Wilson and Nehalem Rivers cresting right around flood stage late December 29 and early December 30. Even though the Wilson River crested a foot below flood stage, there was minor flooding in north Tillamook where Highway 101 crosses the river. This flooding likely

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

OREGON, Northwest

resulted from high runoff from the heavy rains into the Wilson River below the official river gage.

OREGON, Southeast

ORZ062 **Baker**

01 1200MST 1900MST **0** **0** **Heavy Snow**

See narrative for Heavy Snow in Idaho this date.

ORZ061>064 **Harney - Baker - Malheur - Lower Treasure Valley**

07 0300MST 1700MST **0** **0** **Heavy Snow**

A Pacific storm system with spread snow move eastward from the Pacifc Coast into Eastern Oregon the afternoon of Tuesday 6 January 2004. This system dropped 5 inches or more of new snow over much of Eastern Oregon Tuesday night into Wednesday morning before moving in to Idaho. Some snow amounts from this system were Drewsey with 5 inches, Baker City 5 inches and Halfway in northeast Baker County with 10 inches of new snow.

Baker County

Countywide **30 0710MST 0740MST** **0** **0** **Thunderstorm Wind (G60)**

Malheur County

Central Portion **30 0715MST 0810MST** **0** **0** **Thunderstorm Wind (G62)**

See narrative for Severe Thunderstorms in Ada, Canyon, Owyhee and Elmore counties Idaho.

OREGON, Southwest

ORZ022-022-022-022 **Curry County Coast**

01 0400PST 0600PST **0** **0** **High Wind (G92)**

This gust recorded at Gold Beach.

A quick hitting low pressure system brought a short period of high winds to the southern Oregon coast this morning. A High Wind Warning was issued for ORZ022 at 0605 PST on 01/01/04 and expired at 0925 PST on 01/01/04. The above observations verified the warning, and obviously the warning was issued late.

ORZ029-031 **Klamath Basin - Central & Eastern Lake County**

01 0742PST 0821PST **0** **0** **Blizzard**

Spotter KL09 in Klamath reported blizzard conditions.

ORZ026-030-030-030 **Jackson County - Northern & Eastern Klamath County & Western Lake County**

01 0800PST 2236PST **0** **0** **Heavy Snow**

Spotter JA45 in Butte Falls reported 4 inches of snow 1200-1800 PST.

An extraordinary winter storm struck Oregon and Northern California on January 1, 2004. A multitude of warnings and advisories were issued to cover this event. The Oregon warnings are summarized below. Verifying observations are listed above.

ORZ024/026 Winter Storm Warning issued at 12/31/03 at 1500 PST, changed to Heavy Snow Warning at 01/01/04 at 0514 PST, expired at 01/01/04 at 0958 PST. Warning elevation was above 2000 feet, lowered to 1500 feet at 01/01/04 at 0514 PST.

ORZ025 Heavy Snow Warning issued at 01/01/04 at 0514 PST, expired at 01/01/04 at 0958 PST. Warning elevation was above 1500 feet.

ORZ027 Winter Storm Warning issued at 01/01/04 at 0514 PST, expired at 01/01/04 at 0958 PST.

ORZ028 Winter Storm Warning issued at 12/31/03 at 1500 PST, expired at 01/01/04 at 0958 PST.

ORZ029/030/031Blizzard Warning issued at 01/01/04 at 0807 PST, expired at 01/01/04 at 1445 PST. Northern ORZ030 should have been included in the Winter Storm or Heavy Snow warnings earlier.

ORZ024-024-024-024-026-026-026>027 **Eastern Curry County & Josephine County - Jackson County - South Central Oregon Cascades**

02 0730PST 1544PST **0** **0** **Heavy Snow**

Spotter JO01 in Grants Pass reported 4.5 inches of snow in 10 hours ending at 1000 PST.

A Heavy Snow Warning was issued for Oregon zones ORZ021/022/023/024/025/026 at 1122 PST on 01/02/04 and expired at 1734 PST on 01/02/04. As the reports above indicate, this was a valid warning, but it was issued late. It also should have included ORZ027.

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

OREGON, Southwest

ORZ021-021-021>022 **South Central Oregon Coast - Curry County Coast**

06 1930PST 0 0 High Wind (G69)
07 1000PST

Cape Blanco recorded winds in excess of 40 mph continually during this time period. The peak sustained wind was 55 mph at 2300 PST on 01/06.
A High Wind Warning was issued for the headlands of Oregon zones ORZ021/022 at 1435 PST on 01/05 and expired at 0410 PST on 01/07. The above observations verified the warning.

ORZ021-021>022-022 **South Central Oregon Coast - Curry County Coast**

07 2100PST 0 0 High Wind (G62)
08 0000PST

Cape Blanco winds exceeded 40 mph continuously during this time interval. The maximum recorded sustained wind was 55 mph at 2300 PST on 01/07.
The above observations indicate that High Wind Warning criteria was met briefly this evening...but no warning was issued.

ORZ021>022 **South Central Oregon Coast - Curry County Coast**

09 1130PST 0 0 High Wind (G60)
1330PST

Cape Blanco sustained winds were near 40 mph during this interval.
A High Wind Warning was issued for the coastal headlands of Oregon zones ORZ021/022 at 1400 PST on 01/08 and expired at 0835 PST on 01/09. The above observations indicate that the warning was cancelled too early.

ORZ021 **South Central Oregon Coast**

26 1900PST 0 0 High Wind (G40)
27 0000PST

Cape Blanco recorded sustained winds 40 mph or greater continuously during this time interval.
This was a missed high wind event. No warnings were issued for this event.

ORZ029-029>030 **Klamath Basin - Northern & Eastern Klamath County & Western Lake County**

27 0523PST 0 0 Heavy Snow
0800PST

Spotter KL75 near Chiloquin recorded 11 inches of snow between 1500 PST on 1/26 and 0500 PST on 1/27.
This was a missed event. No warnings or advisories were in effect. The belt of heavy snow appeared to be limited to the Cascades (where the snow amounts did not meet warning criteria) and a strip just east of the Cascades.

ORZ021>022 **South Central Oregon Coast - Curry County Coast**

29 2300PST 0 0 High Wind (G89)

Cape Blanco recorded a peak gust of 89 mph.
A High Wind Warning was issued for the coastal headlands of Oregon zones ORZ021/022 at 0500 PST on 01/29 and expired at 0455 PST on 01/30. The above observations verified the warning, and were the highest gusts recorded during this event. Cape Blanco recorded gusts meeting High Wind Warning criteria continuously from 2100-2300 PST on 01/29. It also recorded one more 58 mph gust at 0300 PST on 01/30.

PACIFIC

NOT RECEIVED.

PENNSYLVANIA, Central

PAZ005-010>011 **Mckean - Elk - Cameron**

04 1600EST 0 0 Ice Storm
05 0700EST

Weak low pressure brought a mix of sleet and freezing rain to the northern tier of Pennsylvania during the evening of Sunday January 4th through the morning of Monday January 5th. Over McKean, Elk and Cameron counties, significant ice accumulated. Trees and power lines were reported down in these counties as a result of the ice accumulation.

PAZ024 **Cambria**

04 2300EST 0 0 Flood
05 0530EST

Numerous flooded basements were reported throughout the county. Several roads flooded including Croyle Township Road and Bens Creek Road. Portage Township Road was washed out.

PAZ017 **Clearfield**

05 0100EST 0 0 Flood
0515EST

Minor flooding began across the county during the evening hours of Sunday, January 4th. As rain continued, flooding increased. Eventually, several roads were closed across the county. Roads were submerged in Dubois, with several other road closures near the city of Clearfield.

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

PENNSYLVANIA, Central

PAZ018>019-045 **Northern Centre - Southern Centre - Southern Clinton**

06	**1115EST**	**6**	**12**	**1.5M**		**Winter Weather/Mix**
	1130EST					

An arctic cold front crossed central Pennsylvania during the mid morning hours of Tuesday, January 6th, accompanied by a narrow band of intense snow squalls. These squalls caused the visibility to drop to near zero, and caused roadways to quickly become snow covered and icy. Two multi-vehicle accidents occurred around the time that these squalls affected the area. One accident occurred on Interstate 80, between Lock Haven and Bellefonte, and involved 6 fatalities and numerous injuries. Many tractor trailers and other vehicles were involved with this accident. The second accident also occurred on Interstate 80, between Bellefonte and Milesburg. Three tractor trailers were involved with this accident.
??VE, ??VE, ??VE, ??VE, ??VE, ??VE

PAZ004 **Warren**

07	**0000EST**	**0**	**0**			**Heavy Snow**
	1600EST					

Cold winds crossing the warm waters of Lake Erie produced lake effect snow bands across Warren County. Snow began during the early morning hours, tapering off to lighter snow showers during the late afternoon of the 7th. A total of 4 to 8 inches of snow was prevalent across the county, although isolated amounts in excess of a foot occurred near Bear Lake in northwest Warren County.

PAZ010>011-017>019-024>026 **Elk - Cameron - Clearfield - Northern Centre - Southern Centre - Cambria - Blair - Huntingdon**

14	**1600EST**	**0**	**0**			**Heavy Snow**
15	**0000EST**					

A fast moving low pressure system spread snow across central Pennsylvania during the late afternoon hours of January 14th. The snow became heavy during the early evening hours, depositing between 5 and 8 inches before tapering off shortly after midnight.

PAZ004 **Warren**

19	**1800EST**	**0**	**0**			**Heavy Snow**
20	**0100EST**					

Cold air moving across the relatively warm waters of Lake Erie produced numerous snow squalls across Warren County on Monday, January 19th. Localized amounts in excess of 6 inches occurred in northern portions of the county, with both Bear Lake and Sugar Grove reporting 8 inches.

PAZ024>026-033>036-064>065 **Cambria - Blair - Huntingdon - Somerset - Bedford - Fulton - Franklin - Adams - York**

25	**0200EST**	**0**	**0**			**Heavy Snow**
26	**0600EST**					

A low pressure system developed across the Ohio Valley late Sunday afternoon, January 25th, and moved eastward, before redeveloping along the mid Atlantic coast Sunday night and early Monday. This produced a swath of moderate to heavy snow across portions of south central Pennsylvania Sunday evening into early Monday morning. Average amounts of 6 to 8 inches occurred across the region. This snowfall adversely impacted travel across the region Sunday night and Monday morning.

PAZ017-024-033-042-046-051>053 **Clearfield - Cambria - Somerset - Sullivan - Southern Lycoming - Montour - Northumberland - Columbia**

27	**1800EST**	**0**	**0**			**Heavy Snow**
28	**0200EST**					

A low pressure system approached Pennsylvania from the west during the afternoon and evening hours of Tuesday, January 27th. An area of snow moved from west to east across central Pennsylvania during the late afternoon and evening hours, with some snowfall rates of up to 2 inches per hour. Total snowfall accumulations across the area ranged from 5 to 8 inches. The intensity of the snow produced poor visibilities and road conditions during the evening commute on Tuesday, contributing to numerous accidents across central Pennsylvania. The snow tapered off from west to east early Wednesday morning.

PENNSYLVANIA, East

PAZ054>055 **Carbon - Monroe**

02	**0400EST**	**0**	**0**			**Winter Weather/Mix**
	0800EST					

A warm front moving northeast through the Poconos helped produce some pockets of light freezing rain during the early morning of the 2nd. The recent warm weather prevented roadways from icing. There were trace ice accretions on exposed surfaces such as trees and power lines and on untreated bridges and overpasses.

PAZ054>055 **Carbon - Monroe**

04	**1800EST**	**0**	**0**			**Ice Storm**
05	**1000EST**					

Around half an inch of ice accrued on exposed surfaces in the higher terrain of the Poconos from the evening of the 4th into the morning of the 5th. Untreated roadways were extremely hazardous. The freezing rain was caused by the combination of a low pressure system that formed on a cold front in the Ohio Valley and a high pressure ridge that extended into Ontario Province, Canada. The low pressure system moved from near Paducah, Kentucky during the early afternoon of the 4th, to Cincinnati, Ohio during the evening of the 4th, into northern West Virginia during the morning of the 5th, to the southern Delaware coast during the

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

PENNSYLVANIA, East

afternoon of the 5th. While it was warm enough aloft for precipitation to fall as rain, enough cold air remained in place near the higher terrain surfaces for the rain to freeze on contact.

PAZ055 **Monroe**

06 1400EST 0 0 Winter Weather/Mix
1700EST

Snow squalls in northern Monroe County caused slippery traveling conditions on untreated roadways and led to multi-vehicle accidents on Interstate 380. Interstate 380 was closed between the Tobyhanna (Monroe County) and Gouldsboro (Lackawanna County) exits after more than a dozen vehicles and three tractor-trailers collided in Coolbaugh Township near mile marker 10. A tractor-trailer struck two vehicles that stopped in the right lane because of poor visibility. Minutes later three tractor-trailers and fourteen vehicles collided with the wreckage. Two people required hospitalization. In nearby Carbon County, squalls contributed to a three vehicle accident occurred on U.S. Route 209 in Lansford.

PAZ054>055-060>062-067>071 **Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks - Delaware - Philadelphia**

09 1800EST 2 0 Extreme Cold/Wind Chill
11 1200EST

An arctic air mass brought some of the coldest weather in years to Eastern Pennsylvania from the evening of the 9th through the morning of the 11th. It also claimed the lives of two Philadelphia residents. The low temperature of 4 degrees at the Philadelphia International Airport on the 10th was the coldest day of the winter and the lowest reading since February 5, 1996. The low temperature of zero at the Lehigh Valley International Airport on the 10th was also the coldest reading of the winter and the lowest temperature since February 6, 1996. A record breaking (for the calendar day) low temperature of 10 below zero was recorded in Mount Pocono (Monroe County). What made this even more unusual was that the brutally cold air mass occurred with no snow cover. Winds around the center of the arctic high pressure system were from the north and by-passed the warming effects normally received from the Great Lakes and subsidence from the Appalachian Mountains.

A Philadelphia man was found dead in his home on Irving Street. There was no heat in the house. An 89-year-old woman was found dead within her South Philadelphia unheated home. It was so cold in the home, that the water in the toilet froze. The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who can not afford to heat their homes. There was a dramatic increase in phone calls to social services by individuals who have run out of heat or can not afford to pay their utility bills. Additional schools and community centers were opened as shelters. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. In Northampton County, a Wilson Borough nursing home was evacuated after a pipe burst. Easton City Hall was flooded and Easton Catholic Elementary School was closed because of broken pipes. The cold weather also led to an increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood developed. Many vehicles were not starting because of dead batteries.

Specific low temperatures included 10 degrees below zero in Mount Pocono (Monroe County), 8 degrees below zero in Hazleton (Luzerne County), 2 degrees below zero in Perkasie (Bucks County) and Forks Township (Northampton County), 1 degree below zero in Lehighton (Carbon County), zero at the Lehigh Valley International Airport, 1 degree in Reading (Berks County) and Valley Forge (Chester County) and 4 degrees at the Philadelphia International Airport. The arctic cold front which ushered in the colder air moved through all of Pennsylvania by the 9th. The high pressure system, or the core of the arctic air mass, moved from just west of James Bay on the morning of the 9th, to along the Ontario/Quebec Province border on the morning of the 10th to Virginia and North Carolina on the morning of the 11th. M?PH, F89PH

PAZ055 **Monroe**

14 1600EST 0 0 Heavy Snow
15 0700EST

PAZ054-061>062-069 **Carbon - Lehigh - Northampton - Bucks**

14 1700EST 0 0 Winter Weather/Mix
15 0800EST

An Alberta Clipper low pressure system dropped snow across Eastern Pennsylvania with the heaviest amounts in the Poconos. Snow began falling during the late afternoon on the 14th and continued into the morning commute on the 15th. Accumulations averaged one to three inches in and around the greater Philadelphia Metropolitan Area as well as Berks County. They averaged around five inches in the Lehigh Valley and Carbon County and up to seven inches in Monroe County. Some schools were closed on the 15th in the Poconos. The snow led to slippery traveling conditions especially in the Lehigh Valley and the Poconos. In Monroe County, a 56-year-old man was killed on Eastbound Interstate 80 in Jackson Township. His vehicle rolled over and he was ejected. In Northampton County, a woman was critically injured in Lower Nazareth Township after her vehicle struck a pole. Numerous accidents occurred in the Lehigh Valley on Pennsylvania State Routes 33 and 611 and on Interstate 78. A tractor-trailer accident in the northbound lanes of Route 33 closed the roadway north of Wind Gap (Northampton County) just as the snow was arriving. The snow and detoured traffic caused gridlock in and around Wind Gap and on Pennsylvania State Route 191 as tractor-trailers were stuck on hill tops. Several accidents with injuries closed roads in Berks County. The following morning (the 15th) a fatal accident occurred in Tredyffrin Township (Chester County) when a driver lost control of his vehicle on northbound

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

PENNSYLVANIA, East

U.S. Route 202, slid across a snow covered median and was struck broadside by a southbound heading vehicle. Elsewhere on U.S. Route 202, a truck crashed into a "Jersey divider" while braking for the stopped traffic from the previous accident. Pieces of the concrete divider struck and damaged two vehicles that were heading in the opposite direction. U.S. Route 202 was closed for nearly six hours.

Specific accumulations included 7.0 inches in Saylorsburg (Monroe County), 6.5 inches in East Stroudsburg (Monroe County), 5.5 inches in Lehighton (Carbon County), 5.3 inches at the Lehigh Valley International Airport, 5.0 inches in Jim Thorpe (Carbon County) and Forks Township (Northampton County), 4.4 inches in Springtown (Bucks County), 2.5 inches in Southampton (Bucks County), 2.0 inches in Reading (Berks County), 1.8 inches at the Philadelphia International Airport, 1.3 inches in Rosemont (Delaware County) and Exton (Chester County) and 1.0 inch in Honey Brook (Chester County).

The Alberta Clipper low pressure system moved from Alberta Province Canada on the morning of the 13th into Wisconsin on the morning of the 14th, to central Ohio during the early evening on the 14th, into Chesapeake Bay just after midnight EST on the 15th and about 300 miles east of the Delmarva Peninsula by 10 a.m. EST on the 15th. Precipitation amounts were light, generally less than one quarter of an inch. The unseasonably cold air caused the liquid equivalent to snow ratio to reach as high as 30 to 1 across parts of the Poconos and Lehigh Valley. It normally averages around a 10 to 1 ratio.

PAZ054>055-060>062-067>071

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

15	**1200EST**	**1**	**0**		**Extreme Cold/Wind Chill**
16	**1200EST**				

Following the departing Alberta Clipper low pressure system, another arctic air mass invaded Pennsylvania. While temperatures were slightly higher than the previous outbreak on the 10th and 11th, winds were stronger and the wind chill factors were lower. Another Philadelphian lost his life because of the extreme cold. Most low temperatures were in the single numbers (They were some readings below zero in the Poconos) and the lowest hourly wind chill factors averaged between fifteen degrees and thirty degrees below zero. This second arctic outbreak set some electrical and gas usage records for area utilities.

A Philadelphia man was found dead on railroad tracks within the city. His body temperature dropped to 67 degrees. The unseasonably cold weather was a dangerous situation for the homeless as well as for the elderly who could not afford to heat their homes. There was another dramatic increase in phone calls to social services by individuals who have run out of heat or could not afford to pay their utility bills. PECO Energy set a new winter time usage record of 6,450 megawatts surpassing the old record of 6,346 megawatts on January 23, 2003. The utility also came close to setting a new gas usage record. Pennsylvania Power and Light set a new all-time usage record of 7,549 megawatts surpassing the previous record of 7,155 megawatts on January 23, 2003. The cold weather caused additional schools and community centers to be opened as shelters. This was exacerbated in Monroe County when power outages in Brodheadsville, Effort and Saylorsburg caused the county to open temporary shelters in Brodheadsville and Long Pond. Many municipalities declared code blues to assist the homeless. Teams went outside to locate homeless people and get them to shelters. The unseasonably cold weather caused many pipes to freeze and burst both inside and outside of structures as well as a higher occurrence of water main breaks. Plumbers and heating repair services had twenty-four hours worth of work. In the Lehigh Valley the cold weather caused many schools, universities and daycare centers to have delayed openings. Senior citizen centers, food banks and meals on wheels were cancelled in the valley. Bus service was also delayed. In Carbon County, a burst pipe damaged a Penn Kidder Township School. The cold weather also led to another increase in workload in hospital emergency rooms. Fire fighters were having problems battling blazes as the water quickly turned to ice. In some instances the water was freezing in hoses and the trucks. Fire fighters were injured slipping and falling on the ice. There was a higher incidence of chimney fires and a general shortage of firewood. Many vehicles were not starting because of dead batteries.

Specific low temperatures included 12 degrees below zero in Mount Pocono (Monroe County), 9 degrees below zero at the Pocono Mountain Municipal Airport, 3 degrees below zero in East Stroudsburg (Monroe County), zero at the Lehigh Valley International Airport and Lehighton (Carbon County), 1 degree in Valley Forge (Chester County) and Doylestown (Bucks County), 2 degrees in Green Lane (Montgomery County), 3 degrees in Pottstown (Montgomery County) and Hamburg (Berks County), 4 degrees in Reading (Berks County) and Media (Delaware County) and 7 degrees at the Philadelphia International Airport. The arctic air mass came barreling behind the departing Alberta Clipper low pressure system on the 15th. The low deepened explosively as it moved offshore and the pressure gradient between it and the building high pressure system brought the lowest wind chill factors of the winter into Pennsylvania. The high pressure ridge moved from the Red River and Upper Mississippi Valleys on the morning of the 15th, to the Great Lakes and nearby Canada on the morning of the 16th and into Pennsylvania and New York on the morning of the 17th. The core of the coldest air moved through the region during the night of the 15th with the lowest temperatures occurring between Midnight EST and 6 a.m. EST on the 16th. Lowest hourly wind chill factors included 32 degrees below zero in Mount Pocono (Monroe County), 23 degrees below zero at the Lehigh Valley International Airport, 19 degrees below zero in Doylestown (Bucks County) and 14 degrees below zero at the Philadelphia International Airport.

This second arctic outbreak cemented January as an unseasonably cold month. At the Philadelphia International Airport, the monthly mean temperature of 26.1 degrees was 6.2 degrees colder than normal. It was the 13th coldest January on record and the coldest January since 1982. To add further to the discomfort, it was also the windiest January in Philadelphia in 12 years with an average wind speed of 12.3 miles per hour. At the Lehigh Valley International Airport, the 22.0 degree monthly mean temperature

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

PENNSYLVANIA, East

was 5.1 degrees colder than normal. It was the 10th coldest January on record and the coldest January since 1994. M40OU

PAZ054>055-060>062 Carbon - Monroe - Berks - Lehigh - Northampton

16	**0900EST**	**0**	**3**	**15K**		**Strong Wind**
17	**1600EST**					

The pressure difference between a low pressure system over the Canadian Maritimes and a building high pressure system over the Great Lakes produced measured wind gusts as strong as 49 mph in Berks County, the Lehigh Valley and the Poconos. In Tobyhanna Township (Monroe County), gusty winds caused a tractor-trailer to jackknife on Interstate 380. The jackknifed tractor-trailer slid down a 300 foot embankment and the driver escaped with just minor injuries. Two separate drivers of Sports Utility Vehicles in Jackson and Coolbaugh Townships (both Monroe County) lost control of their vehicles due to the strong winds, hit medians and rolled over. Both drivers were hospitalized. The peak wind gust in Reading was 49 mph and 36 mph at the Lehigh Valley International Airport.

PAZ054>055-060>062-067>069 Carbon - Monroe - Berks - Lehigh - Northampton - Chester - Montgomery - Bucks

17	**1800EST**	**0**	**0**			**Winter Weather/Mix**
18	**1700EST**					

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across most of eastern Pennsylvania from the evening of the 17th through the afternoon of the 18th. Precipitation began as snow across the region during the evening of the 17th. After midnight EST, some sleet started to mix in, especially near Philadelphia. The mixing with sleet took much of the night to reach the Poconos. As more warmer air moved in aloft, precipitation started mixing with and changing to freezing rain after 5 a.m. EST on the 18th. Precipitation in the Poconos remained a wintry mix through the first half of the morning. Near Philadelphia, enough warm air moved in near the surface to change the precipitation to plain rain during the morning of the 18th. As a cold front approached the region and precipitation intensity increased, the changeover process reversed itself. Precipitation changed to all snow by the middle of the morning in the Poconos and the Lehigh Valley and in Berks County and the Philadelphia northwest suburbs around Noon EST. The snow ended during the afternoon of the 18th. Snowfall accumulations averaged between 2 and 5 inches and ice accretions averaged around one tenth of an inch.

Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. Many accidents occurred on the 18th. A fatal accident occurred on Pennsylvania State Route 73 in Ruscombmanor Township (Berks County). A 61-year-old man, 65-year-old man and 64-year-old man were killed when the driver of their Sports Utility Vehicle lost control in the westbound lane, skidded off the road, bounced off a guard rail and hit a tree twenty feet down an embankment. Elsewhere in Berks County, the westbound lanes of Interstate 78 were closed for two and a half hours after a tractor-trailer driver lost control and struck the center median in Greenwich Township. In Lehigh County, a 47-year-old Slatington woman was critically injured after she skidded and struck a tree. In Northampton County, five people were injured in a three vehicle crash on Pennsylvania State Route 33. Interstate 78 was closed in Williams Township when a truck containing hazardous material jackknifed. In Montgomery County, many accidents occurred on Pennsylvania State Route 100 and U.S. Route 422. Cars skidded into each other, guardrails and utility poles.

Specific accumulations included 4.5 inches in Kutztown (Berks County), 4.0 inches in Lower Macungie Township (Lehigh County), 3.8 inches in Palm (Montgomery County), 3.6 inches at the Lehigh Valley International Airport and Williams Township (Northampton County), 3.5 inches in Springtown (Bucks County), Bethlehem (Northampton County), Boyertown and Bechtelsville (Berks County), 3.4 inches in East Saylorsburg (Monroe County) 3.3 inches in Phoenixville (Chester County), 3.2 inches in Doylestown (Bucks County), 3.0 inches in East Nantmeal Township (Chester County) and Lehighton (Carbon County), 1.5 inches in East Stroudsburg (Monroe County), 1.1 inches in West Chester (Chester County) and 1.0 inch in Neshaminy (Bucks County) and Conshohocken (Montgomery County).

The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through Pennsylvania during the afternoon of the 18th to wring moisture from the atmosphere onto the region.

PAZ070>071 Delaware - Philadelphia

17	**1930EST**	**0**	**0**			**Winter Weather/Mix**
18	**0730EST**					

A low pressure system from the southern plains combined with a cold front from the upper Mississippi Valley to bring a wintry mix of precipitation across extreme southeastern Pennsylvania during the evening and overnight on the 17th. Precipitation began as snow across the region and mixed with sleet nearly from the start. As warmer air moved in aloft, precipitation started mixing with freezing rain around 4 a.m. EST on the 18th and changed to just freezing rain by 5 a.m. EST on the 18th. Warmer air also moved in near the surface and the freezing rain changed to plain rain between 7 a.m. and 8 a.m. EST. Snowfall accumulations were an inch or less and ice accretions were generally less than one-tenth of an inch. Untreated roads became very hazardous and slippery, especially since the recent weather was unseasonably cold. The snowfall accumulation at the Philadelphia International Airport was 0.8 inches. The low pressure system responsible for the wintry mix moved from the Oklahoma/Texas border on the morning of the 17th, into the Tennessee Valley the morning of the 18th and east of Long Island during the late afternoon of the 18th. The low pressure system combined with a cold front that moved from the Upper Mississippi Valley the morning of the 17th east through

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

PENNSYLVANIA, East

Pennsylvania during the afternoon of the 18th to wring moisture from the atmosphere onto the region.

PAZ060-067>068-070>071 **Berks - Chester - Montgomery - Delaware - Philadelphia**

23	**2200EST**	**0**	**0**		**Winter Weather/Mix**
24	**0600EST**				

A weak and fast moving Alberta Clipper low pressure system brought light snow across southeast Pennsylvania from the late evening on the 23rd until around sunrise on the 24th. Accumulations in Chester County averaged around one inch, but were less than an inch elsewhere. Nevertheless, the well below freezing temperatures permitted the snow to stick easily and untreated and elevated roadways became slippery. Interstate 95 was closed in Philadelphia because of accidents. In addition Interstate 176 in Berks County and U.S. Route 422 in Berks and Montgomery Counties were snarled because of minor crashes. Accumulations included 1.4 inches in West Chester (Chester County) and 0.8 inches at the Philadelphia International Airport.

PAZ071 **Philadelphia**

25	**0000EST**	**1**	**0**		**Extreme Cold/Wind Chill**
	2359EST				

The unseasonably cold weather claimed a third victim in Philadelphia. A 60-year-old man was found dead in his unheated North Philadelphia home on the 25th. The low temperature at the Philadelphia International Airport on the 25th was 8 degrees. M60PH

PAZ060-067>071 **Berks - Chester - Montgomery - Bucks - Delaware - Philadelphia**

25	**2200EST**	**0**	**0**		**Winter Weather/Mix**
26	**1000EST**				

Snow fell from the late evening of the 25th through the Monday morning rush on the 26th across southeastern Pennsylvania. Accumulations averaged between 2 and 4 inches. Hundreds of traffic accidents occurred; most of them were fender benders and vehicles sliding into poles. Hospitals reported an increase in the number of slip and fall accidents. There were flight delays and a few cancellations at the Philadelphia International Airport. Meetings were postponed. Schools had delayed openings, but in Delaware and Philadelphia Counties, they were cancelled. In Philadelphia, several bus routes were changed to avoid hillier roadways. In Berks County, a 44-year-old man was seriously injured after he sledded into a tree.

Specific accumulations included 4.0 inches in Ontelaunee Township (Berks County) and Willow Grove (Montgomery County), 3.5 inches in Bechtelsville (Berks County) and Honey Brook (Chester County), 3.4 inches in Blue Bell (Montgomery County), 3.3 inches in Media (Delaware County), 3.2 inches in Chadds Ford (Delaware County), 3.0 inches in Glenmoore and West Chester (Chester County), 2.6 inches at the Philadelphia International Airport, 2.5 inches in Hatboro (Montgomery County), 2.3 inches in Langhorne (Bucks County) and 2.0 inches in Doylestown (Bucks County) and Green Lane (Montgomery County).

The snow was caused by a low pressure system that developed in the lower Tennessee Valley during the morning of the 25th. A second low pressure system then developed off the South Carolina coast that evening. The second low pressure system became the primary low and moved northeast. It passed close to Wilmington, North Carolina around 1 a.m. EST on the 26th and just east of Hatteras, North Carolina around 7 a.m. EST on the 26th before it moved farther offshore.

PAZ054>055-060>062 **Carbon - Monroe - Berks - Lehigh - Northampton**

27	**1500EST**	**0**	**0**		**Winter Storm**
28	**1500EST**				

PAZ067>071 **Chester - Montgomery - Bucks - Delaware - Philadelphia**

27	**1500EST**	**0**	**0**		**Winter Weather/Mix**
28	**0600EST**				

The combination of a high pressure system over nearby Canada and a pair of low pressure systems - one that moved into the Great Lakes before dissipating and another that formed over the Virginia coastal waters gave Eastern Pennsylvania a wintry mix of freezing rain, sleet and snow. Heavy snow fell from Berks County and the Lehigh Valley northward. Some spotty light freezing drizzle or freezing rain fell throughout most of the day on the 27th. During the second half of the same afternoon as a low pressure system was forming over the Virginia coastal waters, precipitation intensity increased and heavier freezing rain and sleet began falling across the area. The exception was in the Poconos where precipitation started and continued as snow. As colder air moved in from the wintry mix changed to all snow around 6 p.m. EST in Berks County and the Lehigh Valley and between 6 p.m. and 9 p.m. EST (From northwest to southeast) across southeastern Pennsylvania. The heaviest snow fell during the evening. Snowfall accumulations were averaging one to two inches per hour in the Poconos. The snow ended just before sunrise on the 28th, but lingered into the afternoon in the Poconos. Accumulations averaged between 2 and 6 inches with higher amounts in the Poconos.

Untreated roads were slippery and numerous accidents occurred. In Berks County, several tractor-trailer accidents on Interstate 78 closed the roadway for several hours. A five vehicle crash closed U.S. Route 422 for one hour in Douglass Township. In Monroe County, three vehicle crashes caused injuries as they struck either trees or guy wires. In Carbon County, five persons were injured with two Sports Utility Vehicles slid into each other in Lehighton. Many schools were closed for three days (the 26th through the 28th) in the Lehigh Valley and the Poconos.

Specific accumulations included 7.5 inches in Penn Forest Township (Carbon County) and East Stroudsburg (Monroe County), 7.1 inches in Middle Smithfield Township (Monroe County), 7.0 inches in Jim Thorpe (Carbon County), 7.0 inches in Upper Milford

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

PENNSYLVANIA, East

Township (Lehigh County), 6.0 inches in Fredericksville (Berks County), 5.6 inches at the Lehigh Valley International Airport, 5.5 inches in Furlong (Bucks County), 5.3 inches in Phoenixville (Chester County), 5.2 inches in Williams Township (Northampton County), 5.0 inches in Fleetwood (Berks County), Green Lane (Montgomery County) and Perkasie (Bucks County), 4.0 inches in Newtown Square (Delaware County), 3.8 inches in Trappe (Montgomery County), 3.5 inches in Levittown (Bucks County) and Conshohocken (Montgomery County), 3.0 inches in Media (Delaware County), 2.8 inches in Exton (Chester County) and 1.6 inches at the Philadelphia International Airport.

While the first low pressure system was heading off the North Carolina coast around sunrise on the 26th, another low pressure system was already in Arkansas. This low pressure system moved northeast into the lower Ohio Valley during the afternoon of the 26th and reached Ohio around sunrise on the 27th. The low moved north into Michigan during the afternoon of the 27th and remained nearly stationary as it slowly weakened during the evening and overnight. This low pressure system brought a wedge of warmer air aloft across the region. What made precipitation fall as either freezing rain or sleet was a large high pressure system over nearby Canada that fed cold air south near the surface. During the late afternoon of the 27th, a second low pressure system formed over the Virginia coastal waters. By 7 p.m. EST when it was located near the Virginia Capes, its central pressure was already as strong as the Michigan low pressure system. The Virginia low pressure system moved northeast and intensified and by 1 a.m. EST on the 28th, was located about 120 miles east of Atlantic City, New Jersey and by 7 a.m. EST it was about 240 miles east of Atlantic City, New Jersey. As this second low pressure system intensified and its upper air support moved across the Middle Atlantic States, precipitation intensity increased further and the precipitation changed to snow.

PENNSYLVANIA, Northeast

PAZ038>040-043>044-047>048 **Bradford - Susquehanna - Northern Wayne - Wyoming - Lackawanna - Luzerne - Pike**

10	**0200EST**	**0**	**0**	**35K**	**Extreme Cold/Wind Chill**
	0800EST				

Arctic high pressure over central Ontario province, Canada brought northeast Pennsylvania record cold temperatures with temperatures below zero in most locations. This extreme cold air came in on north winds ahead of the high on the 9th and 10th. Record low temperatures were set at several cooperative observer and ASOS airport sites. Low temperatures the morning of the 10th were generally between zero and 15 below zero.

PAZ038>040-043>044-047>048 **Bradford - Susquehanna - Northern Wayne - Wyoming - Lackawanna - Luzerne - Pike**

15	**1800EST**	**0**	**0**	**70K**	**Extreme Cold/Wind Chill**
16	**0800EST**				

A deep low pressure system in southeast Canada combined with a large area of high pressure in the province of Ontario, Canada to create northwest winds of 15 to 25 mph across the area. This high pressure system also ushered in below zero temperatures. The cold and wind combined to produce wind chill values of 15 to 35 below zero. Many schools were closed due to the extreme cold. The cold air also caused problems with cars and buses starting. In addition, some residences and business had damage from frozen pipes.

PAZ039>040-044-048 **Susquehanna - Northern Wayne - Lackawanna - Pike**

28	**0000EST**	**0**	**0**	**200K**	**Heavy Snow**
	0500EST				

A low pressure system moved northeast into the Ohio Valley early on the 27th. Another low pressure system developed on the east coast later that day then moved northeast to the New England coast. Snow ahead of the initial low became heavy the afternoon of the 27th. The snow tapered off to snow showers the morning of the 28th. Snowfall amounts were 6 to 8 inches with a few higher amounts.

PENNSYLVANIA, Northwest

PAZ001>003 **Northern Erie - Southern Erie - Crawford**

06	**0300EST**	**0**	**0**	**1.1M**	**Heavy Snow**
08	**1200EST**				

Very cold westerly winds blowing across Lake Erie caused lake effect snow showers to develop during the early morning hours of January 6th. This activity intensified during the late afternoon and evening hours of the 6th and finally tapered off around midday on the 8th. Snowfall totals for this event in Erie County ranged from 8 to 18 inches near Lake Erie to over two feet across inland sections of the county. Officially, 17.0 inches of snow fell at Erie International Airport with a maximum of 31.5 inches reported at Hatch Hollow. Observers in Edinboro and Corry also measured over two feet of snow. In Crawford County, significant snow accumulation was reported mainly across the northern third of the county. A maximum of 20 inches was measured at Cambridge Springs with 8 inches at Sagertown. Westerly winds gusting to over 30 mph accompanied the snow and caused whiteout conditions and drifts over ten feet tall. Travel was nearly impossible during the peak of the storm and hundreds of accidents were reported.

PAZ001>003 **Northern Erie - Southern Erie - Crawford**

14	**0900EST**	**0**	**0**	**900K**	**Winter Storm**
15	**1400EST**				

An area of low pressure over lower Michigan moved southeast across Ohio and into southwestern Pennsylvania on January 14th and 15th. A band of moderate to heavy snow developed to the north of the low as it moved through the region. This band of snow

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

PENNSYLVANIA, Northwest

was enhanced by Lake Erie as it moved over the northwestern corner of Pennsylvania. Total accumulations in Erie and Crawford Counties ranged from 6 to 10 inches most areas with the heaviest snow falling during the afternoon and evening hours of the 14th. A maximum of 13.1 inches of snow was measured in northeastern Crawford County with 9.7 inches officially recorded at Erie International Airport. Travel was severely hampered by this event and dozens of accidents were reported.

PAZ002>003 **Southern Erie - Crawford**

19 0100EST 0 0 500K Heavy Snow
20 1400EST

Cold northwest winds blowing across Lake Erie caused lake effect snow showers to develop early on the 19th. This activity persisted into the evening hours of the 19th and then dissipated. Accumulations on the 19th ranged from 6 to 10 inches. Just after midnight on the 20th, an intense band of snow redeveloped over southern Erie and northern Crawford counties. Thunder and lightning were observed with this band and snowfall rates exceeded three inches per hour at times. The band moved slowly west during the predawn hours. Accumulations from midnight to daybreak on the 20th ranged from 8 to 14 inches over much of southern Erie and northern Crawford counties. The snow finally tapered off during the afternoon hours after several more inches of accumulation. Some locations saw nearly two feet of snow during this two day event. Travel was severely hampered by this storm and dozens of accidents were reported.

PAZ001>003 **Northern Erie - Southern Erie - Crawford**

27 0300EST 0 0 800K Winter Storm
1800EST

An area of low pressure moved across Ohio and Lake Erie on the morning of January 27th. Freezing rain associated with this low began in northwest Pennsylvania by the early morning hours of the 27th and continued through the middle part of the day. The precipitation mixed with and then changed completely to snow during the afternoon hours. The precipitation finally tapered off during the evening. Ice accumulations greater than one quarter inch along with 1 to 3 inches of snow fell during this event. Many accidents were reported. A few power lines were also downed.

PENNSYLVANIA, West

PAZ029 **Washington**

03 2040EST 0 0 Flood
2330EST

Coal Bluff Rd flooded in Union Twp, 1 mile southeast of Finleyville. At 1045 PM, Racetrack Rd flooded in Chartiers Twp, 2 miles south of Houston.

PAZ030 **Westmoreland**

03 2300EST 0 0 Flood
04 0045EST

10 roads closed by flooding throughout the county, including Route 119 near Youngwood.

PAZ020 **Beaver**

04 0858EST 0 0 Flood
1000EST

Traverse Creek flooded near Harshaville.

PAZ014 **Butler**

04 1100EST 0 0 Flood
05 1500EST

It started with numerous roads flooded around Saxonburg. By 335 PM, Little Bull Creek flooded Sarver. By 930 PM, Yellow Creek Rd was closed in Lancaster Twp, 4 miles northeast of Zelienople; Creek Rd closed in Penn Twp, 5 miles S of Butler; and Glenwood Way closed in Center Twp, 3 miles N of Butler. By 1230 am on 5th, Sandy Hill Rd was closed by flooding 2 miles east of Mars.

PAZ021 **Allegheny**

04 1115EST 0 0 25K Flood
05 1500EST

In Mount Lebanon, Banksville Rd flooded. In Russellton, Little Deer Creek flooded. Shortly after 1245 AM on the 5th, there was a mudslide on Route 28 between 31st and 40st Street bridges in Millvale. And in Etna, numerous streets were flooded. Basements were flooded in Monroeville (and elsewhere).

PAZ029 **Washington**

04 1115EST 0 0 Flood
05 1500EST

Route 980 in Cecil, Race Track Rd in Canonsburg, and Courtney Hill Rd in Finleyville flooded. By 340 PM, numerous streams had flooded near Burgettstown. By 1015 PM, Factory Way was flooded by Catfish Creek in Washington; and Race Trace Rd was still closed by flooding in Canonsburg.

PAZ022 **Armstrong**

04 1125EST 0 0 Flood
05 1500EST

Route 66 flooded in North Vandergrift. At 455 PM, Buffalo Creek flooded just south of Boggsville. By 545 PM, a mudslide threatened a house in North Vandergrift, and numerous streams were flooding in Armstrong County.

Storm Data and Unusual Weather Phenomena

January 2004

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

PENNSYLVANIA, West

PAZ023 — **Indiana**

04	**1125EST**			**0**	**0**	**70K**		**Flood**
05	**1500EST**							

Route 1008 flooded in Indiana. By 915 PM, Routes 22 and 119 were flooded east of Blairsville, after 3 inches of rain. Business and cars were inundated by floods from Two Lick, Yellow, Black Leggs, and Crooked creeks.

PAZ030 — **Westmoreland**

04	**1130EST**			**0**	**0**			**Flood**
05	**1500EST**							

Numerous roads flooded in Ligonier, Lower Burrell, and Vandergrift. By 915 PM, numerous state and county roads were flooded.

PAZ020 — **Beaver**

04	**1535EST**			**0**	**0**			**Flood**
05	**1500EST**							

Raccoon Creek caused the flooding of Backbone Rd, Park Rd, Ridge Rd, and Route 30 near Harshaville. By 9 PM, mud slides were reported on Reno St in Rochester; SR 151 in Independence; and SR 4047 in Ohioville. By 240 AM on the 5th, flooding from the Connoquenessing Creek closed Route 65 near Ellwood City, between Chapel Dr and Rte 288.

PAZ013 — **Lawrence**

04	**1540EST**			**0**	**0**			**Flood**
05	**1500EST**							

It started when Nashua Rd and SR 168 flooded near New Castle. By 915 PM, streams were still flooding SR 168 near Nashua, 2 miles southeast of New Castle; and Route 388 was closed by flood.

PAZ009-016 — **Forest - Jefferson**

05	**0100EST**			**0**	**0**			**Ice Storm**
	0700EST							

A period of freezing rain caused numerous accidents and left a coating of ice at least one quarter inch thick.

PAZ007>009-015>016-023 — **Mercer - Venango - Forest - Clarion - Jefferson - Indiana**

14	**1900EST**			**0**	**0**			**Heavy Snow**
15	**1000EST**							

Snow began falling the afternoon of the 14th. Many places reached 6" between 7 and 9 PM on 14th. Total accumulations were 9 inches at Tionesta; 8 Franklin; 7 Brookville and Mercer; 6 Indiana.

PAZ031>032 — **Greene - Fayette**

17	**2000EST**			**0**	**0**			**Ice Storm**
	2330EST							

Sleet and freezing rain began the afternoon of the 17th. An ice glaze, at least one quarter inch thick, was reached before midnight, resulting in numerous accidents.

PAZ016-021>022-030 — **Jefferson - Allegheny - Armstrong - Westmoreland**

26	**0200EST**			**0**	**0**			**Heavy Snow**
	1200EST							

Snow began the afternoon of the 25th and ended by noon on 26th. Total accumulations were 6 inches in Allegheny and Armstrong counties; 7 in Jefferson; and 8 in Westmoreland.

PAZ008-015>016-022>023-030-032 — **Venango - Clarion - Jefferson - Armstrong - Indiana - Westmoreland - Fayette**

27	**1700EST**			**0**	**0**			**Heavy Snow**
28	**1000EST**							

Snow began the afternoon of the 27th. Some places in northern Pennsylvania reached 6" by evening; Indiana County reached 6" by midnight on 28th. By the time it was over, total accumulations were 12 inches in Armstrong County; 9 in Clarion and Venango; 7 in Indiana; 6 in Fayette and Jefferson. Westmoreland County had totals ranging from 6 to 14 inches. Patches of freezing rain added to the misery and caused numerous traffic accidents.

PUERTO RICO

NOT RECEIVED.

RHODE ISLAND

RIZ003-006 — **Western Kent - Washington**

27	**2000EST**			**0**	**0**			**Winter Storm**
28	**1500EST**							

A winter storm tracking south of New England brought heavy snow to southern New England, from western Massachusetts into much of Connecticut and southern Rhode Island. Snowfall totals of 4 to 8 inches were common in areas to the west and south of Providence.

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

RHODE ISLAND

Officially, the snowfall total at T.F. Green State Airport in Warwick was 3.7 inches.

Other snowfall totals, as reported by trained spotters, included 9 inches in South Kingston; 7 inches in Coventry, Middletown, and North Kingstown; and 6 inches on Block Island.

SOUTH CAROLINA, Central

SCZ015>016 **Lancaster - Chesterfield**

25	**1500EST**	**0**	**0**		**0**	**Winter Storm**
27	**1400EST**					

SCZ018-020>022-025>031-035>038-041 **Mccormick - Newberry - Fairfield - Kershaw - Edgefield - Saluda - Lexington - Richland - Lee - Aiken - Sumter - Barnwell - Orangeburg - Calhoun - Clarendon - Bamberg**

25	**1730EST**	**0**	**0**		**0**	**Ice Storm**
27	**1600EST**					

An ice storm began over the North Midlands of South Carolina on Sunday night and gradually spread south into the Central Midlands and CSRA on Monday. The storm continued into Tuesday, but was mainly freezing drizzle during that time. Ice accumulations of 1/2 to 3/4 of an inch occurred which brought numerous trees and powerlines down. The heaviest ice accumulations occurred in Lancaster, Chesterfield, Fairfield, Newberry, Saluday, McCormick, Orangeburg, and Clarendon counties. Over 250,000 homes, businesses, and schools were without power for several days. Sleet also fell in Lancaster and Chesterfield counties and accumulated up to 2 inches. Six people were injured in traffic related accidents and there were no deaths. Damage estimates from State Emergency Management were $28.5 mil.

SOUTH CAROLINA, North Coastal

SCZ017-023>024 **Marlboro - Darlington - Dillon**

25	**1400EST**	**0**	**0**	**3.0M**		**Ice Storm**
	2200EST					

Freezing rain began falling over the area the morning of Jan 25th, with ice accumulations reaching a quarter of an inch by the afternoon. Tree limbs snapped from the weight of the ice, causing widespread power outages. Much of the monetary damages were due to debris removal and utility company expenses. Many homes were also damaged when the tree limbs fell on them.

SCZ017-023>024-032>034-039 **Marlboro - Darlington - Dillon - Florence - Marion - Horry - Williamsburg**

26	**1100EST**	**0**	**0**	**23.2M**		**Ice Storm**
27	**0330EST**					

Another episode of frozen precipitation occurred on the heels of the storm of January 25th, bringing more freezing rain and sleet to areas that already had over a quarter inch of ice still in the trees. The total ice accumulations ranged from a trace near the coast to as much as three quarters of an inch over interior sections. The weight of the ice caused major power outages from falling limbs, as well as significant structural damage to many homes. The state declared a forest disaster for the first time in two years. There was some ice accumulations on the roads, especially on bridges and overpasses, with numerous traffic accidents reported. Many residences were without power for over a week. Monetary damages totaled into the millions per county in some parts of South Carolina, due to cleanup of debris, utility expenses, and home repair.

SOUTH CAROLINA, Northwest

SCZ001>003 **Oconee Mountains - Pickens Mountains - Greenville Mountains**

25	**1200EST**	**0**	**0**			**Heavy Snow**
	1800EST					

Light snow began during the early morning across the South Carolina mountains, and gradually intensified throughout the morning and afternoon. By early evening, 3 to 5 inches had accumulated across most of the area.

SCZ004>010-012>014 **Greater Oconee - Greater Pickens - Greater Greenville - Spartanburg - Cherokee - York - Anderson - Laurens - Union - Chester**

25	**1400EST**	**0**	**0**			**Sleet Storm**
26	**0000EST**					

Heavy sleet developed during the afternoon across portions of the Upstate and continued into the late evening. Total sleet accumulations were generally 1 to 2 inches. During the evening, a light freezing rain developed, which resulted in a thin glaze of ice on top of the layer of sleet. Very slick roads were responsible for hundreds of traffic accidents. Some of the accidents involved injuries and fatalaties. Numerous injuries also occurred due to falls.

SCZ001-004>005-010>012-019 **Oconee Mountains - Greater Oconee - Greater Pickens - Anderson - Abbeville - Laurens - Greenwood**

25	**1800EST**	**0**	**0**			**Ice Storm**
26	**0600EST**					

During the early evening, sleet began to mix with freezing rain across northwest portions of the Upstate, while precipitation developed in the form of freezing rain across southern portions of the Upstate. By the morning of the 26th, ice accretion of up to 1/2 inch occurred across the area. Numerous power outages resulted, especially in Greenwood and Abbeville Counties, where thousands were without power for several hours. Numerous injuries also occurred as a result of falls.

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

SOUTH CAROLINA, Northwest

SCZ004>005-010>011-019 — **Greater Oconee - Greater Pickens - Anderson - Abbeville - Greenwood**

26	**2100EST**	**0**	**0**			**Ice Storm**
27	**0000EST**					

Freezing rain redeveloped across western portions of the Upstate during the late evening of the 26th. Additional ice accretion of 1/4 inch or so occurred. This resulted in additional power outages. The glaze of ice also caused numerous traffic accidents on the morning of the 27th.

SCZ006>009-012>014 — **Greater Greenville - Spartanburg - Cherokee - York - Laurens - Union - Chester**

27	**0000EST**	**0**	**0**			**Winter Weather/Mix**
	0600EST					

A light freezing rain developed during the early morning hours of the 27th across much of the Upstate. This added another layer of glaze to the mixture of sleet and ice that was already present. Hundreds of traffic accidents occurred overnight and into the morning rush hour. Many of the accidents involved injuries and some fatalaties. The ice was slow to melt, and traffic accidents continued for another 2 days.

SOUTH CAROLINA, South Coastal

SCZ040-043>045-050 — **Allendale - Northern Colleton - Dorchester - Berkeley - Charleston**

26	**1100EST**	**0**	**0**			**Ice Storm**
27	**0130EST**					

A strong wedge was in place over the Carolinas and Georgia. An area of low pressure developed off the coast and tracked to the northeast on the 26th and into the early morning hours of the 27th, producing freezing rain and freezing drizzle. Ice accretion was generally in the 1/4 inch to around 1/2 inch range. There were trees, large limbs and power lines down that disrupted the power over the low country for several days.

SOUTH DAKOTA, Central and North

SDZ008-020>023 — **Roberts - Codington - Grant - Hamlin - Deuel**

25	**1200CST**	**0**	**0**			**Heavy Snow**
26	**0400CST**					

Heavy snow of 6 to 11 inches fell across far northeast South Dakota. Some snowfall amounts included, 6 inches at Clear Lake, Milbank, Bryant, Sisseton, Watertown, 8 inches at Wilmot, 9 inches at White Rock, and 11 inches at Victor.

SOUTH DAKOTA, Southeast

SDZ039>040-054>056-060>062-066>071 — **Kingsbury - Brookings - Miner - Lake - Moody - Hanson - Mccook - Minnehaha - Turner - Lincoln - Bon Homme - Yankton - Clay - Union**

25	**1000CST**	**0**	**0**			**Winter Storm**
26	**0400CST**					

Snowfall of 5 to 10 inches was accompanied by winds strong enough to reduce visibilities to a quarter mile or less at times in blowing snow. The winds also caused drifting snow, which contributed to making travel very difficult. In addition, dangerous wind chills developed late in the storm as actual temperatures fell. Numerous schools were closed or delayed. Several after school activities, mostly basketball games, were postponed.

SOUTH DAKOTA, West

SDZ024>025 — **Northern Black Hills - Northern Foot Hills**

25	**0600MST**	**0**	**0**	**0**	**0**	**Heavy Snow**
	1500MST					

A storm system moved across the Northern Rockies and into the Northern Plains, bringing heavy snow to parts of the Northern Black Hills. Snowfall amounts of 5 to 8 inches were reported from Lead and Deadwood, northwestward to near Spearfish.

TENNESSEE, Central

NONE REPORTED.

TENNESSEE, East

TNZ012>014-035>041-067>074-081>086-098>101 — **Scott - Campbell - Claiborne - Morgan - Anderson - Union - Grainger - Hamblen - Northwest Cocke - Cocke/Smoky Mountains - Roane - Loudon - Knox - Jefferson - Northwest Blount - Blount/Smoky Mountains - North Sevier - Sevier/Smoky Mountains - Sequatchie - Bledsoe - Rhea - Meigs - Mcminn - Northwest Monroe - Marion - Hamilton - Bradley - West Polk**

09	**0000EST**	**0**	**0**			**Winter Storm**
	1000EST					

2-3 inches snowfall

A winter storm system moved into the region early in the morning January 9th. The storm produced snowfall amounts ranging from 1 to 4 inches. Most of East Tennessee averaged 2-3 inches of snow with exception of the southeast corner of the state where amounts were generally an inch or less and the higher terrain on the Cumberland Plateau where slightly higher totals ranging from

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

TENNESSEE, East

2-4 inches were reported. Interestingly, with this particular storm system, the highest elevations in the Smoky Mountains including Mount Leconte measured only 3 inches of snow.

TNZ015>018-042 **Hancock - Hawkins - Sullivan - Johnson - Northwest Greene**

09 0300EST 1000EST **0** **0** **Winter Storm**

1-4 inches snowfall

A winter storm system moved into the region early in the morning on January 9th producing snowfall amounts ranging from as little as 1 inch to as much as 4 inches of snow across Northeast Tennessee. The most common range of snowfall reported across the counties of Northeast Tennessee was 2-3 inches.

TNZ018-044>045-047 **Johnson - Washington - Unicoi - Southeast Carter**

25 0800EST 2000EST **0** **0** **Ice Storm**

1/4 inch ice with 1-3 inches snow and sleet

Storm system moved north from the Gulf of Mexico spreading moisture laden air over surface based freezing temperatures mainly across Southwest Virginia and the mountains of Northeast Tennessee. Freezing rain produced ice accumulations ranging from around 1/8 inch to as much as 1/4 inch across much of this region. In addition, snow and sleet also fell with the greatest accumulations ranging from 1 to 3 inches at elevations above 3500 feet.

TENNESSEE, South Central

NOT RECEIVED.

TENNESSEE, West

Fayette County

Somerville **26 2000CST 2005CST** **0** **0** **5K** **Lightning**

One home was struck by lightning. The lightning caused the family's van tires to be flattened and the car wouldn't start. Pieces of brick off the front porch were blown. Some bricks on the back of the house were chipped and cracked. Pictures hanging on a wall inside the house were knocked down.

TEXAS, Central

Coleman County

.1 S Novice to .3 N Novice **16 1710CST 1712CST** **0.5** **75** **0** **0** **10K** **Tornado (F0)**

A tornado developed from a low topped storm south of the community of Novice and moved northwest across the community. Portions of two roofs were blown off of homes and numerous windows were broken.

TEXAS, Central Southeast

Madison County

Normangee **17 1832CST 1835CST** **0** **0** **1K** **Hail (0.75)**

0.75" hail reported at OSR and Hwy 39 in Normangee.

Montgomery County

7 NNE Conroe to 7 NNW Conroe **17 2045CST 2050CST** **0** **0** **7K** **Hail (1.50)**

1.50" hail reported 5 miles north of Lake Conroe Dam that covered the ground.

Montgomery County

Willis **17 2105CST 2110CST** **0** **0** **3K** **Hail (0.75)**

0.75" hail in Willis.

Montgomery County

Cut And Shoot **17 2130CST 2135CST** **0** **0** **5K** **Hail (1.00)**

1.00" hail along Hwy 105 in Cut and Shoot that covered ground. Law officer had to pull off road during the event.

Montgomery County

.5 SE Willis **17 2148CST 2155CST** **0** **0** **5K** **Hail (1.00)**

1 inch hail along FM 2432, Willis-Waukegan road, outside of Willis.

Liberty County

5 N Hardin **25 0122CST** **0** **0** **1K** **Thunderstorm Wind (G55)**

Small tree down.

Storm Data and Unusual Weather Phenomena

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

TEXAS, Extreme West

NONE REPORTED.

TEXAS, Mid - South

NONE REPORTED.

TEXAS, North

Bell County

Killeen	**16**	**1536CST** **2130CST**			**0**	**0**			**Flash Flood**

28 persons from a trailer park and a day care center were evacuated due to high water. Numerous roads were barricaded due to high water. Some street intersections had water three feet deep.

Tarrant County

Ft Worth	**16**	**1940CST** **2040CST**			**0**	**0**			**Flash Flood**

A car was submerged in water at Trinity and Precinct Line Road.

Bell County

Killeen	**16**	**2046CST** **2130CST**			**0**	**0**			**Flash Flood**

Roads were reported barricaded by the Killeen Police Department. Water was also over roads on the east side of Fort Hood.

Coryell County

Ft Hood Aaf	**16**	**2046CST** **2130CST**			**0**	**0**			**Flash Flood**

Water covered roads across the western part of Fort Hood.

Bell County

6 SE Killeen to Killeen	**16**	**2110CST** **2210CST**			**0**	**0**			**Flash Flood**

A farm-to-market road was closed due to high water near Harker Heights.

TEXAS, North Panhandle

NONE REPORTED.

TEXAS, Northeast

NONE REPORTED.

TEXAS, South

NONE REPORTED.

TEXAS, South Central

De Witt County

Countywide	**16**	**1630CST** **2000CST**			**0**	**0**	**3K**	**0**	**Flash Flood**

General 1 to 2 inch totals fell across the county with isolated amounts to 3 inches in the southeast portion. Roads were closed between Yorktown and Cuero, with highway 87 blocked by high water in Cuero.

Gonzales County

Countywide	**16**	**1700CST** **1900CST**			**0**	**0**	**5K**	**0**	**Flash Flood**

General 1 to 2 inch totals fell across Gonzales County. Isolated amounts to 3 inches were reported in the eastern part of the county. Peach Creek was in flood and was reported over FM795.

Kendall County

Northwest Portion	**16**	**1730CST** **1930CST**			**0**	**0**	**5K**	**0**	**Flash Flood**

General 1 to 2 inch totals fell across Kendall County, with isolated amounts to 3 inches in the northwest portion. Several roads were closed due to flash flooding.

Medina County

Countywide	**16**	**1730CST** **1930CST**			**0**	**0**	**3K**	**0**	**Flash Flood**

Rainfall over Medina County was generally between one half inch and one inch. Isolated totals to near 3 inches were reported in the northwest part of the county. Roads were closed in the Natalia area in the southeast part of the county.

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

TEXAS, South Central

Bandera County

East Portion	**16**	**1800CST** **2000CST**			**0**	**0**	**10K**	**0**	**Flash Flood**

Bandera County reported a general rainfall of between 1 and 2 inches over the county, with isolated totals with isolated amounts to 3 inches between Pipe Creek and Bandera. Numerous roads were closed in and around Pipe Creek.

Travis County

Countywide	**16**	**1800CST** **2200CST**			**0**	**0**	**10K**	**0**	**Flash Flood**

A general one inch rain fell across Travis County, with isolated amounts of up to to 4 inches in the western part of the county. Although the worst flooding took part in the western part of the county, roads were closed in the city of Austin where several high water rescues were performed.

Williamson County

West Portion	**16**	**1800CST** **2200CST**			**0**	**0**	**5K**	**0**	**Flash Flood**

Rainfall in Williamson County averaged near 1 in the west and one-half inch in the east. Isolated totals to 4 inches were reported between Liberty Hill and Florence along the western edge of the county. Numerous roads were closed over western Williamson County.

Burnet County

Countywide	**16**	**1830CST** **2130CST**			**0**	**0**	**3K**	**0**	**Flash Flood**

General 1 rain was reported over most of Burnet County. The highest amounts were along the eastern boundary with Williamson and Travis Counties, where totals to 3 inches were indicated. Numerous county roads, including DR 211, 212, 213, and 243E, were closed across the county.

Hays County

Northwest Portion	**16**	**1830CST** **2200CST**			**0**	**0**	**3K**	**0**	**Flash Flood**

Rainfall over Hays County averaged near 1 inch with isolated totals in the northwest part of the county to 3 inches.

Llano County

West Portion	**16**	**1830CST** **2130CST**			**0**	**0**	**3K**	**0**	**Flash Flood**

Llano County reported a general rainfall of around 1 inch, with isolated amounts to 3 inches over the northwest portion. Several roads were closed in western Llano County

Bastrop County

Countywide	**16**	**1900CST** **2100CST**			**0**	**0**	**3K**	**0**	**Flash Flood**

Rainfall over Bastrop County averaged near 1 inch with isolated totals to 3 inches between Rosanky, Bastrop and Elgin.
Synopsis: In advance of an upper level low approaching slowly from the west, light to moderate rain began falling in the mid afternoon of January 16. Due to the saturated nature of soils over the area, nearly all rainfall became runoff, with flash flooding developing across low water crossings with accumulations as little as one half inch. A general rainfall of one-half inch to one inch covered South Central Texas, with isolated maximum totals of up to 4 inches.

TEXAS, South Panhandle

NONE REPORTED.

TEXAS, Southeast

NONE REPORTED.

TEXAS, West

TXZ258 **Guadalupe Mountains Of Culberson County**

	03 **04**	**1300MST** **0800MST**			**0**	**0**	**0**	**0**	**High Wind (G89)**

A low amplitude longwave trough slowly propagated east across the Southern Plains late on the 3rd and into the first half of the 4th. Height gradients in the base of the trough were tight, and resulted in severe winds in the higher elevations of the Guadalupe Mountains. Gusts frequently exceeded 80 MPH during the nighttime hours. At 0200 MST, a peak gust of 102 MPH was observed at The Bowl (7,755 FT MSL). The extreme winds were generally restricted to rural areas of the Guadalupe Mountains National Park. Park Service rangers reported an unknown number of trees that had been blown down by the winds. Given the uninhabited nature of the area, no damage occurred to man-made structures and there were no injuries.

TXZ061>062 **Ector - Midland**

	26	**0800CST** **1100CST**			**0**	**0**	**22K**	**0**	**Strong Wind**

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

TEXAS, West

A cold front swept south across the Permian Basin during the morning of the 26th bringing strong northwest winds. Measured wind gusts were generally between 40 and 50 MPH as recorded by area ASOS sites and the Texas Mesonet. Minor roof damage was sustained to a business in Midland. In Odessa, the winds sent roof debris flying off of two businesses, a few large signs were blown down, and a couple of power poles were damaged.

TEXAS, Western North

NONE REPORTED.

UTAH, East

UTZ027 **Grand Flat And Arches**

01	**0000MST**	**0**	**0**	**Dense Fog**
	0800MST			

Extensive low level moisture and a strong inversion in the valleys of east-central Utah caused widespread dense fog to form. This dense fog episode began on the morning of December 31 with widespread visibilities below 1/4 mile which continued through the early morning hours of January 1. Grand County law enforcement and the Canyonlands ASOS indicated the fog had dissipated shortly after daybreak.

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**

01	**0000MST**	**0**	**0**	**Drought**
31	**2359MST**			

A number of storms moved across eastern Utah during the month resulting in a slight improvement in the protracted drought situation across extreme eastern Utah. However, drought severity remained in the "extreme" category across most of the area with a small area of "exceptional" drought conditions across southwestern San Juan County. See the February, 2004 Storm Data publication for a continuation on this drought situation.

UTZ023-025-028 **Eastern Uinta Mountains - Tavaputs Plateau - La Sal & Abajo Mountains**

01	**2100MST**	**0**	**0**	**Winter Storm**
03	**2300MST**			

A strong and moist winter storm produced 1 to 2 feet of snow across the mountains of eastern Utah. The Camp Jackson SNOTEL in the Abajo Mountains recorded the largest snowfall amount with 26 inches. Windy conditions in high exposed areas resulted in blowing and drifting snow.

UTZ027 **Grand Flat And Arches**

08	**0700MST**	**0**	**0**	**Dense Fog**
	1230MST			

High pressure over the area and snow cover produced a strong inversion in the central valleys of extreme eastern Utah. This resulted in widespread dense fog with visibilities less than 1/4 mile. Major highways were affected by the dense fog, including Interstate 70.

UTZ027 **Grand Flat And Arches**

09	**1653MST**	**0**	**0**	**Dense Fog**
14	**1500MST**			

Trapped low level moisture and a strong inversion resulted in a prolonged period of dense fog in the valleys of east-central Utah. The Utah Highway Patrol, weather spotters, and automated sensor data indicated widespread visibilities below 1/4 mile. Additionally, below freezing temperatures allowed icy patches to form on roadways.

UTZ024 **Eastern Uinta Basin**

11	**1800MST**	**0**	**0**	**Dense Fog**
14	**1500MST**			

Trapped low level moisture and a strong inversion resulted in a prolonged period of widespread dense fog, with reported and measured visibilities less than 1/4 mile. Additionally, below freezing temperatures allowed icy patches to form on roads.

UTZ022 **Southeast Utah**

15	**2300MST**	**0**	**0**	**Dense Fog**
16	**1100MST**			

Low level moisture and stable conditions produced widespread visibilities below 1/4 mile across the valleys of southeast Utah.

UTZ028 **La Sal & Abajo Mountains**

30	**1400MST**	**0**	**0**	**Winter Weather/Mix**
31	**2145MST**			

A storm system and associated cold front moved from northwest to southeast across southeast Utah and produced 5 to 6 inches of snow in the La Sal and Abajo Mountains.

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

UTAH, West and Central

UTZ002>003-006>010-015 — **Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake And Toole Valleys - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Western Unita Mountains - Wasatch Plateau/Book Cliffs - West Central Utah/Delta**

01	**1200MST**	**0**	**0**	**2K**	**0**	**Winter Storm**
04	**0600MST**					

A strong and cold upper-level Pacific trough moved into northern Utah. This storm brought heavy snow accumulations to both valley and mountain locations in northern Utah. Some of the higher snow totals include Alta UDOT 29 inches, Snowbird 21 inches, Beaver 14 inches, Gunnison 12 inches, and Salina 10 inches. Power was lost to 13500 homes in the Wasatch Front as very strong winds accompanied the snow. Some of the stronger gusts include Sherwood Hills 85 mph, Stockton 75 mph, Signal Peak 72 mph, Tooele 66 mph, and Lost Creek 62 mph. Large snow drifts also caused transportation problems. A drift of 8 feet was reported along State Road 111 near Bacchus.

UTZ002>003-006>008-010 — **Northern Wasatch Front/Brigham City/Ogden Bountiful - Salt Lake And Toole Valleys - Wasatch Mountain Valleys/Huntsville/Park City/Heber - Wasatch Mountains I80 North - Wasatch Mountains South Of I80 - Wasatch Plateau/Book Cliffs**

25	**0000MST**	**0**	**0**	**100K**	**0**	**Heavy Snow**
	1700MST					

A cold Pacific storm system moved into Utah and affected mainly northern sections of the state. Some of the larger snowfall totals include Alta UDOT 20 inches, Snowbird 20 inches, Spruces 18 inches, Farmington Canyon 18 inches, and Snowbasin 18 inches.

UTZ004-008-010-017 — **Southern Wasatch Front/Lehi/Provo/Nephi - Wasatch Mountains South Of I80 - Wasatch Plateau/Book Cliffs - Central And Southwest Mountains**

30	**1600MST**	**0**	**0**	**0**	**0**	**Heavy Snow**
31	**1230MST**					

An upper level trough moved into Utah from the northwest and affected northern valleys and mountains as well as the southern mountain areas. Some of the larger snowfall totals include Sundance 8 inches, Alta UDOT 6 inches, Snowbird 6 inches, Farmington Canyon 6 inches, and Gooseberry Ranger Station 6 inches.

VERMONT, North and Central

VTZ001>012-016>019 — **Grand Isle - Western Franklin - Orleans - Essex - Western Chittenden - Lamoille - Caledonia - Washington - Western Addison - Orange - Western Rutland - Windsor - Eastern Franklin - Eastern Chittenden - Eastern Addison - Eastern Rutland**

13	**1800EST**	**0**	**0**			**Extreme Cold/Wind Chill**
14	**1200EST**					

Weak low pressure moved across northern New England during Monday, January 12th with 2 to 4 inches of snow. Colder air followed this storm. Then an arctic front moved through the area Tuesday, January 13th. Wind chills during Tuesday night, Jan 13th through noon on Wednesday, January 14th were generally between 25 and 45 below zero. Arctic high pressure then settled across the area during Wednesday, January 14th.

VTZ001>012-016>019 — **Grand Isle - Western Franklin - Orleans - Essex - Western Chittenden - Lamoille - Caledonia - Washington - Western Addison - Orange - Western Rutland - Windsor - Eastern Franklin - Eastern Chittenden - Eastern Addison - Eastern Rutland**

15	**1200EST**	**0**	**0**	**100K**		**Extreme Cold/Wind Chill**
16	**1200EST**					

Arctic high pressure built southeast from Canada on Thursday, the 15th of January and Friday the 16th of January. Wind chills during Thursday, January 15th and Friday, January 16th were generally between 25 and 45 below zero. Some sprinkler systems froze and burst in several area locations. One location on the University of Vermont campus resulted in 100,000 dollars of damage. Thereafter, it remained cold with arctic high pressure over the area, but winds abated. Record low maximum temperatures were set at several Vermont locations on Thursday, January 15th: The summit of Mount Mansfield (Lamoille county), minus 24F, previous record was minus 10. Montpelier (Washington county), minus 11F, previous record was minus 8F. St. Johnsbury (Caledonia county), minus 9F, previous record was minus 6F, and Burlington (Chittenden county), minus 7F, previous record was minus 6F.

VERMONT, South

VTZ013>015 — **Bennington - Western Windham - Eastern Windham**

15	**1900EST**	**0**	**0**			**Extreme Cold/Wind Chill**
16	**1100EST**					

An extremely cold airmass moved out of Siberia, then plunged southward through Canada and across the northeast by January 15. At the same time, a powerful storm developed off the Canadian Maritimes. The pressure gradient between the intense storm and the arctic high pressure, extending from central Canada southward through the Ohio Valley, produced gusty north to northwest winds in the 15 to 30 mph range, with higher gusts. This wind, combined with ambient temperatures ranging from 5 below zero to 15 below zero, resulted in dangerous wind chills across extreme southern Vermont during the night of January 15 through the morning of the 16th. Equivalent wind chill readings ranged from 30 to 40 below zero.

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

VERMONT, South

VTZ013>015 — **Bennington - Western Windham - Eastern Windham**

Date	Time Local/ Standard	Killed	Injured	Character of Storm
28	**0000EST** **0400EST**	**0**	**0**	**Winter Storm**

A complex low pressure area moved into the Ohio Valley on January 27. Energy from this storm transferred across the Appalachians to form a secondary storm, off the mid Atlantic coast by midnight. This second storm moved northeast, south of Long Island. The two systems combined to produce a marginal winter storm event in extreme southern Vermont as a band of moderate to heavy snow moved over the area from around midnight into the early morning hours of the 28th. The temperature profile was cold enough for all snow. Seven to 13 inches of snow accumulated across much of the area. Specific amounts included 12.6 inches at Sunderland, Bennington County and 7.5 inches at West Wardsboro, Windham County.

VIRGIN ISLANDS

NOT RECEIVED.

VIRGINIA, East

VAZ048>049-060>062-065>070-079>081-087>089-092>098 — **Fluvanna - Louisa - Prince Edward - Cumberland - Goochland - Mecklenburg - Lunenburg - Nottoway - Amelia - Powhatan - Chesterfield - Brunswick - Dinwiddie - Prince George - Greensville - Sussex - Surry - Southampton - Isle Of Wight - Newport News - Norfolk - Suffolk - Chesapeake - Virginia Beach**

Date	Time Local/ Standard	Killed	Injured	Character of Storm
09	**0000EST** **1600EST**	**0**	**0**	**Winter Storm**

Two to as much as five inches of snow fell across portions of central, southcentral, and southeast Virginia. Some higher amounts included: Victoria in Lunenburg county 5", Farmville in Prince Edward county 4", Great Bridge in Chesapeake city 3-4", Blackstone in Nottoway county 3-4", City of Portsmouth 3.5-4", Fluvanna county 3-4", South Hill in Mecklenburg county 2-3", City of Emporia 2.5-3", and Louisa in Louisa county 2.5". The snow produced very slippery roadways, which resulted in several accidents.

VAZ048>049-060>064-067>069-071-074 — **Fluvanna - Louisa - Prince Edward - Cumberland - Goochland - Hanover - Caroline - Nottoway - Amelia - Powhatan - Henrico - Essex**

Date	Time Local/ Standard	Killed	Injured	Character of Storm
25	**1400EST**	**0**	**0**	**Winter Storm**
26	**1100EST**			

Four to as much as six inches of snow and sleet fell across portions of central Virginia. Some higher amounts included: Farmville in Prince Edward county 6", Cumberland in Cumberland county 6", Montpelier in Hanover county 6", Columbia in Fluvanna county 5", Goochland in Goochland county 5", Glen Allen in Henrico county 5", and Tappahannock in Essex county 5". The snow and sleet produced very slippery roadways, which resulted in numerous accidents and school closings for a few days.

VAZ065>066-070-072>073-079>084-086>090-092 — **Mecklenburg - Lunenburg - Chesterfield - King William - King And Queen - Brunswick - Dinwiddie - Prince George - Charles City - New Kent - Gloucester - Mathews - Greensville - Sussex - Surry - James City - Southampton**

Date	Time Local/ Standard	Killed	Injured	Character of Storm
25	**1400EST**	**0**	**0**	**Winter Storm**
26	**1100EST**			

Three to as much as five inches of snow and sleet fell across portions of southcentral and eastern Virginia. Some higher amounts included: Chesterfield in Chesterfield county 5", Toano in James City county 5", King William Courthouse in King William county 5", Mangohick in King William county 5", New Kent Courthouse in New Kent county 5", Surry in Surry county 5", Prince George in Prince George county 4.5", and Sussex Courthouse in Sussex county 4.5". The snow and sleet produced very slippery roadways, which resulted in numerous accidents and school closings for a few days.

VAZ075>078-085-091-093>100 — **Westmoreland - Richmond - Northumberland - Lancaster - Middlesex - York - Isle Of Wight - Newport News - Norfolk - Suffolk - Chesapeake - Virginia Beach - Accomack - Northampton**

Date	Time Local/ Standard	Killed	Injured	Character of Storm
25	**1400EST**	**0**	**0**	**Winter Storm**
26	**1100EST**			

Two to as much as four inches of snow and sleet fell across portions of eastern and southeast Virginia. Some higher amounts included: Chincoteague in Accomack county 4.5", City of Hampton 4", Ottoman in Lancaster county 3.5", Downtown Norfolk 3-4", Colonial Beach in Westmoreland county 4", Yorktown in York county 4", Reedville in Northumberland county 3.5", Grafton in Newport News 3.25", and City of Virginia Beach 3". The snow and sleet produced very slippery roadways, which resulted in numerous accidents and school closings for a few days.

VIRGINIA, Extreme Southwest

VAZ001>002-005>006-008 — **Lee - Wise - Scott - Russell - Washington**

Date	Time Local/ Standard	Killed	Injured	Character of Storm
09	**0300EST** **1000EST**	**0**	**0**	**Winter Storm**

2-4 inches snowfall

A winter storm moved into the region during the early morning hours of January 9th producing snowfall amounts ranging from 2 to

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

VIRGINIA, Extreme Southwest

4 inches across the lower elevations while dumping as much as 6 inches of snow at the highest elevations of Russell County and 7 inches in the highest elevations of Scott County.

VAZ001>002-005>006 **Lee - Wise - Scott - Russell**

25	**0800EST**	**0**	**0**		**Ice Storm**
	2000EST				

1/10-1/8 inch ice accumulation

Ice accumulated to a thickness ranging from 1/10 to 1/4 inch across a large part of Southwest Virginia during the period extending from around 8 am Sunday morning to around 8 pm Sunday evening. Some very minor snow accumulations were also reported across this area.

VIRGINIA, North

VAZ021-025>026-036>038-042-053>055 **Highland - Augusta - Rockingham - Nelson - Albemarle - Greene - Loudoun - Fairfax - Arlington - Stafford**

08	**1700EST**	**0**	**0**		**Winter Weather/Mix**
09	**1700EST**				

An area of low pressure tracked across Central and Northern Virginia on the 8th and 9th. This system produced one to two inches of snow across the Shenandoah Valley and the Central Foothills of Virginia. Other areas of Northern Virginia reported a half inch or less of snow. This light snow caused widespread traffic problems. Numerous automobile accidents were reported, and schools either closed on Friday the 9th or opened two hours late.

VAZ042-053>055-057 **Loudoun - Fairfax - Arlington - Stafford - King George**

10	**0100EST**	**0**	**0**		**Extreme Cold/Wind Chill**
	1100EST				

Very cold Arctic air settled over the portions of Northern Virginia. The minimum temperatures ranged from the lower teens to the digits, and north winds averaged 10 to 15 mph. This produced wind chills on the average of 10 degrees below zero. There were dozens of cases of broken water mains and water pipes due to the extremely cold temperatures.

VAZ042-053>054 **Loudoun - Fairfax - Arlington**

15	**2300EST**	**0**	**0**		**Extreme Cold/Wind Chill**
16	**1100EST**				

A fast moving storm system brought light snow to the region on the 14th and 15th. Most areas of Northern Virginia only received a trace of snowfall. However, there was some very cold air behind this system. Minimum temperatures across the region were in the single digits and teens. Strong northwest and west winds (20 to 25 mph with gusts to 35 mph) produced wind chills of 5 to 10 below zero on the night of the 15th and the early morning of the 16th.

VAZ042-053>054 **Loudoun - Fairfax - Arlington**

17	**1800EST**	**0**	**0**		**Winter Weather/Mix**
18	**1600EST**				

Two areas of low pressure merged over the region to produce a mix of snow and freezing rain on the 17th and 18th. Snowfall amounts from one quarter to one inch were recorded in Northern Virginia. Ice accumulations of one tenth inch were also reported. Several automobile accidents occurred when motorists lost control of their vehicles when they encountered glazed pavements.

VAZ028 **Frederick**

23	**1900EST**	**0**	**0**		**Winter Storm**
24	**1200EST**				

An area of low pressure developed over the Lower Great Lakes and brought more snow to the region on the 23rd and 24th. The low tracked across West Virginia, Virginia and Maryland. Five inches of snow was reported across Northern Frederick County.

VAZ021-025>031-037>038-040>042-053>054 **Highland - Augusta - Rockingham - Shenandoah - Frederick - Page - Warren - Clarke - Albemarle - Greene - Rappahannock - Fauquier - Loudoun - Fairfax - Arlington**

25	**1200EST**	**1**	**0**		**Winter Storm**
26	**1000EST**				

An area of low pressure developed off the coast of North Carolina and tracked north. This storm produced widespread snow, sleet and freezing drizzle over the region. Five to six inches of snow fell over Northern and Central Virginia. The snow mixed with sleet and finally changed over to freezing drizzle before tapering off. A man died in Fairfax County when his vehicle slammed into the back of a snow plow. Several other minor accidents occurred according to Emergency Operations Centers. Dozens of school districts closed. M43VE

VAZ036-039-050>051-055>057 **Nelson - Madison - Orange - Culpeper - Stafford - Spotsylvania - King George**

25	**1200EST**	**0**	**0**		**Winter Weather/Mix**
26	**1000EST**				

An area of low pressure developed off the coast of North Carolina and tracked north. This storm produced widespread snow, sleet and freezing drizzle over the region. Two to four inches of snow fell over the Central Foothills and the Northern Piedmont of Virginia. The snow mixed with sleet and finally changed over to freezing drizzle before tapering off. Several other minor accidents occurred according to Emergency Operations Centers. Dozens of school districts closed.

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

VIRGINIA, North

VAZ042-053>054 — **Loudoun - Fairfax - Arlington**

Date	Time	Killed	Injured	Character of Storm
26	1530EST	2	0	Winter Weather/Mix
27	2230EST			

An area of low pressure moved across the area on the 26th and 27th. This low produced a second round of freezing rain and snow across the region. Due to the inclement weather Federal agencies in the Washington DC Metropolitan area closed three hours early on the 27th. Two fatalities were reported in Loudoun County from separate automobile accidents. The motorists died when their vehicles rear ended snow plows. Other less severe injuries were also blamed on the ice, along with scattered power outages and breaks in natural gas services. Some schools were closed again on the 27th. M45VE, M38VE

VAZ042 — **Loudoun**

Date	Time	Killed	Injured	Character of Storm
31	0300EST	0	0	Extreme Cold/Wind Chill
	1000EST			

Very cold arctic air combined with strong Northwest winds to produce dangerous wind chills. Minimum temperatures were in the lower teens. Wind speeds averaged 20 mph. Gusts of 30 mph were observed. This produced wind chill values of five to ten degrees below zero.

VIRGINIA, Northwest

VAZ003 — **Dickenson**

Date	Time	Killed	Injured	Character of Storm
02	1100EST	0	0	Flood
	1400EST			

Rains of 1.25 to 2 inches fell in about a 6 hour time span. This caused small streams to overflow and block roads. A few of the affected streams included Pine Creek, Bearpen Branch, and Road Branch.

VAZ003>004 — **Dickenson - Buchanan**

Date	Time	Killed	Injured	Character of Storm
25	0800EST	0	0	Ice Storm
	1400EST			

Freezing rain accumulated a quarter to a half inch on trees and power lines. Temperatures rose above freezing during the afternoon. No widespread power outages were reported.

VIRGINIA, Southwest

VAZ012>014-016>017-019>020-022>024-032>035-043>047-058>059 — **Wythe - Pulaski - Montgomery - Carroll - Floyd - Alleghany - Bath - Roanoke - Botetourt - Rockbridge - Patrick - Franklin - Bedford - Amherst - Henry - Pittsylvania - Campbell - Appomattox - Buckingham - Halifax - Charlotte**

Date	Time	Killed	Injured	Character of Storm
25	0645EST	0	0	Heavy Snow
	2345EST			

A winter storm on the 25th dumped from 4 to 7 inches across Western Virginia. The higher amounts fell from Roanoke County southwest into portions of the New River Valley...with local higher amounts in portions of Campbell County, in the piedmont. Numerous accidents were reported, due to slick roads, but the majority across the region were minor. One accident on a slick highway in Carroll County resulted in one minor injury. Several injuries were also reported in Pittsylvania county from vehicle accidents due to slick roads.

VAZ015 — **Grayson**

Date	Time	Killed	Injured	Character of Storm
28	0445EST	0	0	High Wind (G55)

A strong cold front moved across the county during the evening of the 27th. High winds behind the front resulted in trees being blown down during the morning of the 28th.

WASHINGTON, Northeast

WAZ032>033-036>038-041-044 — **Lower Garfield & Asotin - Washington Palouse - Spokane Area - Northeast Mountains - Okanogan Highlands - Wenatchee Area - Waterville Plateau**

Date	Time	Killed	Injured	Property	Character of Storm
01	1800PST	0	0	0	Heavy Snow
02	2100PST				

From the evening of January 1st through the evening of January 2nd a winter storm dumped heavy snow across portions of eastern Washington. Spotter at Pullman reported 8 inches of snow while at Oaksdale they had 7.5 inches. Eight and one half inches fell in northeast Spokane and 10 inches was reported just east of Colville. A spotter in East Wenatchee reported 7 inches. Numerous other reports were received from spotters with amounts ranging from 4 to 7 inches.

WAZ033-036>038-041>043 — **Washington Palouse - Spokane Area - Northeast Mountains - Okanogan Highlands - Wenatchee Area - East Slopes Northern Cascades - Okanogan Valley**

Date	Time	Killed	Injured	Character of Storm
04	0100PST	0	0	Extreme Cold/Wind Chill
06	1200PST			

From January 4th through the morning of January 6th extreme cold gripped eastern Washington. On the coldest morning, January 5th, Pullman reported minus 17,Turnbull Wildlife Refuge minus 34, Davenport minus 25, Spokane minus 22, Deer Park minus 28, and Springdale minus 32. Other reports include Republic minus 24, Twisp minus 21, Winthrop minus 20, and Nespelem minus 17. The extreme cold resulted in numerous broken water pipes and several areas with power outages.

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

WASHINGTON, Northeast

WAZ033>035-043>044 — **Washington Palouse - Moses Lake Area - Upper Columbia Basin - Okanogan Valley - Waterville Plateau**

	06	1600PST	0	0	0		Heavy Snow
	07	2000PST					

A winter storm dumped heavy snow over portions of Whitman, Grant, Douglas and Okanogan Counties during the evening of January 6th into the evening of January 7th, A spotter in Whitman County reported 8 inches of snow. Spotters in Douglas and Grant Counties reported 6 inches of new snow. 7 inches of new snow fell in the Okanogan Valley. Numerous other reports were received ranging from 4 to 5.5 inches.

WAZ035>037 — **Upper Columbia Basin - Spokane Area - Northeast Mountains**

	22	1600PST	0	0	0		Heavy Snow
	23	1200PST					

A winter storm dumped heavy snow over Lincoln, Spokane, Stevens, and Pend Oreille Counties from the evening of January 22nd through the morning of January 23. A spotter in Newport reported 7 inches of new snow. A Loon Lake spotter reported 4.5 inches of snow while one at Rosalia reported 4 inces of new snow.

WAZ041>042 — **Wenatchee Area - East Slopes Northern Cascades**

	30	0400PST	0	1			High Wind (G50)
		0800PST					

A 71 year old man was killed when high winds blew a tree down on him as he was cross country skiing near Leavenworth. The high winds also blew a tree into a house in the same area destroying the home. In Wenatchee a blown down tree caused major damage to an apartment. Several other reports of minor damage in the area were received.

WASHINGTON, Northwest

WAZ001>002 — **San Juan - Western Whatcom**

	03	0000PST	0	0	25K		High Wind (G61)
		0600PST					

High winds caused scattered power outages in the San Juan islands and the islands off western Whatcom county.

WAZ004-008-011 — **Central Cascade Foothills - Tacoma Area - Southwest Interior**

	03	0730PST	0	0			Heavy Snow
	04	0730PST					

5 to 12 inches of snow closed some major travel arteries, including state highways 512 and 410 for several hours. Washington State Patrol responded nearly 200 collisions in Pierce and Thurston counties, most involving cars sliding into ditches.

WAZ003-005>008-010>011-014>015 — **Northern Cascade Foothills - Northwest Interior - Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Hood Canal/Kitsap Peninsula - Southwest Interior - Western Strait Of Juan De Fuca - North Coast**

	06	0200PST	0	0	1M		Heavy Snow
		1900PST					

It snowed over much of western Washington before turning to freezing rain in the evening. Most locations reported between 3 and 11 inches of snow, with 4 to 8 inches being most common. Although most schools were closed and a lot of people stayed home, there were still some major traffic problems on I-5 and Highway 16 in Tacoma. State patrol required chains in some areas. Many state, local and federal offices closed early. About 30 streets were closed in the city of Seattle. Out of the hundreds of accidents only about 10 of them had injuries. Broken water pipes was a common problem.

WAZ004 — **Central Cascade Foothills**

	06	0930PST	0	0			High Wind (G50)
		1400PST					

High winds blew over the central cascade foothills, effecting the towns of North Bend and Enumclaw.

WAZ002>008-010>011 — **Western Whatcom - Northern Cascade Foothills - Central Cascade Foothills - Northwest Interior - Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Hood Canal/Kitsap Peninsula - Southwest Interior**

	06	1900PST	0	0			Winter Weather/Mix
	07	0600PST					

During the evening of the 6th, most of the snowfall changed to freezing rain over western Washington. This caused most of the nearly 150,000 power outages. It also wreaked havoc with the airlines, Alaska and Horizon cancelled about 2/3 of their flights. In some places, like the Shelton area, schools were closed for a third straight day.

WAZ006>008-011 — **Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Southwest Interior**

	29	0530PST	0	0			Flood
	31	0400PST					

After 1 to 4 inches of rain fell, minor flooding occurred on the Snohomish, Tolt and Skookumchuck rivers, with moderate flooding on the Snoqualmie. A few roads were closed in the Snoqualmie valley.

WAZ009 — **Admiralty Inlet Area**

	30	0400PST	0	0	10K		High Wind (G52)
		0900PST					

High winds caused some power outages, mainly in Island county, but a few in southwest Skagit and eastern Clallam counties. A

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

WASHINGTON, Northwest

truck was blown sideways against the guardrail of the Deception Pass bridge.

WASHINGTON, Southeast

WAZ024-026>028 — **East Columbia River Gorge - Kittitas Valley - Yakima Valley - Lower Columbia Basin**

01	**0100PST**	**0**	**0**		**Heavy Snow**
	2000PST				

A powerful winter storm hit the Pacific Northwest on New Years Day. A deep surface low tracked across central and northeast Oregon, as well as southeast Washington. This resulted in heavy snow on the northwest side of the surface low track. Breezy winds in the Tri-Cities area also led to snow drifts up to 20 inches. Here are some of the snow totals from this event...
Eastern Columbia River Gorge: 6-8 inches
Yakima Valley: Yakima 6 inches, Selah 4 inches
Lower Columbia Basin: 2 NE Richland 7 inches, Kennewick 6 inches, 5 NE Prosser 4 inches
Kittitas Valley: 7 miles west of Thorp 8.5 inches

WAZ029 — **Blue Mountain Foothills**

01	**0910PST**	**0**	**0**		**Winter Weather/Mix**
	1600PST				

A powerful winter storm hit the Pacific Northwest on New Years Day. A deep surface low tracked across central and northeast Oregon as well as SE Washington. A band of moisture moved north out ahead of the low and dumped anywhere from 1-4 inches in Walla Walla and Whitman Mission. As the low tracked northeast of the Blue Mountain Foothills, a sudden surge of strong westerly winds developed. Highway patrol reported that cars were being blown off the road on highway 12 near nine mile hill due to the wind and ice. Between 2:20 and 3:30 pm, brief blizzard conditions were reported in Waitsburg and Dayton with wind gusts to 55 MPH and visibilities between zero and one quarter of a mile.

WAZ024 — **East Columbia River Gorge**

03	**1300PST**	**0**	**0**		**Heavy Snow**
04	**1002PST**				

Eight inches of snow was reported in the Eastern Columbia River Gorge.

WAZ024>030 — **East Columbia River Gorge - East Slopes Southern Cascades - Kittitas Valley - Yakima Valley - Lower Columbia Basin - Blue Mountain Foothills - Northwest Blue Mountains**

04	**2000PST**	**0**	**0**		**Extreme Cold/Wind Chill**
05	**1000PST**				

An arctic air mass moved south out of British Columbia, setting daily low record low temperatures for January 5th. Some of the daily low temperatures, several of which were records, observed in degrees Fahrenheit included: -21 Whitman Mission; -16 Ellensburg; -15 Eltopia; -14 in Yakima, and Selah; -12 Walla Walla, Wapato, and Dayton; -10 Bickleton; -9 Sunnyside; -8 Prosser; and -6 in Richland. Frigid temperatures and poor driving conditions caused numerous school closures and cancellations.

WAZ024-026>028 — **East Columbia River Gorge - Kittitas Valley - Yakima Valley - Lower Columbia Basin**

06	**0200PST**	**0**	**0**		**Heavy Snow**
07	**1224PST**				

Heavy snow fell across much of the Eastern Columbia River Gorge, as well as the Yakima Valley and Lower Columbia Basin. Interstate 90 was closed from North Bend to Ellensburg from 3:45 AM to 5:00 PM on January 7th due to treacherous driving conditions. The snow and icy roadways contributed to 70 traffic accidents. Snow reports from this event included:
Eastern Columbia River Gorge: 8 inches
Yakima Valley: Sunnyside 5 inches in a 12 hour period ending at 9:55 AM
Lower Columbia Basin: 10 inches near Prosser, 8 inches Richland
Kittitas Valley: Ellensburg 7 inches

WAZ024-027>028 — **East Columbia River Gorge - Yakima Valley - Lower Columbia Basin**

08	**1600PST**	**0**	**0**		**Winter Weather/Mix**
09	**0800PST**				

A mix of sleet and freezing rain occurred with ice accumulations less than a quarter inch.

WAZ025>026 — **East Slopes Southern Cascades - Kittitas Valley**

08	**2200PST**	**0**	**0**		**Ice Storm**
09	**0400PST**				

Significant ice accumulations occurred along portions of the east slopes of the southern Washington Cascades, as well as the Kittitas Valley. Weather spotters in Ellensburg, Cle Elum, and Goldendale reported ice accumulations between .25-.50 inches.

WAZ027 — **Yakima Valley**

15	**0300PST**	**0**	**0**		**Dense Fog**
	0500PST				

Dense fog and icy roadways led to a 20 vehicle pile-up outside of Selah which blocked westbound lanes of interstate 82 for about two hours, with no serious injuries.

WAZ025 — **East Slopes Southern Cascades**

24	**1700PST**	**0**	**2**		**Winter Weather/Mix**
	2100PST				

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

WASHINGTON, Southeast

A blinding snowstorm two miles west of Cle Elum led to a 13-vehicle pileup between four semi-trucks and nine passenger vehicles. Two people were transported by ambulance to Kittitas Valley Community Hospital and later released.

WAZ026 **Kittitas Valley**

28	**0700PST**	**0**	**0**			**Winter Weather/Mix**
	0830PST					

A brief period of freezing rain led to six accidents on interstate 90 between Ellensburg and Kittitas, resulting in several minor injuries.

WAZ028>029 **Lower Columbia Basin - Blue Mountain Foothills**

30	**0215PST**	**0**	**0**	**17K**		**High Wind (G60)**
	0430PST					

A weather spotter in Dayton reported a wind gust of 61 MPH. In addition, an automated weather station 16 miles northwest of Benton City recorded a wind gust of 69 MPH. Tree damage in Waitsburg included uprooted trees, large limbs, and trees snapped off from the base. A 1994 Ford was totaled when strong winds blew a tree onto the vehicle. The high winds blew shingles off a few homes in Waitsburg, and also blew out a bedroom window. Part of a home run fence was also destroyed by a falling tree. Just north of Dayton, the wind snapped an 18-inch thick Columbia REA power pole off at the base. In Prosser, a 1997 Dodge Ram pickup was severly damaged when a tree was blown onto the truck. The property damage from this event is estimated at $17,000.

WAZ024 **East Columbia River Gorge**

30	**0218PST**	**0**	**0**			**High Wind (G51)**

WAZ027 **Yakima Valley**

30	**0230PST**	**0**	**0**	**4K**		**Strong Wind**
	0400PST					

Strong winds in Grandview caused a tree to topple onto a car. The tree had no root ball to hold it into the ground. The strong winds also resulted in scattered power outages from Naches to White Swan. The property damage from this event is estimated at $4,000.

WASHINGTON, Southwest

WAZ019>023-039>040 **West Slopes Southern Cascades And Passes - Southwest Interior - South Coast - Lower Columbia - West Columbia River Gorge - Vancouver Area - Southern Cascade Foothills**

06	**0600PST**	**0**	**0**			**Winter Storm**
09	**0900PST**					

WAZ023 **West Columbia River Gorge**

06	**1000PST**	**0**	**0**			**Blizzard**
08	**0800PST**					

A strong winter storm packing the powerful punch of a frigid arctic airmass, heavy snow, sleet and freezing rain, along with strong east winds through and near the Columbia River Gorge snarled travel, forced the closure of most schools and businesses, and resulted in widespread power outages and properly damage in Southwest Washington. Strong high pressure built up east of the Cascade Mountains by January 5th, which forced frigid air through the Columbia River Gorge into Southwest Washington. A Pacific low pressure system brought moist Pacific air over the top of this cold dome, producing the widespread snow...sleet...and freezing rain throughout the area, and blizzard conditions in Columbia River Gorge. Snowfall totals ranged from 3 inches in Camas to 5 inches at Raymond and Longview, 7 inches in Vancouver, 8 inches in Grays River, and two feet in the South Washington Cascades. Accumulations of up to 2 inches of sleet and freezing rain followed the snowfall. Blizzard conditions in the Columbia River Gorge resulted in the closure of Interstate 84 between Troutdale, Oregon and Hood River Oregon, and Washington State Route 14 between Washougal, Washington and White Salmon, Washington during the same period, halting east-west travel through the Gorge and stranding hundreds of trucks at both ends of the Gorge. Weight from the snow and ice buildup resulted in widespread downed trees and power lines, leaving 2000 customers without power in Clark County. Clark Public Utilities estimated the storm cost between $1 and $1.5 million, while the city of Vancouver estimates up to $500,000 in damages.

WAZ039 **Vancouver Area**

23	**1200PST**	**0**	**0**			**Heavy Snow**
24	**1200PST**					

A winter storm brought a blanket of snow the the area. Hockinson received one inch.

WEST VIRGINIA, East

WVZ054 **Pendleton**

08	**1700EST**	**0**	**0**			**Winter Weather/Mix**
09	**1400EST**					

An area of low pressure tracked across Southern West Virginia and Central Virginia on the 8th and 9th. This system produced an inch of snow or less across the Panhandle of Eastern West Virginia and one to two inches of snow across portions of Northern Virginia. The small amounts of snow caused widespread traffic problems. Numerous automobile accidents were reported.

WVZ051>053 **Morgan - Berkeley - Jefferson**

10	**0100EST**	**0**	**0**			**Extreme Cold/Wind Chill**
	1100EST					

Storm Data and Unusual Weather Phenomena

January 2004

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

WEST VIRGINIA, East

Very cold Arctic air settled over the portions of Northern and Central Virginia. The minimum temperatures were in the lower teens and single digits with North winds averaging 10 to 15 mph. This produced wind chills on the average of 10 degrees below zero. There were dozens of cases of broken water mains and pipes due to the extremely cold temperatures.

WVZ051>053 **Morgan - Berkeley - Jefferson**

15 2300EST 0 0 Extreme Cold/Wind Chill
16 1100EST

A fast moving storm system brought light snow to the region on the 14th and 15th. The Eastern Panhandle of West Virginia only received one half to an inch of snowfall. There was some very cold air behind this system. Minimum temperatures across the region were in the single digits and teens. Strong northwest and west winds (15 to 20 mph with gusts to 30 mph) produced wind chills of 5 to 10 below zero on the night of the 15th and the early morning of the 16th.

WVZ051>053 **Morgan - Berkeley - Jefferson**

17 1800EST 0 0 Winter Weather/Mix
18 1600EST

Two areas of low pressure merged over the region to produce a mix of snow and freezing rain. Snow amounts of two to three inches were recorded over the Panhandle of Eastern West Virginia. There were also reports of ice accumulations up to two tenths inch.

WVZ052 **Berkeley**

23 0500EST 0 0 Extreme Cold/Wind Chill
1000EST

An arctic front ushered more cold air into the area on the 22nd and 23rd. Minimum temperatures were in the lower to mid teens. Strong north winds of 15 to 25 mph with gusts near 30 mph helped to produce wind chills of 5 to 10 degrees below zero.

WVZ048>053 **Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson**

23 1900EST 0 0 Winter Storm
24 1200EST

An area of low pressure developed over the Lower Great Lakes and brought more snow to the region on the 23rd and the 24th. The low tracked across West Virginia, Virginia and Maryland. Snowfall amounts across Eastern West Virginia averaged five to seven inches.

WVZ048>055 **Grant - Mineral - Hampshire - Morgan - Berkeley - Jefferson - Pendleton - Hardy**

25 1200EST 0 0 Winter Storm
26 1000EST

An area of low pressure developed off the coast of North Carolina on the 25th and 26th. This storm produced widespread snow, sleet and freezing drizzle over the region. Five to seven inches of snow fell across Eastern West Virginia . The snow mixed with sleet and finally changed over to freezing drizzle before tapering off. Several accidents with minor injuries were reported to Emergency Operations Centers. Many school districts closed due to the inclement weather.

WVZ049 **Mineral**

26 1530EST 0 0 Winter Storm
27 2230EST

A weak area of low pressure moved across the region on the 26th. This low produced a second round of snow and freezing rain on the 27th. An additional five inches of snow fell in Mineral County.

WVZ051>053 **Morgan - Berkeley - Jefferson**

31 0300EST 0 0 Extreme Cold/Wind Chill
1000EST

Very cold arctic air combined with strong northwest winds to produce dangerous wind chills. Minimum temperatures were in the lower teens. Wind speeds averaged 20 mph. Gusts of 30 mph were observed. This produced wind chill values of five to ten degrees below zero.

WEST VIRGINIA, North

WVZ003 **Ohio**

03 2050EST 0 0 Flood
2330EST

Short Creek Rd, Huffs Rd, and G C & P Rd closed by high water and mud slides.

WVZ002 **Brooke**

03 2300EST 0 0 Flood
2359EST

Near Bethany, 3 roads closed by flooding and mud slides.

WVZ002 **Brooke**

04 1105EST 0 0 Flood
05 2100EST

Rte 67 flooded near Wellsburg. By 325 PM, numerous streams were flooded just south of Wellsburg. By 451 PM, mud slides were reported on Rte 2 between Wellsburg and Windsor Heights. Also, Rte 67 was flooded by Greens Run and Hukill Run. At 930 PM on the 4th, Hukills Rd near Bethany flooded; and Pierce Run Rd flooded near McKinleyville.

Storm Data and Unusual Weather Phenomena

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

WEST VIRGINIA, North

WVZ001 **Hancock**

	04	1110EST			0	0			Flood
	05	1500EST							

In Weirton, Kings Creek Rd flooded. At 455 PM, Hardin Run flooded at New Cumberland. At 930 PM, there were mud slides on Kings Creek Rd.

WVZ003 **Ohio**

	04	1500EST			0	0	60K		Flood
	05	1500EST							

It began when Weidman Run flooded 2 miles south of West Liberty. By 5 PM, Middle Creek Rd flooded near Triadelphia. By 920 PM, about 2 miles west of West Liberty, a bridge was washed away and a mud slide moved a house along South Creek Road. At 930 PM, Pierce Rd flooded near McKinleyville.

WVZ004 **Marshall**

	05	0112EST			0	0	60K		Flood
	06	1000EST							

Turkey Run, near Viola, flooded Majorsville. Early in the morning of the 5th, Route 250 about 5 miles of Cameron, collapsed by flood waters. Four vehicles were damaged. Some roads were still flooded as late as 6 AM on the 6th.

WVZ004 **Marshall**

	05	1600EST			0	0			Flood
	06	1700EST							

Rivers began to rise January 2 because of snow melt and temperatures 20 degrees above normal. Two to 3 inches of rain fell January 3 and 4, causing rivers to rise. Numerous small streams flooded first, followed by the rivers: The Ohio River at Moundsville rose above flood stage (37 feet) at 4 PM on the 5th; crested 37.5 ft 10 AM on 6th; fell below flood stage at 5 PM on the 6th. At Wheeling, the Ohio River crested 36.4 feet, just below the flood stage of 37 feet.

WVZ041 **Tucker**

	15	0700EST			0	0			Heavy Snow
		1000EST							

It started early on the morning of the 15th. Canaan Valley reported 7" of snow.

WVZ004-012-021>023-041 **Marshall - Wetzel - Marion - Monongalia - Preston - Tucker**

	17	1800EST			0	0			Ice Storm
		2330EST							

Sleet and freezing rain began the afternoon of the 17th. An ice glaze, at least one quarter inch thick, was reached before midnight, resulting in numerous accidents.

WVZ023-041 **Preston - Tucker**

	24	0500EST			0	0			Heavy Snow
		0800EST							

A total of 8 to 9 inches of snow fell from the evening of the 23rd into the morning of the 24th. Initially, the snow was caused by a northwest flow of air over Lake Erie, but a low pressure center developed in Ohio and moved east, enough to enhance the snows over the highest elevations in these counties.

WVZ022>023-041 **Monongalia - Preston - Tucker**

	26	0000EST			0	0			Heavy Snow
		1200EST							

Snow began the afternoon of the 25th and ended by noon 26th. Total accumulations were 6 inches in Tyrone; 7 Parsons; 8 Kingwood; and 12 Terra Alta. In Tucker County, sleet and freezing rain occurred after 2 AM on 26th.

WVZ001-023-041 **Hancock - Preston - Tucker**

	27	1400EST			0	0			Heavy Snow
	28	0000EST							

Snow began the afternoon of the 27th. Total accumulations by midnight were 6 inches in Hancock County, 6 in Tucker, and 9 in Preston.

WVZ023 **Preston**

	30	0500EST			0	0			Heavy Snow
		0900EST							

Snow began on the evening of the 29th, and accumulated 6 inches by 5 AM on 30th. By end of storm, 7 inches was reported in Fellowsville, Rowlesburg, and Terra Alta.

WEST VIRGINIA, Southeast

WVZ045 **Greenbrier**

	25	1000EST			0	0			Heavy Snow
	26	0100EST							

A winter storm dumped 4 to 5 inches of snow across the county from the late morning of the 25th through the early morning of the

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

WEST VIRGINIA, Southeast

26th. The highest amounts were reported across the southern and eastern sections of the county.

WEST VIRGINIA, West

WVZ005>011-013>020-024>040-047 **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 - Randolph**

25	1000EST	0	0		Winter Storm
26	0200EST				

WVZ046 **Pocahontas**

25	1300EST	0	0		Heavy Snow
26	0200EST				

Sleet started across Mingo and McDowell Counties by 1000E. The precipitation spread north, reaching the Parkersburg, Clarksburg, and Elkins corridor after 1500E. Further north, the precipitation started as snow, but changed to sleet. Snow and sleet accumulated less than an inch as far north at Huntington and Charleston, and in the 1 to 3 inch range for the southern mountains around Beckley, plus through the Parkersburg to Sutton region. Three inches of snow and sleet accumulated in the Clarksburg to Elkins vicinities.

The snow and sleet changed to freezing rain with temperatures still in the low and mid 20s. This transition to freezing rain began around 1500E for Huntington and Charleston, then after dark for Parkersburg, Clarksburg, and Elkins. The precipitation remained mainly in the frozen form across Pocahontas County. New snow accumulations ranged from 4 to 9 inches across Pocahontas County, before being topped off with some freezing drizzle. As the precipitation ended overnight, temperatures climbed to near or above freezing. Treacherous roads were common, but no major power outages occurred.

WISCONSIN, Northeast

WIZ040-050 **Kewaunee - Manitowoc**

09	0400CST	0	0		Heavy Snow
	1400CST				

Cold air aloft moving across the warmer waters of Lake Michigan caused the atmosphere to become unstable and led to the development of snow showers. The heaviest snowfall totals were 7.6 inches 6 miles south of Kewaunee (Kewaunee co.) and 7.5 inches at Two Rivers (Manitowoc co.).

WIZ005-010>013-021>022-040-073 **Vilas - Oneida - Forest - Florence - Northern Marinette - Northern Oconto - Door - Kewaunee - Southern Marinette**

14	0000CST	0	0		Heavy Snow
	1400CST				

A low pressure system moved through southern Wisconsin and produced a swath of heavy snow across the north-central and northeast sections of the state. The highest totals were in Door county where 10.0 inches of snow fell 4 miles northeast of Sister Bay, 8.3 inches fell near Carlsville and 8.0 inches fell near Baileys Harbor and Sturgeon Bay. Other significant snowfall totals included 8.0 inches near Manitowish Waters (Vilas co.), 7.1 inches at Athelstane (Marinette co.) and 7.0 inches at Long Lake (Forest co.) and near Laona (Forest co.) and Kewaunee (Kewaunee co.).

WIZ022-039>040-050-073 **Door - Brown - Kewaunee - Manitowoc - Southern Marinette**

26	1200CST	0	0		Winter Storm
27	0000CST				

Low pressure that moved from the Ohio Valley into southeast Michigan brought 5 to 10 inches of snow to east-central Wisconsin. Northeast winds off Lake Michigan enhanced the snowfall near the lake and caused blowing and drifting snow. The highest snowfall totals included 10.5 inches near Ephraim (Door co.), 9.3 inches at Carlsville (Door co.), 8.5 inches at Baileys Harbor (Door co.) and Marinette (Marinette co.), 7.5 inches at Two Rivers (Manitowoc co.), 6.7 inches at Valders (Manitowoc co.) and 5.8 inches at Green Bay (Brown co.).

WISCONSIN, Northwest

WIZ001>003 **Douglas - Bayfield - Ashland**

13	2300CST	0	0		Heavy Snow
14	1000CST				

Six to eight inches of snow fell over far northwestern Wisconsin overnight. South Range had 8.5", Upson reported 7.8", while Brule had 7".

WIZ001 **Douglas**

21	2000CST	0	0		Extreme Cold/Wind Chill
22	0800CST				

Winds were blowing at 15 to 30 mph while temperatures dipped to well below zero, creating wind chills of -40 to -50.

WIZ001 **Douglas**

25	1000CST	0	0		Heavy Snow
27	2300CST				

Storm Data and Unusual Weather Phenomena

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

WISCONSIN, Northwest

Around 10 inches of snow fell in Superior.

WISCONSIN, Southeast

WIZ046>047-051>052-056>060-062>068-068>072 — **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

04	**1200CST**	**0**	**0**			**Winter Weather/Mix**
05	**0300CST**					

The first widespread snowfall of the winter season to affect south-central and southeast Wisconsin resulted in an estimated 300 to 400 vehicle accidents. At least a dozen injuries required medical treatment. Generally 3 to 5 inches of snow fell, with an isolated 6 inch measurement in Juneau (Dodge Co.). Milwaukee (Milwaukee Co.) picked up 5 inches while Madison (Dane Co.) came in with 4 inches. Road surfaces become very slippery. Just east of Madison, two multi-vehicle accidents (44 and 17 vehicles respectively) occurred near the Intersection of Interstates 90 and 94. Drifts were reported to be one-foot deep. In Milwaukee County, 27 accidents were reported, while in Kenosha County, several dozens occurred. At Mitchell Field (Milwaukee Co.), 30 flights were delayed and 10 were cancelled.

WIZ046>047-051>052-056>060-062>072 — **Marquette - Green Lake - Fond Du Lac - Sheboygan - Sauk - Columbia - Dodge - Washington - Ozaukee - Iowa - Dane - Jefferson - Waukesha - Milwaukee - Lafayette - Green - Rock - Walworth - Racine - Kenosha**

16	**1200CST**	**0**	**0**			**Winter Weather/Mix**
17	**0600CST**					

South-central and southeast Wisconsin were affected by a freezing rain event that switched to snow. Road surfaces became very slippery due to initial ice glazings of 1/16 to 1/8 inch. West of Fort Atkinson (Jefferson Co.), a car slid across the center line and collided head-on with a semi-tractor trailer. The driver of the car was killed instantly (indirect death). Several dozens of vehicle accidents were noted elsewhere. Snow accumulations at the end of this event ranged from 1/2 to 2 inches across southeast Wisconsin and 2 to 4 inches from Lafayette and Iowa Counties northeast to Sheboygan County.

WIZ059-065>066 — **Washington - Waukesha - Milwaukee**

26	**1200CST**	**0**	**0**			**Heavy Snow**
27	**1200CST**					

A long-duration, heavy snow event affected three counties in southeast Wisconsin. Most of the snow occurred in two separate periods, with the first period consisting of "system snow" and the second period consisting of "lake-effect" snow. Dozens of vehicle accidents were noted in newspapers. In Jefferson County, near Lake Mills, a roll-over accident claimed the life of a 14-year old student on the way to school (indirect death). In Germantown (Washington Co.), 9.9 inches of snow was measured, followed by 9.3 inches at a location 4 miles south of the city of Waukesha (Waukesha Co.), and 8.9 inches on the UW-Milwaukee campus (Milwaukee Co.). Elsewhere across south-central and southeast Wisconsin, generally 2 to 5 inches of snow was reported.

WISCONSIN, Southwest

WIZ032>033-041 — **Buffalo - Trempealeau - La Crosse**

26	**0500CST**	**0**	**0**			**Winter Storm**
27	**0600CST**					

Parts of southwest Wisconsin were hit by a winter storm that produced snow accumulations of 6 to 7 inches. Snowfall amounts included 7 inches at Waumandee (Buffalo County) and Arcadia (Trempealeau County) and 6.5 inches at the La Crosse National Weather Service (La Crosse County).

WISCONSIN, West

WIZ023>028 — **St. Croix - Pierce - Dunn - Pepin - Chippewa - Eau Claire**

26	**0000CST**	**0**	**0**			**Winter Storm**
27	**2359CST**					

Low pressure that formed over the Southern Great Plains moved across central Wisconsin early on the 26th. This storm dropped moderate snow across much of west central Wisconsin on the 26th. Snowfall totals ranged from 8 inches near Durand and Eau Claire to 4 inches near Balsam Lake. Specific totals included Hudson and Chippewa Falls at 6 inches and Menomonie at 5 inches. In addition to the snowfall, wind gusts to 25 mph led to reduced visibilities with blowing snow.

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

WYOMING, Central and West

WYZ001>002-012>015-023>025-027 — **Yellowstone National Park - Absaroka Mountains - Teton & Gros Ventre Mountains - Jackson Hole - Wind River Mountains West - Wind River Mountains East - Star Valley - Salt River & Wyoming Ranges - Upper Green River Basin Foothills - South Lincoln County**

01	**0000MST**	**0**	**0**		**Heavy Snow**
02	**0400MST**				

Photograph taken on January 2, 2004 in Alpine, Wyoming after 5 feet of new snow fell in a little over a week. Picture courtesy of Paul Skrbac.

Three vigorous weather systems slammed into the western mountains and valleys of Wyoming dropping significant snowfall as 2003 came to a close. Holiday travel was significantly impacted as snow began with the first storm on Christmas Night. The final storm pushed out of western Wyoming on 1/1/04. Total snowfall accumulation during this eight day stretch approached 4 to 5 feet in the western mountains and northern Star Valley. Two to three feet of new snow was recorded in the rest of the western valleys during this time frame. Several roads were closed across western and central Wyoming including Highway 28 at South Pass and Highway 22 at Teton Pass. The beginning of this event is provided in the December 2003 Storm Data publication.

WYZ019 — **Green Mountains & Rattlesnake Range**

06	**1430MST**	**0**	**0**	**High Wind (G54)**

WYZ028>029 — **Rock Springs & Green River - Flaming Gorge**

10	**2200MST**	**0**	**0**	**Dense Fog**
11	**0900MST**			

Visibilities frequently dropped to one-quarter of a mile or less at times during this period as reported by Wyoming Department of Transportation and ASOS.

WYZ019 — **Green Mountains & Rattlesnake Range**

27	**0630MST**	**0**	**0**	**High Wind (G60)**

Storm Data and Unusual Weather Phenomena

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

WYOMING, Central and West

WYZ019 **Green Mountains & Rattlesnake Range**

	30	**0945MST**			**0**	**0**			**High Wind (G52)**

WYOMING, Extreme Southwest

NONE REPORTED.

WYOMING, North Central

NONE REPORTED.

WYOMING, Northeast

WYZ054>055 **Northern Campbell - South Campbell**

	01	**2100MST**			**0**	**0**	**0**	**0**	**High Wind (G51)**
	02	**0200MST**							

Strong southwest winds developed across Northeast Wyoming during the overnight hours. Sustained winds of 30 to 45 mph, with gusts to around 60 mph, were observed across much of the area.

WYZ054 **Northern Campbell**

	25	**0400MST**			**0**	**0**	**0**	**0**	**Heavy Snow**
		1500MST							

A storm system moved across the Northern Rockies and into the Northern Plains, bringing heavy snow to parts of Northeast Wyoming. Snowfall amounts were generally 2 to 4 inches across the area, with local amounts of 6 inches across northern Campbell County.

WYOMING, Southeast

NONE REPORTED.

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

Additions/Corrections

TEXAS, North

Young County									
Padgett	**05**	**1710CST**			**0**	**0**			**Hail (2.75)**
Stephens County									
1 N Crystal Falls	**05**	**1729CST**			**0**	**0**			**Hail (1.75)**
Young County									
Eliasville	**05**	**1732CST** **1737CST**			**0**	**0**			**Hail (1.00)**
Young County									
Graham	**05**	**1743CST** **1747CST**			**0**	**0**			**Hail (4.00)**
Palo Pinto County									
6 W Graford	**05**	**1808CST** **1814CST**			**0**	**0**			**Hail (4.00)**
Golfball to softball size hail occurred for 6 minutes.									
Palo Pinto County									
Possum Kingdom Lake	**05**	**1808CST**			**0**	**0**			**Hail (1.75)**
Palo Pinto County									
5 N Graford	**05**	**1818CST**			**0**	**0**			**Hail (2.75)**
Palo Pinto County									
5 N Graford	**05**	**1818CST**			**0**	**0**			**Thunderstorm Wind (G69)**
Palo Pinto County									
12 W Graford	**05**	**1820CST** **1822CST**	**0.3**	**100**	**0**	**0**	**250K**		**Tornado (F1)**
Brief tornado touchdown reported on the east side of Possum Kingdom Lake. 25 mobile homes were damaged or destroyed at Sky Camp, Lefty's, and P. K. Lodge. No people were injured.									
Young County									
3 N Eliasville	**05**	**1840CST**			**0**	**0**			**Hail (2.75)**
Parker County									
5 E Peaster	**05**	**1906CST**			**0**	**0**			**Hail (1.75)**
Jack County									
4 S Bryson	**05**	**1917CST**			**0**	**0**			**Hail (0.88)**
Parker County									
Springtown	**05**	**1918CST** **1923CST**			**0**	**0**			**Hail (1.75)**
Tarrant County									
Saginaw	**05**	**1933CST**			**0**	**0**			**Hail (1.75)**
Tarrant County									
Saginaw	**05**	**1940CST**			**0**	**0**			**Hail (2.75)**
Tarrant County									
Saginaw	**05**	**1940CST**			**0**	**0**			**Thunderstorm Wind (G69)**
Tarrant County									
2 E Eagle Mtn Lake	**05**	**1943CST**			**0**	**0**			**Hail (1.75)**

Storm Data and Unusual Weather Phenomena

April 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

Additions/Corrections

TEXAS, North

Tarrant County
Keller 05 2005CST 0 0 **Hail (3.00)**

Tarrant County
North Richland Hills 05 2005CST 0.5 100 0 0 20K 2K **Tornado (F0)**
2007CST
A small short lived tornado did minor roof damage and broke numerous tree branches.

Tarrant County
Ft Worth 05 2012CST 0 0 **Thunderstorm Wind (G60)**
Occurred at the intersection of Loop 820 and Mark IV Parkway.

Dallas County
Dallas-Ft Worth Intl 05 2015CST 0 0 750K **Hail (1.75)**
2020CST
Weather observer reported golf ball size hail. 59 aircraft were damaged and 121 flights were cancelled due to severe weather.

Tarrant County
2 SW Grapevine 05 2015CST 0 0 **Hail (2.00)**

Tarrant County
2 E Euless to 2.5 E Euless 05 2019CST 0.5 100 0 0 1K **Tornado (F0)**
2021CST
A small short lived tornado moved east across the south end of DFW Airport property.

Dallas County
Dallas 05 2020CST 0 0 **Hail (2.75)**
Occurred at Interstate 635 and North McArthur in North Dallas.

Dallas County
1 W Irving to .8 W Irving 05 2021CST 0.2 100 0 0 1K **Tornado (F0)**
2022CST
This is a continuation of the tornado path across the south end of the DFW Airport property.

Dallas County
Irving 05 2027CST 0 0 **Hail (1.75)**

Parker County
Briar 05 2052CST 0 0 **Hail (2.25)**

Wise County
Newark 05 2103CST 0 0 **Hail (1.50)**

Dallas County
Dallas 05 2117CST 0 0 **Hail (1.75)**
Occurred at Interstate 635 and North McArthur in North Dallas.

Dallas County
Irving 05 2120CST 0 0 **Hail (1.75)**
Occurred at Valley Ranch in far north central Irving.

Denton County
2 N Roanoke 05 2123CST 0 0 **Hail (1.75)**
Occurred at Interstate 35 and Highway 114.

Dallas County
Dallas 05 2126CST 0 0 **Hail (1.50)**
Valley View Mall in North Dallas had heavy ping pong ball size hail.

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

Additions/Corrections

TEXAS, North

Rockwall County									
Rockwall	**05**	**2130CST**			**0**	**0**			**Hail (4.50)**
Denton County									
Roanoke	**05**	**2131CST**			**0**	**0**			**Hail (0.88)**
Denton County									
1 W Lewisville	**05**	**2145CST**			**0**	**0**			**Hail (1.00)**
Denton County									
2 E Argyle	**05**	**2146CST**			**0**	**0**			**Hail (1.00)**
Dallas County									
Sachse	**05**	**2150CST**			**0**	**0**			**Hail (1.25)**
Denton County									
3 SW Lewisville	**05**	**2150CST**			**0**	**0**			**Hail (1.00)**
Hunt County									
Greenville	**05**	**2150CST**			**0**	**0**			**Hail (1.00)**
Hunt County									
Caddo Mills	**05**	**2151CST**			**0**	**0**			**Hail (1.00)**
Rockwall County									
Rockwall	**05**	**2205CST**			**0**	**0**			**Hail (1.00)**
Montague County									
2 N Bowie	**05**	**2214CST**			**0**	**0**			**Hail (1.75)**
Collin County									
Plano	**05**	**2216CST**			**0**	**0**			**Hail (2.00)**
Occurred in western part of Plano at Spring Creek and Tollway.									
Montague County									
Stoneburg	**05**	**2223CST**			**0**	**0**			**Hail (1.75)**
Cooke County									
Lindsay	**05**	**2230CST**			**0**	**0**			**Hail (2.50)**
Collin County									
Plano	**05**	**2232CST**			**0**	**0**			**Hail (3.00)**
Hunt County									
Caddo Mills	**05**	**2235CST**			**0**	**0**			**Hail (1.00)**
Hopkins County									
Cumby	**05**	**2250CST**			**0**	**0**			**Hail (1.75)**
Hunt County									
1 S Greenville	**05**	**2313CST**			**0**	**0**			**Hail (2.00)**
Cooke County									
Gainesville	**05**	**2321CST**			**0**	**0**	**4M**		**Hail (2.50)**
Large hail damaged approximately 1,000 cars and about the same number of homes.									

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

Additions/Corrections

TEXAS, North

Cooke County									
Gainesville	**05**	**2321CST**			**0**	**0**			**Thunderstorm Wind (G52)**
Hunt County									
Caddo Mills	**05**	**2322CST**			**0**	**0**			**Hail (1.75)**
Hopkins County									
Sulphur Spgs	**05**	**2340CST**			**0**	**0**			**Hail (2.00)**
Hunt County									
Cash	**05**	**2341CST**			**0**	**0**			**Hail (1.75)**
Hopkins County									
3 S Sulphur Spgs	**05**	**2345CST**			**0**	**3**			**Hail (2.75)**
	Three persons injured by baseball size hail.								
Grayson County									
Whitesboro	**05**	**2355CST**			**0**	**0**	**250K**		**Hail (2.75)**
Grayson County									
1 SW Sherman	**06**	**0030CST**			**0**	**0**	**10M**		**Hail (2.75)**
	Hail up to baseball size did extensive damage in Sherman to cars and houses. This is the same storm that hit the Whitesboro area earlier.								
Hopkins County									
Sulphur Spgs	**06**	**0035CST**			**0**	**0**			**Hail (1.00)**
Hopkins County									
Sulphur Spgs	**06**	**0035CST**			**0**	**0**	**5K**		**Thunderstorm Wind (G60)**
	Trees and utility lines were blown down by high winds.								
Fannin County									
Ector	**06**	**0112CST**			**0**	**0**			**Hail (1.75)**
Fannin County									
Savoy	**06**	**0112CST**			**0**	**0**			**Hail (1.75)**
Fannin County									
4 N Bonham	**06**	**0135CST**			**0**	**0**			**Hail (1.75)**
Lamar County									
Paris	**06**	**0222CST**			**0**	**0**			**Hail (1.00)**

Dime to quarter size hail covering the ground.

On April 5th, a lone supercell thunderstorm developed around 300 pm southeast of Claremont, in Kent County. This storm quickly became severe, and by 500 pm had moved eastward into western Young County in North Central Texas. This storm produced large hail, straight line damaging winds, and at least four weak tornadoes across North Central Texas from 510 pm cdt until 1050 pm cdt. This storm quickly dissipated after the last severe weather report at 1050 pm. The damage path across North Texas extended from Padgett, in western Young County, to west of Sulphur Springs in Hopkins County, a distance of approximately 192 miles. This was one of the costliest storms on record to hit North Texas, with damage estimates approximately 885 million dollars.

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

Additions/Corrections

TEXAS, North

Eastland County

8 NW Cisco to 10 NNW Cisco | **15** | **2100CST** to **2105CST** | **2.4** | **300** | **0** | **0** | **5K** | | **Tornado (F0)**

The tornado moved mostly through open country damaging fences and tearing sheet metal off a barn, then moved into southern Stephens County before lifting 3 miles southeast of Eolian. This was reported by a rancher, whose property the tornado passed through.

Stephens County

10.6 S Eolian to 3 SE Eolian | **15** | **2105CST** to **2130CST** | **9.6** | **300** | **0** | **0** | **5K** | | **Tornado (F0)**

The tornado moved through open country damaging fences and trees before lifting 3 miles southeast of Eolian. This was reported by a rancher, whose [property the tornado passed through.

Stephens County

6 S La Casa | **15** | **2140CST** | | | **0** | **0** | | | **Hail (1.00)**

Eastland County

1 NW Ranger | **15** | **2213CST** | **0.1** | **50** | **0** | **0** | | | **Tornado (F0)**

A brief tornado was observed by a trained spotter.

Palo Pinto County

2 N Gordon | **15** | **2248CST** | | | **0** | **0** | | | **Hail (1.50)**

Hood County

5 S Granbury | **16** | **0200CST** | | | **0** | **0** | **100K** | | **Lightning**

Lightning hit an Oncor transmission line between Somervell County and Parker County, causing at least 4 power plants to temporarily shut down. 300,000 to 400,000 customers across Texas were without electricity from 15 minutes to 2 hours before power was restored.

Montague County

5 E Bowie | **16** | **0200CST** | | | **0** | **0** | | | **Thunderstorm Wind (G52)**

A tree was blown onto a road by thunderstorm winds.

Tarrant County

Ft Worth | **16** | **0300CST** | | | **0** | **0** | **90K** | | **Lightning**

A lightning started fire in northeast Ft Worth severely damaged a house and it's contents.

Navarro County

3 SE Corsicana | **16** | **1555CST** | | | **0** | **0** | | | **Hail (1.75)**

Navarro County

3 SE Corsicana | **16** | **1610CST** | | | **0** | **0** | | | **Hail (1.75)**

Golfball size hail was reported at Mildred.

Navarro County

4 S Corsicana | **16** | **1612CST** | | | **0** | **0** | | | **Hail (0.88)**

Nickel size hail was reported at Angus.

Van Zandt County

6 E Canton | **16** | **1619CST** | | | **0** | **0** | | | **Hail (1.75)**

Golfball size hail covered the ground.

Navarro County

Eureka | **16** | **1621CST** | | | **0** | **0** | | | **Hail (2.75)**

Van Zandt County

Van | **16** | **1635CST** | | | **0** | **0** | | | **Hail (0.88)**

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

Additions/Corrections

TEXAS, North

Henderson County
6 S Athens | **16** | **1706CST** | **0** | **0** | **Hail (1.75)**

Navarro County
5 E Eureka | **16** | **1707CST** | **0** | **0** | **Hail (1.75)**

Henderson County
Chandler | **16** | **1720CST** | **0** | **0** | **Hail (0.75)**

Anderson County
Cayuga | **16** | **1724CST** | **0** | **0** | **Hail (1.75)**

Freestone County
2 N Fairfield | **16** | **1817CST** | **0** | **0** | **Hail (1.75)**

Anderson County
Neches | **16** | **1820CST** | **0** | **0** | **Hail (0.88)**

Anderson County
Tucker | **16** | **1905CST** | **0** | **0** | **Hail (0.88)**

Limestone County
New Hope | **16** | **1920CST** | **0** | **0** | **Hail (1.75)**

Occurred on the east side of Lake Limestone.

Leon County
Centerville | **16** | **2000CST** | **0** | **0** | **Hail (1.75)**

Robertson County
2 E Franklin | **16** | **2030CST** **2033CST** | **0** | **0** | **Hail (2.75)**

Golfball to baseball size hail was reported.

Milam County
4 SE Milano | **16** | **2125CST** | **0** | **0** | **Hail (0.75)**

Jack County
12.2 NNW Jacksboro to Jacksboro | **16** | **2200CST** | **0** | **0** | **Thunderstorm Wind (G53)**

The 61 mph wind gust occurred at Bear Mountain just west of Highway 148.

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

Additions/Corrections

NEW MEXICO, Central and North

Colfax County

24 SE Raton	**04**	**1229MST**	**0.5**	**100**	**0**	**0**			**Tornado (F0)**

A weak tornado was observed by storm chasers over the open rangeland of east central Colfax County or about 15 miles southwest of Capulin.

OKLAHOMA, Panhandle

OKZ003	**Beaver**								
	28	**2320CST**			**0**	**0**	**5K**		**Strong Wind**
	29	**2330CST**							

A strong thunderstorm over Beaver county about eight miles west and one and a half miles south of Slapout Oklahoma knocked out electricity and tree branches were blown off. Also...four big power line poles were blown down. The Oklahoma Mesonet site at Slapout Oklahoma was only about one quarter of a mile from this location and only registered thirty-seven knots at the time of the high winds.

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

Additions/Corrections

ATLANTIC OCEAN

Fire Island Inlet Ny To Sandy Hook Nj Out 20Nm

Sandy Hook Bay	**15**	**0136EST 0200EST**			**0**	**0**			**Marine Tstm Wind**

Montauk Point Ny To Sandy Hook Nj 20 To 40Nm

Sandy Hook Bay	**15**	**0136EST 0200EST**			**0**	**0**			**Marine Tstm Wind**

As a line of showers and thunderstorms moved east, peak wind gusts to 41 knots was measured by the National Ocean Service Buoy at Sandy Hook at 2:36 am and at 3:00 am.

Long Island Sound E Of New Haven Ct To Port Jefferson Ny

2 E New London Harbo	**29**	**0842EST**			**0**	**0**			**Marine Tstm Wind**

A severe thunderstorm produced a 34 knot wind gust, which was measured by the National Weather Service's Automated Surface Observing System at Groton-New London Airport.

Moriches Inlet To Fire Island Inlet Ny Out 20Nm

6 NW Moriches Inlet	**29**	**0846EST 0915EST**			**0**	**0**			**Marine Tstm Wind**

A severe thunderstorm produced a 34 knot wind gust, which was measured by the National Weather Service's Automated Surface Observing System at Shirley-Brookhaven Airport.

Montauk Point To Moriches Inlet Ny Out 20Nm

23 SW Montauk Point	**29**	**0900EST**			**0**	**0**			**Marine Tstm Wind**

A severe thunderstorm produced a 34 knot wind gust, which was measured by the National Data Buoy Center Buoy 44017.

Long Island Sound E Of New Haven Ct To Port Jefferson Ny

2 E New London Harbo	**29**	**0955EST**			**0**	**0**			**Marine Tstm Wind**

A severe thunderstorm produced a 36 knot wind gust, which was measured by the National Weather Service's Automated Surface Observing System at Groton-New London Airport.

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

Additions/Corrections

MICHIGAN, Upper

MIZ001>005-009-084 **Keweenaw - Ontonagon - Northern Houghton - Baraga - Marquette - Gogebic - Southern Houghton**

12	**1800EST**	**0**	**0**		**Winter Storm**
13	**0527EST**				

MIZ006>007-085 **Alger - Luce - Northern Schoolcraft**

13	**0000EST**	**0**	**0**		**Blizzard**
	0527EST				

A rapidly deepening storm moved across northern Wisconsin eastward into southeast Canada. Snow developed over western and central Upper Michigan and became heavy at times. Northwest winds behind the storm increased to as high as 40 mph, resulting in areas of blowing and drifting snow. Blizzard conditions occurred near Lake Superior in Alger, Luce and Northern Schoolcraft Counties with frequent periods of zero visibility. Schools and a few businesses were closed in Gogebic, Ontonagon, Baraga and Marquette counties and some roads were blocked in Houghton and Keweenaw counties.The snow was wet and heavy, breaking off tree branches and downing power and telephone lines and hampering plowing and cleanup efforts. Roads were slick and hazardous, restricting travel across the area.

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

Additions/Corrections

FLORIDA, West Central

FLZ039 **Levy**

07 0400EST 0 0 Frost/Freeze
0700EST

Light winds and clear skies allowed temperatures to drop to 30 degrees near Bronson.

Lee County

Cape Coral 16 1730EST 0 0 20K Thunderstorm Wind (G50)

Thunderstorms along a strong cold front produced damaging winds that knocked down several trees and power lines at the intersection of Nicholas Parkway and 4th Avenue Southeast.

FLZ039-042-048 **Levy - Citrus - Hernando**

18 0400EST 0 0 Frost/Freeze
0700EST

A cold front passed through the area a day earlier allowing overnight temperatures to drop to 30 in Bronson, 28 in Brooksville, and 30 in Inverness.

FLZ039-042>043-048-051>052 **Levy - Citrus - Sumter - Hernando - Hillsborough - Polk**

21 0100EST 0 0 Frost/Freeze
0800EST

Clear skies and light winds behind a cold front lead to the first hard freeze of the season for parts of west central Florida. Overnight low temperatures in the low to mid 20s were found in Levy, Citrus, Hernando, and Sumter counties. Low temperatures included 20 degrees in Brooksville, 22 in Chiefland, 25 in Inverness, and around 30 degrees along the Hillsborough/Polk county line.

MICHIGAN, Upper

MIZ001>007-009-013>014-085 **Keweenaw - Ontonagon - Northern Houghton - Baraga - Marquette - Alger - Luce - Gogebic - Delta - Southern Schoolcraft - Northern Schoolcraft**

10 1200EST 0 0 Heavy Snow
12 2249EST

A low pressure system that developed in the plains, moved northeast through the central Great Lakes. Rain and snow developed over Upper Michigan on the 9th, and then changed to a heavy wet snow on 10th. By the time the storm moved away on the 12th, the combination of system and lake effect snows deposited as much as 23 inches at Phoenix and 22 inches at Mohawk in Keweenaw County and 22 inches at the Marquette National Weather Service office. Nineteen inches fell at Watton in Baraga County, 17 inches at Ironwood, 15 inches at Bruce Crossing in Ontonagon County, 12 Inches at Wetmore in Alger County, and 11 inches at McMillan in Luce County and at Germfask in Schoolcraft County..

MICHIGAN, West

MIZ064-071 **Allegan - Van Buren**

19 0300EST 0 0 Heavy Snow
20 0100EST

A narrow dominant lake effect snow band developed over the western half of Allegan county and most of Van Buren county. Six to twelve inches of snow fell in a band from Holland to Paw Paw. Most of the snow fell between 6 a.m. and 10 p.m. on the 19th, though the event lasted for twenty two hours, from the early morning hours of the 19th until around 1 a.m. on the 20th. The heaviest snowfall report was received from Paw Paw (Van Buren county), where twelve inches of snow was reported.

MIZ064 **Allegan**

24 1300EST 0 0 Heavy Snow
25 0700EST

This was a combination low pressure system and lake enhanced snowfall event. Up to six inches of snow fell in a narrow area of Allegan county west of US-31.

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.
1st letter: Gender (M/F) – 2nd numbers: Age – 3rd 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 tress 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; airborn 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 airborn 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 it's 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.

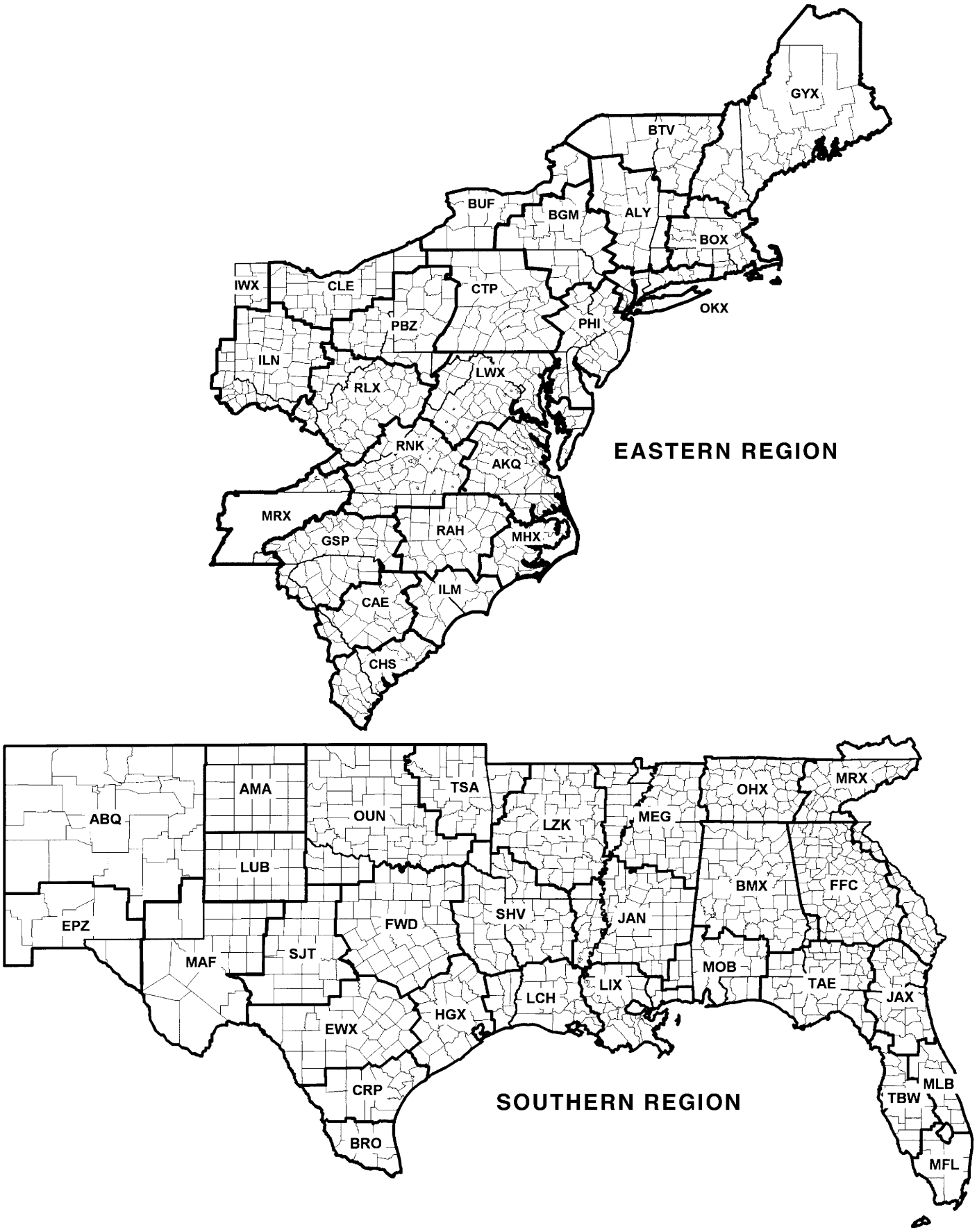
Typical F4 Tornado Damage
This home is almost completely obliterated, with no walls standing. The debris from the home is where the house once stood.

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



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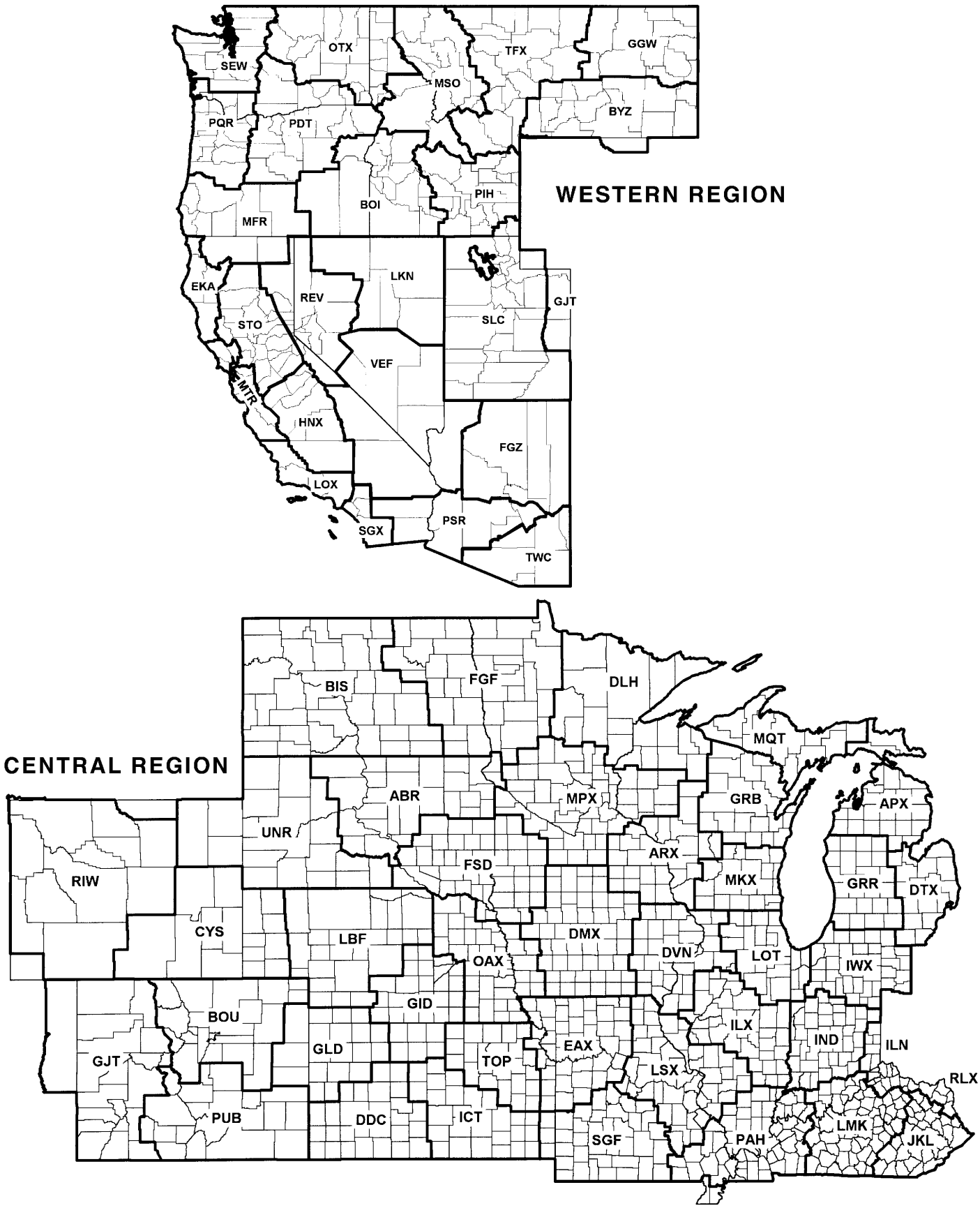
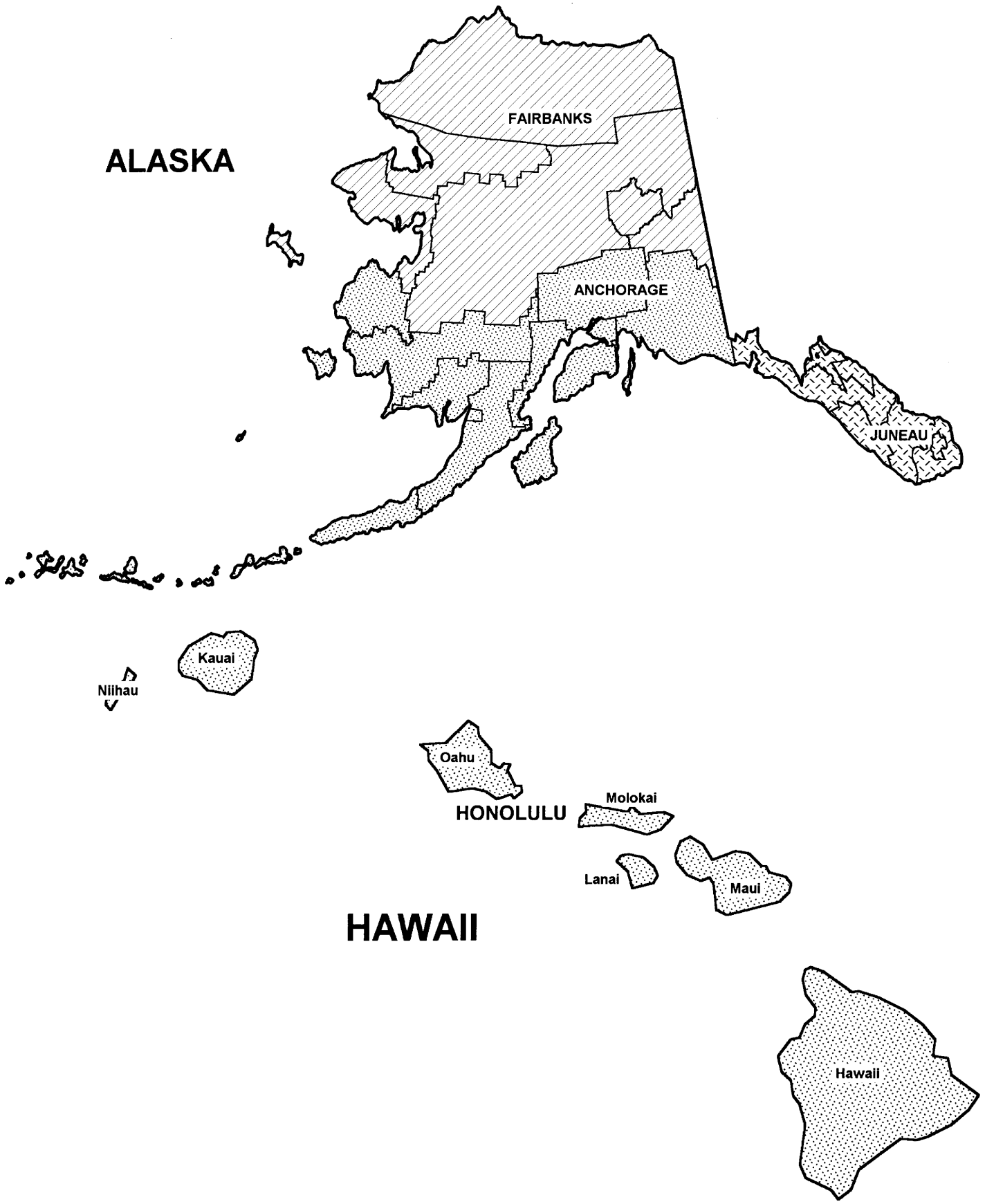


MODERNIZED COUNTY WARNING AREAS



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 though 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 severalhundred cities in the U.S. and its territories. Each monthly publication also containes 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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