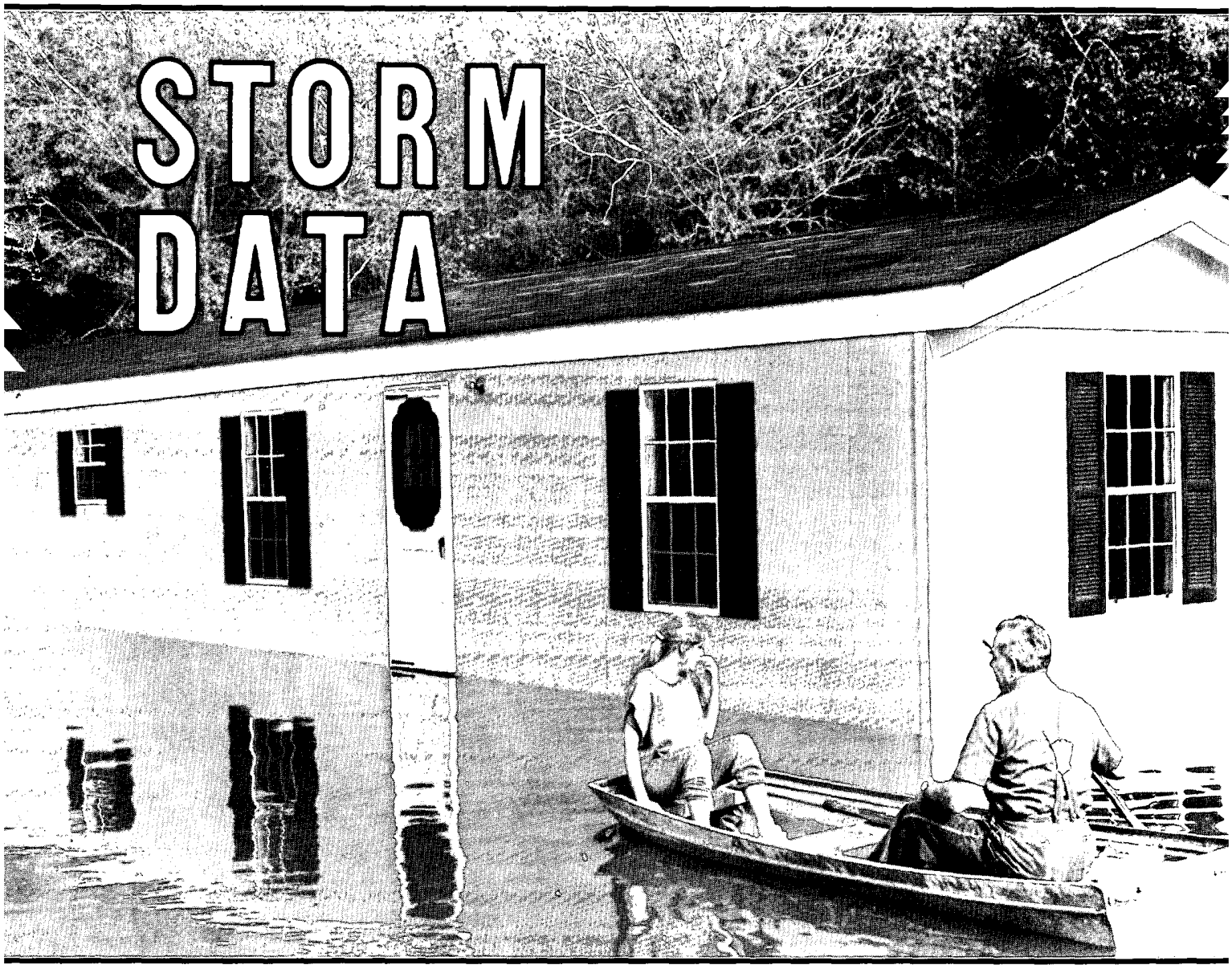
OCTOBER 1990
VOLUME 32
NUMBER 10

STORM DATA



AND UNUSUAL WEATHER PHENOMENA WITH LATE REPORTS AND CORRECTIONS

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL CLIMATIC DATA CENTER ASHEVILLE, N.C.

COVER: The residence of Karen and Bryan Usry near Kite, Georgia on October 13th appears to be floating on the flood waters of the Little Ohoopee River after the remnants of Tropical Storms Klaus and Marco dumped a little more than 17 inches of rain in two days. *Photo courtesy: Photographer Bill Rogers, Jr., The Blade, Swainsboro, Georgia.*

CONTENTS

STORM DATA

(ISSN 0039-1972)
National Climatic Data Center
Editor: Roger W. Tanner
Associate Editor: Vince Miller
Publication Staff: Lanny Dimmick, Jay Hollifield, Mary Ann Byrd, and Sara Lackey

STORM DATA is prepared, funded, and distributed by the National Oceanic and Atmospheric Administration (NOAA). The Outstanding Storms of the Month section is prepared in cooperation with Mr. Vince Miller, Associate Editor. He is a broadcast meteorologist for THE WEATHER CHANNEL® in Atlanta, Georgia.

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

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

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

Except for the limited editing for grammatical errors, material submitted are generally published as received.

Subscription, pricing, and ordering information is available from:

National Climatic Data Center
Federal Building
Asheville, NC 28801-2696
(704) 259-0682 or (704) CLIMATE

The editors of **STORM DATA** solicit your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or unusual weather events (past or present). These could be for use in the "Outstanding Storms of the Month" or "Et Cetera" sections of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

Mr. Vince Miller
1464 Wood Thrush Way
Marietta, GA 30062

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

"I certify that this is an official publication of the National Oceanic and Atmospheric Administration and is compiled from information received at the National Climatic Data Center, Asheville, North Carolina 28801."

Kenneth D Hadeen

Director
National Climatic Data Center

STORM FOLKS . . .

Biographical Sketch
JOHN S. QUINLAN

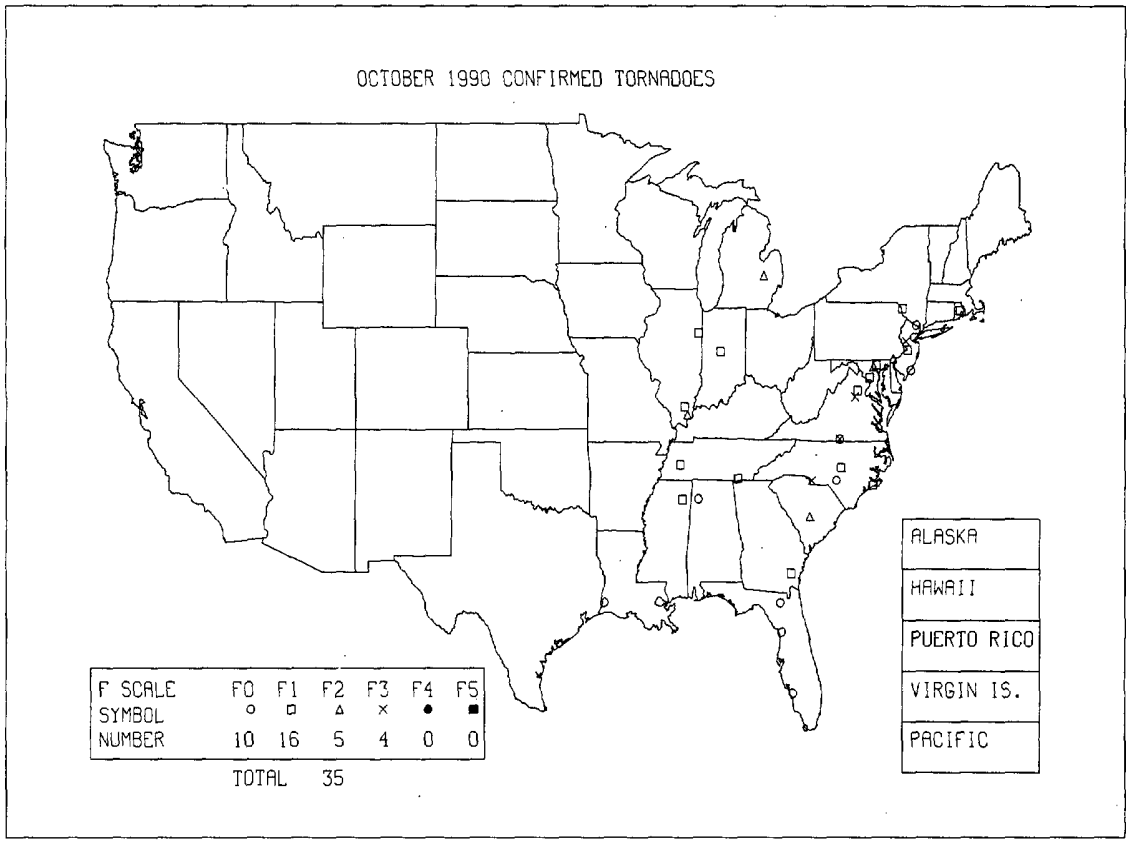
John Quinlan graduated from Lyndon State College with a B.S. degree in meteorology in 1984 and he received an M.S. degree in meteorology from Rutgers University in 1987. John worked as a meteorologist intern at WSO Binghamton, NY from 1987-91 and is currently a forecaster at WSFO Albany, NY. While at WSO Binghamton, John served as SKYWARN coordinator developing an extensive SKYWARN rain gage network and led the severe weather verification program.

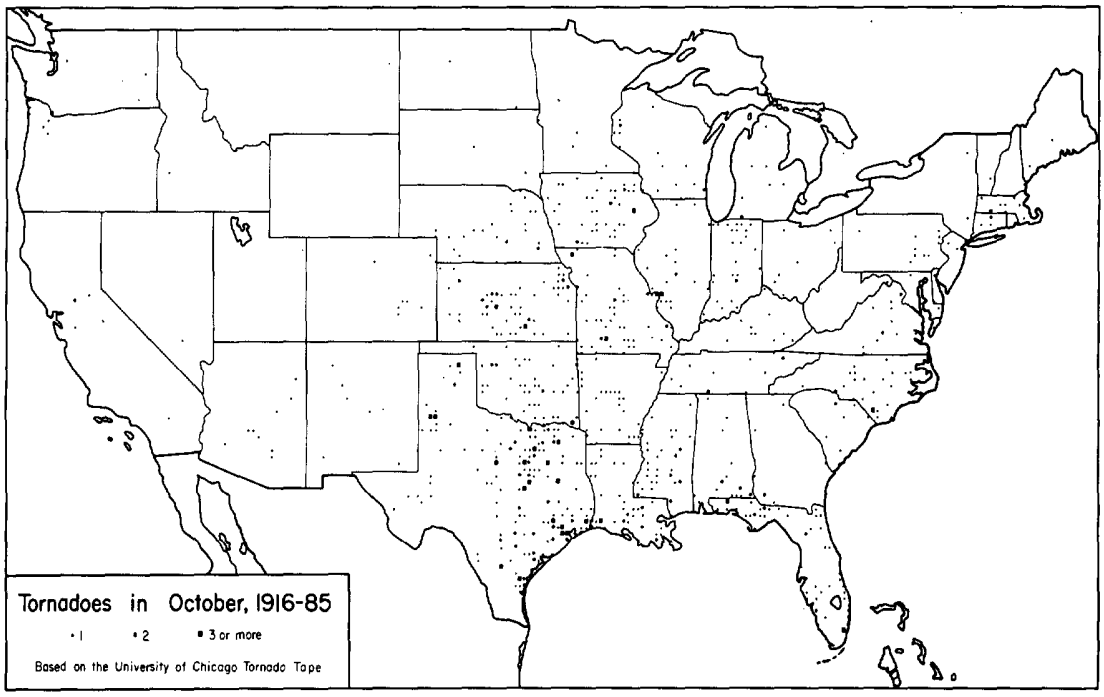
CORRECTIONS TO PREVIOUS *OUTSTANDING STORMS OF THE MONTH*

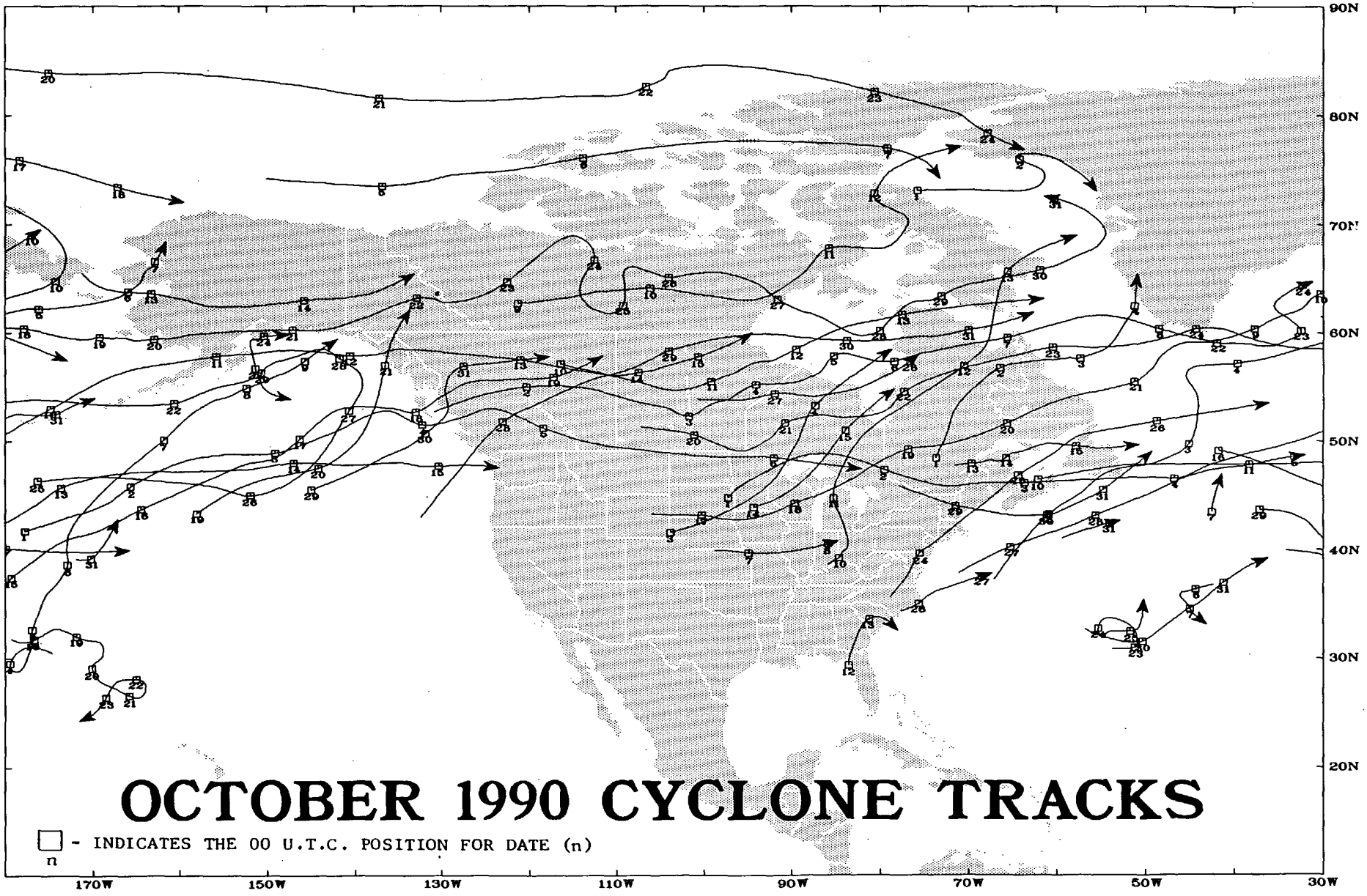
August 1990 (page 18): Caption for bottom-right photo: Folcy, Minnesota should read Foley, Minnesota.

September 1990 (page 6): Heading at top of page: May 1990 should read September 1990.

OUTSTANDING STORMS OF THE MONTH






90N
80N
70N
60N
50N
40N
30N
20N
170W
150W
130W
110W
90W
70W
50W
30W
OCTOBER 1990 CYCLONE TRACKS
- INDICATES THE 00 U.T.C. POSITION FOR DATE (n)
n

1. PRECIPITATION AND TEMPERATURE ANOMALIES - OCTOBER 1990

Table 1 lists the 96-year temperature and precipitation rankings for the nine climatically homogeneous regions shown by Fig. 1. The areas east of the Mississippi River, portions of the southern and north-central Plains, the central Rockies, and the Pacific Northwest experienced greater-than-normal precipitation. Below normal precipitation was the rule in the northern and south-central Plains, the Southwest, California and the Great Basin, the central Gulf Coast, the western Hawaiian Islands, and across southern Alaska. (See Figs. 2 and 3 on the opposite page.)

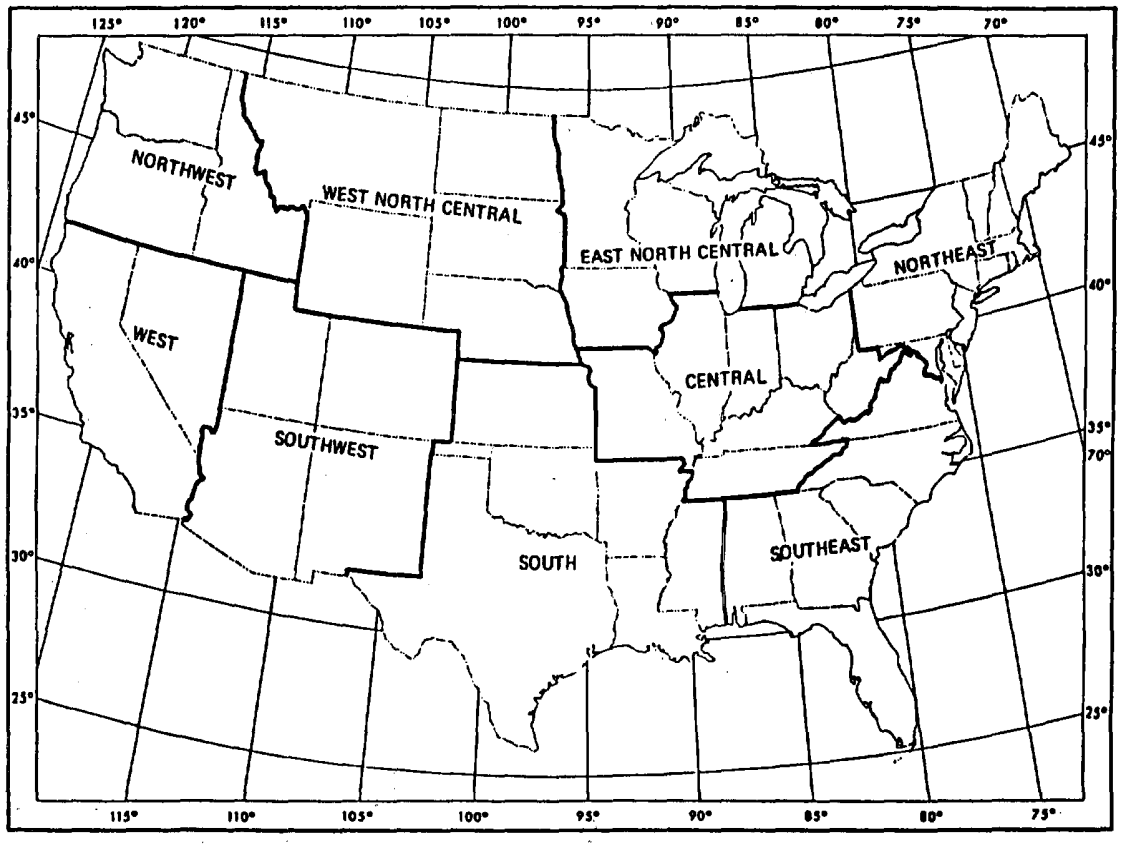
TABLE 1. TEMPERATURE AND PRECIPITATION RANKINGS FOR OCTOBER 1990, BASED ON THE PERIOD 1895-1990.
1 = DRIEST/COLDEST, 96 = WETTEST/HOTTEST.

REGION	PRECIPITATION	TEMPERATURE
Northeast	93	81
East North Central	63	33
Central	89	32
Southeast	93	76
West North Central	26	40
South	40	31
Southwest	40	65
Northwest	75	28
West	19	82
National	77	48

From National Climatic Data Center

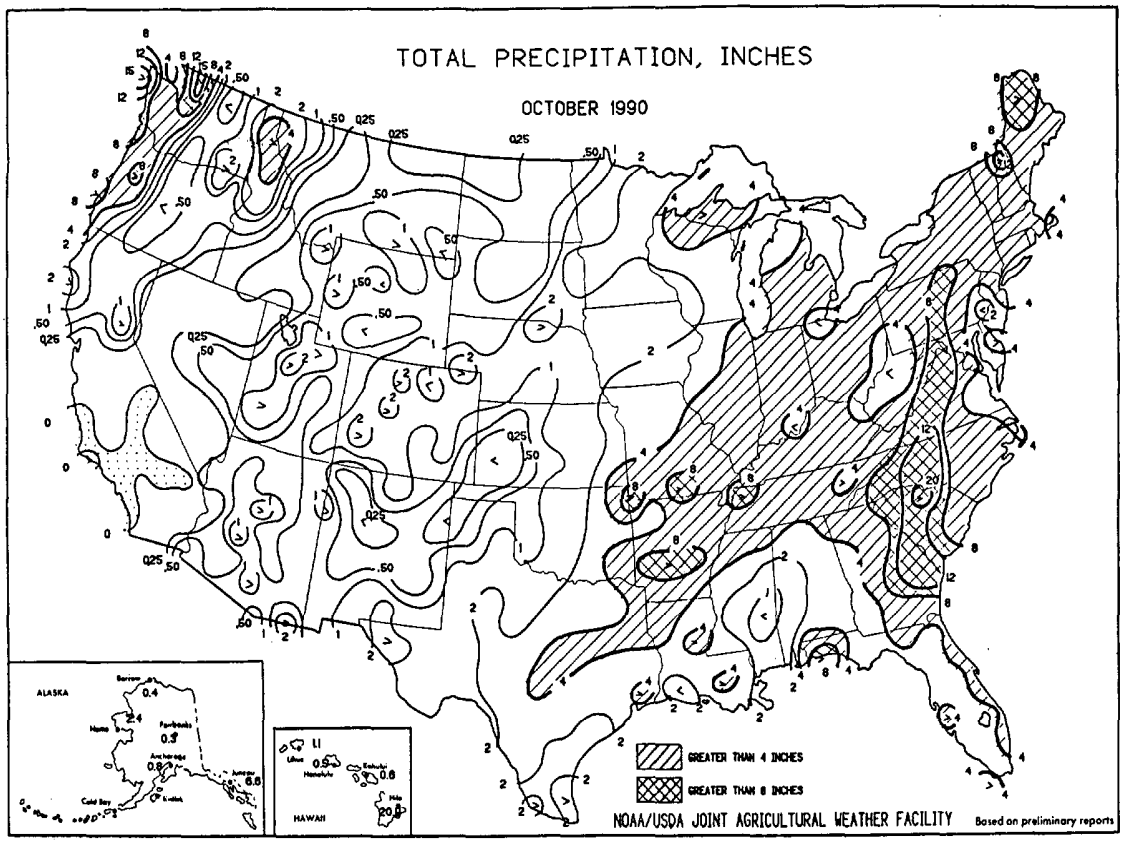
Temperatures for the nation during October averaged near the long-term mean, however, there were some regional deviations as depicted by Fig. 4 on page 8. The East Coast, most of California, and the desert Southwest had monthly average temperatures more than 2°F above normal. Average October temperatures of more than 2°F below normal occurred in the northern Intermountain West, the northern Plains and the upper Midwest and the lower and middle Mississippi Valley.

Fig. 1



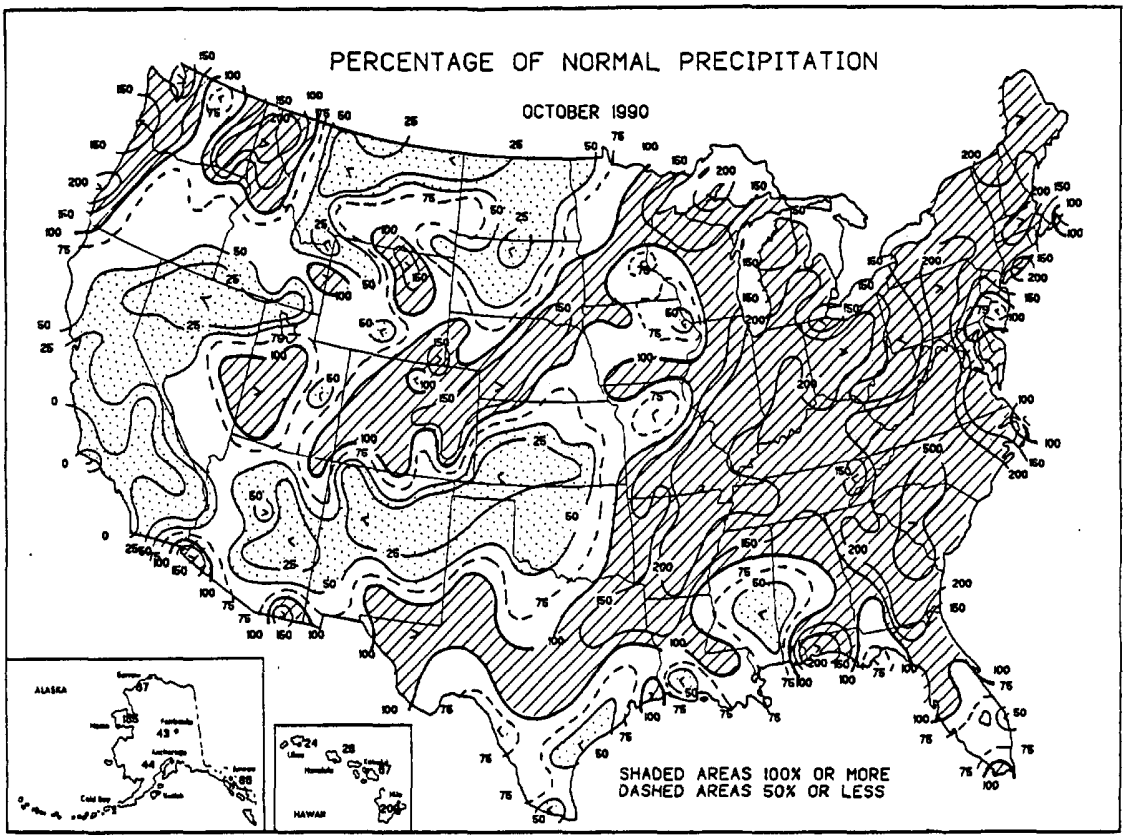
From National Climatic Data Center

Fig. 2



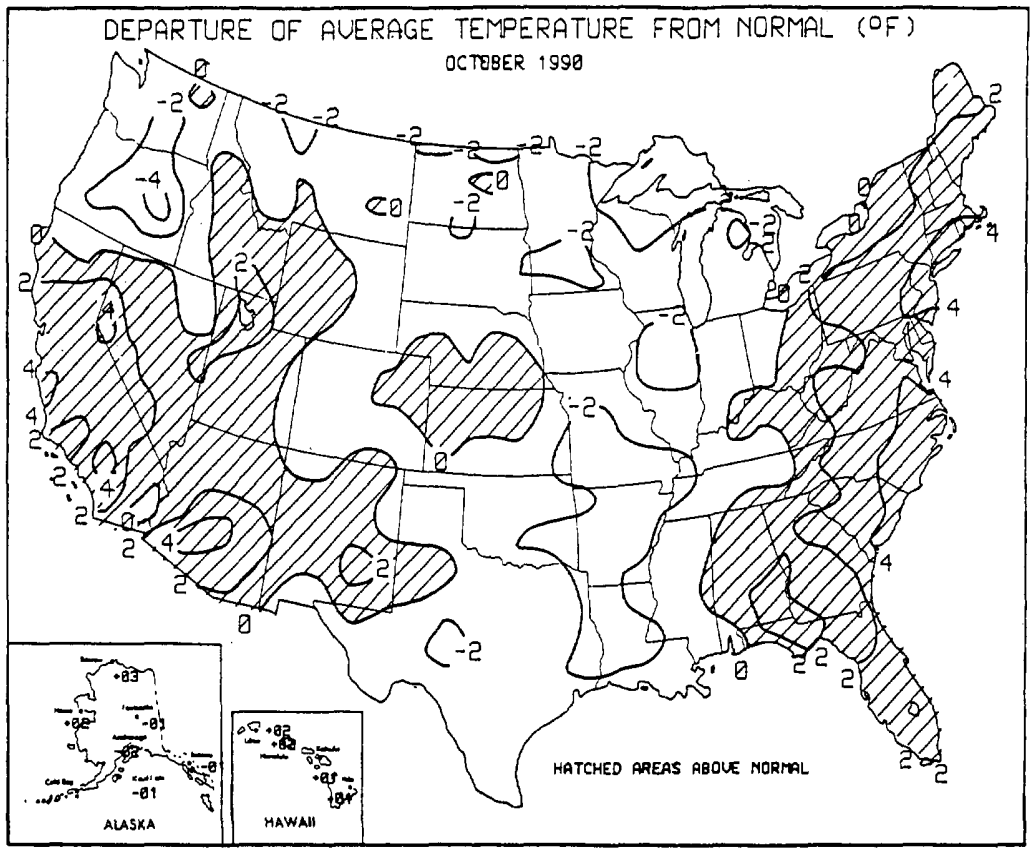
Reprinted from Weekly Weather and Crop Bulletin - November 6, 1990

Fig. 3



Reprinted from Weekly Climate Bulletin - November 10, 1990

Fig. 4

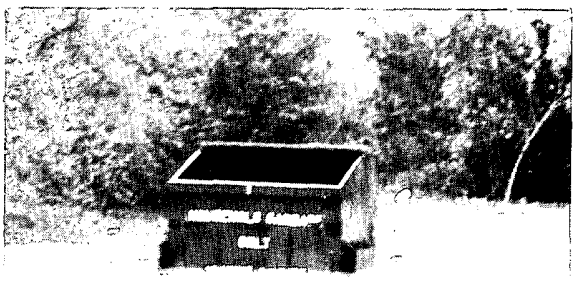


Reprinted from Weekly Climate Bulletin - November 10, 1990

2. FLOODING IN THE EASTERN U.S. - OCTOBER 10-13, 1990

Tropical Storm Marco, a stalled cold front along the Appalachians, and the remnants of Hurricane Klaus produced heavy rain and thunderstorms that soaked the eastern U.S. from October 10th through the 13th. Flooding was widespread in the area from the Florida Keys to southern Maine including much of the inland areas of Georgia, South Carolina, North Carolina, and Virginia. More than 15 inches of rain was dumped on portions of the Southeast and mid-Atlantic during this period.

Eleven deaths were caused by these floods and flash floods: four in Georgia; five in South Carolina; and two in North Carolina. Some injuries and considerable crop and property damages were reported.



Right: Flooding of the Ogeechee River at Herndon, Georgia after more than 12 inches of rain fell in the area on October 11-12. *Photo courtesy: The Blade, Swainsboro, Georgia.*

EASTERN GEORGIA FLOODS

The relatively dry Spring and Summer in Georgia ended abruptly as the remnants of Hurricane Klaus and Tropical Storm Marco produced torrential rains, beginning October 10th.

Flooding caused damage to several mobile homes such as the one above surrounded by the overflow of the Ogeechee River in eastern Georgia. *Photo courtesy: The Blade, Swainsboro, Georgia.*

Hardest hit was the Central Savannah River area. Within the first 18 to 24 hours, the ground was totally saturated and ponds, creeks, and tributaries of the Savannah and Ogeechee rivers had swollen to near bankfull. As the rains continued through October 12th, many homes and businesses sustained flood damage, roads and railroad beds were washed out, water mains were broken, and crops were washed away or severely eroded. Many residents and businesses suffered power interruptions. Numerous vehicles were damaged or washed away. The heavy rainfall caused several roofs to collapse. The University Hospital in Augusta was damaged and another hospital had to evacuate its patients. Air travel to and from Augusta was suspended.

An elderly man in Columbia County, Georgia died after being swept away by flood waters into Bettye's Branch Creek when he and his wife evacuated their car. Three people died in Jefferson County as a result of flooding: a 53-year-old man when his vehicle was swept off the road by flood waters just north of Wadley, Georgia; a 29-year-old woman when she was trapped in a vehicle that fell into a washed-out section of a road near Wrens, Georgia; and a 46-year-old woman on the same road near Wrens, Georgia when her vehicle fell from the road into a pond.

Heavy rain continued in eastern Georgia until October 12th. An official National Weather Service cooperative station at Louisville 1 E (Jefferson County) recorded 19.89 inches for the 10-12th. Of that total an astounding 16.42 inches fell in 18 hours between 6:00 p.m. EDT of the 11th and noon of the 12th. The Savannah River crested on the 13th in Richmond County at 22.8 feet—the highest level since 1983. The flood stage is 21 feet. The Ogeechee River crested at Scarboro, Georgia on the 15th at 13.5 feet; flood stage is 8 feet.

FLOODING IN SOUTH CAROLINA

South Carolina experienced some of the fury remaining in the dissipating tropical systems Klaus and Marco. The remnants of these storms combined with the stalled cold front in the Appalachians resulted in heavy rains and flooding during the second week of October.

Heavy rains due to the remnants of Hurricane Klaus, in Camden on October 10th resulted in drowning deaths of four people when a 50-foot section of Kendall Lake Dam burst less than a mile upstream from their stalled car. The failed dam sent a wave of water from the 80-acre lake across a commercial section of Camden. A 50-year-old restaurant next to Little Pine Tree Creek was heavily damaged by the onrush of water. Several other dams failed within Kershaw County; 120 dams statewide due to heavy rains October 10-12.

As the rains continued through the 11th, evacuations became necessary in several counties in central South Carolina. The evacuation of 2,000 people was necessary in Darlington County. Evacuations affecting fewer people occurred in Calhoun, Kershaw, Lee, and Orangeburg counties.

By October 12th the remnants of Tropical Storm Marco had moved just east of the stalled front in the Appalachian Mountains causing considerable precipitation and flash flooding in northwestern South Carolina. The greatest official 24-hour amount of rain recorded on the 12th for northwestern South Carolina was 10.47 inches at the R.B. Sims Filter Plant near Spartanburg—approaching a 100-year record.

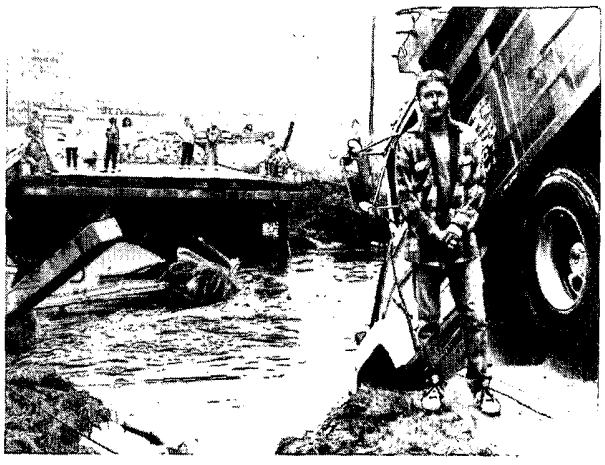
There was one fatality of a 2-year old boy in northwestern South Carolina near Chesnee on the 12th. He fell into Little Buck Creek which is normally 2-3 feet wide and 10 inches deep, but was swollen to 20 feet wide and 6-8 feet deep.

Flooding was widespread throughout the state with the worst in the central and coastal portions.

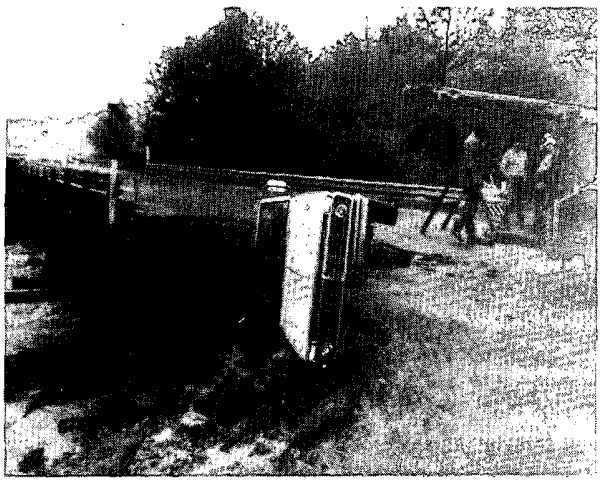
Remains of the Haile Street Grill in Camden, SC after being hit by the water released by the break in the Kendall Lake Dam. *Photo courtesy: Chronicle-Independent, Camden, SC.*

Repair crew working on a bridge on Haile Street after the failure of Kendall Lake Dam in Camden, SC. *Photo courtesy: Chronicle-Independent, Camden, SC.*

Flooding of Black Creek near Pageland, SC washed out this Highway 43 bridge October 11th. The sand truck above crashed into the creek and was almost completely submerged. *Photo courtesy: Photographer-Brian Hough, The Pageland (SC) Progressive Journal.*



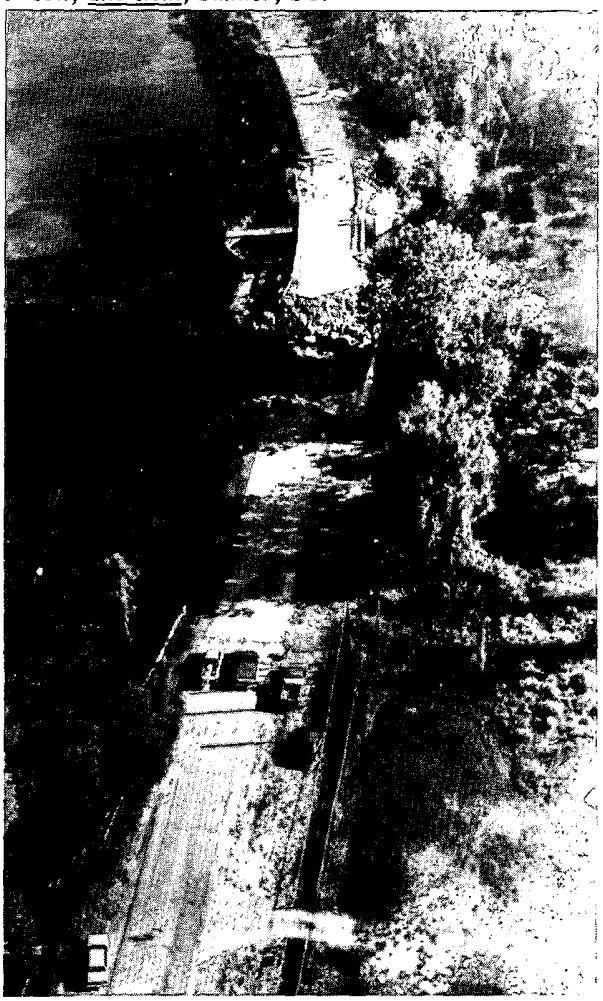
Truck driver George Bailey standing by his sand truck (same as in photo at left) after it had been pulled out of the creek. He was swept several hundred yards downstream after driving off the end of the pavement. He suffered two broken fingers and numerous cuts and bruises. *Photo courtesy: Photographer-Brian Hough, The Pageland (SC) Progressive Journal.*



A pickup truck driven by Randy Austin fell through the pavement after a washout at the bridge on secondary road 683 near Pageland, SC on October 11th. The driver was not seriously injured. *Photo courtesy: Photographer-Brian Hough, The Pageland (SC) Progressive Journal.*

County workers rush to place sand bags around Second Mill dam in Sumter, SC on October 12th. Water is already crossing the road in two places. *Photo courtesy: Photographer-Bruz Crowson, The Item, Sumter, SC.*

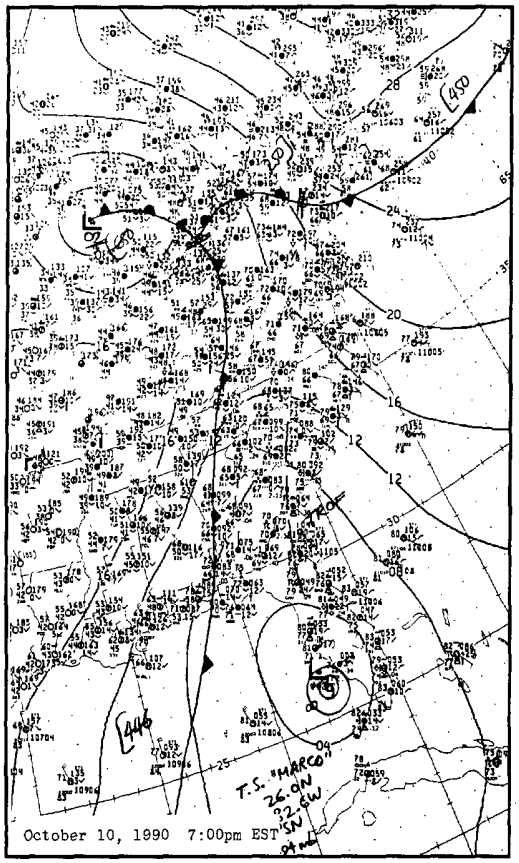
Second Mill Road in Sumter, SC on October 12th, just before it washed out. *Photo courtesy: Photographer-Bruz Crowson, The Item, Sumter, SC.*

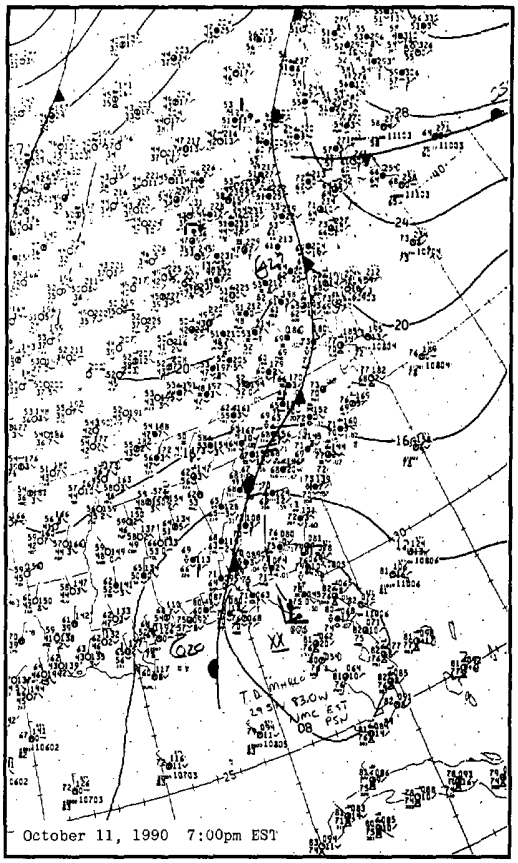


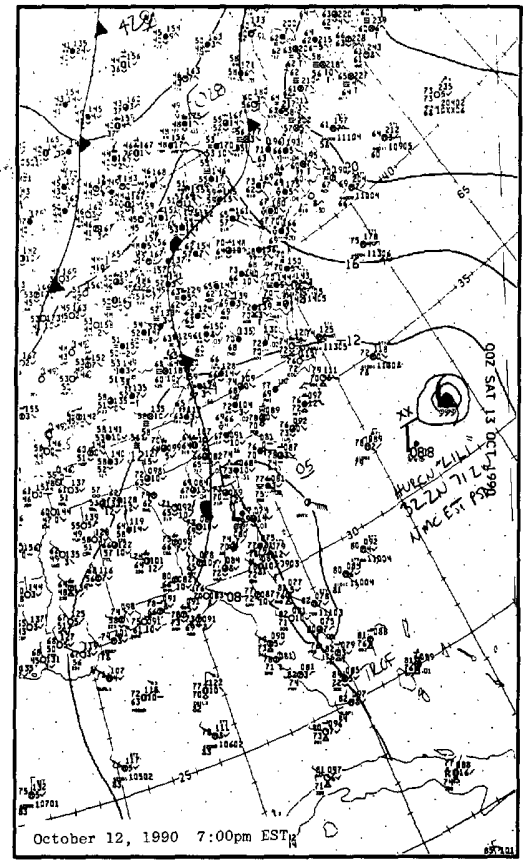
Above: Second Mill Road (Sumter, SC) after the failure of the dam. *Photo courtesy: Photographer-Bruz Crowson, The Item, Sumter, SC.*

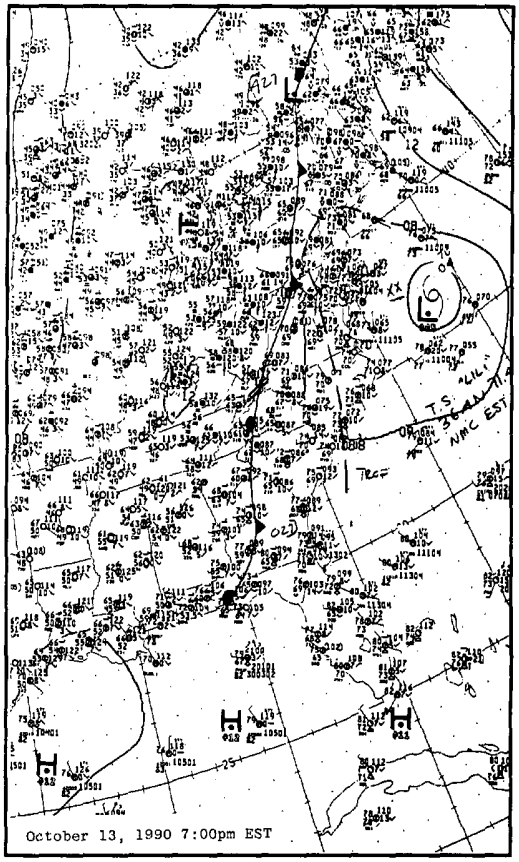
Left: Flooded home at 15 Burkett Street in Sumter, SC have heavy rains during the second week of October. *Photo courtesy: Photographer-Bruz Crowson, The Item, Sumter, SC.*

SURFACE ANALYSES DEPICTING SYSTEMS THAT CAUSED THE OCT. 10-13 FLOODING









3. MORE SEVERE WEATHER IN THE EASTERN U.S. - OCTOBER 22-24, 1990

Two intense low pressure centers developed along a slow-moving cold front in the southeast and moved northeastward up the Atlantic coast during the last full week of October. Heavy rains accompanied these cyclones over already-saturated and, in many cases, flooded areas from Georgia to Maine. The mid-Atlantic states northward to New England received generally from 2 to over 3 inches of rain while the Southeast was deluged with rainfall amounts exceeding 6 inches.

Hurricane strength winds were reported along parts of the Atlantic Coast—South Island near Norfolk recorded 92 mph gusts. High winds broke a dredge from its moorings in the Outer Banks of North Carolina and pushed it into the Herbert Banner Bridge, knocking out a 250-foot section. Thousands of residents and tourists were stranded.

Several tornadoes were spawned by these conditions. The Carolinas reported three tornadoes; one strong (F2) in South Carolina on the 22nd; and two weak (F1) in North Carolina on the 23rd. The South Carolina tornado occurred near St. Matthews and was on the ground for only one-eighth of a mile with a width of 20 yards, but injured four people, killed one 11-year-old child, and destroyed three mobile homes; two sheds; part of a brick house; and a small concrete building. Another home was moved off its foundation.

The Susquehanna River in southern New York crested 3 feet above flood stage at Vestal. Many roads were reported flooded in eastern Pennsylvania. Flooding in Maine left 6 feet of water over a bridge south of Caribou.

Flooded home in Wedgefield, South Carolina, October 23rd. *Photo credit: Photographer-Bruz Crowson, The Item, Sumter, SC.*

A 60-foot section of a railroad overpass (Highway 176) in St. Matthews, SC fell 30 feet when a freight train derailed and struck the overpass supports. Derailment was blamed on 24-hour rains of 12.30 inches and washed out tracks. Two vehicles plummeted off the overpass resulting in one death and one serious injury. *Photo credit: Wes Tyler, S.C. State Climatology Office.*

4. HEAVY THUNDERSTORMS FROM NORTH CAROLINA TO CONNECTICUT - OCTOBER 18TH.

Intense thunderstorms developed along and ahead of a cold front on October 18th and produced local to widespread flooding and damaging winds from North Carolina to southern New England. Thunderstorms spawned sixteen tornadoes over a seven-state area.

SUMMARY OF
OCTOBER 18th TORNADOES
IN THE EASTERN U.S.

STATE	F0	F1	F2	F3	KILLED	INJURED
DE			1			
MD		2	1			60
NC				1		2
NJ	2	1		1		11
NY	1					1
RI	1					
VA	1	2	_	2	1	_
	5	5	2	4	1	74

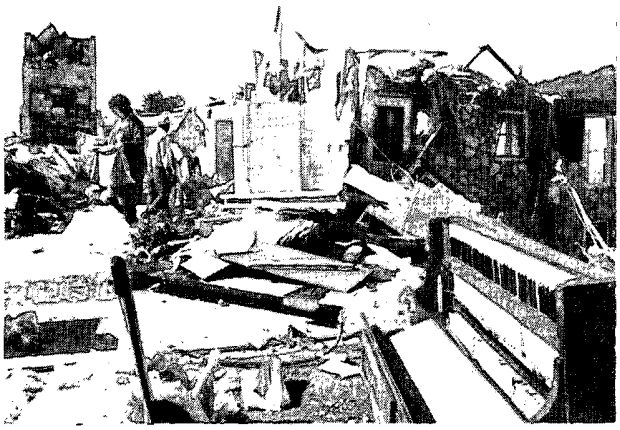
Virginia and Maryland were hardest hit in terms of personal injury and death. A 73-year-old man was killed in King William County, VA after he crawled under a barn for shelter from an F3 tornado. The barn collapsed. A small but strong (F2) tornado touched down at Reisterstown, MD in the Glyndon section. A 150-apartment complex and 52 homes were hit, injuring 59 persons. One person was injured by a weak (F1) tornado that touched down in Kensington, MD.

Looking northeastward at a barn destroyed by an F3 tornado on the Russell Martin farm in King William County, VA October 18th. The 73-year-old Mr. Martin was crushed to death after he apparently hid in the crawl space of the barn. *Photo courtesy: Roy Britt, Richmond, VA.*

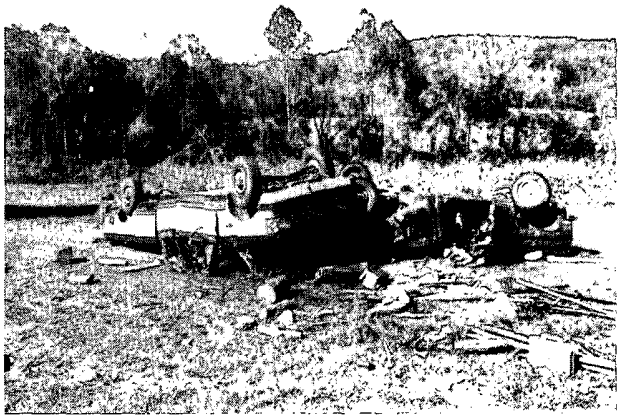
Looking north at Mr. Russell Martin's house damaged by the October 18th tornado. *Photo courtesy: Roy Britt, Richmond, VA.*

Tornado damage to a shed on the Russell Martin farm. *Photo courtesy: Roy Britt, Richmond, VA.*

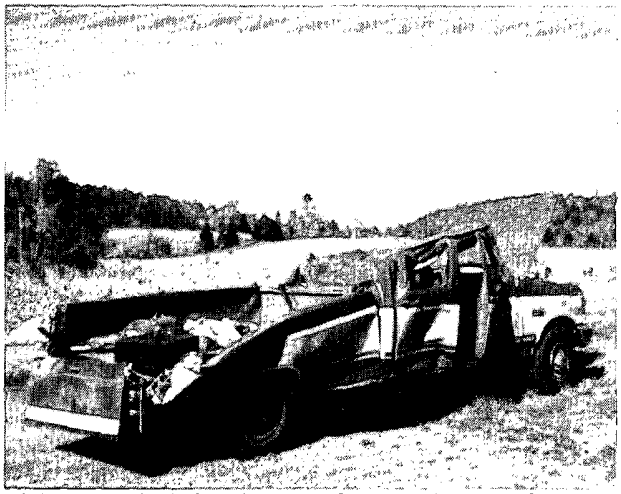
Garage blown over next to the Russell Martin home. *Photo courtesy: Roy Britt, Richmond, VA.*



Destroyed home of George and Nancy Carter after being struck by a strong (F3) tornado in Bushy Mountain area of Orange County, VA on October 18th. *Photo courtesy: Photographer-Scott Painley, Orange County (VA) Review.*



Two pickup trucks overturned by the Orange County, VA tornado on October 18th. *Photo courtesy: Photographer-Scott Painley, Orange County (VA) Review.*



Pickup truck belonging to George Carter of Orange County, VA was lifted and dropped on its top by the October 18th tornado. *Photo courtesy: Roy Britt, Richmond, VA.*

Travel trailer destroyed by the tornado in a field northeast of the Carter home in Orange County, VA. *Photo courtesy: Roy Britt, Richmond, VA.*

5. OCTOBER 1990 TROPICAL STORMS AND HURRICANES

(Editor's Note: Atlantic and Eastern Pacific tropical systems which have little or no impact on the U.S. or its possessions will be covered in the December 1990 STORM DATA).

The material including graphics printed below were provided by the National Hurricane Center.

5(a). HURRICANE KLAUS (October 3-9, 1990)

Klaus originated from a tropical wave that moved off the coast of Africa on September 27th. The wave was convectively active as it moved westward across the tropical Atlantic. Evidence of a circulation was detected from METEOSAT imagery as early as September 28th when the system was located 350 nautical miles south of the Cape Verde Islands. The wave moved across the Atlantic for several days, occasionally showing signs of becoming a depression. Finally, on October 3rd, when located just east of the Lesser Antilles, the wave began a steady strengthening even though there appeared to be a strong shearing environment.

Klaus' best track starts with a tropical depression centered 100 nautical miles east of Dominica, at 1200 UTC on October 3rd. The best track is plotted on Figure 5.

The system drifted slowly toward the northwest for three days, caught in a weak steering current between high pressure to its east and west and with short-wave troughing to the north. It quickly strengthened to a tropical storm at 1800 UTC on the 3rd and reached hurricane strength at 1200 UTC on the 5th. At this time, the center was at its point of closest approach to the Leeward Islands and was only about 25 nautical miles east of Antigua and, shortly thereafter, ten nautical miles east of Barbuda. Tropical storm and hurricane warnings were issued as appropriate for the islands near Klaus' path.

Klaus reached its peak on the 5th with 70-knot winds and a 985-millibar central pressure and was a hurricane for only 15 hours. Although it moved close to the Leeward Islands as a hurricane, there were no observations of sustained tropical-storm-force winds at Antigua or other nearby islands. This was due to the frequent shearing conditions that caused most of the deep convection and strong winds to be located north and east of the circulation center.

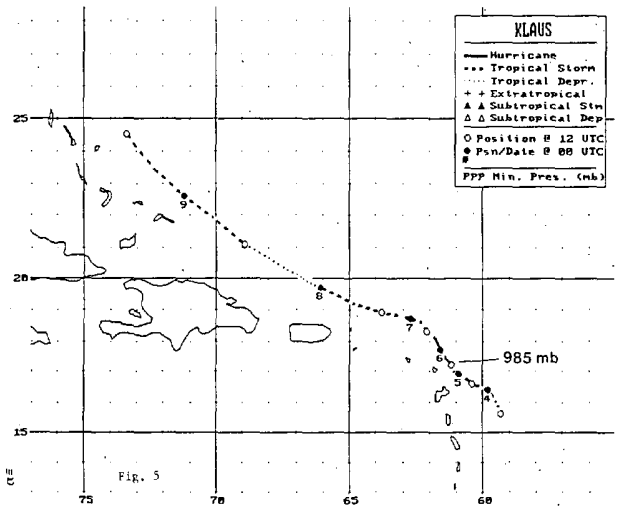
On the 6th, Klaus weakened to a tropical storm and turned slightly toward the west-northwest, its center remaining rather close to the northern Leeward Islands and then the U.S. and British Virgin Islands. By 0000 UTC on the 8th, Klaus was north of the Mona Passage when it weakened to a tropical depression in response to persistent strong shearing.

Klaus regained deep convection near its center and also regained tropical storm status at 1200 UTC on the 8th. With the storm's forward motion toward the northwest at 12 to 15 knots, tropical storm warnings were subsequently issued for the central and northern Bahamas. Klaus peaked, for the second time, late on the 8th and early on the 9th, with 45-knot winds.

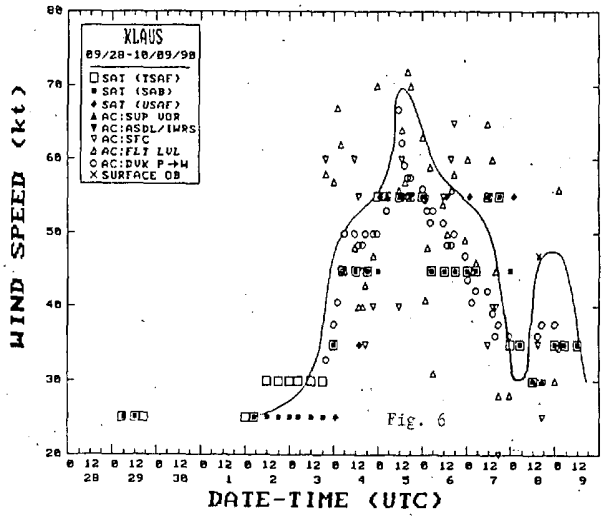
A secondary low pressure center was noted at mid-atmospheric levels as early as the 6th near eastern Cuba. This low drifted westward and gradually worked its way to the surface near western Cuba. By early on the 10th (UTC), this

low became the dominant feature and absorbed the now rapidly-weakening Klaus, as the low developed into Tropical Storm Marco. The remnants of Klaus, interacting with Marco and a slow-moving cold front, were responsible for some heavy rainfall that spread across portions of the southeastern United States.

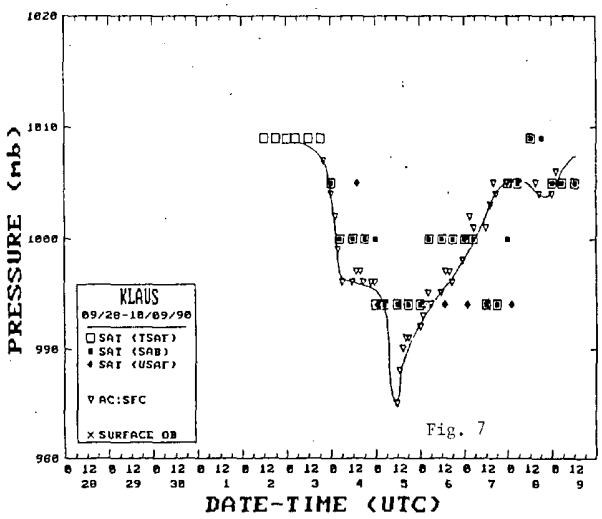
Figure 6 is a plot of all wind speed observations for Klaus and contains the best-track wind speed curve. Figure 7 is a plot of the pressure data and of the best-track pressure curve.



Best track positions for Hurricane Klaus, October 3-9, 1990.



Best track one-minute surface wind speed curve for Hurricane Klaus, October 3-9, 1990.



Best track minimum central pressure curve for Hurricane Klaus, October 3-9, 1990.

5(b). TROPICAL STORM MARCO (October 9-13, 1990)

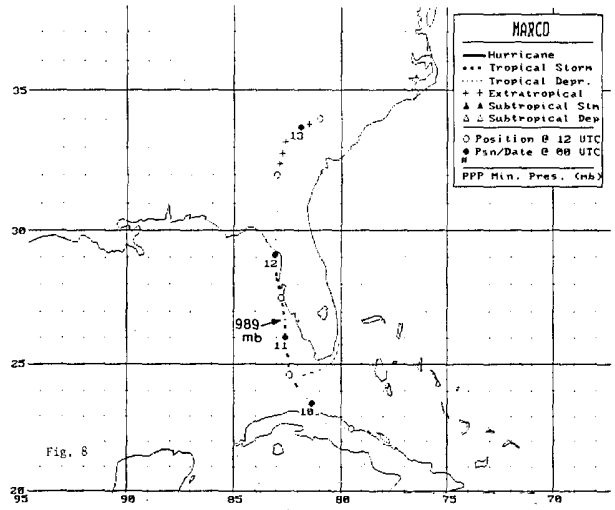
Early on October 9th, Tropical Storm Klaus was located east of the Bahamas, moving northwest, and becoming poorly organized. At the same time, a cold low aloft was developing over Cuba. By 1200 UTC on October 9th, Klaus had dissipated and the new low had developed downward to the surface over central Cuba. This new low absorbed the remnants of Klaus and became Tropical Depression Fifteen near Caibarien, Cuba. The best track is plotted on Figure 8.

The depression moved west-northwest along the north coast of Cuba, and then turned toward the northwest over the Florida Straits. The system became Tropical Storm Marco at 0600 UTC on October 10th while centered about 30 nautical miles south-southwest of Key West, Florida. After passing midway between the Dry Tortugas and Key West, Marco moved generally toward the north at 5 to 10 knots just off the Florida west coast. The storm reached its peak intensity near 0600 UTC on October 11th with 55-knot sustained winds and a 989-mb central pressure. The center moved to just a few nautical miles west of Bradenton Beach by 1200 UTC on October 11th and continued hugging the coast, with much of its circulation over land in the St. Petersburg area, to near Clearwater around 1500 UTC.

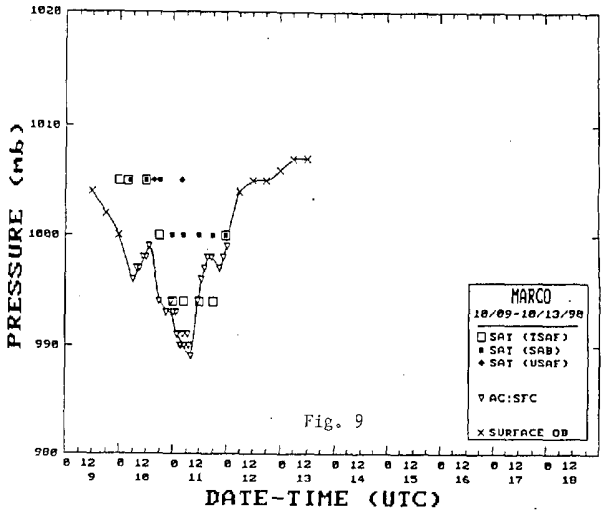
Marco was downgraded to a tropical depression at 0000 UTC on October 12th just offshore of Cedar Key, Florida. The central pressure rose as the depression continued moving inland, and the system was declared extratropical at 1200 UTC over central Georgia. The low could be followed in surface pressure and wind reports for another 24 hours, moving through Georgia and into South Carolina. The weakening low was finally absorbed by a frontal system in the vicinity of Columbia, South Carolina, near 1200 UTC on October 13th.

Although Marco brought sustained tropical storm force winds to several areas on the Gulf of Mexico side of the Florida peninsula and to the Florida Keys, the storm and its remnants will also be remembered for contributing to heavy rains previously initiated by the remnants of Klaus over Georgia and the Carolinas.

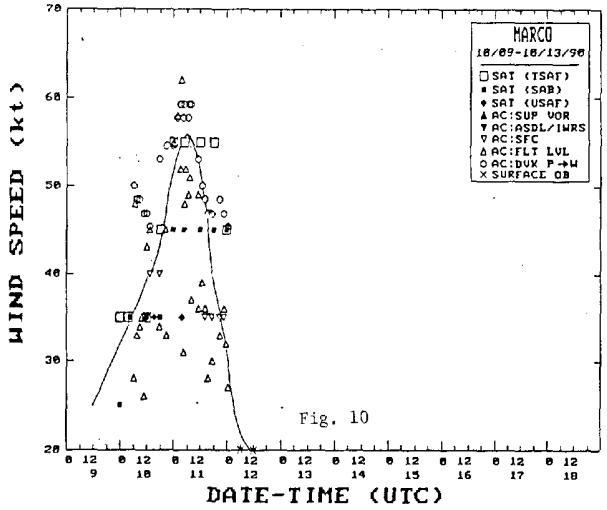
Figure 9 is a plot of the pressure data for Marco and contains the best-track pressure curve. Figure 10 is a plot of wind speed observations and the best-track wind speed curve.



Best track positions for Tropical Storm Marco, October 9-13, 1990.



Best track minimum central pressure curve for Tropical Storm Marco, October 9-13, 1990.



Best track maximum sustained wind speed curve for Tropical Storm Marco, October 9-13, 1990. (Not all aircraft observations are sampling the maximum wind.)

6. STRANGE STILLNESS AT BARROW, ALASKA

WWAK35 PABR 301700
ZCZC FAISPSBRW

AKZ001-301700-
SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE BARROW AK
8 AM AST TUE OCT 30 1990

...RARE EVENT OCCURS AT BARROW ALASKA...

AN UNUSUAL EVENT OCCURRED AT BARROW ALASKA THIS TUESDAY MORNING... CALM SURFACE WINDS... A CALM SURFACE WIND AT BARROW IS SUCH A RARITY THAT IT COULD ONLY REQUIRE A SPECIAL WEATHER STATEMENT. WE HAVE BEEN TOLD THAT THERE ARE CHILDREN IN BARROW WHO HAVE NEVER WITNESSED THIS RARE PHENOMENA.

BUT AS WITH ALL OTHER RARE EVENTS THIS TOO WILL PASS AND THE WIND WILL RETURN TO ITS NORMAL GUSTY..BLUSTERY SELF BY TOMORROW.

JRF OCT 90

BRW SP 2012 M10 OVC 7S- 1404/974/BINOVC=
BRW SA 1953 M9 OVC 5S- 070/8/5/1603/974/10SC=
BRW SA 1853 M9 OVC 5S- 067/8/5/0000/973/10SC
Z46 UNFFL 1830 OVC 3S- 7/CALM/29.71/HI12 LO 5 TRACE PRECIP=
BRW SA 1753 M9 BKN 7S- 064/8/4/0000/972/CIG PRTLY THN 9ST/ 20800
1600 90205 04=
BRW SA 1653 M9 OVC 5S- 064/9/5/0000/972/10=
BRW SA 1550 M9 OVC 7S- 060/6/3/0000/971/VLGT PCPN 10ST=
BRW SA 1450 M9 OVC 7S- 055/5/2/1003/969/VLGT PCPN 10ST/ 10300
16//=
BRW SA 1354 M9 OVC 6S- 055/7/4/1104/969/VLGT PCPN 10ST=
BRW SA 1255 M9 OVC 6S- 052/8/4/0805/969/VLGT PCPN 10ST=
BRW SA 1152 M9 OVC 6S- 052/10/6/0707/969/VLGT PCPN 10ST/ 60200
16// 90405 08 RADAT ZERO=
BRW SA 1050 M9 OVC 6S- 054/9/6/0805/969/VLGT PCPN 10ST=
BRW SA 0950 M9 OVC 6S- 052/9/6/0905/969VLGT PCPN 10ST=
BRW SA 0851 M9 OVC 6S- 054/11/8/0905/969/VLGT PCPN 10ST/ 50200
16//=
BRW SA 0755 M8 OVC 6S-F 054/11/8/1205/969/10ST=
BRW SA 0650 M8 OVC 6S-F 054/11/8/0605/969/10ST=
BRW SA 0557 M7 OVC 6S-F 055/11/9/0705/970/10ST/ 60700 16// 16=
BRW RS 0457 M5 OVC 6S-F 057/11/8/1105/970/10ST=
BRW SA 0358 M4 OVC 6S-F 059/11/8/0704/970/10ST=

NOTE: The mean wind speed for October is 13.2 miles per hour.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1990

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

ALABAMA

Marion County 04 0540CST 0.3 10 0 0 ? ? **Tornado (F0)**

A small tornado touched down about 6 miles west of Haleyville and moved a few hundred yards. A house and a mobile home were severely damaged and trees were blown down in the same area. There were no injuries.

Morgan County 04 0605CST 0 0 6 0 **Thunderstorm Wind**

Strong thunderstorm downburst winds destroyed a part of the Hartselle business district as well as a few nearby homes. Final damage figures showed 48 businesses and homes were damaged. Several buildings were destroyed. The damage was caused by straight-line thunderstorm winds that reached an estimated 80 mph, accompanied by a squall line, that moved through the area. Few people were in the business district at that hour of the day and there were no injuries. Total damage estimates were between $600 and $700,000.

Blount County 04 0745CST 0 1 5 0 **Thunderstorm Wind**

Straight-line thunderstorm winds caused considerable damage in the Royal Community, located about 8 miles northeast of Cleveland. A survey showed the damaged area to be approximately 150 feet by 200 feet and one-fourth mile in length. One mobile home was tipped over into trees. Three chicken houses were damaged; one extensively, and the other two, moderately. A woman inside the extensively damaged chicken house received minor injuries. Damage estimates were placed at approximately $200,000.

Tuscaloosa County 04 0745CST 0 0 ? ? **Thunderstorm Wind**

Trees were blown down at Coker. Also, at Vance, a van was blown over and a tin roof was ripped off a building.

ARIZONA

Yuma County Yuma 01 1630MST 0 0 4 0 **Hail (1.00) Flash Flooding**

Tropical moisture from former Hurricane Odile moved over much of the state. Thunderstorms developed during the afternoon over the deserts and hit the Yuma area with hail and heavy rains. A few homes were flooded. Downtown Yuma had 1.18 inches of rain with quarter-size hail. One area had hail pile up to a depth of 6 inches. The airport received 0.95 inch along with dime-size hail.

AZZ001 Northwestern Deserts 19 1530MST 0 0 2 0 **High Winds**

Northwestern Arizona experienced very strong winds the afternoon of the 19th as a fast-moving cold front moved into the area. The Bullhead City Fire Department reported a peak gust of 79 mph with only minor damages. Winds at Katherines Landing, just to the north, were estimated at between 75 to 100 mph, causing numerous trees and signs to be blown down. Dust storms reduced the visibility in the Kingman area. Power outages were reported in Parker. The Lake Havasu City Police reported a blinding dust storm at about 1645 MST.

ARKANSAS

Polk County 07 1400CST-2300CST 0 0 5 0 **Flash Flooding**

Twelve inches of rain in 24 hours caused extensive flooding across Polk County. Four bridges were damaged and 25 major washouts occurred on county roads. Ward and Prairie Creeks rose out of their banks, as did other small streams. Drainage systems were overwhelmed. Some residents of Mena were moved to higher ground, and several motorists were stranded on flooded roads. All schools in Polk County were closed the next day.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME (LOCAL STANDARD)	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

ARKANSAS, Cont'd

Sevier County	07	1600CST-2000CST	0	0	4	0	**Flash Flood**

Heavy rains flooded and washed out several county roads. Many roads remained under water until midday Monday. Schools in Lockesburg had to be canceled on the 8th due to the road damage.

Howard County							
5 W Nashville	07	1615CST	0	0	0	0	**Hail (1.00)**
Sevier County							
6 W Lockesburg	07	1620CST	0	0	0	0	**Hail (1.00)**
Little River County	07	1740CST	0	0	2	0	**Thunderstorm Winds**
5 W Foreman	07	1740CST	0	0	0	0	**Hail (1.75)**

Thunderstorm winds downed trees west of Foreman. Golf ball-size hail also fell.

Howard County							
6 S Newhope	07	1800CST-2200CST	0	0	2	0	**Flash Flood**

Nearly 5 inches of rain fell across northeastern Howard County causing flooding along Highway 369.

Miller County							
Index	07	1830CST	0	0	2	0	**Thunderstorm Winds (G52)**

Thunderstorm winds downed several trees.

Clark County							
Amity	08	2200CST-					
	09	0200CST	0	0	2	0	**Flash Flood**

Heavy rain flooded many roads in and around Amity.

Pulaski County							
Little Rock	08	2330CST-					
	09	0330CST	0	0	3	0	**Flash Flood**

About 5 inches of rain flooded numerous roads in the Little Rock area. Two men had to be rescued from atop their vehicles after being swamped by water from a flooded creek. About 20 roads were closed at various times across the Little Rock area.

Saline County	08	2330CST-					
	09	0330CST	0	0	3	0	**Flash Flood**

About 5 inches of rain caused flash flooding across Saline County. The Shannon Hills and Bryant areas had flooded roads. Six families were evacuated from mobile homes near Little Hurricane Creek in Bryant.

Hot Spring County	09	0030CST-0430CST	0	0	3	0	**Flash Flood**

Heavy rain washed out two bridges and flooded roads across Hot Spring County. Streets in Malvern also flooded, leaving some residents stranded until about midday.

Lonoke County							
Carlisle	09	0130CST-					
		0530CST	0	0	2	0	**Flash Flood**

Heavy rain caused the closing of Highway 13 north out of Carlisle.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

ARKANSAS Cont'd

Monroe County Clarendon	09	0230CST			0	0	2	0	Lightning

Lightning struck a bank, knocking out the time and temperature telephone system.

Logan County 2 W Delaware	17	1642CST							Funnel Cloud
Independence County Gainsboro	17	1700CST			0	0	3	0	Thunderstorm Winds (G48)

Thunderstorm winds estimated at 50 to 55 mph damaged the roof of a barn.

Pope County Dover	17	1725CST			0	0	2	0	Thunderstorm Winds
Atkins	17	1730CST			0	0	2	0	Thunderstorm Winds

Thunderstorm winds blew down trees near Dover and Atkins. Power was also knocked out at both locations.

Independence County Batesville	17	1830CST			0	0	3	0	Thunderstorm Winds (G43)

A fast moving thunderstorm produced wind gusts estimated at 50 mph, resulting in scattered minor damage in Batesville. About half of a tin roof on a barn was blown off, and a few small trees were blown over. A few power outages were also reported.

Craighead County Jonesboro	17	1940CST			0	0	3	0	Thunderstorm Winds

Thunderstorm winds blew down several trees and one utility pole. A car was damaged by the downed pole.

Hot Spring County Bismarck	18	0800CST			0	0	3	0	Lightning

Lightning caused extensive damage to an electrical substation, leaving about 600 customers without power.

CALIFORNIA, Northern

Yuba County 3 S Marysville	31	1329PST- 1337PST			0	0	0	0	Funnel Cloud
Sacramento County 21 ESE Sacramento	31	1354PST- 1355PST			0	0	0	0	Funnel Cloud

Funnel clouds formed in the unstable air mass behind a Pacific cold front.

CALIFORNIA, Southern

None reported.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME (LOCAL STANDARD)	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

COLORADO

Northern Mountains
Front Range
Northeastern Plains
Palmer Divide
COZ002-011-012-014

07-08 — 0 0 0 0 **Snow**

The season's first significant snow fell across the state's northern mountains, Palmer Divide, Front Range, and adjacent northeastern plains from the 7th to the morning of the 8th. Snowfall totals varied from 3 to 8 inches in the northern mountains, 4 to 10 inches across the Palmer Divide, 3 to 15 inches in and along the Front Range, and 3 to 6 inches on the northeastern plains. A few significant snowfall amounts in the high country include 8 inches at the Mary Jane Ski Area and 4 to 6 inches in the Winter Park Ski Area, both west of Boulder; while 10 inches blanketed the small North Park community of Hebron in central Jackson County. On east-facing slopes of the Front Range, 15 inches of heavy, wet snow fell in the Red Feather Lakes area in northwestern Larimer County, 11 inches on Buckhorn Mountain west of Fort Collins, and 6 to 10 inches in the Fort Collins/Loveland area. Other significant totals include 6 to 8 inches on the northern side of Colorado Springs near the Austin Bluffs, 10 inches in the town of Black Forest, 15 miles northeast of Colorado Springs, and 3 to 7 inches within the Denver metropolitan area. Lesser amounts (generally less than 3 inches) fell across the state's central and southern mountains, southern foothills, and southeastern plains during the same period.

Boulder County
COZ011

13 1200MST-2000MST — 0 0 ? 0 **High Winds**

Strong downslope winds stirred up clouds of dust and gravel, rattled windows, and stripped autumn-colored leaves off trees in western sections of Boulder through much of the afternoon. A gust of 78 mph (68 knots) was clocked by an NCAR employee on Boulder's southwestern side at 1300 MST, while a 96 mph (83 knot) gust was recorded in northwestern Boulder just before 1900 MST.

Front Range
Northeastern Plains
COZ011-012

16 0900MST-17 0200MST — 0 0 5 0 **High Winds**

Strong downslope winds in the Fort Collins area had reportedly caused widespread damage to trees and power lines, resulting in intermittent power outages during much of the afternoon and evening of the 16th. A gust of 94 mph (82 knots) was clocked at 2250 MST on the Foothills Campus of Colorado State University. At about the same time, west winds gusting to 74 mph (64 knots) whipped through the small Front Range foothills town of Masonville, 10 miles southwest of Fort Collins. Winds gusting 60 to 75 mph (52 to 65 knots) continued to buffet portions of Larimer and Weld counties through the morning of the 17th, with a peak gust of 55 mph (48 knots) recorded in Fort Morgan (Morgan County) at 0945 MST. High winds in the Denver area resulted in wave damage to a dock used to moor several private sail boats on Cherry Creek Reservoir in southeastern Denver. Damage was confined to the dock and two anchor cables.

Statewide
COZALL

19-20 — 0 0 0 0 **Snow**

An early-winter snow storm tracked east along the Colorado/New Mexico line dumping a blanket of wet snow across nearly all of Colorado. Hardest hit was the state's northeastern Front Range foothills, northern and central mountains, and Palmer Divide. Snowfall totals varied from 4 to 8 inches in the Front Range foothills, generally above 6,500 feet MSL, 4 to 7 inches in the Castle Rock area on the Palmer Divide, 2 to 5 inches in the Denver/Boulder metropolitan area, 8 to 14 inches in the high country, with a foot of new snow at Echo Lake in the mountains west of Denver, and 10 inches at the Loveland Basin Ski Area. Roads were icy and snow-packed in the mountains during the storm, yet remained generally wet and slushy at lower elevations. Minor delays due to reduced visibilities and low clouds were reported at Denver's Stapleton International Airport during the peak of the storm.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
CONNECTICUT									
CTZ001-002-003-004-005	13-14	0800EST-0300EST			0	0	4	0	Heavy Rain
New London County									
Colchester	14	0100EST-0300EST			0	0	?	0	Flooding
Windham County	13	1945EST			0	1	0	0	Lightning

A tropical air mass associated with the remnants of Tropical Storm Marco moving north-northeastward from the southeastern United States brought tropical downpours and thunderstorms. From 2.00 to 5.50 inches of rain fell across most of the state, except southeastern coastal sections, in less than 24-hours, and, in some areas 2 to 4 inches fell in 6 hours. The greatest 24- hour total was 5.39 inches in Putnam with around 5 inches in North Branford. In Clinton, rising waters from a small stream forced 100 residents from their homes. Many roads and highways were temporarily flooded by the downpours. A man was struck and injured by a bolt of lightning in Killingly. Several streams overflowed their banks in Colchester and Lebanon after 0100 EST.

CTZALL	18	1200EST-2200EST			0	0	5	0	High Winds
Litchfield County	18	1935EST			0	0	?	0	Thunderstorm Winds
Hartford County									
Bristol	18	2021EST			0	0	?	0	Thunderstorm Winds (62 KTS)
Fairfield County									
Greenwich, West Port, New Canaan	18	2025EST			0	0	?	0	Thunderstorm Winds
Hartford County									
Windsor Locks	18	2028EST			0	0	4	0	Thunderstorm Winds (63 KTS)
Hartford County	18	2103EST			0	0	?	0	Thunderstorm Winds
New London County	18	2100EST-2200EST			0	0	?	0	Thunderstorm Winds
Tolland County	18	2050EST-2115EST			0	0	?	0	Thunderstorm Winds

Strong- to gale-force southerly winds preceded an eastward-moving squall line and strong cold front. Winds frequently gusted up to 40 to 60 mph. The combination of high winds, severe thunderstorm winds, and heavy rain resulted in power outages which affected some 57,000 customers statewide. The National Weather Service in Windsor Locks recorded a peak gust to 73 mph during a severe thunderstorm. Numerous large trees were blown down. Many houses and automobiles were damaged by falling trees and limbs. The coastal areas of Fairfield County, including Westport and Greenwich, also reported numerous large trees blown down.

DELAWARE

New Castle County Greenville	18	1700EST-1710EST	1.0	430	0	0	5	0	Tornado (F2)

About one-fourth mile north of Greenville, a tornado swept a path about a mile long and one-fourth-mile wide, damaging 30 homes and demolishing a barn. Many trees were damaged as well. Witnesses said the funnel was about 10 feet off the ground. Intensity was F2 at touchdown and F1-F2 along the path. No injuries or fatalities were reported.

New Castle County									
Greenville Centerville	18	1700EST-1730EST			0	0	3	0	Thunderstorm Winds

The same thunderstorm that spawned the tornado one-fourth mile north of Greenville caused strong winds that blew trees and power lines down at Greenville and Centreville.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

FLORIDA

Brevard County
Kennedy Space Center — 01 1015EST — 0 0 0 0 — **Funnel Cloud**

A short-lived funnel cloud was observed over the Kennedy Space Center complex on Cape Canaveral.

Monroe County
7 E Marathon — 01 1150EST — 0 0 0 0 — **Waterspout**

A waterspout was observed by the Coast Guard 5 miles south of Grassy Key in the middle Florida Keys.

Nassau County
Fernandina Beach — 05 0855EST — 0 0 0 0 — **Waterspouts**

Several waterspouts were observed near the mouth of the St. Mary's River along the Nassau County, Florida-Camden County, Georgia border.

Pinellas County
Clearwater
Dunedin — 05 1915EST — 0 0 3 0 — **Thunderstorm Wind**

Strong thunderstorm winds uprooted 60 trees and downed many power lines in Clearwater. Dunedin reported 55 transformers were destroyed by lightning strikes resulting in considerable power outages.

Brevard, Indian River, Volusia Counties — 09 0830EST-1200EST — 0 0 2 1 — **Strong Winds**

The remnants of Tropical Storm Klaus moved into east-central Florida coastal areas bringing wind gusts to 40 to 45 mph and minor beach erosion. Many public beaches were closed due to large waves and breakers. The winds and waves subsided during the afternoon.

Lee County
Fort Myers — 09 1825EST 0.6 20 — 0 0 5 0 — **Tornado (F0)**

A small tornado moved through two adjacent mobile home parks. Twenty-five mobile homes suffered damage (mainly to screen porches and carports). The roof of a clubhouse building and six recreational vehicles suffered minor damage. The total estimated damage was $200,000. The tornado dissipated after moving through the trailer parks.

Dade County
Key Biscayne — 09 2200EST — 0 0 3 0 — **Thunderstorm Wind Lightning**

Strong downburst winds struck Cape Florida State Park on Key Biscayne, leveling about 150 190-foot tall Australian pines. Lightning damaged the control mechanism of the Brickell Avenue drawbridge, and it was stuck in the up position for about 48 hours.

Clay County
Green Cove Springs — 10 0730EST — 0 0 0 0 — **Lightning**

Lightning struck the Clay County Sheriff's Office, knocking out 20 computer terminals and most telephone lines in the office.

FLZ006-007-010-013-018-021-023
Florida West Coast and Keys — 10 1200EST-11 1700EST — 0 1 6 0 — **Storm Winds**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

FLORIDA Cont'd

Tropical Storm Marco formed in the Gulf of Mexico, just west of Key West in the lower Keys, on the afternoon of the 10th. The storm moved generally north just off the Florida west coast, but with the east side of the circulation affecting the coast. By 1700 EST on the 11th, when it was downgraded to a depression, Marco was just south of Cedar Key. Schools in many of the southwest and west-central counties were closed on the 11th, although very few evacuations were necessary. Most of the damage was downed trees and power lines, some coastal flooding and beach erosion from the combination of high tides and onshore winds (but this was minimal), and some damage to roofs and trailer homes from storm winds and from two small tornadoes spawned by the storm. These tornadoes both occurred between 1400 and 1500 EST on the 11th, one 10 miles north of Crystal River along the Citrus-Levy County line, and one in northeast Lake City in Columbia County. The only injury of significance occurred in Sarasota County, when a pine tree crashed into a car resulting in a serious injury to its occupant. Peak wind gusts during the storm were as follows: 85 mph on the Sunshine Skyway Bridge across Tampa Bay at 0359 EST on the 11th, 68 mph at McDill AFB at 0720 EST on the 11th, 58 mph at Englewood at 0143 EST on the 11th, 56 mph at Sarasota at 0414 EST on the 11th, 52 mph at Port Charlotte at 0315 EST on the 11th, 48 mph at Venice at 0310 EST on the 11th, and 47 mph at Key West at 1227 EST on the 10th. The peak gust reported elsewhere in the Tampa Bay area was 36 mph at both Tampa International Airport and the St. Petersburg-Clearwater Airport.

Citrus County									
10 N Crystal River	**11**	**1430EST**	**0.5**	**20**	**0**	**0**	**0**	**0**	**Tornado (F0)**

A small tornado spawned by Tropical Storm Marco hit a mostly rural area along the Citrus-Levy County line, downing trees and power lines.

Columbia County									
Lake City	**11**	**1450EST**	**0.7**	**25**	**0**	**0**	**0**	**0**	**Tornado (F0)**

Another small tornado spawned by Marco moved through a northeastern Lake City subdivision, downing trees and power lines, and damaging the roofs of several homes.

Dade County									
5 WSW Miami	**23**	**1505EST**			**0**	**0**	**1**	**0**	**Thunderstorm Wind**

Strong thunderstorm winds uprooted trees and downed power lines in interior Dade County.

Monroe County									
11 N Key West	**28**	**1630EST**			**0**	**0**	**0**	**0**	**Waterspout**

A waterspout was observed 11 miles north of Key West Airport. It dissipated rapidly.

GEORGIA

Houston County									
2 W Warner Robins									
2 SW Warner Robins	**04**	**1415EST**			**0**	**0**	**3**	**0**	**Thunderstorm Wind**
4 SW Warner Robins	**04**	**1430EST**			**0**	**0**	**3**	**0**	**Thunderstorm Wind**

Numerous trees were uprooted or snapped by winds around Warner Robins. Scattered power outages developed when lines were torn down during the storm.

Twiggs County									
10 SE Warner Robins	**04**	**1432EST**			**0**	**0**	**2**	**0**	**Thunderstorm Wind**

Several trees and large limbs were blown down along and across Georgia Highway 96.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
GEORGIA Cont'd									
Chatham County Savannah	04	1752EST			0	0	0	0	Thunderstorm Wind (G53)
Chatham County Savannah	10	1315EST			0	0	0	0	Flash Flood
GAZ007-Z009-Z010 East, East-Central and Southeastern Georgia	10 12	2030EST- 0700EST			0	0	0	0	Heavy Rainfall
Chatham County Savannah	11	1715EST			0	0	0	0	Flash Flood
		Heavy rainfall developed over eastern and southeastern Georgia as the remains of Tropical Storm Marco, the remnants of Hurricane Klaus, and a slow-moving cold front converged over Georgia. Minor flooding began developing around low-lying and poorly-drained areas. Several low-lying sections of Savannah were flooded by afternoon.							
Charlton County Folkston	11	1930EST			0	0	0	0	Thunderstorm Wind
		Scattered power outages resulted due to thunderstorm winds.							
Brantley County Countywide	11	2000EST			0	0	4	0	Flash Flood
		Close to 5 inches of rain fell over the county as a complex storm system moved over the area. Low-lying areas over Brantley County were flooded, leaving a few rural roads damaged.							
6 WSW Nahunta	11	2000EST			0	0	2	0	Thunderstorm Wind
		Scattered trees and limbs were blown down.							
3 WNW Raybon	11	2140EST	1.0	150	0	0	5	0	Tornado (F1)
		A small tornado, spawned by the remains of Tropical Storm Marco, developed near the Satilla River outside of Raybon over an area comprised of vacation and weekend properties. The storm totally destroyed 22 residences and left several others with extensive damages, including a country store. Numerous trees, utility lines, and poles were twisted or broken along the path.							
Richmond County Countywide	11 12	2135EST- 0700EST			0	0	4	0	Heavy Rainfall
Countywide Augusta	11 12	2135EST- 1400EST			0	0	7	0	Flash Flood
Columbia County Countywide	11 12	2140EST- 0700EST			0	0	0	4	Heavy Rainfall
Countywide	11 12	2140EST- 1400EST			0	0	7	0	Flash Flood
5 N Evans	12	0605EST			1	0	0	0	Flash Flood
Burke County Countywide	11 12	2140EST- 0700EST			0	0	0	5	Heavy Rainfall
Countywide	11 12	2140EST- 1400EST			0	0	6	0	Flash Flood
Jefferson County Countywide	11 12	2140EST- 0700EST			0	0	0	7	Heavy Rainfall
Countywide Louisville	11 12	2140EST- 1400EST			0	0	7	0	Flash Flood
1 N Wadley	12	0520EST			1	0	0	0	Flash Flood

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
GEORGIA Cont'd									
Wrens	**12**	**0524EST**			**1**	**0**	**0**	**0**	**Flash Flood**
	12	**0625EST**			**1**	**0**	**0**	**0**	**Flash Flood**

Heavy rainfall started over eastern Georgia on October 10th, shortly after sunrise, as the remnants of Hurricane Klaus and Tropical Storm Marco dumped heavy rainfall over the central Savannah River area. By the afternoon of the 11th, with the ground totally saturated, area ponds, creeks, and tributaries of the Savannah and Ogeechee Rivers were near bankfull.

Numerous flash flooding events developed over Richmond County. With the city of Augusta hardest hit, a total of about 500 homes and businesses over the county sustained damages. Spirit Creek and Rocky Creek were among those flooded. In south Richmond County, 2,000 homes had no power during the early hours of the morning. Forty roads were flooded and six water mains broke. Repair costs for the roads amounted to $1.3 million. The total estimated costs of damages in unincorporated areas was $6 million. Included in the total was $350,000 in damages to crops, ponds, dams, irrigation equipment, nurseries, and other farm properties.

The city of Augusta was hard hit by the flash flooding. By 2340 EST on the 11th, Rae's Creek and Buffalo Creek in Augusta had pushed 3 feet of water into the streets. By 0215 EST on the 12th, the Augusta National Golf Course was flooded and evacuations had begun as waters rose to 6 feet in some areas. By 0415 EST, nearly 16,000 homes and businesses were without power. By 0530 EST, many roadways around Augusta were closed; others were washed out. Numerous vehicles were damaged or washed away. Interstate 20 was closed over a 2 mile stretch due to flooding. Air travel was suspended. By 0630 EST, many homes and businesses were flooded, while heavy rainfall caused several roofs to collapse. The University Hospital suffered $300,000 in damage. Another downtown hospital had to evacuate its patients. Water and sewage treatment was partially closed down in Augusta. About 6,000 residents were left without water service due to broken water mains. By 0830 EST, most roads in and around Augusta were closed. In Augusta, damages were estimated at $30 million.

In Columbia County, 93 dwellings were damaged; three were totally destroyed. Considerable damage was done to personal properties and vehicles over the county. The heavier damages occurred around Martinez and Evans. Numerous county roads and culverts were washed out or damaged and extensive soil erosion resulted. Water and sewage treatment was partially closed down in Appling due to the flooding. Three water treatment plants were flooded, leaving 1,000 residents without water service. Severe damage was done to a bridge in Evans; at least $60,000 was required to replace it. Another bridge was washed out on Reed Creek. Railroad tracks, utility lines, and telephone cables were washed out in several areas. Damages over Columbia County were estimated to cost near $10 million, including private properties. Agricultural damages in the county were minimal, although some newly planted fields were washed away. Reed Creek, Uchee Creek, and the Kiokee Creek near Appling were among those flooded. When an elderly man and his wife evacuated their car, the man was swept away by flood waters into Bettye's Branch Creek and drowned. His body was recovered at 0950 EST. (M80O)

In Burke County, there was an estimated $4 million damage to crops and farm ponds. The storm also severely eroded fields and drowned some livestock. County roads and bridges suffered an additional $500,000 in damages. Fourteen dwellings were damaged by the floods. Water and sewage treatment was partially closed down in Waynesboro due to flooding. Near Waynesboro, considerable flooding developed on Brier Creek.

The heaviest rainfall during the storm was 16.42 inches in 24 hours, measured at Louisville in Jefferson County. Over the northern portion of Jefferson County, two unofficial totals over 17.00 inches were reported. Over the county, 67 dwellings were damaged; 12 others were totally destroyed. Over half of the county's roads were severely damaged; repair costs were estimated at $2 million. Rain-swollen creeks destroyed at least six dams. Approximately 75,000 acres suffered soil erosion. Agricultural damages over Jefferson County were estimated at $5 million, mainly to farm ponds. About 300 ponds in the county were destroyed. By 0630 EST, Lousiville was completely isolated as most bridges and roads to the town were flooded. Two water mains burst and left 79 families without water service. At Wadley, five homes were evacuated.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME (LOCAL STANDARD)	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

GEORGIA Cont'd

In Jefferson County, considerable flooding developed along Brushy Creek near Wrens, Big Creek near Louisville, and along the tributaries of the Ogeechee River near Wadley. A man died about 0520 EST when his vehicle was swept off the road by flood waters just north of Wadley. His body was recovered in Boggy Gut Creek about 1010 EST. A 29-year-old woman drowned about 0524 EST after being trapped in a vehicle that fell into a washed-out section of a road near Wrens. Her body was found at 1245 EST. Another woman died about 0625 EST in flood waters on the same road near Wrens, when the family vehicle fell from the road into a pond. Her body was recovered at 1738 EST. (M53V, F29V, F46O)

Emanuel County Countywide	11-12	2200EST-1400EST	0	0	6	4		**Flash Flood**
Jenkins County Countywide	11-12	2200EST-1400EST	0	0	6	0		**Flash Flood**
Johnson County Countywide	11-12	2200EST-1400EST	0	0	6	5		**Flash Flood**
McDuffie County Countywide	11-12	2200EST-1400EST	0	1	6	0		**Flash Flood**
Lincoln County Countywide	11-12	2200EST-1400EST	0	0	4	0		**Flash Flood**
Screven County Countywide	11-12	2200EST-1400EST	0	0	5	0		**Flash Flood**

In Emanuel County, several mobile homes in low-lying areas were damaged by the flooding after more than 12 inches of rain fell on parts of the county. Dams broke on five farm ponds that were 100 acres or larger, causing a chain reaction that damaged smaller ponds downstream, further complicating the flooding. Some cotton fields were damaged. Considerable damages occurred to numerous paved and dirt roads due to the rushing waters. Railroad tracks between Midville, in southern Burke County, and around Swainsboro were washed out. Near Stillmore, a tributary of the Canoochee River and near Coleman's Lake, the Ogeechee River were among the flooded waterways in Emanuel County.

In Johnson County, numerous roads were washed out and many more were damaged. Several earthen dams broke on farm ponds and damaged crops. Over 16.00 inches of rain fell over parts of Johnson County. Considerable flooding developed over the Cowford community on the Little Ohoopee River near Kite.

In McDuffie County, many roads were washed out. One injury occurred when a woman, trapped in her car by water, had a tree fall upon her. Several mobile and permanent homes were damaged by the floods. Considerable flooding developed along Brier Creek in the southern section of the county and along an unnamed tributary near the Richmond County line.

In Jenkins County, flooding developed along creeks and streams. The tributaries of the Ogeechee River were among the flooded waterways, particularly near Millen. A few trees fell, mainly due to the loosened soils. Altogether 54 homes were evacuated in Millen and a few near Herndon. About 20 homes, both vacation homes and permanent residences, had significant flood damage. Underground gas meters were damaged, along with a large number of city and county culverts and roadways. Train service was interrupted due to several washouts and high water along the tracks. At Scarboro, the Ogeechee River crested at 13.5 feet during the afternoon of the 15th.

In Lincoln County, one road was washed out. In Screven County several county roads were damaged or washed out.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

GEORGIA Cont'd

Washington County								
Countywide	11	2140EST-						
	12	0700EST	0	0	5	0		**Flash Flood**
Tennille	11	2200EST	0	0	3	0		**Thunderstorm Wind**

Torrential rainfall over Washington County resulted in flash flooding after 7 to 10 inches accumulated. Flash floods developed around Riddlesville and Sandersville. Flooding conditions were complicated by a dam break outside of Riddleville on a small catfish pond. At Tennille, thunderstorm winds uprooted a few trees, resulting in scattered power outages.

Laurens County								
Northern and Eastern Laurens County	12	0400EST	0	0	5	0		**Flash Flood**
Dublin	12	0430EST	0	0	5	0		**Flash Flood**
Dudley	12	0430EST	0	0	5	0		**Flash Flood**

Many county roads were submerged under water up to 4 feet in depth as heavy rainfall moved over Laurens County. Secondary dirt roads were washed out due to flooding along several small streams and creeks. In Dublin, houses were flooded in the northern section of the city. Near Dudley, nine county roads were damaged by floodwaters.

Treutlen County								
Countywide	12	0430EST	0	0	5	0		**Flash Flood**
9 NE Soperton	12	0430EST	0	0	5	0		**Flash Flood**

Heavy rainfall pushed the Ohoopee River out of its banks into residential areas near U.S. Highway 221, northeast of Soperton. A few bridges and several county roads were damaged by the flooding.

Clarke County								
Athens	12	0430EST	0	0	3	0		**Thunderstorm Wind**
Madison County								
Northeastern Madison County	12	0430EST	0	0	3	0		**Thunderstorm Wind**

Several trees were uprooted by winds resulting from the remnant of Tropical Storm Marco. Power lines were torn down by the trees, resulting in scattered outages in northeastern Madison County and over a large portion of Athens.

Washington County								
6 E Riddleville	12	0500EST	0	3	5	0		**Flash Flood**
4 E Riddleville	12	0500EST	0	0	4	0		**Flash Flood**

Two sections of Georgia Highway 242 were washed out by flood waters as heavy rainfall continued. A 12-foot culvert was swept away 6 miles east of Riddleville, leaving a hole 12 feet deep. Three persons were injured there when two automobiles fell into that washed-out section about 0500 EST.

Richmond County								
Augusta	12	0700EST-						
	13	1900EST	0	0	7	0		**Flood**
Eastern Richmond County	12	0700EST-						
	13	1900EST	0	0	6	0		**Flood**

Residual flooding continued over Augusta from the earlier heavy rainfall and flash flood events. The Savannah River pushed out of its banks and flooded Augusta and the rural areas along the river. The new Savannah Bluff Water Park was flooded, along with 279 houses, mobile homes, and apartments. Considerable damage occurred to roadways and other facilities. Agricultural areas along the river in both eastern Richmond County and South Carolina were flooded. One bridge crossing the Savannah River near Augusta had major damages and the bank between the Augusta Canal and the Savannah River suffered a large crack. The river crested at 22.8 feet on the 13th, reaching the highest level since 1983. The flood stage is 21 feet.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

GEORGIA Cont'd

Jefferson County
5 W Wadley 13 0400EST-
15 0700EST 0 0 5 0 Flood

The Ogeechee River pushed out of its banks around Wadley. Flood water hampered railroad operations after water inundated the tracks. An earthen dam gave way outside of Wadley, resulting in additional flooding near the river.

Burke County
Midville 13 0400EST-
16 1900EST 0 0 5 0 Flood

Emanuel County
Coleman Lake 13 0400EST-
Northern Emanuel County 16 1900EST 0 0 5 0 Flood

The rain-swollen Ogeechee River flooded around Midville, Coleman Lake, and northern Emanuel County mainly over agricultural and rural lands. Roads and a few residences were flooded or damaged along the river. The river crested at 12.2 feet; 6.2 feet over the flood stage.

Southern Emanuel County 13 0700EST-
16 1900EST 0 0 5 0 Flood

The Ohoopee River rose rapidly over rural lands and flooded homes, clubhouses, and campgrounds.

Burke County
Waynesboro 13 0700EST-
18 0700EST 0 0 5 0 Flood

Screven County
Northern Screven County
Millhaven 13 0700EST-
Hilltonia 18 0700EST 0 0 6 4 Flood

Runoff waters along with heavy rainfall pushed Brier Creek, a tributary to the Savannah River, over its banks. A record flood developed between Waynesboro and Millhaven, with generally agricultural lands inundated by the waters. Floodwaters damaged the peanut crop. At Hilltonia, Brier Creek hampered travel along Route 140.

Jenkins County
Millen 14 1200EST-
16 1600EST 0 0 5 0 Flood
Scarboro 14 1200EST-
21 0200EST 0 0 4 0 Flood

By the 14th, 200 residents around Millen in the small communities of Rogers Landing, Old Eighty, Herndon Landing, Bennett's Landing, and Fairfield Landing were evacuated. The Ogeechee River flooded near Scarboro and inundated roads and bridges, along with low-lying agricultural areas and timberland. At Scarboro, the river crested at 13.5 feet on the 15th; the flood stage is 8 feet.

Screven County
Rocky Ford 14 2000EST-
Dover 21 0700EST 0 0 5 0 Flood

The Ogeechee River flooded low-lying areas in western Screven County, mainly around Rocky Ford and a large portion of Dover. Approximately 75 residents were evacuated when more than a dozen residences were flooded. Railroad operations were hampered in both areas after the tracks were flooded. At Dover, the river crested at 13.0 feet on the 16th; the flood stage is 7 feet.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

GEORGIA Cont'd

Toombs County
7 NE Lyons — 14 2000EST- / 18 0700EST — 0 0 5 0 **Flood**

With drainage from upstream watersheds, the Ohoopee River rose against a detour bridge on Georgia Highway 152 between Lyons and Cobbtown. The floodwaters washed the bridge and construction equipment away.

Burke County
Burton's Ferry — 15 0700EST- / 20 0200EST — 0 0 0 4 **Flood**

The Savannah River flooded at Burton's Ferry and inundated agricultural lands over the area. The river crested at 17.6 feet on the 17th; the flood stage at Burton's Ferry is 15 feet.

Tattnall County
Reidsville — 15 1000EST- / 21 0700EST — 0 0 4 4 **Flood**

The Ohoopee River flooded at Reidsville and inundated roads over the area. Water flooded agricultural lands around Reidsville, and damaged the yards of several homes in the Joy Bluff community. The river crested at 20.3 feet on the 17th; the flood stage at Reidsville is 11 feet.

Effingham County
Clyo — 16 0700EST- / 31 2400EST — 0 0 0 0 **Flood**

The Savannah River flooded at Clyo and inundated several county roads, cutting off residents and visitors housed in cabins in the recreational areas. The river crested at 16.1 feet on the 20th and began a slow fall, although flooding continued through the month. The flood stage at Clyo is 11 feet.

Effingham County
Eden — 18 0700EST- / 31 2400EST — 0 0 4 4 **Flood**

Bryan County
Eastern Bryan County — 18 0700EST- / 31 2400EST — 0 0 0 4 **Flood**

The Ogeechee River flooded at Eden and over eastern Bryan County. River access roads and rural residential areas were flooded along the river, forcing the evacuation of a total of 40 families from both counties. In Effingham County, portions of Georgia Highway 17 were inundated. Riverside agricultural and recreational areas were also flooded. The river crested at 14.4 feet on the 20th and began a slow fall, although flooding continued through the month. The flood stage at Eden is 9 feet.

IDAHO

IDZ009
Northern Idaho — 04 1600PST- / 2200PST — 0 0 4 0 **High Wind**

A strong cold front passed through northern Idaho during the afternoon and evening hours. Sustained winds of 40 mph were common with reported gusts near 60 mph. Many power lines were downed as well as numerous trees. High winds ripped off a 20 foot section of a Kootenai County-owned boathouse on Blackwell Island.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

ILLINOIS

Madison County
Collinville 03 1620CST 0 0 4 ? **Thunderstorm Winds**

Winds caused damage to trees and power lines.

Macon County
Decatur 03 1645CST 0 0 5 4 **Thunderstorm Winds**

Winds caused damage to a school roof, farm buildings, and crops.

Iroquois County
Watseka 03 1755CST 0.5 100 0 0 6 3 **Tornado (F1)**

A tornado touched down on the southeastern edge of Watseka and tore up trees and cornfields. It then moved northeast, downed three newly-planted utility poles, moved across Illinois Route 24 into the Eastside Mall, damaged 70,000 square feet of roof, with attached heating and air conditioning units, caused much flying glass and debris at stores and EZ Pickins Market, and apparently lifted shortly thereafter.

St. Clair County
Belleville-
Shiloh 03 1840CST 0 0 2 0 **Thunderstorm Winds**

Trees were downed on 59th street. Other power lines and trees were damaged.

Hamilton, Saline Counties
Cornersville-
Walpole 03 2030CST 3.0 50 0 0 5 4 **Tornado (F1)**

A tornado caused heavy property damage to several farm homes and farm buildings along the county border, from near Cornersville to about 1 mile southwest of Walpole.

Pope County
Herod 03 2120CST 1.0 100 0 0 5 0 **Tornado (F2)**

A tornado touched down at Herod and destroyed the Post Office; then moved northeast 1 mile, damaged two homes, outbuildings and trees, then lifted near the border of Hardin County.

ILZ003
Monroe Harbor 08 1200CST 0 0 6 0 **High Wind**

Gale force winds and waves caused heavy damage to boats at Monroe Harbor, near downtown Chicago on Lake Michigan. At least 30 boats broke from their moorings; many either sank or sustained damage.

ILZ001-002 10 1100CST 0 0 5 0 **Ice Storm**

Ice and snow caused heavy damage to trees and power lines in Stephenson and western Ogle counties. Polo had 3.50 inches of snow and ice, Dixon had 2 inches, and Freeport had 1 inch.

Mercer County
Joy 17 1545CST 0 0 0 0 **Funnel Cloud**

There were eyewitness accounts of a funnel cloud overhead.

Pike County
2 W Hull 17 1550CST 0 0 3 0 **Thunderstorm Winds**

Trees were downed between Hull and East Hannibal.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

ILLINOIS Cont'd

Green County
Near Carrollton — 17 1600CST — 0 0 5 0 — **Thunderstorm Winds**

There was heavy damage to outbuildings at several farms west and east of Carrollton. Utility crews reported damage in a 5-mile swath from Calhoun County across Green County to Franklin in Morgan County.

Mercer County
Matherville — 17 1600CST — 0 0 4 0 — **Thunderstorm Winds**

There was damage to a home, trees, and power lines.

Rock Island County
Moline — 17 1615CST — 0 0 3 0 — **Thunderstorm Winds**

Scattered damage to trees and power lines was reported.

Macon County
Decatur — 17 1750CST — 0 0 0 0 — **Thunderstorm Winds (G48)**

Entered for chronology.

Christian, Shelby Counties
35 SE SPI — 17 1800CST — 0 0 3 4 — **Thunderstorm Winds**

A large tree was down on a house at Moweaqua. Other scattered damage was reported along the Christian-Shelby County line.

INDIANA

Clinton County
Frankfort — 03 2105EST — 0 0 4 ? — **Thunderstorm Winds**

Trees, limbs, power poles, and signs were blown down in Frankfort. A barn was flattened 1 mile east of Frankfort.

Boone and Hamilton Counties
1 WNW Gadsden to 4 NE Boxley — 03 2117EST-2138EST — 17 — 300 — 0 0 5 ? — **Tornado (F1) Thunderstorm Winds**

A mini tornado produced a 17-mile damage path. Downburst wind damage was also evident south of the tornado track. A number of trees were damaged or broken. Three barns were damaged and windows were blown out of a farmhouse west of Gadsden. The most severe damage was in Sheridan. Several trees were broken or uprooted. Trees and limbs fell on cars and houses. The roof of a high school was peeled back over the boiler room and the gym, resulting in water damage. A portion of a wall was also damaged.

Madison County
Edgewood and Chesterfield — 03 2210EST — 0 0 ? ? — **Thunderstorm Winds**

Trees were blown down in Edgewood and power lines were downed in Chesterfield.

Boone County
Thorntown — 07 1132EST — 0 0 ? ? — **Hail (1.00)**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

INDIANA Cont'd

Hendricks County
Brownsburg 17 1108EST 0 0 ? ? **Thunderstorm Winds (G52)**

An amateur radio operator measured a 60 mph wind gust.

IOWA

Mahaska County
New Sharon 17 1250CST 0 0 4 2 **Hail (1.75)**
Poweshiek County
Deep River 17 1310CST 0 0 4 2 **Hail (1.75)**
Muscatine County
Muscatine 17 1520CST 0 0 4 3 **Thunderstorm Winds (G52)**
Scott County
Davenport 17 1545CST 0 0 4 3 **Thunderstorm Winds (G50+)**
Clinton County
Clinton 17 1630CST 0 0 3 2 **Thunderstorm Winds (G50+)**

A strong cold front moved across Iowa during the day. Thunderstorms developed along the front about midday. As the line formed, golf ball-size hail fell over Poweshiek and Mahaska counties. Later, as the storms moved east, high winds occurred over extreme eastern Iowa. Trees and power lines were downed in the Quad Cities area as well as in Muscatine.

IAZ001-002-003-004-005-006-007-008-009-010-011-SDZ018
ILZ004
Northeastern half of Iowa 27 0900CST-1500CST 0 0 5 2 **High Winds**

A cold front moved across Iowa during the early morning hours. After sunrise, high winds developed over about the northeastern half of Iowa. Winds of 30 to 50 mph were common. Damage was relatively minor; however, substantial damage occurred at a construction site near Dubuque. A building under construction there was leveled.

KANSAS

Franklin County
Williamsburg 04 2200CST 0 1 4 0 **Thunderstorm Winds**

A mobile home was blown over by thunderstorm winds. The mobile home was totally destroyed and the occupant/owner was taken to the hospital with minor injuries.

KENTUCKY

Mason County 04 0330EST 0 0 4 0 **Thunderstorm Winds**

Strong thunderstorm winds damaged a tenant house and took the roof off a barn near Ewing. In addition, several trees were blown down.

Garrard County 04 0415EST 0 0 4 0 **Thunderstorm Winds**

Strong winds ripped the roof off a house and destroyed a barn. Several large trees were also blown down.

Hickman County
Fulton County 09 0600CST 0 0 3 0 **Flash Flood**

Around 3 inches of rain fell over three hours causing several creeks and streams to overflow. Only minor damage was reported.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

LOUISIANA

Morehouse Parish									
5 SE Bastrop	**04**	**1600CST**			**0**	**0**	**2**	**0**	**Thunderstorm Winds**

Thunderstorm wind gusts blew down trees in a couple of areas southeast of Bastrop.

Calcasieu Parish									
1 E Vinton	**21**	**1245CST**	**0.1**	**20**	**0**	**0**	**0**	**0**	**Tornado (F0)**

Louisiana State Police spotted a tornado which touched down briefly in an open field east of Vinton. No damage was reported.

MAINE

MEZ007-010-013	**04**	**Evening**			**0**	**0**	**?**	**0**	**High Wind**

An intense low pressure system moving across Hudson Bay pushed a frontal system across Maine. Numerous trees were downed causing power outages and minor damage to houses and cars. Damage seems to have been concentrated in an area where the tight pressure gradient coincided with deciduous trees that had not lost their leaves.

York County									
Cumberland County	**13**	**Evening**							
	14	**Early Morning**			**0**	**0**	**4**	**0**	**Flood**

The remnants of Tropical Storm Marco moved north across eastern New York state as Tropical Storm Lili approached the east coast Saturday night and early Sunday morning. Vertical motion was enhanced by a slow-moving and dissipating north-south frontal system over western New England. Thunderstorms developed with several lightning strokes over southern Maine. Lightning struck a house at Shore Road in York, Maine. No damage was reported.

MEZ001-007-009									
010-012-013-014	**18**	**Evening**			**0**	**0**	**?**	**0**	**High Winds**

Low pressure passed through Quebec province late on the 18th pushing a cold front through Maine and New Hampshire. Strong winds ahead of the front caused damage over a large area in western Maine. Pine trees were downed on Route 25 in Gorham. Many residents lost power during the storm including 3,200 in Franklin County. Other outages were located in Hollis, Pequis, Eustis, Jackman, Howland, and Ashland.

Oxford County	**18**	**2255EST**			**0**	**0**	**?**	**0**	**Thunderstorm Winds**

A line of severe thunderstorms passed through western Maine late on the 18th into the early morning hours of the 19th. Thunderstorm winds associated with a cold front brought down trees and wires in Lovell.

York County	**18**	**2305EST**			**0**	**0**	**?**	**0**	**Thunderstorm Winds**

Trees were downed with the passage of the cold front in Sanford.

Cumberland County	**18**	**2330EST**			**0**	**0**	**?**	**0**	**Thunderstorm Winds**

Severe thunderstorms brought down trees and large limbs in Casco.

Androscoggin									
County	**18**	**2335EST**			**0**	**0**	**?**	**0**	**Thunderstorm Winds**

Trees and power lines were blown down during a severe thunderstorm in Mechanic Falls and Poland.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

MAINE Cont'd

Cumberland County — 19 0020EST — 0 0 ? 0 **Thunderstorm Winds**

A line of thunderstorms downed a tree in Cape Elizabeth which struck a house.

MEZ001-007-009-010 — 24 0600EST-25 0930EST — 0 0 5 ? **Flood**

Minor street flooding was reported from Eustis to Detroit and from Augusta to Pittsfield. A freshet moved down the Penobscot River damaging the Bangor Dock Facility. Wet grounds prevented potato farmers from harvesting potato crops. A low pressure system moved across southern New England and the Gulf of Maine producing some 2.50 inches of rain over Maine.

MARYLAND and D.C.

Montgomery County Kensington — 18 1515EST 1.0 100 0 1 6 0 **Tornado (F1)**

Local officials estimated that 40 buildings were damaged with an estimated value of about $2 million. One person was slightly injured. The storm's path length was estimated at 0.50- to 1-mile long and 300-feet wide.

Montgomery County Silver Spring, Kensington — 18 1520EST — 0 0 3 0 **Thunderstorm Winds**

A severe weather spotter measured winds to 60 mph (52 knots). Trees and power lines were downed, and three homes in Kensington were damaged by trees falling onto them.

District of Columbia — 18 1527EST — 0 1 5 0 **Thunderstorm Winds**

Winds were recorded up to 71 mph (61 knots) in the northwestern part of the District; large trees were downed across several streets. Boats were sunk in Washington Harbor and one man was injured. Wind surfers were stranded on rocks in the Potomac River.

Baltimore County Glyndon — 18 1530EST 0.1 100 0 59 7 0 **Tornado (F2) Thunderstorm Winds**

A small tornado occurred at Reisterstown in the Glyndon section, at the same time that extensive damage from straight-line winds was occurring all around Reisterstown. An apartment complex hit by the tornado suffered heavy roof and facing damage, some 150 apartments were rendered unlivable, a car was overturned, and several cars were twisted from their normal parking area. Fifty-two homes were also damaged. Total damage estimates range up to $9.5 million. The path was about one-eighth of a mile long and 100 yards wide. No fatalities occurred, but about 50 people reported minor injuries, and nine other people were injured (two seriously) and treated at hospitals. Damage from straight-line winds was reported in a shopping center near Glyndon about the same time of the tornado.

Howard County — 18 1530EST — 0 0 4 0 **Thunderstorm Winds**

Numerous trees and power lines were downed. A large tree fell onto a house collapsing a wall.

Anne Arundel County City of Baltimore — 18 1537EST — 0 0 4 0 **Thunderstorm Winds**

Trees and power lines were downed in the northern part of Anne Arundel County and in the Curtis Bay and Brooklyn sections of Baltimore. A tree fell onto a house in Curtis Bay. Winds were measured by a cooperative observer in the northernmost part of Anne Arundel County at 73 mph (63 knots). Other parts of Baltimore also reported large trees downed.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

MARYLAND and D.C. Cont'd

Baltimore County Sparks — 18 — 1549EST — 0.1 — 10 — 0 — 0 — 5 — 0 — **Tornado (F1)**

There were several reports of damage to structures in the Sparks area. An eyewitness saw a funnel approaching before he and his wife took shelter; his home was extensively damaged. Debris was strewn in a circular manner. A grove of trees past the house showed evidence of twisting damage.

Baltimore County — 18 — 1520EST-1700EST — 0 — 0 — 0 — 0 — **Thunderstorm Winds**

The same thunderstorm that produced the tornadoes at Glyndon and Sparks also caused widespread wind damage to trees in and around those two localities. Inspection of the damage revealed evidence of downbursts.

Harford County — 18 — 1800EST — 0 — 0 — 3 — 0 — **Thunderstorm Winds**

Trees and power lines were downed at several locations. Resulting power outages affected 10,200 customers according to local power company officials.

Kent County 5 N Rock Hall — 18 — 1800EST — 0 — 0 — 4 — 0 — **Thunderstorm Winds**

Strong winds downed trees in the Tolchester area (5 miles north of Rock Hall). A pickup truck was totaled by a large tree that fell on it.

Allegany County Mount Savage, Midland — 19 — 0330EST-0800EST — 0 — 0 — 4 — 0 — **High Winds**

High winds following a cold front downed several trees in the Mount Savage area, some of which fell onto cars, heavily damaging them. Other trees were downed around Midland.

Allegany County Mount Savage, Cumberland, McCoole — 23 — 0000EST-0700EST — 0 — 0 — 4 — 0 — **Flooding**

Several basements were reported flooded as a result of overnight heavy rains. There were many reports of washed-out roads.

Montgomery County — 23 — 0600EST-1500EST — 0 — 0 — 0 — 0 — **Flooding**

Very heavy rains caused widespread flooding of low-lying areas. Thirteen roads were closed by flood waters.

MASSACHUSETTS

MAZALL — 04 — 1200EST-2400EST — 0 — 0 — 5 — 0 — **High Winds**

Strong south and southwest winds gusting up to 40 to 50 mph caused scattered power outages statewide. Many of the outages occurred in central and western Massachusetts. Up to 6,000 electric customers lost power in northern Worcester County. In Raynham, Bristol County, a motorist narrowly escaped injury when a large tree fell across her car on Route 44.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
MASSACHUSETTS Cont'd									
MAZ001-004-005-007-008	13	1900EST-							
	14	0400EST			0	0	6	0	Heavy Rain
Essex County	13	1900EST-							
	14	0400EST			0	0	?	0	Flooding
Norfolk County									
Norfolk	14	0225EST			0	0	3	0	Lightning

A tropical air mass associated with the remnants of Tropical Storm Marco moving north-northeastward from the southeastern United States brought tropical downpours and thunderstorms. Twenty-four hour rainfall amounts ranged from 3 to 6.50 inches. The maximum reported amout was 6.39 inches at West Medway, MA, but totals of 4 to 5 inches fell across eastern Worcester County, Middlesex County, Suffolk and Essex counties. The heaviest rainfall occurred during thunderstorms in the evening hours of October 13th into the early morning hours of October 14th. Amounts of from 3 to 5 inches were reported, with considerable flooding of roads, aggravated by clogged storm drains filled with fallen leaves. Severe flooding was reported from Medway and Bellingham with some streets under several feet of water along with some basement flooding. A house was struck by lightning in the town of Norfolk and resulted in $4,000 damage. Several small streams overflowed their banks causing minor flooding in Essex County.

MAZALL	18	1400EST-							
	19	0100EST			0	1	5	0	High Winds
Berkshire County									
Pittsfield, Dalton	18	2000EST			0	0	4	0	Thunderstorm Winds (50 KTS)
Hampshire County									
Northampton Hadley	18	2025EST			0	0	4	0	Thunderstorm Winds (50 KTS)
Worcester County									
Worcester	18	2102EST			0	0	4	0	Thunderstorm Winds (51 KTS)

Strong- to gale-force southerly winds preceded an eastward moving squall line and strong cold front. Winds frequently gusted up to 40 to 60 mph. A 17-year-old girl carrying a baby was struck and pinned down by a falling tree limb in Springfield. She suffered a broken back, but the infant was unhurt. There were many reports of vehicles damaged by falling trees and tree limbs. Up to 12,000 electric customers in western Massachusetts lost power. Most of the outages lasted only a few hours. Several thousand additional outages were reported from central and eastern parts of the state. Wind gusts to near 60 mph accompanied thunderstorms associated with the squall line. Some peak gusts included 52 mph at Westfield, 59 mph at Worcester, and 63 mph at the Blue Hill Observatory in Milton.

MICHIGAN

Ionia County									
Lake Odessa	04	1200EST			0	0	4	0	Thunderstorm Winds

Strong thunderstorm winds blew down power lines on the eastern end of Jordan Lake.

Ingham County									
East Lansing	04	1257EST			0	0	4	0	Thunderstorm Winds

Thunderstorm winds blew a tree onto the roof of a vacant home. There was significant damage to the roof. The tree also caused a power line near it to come down.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

MICHIGAN Cont'd

Alcona County
Barton City — 04 1400EST — 0 0 4 0 — **Thunderstorm Winds**

Thunderstorms moving through southern Alcona County had damaging winds associated with them. Power lines were blown down, trees were toppled, and shingles were blown off many roofs. The high winds lasted about 15 minutes.

Oakland County
Royal Oak — 04 1620EST — 0 1 4 0 — **Thunderstorm Winds**

A 55-year-old man was driving his car down the street when thunderstorm winds blew a 2-foot-wide oak tree onto the car. The car continued through an intersection before it stopped. No other car was damaged as he went through the intersection. Two other trees in the same area fell during the storm; each tree crushed a car. Many power lines and tree limbs also came down during the storm. As a result, three cars were damaged; one man had back and head injuries, and many trees and power lines were damaged.

Saginaw County — 04 1700EST — 0 0 3 0 — **Thunderstorm Winds**

As strong thunderstorms moved through the county, many areas had trees or large limbs down. Power lines were down and one car was damaged in the town of Saginaw when a tree fell on it.

Huron County
Bad Axe — 04 1745EST — 0 0 0 0 — **Thunderstorm Winds**

Strong thunderstorm winds blew down many large tree limbs and a few trees, as the thunderstorms moved through this area during the evening hours.

Genesee County
Flint — 04 1900EST 3.0 50 0 1 6 0 — **Tornado (F2)**

The tornado touched down in the city of Flint at 1800 EST in the eastern end of the city. It ripped the roof off a bar, and put a 4-foot hole in the roof of the Engineered Products Company that was also 4 feet across. The tornado skipped half a mile; when it touched down again it moved through the main business section of town. It finally lifted about 1825 EST, half a mile after passing over Interstate 69. While it passed over Interstate 69 it blew over a tractor-semitrailer that blocked the road for hours. The driver had only minor injuries to his head and back. While the tornado was moving through the business area, many buildings had serious damage. One home was demolished, and many windows were shattered, as were many signs. A satellite dish was tipped over and much debris was hurled in the air. Some cars were damaged by being picked up, then dropped, or by having trees fall on them. Some cars were tipped over by the wind. The cars were unoccupied at the time. Many trees and power lines were also damaged. Total damage was around $2 million. Only one injury was reported; that was the truck driver.

Oakland County
Madison Heights — 04 1900EST — 0 0 3 0 — **Thunderstorm Winds**

Strong thunderstorm winds blew several trees and power lines down. The downed power lines caused several small power outages, and 12,000 customers lost power across southeastern lower Michigan.

Muskegon, Ottawa, Kent Counties — 17 0330EST — 0 0 4 0 — **Thunderstorm Winds**

Strong thunderstorms moved onshore from Lake Michigan around 0330 EST with high winds. Many trees and power lines were blown down. As a result, 15,000 customers lost power during the storm. Total damage to repair downed wires for all three counties is around $40,000.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

MICHIGAN Cont'd

Ottawa County
Holland — 17 0400EST — 0 0 5 0 **Lightning**

While three people were asleep in their home, early in the morning, lightning struck the roof, and set the insulation on fire. The fire then spread to the garage. About 0430 EST a passerby noticed the fire and awakened the people. By the time the fire fighters arrived and got the fire under control, around $100,000 in damage was done to the home and the garage. Smoke detectors did not go off because the fire was still in the attic, thus the fire was above the smoke detectors. No one was hurt during the fire; thanks to the passersby who cared enough to awaken the residents of the home.

Houghton County
Houghton — 17 0435EST — 0 0 3 0 **Lightning**

Lightning struck a home in the city of Houghton, blowing a hole in the wall where it entered the home. After blowing a hole in the wall, it went across the room, hit the coat closet, and blew the door off of it. Plaster was blown all over the living room as a result of the hole blown in the wall. Before the lightning hit the home, it first struck a tree 10 feet from the home. The small fire that resulted from this was due to the insulation igniting where the lightning blew a hole in the wall. While the residents were in the home at the time, no injuries resulted since they were in bed in another room.

MIZ073-077
Western Upper Peninsula — 18 0400EST — 0 0 5 0 **Snow**

A strong winter storm moved into western upper Michigan during the early morning hours of Thursday. Very strong winds blew the snow into 2-foot drifts. The high winds and heavy snow combined to cause many trees and power lines to come down. This caused power outages throughout most of the area. Thousands of customers were affected by the power outages. Most of the schools in this five-county area were closed for the day. Many minor auto accidents were reported as a result of the high winds, heavy snow, and low visibilities. The Ontonagon Road Commission reported wind gusts to 65 knots. Many areas had sustained winds of 20 to 30 knots. The snow ended during the afternoon on Thursday. The snowfall averaged 6 inches across the five counties. The maximum snowfall was around 9 inches in east-central Baraga and west-central Marquette counties.

MIZ031
Southeastern Lower Peninsula — 18 1300EST — 0 0 5 0 **High Wind**

Strong winds blew across all of lower Michigan while the heavy snow fell over the Michigan upper peninsula. Wind gusts on land were generally under 40 knots; however, on the St. Clair River, near where it flows out of Lake Huron, the Canadian freighter, "Willowglen", was blown against a sea wall and came very close to damaging the Thomas Edison Inn, which is very close to where the freighter was blown into the sea wall. About $80,000 damage was caused to the freighter.

MINNESOTA

Houston County
Spring Grove — 03 1100CST — 0 0 4 0 **Thunderstorm Winds**

Strong thunderstorm winds totally destroyed a new 80 foot by 60 foot camper shed in Spring Grove.

St. Louis County
Cloquet — 17 0835CST — 0 0 0 ? **Hail (1.00)**

Thunderstorms dropped 1-inch size hail in Cloquet.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

MINNESOTA Cont'd

MNZ003-004-005-007-008-009-011
Central-Northeastern Minnesota — 17 1000CST — 0 0 0 0 — **Heavy Snow**

An intense low pressure system moved from central Iowa to west-central Wisconsin then into the Great Lakes region from October 17th to the 18th. Snow began to fall by midmorning on the 17th over north-central Minnesota and fell heavily in the northeast during the night. A 40-mile swath of 6 inches or greater fell from near Remer to the Poplar Lake area in far northeastern Minnesota near the Canadian border. A narrow band of snow of 8 to 12 inches fell from Hibbing to Ely and Poplar Lake with Ely receiving 1 foot. The heavy, wet snow bent over 14- to 16-foot-tall cedars along Highway 169, between Virginia and Tower, blocking the road in some areas. Thirty miles of Highway 1 from Isabella to Ely was closed for a time due to downed trees and slippery conditions. Power was knocked out to 5,000 homes and businesses in the Ely, Tower, Babbit, and Embarrass areas for many hours.

MISSISSIPPI

Lee County
1 NW to 1 SE Verona — 04 0415CST 2.0 75 0 2 5 0 — **Tornado (F1)**

Three mobile homes had severe damage with one overturned on top of a car. Two minor injuries occurred in the mobile homes. The mobile homes had no visible tie-downs. Several metal buildings were destroyed and several houses had minor roof damage. One small wood framed house was pushed off its blocks. Numerous trees were broken off or uprooted. Total estimated property damage was $200,000.

MISSOURI

Marion County
Hannibal — 17 1520CST — 0 0 2 0 — **Thunderstorm Winds**

Winds to 60 mph were reported by Civil Defense.

Marion, Ralls Counties — 17 1535CST — 0 0 3 0 — **Thunderstorm Winds**

Trees were downed in Hannibal and just south of Hannibal in Ralls County.

Franklin County
Near Washington — 17 1602CST — 0 0 3 0 — **Thunderstorm Winds**

Power lines were downed 2.50 miles northwest of Washington and 2 miles east of Washington.

Saint Charles County — 17 1640CST — 0 0 1 0 — **Thunderstorm Winds**

Winds of at least 60 mph reported in St. Peters downed a billboard at Interstate 70.

MONTANA

MTZ003 — 02 2300MST-03 0400MST — 0 0 3 0 — **High Wind (G75)**

Choteau reported 86 mph winds.

MTZ003 — 04 0850MST — 0 0 3 0 — **High Wind (G76)**

Choteau reported 87 mph winds.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
MONTANA Cont'd									
MTZ007 **Lake County**	05 06	2200MST- 1800MST			0	0	0	0	**Heavy Snow**
	Twelve inches of snow fell at Rec Lodge and 16 inches at Mystic Lake.								
Just off-shore from Finley Point	06	0817MST			0	0	0	0	**Waterspouts**
	Two waterspouts were observed and video taped.								
MTZ003	12	1000MST- 1700MST			0	0	4	0	**High Winds (G65)**
	Great Falls reported 60 mph winds and Choteau 75 mph. Minor tree and roof damage was reported.								
MTZ007	13	1310MST			0	0	0	0	**High Wind (G56)**
MTZ008	26				0	0	3	0	**High Winds (G50)**
	Roof damage was reported in Scobey.								
Cascade County Ulm 5 SE	28	1100MST- 1500MST			0	0	5	3	**Grass Fire (G45)**
	Strong winds fanned a grass fire burning nearly 3,000 acres. Ten to 12 haystacks burned. The fire started from a power line being blown down.								
NEBRASKA									
NEZ001-005-011 **Northeastern Panhandle**	07 08	Early Morning			0	0	?	1	**Heavy Snow**
	Six to eight inches of snow fell in the panhandle of Nebraska.								
NEZ007-008-014 **Central Nebraska**	17	1130CST- 1400CST			0	0	?	?	**High Wind**
	Winds gusted to around 60 mph in Broken Bow and Ord in central Nebraska.								
NEVADA									
Clark County	19	1500PDT			0	0	0	0	**Thunderstorm Winds**
	The National Park Service reported 75 to 100 mph winds at Katherine's Landing in Lake Mead National Recreation Area.								
Clark County	19	1600PDT			0	0	5	0	**Thunderstorm Winds**
	The National Park Service reported one boat sunk, a fuel dock damaged, and signs and trees blown down by strong thunderstorm winds at Lake Mead National Recreation Area. Damage was estimated by the National Park Service at $125,000.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

NEW HAMPSHIRE

NHZ004 04 1822EST-2139EST 0 0 ? 0 **High Wind**

An intense low pressure system moving across the Hudson Bay pushed the frontal system across New Hampshire. Numerous trees were downed causing power outages and minor damage to houses and cars. Damage seems to have been concentrated in an area where the type pressure gradient coincided with deciduous trees that had not lost their leaves. Numerous trees and power lines were down resulting in several fires.

Rockingham County 13 2030EST 0 0 ? 0 **Lightning**
Rockingham County 13 2230EST 0 0 4 0 **Lightning**
Rockingham County 14 0355EST 0 0 ? 0 **Lightning**

The remnants of Tropical Storm Marco moved north across eastern New York state as Tropical Storm Lili approached the east coast Saturday night and early Sunday morning. Vertical motion was enhanced by a slow moving and dissipating north-south frontal system over western New England. Thunderstorms developed with several lightning strokes over southern New Hampshire. Lightning hit the master fire control panel at the Rockingham County complex. Lightning destroyed a house at 96 Bunker Hill Avenue, Stratham.

Rockingham County 13 Evening 0 0 ? 0 **Flood**

Heavy rains fell across southern New Hampshire as the remnants of Tropical Storm Marco, a dissipating cold front, and Tropical Storm Lili interacted over New England. Southeastern New Hampshire was deluged with some 4.50 inches of rain. Leaf-clogged drains caused streets to flood as well as some basement flooding. The Galley Hatch Restaurant had 5 inches of water in the basement and at 2142 EST a flooded furnace shorted out and started an electrical fire at 1 Charter St. Extension in Exeter.

Hillsborough County 18 1645EST 0 0 ? 0 **Lightning**

Lightning associated with a line of severe thunderstorms struck a power station in Amherst. Power was knocked out for 6,800 customers.

NHZ001-002-004 005-006 18 Night
19 Early Morning 0 0 ? 0 **High Winds**

High winds ahead of a cold front caused power outages. The New Hampshire Public Service Company reported outages due to trees on lines near Groveton. Concord Electric reported similar problems in the Capital area and Nashua. A barn was damaged due to the high winds in Alstead. Power was cut at the Dartmouth hospital. In Tilton 500 homes were without power. High winds in South Wolfeboro toppled a tree into a home causing damage to its roof.

Grafton County 18 2130EST 0 0 ? 0 **Thunderstorm Winds**

A line of severe thunderstorms passing through New Hampshire produced high winds which blew over a mobile home in Grafton and damaged another in Enfield. Rows of trees were knocked down in the same area.

Merrimack County 18 2200EST 0 0 ? 0 **Thunderstorm Winds**

WFTN Radio reported large trees down in Franklin and Franklin Falls.

Merrimack County 18 2200EST 0 0 ? 0 **Thunderstorm Winds**

WMUR TV-9 in Manchester reported approximately 26 trees were knocked down by strong winds near the town of Webster.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

NEW JERSEY, Northern

Hunterdon County	**09**	**0050EST-0300EST**			**0**	**0**	**?**	**0**	**Flood**

Heavy rains falling over eastern Hunterdon County caused the Raritan River to overflow near Flemington. In addition, several small streams and creeks overflowed. The worst of the flooding was observed near White House Station. Rainfall amounts ranged between 3 to around 4 inches with Flemington at 4.19 inches reporting the highest total.

Sussex County									
Cranberry Lake	**18**	**1730EST**			**0**	**0**	**?**	**0**	**High Wind**
Newton									
Hopatcong									

A tight pressure pattern ahead of a developing squall line generated damaging winds across sections of Sussex County. Numerous trees and power lines were reported down.

Middlesex County									
Somerset County									
Montgomery	**18**	**1805EST**			**0**	**0**	**?**	**0**	**Thunderstorm Wind**
	18	**1807EST**	**0.5**	**50-100**	**0**	**8**	**6**	**0**	**Tornado (F3)**
Somerset County									
Belle Mead									
Franklin Park	**18**	**1810EST-**							
Hillsborough		**1815EST**			**0**	**0**	**5**	**0**	**Thunderstorm Wind**
Passaic County									
N. Haledon	**18**	**1820EST**			**0**	**0**	**4**	**0**	**Thunderstorm Wind**
Morris County									
Hanover									
Morristown	**18**	**1820EST**			**0**	**0**	**4**	**0**	**Thunderstorm Wind**
Bergen County									
Fair Lawn	**18**	**1830EST**			**0**	**0**	**?**	**0**	**Thunderstorm Wind**
Union County									
Roselle	**18**	**1850EST**	**0.5**	**15-50**	**0**	**3**	**6**	**0**	**Tornado (F0)**
Union County									
Elizabeth									
Rahway	**18**	**1850EST**			**0**	**1**	**6**	**0**	**Thunderstorm Wind**
Essex County									
Newark Airport									
Millburn	**18**	**1850EST**			**0**	**20**	**4**	**0**	**Thunderstorm Wind**
Hudson County	**18**	**1850EST**			**0**	**0**	**?**	**0**	**Thunderstorm Wind**

A squall line developed rapidly over the western sections of northern New Jersey. Strong southerly winds gusting to 35 to around 40 knots ahead of this squall line pumped warm and moisture-laden air into the area. This warm and moist air collided violently with the colder air moving in with the squall. This squall line produced two tornadoes in northern New Jersey. The worst, an F3 tornado, hit Montgomery injuring eight people. It destroyed three homes and damaged 21 others. Another tornado touched down in Roselle damaging several homes and injuring three people. In addition to the tornadoes, thunderstorms generated damaging winds throughout northern New Jersey. The winds downed hundreds of trees and in the process damaged many homes and commercial property. At Newark Airport a large storage trailer overturned onto several cabs injuring five drivers. Another fifteen people received minor injuries at the airport due to flying debris. At a marina in Hudson County, eighteen boats in dry-dock were blown off their supporting stands and damaged.

Bergen County									
Lodi	**24**	**0100EST**			**0**	**0**	**0**	**0**	**Flood**

Runoff from a nearly 2-inch rainfall pushed the Saddle River at Lodi just over its banks during the early morning hours. The flooding was relatively minor and short-lived.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

NEW JERSEY, Southern

Camden County

Mt. Ephraim	18	1740EST			0	0	?	0	Thunderstorm Wind (G52)
Camden	18	1740EST			0	0	3	0	Thunderstorm Wind

Thunderstorm wind gusts were measured at 60 mph in Mt. Ephraim. Trees and utility lines were down in Camden.

Burlington County

1 SE Bordentown	18	1820EST	1.0	100	0	0	5	0	Torando (F1)

The tornado first touched down near a motel on Route 206 blowing over a large motel sign and blowing in windows on automobiles. On the other side of the highway glass was blown out of a sign. The tornado continued northeast snapping off or twisting off many trees. The tornado then moved across the Williamsburg Village subdivision taking down small trees, blowing out windows, taking siding and roof shingles off buildings, blowing down fences, sucking up chimney caps, and twisting stop signs. One townhouse had all the siding off one side. A garage door was pushed in. The windshield on a van was pushed in. One townhouse had the entire wall of the second floor torn off on one side. Wind speeds were estimated at 75 to 100 mph.

Cumberland County

2 E Manumuskin	18	1835EST			0	0	3	0	Thunderstorm Wind
Seabrook	18	1835EST			0	0	3	0	Thunderstorm Wind

Thunderstorm wind gusts uprooted trees.

Atlantic County

Hammonton	18	1930EST			0	0	?	0	Thunderstorm Wind (G54)
Atlantic City	18	1955EST			0	4	5	0	Thunderstorm Wind
Ventnor City	18	2000EST			0	0	?	0	Thunderstorm Wind (G63)
Margate City	18	2000EST			0	0	4	0	Thunderstorm Wind

Thunderstorm wind gusts were measured at 62 mph in Hammonton and at 73 mph on the Ventnor City fishing pier. Portions of the roofs were blown off apartments in Margate City. In Atlantic City numerous trees and power lines were down. A temporary partition was blown over at a casino and injured four people. There were some buildings that appeared to have structural damage. One construction crane was blown over. There were also numerous utility poles down.

Ocean County

1 NW Tuckerton	18	1945EST			0	0	3	0	Thunderstorm Wind

Thunderstorm wind gusts downed trees.

Cape May County

Cape May-Court House	18	1955EST			0	0	?	0	Thunderstorm Wind (G56)
Ocean City	18	1955EST			0	0	5	0	Thunderstorm Wind
Mayville	18	1955EST			0	0	3	0	Thunderstorm Wind
Stone Harbor	18	2000EST			0	0	3	0	Thunderstorm Wind

In the southern end of Ocean City thunderstorm wind gusts pulled stairways away from a building, blew out windows, severely damaged porches, and downed trees and utility lines. In Stone Harbor trees and utility lines were down. Thunderstorm wind gusts downed trees and utility lines in Mayville and were measured at 65 mph in Cape May Court House.

Atlantic County

Ventnor City	18	2008EST	1.0	1100	0	0	5	0	Tornado (F0)

The tornado moved across Ventnor City taking off portions of roofs, destroying a shed, and downing trees and utility poles. A large wooden deck was blown off a high rise building and went through the roof of a house next to the buildings.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

NEW MEXICO

NMZ002
Colfax County
Taos County
Rio Arriba County — 20 0100MST- / 21 0300MST — 0 0 0 0 — Snow

An upper-level trough moving east from the Great Basin, in combination with cold air moving south and west through northeastern New Mexico, brought some localized snows to the north-central mountains above about 6,500 feet elevation. Red River received 12 inches of snow, Chama 10 inches, and Angel Fire 4 inches. Moreno, which is between Red River and Eagle Nest, received 4 inches.

NEW YORK, Central

Oneida County									
Verona	04	0900EST			0	0	4	0	High Winds
Oneida	04	1035EST			0	1	3	0	High Winds
Sylvan Beach	04	1045EST			0	0	4	3	High Winds
Albany County	04	1100EST-							
		1300EST			0	0	4	4	High Winds

Strong gusty winds caused a freak accident in the city of Oneida. A New York Telephone Company repairman was working on lines when the wind blew the workman's ladder down, injuring his legs.

Sullivan County									
Hortensville to	13	1335EST-							
3 NE Hortensville		1340EST	3	108	0	0	5	5	Tornado (F1)
3 NE Hortensville	13	1340EST-							
to Callicoon Center		1345EST			0	0	0	0	Funnel Cloud

An F1 tornado touched down in the community of Hortensville. The storm caused major damage to six site built residences, destroyed three mobile homes and caused minor damage to several other buildings and outbuildings. About a mile northeast of the point of liftoff, several residents continued to observe a funnel cloud.

Orange County									
Fort Montgomery	18	1755EST			0	0	4	0	Thunderstorm Wind
West Point	18	1800EST			0	0	5	?	Thunderstorm Wind
Sullivan County									
Monticello	18	1800EST			0	0	?	?	Thunderstorm Wind (G63)
Orange County									
(V) Montgomery	18	1805EST			0	0	4	0	Lightning
Beaver Dam Lake	18	1820EST			0	0	3	2	Thunderstorm Wind
Ulster County									
Kingston	18	1845EST			0	0	4	2	Thunderstorm Wind
Greene County	18	1845EST-							
		2015EST			0	0	5	5	Thunderstorm Wind
(T) Catskill	18	1855EST			0	0	4	5	Thunderstorm Wind
(V) Catskill		1857EST			0	0	7	4	Thunderstorm Wind
(T) Athens	18	1900EST			0	0	4	4	Thunderstorm Wind
(V) Athens	18	1900EST			0	0	3	4	Thunderstorm Wind
Coxsackie	18	1904EST			0	0	3	3	Thunderstorm Wind
New Baltimore	18	1905EST			0	0	7	6	Thunderstorm Wind
Greenville	18	1907EST			0	0	4	3	Thunderstorm Wind
Freehold	18	1910EST			0	0	4	3	Thunderstorm Wind
Columbia County	18	1900EST-							
		2015EST			0	0	6	5	Thunderstorm Wind
Claverack	18	1910EST			0	0	4	4	Thunderstorm Wind
Rensselear County									
Schodack	18	1915EST			0	0	5	3	Thunderstorm Wind

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
NEW YORK, Central Cont'd									
Washington County									
Cossayuna	18	1930EST			0	4	6	6	Thunderstorm Wind
Middle Falls	18	1930EST			0	0	4	3	Thunderstorm Wind
Greenwich	18	1930EST			0	0	4	3	Thunderstorm Wind
Columbia County									
Chatham	18	1934EST			0	2	7	0	Thunderstorm Wind
Ghent	18	1935EST			0	1	5	?	Thunderstorm Wind
Livingston	18	1935EST			0	0	4	4	Thunderstorm Wind
Stuyvesant	18	1935EST			0	0	4	5	Thunderstorm Wind
Columbia County									
Airport	18	1935EST			0	0	7	0	Thunderstorm Wind
Claverack	18	1935EST			0	0	5	4	Lightning
Kinderhook	18	1935EST			0	0	4	4	Thunderstorm Wind
Greene County									
Medway-Grapeville	18	1935EST-1943EST			0	0	6	5	Microburst
Dutchess County	18	1900EST-2015EST			0	0	4	4	Thunderstorm Wind
Pine Plains	18	1940EST			0	0	4	3	Thunderstorm Wind
Rhinebeck	18	1945EST			0	0	3	3	Thunderstorm Wind
Red Hook	18	1945EST			0	0	4	2	Thunderstorm Wind
Ulster County									
Kingston	18	1955EST			0	1	4	0	Thunderstorm Wind
Kingston	18	1956EST			0	1	4	0	Thunderstorm Wind
Washington County									
Cossayuna	18	2000EST			0	0	4	4	Thunderstorm Wind
Warren County									
Horicon	18	2004EST			0	0	3	3	Thunderstorm Wind
Queensbury	18	2011EST			0	0	3	3	Thunderstorm Wind
Saratoga County									
Saratoga Spring	18	2018EST			0	0	4	4	Thunderstorm Wind
Ballston Spa	18	2024EST			0	0	4	4	Thunderstorm Wind
Delaware County									
Downsville	18	2030EST			0	0	5	4	Flash Flood
Delhi	18	2030EST			0	0	3	?	Small Stream Flooding
Walton	18	2030EST			0	0	3	3	Small Stream Flooding
Hamden	18	2030EST			0	0	3	3	Small Stream Flooding
Sullivan County									
Youngsville	18	2045EST			0	0	5	3	Thunderstorm Wind (G70)
Ulster County									
High Falls	19	0100EST			0	0	6	0	Lightning
Putnam County									
Brewster	19	0105EST			0	0	4	0	Lightning

Strong winds accompanied by thunder and lightning brought down large numbers of trees, tree limbs, and power lines. In Youngsville, Sullivan County residents reported 60-foot tall trees ripped out by their roots. Heavy rain, 4.20 inches in two hours, created considerable flood problems in Delaware County. A power substation at High Falls, Ulster County, was severely damaged by a lightning bolt during the early morning hours. Power was out for about 16 hours to over 2,000 homes; however, a handful of homes remained without power until Saturday afternoon.

The worst damage, however, occurred in Columbia and Greene counties. Damage was widespread in these counties, with numerous roofs ripped off, aircraft damaged, and extremely large trees taken out by their roots. High winds and tidal effects combined forces at Athens to bring down some "flats". One was last seen floating down river, but has not yet been recovered. Local newspaper ads asked for any information on the whereabouts of the flat.

A few minor injuries were reported during the event, but they did not require overnight hospital stays.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

NEW YORK, Central Cont'd

Oneida County								
Canastota	19	0600EST	0	0	4	0		High Wind
Wampsville	19	0600EST	0	0	4	0		High Wind

High winds brought down trees and power lines.

Areawide	19	Early AM	0	0	0	0		Earthquake

An earthquake (4.7 to 5.2 Richter scale) shook eastern New York. The quake was centered 70 miles north of Ottawa, Canada.

NYZ006								
Susquehanna	22	PM-						
Region	24	AM	0	0	5	?		Small Stream Flooding
NYZ006								
Susquehanna	23	PM-						
Region	25	AM	0	0	5	0		Flood
NYZ012	22	PM-						
Saratoga-Lake George Region	24	AM	0	0	7	?		Small Stream Flooding
Albany County								
Guilderland	22	2100EST	0	0	4	0		Small Stream Flooding
Clinton County								
Alice Falls	22	Unknown	0	0	4	0		Dam Break
Oneida County								
Westmoreland	23	0300EST	0	0	4	0		Small Stream Flooding
Kirkland	23	0300EST	0	0	4	0		Small Stream Flooding
Herkimer County								
Little Falls	23	0335EST	0	0	4	?		Flash Flood
Herkimer	23	0410EST	0	0	4	0		Small Stream Flooding
Little Falls	23		0	0	5	4		Flood
Warren County	23	0500EST	0	0	5	0		Mud Slides
Saratoga County								
Stillwater	23	0500EST	0	0	3	?		Small Stream Flooding
Columbia County								
Claverack	23	AM	0	0	3	0		Small Stream Flooding
Greenport	23	AM	0	0	3	0		Small Stream Flooding
(C) Hudson	23	AM	0	0	3	0		Small Stream Flooding

Rainfall in excess of 3 inches fell on southern Clinton, Essex, and Warren counties. Heaviest rainfall was reported near Tongue Mountain, where water cascaded down the mountain and washed out portions of State Route 9N and Warren County Route 11, along Lake George. In addition to the flooding, excessive rainfall also triggered numerous mud slides. State Route 9N is expected to be out of service for many months. A coffer dam was washed out at Alice Falls, in Ausable Chasm. In Lisle, Broome County, five persons had to be rescued by rowboat when the Dudley Creek overflowed. In Tioga County, two bridges were severely damaged. In New Hartford, Onieda County, sand bags had to be used to divert water from the Sauquoit Creek. In Columbia County, the Claverack Creek also overflowed, forcing local officials to close Boo Rock Road and Wire Road. In the city of Hudson High, water flowing over State Route 9-G washed a car off the road. The lone female occupant was uninjured.

Dutchess County								
Red Hook	26		0	0	3	0		High Winds
Beacon	26		0	0	4	0		High Winds
(T) Wappingers	26		0	0	3	0		High Winds

Trees and power lines were downed.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1990

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
NEW YORK, Coastal									
NYZ016-017	13	0900EST-							
Suffolk County		1300EST			0	0	?	0	Flood
		Warm and moisture-laden tropical air, swirling northward over the area, generated rainfall amounts of between 2 to 3 inches over sections of Long Island. Most of this rain fell during a rather short period. This produced extensive flooding in Bay Shore, Babylon, Deer Park, East Northport, and Central Islip.							
Suffolk County									
Stony Brook	13	2310EST			0	0	?	0	Flash Flood
		An accumulation of heavy rains during the morning and early afternoon hours and again during the night, caused a section of a wall surrounding a 10-acre recharge basin to collapse. The rapid release of water buckled a nearby roadway and also damaged several cars. In addition, a section of railroad tracks was severely undermined by the torrent and needed to be closed for about five hours until repairs could be made.							
Rockland County									
Suffern	18	1838EST	1.0	100-200	0	1	?	0	Tornado (F0)
Westchester County	18	1900EST			0	0	?	0	Thunderstorm Wind
Richmond County									
Great Kills	18	1900EST			0	0	?	0	Thunderstorm Wind
New York County	18	1900EST			0	1	4	0	Thunderstorm Wind
Kings County	18	1900EST			0	0	?	0	Thunderstorm Wind
Suffolk County									
Bridgehamton	18	2220EST-							
East Hampton		2240EST			0	0	?	0	Thunderstorm Wind
Southampton									
Sagaponack Spring		A squall line developed rapidly over the western sections of northern New Jersey. Strong southerly winds gusting to 35 to around 40 knots ahead of this line pumped warm and moisture laden air into the area. This warm and moist air collided violently with the colder air moving in with the squall. This line produced one weak tornado at Suffern injuring one person and damaging many homes. In addition to the tornado, thunderstorms generated damaging winds in Westchester County and in New York City. One person was injured in Manhattan when construction material was blown off a building onto her car. Over three hours later a regenerated squall line produced damage over eastern Suffolk County.							
NYZ015-016-017	23	2050EST-							
Southeastern	24	0100EST			0	0	?	0	Flood
New York									
NYZ014	23	2330EST-			0	0	?	0	Flood
Westchester County	24	0800EST			0	0	?	0	Flood
		A strong low pressure system moving northeastward along the coast dumped 2 to 2.50 inches of rain across southeastern New York. Extensive flooding was observed in Richmond, Nassau, Suffolk, and Westchester counties. Also in Westchester County the Saw Mill and Hutchinson Rivers overflowed their banks flooding their adjacent parkways. These parkways remained flooded in the early morning hours.							
NEW YORK, Western									
Erie County									
Lancaster	04	1950EST			0	0	3	0	Thunderstorm Wind
Cheektowaga	04	1950EST			0	0	3	0	Thunderstorm Wind
		A cold front crossed western New York during the evening hours. Thunderstorms accompanying the front caused wind damage. Local police departments reported large trees and numerous power lines were downed.							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
NEW YORK, Western Cont'd									
Erie County									
Lancaster	10	1950EST			0	0	3	0	**Thunderstorm Wind**
Cheektowaga	10	1959EST			0	0	3	0	**Thunderstorm Wind**
		A cold front crossed western New York during the evening hours. Thunderstorms accompanying the front caused wind damage. Local police departments reported large trees and numerous power lines were downed.							
NYZ022	18	1530EST			0	0	4	0	**High Winds**
NYZ001	18	1730EST			0	0	4	0	**High Winds**
		A deep low pressure system pushed a strong cold front across western New York producing high winds. Local police authorities reported large trees and numerous power lines downed. The local power company reported nearly 4,000 customers were affected by the power failures.							
NYZ003	23	1700EST			0	0	4	0	**Floods**
		Heavy rains dropped up to 2.50 inches of rain on the central-southern tier of New York, flooding streets and homes and washing out bridges. Many main and secondary roads throughout the area were under water through the early morning hours of the 24th. Area creeks and streams reached bank full. County Route 44 in Corning was closed and was under 3 feet of water. A bridge on Tannery Creek Road in Lindley was washed out.							
NORTH CAROLINA									
Brunswick County									
Sunset Beach	10	1500EST			0	0	0	0	**Coastal Flood**
		Some minor coastal flooding occurred in Brunswick County near Sunset Beach. The bridge to Sunset Beach was closed.							
NCZ07 08 09 13 Avery, Watauga, Ashe, Burke, Caldwell, Polk, Rutherford, McDowell, Mecklenburg, Union, Anson, Cabarrus, Stanley, Richmond, Montgomery Counties	10-13				2	0	6	0	**Flash Flood**
		From the afternoon of October 10th through October 13th, 8 to 10 inches of rain fell over the northern mountains, foothills, and the southern piedmont. Much of the rain was the result of the remnants of Tropical Storms Marco and Klaus moving over the state. Flash flooding began in Mecklenburg and Union counties between 1900 and 2100 EST on the 10th. A mobile home park in Union County was flooded. Early on the 11th flash flooding began in Cabarrus, Anson, Richmond, Stanley, and Montgomery counties. Most of the flood damage was to bridges, roads, and highways. A 14-car train derailed at Marshville in Union County. In Anson County schools were closed on the 11th. A 45-year-old man was drowned, when his small station wagon was swept into a creek outside of Peachland, as he attempted to drive over a flooded bridge. By the 12th serious flash flooding was reported in Gaston, Cleveland, Catawba, and Lincoln counties. Many roads and bridges were washed out. In Lincoln County a young man drowned, when he attempted to go canoeing in the flooded South Fork River near Lincolnton, without a life jacket. Especially hard hit were the roads and bridges in Cleveland County. In Avery County flash flooding on the Linville River began around 1000 EDT on the 12th. Many bridges and roads were flooded and damaged causing some people to flee their homes and stranding campers. Between 1400 and 1600 EST flooding began in Ashe, Burke, Watauga, Caldwell, Polk, and Rutherford counties. Most of the damage was to bridges and roads, as many streams and creeks came out of their banks. Flash flooding began in McDowell and Burke counties about 1800 EST. A car was washed off a flooded road near Morganton. The driver and passengers were able to swim to safety. The flooding lasted in most areas until about 1400 EST on the 13th except in McDowell and Burke counties where flooding lasted until 1800 EST on the 13th. (V45M, O30M)								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

NORTH CAROLINA Cont'd

Guilford County
Summerfield 18 1558EST 0 0 0 0 **Thunderstorm Wind**

Thunderstorm winds blew down two trees near Summerfield.

Union County
Monroe 18 1600EST 12 100 0 2 5 0 **Tornado (F3)**

A small but strong tornado touched down about 6 miles west of Monroe. It moved east and crossed the northern part of Monroe and lifted about 6 miles east-northeast of the city. The tornado briefly touched four times along the track. The tornado seemed to be strongest as it crossed north Monroe. There was considerable damage to fences, porches, shingles and outbuildings. The roof was blown off one house. Two people were injured in a car. A total of five cars were severely damaged at a mall. Some were overturned. Damage estimates were near $170,000.

Richmond County
Mount Pleasant 18 1630EST 0 0 4 0 **Thunderstorm Wind**

Strong thunderstorm winds damaged the roof of a church and a house and blew down numerous trees in Mount Pleasant.

NCZ08 22 1900EST 0 0 5 0 **Flash Flood**
Anson, Union, Gaston, Mecklenburg, Cabarrus Counties

A second round of flash flooding hit Mecklenburg, Anson, Gaston, and Cabarrus counties at about 2000 EST on the 22nd. In Charlotte there was widespread stream and street flooding. People were trapped in their cars in two locations in south Charlotte. In Kannapolis, in Cabarrus County, a rest home was evacuated. Many major roads in the county were flooded. Flooding lasted until about midnight in most areas. Schools in Anson and Union counties opened late on the 23rd due to high water on many main and secondary roads.

Hoke County
3 W Rockfish 23 0300EST 0.5 75 0 0 3 0 **Tornado (F0)**

A small tornado touched down briefly in the Puppy Creek area about 3 miles west of Rockfish. The tornado blew down numerous trees and blew the underpinning from 15 mobile homes.

Harnett County
Wake County
3 W Angier 23 0315EST 1.5 100 0 0 4 0 **Tornado (F1)**

A small tornado touched down 3 miles west of Angier and moved north-northeast and ended about 100 yards into Wake County northwest of Angier. The path of the tornado was about 100 yards wide and 1.5 miles long. The tornado damaged one house and three mobile homes. A boat on a trailer and a number of outbuildings were destroyed. Numerous trees were blown down along the path.

Pender County
Scotts Hill 23 0540EST 0 0 4 0 **Thunderstorm Wind**
Randolph County
2 E Ramseur 23 0600EST 0 2 4 0 **Flash Flood**

Two people were seriously injured when two cars plunged into a chasm formed when flood waters from a creek washed out a rural paved road 2 miles east of Ramseur. Many roads in the county had been flooded on the 22nd and early on the 23rd. Strong thunderstorm winds destroyed three boats and about 100 feet of dock at a marina in Scotts Hill.

Carteret County
Newport 23 0823EST 0.75 100 0 0 4 0 **Tornado (F1)**

A small tornado touched down briefly in Newport overturning a mobile home, destroying two tractors, and damaging two farm buildings and a truck.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

NORTH CAROLINA Cont'd

Carteret County
Emerald Isle — 25 — 1015EST — 0 — 0 — 0 — 0 — **Waterspout**

A waterspout was sighted in the coastal waters off Emerald Isle.

Stanley County
Locust — 25 — 1230EST — 0 — 0 — 0 — 0 — **Hail (0.88)**

Nickel-size hail fell in the western part of Stanley County until about 1245 EST.

Mecklenburg County
Union County — 25 — 1600EST — 0 — 0 — 0 — 0 — **Flash Flood**

From about 1730 to 2200 EST on the 25th heavy rains produced flash flooding on roads, creeks, and streams in the city of Charlotte and in Union County. Carowinds Theme Park was closed due to high water in the area.

Jones County
5 W Trenton — 25 — 1905EST — 0 — 0 — 0 — 0 — **Hail (1.00)**

Quarter-size hail fell about 5 miles west of Trenton.

Coastal North Carolina — 25-26 — 1 — 0 — 6 — 0 — **Coastal Storm**

A fast-developing low pressure system off the North Carolina coast produced high winds along much of the coast. Recorded maximum wind gusts ranged from 50 to 60 knots. High winds, strong currents, and offshore seas of 14 to 16 feet, pushed the dredge Northerly Island into the Herbert C. Bonner Bridge about 0130 EDT on the 26th, knocking out a 300-foot section of the bridge. The bridge is the only link between Hatteras Island and the mainland, other than ferry service. Phone and electric service to the bridge was estimated to be from $1 to $2 million. An estimated $15 million will be lost in tourist trade before the bridge can be repaired in four to six months. The storm produced only minor ocean overwash, but soundside flooding on Hatteras was reported to be the "...worst in many years". Two to 3 feet of water covered many yards in Frisco and parts of Highway 12. A woman drowned in the predawn hours of the 26th near the Cedar Island bridge on Highway 12. She drove into a flooded area and lost control of her car which ran off the road. The car was totally submerged in the ditch. (V42F)

NORTH DAKOTA

NDZ002
Parts of North-western North Dakota — 26 — 1600CST-1800CST — 0 — 0 — 4 — 4 — **High Wind**

Sustained winds of 40 to 45 mph with gusts to 67 mph were recorded at the Williston weigh station. These dry winds occurred with the passage of a fast-moving cold front. Warm and dry conditions preceded the cold frontal passage. The winds fanned rangeland fires and caused widespread blowing dust and smoke. Visibilities were severely restricted and 11 people were hurt in minor traffic accidents. The wind and fires destroyed several cabins and other rural structures.

OHIO

Williams County
Montpelier — 11-14 — 1700EST-0930EST — 0 — 0 — 0 — 4 — **Flood**

Heavy rain pushed the St. Joseph River at Montpelier to 12.9 feet at 1700 EST on the 12th. This was nearly 2 feet above the 11 foot flood stage. Minor damage occurred along the river.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME (LOCAL STANDARD)	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

OKLAHOMA

McCurtain County
Countywide 07 1555CST-
08 1200CST 0 0 4 0 **Flash Flood**

Persistent thunderstorms with heavy rains drenched southern portions of the county with rainfall in excess of 8 inches. Amounts of 4 to 6 inches were reported elsewhere. Several roads were washed out and damage to bridges was reported. Several schools were closed due to flooded roads in Smithville. Early damage estimates are $50,000.

Pottawatomie County
8 W Tecumseh 20 1935CST-
1940CST 0 0 3 0 **Thunderstorm Wind (G52)**

Thunderstorm winds blew several shingles off the roof of a house and broke several large limbs off trees. Hail slightly larger than pea-size accumulated to a depth of 8 inches. Total damage is estimated at $500.

OREGON

ORZ001, 004
Northwestern Oregon 18 **Heavy Rain**

Rainfall for 6 hours totaled 1.30 inches at Lee's Camp and 1.20 inches at Eugene.

ORZ001
Northern Coast 25 **High Wind**

Winds associated with a frontal system gusted to 58 mph at Tillamook and 56 mph at Seaside.

ORZ001
Northern Coast 27 **High Wind**

Winds associated with a frontal system gusted to 57 mph at Pacific City and 49 mph at Astoria.

ORZ003
Southern Coast 29 **High Wind**

Wind ahead of a strong Pacific cold front peaked at 70 mph at the Cape Blanco Lighthouse.

ORZ002-004
Southwestern Oregon 29-
30 **Heavy Rain**

A slow-moving cold front poured significant rain over the southwestern sections of the state. Various rainfall totals and time periods include: 4.45 inches/24 hours near Agness, 4.24 inches/24 hours northeast of Brookings, 3.75 inches/24 hours at Bandon, 2.60 inches/24 hours at Reedsport and 2.30 inches/16 hours near Florence.

PENNSYLVANIA, Eastern

Tioga County 11 1300EST 0 0 ? 0 **Flash Flood**

Heavy rain resulted in some flooding along most feeder streams and there was flooding along the Cowanesque River from Cowanesque to Knoxville. Many roads were flooded in the northern part of the county. Flooding occurred between 1300 and 1600 EST.

Adams County 13 0100EST 0 0 ? 0 **Flash Flood**

Heavy rain caused flooding along the Conewago Creek. Several roads were closed by the flooding and also some basements were flooded. Automobiles in a used car lot were also flooded. Flooding occurred between 0100 and 1030 EST.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

PENNSYLVANIA, Eastern Cont'd

PAC067-097-099-109-119 Juniata, Northumberland, Perry, Snyder, Union Counties	13	0130EST			0	0	?	0	**Flash Flood**

At 0020 EST Williamsport reported 1.10 inches of rain in the past hour and at 0130 EST Union County had 1.50 inches of rain in the past hour and heavy rain continued. At 0200 EST minor street flooding was occurring in Northumberland County and in Perry County by 0055 EST. By 0130 EST street and highway flooding was occurring in Union, Northumberland, and Perry counties. By 0230 EST, local street flooding and flooding of many small streams was occurring in Juniata, Snyder, Northumberland, Union, and Perry counties. At 0330 and 0430 EST, local street flooding and small stream flooding continued in Northumberland, Snyder, Union, and Perry counties. Flooding on small streams did not subside until around 1230 EST.

PAC001-041 Adams, Cumberland Counties	13	0130EST			0	0	?	0	**Flash Flood**

At 0130 EST street and highway flooding and small stream flooding was reported in Cumberland County and also started in Adams County before daybreak. Nearly 4 inches of rain fell during the night at Pine Grove Furnace in Cumberland County. Arentville in Adams County reported heavy rain during the night. Flooding continued on small streams through the morning. Flooding was reported on the Toms Creek, Conewage Creek, and Marsh Creek in Adams County and on the Mountain Creek and Conodoguinet Creek in Cumberland County. The flooding mostly ended in Adams County by 1300 EST but continued until around 1900 EST in Cumberland County.

Bradford County	13	0600EST			0	0	?	0	**Flash Flood**

Heavy rain caused flooding along the Towanda and Sugar Creeks and along many feeder streams. A few families had to be evacuated along Towanda Creek. Several roads also were closed by flooding. Flooding occurred between 0600 and 0900 EST.

Lycoming County	13	0800EST			0	0	?	0	**Flash Flood**

Heavy rain caused minor flooding along the Lycoming and Loyalsock Creeks from 0800 to 1000 EST. Minor flooding occurred along Muncy Creek and at Heleeka (north of Williamsport) and in the Gardenview area from 0900 to 1100 EST. At least two roads along Muncy Creek were closed by flooding. There was also a significant amount of basement flooding.

Centre County								
State College	18	1030EST			0	0	3	0	**Thunderstorm Wind (G64)**
Centre Hall	18	1130EST			0	0	3	0	**Thunderstorm Wind**
Axeman	18	1130EST			0	0	3	0	**Thunderstorm Wind**

Wind gusts at the Pennsylvania State University weather station reached 60 mph numerous times between 1030 and 1330 EST. The peak gust was 74 mph. The wind gusted to 58 mph with the passage of the cold front at 1330 EST. Numerous trees were down in State College. Numerous trees were also down in Centre Hall and in Axeman along Route 144.

Dauphin County								
Harrisburg	18	1500EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts downed trees and utility lines in Harrisburg and also in the southern part of the county between 1500 and 1630 EST.

Cumberland County								
Mechanicsburg	18	1535EST			0	0	3	0	**Thunderstorm Wind**
Mt Holly Springs	18	1535EST			0	0	3	0	**Thunderstorm Wind**
1 N Mt Holly Springs	18	1535EST			0	0	3	0	**Thunderstorm Wind**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

PENNSYLVANIA, Eastern Cont'd

Camp Hill	18	1545EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts downed trees and utility lines. In Mechanicsburg and in Mt. Holly Springs it was between 1535 and 1730 EST.

Centre County									
Bellefonte	18	1630EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts downed trees and utility lines.

Lancaster County									
Lancaster	18	1630EST			0	0	3	0	**Thunderstorm Wind**
Lititz	18	1630EST			0	0	3	0	**Thunderstorm Wind**
Lancaster	18	2030EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts downed trees and utility lines throughout the county between 1630 and 1700 EST and again between 2030 and 2100 EST. A few of the trees fell on houses or automobiles.

Chester County									
Cochranville	18	1630EST			0	0	4	0	**Thunderstorm Wind**
West Chester	18	1700EST			0	0	3	0	**Thunderstorm Wind**
Oxford	18	1815EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts blew a barn onto a road in Cochranville, downed a tree onto automobiles in West Chester, and downed trees and utility lines in Oxford.

Northampton County									
3 N Nazareth	18	1640EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts downed trees.

Montgomery County									
1 SE Cedars	18	1722EST			0	0	5	0	**Thunderstorm Wind**
2 NE Cedars	18	1722EST			0	0	3	0	**Thunderstorm Wind**
Lansdale	18	1727EST			0	0	4	0	**Thunderstorm Wind**

Thunderstorm wind gusts downed trees and caused extensive damage to two houses. Windows were blown out and portions of walls were blown off in Worcester, which is southeast of Cedars. A portion of the roof was blown off a house in Towamencin Township, which is northeast of Cedars. In Lansdale a one car metal garage was lifted up and blown out into a street.

Delaware County									
1 N Media	18	1745EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts damaged large trees along a 200 yard path.

York County									
York	18	2030EST			0	0	3	0	**Thunderstorm Wind**

Thunderstorm wind gusts downed trees and utility lines in the city of York, and on the south to the Maryland border, between 2030 and 2100 EST.

York County	23	1200EST			0	0	?	0	**Flash Flood**

Heavy rain of more than 2 inches caused flooding along streams. The flooding was mainly in Paradise, Dover, West Manchester, and Fairview Townships. The flooding covered some roadways causing some roads to be closed. The Big and Little Conewago Creeks were among the streams that flooded. Flooding occurred between 1200 and 1900 EST.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

PENNSYLVANIA, Eastern Cont'd

Adams County 23 1200EST 0 0 ? 0 **Flash Flood**

Heavy rains of more than 2 inches caused flooding in the Fairfield, Arentsville, and Carroll Valley areas. Some roadways were flooded and had to be closed. Flooding occurred between 1200 and 1900 EST.

Lycoming, Sullivan, and Tioga Counties 23 1500EST 0 0 3 0 **Flash Flood**

Heavy rain of more than 2 inches caused flooding along smaller streams and along a few major streams. Damage was minimal, mostly basement flooding and some road closings. Flooding occurred between 1500 and 2300 EST.

Bradford County 23 1500EST 0 0 5 0 **Flash Flood**

Heavy rain of almost 3 inches caused flooding which closed many roads, some for an extended period. Several families had to be evacuated along Towanda Creek east of Canton and a couple of families near the airport southeast of Towanda. Road and bridge damage was reported in Athens Township (east of Athens) and near Burlington. Flooding occurred between 1500 EST on the 23rd and 0500 EST on the 24th.

PENNSYLVANIA, Western

PAZ005
Laurel Mountains 04 1200EST 0 0 0 0 **High Wind**

Trees and power lines were downed in eastern Westmoreland County from nonconvective winds.

Bedford County
7 E Bedford
19 SW Bedford 22 1100EST-2000EST 0 0 2 0 **Flood**

The Juniata River was 5 feet above flood stage at Everett. A tributary of Wills Creek in Hyndman closed Creek Road due to high water. Shobers Run and Little Wills Creek were over bank full. A golf course was flooded and creeks were running over roadways. There were basements flooded in Juniata Township. Some slight damage occurred to storage sheds.

RHODE ISLAND

RIZALL 04 1200EST-2400EST 0 0 4 0 **High Winds**

Strong and gusty south and southwest winds gusting up to 40 to 50 mph downed trees and tree limbs, resulting in scattered power outages affecting several thousand electric customers statewide. A 40-foot sailboat ran aground in Newport, where gusts of 50 mph were recorded. In West Warwick, a large limb fell on a van causing several thousand dollars damage.

RIZ001 13 1200EST-14 0300EST 0 0 5 0 **Heavy Rain**

A tropical air mass associated with the remnants of Tropical Storm Marco, which moved northeastward from the southeastern United States, brought tropical downpours and thunderstorms to the northern portion of the state. Up to 3 inches of rain was reported from Woonsocket during an eight-hour period. Many roads were flooded and some were washed out. A mud slide blocked a road in Burrillville. In Woonsocket, a concrete retaining wall collapsed crushing three vehicles. A brook overflowed flooding a restaurant.

PLACE	DATE	TIME (LOCAL STANDARD)	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
RHODE ISLAND Cont'd									
RIZALL	18	1200EST-2300EST			0	0	4	0	**High Winds**
Strong- to gale-force southerly winds preceded an eastward-moving squall line and strong cold front. Winds gusting to 40 to 60 mph occurred statewide. Burrillville reported a gust to 65 mph. Numerous tree limbs and some trees were knocked down causing scattered power outages and some property damage.									
Washington County Westerly	18	2248EST			0	0	5	0	**Thunderstorm Winds (100 KTS)**
A severe thunderstorm, associated with a squall line and strong and rapidly-moving cold front, spawned a downburst wind which slammed into the Misquamicut section of Westerly, lifting a roof of one motel and leveling another. Some large trees were snapped off and uprooted and nearby buildings were damaged. Total property damage was estimated at around $350,000.									
Kent County Warwick	18	2310EST	4.5	75	0	0	5	0	**Tornado (F1)**
A severe thunderstorm, which had struck Westerly just minutes earlier, spawned a small tornado which moved rapidly northeastward along a narrow path through Warwick. The tornado came ashore near Sea View Drive and Forest, crossed the Oakland Beach peninsula to the shore of Old Warwick Cove, across the Longmeadow section to Narragansett Bay. A total of 17 houses were damaged, many by falling trees. One building lost its roof. Damage to private property was estimated to be around $250,000.									
Kent County	18	2255EST-2330EST			0	0	5	0	**Thunderstorm Winds (50 KTS)**
A severe thunderstorm, which produced a severe downburst wind in Westerly, moved northeastward from Washington County into Kent County with winds to 60 mph. Scattered property damage and power outages occurred in Exeter, East and West Greenwich, and Warwick.									
Providence County	18	2300EST			0	0	?	0	**Thunderstorm Winds**
Trees were downed by thunderstorm winds.									
SOUTH CAROLINA									
Cherokee County 3 S Gaffney	04	1200EST			0	0	4	0	**Thunderstorm Winds**
Spartanburg County Whitney	04	1315EST			0	0	2	0	**Lightning**
A rapidly-moving, low-topped thunderstorm became severe briefly and produced some damaging winds near Gaffney. One mobile home was blown on its side, and another was shifted on its foundation. Some power outages were reported in the area. Lightning struck a tree in a wooded area near Chapman Elementary and Whitlock Junior High Schools, causing a power line to come down.									
SCZ007 Northern Coast	06	1116EST-1456EST			0	0	?	0	**Coastal Flooding**
SCZ007 Northern Coast	07	0916EST-1054EST			0	0	?	?	**Coastal Flooding**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME (LOCAL STANDARD)	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

SOUTH CAROLINA Cont'd

SCZ007 Northern Coast	10	1116EST- 1530EST	0	0	?	?	Coastal Flooding

The highest tides of the year occurred at the same time as the tropical systems. The combination of high pressure off the coast, and the tropical systems added to the tides, destroyed many miles of sand dunes between Folly Beach and North Myrtle Beach, built up by the U.S. Army Corps of Engineers, following Hurricane Hugo, in 1989.

Orangeburg County Countywide	10 11	1730EST- 1745EST	0	0	?	?	Flash Flood
Calhoun County Countywide	10 11	1730EST- 1745EST	0	0	5	?	Flash Flood
Richland County Southern Sections	10 11	2300EST- 2300EST	0	0	?	?	Flash Flood
Kershaw County Camden	10	1900EST	4	0	0	0	Flash Flood

Four people drowned when a 50-foot brick section of Kendall Lake Dam burst less than a mile upstream from their stalled car, sending a wave of water from the 80-acre lake across a commercial section of Camden. The creek overflowed its banks and had stalled cars on U.S. 1 and Haile Street, also in Camden, about 50 yards from the dam. Motorists trying to push cars through waist-deep water were swept 50 to 100 yards downstream when the dam burst. Those people clung to limbs until rescue workers could reach them by boats. The four victims were waiting in a car as four other passengers helped push stalled cars off the road, when they became trapped in the floodwaters. Also in Camden, flooding from the same breached dam burst through the plate glass windows of a 50-year-old restaurant, sweeping the contents downstream, after knocking down the concrete brick back wall of the building. Several other dams failed in the county, prompting officials to close several roads. (M25V, F14V, M09V, M10V)

Kershaw County Countywide	10 11	1900EST- 1730EST	0	0	6	?	Flash Flood
Sumter County Countywide	10 11	1930EST- 1730EST	0	0	5	?	Flash Flood
Chesterfield County Countywide	10 11	2000EST- 0200EST	0	0	4	?	Flooding
Lancaster County Countywide	10 11	2105EST- 0100EST	0	5	?	?	Flooding

Two incidents involving five people happened in the Kershaw area. In one, water flooded a section of Gills Creek Road, 1 mile west of Kershaw, sweeping a vehicle off the road, leaving two passengers stranded in a swollen creek. Two men attempted to rescue the couple, and were trapped by the current and stranded. All four victims were treated for minor injuries and released. In a separate incident, a man suffered minor injuries when the vehicle he was driving ran into a water-filled gully where a section of White Bluff Road, near the intersection of U.S. Highway 601 and S.C. Highway 903, had been eroded by heavy rains.

Clarendon County Countywide	10 11	2300EST- 1730EST	0	0	?	?	Flash Flood
Charleston County Countywide	11	0940EST- 1700EST	0	0	?	0	Urban Flooding

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
SOUTH CAROLINA Cont'd									
Lee County Countywide	11	1000EST-1730EST			0	0	5	?	Flash Flood
Georgetown County Georgetown	11	1130EST			0	0	?	0	Urban Flooding
Colleton County Walterboro	11	1315EST			0	0	4	0	Flooding
Dorchester County Countywide	11	1355EST			0	0	?	?	Urban Flooding
Berkeley County Countywide	11	1415EST			0	0	?	?	Urban Flooding
Williamsburg County Countywide	11	1605EST			0	0	?	?	Urban Flooding

The moisture associated with the dissipating Tropical Storm Klaus moved inland, and in conjunction with an approaching active cold front, brought torrential rains to the majority of the state. After the remnants of Klaus dumped up to 12 or more inches of rain in the state, the cold front stalled on the Appalachian Mountains for about a day on the 11th.

Evacuations were necessary in Darlington County, where 2,000 people were affected. Other evacuations occurred in Calhoun, Kershaw, Lee, and Orangeburg counties, each of them for a small number of people.

McCormick County Countywide	12	0200EST			0	0	4	?	Flooding
Aiken County Countywide	12	0330EST			0	0	5	?	Flooding
Edgefield County Countywide	12	0400EST			0	0	5	?	Flooding
Greenwood County Ninety Six	12	0600EST			0	0	4	?	Flash Flood
Spartanburg County Southern sections	12	0810EST			0	0	?	?	Flash Flood
Jasper County Countywide	12	0910EST			0	0	?	?	Urban Flooding
Spartanburg County Spartanburg	12	0924EST			0	0	3	?	Flash Flood
Spartanburg	12	1530EST			0	0	?	0	Urban Flooding
Cherokee County Countywide	12	1600EST-2100EST			0	0	6	6	Flash Flood
Spartanburg County Countywide	12	1700EST-1855EST			1	0	6	?	Flash Flood

One fatality occurred when a 2-year-old boy fell in the flooded Little Buck Creek near Chesnee at 1705 EST. The stream was normally 2 to 3 feet wide, and 10 inches deep but had swelled to 20 feet wide, and 6 to 8 feet deep. (M02O)

Union County Western Sections	12	1720EST-2000EST			0	0	5	?	Flash Flood
Jonesville	12	1830EST			0	0	5	?	Flash Flood
Spartanburg County Croft area	12	1855EST-2100EST			0	0	5	?	Flash Flood
Richland County Lexington County Irmo	12	1100EST			0	0	?	0	Urban Flooding

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

SOUTH CAROLINA Cont'd

Tropical Storm Marco formed between the Florida Keys and Cuba on the 9th, moved slowly northward along the Florida Gulf Coast, making landfall along the Florida Panhandle. As Marco moved northward, it weakened, and moved northward ahead of the cold front that stalled on the Appalachian Mountains after the passage of the remnants of Tropical Storm Klaus. This brought heavy rains to western South Carolina, causing flash flooding in that area.

Numerous bridges and roads were washed away thoughout the affected areas. According to the Federal Emergency Management Agency, at least 120 dams failed statewide in response to the heavy rains. Flooding was widespread in most parts of the state with the worst occurring in the midlands and coastal plain. Many rivers reached flood stage around the 12th or 13th, and flooding in the coastal plain continued until the end of the month.

Damages in northwestern South Carolina included localized flash flooding of some areas during the morning hours of the 12th. Some bridges were covered, some roads closed, and some motorists required rescue. Most of this flooding occurred in typical problem areas during all heavy rain/flash flood episodes.

Some rainfall totals (in inches) for October 10th through the 12th are as follows: Andrews 11.40, Cheraw 7.72, Gaston Shoals 10.48, Lake City 1 SE 9.87, McCormick 9 E 9.58, Williams (unpublished) 13.22.

Rainfall totals for the 12th in northwestern South Carolina were from 10 to 11 inches, with the highest known measurement and unofficial 11.00 inches from southeast Spartanburg. The highest official amount recorded on the 12th was 10.47 inches, for the 24-hour period, observed at the R.B. Simms Filter Plant, in Spartanburg. The storm on the 12th produced rainfall which approached the 100-year threshold.

As flooding from the morning of the 12th had ended or was receding, an area of strong thunderstorms developed over Anderson, Greenville, and Laurens counties. The storms moved slowly east and expanded, and merged with the remnants of the morning storms still over Cherokee County. This resulted in afternoon and evening rainfall of 4 to 6 inches in a period of 4 to 5 hours over a small area of Cherokee, Spartanburg, and Union counties.

Flash flooding over northwestern South Carolina, in areas which are not usually prone to extensive flooding, was the worst in modern times. Numerous rescues were required and a number of people were evacuated as creeks and rivers overflowed their banks. Since the event occurred during a Friday afternoon and evening rush hour, largely in an urban setting, it is amazing that more lives were not lost.

Some other events associated with the flooding include: train traffic to Columbia on the Seaboard Coast Line had to be re-routed because a bridge over the Lynches River between Bethune and McBee, in Chesterfield County, was flooded. In Bishopville, Lee County, the roof of a furniture store collapsed. Elsewhere, in Sumter County, Rafting Creek Baptist Church, about 7 miles from U.S. Highway 378 had its churchyard flooded. The church cemetery was under 3 feet of water, causing vaults to rise to the surface. At least one floated away, and was recovered three days later. In Spartanburg County, several small private dams broke and the dam at Croft State Park, near Pacolet, partially failed. The water release was rather gradual, therefore, a surge of water was not sent downstream.

Union County								
Union	22	1700EST	0	0	3	?		**Flash Flood**
Orangeburg County								
Cordova	22	1700EST	0	0	0	0		**Funnel Cloud**
Orangeburg	22	1715EST	0	0	5	0		**Thunderstorm Winds**
2 N Orangeburg	22	1720EST	0	0	0	0		**Funnel Cloud**
York County								
Central and Western Sections	22	1730EST-2000EST	0	0	?	?		**Flooding**

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

SOUTH CAROLINA Cont'd

Calhoun County									
5 S St. Matthews	22	1750EST	0.12	20	1	4	5	0	Tornado (F2)

A funnel cloud was sighted in at least two places (Cordova and 2 miles north of Orangeburg) moving from southwest to northeast from north of Orangeburg, parallel to U.S. Highway 601, into Calhoun County, where it touched down briefly. The tornado injured a total of four people, and killed an 11-year-old girl. The tornado destroyed three mobile homes, two sheds, one room of a brick house, and one small concrete building. Also, one house was moved off its foundation by the tornado. (F11M)

Chester County									
Countywide	22	1740EST-							
	23	1100EST			0	0	?	?	Flooding
Union County									
Lockhart	22	1900EST			0	0	4	0	Flood
Laurens County									
Clinton	22	2200EST			0	0	4	?	Flash Flood
Union County									
Union	22	2208EST			0	0	4	0	Flash Flood
York County									
Central and									
Western Sections	22	2230EST-							
	23	0100EST			0	0	?	?	Flooding
Lancaster County									
Countywide	22	2240EST-							
	23	0645EST			0	0	?	?	Flooding
Laurens County									
Joanna	22	2306EST			0	0	3	0	Flash Flood
Union County									
Lockhart	23	0100EST			0	0	3	?	Flood
Cherokee County									
Southern Sections	23	0300EST			0	0	3	?	Flood
Calhoun County									
St. Matthews	23	0545EST			0	0	6	0	Heavy Rains

Heavy rains apparently caused a derailment of several freight cars, which then struck an overpass. Two indirect deaths occurred as a result of the incident. One automobile barely made it over the bridge as it collapsed. The next automobile plummeted to the ground, killing its driver on impact. A small truck followed the second car across the bridge. The driver of the truck was injured in the incident.

Richland County									
Eastover	23	0600EST			0	0	?	?	Urban Flooding
Columbia	23	0600EST-							
		0700EST			0	0	?	?	Urban Flooding

A second batch of flooding occurred during the night of the 22nd and morning of the 23rd. The cause of this episode was a cyclone that formed over the state on the 22nd, and moved offshore on the 23rd. This cyclone brought heavy rain to the state, and again caused flooding. The rainfall was more gradual in this event than it was on the 12th.

The most significant events of this episode were the tornado, and a later train derailment in Calhoun County, which are both described above. The worst problem in the upstate was in Lockhart, where the backwater from the Broad River flooded, causing a number of evacuations. In Union, a mill pond overflowed, and in western Union County, the Fairforest Creek overflowed its banks. In other areas, bridges and roads were washed out. Rainfall during the event reached 3 to 5 inches in many places in the piedmont, with an unofficial 8 inches reported at one location in Union. This heavier rain apparently contributed to some of the flooding in Union, and in the western part of Union County.

In Eastover, and the Lake Catherine area of Columbia, urban flooding occurred on the 23rd.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

SOUTH CAROLINA Cont'd

SCZ003
Eastern Piedmont — 24 **Unknown** — 1 0 0 0 **Cold**

An infant boy died of hypothermia in Kershaw County. (M00?)

SCZ004
Lower Piedmont — 27 **Unknown** — 1 0 0 0 **Cold**

A 45-year-old man died of exposure to weather in Aiken County. (M45?)

SCZ005
North Midlands — 30 **Unknown** — 1 0 0 0 **Cold**

A 42-year-old man died of cold exposure in Dillon County. (M42?)

SCZ002-003-005-006-007-008
Foothills, Eastern Piedmont, Midlands, Coast — 11-31 — 0 0 6 ? **Flooding**

Major river flooding developed along the central and lower portions of the Great Pee Dee, Santee, Wateree, Congaree, Edisto, and Broad Rivers as a result of the combination of the rains of the 10th to the 13th, and the rains from the system described above. Flooding also occurred as a result of the rains of the 22nd and 23rd.

The flooding was the highest since 1945 along the Lynches River at Effingham. Other areas exceeded the 100-year flood level: according to preliminary FEMA estimates, the Black Creek near Hartsville (Darlington County) 2.1 times the 100-year flood; Fork Creek at Jefferson (Chesterfield County), 4.7 times the 100-year flood; Scape Ore Swamp near Bishopville (Lee County), 2.4 times the 100-year flood.

As a result of all the events, 12 counties were declared disaster areas by President Bush. The counties in the declaration were: Aiken, Calhoun, Cherokee, Darlington, Edgefield, Florence, Kershaw, Lee, Orangeburg, Spartanburg, Sumter, and Union. Preliminary estimates of damage in those counties are as follows: $3,239,409, with more than $2 million in damage to roads. At least 1,430 applications for assistance were received by the Federal Emergency Management Agency.

SOUTH DAKOTA

Codington County
Watertown — 03 1932CST — 0 0 4 0 **Lightning**

Lightning struck a house and burned the interior of the attached garage and some rafters on the house. There was considerable smoke damage.

TENNESSEE

Madison County	04	0045CST			0	0	2	0	**Thunderstorm Winds**
	04	0100CST-0106CST	2.0	40	0	0	5	0	**Tornado (F1)**
	04	0109CST			0	0	2	0	**Thunderstorm Winds**
Davidson County	04	0200CST			0	0	2	0	**Thunderstorm Winds**
Sumner County	04	0225CST			0	0	3	0	**Thunderstorm Winds**
Wilson County	04	0230CST			0	0	2	0	**Thunderstorm Winds**

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

TENNESSEE Cont'd

Hamilton County	04	0715CST-0720CST	1.8	25	0	0	5	0	Tornado (F1)

A strong cold front moved rapidly across Tennessee, early on the 4th, with thunderstorms causing spotty damage across the state. A small tornado touched down in the city limits of Jackson in Madison County. It first touched down at the intersection of Wallace and Skyline Drive in the western part of the city, and traveled east for about 2 miles. Most of the damage was due to large trees being blown down onto houses and cars, but one house had its carport ripped off, other houses had some roof damage, and a number of sheds and outbuildings were demolished. Thunderstorm winds knocked down numerous trees and power lines, and caused scattered damage throughout the county.

Thunderstorm winds knocked down numerous trees and power lines in middle Tennessee, as the front continued its march eastward. The hardest hit area was between Hendersonville and Gallatin in Sumner County, where several houses were damaged, and one house had its roof ripped off. In Nashville, a man was injured in a one car accident due in part to water-covered roads.

A tornado touched down briefly in the southeastern part of Chattanooga as the cold front continued to move southeast. The tornado touched down at 0915 EDT and traveled east for nearly 2 miles. One large manufacturing building had extensive damage, one wall was partially caved in, and a large section of roof removed. Several other buildings had damage as well, mostly to roofs. There were numerous trees knocked down along with some power lines.

TEXAS, Northern

Dallas County							
Cockrell Hill	03	0918CST	0	0	3	?	Thunderstorm Winds
Oak Cliff	03	0945CST	0	0	3	?	Thunderstorm Winds

Strong winds blew out several windows of a school, destroyed an outdoor shed, and blew down a satellite dish in Cockrell Hill. A downburst blew down several trees and power lines and shattered the window of a home in Oak Cliff.

Delta County							
Cooper	07	1555CST	0	0	3	?	Thunderstorm Winds

A downburst blew down two telephone poles.

Hopkins County							
Sulphur Springs	07	1630CST	0	0	4	?	Thunderstorm Winds
Sulphur Springs	07	1700CST	0	0	4	?	Thunderstorm Winds
Sulphur Springs	07	2110CST	0	0	3	?	Thunderstorm Winds Hail (2.75)
Sulphur Springs	07	2200CST-08 0030CST	0	0	?	?	Flash Flooding

In Sulphur Springs, strong winds destroyed a barn at 1630 CST, blew down a street sign, a garage, and two tanker trucks at 1700 CST, and blew down several trees and power lines at 2110 CST. Heavy rains of 3 inches in a three-hour period resulted in considerable lowland flooding in Sulphur Springs.

Johnson County							
Joshua	07	1730CST	0	0	3	?	Thunderstorm Winds

A downburst lifted the tin roof off a building and blew down several trees.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM
TEXAS, Northern Cont'd									
Cass County	07	1800CST-2000CST			0	0	?	?	Flash Flooding
		Heavy rains of 4 to 6 inches in a 12-hour period resulted in the flash flooding of several roadways and culverts in Cass County.							
Bowie County	07	1800CST-2000CST			0	0	?	?	Flash Flooding
	08	0320CST-0800CST			0	0	?	?	Flash Flooding
		Heavy rains of 6 to 8 inches in a 12-hour period resulted in the flash flooding of several culverts in Bowie County.							
Freestone County									
Wortham	07	1858CST			0	0	?	?	Hail (0.75)
Anderson County	09	0010CST-0400CST			0	0	?	?	Flash Flooding
		Heavy rains resulted in several creeks overflowing their banks throughout Anderson County and producing flash flooding of most county and secondary roadways.							
Cherokee County									
Jacksonville	09	0040CST-0430CST			0	0	?	?	Flash Flooding
		Heavy rains resulted in considerable flash flooding of low-lying areas and roadways in Jacksonville.							
Tarrant County									
5 W Keller	17	1550CST			0	0	?	?	Hail (1.75)
Haslett	17	1552CST			0	0	?	?	Hail (0.75)
North Richland Hills	17	1620CST			0	0	?	?	Thunderstorm Wind (G52)
Denton County									
Corinth	17	1600CST			0	0	?	?	Thunderstorm Wind (G50)
Lewisville	17	1645CST			0	0	?	?	Thunderstorm Wind (G50)
Bosque County									
Kopperl	17	1600CST			0	0	?	?	Hail (0.88)
Collin County									
McKinney	17	1620CST			0	0	3	?	Thunderstorm Winds
McKinney	17	1631CST			0	0	?	?	Hail (0.75)
		Strong winds blew over a tractor-semitrailer on U.S. Highway 380 in McKinney.							
Hill County									
1 SW Aquilla	17	1620CST			0	0	?	?	Hail (0.75)
McLennan County									
Elmont	17	1725CST			0	0	?	?	Thunderstorm Wind (G56)
Gholson	17	1725CST			0	0	?	?	Hail (0.88)
China Springs	17	1742CST			0	0	3	?	Thunderstorm Winds
Waco	17	1809CST			0	0	?	?	Hail (0.75)
		A downburst blew down a large tree at China Springs.							
Red River County									
Clarksville	17	1810CST			0	0	?	?	Hail (1.00)

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

TEXAS, Northern Cont'd

Franklin County
1 W Talco 17 1815CST 0 0 3 ? **Thunderstorm Winds**

A downburst blew down several trees.

Anderson County
Palestine 17 1840CST-2230CST 0 0 ? ? **Flash Flooding**

Heavy rains resulted in high water up to 1 foot in depth over several roadways in Palestine.

Henderson County
Brownsboro 17 1913CST 0 0 3 ? **Thunderstorm Winds**

Strong winds lifted the tin roof off a gasoline station.

TEXAS, Southern

Matagorda County
Bay City 17 2015CST 0 0 4 0 **Thunderstorm Wind (G52)**

High winds from a thunderstorm caused scattered damage in and around the town of Bay City. Four chimneys were blown off apartments in a complex. Two police cars had windows blown out. Large trees and limbs fell on and downed power lines. One roof was blown off a carport. Two trailers were overturned.

TEXAS, Western

Presidio and Brewster Counties 01-10 0 0 6 4 **Flood**

Heavy rain from thunderstorms during late September and early October caused flooding along the Rio Grande River from Presidio through the Big Bend National Park. On the morning of the 2nd, a levee failed near Redford in Presidio County. The resulting floodwaters inundated 1,840 acres of farmland. Total losses from the flood were estimated at $3.5 million.

Pecos County
2 W Imperial 16 1745CST 0 0 0 0 **Hail (0.75)**

The public observed dime-size hail 2 miles west of Imperial, in northern Pecos County. No damage resulted.

UTAH

None reported.

VERMONT

None reported.

VIRGINIA

Louisa County 04 1245EST 0 0 4 0 **Thunderstorm Winds**

A downburst unroofed a church and downed trees in the southwestern part of the county.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

VIRGINIA Cont'd

City of Lexington 04 1400EST 0 0 0 0 **Thunderstorm Winds**

Several large trees were downed during a brief thunderstorm.

Henry County 11 0000EST 0 0 3 0 **Flooding**

The Sheriff's Department reported mudslides in the Axton area; trees were downed by waters in many parts of the southern half of the county.

VAZ005-101-011-012 13 0000EST-0800EST 0 1 5 0 **Flooding**

Widespread minor to moderate flooding occurred in the following counties: Rappahannock, Madison, Greene, Page, Shenandoah, Frederick, Clarke, Culpeper, Rockingham, and Warren. Many state highways and bridges were inundated in low-lying areas as a result of heavy rains from the remnants of Tropical Storm Marco. Mud slides were reported in Rappahannock and Page counties. Two bridges were washed out in Rappahannock County, and some 50 to 60 miles of county roads suffered damage; cost of replacement and repair of other bridges was placed at $175,000 by state officials. Two other bridges were washed out in Warren County. A woman in Warren County was slightly injured when she drove her vehicle into a creek after a bridge was washed out. A campground was inundated, four trailers and several cars were destroyed, and the campgrounds office and store were heavily damaged.

City of Buena Vista 18 1000EST 0 0 0 0 **Thunderstorm Winds**

A large tree was downed by thunderstorm winds.

Orange County
Everona 18 1215EST 3.5 333 0 1 6 0 **Tornado (F3)**

In the Bushy Mountain section of Everona, a house and a garage were destroyed, and several other homes suffered damage. Two cars and two pickup trucks were thrown about 50 feet. A man inside one of the trucks was slightly injured. A six-ton tractor was lifted and turned around. Several hundred trees were leveled. This tornado was estimated to be an F3, with a path length of 3.5 miles in mountainous terrain, and a width of 1,000 feet. Damage was estimated at about $500,000 by local officials.

Fauquier County
Remington 18 1233EST 0.4 100 0 0 5 0 **Tornado (F1)**

About a dozen witnesses saw the tornado touch down. The path of this tornado was estimated to be 300-feet wide and 0.4-mile long; the tornado lifted and dissipated over an elementary school full of children. A number of business establishments and other buildings in the downtown area suffered major damage, with two stores having more than $100,000 damage to each. Several residences were unroofed. Actual damages totaled $416,222.

Fairfax, Loudoun, Arlington Counties
City of Fairfax
Reston
McLean 18 1430EST-1530EST 0 1 5 0 **Thunderstorm Winds**

There were numerous reports of downed trees and power lines in those areas. Power companies reported about 30,000 customers lost power. Winds gusted to 52 mph (45 knots) at the National Weather Service Forecast Office in Sterling and to 58 mph (50 knots) at Washington National Airport (DCA). At Reston, eight apartments were unroofed and a house was damaged. At McLean, power lines fell across a school bus, trapping the occupants temporarily. Also in Reston, a man was slightly injured when strong winds blew a tree onto his van.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

VIRGINIA Cont'd

Culpeper, Madison Fauquier, and Albermarle Counties 18 1500EST-1700EST 0 0 4 0 **Flooding**

Two to 6 inches of rain in the early afternoon caused widespread flooding of roads. Cars were reported submerged in Culpeper County and a motorist had to be rescued from high water.

Fairfax County Herndon 18 1511EST 0.1 5 0 0 0 0 **Tornado (F0)**

Several witnesses saw a funnel cloud and rotating debris for a brief time. No fatalities or injuries were reported.

King William County 6 SW King William to 2 WSW King William 18 1600EST 5.0 430 1 0 6 0 **Tornado (F3)**

This tornado touched down just north of the Pamunkey River and traveled about 5 miles to the northeast. Its path was 0.25-mile wide at its maximum. A 73-year-old man lost his life in the Mount Olive section (about 4 SW King William) when the barn he took shelter under collapsed on him. At least three homes were heavily damaged along with several outbuildings, and great numbers of trees were destroyed. The tornado was estimated to be an F3. No other injuries were reported. County officials estimated the damage at about $100,000. (M73O)

Halifax County Cluster Springs 18 1610EST 0.2 33 0 1 5 0 **Tornado (F1)**

A probable tornado damaged two houses and destroyed a mobile home in Cluster Springs. The roof collapsed on one of the houses, and the second house, under construction, also collapsed. The trailer was picked up, moved 50 to 75 feet, and dropped. One person was injured in a weather-related traffic accident. A car swerved to avoid a fallen tree limb and hit another car; an occupant of the second car was injured slightly.

Surry County Sussex 18 1820EST 0 0 3 0 **Thunderstorm Winds**

Strong winds lasting about 30 seconds destroyed an outbuilding and blew down telephone poles and trees. Reports of a tornado could not be confirmed.

City of Williamsburg 18 1845EST 0 0 0 0 **Thunderstorm Winds**

Strong winds blew down trees.

York County Magruder Yorktown 18 1905EST 0 0 0 0 **Thunderstorm Winds**

Trees were downed by thunderstorm winds in both communities.

City of Newport News Denbigh 18 1915EST 0 0 0 0 **Thunderstorm Winds**

A few trees were downed in the Denbigh area. Winds were measured by a weather spotter at 52 knots in the western part of the city.

City of Norfolk 18 1953EST 0 0 0 0 **Thunderstorm Winds**

Winds gusted to 58 mph (50 knots) at Norfolk International Airport (ORF). Winds gusted to 63 mph (55 knots) as recorded on board the USS Saipan at the U.S. Naval Base in the northwestern part of the city (about 6 miles northwest of Norfolk).

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

VIRGINIA Cont'd

City of Chesapeake 18 1955EST 0 0 4 0 **Thunderstorm Winds**

Strong winds downed trees in parts of the city. Trees fell onto power lines and vehicles; some vehicles were moved by the winds.

City of Virginia Beach
6 N City of Virginia Beach, Cape Henry 18 1958EST 0 0 0 0 **Thunderstorm Winds**

Winds gusted to 69 mph (60 knots) at the South Island of the Chesapeake Bay Bridge Tunnel. Winds gusted to 58 mph (50 knots) at Cape Henry.

Loudoun County
Leesburg 18 2000EST 0 0 0 0 **High Winds**

Post-frontal wind gusts reached 72 mph (62 knots) in parts of Leesburg.

VAZ005-011 23 0600EST-1500EST 0 1 4 0 **Flooding**

Widespread flooding of low-lying areas occurred in Fairfax, Loudoun, and Prince William counties. About ten roads were closed in western Loudoun County, 32 in Fairfax County including a part of an interstate highway, and at least 12 roads were closed in Prince William County. A man was injured in Fairfax County when his vehicle hydroplaned and overturned due to flood waters. About 25 other accidents occurred on interstates and major highways in Fairfax County due to water covering parts of those roadways. There was also widespread minor to moderate flooding of low places in the northern Shenandoah Valley, in particular Shenandoah County, where more than 50 roads had to be closed due to high water. A school was flooded in Strasburg, suffering minor damage.

Albermarle County 23 0300EST-1500EST 0 1 3 0 **Flooding**

Widespread flooding of low-lying areas occurred after heavy rains. A man was rescued from a stranded pickup truck and treated for hypothermia at a hospital.

Halifax County
Riverdale 25 0000EST-26 0000EST 0 0 4 0 **Flooding**

The Dan River crested at 15 feet over flood stage in the Riverdale area at noon on the 25th, causing considerable flooding of businesses on the banks of the river.

VAZ002 26 0000EST-1200EST 0 0 3 0 **High Winds** **Tidal Flooding**

An intense low-pressure system moved slowly northeast along the mid-Atlantic coast, causing strong winds which downed trees and power lines over large parts of Norfolk and Virginia Beach. Winds damaged several homes in Chesapeake. About 20,000 homes were without power in the Hampton Roads area. Coastal flooding occurred on the oceanfront of Virginia Beach south to Sandbridge (ten miles southeast of Virginia Beach). High wind speeds were reported as follows.

City of Norfolk 26 0253EST 0 0 0 0 **High Winds**

Winds gusted to 69 mph (59 knots) at Norfolk International Airport (ORF).

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

VIRGINIA Cont'd

City of Newport News — 26 0255EST — 0 0 0 0 — **High Winds**

Winds gusted to 57 mph (49 knots) at Patrick Henry Field (PHF).

6 N City of Virginia Beach — 26 0300EST — 0 0 0 0 — **High Winds**

Winds were sustained at 80 mph (69 knots) with gusts to 92 mph (79 knots) at the South Island of the Chesapeake Bay Bridge.

City of Virginia Beach — 26 0335EST — 0 0 0 0 — **High Winds**

Winds were sustained at 74 mph (64 knots) with gusts to 85 mph (73 knots) at Cape Henry.

City of Charlottesville — 26 0600EST-1000EST — 0 0 4 0 — **High Winds**

Strong gusty winds felled trees that toppled onto power lines, causing outages to 5,000 power customers.

WASHINGTON

WAZ013 South-Central Washington — 03 1400PST — 1 0 0 0 — **Dust Storm**

Winds up to 45 mph caused blowing dust in Benton, Franklin, Walla Walla and Spokane counties. Visibilities reduced to near-zero were responsible for a 15-vehicle accident on Interstate 82 between Kennewick and Plymouth. One fatality was reported. (M48V)

WAZ001 Pierce County — 25 1300PST — 0 0 0 0 — **High Winds**

Winds gusting up to 40 mph, associated with a warm front, damaged 30 refrigerated storage containers at the Port of Tacoma.

WEST VIRGINIA

Berkeley County Martinsburg — 13 0300EST-0800EST — 0 0 4 ? — **Flash Flood**

Remnants of Tropical Storm Marco dumped 3.50 inches of rain between 1300 and 1900 EST. Thirty to 50 basements were flooded. A large water main was broken due to a wash-out along Kelly Island Road. Water service was interrupted to hundreds of residents. Several streets were closed by high water. Opequon Creek overflowed and blocked some outlying county roads.

WISCONSIN

WIZ011- Central Wisconsin — 10 Midmorning into 10 Late Evening — 0 0 5 ? — **Heavy Snow**

An early season snowstorm struck central Wisconsin. Six inches of snow were reported at Adams-Friendship (Adams County). Throughout portions of central Wisconsin, the wet, heavy snow caused power outages as leaf-laden trees collapsed onto power lines and affected over 20,000 customers. Numerous accidents and some business closures also resulted.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

WISCONSIN Cont'd

Dane County									
Madison	14	1915CDT			0	0	?	?	**Thunderstorm Wind (G54)**
Deforest	14	1924CDT			0	0	4	?	**Thunderstorm Winds**
Walworth County									
Genoa City	14	2034CDT			0	0	?	?	**Thunderstorm Winds**

Isolated severe thunderstorms producing winds up to 62 mph damaged a home under construction, and caused roof and garage damage near Deforest. Power lines were knocked down near Genoa City.

Green Lake County									
5 S Berlin	17	0824CDT			0	0	?	?	**Hail (0.75)**

Hail up to three-quarter inch in diameter fell from a severe thunderstorm just south of Berlin.

WYOMING

WYZ002-014-015-016-									
Northwestern Chinook									
Red Desert									
Southern Mountains	03	1200MST-							
Laramie Valley		2000MST			0	0	0	0	**High Winds**

Strong winds blew across the south-central and northwestern parts of the state between 1200 and 2000 MST. Gusts up to 60 mph caused no damage.

WYZ001-004-									
Northwestern									
Mountains	06	0000MST-							
Big Horn Mountains		1200MST			0	0	0	0	**Heavy Snow**

A snowstorm dumped 4 to 10 inches of snow across the northern Wyoming mountains.

WYZ012-015-016-017-									
Eastern Plains									
Southern Mountains									
Laramie Valley	06	2000MST-							
Southeastern Plains	08	0400MST			0	0	4	0	**Heavy Snow**

A lingering snowstorm produced 3 to 6 inches of snow across much of southeastern Wyoming, with up to 10 inches in the far southeastern corner. Mountain areas received about 9 to 15 inches. The heavy wet snow broke limbs off many trees as leaves were still on them.

WYZ014-015-016									
Red Desert									
Southern Mountains	13	1000MST-							
Laramie Valley		1800MST			0	0	0	0	**High Winds**

Winds up to 60 mph buffeted south-central Wyoming between 1000 and 1800 MST.

WYZ001-004-									
Northwestern									
Mountains	16	0800MST-							
Big Horn Mountains		2000MST			0	0	0	0	**Heavy Snow**

Snowfall of 4 to 12 inches occurred over the mountains of northern Wyoming from 0800 to 2000 MST.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

WYOMING Cont'd

WYZ012-014-017
Eastern Plains
Red Desert
Southern Mountains
Laramie Valley
Southeastern Plains

16 1500MST-2345MST — 0 0 2 0 **High Winds**

Strong winds associated with a cold front blew across southern Wyoming from 1500 to 2345 MST. Winds gusted to 60 mph at Rawlins around 1530 MST, while gusts of 65 to 70 occurred near Cheyenne between 2000 and 2345 MST. Some minor tree damage occurred at Cheyenne.

WYZ012-016-017
Eastern Plains
Laramie Valley
Southeastern Plains

17 0800MST-1600MST — 0 0 0 0 **High Winds**

Winds up to 60 mph occurred briefly over part of southeastern Wyoming between 0800 and 1600 MST.

WYZ012-016
Eastern Plains
Laramie Valley

21 0800MST-1600MST — 0 0 0 0 **High Winds**

Occasional winds up to 60 mph occurred in the Laramie range of southeastern Wyoming between 0800 and 1600 MST.

ALASKA, Southeastern

Northern and Central

08 0000ADT — 0 0 0 0 **High Winds**

All Southeastern Alaska

11 1700ADT — 0 0 0 0 **High Winds**

Central, Coastal and Southern

17 1500ADT — 0 0 0 0 **High Winds**

All Southeastern Alaska

22 0900ADT — 0 0 0 0 **High Winds**

Central, Coastal and Southern

26 1400ADT-1800ADT — 0 0 0 0 **High Winds**

Nondamaging high wind situations are quite common for southeastern Alaska in October. The above listed storms were all due to developing extratropical cyclones and their associated weather fronts. The storm on the 26th was unusual, in that it caused significant damage in the towns of Metlakatla and Ketchikan. A 970 mb northeastern-moving low slowed off the central coast while a Pacific front became nearly stationary along the southern coast. A very rough estimate of damage caused in the storm on the 26th is $100,000.

ALASKA, Southern

Kodiak Island
Central Gulf Coast

07-08 1500ADT — 0 0 0 0 **High Winds**

A strong low moved out of the north Pacific to southeast of Kodiak on the afternoon of the 7th and to near Cordova on the 8th, bringing high winds to the central gulf coast and Kodiak Island. Middleton Island reported eastern winds gusting to 60 mph on the 7th and western winds gusting to 74 mph on the 8th. Kodiak had northwestern wind gusts to 54 mph and 2.49 inches of rain on the 7th, a record rainfall for the date.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

ALASKA, Southern Cont'd

Alaska Peninsula 09-10 2200ADT — 0 0 0 0 **High Winds**

A moderate 982 mb low moved eastward just north of the eastern Aleutians and Alaska Peninsula causing strong winds through some passes on the Alaska Peninsula. Cold Bay reported southeastern winds 40 mph with gusts to 56 mph around midnight.

Aleutians 17-18 1900ADT — 0 0 0 0 **High Winds**

A strong 968 mb low moved eastward along 59° north in the Bering Sea. Northwestern winds gusted to 63 mph at Amchitka and 54 mph at Adak and Shemya on the night of the 17th and morning of the 18th.

HAWAII

None reported.

PACIFIC

None reported.

PUERTO RICO

Islandwide 09-23 — 1 0 0 0 **Floods and Urban Flooding**

A series of strong weather systems moved across Puerto Rico between October 9th and 23rd resulting in moderate flooding and damage. Early in the month feed bands from Tropical Storm Klaus affected the area, followed by some upper dynamics, including a combination of upper trough with a surface trough. By mid-month an upper level trough north of Puerto Rico, a surface trough in the vicinity, and a tropical wave entering the area increased the instability. As the tropical wave moved out of the area, the upper level trough remained. By the end of the month an upper ridge stabilized conditions with drier air feeding into the area.

As a result of the prevailing weather conditions heavy rains were produced causing river rises between 5 to 10 feet above normal stage conditions islandwide. Higher peaks were recorded along the north and northwestern coasts. The Rio Grande de Manati and the Rio Culebrinas peaked 18 and 17 feet above normal stage conditions respectively. Minor flooding was reported at Naranjito, Manati, Caguas, Curabo, Cayey, Mayaguez, and San Lorenzo. Street flooding was reported at Bayamon, Manati, Corozal, Salinas Guayama, Ponce and San Lorenzo. Road flooding was reported at Manati, Guayanilla, Anasco, Mayaguez, Coamo, Luquilli, Fajardo, Barceloneta, Utuado, Arecibo, Camuy, Hatillo, and Toa Alta. Home flooding was reported at Barceloneta, Guayanilla, Toa Alta and Arecibo. Landslides were reported in Lares, Corozal, Anasco, Trujillo Alto, and Toa Baja. Mudslides were reported in Orocovis and Morovis. A massive mudslide caused by rain-soaked waste from a concrete plant slid down a slope covering all six lanes of the Diego Expressway forcing the shutdown of the heavily traveled roadway near the Toa Alta toll booth for several days. No fatalities were reported. A death was also reported during the month. A man in Vega Alta was found drowned near Cruce Fatima bridge in the Rio Cibuco waters. (M55O)

VIRGIN ISLANDS

U.S. Virgin Islands
St. Croix 11 NA — 0 0 ? 0 **Floods and Urban Flooding**

As a result of an upper-level trough drifting westward over the area, rains were produced causing minor flooding. Ponded waters reached several homes in low-lying areas.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME (LOCAL STANDARD)	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED DAMAGE PROPERTY	ESTIMATED DAMAGE CROPS	CHARACTER OF STORM

VIRGIN ISLANDS Cont'd

St. Croix — 14 NA — 0 — 0 — ? — 0 — **Floods and Urban Flooding**

An upper-level trough in the region caused heavy rains in St. Croix. Some localized flooding took place.

St. Thomas
St. John — 19 NA — 0 — 0 — ? — 0 — **Floods and Urban Flooding**

An upper-level trough in the area combined with a tropical wave caused heavy rains in St. Thomas and St. John. Flooding was reported in St. Thomas.

NO LATE REPORTS OR CORRECTIONS

STORM SUMMARY

October 1990

TYPE	ALABAMA	ARIZONA	ARKANSAS	CALIFORNIA	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA	IDAHO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND & DC	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI	MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE
TORNADOES				0																							
Number	1						1	3	1		3	1				1		3		1		1					
Days	1						1	2	1		1	1				1		1		1		1					
Deaths	0						0	0	0		0	0				0		0		0		0					
Injuries	?						5	5	5		6	?				0		7		6		5					
Property Damage	?						0	1	0		3	5				0		0		0		0					
Crop Damage																											
HAIL																											
Deaths												0	0								0						
Injuries												0	0								0						
Property Damage												?	4								?						
Crop Damage													2														
THUNDERSTORM WINDS																											
Deaths	0		0			0	0	0	0		0	0	0	0	0	0	0	0	0	0	0		0		0		0
Injuries	1		4			5	3	3	3		6	5	4	1	4	2	?	5	5	1	4		4		5		?
Property Damage	6		0			0	0	1	0		5	2	4	4	0	0	0	1	0	5	0		0		0		0
Crop Damage	0		0			0	0	0	0		0	2	0	0	0	0	0	0	0	0	0		0		0		0
HIGH WINDS																											
Deaths		0			0	0				0	0		0				0	0	0	0				0	0		0
Injuries		0			0	0				0	0		0				0	0	1	0				0	?		0
Property Damage		2			5	5				4	6		5				?	4	6	5				4			?
Crop Damage		0			0	0				0	0		2				0	0	0	0				0	0		0
LIGHTNING																											
Deaths			0			0		0											0	0							0
Injuries			3			1		2											3	5							4
Property Damage			0			0		0											0	0							0
Crop Damage																											
FLASH FLOODS																											
Deaths		0	0						4						0												
Injuries		0	0						4						0												
Property Damage		4	5						7						3												
Crop Damage		0	0												0												
FLOODS																											
Deaths						0			0								0	0	0								0
Injuries						0			0								0	0	0								0
Property Damage						?			7								?	4	?								?
Crop Damage						0			5									0	0								0
HEAVY SNOWSTORMS AND BLIZZARDS @																											
Deaths																				0					0		
Injuries																				0					?		
Property Damage																				5					1		
Crop Damage																				0							
ICE STORMS #																											
Deaths											0																
Injuries											0																
Property Damage											5																
Crop Damage											0																
HURRICANES AND TROPICAL STORMS																											
Deaths								0																			
Injuries								1																			
Property Damage								6																			
Crop Damage								1																			
ALL OTHERS																											
Deaths						0			0										0					0			
Injuries						0			0										0					0			
Property Damage						4			4										6					5			
Crop Damage						0			7										0					3			

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM SUMMARY

October 1990

TYPE	NEW JERSEY	NEW MEXICO	NEW YORK	NORTH CAROLINA	NORTH DAKOTA	OHIO	OKLAHOMA	OREGON	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA	SOUTH DAKOTA	TENNESSEE	TEXAS	UTAH	VERMONT	VIRGINIA	WASHINGTON	WEST VIRGINIA	WISCONSIN	WYOMING	ALASKA	HAWAII	PACIFIC	PUERTO RICO	VIRGIN ISLANDS	NATIONAL DEATHS & INJURY TOTALS
TORNADOES		0						0							0	0						≠	0	0		0	
Number	4		25	42						11	11		21				51										
Days	1		01	02						00	14		00				12										
Deaths	0		1	5						5	5		5				6										2
Injuries	11		55	0						0	0		0				0										83
Property Damage	6		5	0						0	0		0				0										
Crop Damage	0																										
HAIL																											
Deaths														0						0							
Injuries														0						0							
Property Damage														3						?							
Crop Damage														0													
THUNDERSTORM WINDS																											
Deaths	0		0	0			0		0	0	0		0	0			0			0							
Injuries	2		10	0			0		0	0	0		0	0			1			0							40
Property Damage	5		6	0			3		5	5	5		0	0			5			4							
Crop Damage	0		4	0			0		0	0	0		0	0			0			?							
HIGH WINDS																											
Deaths	0		0		0					0							0				0						
Injuries	0		1		0					0							0				0						2
Property Damage	?		5		4					5							4				2						
Crop Damage	0		4		4					0							0				0						
LIGHTNING																											
Deaths			0								0	0															
Injuries			0								0	0															1
Property Damage			7								2	4															
Crop Damage			4								0	0															
FLASH FLOODS																											
Deaths			0	2			0		0		5								0						1		12
Injuries			0	2			0		0		0								0						0		6
Property Damage			7	6			4		5		6								4						0		
Crop Damage			3	0			0		0		6								0						0		
FLOODS																											
Deaths	0		0			0			0		0			0			0								1		1
Injuries	0		0			0			0		0			0			3								0		8
Property Damage	?		5			4			2		5			6			5								0		
Crop Damage	0		0			0			0		?			4			0								0		
HEAVY SNOWSTORMS AND BLIZZARDS @																											
Deaths																				0	0						
Injuries																				0	0						
Property Damage																				5	4						
Crop Damage																				?	0						
ICE STORMS #																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HURRICANES AND TROPICAL STORMS																											
Deaths																											
Injuries																											1
Property Damage																											
Crop Damage																											
ALL OTHERS																											
Deaths				1						0	3							1									5
Injuries				0						0	0							?									
Property Damage				6						5	6							0									
Crop Damage				0						0	6							0									

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM DAMAGE CATAGORIES

1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5 Million
7 $5 Million to $50 Million
8 $50 Million to $500 Million
9 $500 Million to $5 Billion

REFERENCE NOTES

0/Blank	None reported.
*	Miles instead of yards.
**	Yards instead of miles.
@	Includes heavy sleet storm.
#	Freezing drizzle and freezing rain, commonly known as glaze.
≠	Report incomplete.
≠≠	Report not received.
o/c	Indicates Crop Damage amount is included in the value given for property damage.

When reports are not received or are incomplete, the Storm Summary National Death and Injury totals may also be incomplete.

Definition of Fujita Tornado Scale (F scale)

(F0) Gale tornado (40-72 mph): Light damage
Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage sign boards.

(F1) Moderate tornado (73-112 mph): Moderate damage
The lower limit (73 mph) is the beginning of hurricane wind speed; peel surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads.

(F2) Significant tornado (113-157 mph): Considerable damage
Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.

(F3) Severe tornado (158-206 mph): Severe damage
Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

(F4) Devastating tornado (207-260 mph): Devastating damage
Well-constructed houses leveled; structure with weak foundation blown off some distance; cars thrown and large missiles generated.

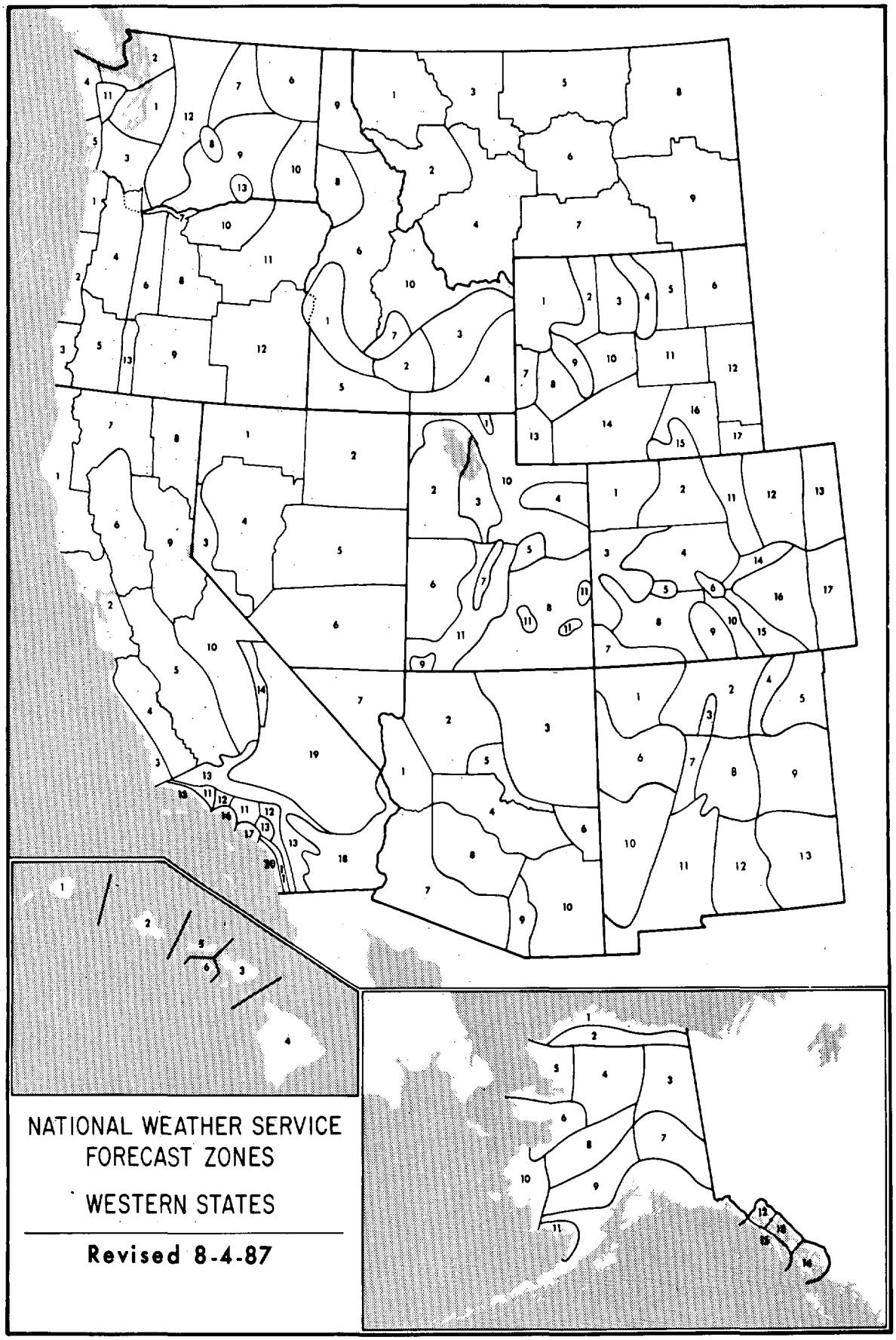
(F5) Incredible tornado (261-318 mph): Incredible damage
Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 m; trees debarked; incredible phenomena will occur.

(F6-F12) (319 mph to Mach 1, the speed of sound): The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

(F0+F1) Weak Tornado
(F2+F3) Strong Tornado
(F4+F5) Violent Tornado

From J. Atmos. Sci., August 1981, p. 1517-1519

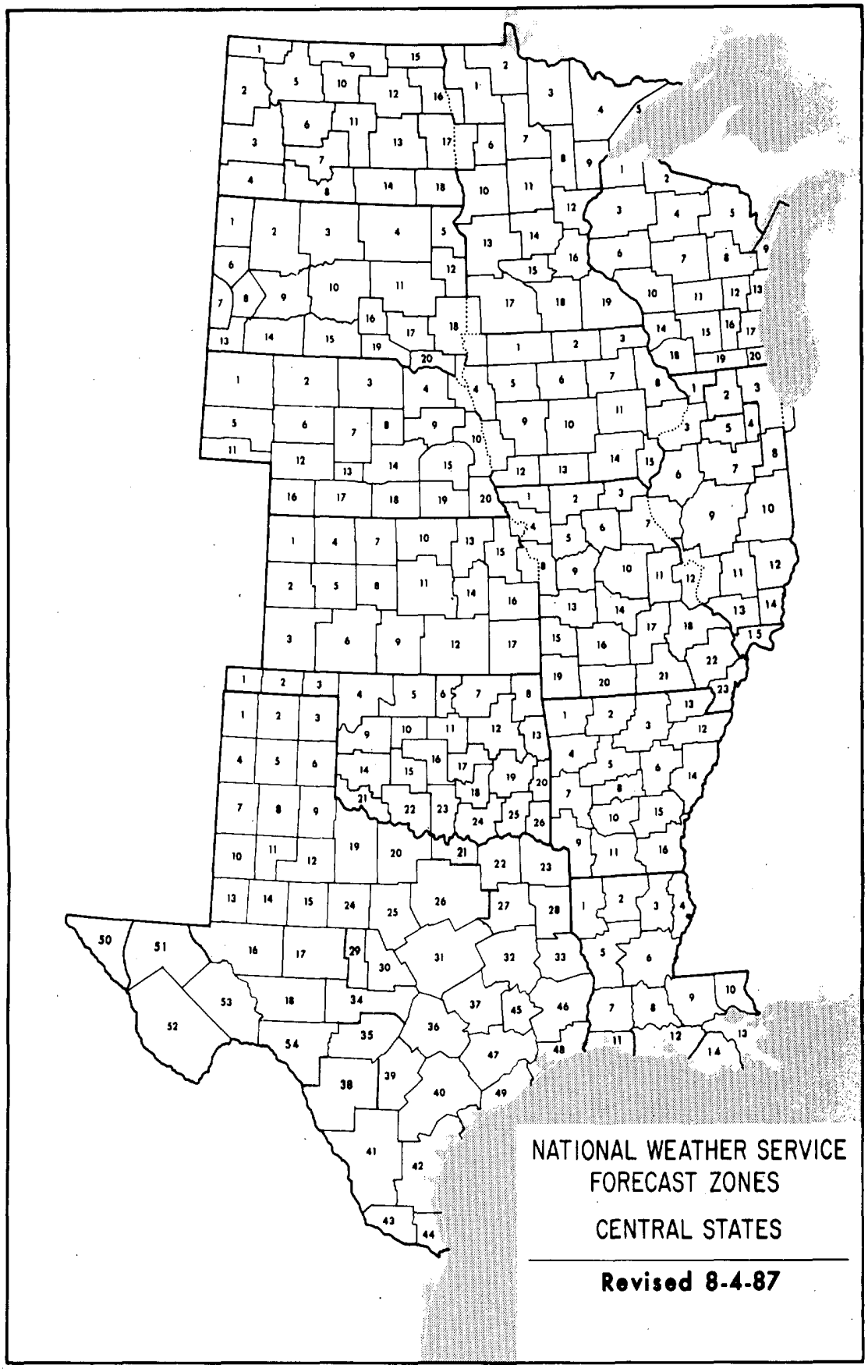
USCOMM-NOAA-ASHEVILLE, N.C. 1990-1800

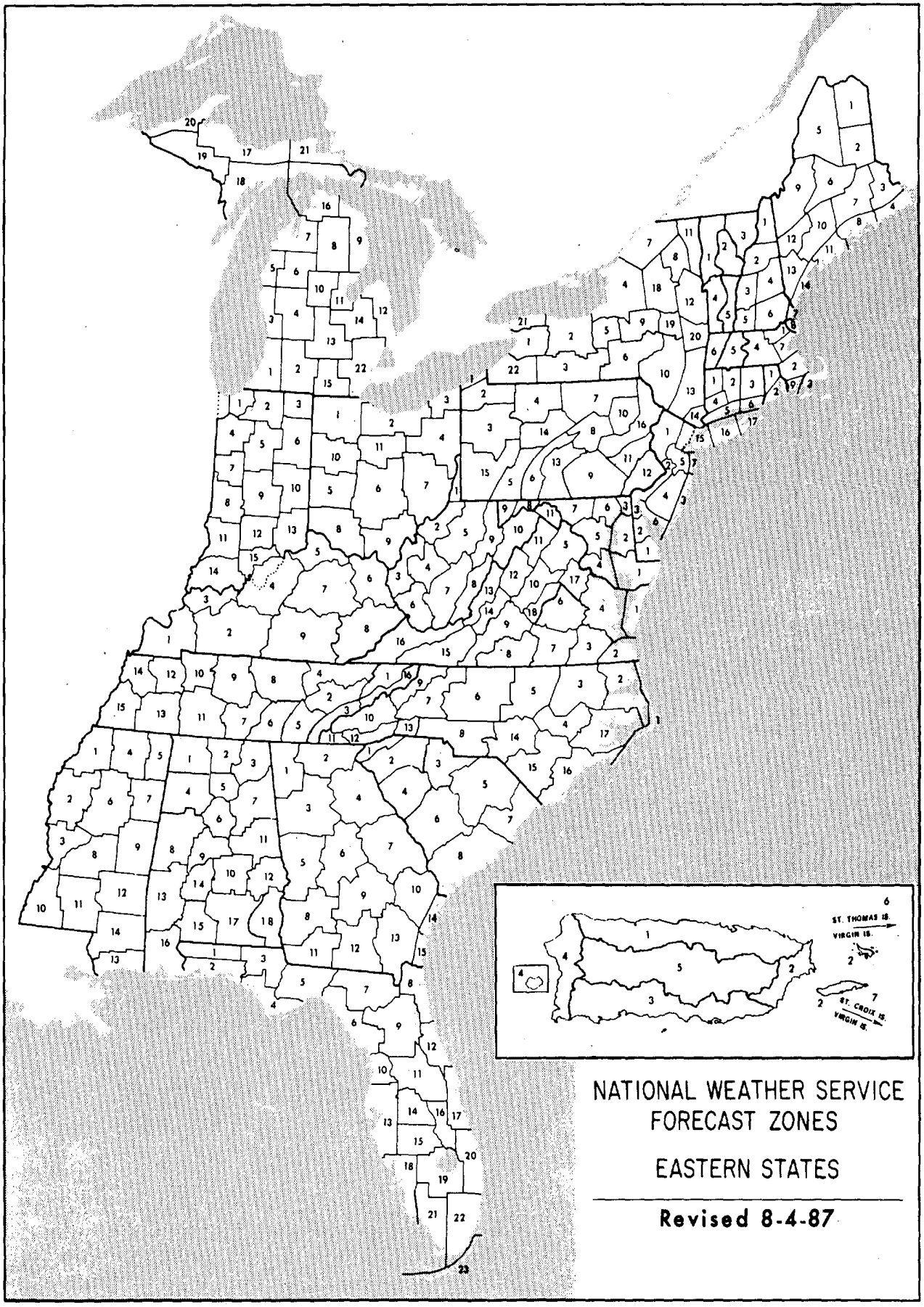


NATIONAL WEATHER SERVICE
FORECAST ZONES

WESTERN STATES

Revised 8-4-87


NATIONAL WEATHER SERVICE
FORECAST ZONES
CENTRAL STATES
Revised 8-4-87



NATIONAL WEATHER SERVICE FORECAST ZONES

EASTERN STATES

Revised 8-4-87

CLIMATOLOGICAL DATA is a unique source of weather information derived from data collected by over 8,000 cooperative weather observers located throughout the United States, Puerto Rico, the Virgin Islands, and U. S. Pacific Islands. It is published monthly, with an Annual Summary, for each State or combination of States/Areas by the National Climatic Data Center, Asheville, North Carolina.

- MONTHLY editions contain:
- Temperature and precipitation extremes and summarized data.
- Daily precipitation, maximum and minimum temperatures, snowfall, soil temperatures, and evaporation & wind.
- Graphical displays of various climatological features.
- Station indices and locator maps.
- Monthly totals of heating degree days and snowfall are published as seasonal tables in the July issue.
- ANNUAL SUMMARY contains monthly and annual:
- Total precipitation and departures from normal.
- Average temperatures and departures from normal.
- Temperature extremes and freeze data.
- Soil temperatures.
- Total evaporation and wind movement.
- Monthly and seasonal cooling degree days.
- Graphical displays of various climatological features.
- Station indices and locator maps.

SHELF STOCK of the printed publication is maintained only for the most recent three years. Earlier years are available on microfiche or as paper copies reproduced from microfiche. The data are also available in digital form - on magnetic tape or diskette.

NATIONAL CLIMATIC DATA CENTER

CLIMATOLOGICAL DATA ANNUAL SUMMARY PENNSYLVANIA 1987

ISSN 0364-5843

VOLUME 92 NUMBER 13

IT THIS IS AN OCEANIC AND A ED FROM INFOR C DATA CENTER.

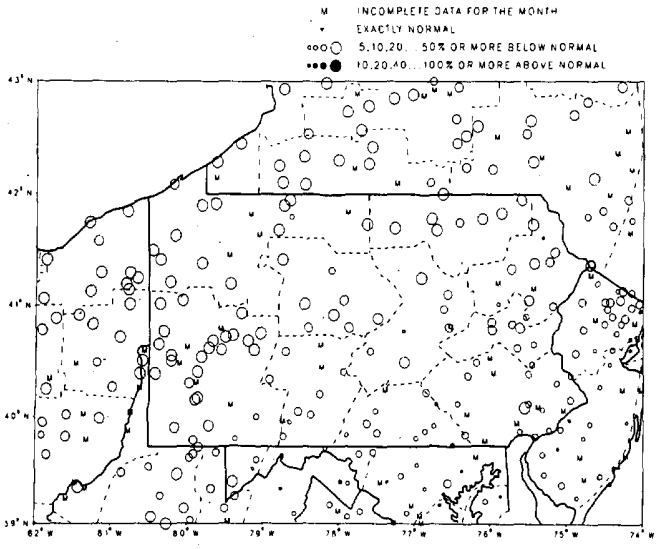
Director

ISSN 0364-5843

CLIMATOLOGICAL DATA PENNSYLVANIA

JANUARY 1988
VOLUME 93 NUMBER 1

MONTHLY PRECIPITATION DEPARTURE FROM INDIVIDUAL STATION NORMALS (1951-1980)



CIRCLE DIAMETER IS PROPORTIONAL TO DEPARTURE ON A CONTINUOUS SCALE

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AND IS COMPILED FROM INFORMATION RECEIVED AT THE NATIONAL CLIMATIC DATA CENTER.

Kenneth D. Hadeen

DIRECTOR, NATIONAL CLIMATIC DATA CENTER

noaa

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER ASHEVILLE NORTH CAROLINA

A WORLD OF INFORMATION

For.....

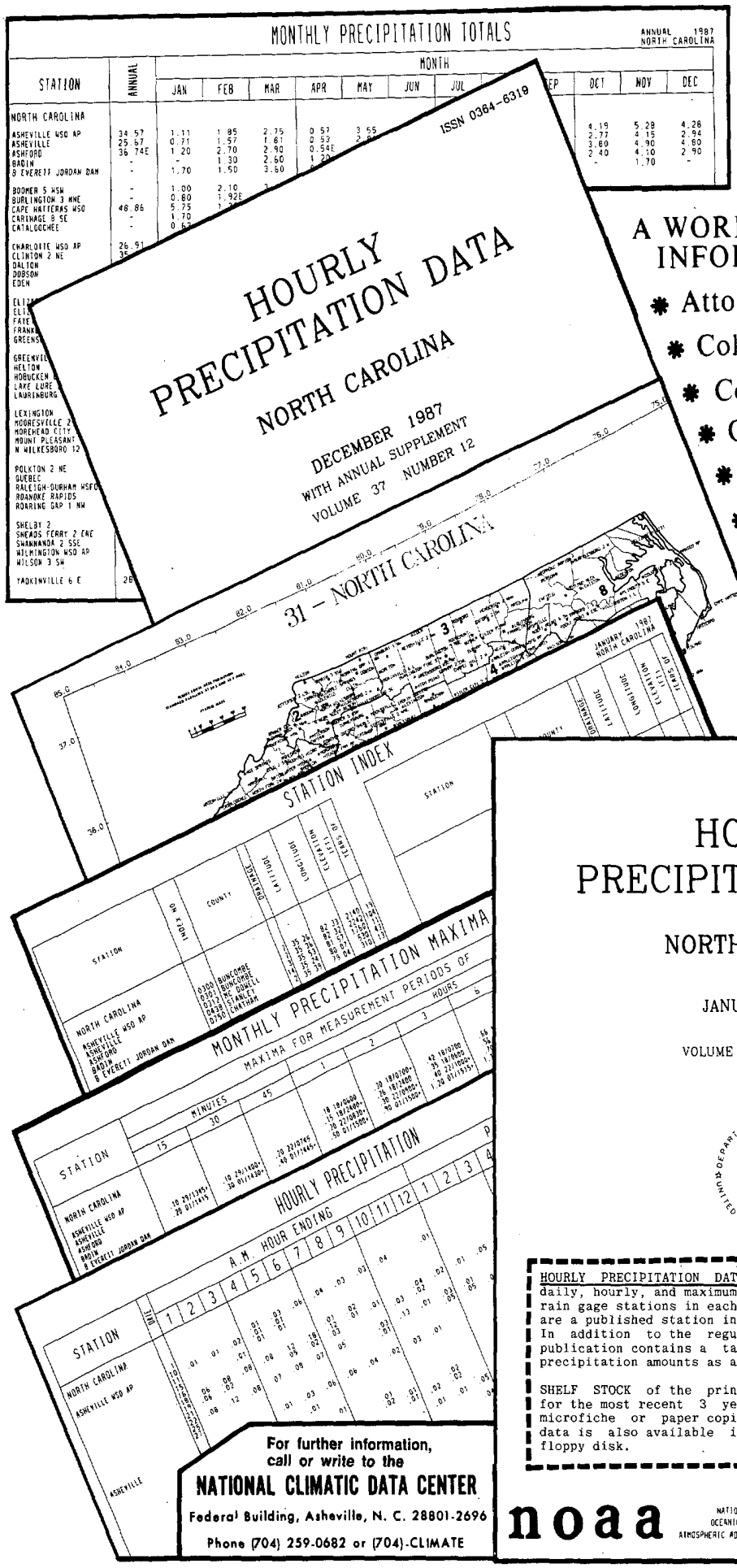
- Industry
- Research and Development
- Public Utilities
- Government Agencies
- Attorneys
- Construction
- Consultants
- Insurance Companies
- Colleges and Universities
- Energy

For further information, call or write to the

NATIONAL CLIMATIC DATA CENTER

Federal Building, Asheville, N. C. 28801-2696

Phone (704) 259-0682 or (704)-CLIMATE



A WORLD OF CLIMATIC INFORMATION FOR....

- Attorneys
- Colleges & Universities
- Construction
- Consultants
- Governmental Agencies
- Industry
- Insurance Companies
- Public Utilities
- Research & Development
- Energy

ISSN 0364-6319

HOURLY PRECIPITATION DATA

NORTH CAROLINA

JANUARY 1987

VOLUME 37 NUMBER 1

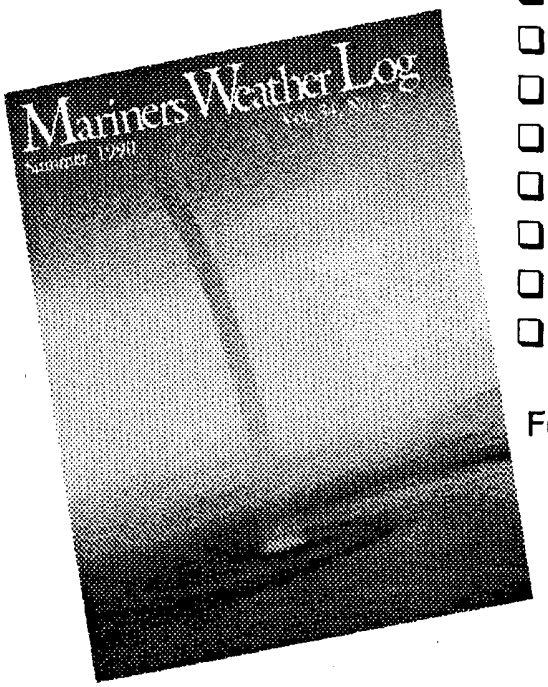
HOURLY PRECIPITATION DATA is published monthly and presents daily, hourly, and maximum short duration data for recording rain gage stations in each state except Alaska. Also included are a published station index and a locator map for the state. In addition to the regularly published data, the December publication contains a tabulation of monthly and annual total precipitation amounts as an annual supplement.

SHELF STOCK of the printed publication is maintained only for the most recent 3 years. Earlier years are available on microfiche or paper copies reproduced from microfiche. The data is also available in digital form - on magnetic tape or floppy disk.

noaa
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER ASHEVILLE, NORTH CAROLINA

Mariners Weather Log

Serving the maritime community



- ❑ Comprehensive coverage of storms.
- ❑ Typhoon and Hurricane information.
- ❑ Unusual weather phenomena at sea.
- ❑ Selected gale and wave observations.
- ❑ Storm tracks and weather–related casualties.
- ❑ History of marine weather and marine lore.
- ❑ Lighthouse features by Elinor DeWire
- ❑ Sea photography and radio tips.

For sample copy and subscription form write:

User Services Branch
National Oceanographic Data Center
NOAA
Washington, DC 20235

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service
National Climatic Data Center
Federal Building
Asheville NC 28801

BULK RATE
POSTAGE & FEES PAID
United States Department Of Commerce
NOAA Permit No. G - 19

To change your address, please return a copy of the mailing label along with your new address.

"FORWARDING AND RETURN POSTAGE GUARANTEED - ADDRESS CORRECTION REQUESTED"