

OCTOBER 1977

VOLUME 19

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# STORM DATA



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

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1977

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INURED	PROPERTY	CROPS	
<b>ALABAMA</b>									
Jefferson County	8	9.55p			0	0	0	0	Heavy Rain
Portions of Jefferson County recorded nearly four inches of rain during the day. Some minor flooding occurred in the Ensley area and in downtown Birmingham. Ensley is located five miles west of downtown Birmingham.									
Alabama	13-14				0	0	0	0	Record cold
Huntsville, Birmingham and Mobile all set new low temperature records. Temperatures were generally in the 30s statewide, but several north Alabama Cooperative Stations had readings in the upper 20s. Coldest temperature was 28 degrees at Winfield on the morning of the 14th. Winfield is located 45 miles north of Tuscaloosa.									
Baldwin County	25	7.00a	15	100	0	0	4	0	Tornado
A tornado skipped across the southern part of Baldwin County from near Foley to Robertsdale, and ending near Loxley. Several homes near Robertsdale had minor damage and one mobile home was overturned. State troopers followed the intermittent tornado as it moved north. Robertsdale is located 25 miles east of Mobile.									
Mobile County	25	9.32a			0	0	2	0	Waterspout/wind
A waterspout passed directly over the Dauphin Island Sea Lab which is located on the east end of the island. Peak wind was 50 mph and minor damage occurred. Dauphin Island is 30 miles south of Mobile.									
<b>ALASKA</b>									
Gulf of Alaska	14-15				1	0	5		Wind and high seas
A powerful storm moved northeastward into the Gulf of Alaska on Oct. 14. Storm force southeast winds over the North Gulf Coast and Southeast Alaska on Oct. 14 veered to south/southwest and slowly decreased on Oct. 15. The 42-foot fishing vessel "Narnot Cape" was torn from anchor and destroyed in the surf at Astrolabe Bay, about 70 miles west of Juneau, early on Oct. 15. Waves of 30 feet were reported in the area at the time. One crew member was lost.									
Gulf of Alaska	16-17				0	0	6		Wind and high seas
Another North Pacific storm moved northeastward into the Gulf of Alaska on Oct. 16. Storm force winds were common over most of the Gulf of Alaska Oct. 16-17. An arctic front moved southeastward across the Kenai Peninsula. Storm force northwesterly winds behind the arctic front developed over Kodiak Island and the southern Kenai Peninsula waters Oct. 17. The 70-foot fishing vessel "Seafarer" was sunk about 5 miles east of Chugach Island, just off the southern tip of the Kenai Peninsula, on the evening of Oct. 17. Winds of 80 knots and 20 foot seas were reported in the area. The crew was rescued.									
Southern Kenai Peninsula	22				0	0	5		Heavy rain and mudslide
Strong southeast flow off the Gulf of Alaska Oct. 20-22 caused moderate to heavy precipitation over the southern Kenai Peninsula. Seward had 2 1/2 inches of rain Oct. 20-22. On Oct. 22, a mudslide blocked the road at mile 91 on the Seward Highway.									
Aleutian Islands	25-26				0	0	5		Strong wind and high seas
An extratropical low formed just north of Typhoon Ivy - in the west Pacific - on the evening of Oct. 23. The low moved rapidly northeastward toward the Aleutian chain and strengthened explosively. The center moved north of the central Aleutians on Oct. 25, causing peak winds of 95 knots from the west at Adak around noon. The center then turned southeastward and crossed the eastern Aleutians on the evening of Oct. 25. The ship "Vigilant", near Dutch Harbor, reported a pressure of 27.35 inches (924.1 millibars) at 6PM Oct. 25 - a new Alaska all-time record low pressure reading. Several buildings were blown from their foundations at Atka Island. Some building materials were lost and some wind damage occurred at King Cove, on the southern Alaska Peninsula. Some barges were temporarily beached on the north side of the Alaska Peninsula near Port Hidden.									
<b>ARIZONA</b>									
Buckeye, Maricopa County	5	7:00 p.			0	0	5	5	Wind, Hail
A severe thunderstorm with winds estimated over 60 m.p.h. downed 17 poles of a 69,000 volt transmission line, uprooted trees, broke windows, ripped off roofs and damaged mobile homes. Numerous cotton fields were flattened by wind and hail.									
<b>ARIZONA (continued)</b>									
Santa Cruz, Pima, Pinal and Cochise Counties	6-10				0	0	7	6	Flooding
Torrential rains from tropical storm Heather over a four day period brought severe flooding and devastation to southern Arizona along the Santa Cruz and San Pedro Rivers. The greatest destruction was along the Santa Cruz between Nogales and Marana. Heather was born in the eastern Pacific well south of the southern tip of Baja on October 3-4. For the next two days the tropical storm moved northwest, parallel and west of Baja. It then curved to the east, spreading rain into Arizona. On the 7th, it was breaking up and difficult to pinpoint, but heavy rains continued through the evening of the 9th. Rainfall amounts for the four day period across extreme southern Arizona and extreme northern Mexico were mostly between 4 and 12 inches. Nogales measured 8.30, Bisbee 5.75 and Fort Huachuca 5.50 inches. At Pena Blanca, about twelve miles northwest of Nogales, 12 to 14 inches were noted. At a number of locations, the total amounts exceeded average annual values. While some flash flooding occurred on the Santa Cruz and its tributaries, mainly around Tucson, on the 6th and 8th, the major flooding on the Santa Cruz and San Pedro Rivers began during the morning hours of the 9th near the Mexican border and spread northward during the afternoon and evening and continued on the 10th and 11th. Peak discharge occurred on the Santa Cruz between Nogales and Continental, reaching the so-called "100-year flood level" of 30-40,000 cubic feet per second. The governor's office estimated the total damage from the heavy rains at \$13,400,000. The major item was \$8,800,000 to farms, which included \$5,700,000 to land and \$2,100,000 to crops. Other damages were \$290,000 to residences, \$300,000 to small businesses, \$700,000 to utility and railroad companies and \$2,300,000 to roads and streets. There were no injuries or deaths, but 400 persons were driven from their homes.									
<b>ARKANSAS</b>									
Near Jessieville - Garland County	23	8:10 p.			0	0	?	0	Hail
Strong thunderstorms moving northeastward through the county produced one-inch hail.									
Just West of Hot Springs - Garland County	23	8:10 p.			0	0	?	0	Hail
Heavy thunderstorms moving northeastward through the county produced three-quarter inch hail.									
<b>CALIFORNIA</b>									
<b>NORTHERN &amp; CENTRAL</b>									
NONE REPORTED									
<b>CALIFORNIA SOUTHERN</b>									
NONE REPORTED									
<b>COLORADO</b>									
NONE REPORTED									
<b>CONNECTICUT</b>									
Southwest	19	Afternoon			0	0	4	0	Wind, hail
Gusts to 40 knots blew down many trees and broke some windows. Small hail also occurred.									
Ansonia	20	?			0	0	5	0	Lightning
Lightning struck a utility pole and passed electrical charges into several shpps and set a fire.									
Central	All Month				0	0	0	5	Rain
Excessive monthly rainfall flooded potatoe fields delaying harvest and causing water rot in potatoes.									

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					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS		
<b>DELAWARE</b>										<b>INDIANA</b>										
Sussex County	14	All Day			0	0	5	0	Coastal Storm, High Tides	West Central	1	Early Morning				0	0	?	6	Rains
<p>A "Nor'easter" struck the coastal area causing the second highest tide of the year, nearly 3-feet above normal. This, combined with northeasterly winds gusty to 50 mph, caused minor flooding at Lewes, Indian River Inlet, Bethany Beach and the northern portion of Fenwick Island. The loss of protective dunes accounted for the major portion of the damage figure. However, septic systems were exposed in the South Bethany Beach area, along with damage to bulkheads and destruction of some fences.</p>										<p>Very heavy rains deluged Western and Central Indiana late Friday night and early Saturday morning. Between 3 to 6 inches of rain fell in the area between Indianapolis to west of Crawfordsville. More than 6 inches of rain fell in the Sugar Creek basin in the vicinity of Crawfordsville. These rains resulted in the flooding of farmlands from Covington to Terre Haute. The Corps of Engineers estimated the crop damage at near 5 million dollars.</p>										
<b>FLORIDA</b>										<p>Wind and hail damage to West Central Indiana technically occurred on Friday, September 31, and was reported in the September data.</p>										
Monroe County	2	5:00 PM EST			0	0	0	0	Waterspout	Centerville Wayne County	1	5:00 AM	1	50	0	1	5	?	Tornado	
<p>A waterspout was reported 3 miles east of Key West drifting slowly southwestward.</p>										<p>A small tornado moving on a southeastward track crashed into the Richland subdivision near Centerville in the early morning hours. Two houses were demolished and several houses on either side were damaged considerably. Many tree limbs were snapped off and some roofs were damaged. One woman was slightly injured.</p>										
Dade County	6	4:30 PM EST			0	0	0	0	Waterspouts	Near Corydon, Harrison County	1	8:00 AM	1/2	40	1	1	4	0	Tornado	
<p>Several waterspouts were observed near Miami Beach and all dissipated without coming ashore.</p>										<p>A twister struck a mobile home eight miles northeast of Corydon in a rural area. The home was blown apart and scattered for 1,000 yards. The male occupant was found 200 feet from the foundation and died later that morning. His wife suffered multiple injuries. Several trees were knocked down in the vicinity of the trailer home.</p>										
Hillsborough County	12	3:06 PM EST			0	0	0	0	Waterspouts.											
<p>Two waterspouts were reported by a pilot over Tampa Bay, movement unknown.</p>																				
Dade County	12	3:30 PM EST			0	0	0	0	Funnel aloft.											
<p>A funnel cloud aloft was reported 10 miles west of Homestead.</p>																				
Escambia County	25	7:25 AM CST	1/10	20	0	0	0	2	Tornado											
<p>A small tornado touched down briefly near the east fence of Saufley Field Naval Air Station. No injuries or significant damage were reported. Damage was confined to about 100 feet of fence and to scattered butane gas tanks and trees down in the vicinity of Saufley Field. The tornado, associated with one of numerous thunderstorms in the area, was moving toward the northeast at 25 mph.</p>																				
Escambia County	25	9:00 AM CST			0	0	0	0	Waterspout.											
<p>A waterspout was reported over Pensacola Bay.</p>																				
Okaloosa County	25	11:45 AM CST	1/10	15	0	0	0	0	Tornado											
<p>A small tornado, associated with one of numerous thunderstorms in the area, was reported by Okaloosa County Civil Defense west of Ft. Walton Beach near Hurlburt Field. No damage or injuries were reported.</p>																				
Mico, Brevard County	30	10:47 PM EST	1/10	15	0	0	2	0	Tornado											
<p>Brevard County Civil Defense reported that a small tornado touched down briefly causing minor damage. A power line and some trees were blown down, and the roofs of two mobile homes were damaged. No injuries were reported.</p>																				
Monroe County	31	3:47 PM EST			0	0	0	0	Waterspout											
<p>A waterspout was reported 5 miles south of Key West drifting slowly toward the southwest.</p>																				
<b>GEORGIA</b>										<b>KANSAS</b>										
Northeast	25 thru 26				0	0	0	3	Flooding	Coffey, Franklin and Osage Counties	31	11:15 p				0	0	5	5	Wind, hail, rain
<p>Heavy rains during the 25th to 26th caused about \$5,000 damage to crops.</p>										<p>Heavy thunderstorms moved north-northeast from northeast Coffey county along the Osage-Franklin counties line. Gusty winds, small hail, and locally heavy rains caused rural damage from southeast of Haverly to near Williamsburg. Wind damage was to trees, barns and outbuildings. Heavy rain and small hail caused extensive crop damage to soybeans and milo. 3-1/2 inches of rain fell in a short period 2-1/2 miles southeast of Haverly. Hail to 3/4 inch diameter along with gusty winds caused damage to recreational vehicles near Vassar.</p>										
<b>HAWAII</b>										<b>KENTUCKY</b>										
4 mi. SW of Wheeler AFB, Oahu	10	2:59p-3:03p							Funnel cloud	MARION CY	1	10 AM	5	300	0	0	5	5	TORNADO	
										<p>A small tornado damaged 4 homes and many barns and sheds in an area just SW of Lebanon. The storm moved from the NW to the SE at 50 mph.</p>										
<b>IDAHO</b>										FAYETTE CY										
NONE REPORTED										<p>1 10 AM 8 400 0 0 5 5 TORNADO</p> <p>A tornado damaged 5 homes and flattened 12 barns as it moved thru an area 11 miles NE of the airport at Lexington. This storm which caused more than one-half million dollars to crops and property moved from the NW to SE at 50 mph.</p>										
<b>ILLINOIS</b>										OWSLEY CY										
SEE END OF TABLE										<p>1 12:30 PM 12 400 0 0 5 5 TORNADO</p> <p>A tornado which moved thru Travelers Rest damaged 29 barns and sheds. This tornado which caused damage estimated at one-half million dollars to crops and property moved from the NW to the SE at 50 mph.</p>										
										LAUREL CY										
										<p>1 2:10 PM 2 400 0 16 5 5 TORNADO</p> <p>A tornado caused extensive damage to the PINEY GROVE community located 4 to 5 miles south of London. A total of 16 people were injured when 10 barns, 8 mobile homes, and 8 homes were damaged or destroyed.</p>										
										HARDIN CY										
										<p>1 6 PM 2 1 0 0 5 0 TORNADO</p> <p>A funnel cloud which traveled over the city of Ratcliff touched down briefly destroying a new brick home and blowing the roof off the one next to it. This storm moved from W to E at 40 miles per hour.</p>										

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					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS	
<b>KENTUCKY (continued)</b>										<b>MICHIGAN</b>									
HARLAN CY	1	Eve					6	5	FLOOD	Sanilac, Huron, Tuscola, Genesee, Saginaw, Bay, and Arenac Co.	1-18								C Excessive Rainfall
Five inches of rain which fell over the Cumberland River basin caused flooding over Cranks Creek, Little Creek, Clover Fork, Jones Creek, and Yocum Creek. Three homes were destroyed, six county bridges were washed out, and crops were destroyed.										Numerous rains in late September and the first week in October left water standing in many fields. Heavy machinery was unable to enter fields for harvesting purposes, resulting in water damage to 50 percent of the areas dry bean crop.									
NELSON CY	1	Morning					5	4	TSTM	NONE REPORTED									
A severe thunderstorm hit Bloomfield flattening two barns and damaging three homes.																			
<b>LOUISIANA</b>										<b>MISSISSIPPI</b>									
Caddo Parish	8	1:30 AM			0	0	6	0	Wind	Woodville, Wilkinson County	8	5:15 PM	15	50	0	0	3	?	Tornado
Winds estimated at 30-40 mph caused TV tower near Mooringsport to vibrate and fall.										A tornado touched down 10 mi. west of Woodville at about 5 PM near the Pond Road damaging several small outbuildings. The twister moved east, passing about 2 mi. south of Woodville near Highway 61 damaging several sheds and small structures before lifting about one mile north of Newtonia. Damage \$2,500.									
Jackson Parish	8	3:55 PM	1/2	25	0	0	4	0	Tornado	Flora, Madison County	8	8:10 PM			0	0	0	0	Funnel Cloud
A funnel cloud was first spotted about 3:49 PM NW of Hodge. It touched down in Hodge Shopping Center at 3:55 PM damaging a bank, food store, elementary school, roofs and power lines.										The tornado then lifted, but wind damage to trees was reported along highway east of town and to roofs in Weston as the thunderstorm moved southeast.									
Northern Parishes	8	5-7 PM			0	0	3	0	Thunderstorms and wind	A funnel cloud was reported by the public and verified by the Jackson radar about 2 mi. south of Flora moving east.									
Several reports of trees and power lines knocked down. Minor damage near Columbia in Caldwell Parish about 5:05 PM and in Pleasant Hill area of Sabine Parish about 6:20 PM.										<b>MISSOURI</b>									
<b>MAINE</b>										<b>North Half</b>									
Statewide	1	Daylong					4	3	Southeaster	21-24	pm 21-24	?	?	0	0	?	?	Heavy Rain	
Rain and high winds buffeted the state. Trees and limbs downed power lines and caused damage to buildings and vehicles. Coastal areas were hard hit. Orchardists were caught in the final stages of picking fruit.										A stationary front slipped into northern Missouri, and a low developed in eastern Kansas. Conditions changed little the entire weekend. Rain began falling in northwest Missouri late Friday and lingered in northeast Missouri into Monday. As a result of the continuous rain, much flooding covered the northern half of Missouri. The flooding affected mostly rural areas; the rivers and streams rose slowly but relentlessly. Most damage was to rural homes and crops not yet harvested.									
Statewide	9	Daylong					4		Southeaster	NONE REPORTED									
High winds ripped the state and coastal areas. Heavy rains the second weekend in a row weakened tree roots, aiding blowdowns.										<b>MONTANA</b>									
Statewide	17	Daylong					4		Northeaster	NONE REPORTED									
High winds and heavy rains the third weekend in a row resulted in more damage from rain and wind.										<b>NEBRASKA</b>									
<b>MARYLAND &amp; D.C.</b>										NONE REPORTED									
Eastern Shore	14	All Day			0	0	5	0	Coastal Storm, High Tides	NONE REPORTED									
Northeast winds gusting to 40-50 mph and tides running about 3 feet above normal battered the area, particularly in the Ocean City vicinity. Storm was called the worst in 15 years as sand that had been replaced from an earlier storm, was again washed away. Besides serious beach and dune erosion, a 75-foot section of pier was washed away, while streets were flooded and covered with debris.										<b>NEW HAMPSHIRE</b>									
Cumberland	17	6:30 a			0	0	4	0	Wind	NONE REPORTED									
Gusty winds were believed to be the cause of the outward collapse of a 12x25-foot section of brick wall of building.										<b>NEW JERSEY</b>									
<b>MASSACHUSETTS</b>										<b>Coastal Areas</b>									
Northeast Coast	14	All day			0	0	5	0	High wind	14	am-pm			0	0	?	0	0	Storm Tide
An intense coastal storm blew several hundred boats from their moorings. Marblehead Harbor saw 5 large yachts blow ashore.										A storm with winds over 50 mph lashed the New Jersey Coast, causing tides over 4 feet above normal. Streets and coastal highways were closed. Scattered areas were evacuated major beach erosion occurred at Sandy Hook and Monmouth Beach.									
Attleboro	20	9-10 AM			0	0	2	0	Lightning	NONE REPORTED									
Lightning struck houses, but caused only minor damage.										<b>NEW MEXICO</b>									
Easton	20	Morning			0	1	0	0	Lightning	NONE REPORTED									
A school aid was struck by lightning as the current passed through the telephone on which she was talking.										<b>NEW YORK</b>									
<b>COASTAL</b>										<b>(Extreme Southeast)</b>									
										Massou, Suffolk Co.									
										14 am-pm									
										Easterly winds in excess of 35 mph resulted in excessive beach erosion along the south shore of Long Island. A police car was trapped on the sand and washed put to sea. Tides ran 3 to 4 feet above normal, with waves breaking over the sand dunes.									

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<b>NEW YORK</b> CENTRAL AREAWIDE					0	0	5	7	RAIN
	DURING THE FIRST HALF OF THE MONTH EXTREMELY WET WEATHER WITH STORMS ON THE 1ST, 8TH, 9TH, 14TH, 16TH, AND 19TH; CREATED A SUBSTANTIAL LOSS TO AGRICULTURE; MAINLY, DAIRY FEED; CORN; HAY; OATS; ALSO SOYBEANS AND POTATOES.								
	125% TO 225% OF NORMAL PRECIPITATION ALSO CAUSED WIDESPREAD FLOODING BUT MAINLY IN THE DELAWARE AND SUSQUEHANNA RIVER BASINS. MANY FAMILIES IN THESE AREAS HAD TO BE TEMPORARILY EVACUATED. THE FIRST SNOW FOR THE SEASON OCCURRED IN THE STORM ON THE 16TH.								
<b>NEW YORK</b> WESTERN			NONE REPORTED						
<b>NORTH CAROLINA</b> Randolph County	1	9:00 PM	11.1	40	0	0	5		Tornado
	A tornado touched down near highway 311 and across southern Randleman and on northwest to Lineberry south of Climax. Total damage to buildings and poultry \$100,000.								
Stanley County	26						5		Flooding
	Flooding damaged mills to the extent of 1/2 million dollars.								
<b>NORTH DAKOTA</b> 4 Miles SW Ryder (Ward County)	30	9 am	--	--	0	0	0	3	Lightning
	A fire...started by lightning...destroyed 250 one hundred pound bales of straw in an open field.								
<b>OHIO</b> Southwest	1	2A-4A			0	0	4	0	Heavy rain, High wind
	An area of thundershowers moved through southwest Ohio accompanied by heavy rains and strong winds. Rainfall amounts were as high as 4 to 6 inches during a two hour period. The showers produced considerable urban and small stream flooding from Columbus to Cincinnati. Winds downed utility lines and trees.								
Carlisle (35 NE CVG)	1	655A	0.3	50	0	0	5	0	Tornado
	This small tornado did damage between Lincoln Ave and Roberts Dr. One home suffered major damage while 8 others had moderate damage. This tornado moved west to east.								
Green Township (10 NNE CVG)	1	710A	3/4	150	0	17	6	0	Tornado
	A tornado with as many as three funnels touched down on Seville Ct. in suburban Cincinnati. The tornado destroyed 12 homes and damaged 15 others, 9 extensively. The tornado moved from the west northwest to the east southeast.								
Cincinnati (13 NE CVG)	1	730A	1/2	100	0	0	5	0	Tornado
	A tornado touched down at the intersection of Madison and Redbanks Rds. The tornado touched down in a factory parking lot lifting up and rolling over several cars and large trucks. It also damaged the factory, a nearby church and a boys home. This tornado also moved from WNW to ESE and may have come from the same storm that produced the Green Township tornado.								
Winchester, Adams County	1	810A	1/2	50	0	0	4	0	Tornado
	A thunderstorm did damage to homes and trees in Clermont county and moved ESE to produce a small tornado in Adams County. The tornado damaged trees and farm buildings.								
Rocky Fork Lake State Park, Highland County	1	810A			0	0	5	0	High winds, lightning
	A line of thunderstorms moved through Hillsboro and across Rocky Fork Lake. Several lightning strikes started fires. Trees and utility lines were downed and a number of trailers were overturned around the Lake.								
Jerry City, Wood County	8	646P	0.4	50	0	0	5	0	Tornado
	A small tornado touched down about 8 miles SE of Bowling Green. Roofs and farm building were damaged and trees and utility lines were downed.								
<b>OKLAHOMA</b>									NONE REPORTED
<b>OREGON</b> Lincoln County	28	Morning			1	7	5		Coastal flooding from extremely high seas. Damaged beach motels and dock facilities.
<b>PACIFIC</b> 3 mi. NW of weather office Kwajalein	9	3:30p-3:54p							Waterspout
	Dark gray waterspout, moving towards NE, extended straight down from towering cumulus cloud (base 1,500 ft. and estimated tops 20,000 ft.). Rainshowers in vicinity of waterspout.								
<b>PENNSYLVANIA</b> EASTERN Eastern Penna.	16 17	10 AM to 1 PM EST			0	0	6	3	Heavy Snow, Heavy Rain, Electrical, Wind
	Snow that began the evening of the 16th was heavy and wet and unusual amounts accumulated on trees that still had their fall foliage. The snow was mainly over the northern half of Eastern Pennsylvania although some small amounts did fall over the southern half. Innumerable thousands of trees and tree limbs were down over the northern half. Some trees were uprooted and trees and limbs were snapped off or bent over, some all the way to the ground. The trees and limbs brought down utility lines throughout the area and also fell on buildings and automobiles.								
	Over 65,000 customers experienced power outages with some being out for several days. The number of trees on the roads greatly hampered road clearing operations as crews had to be dispatched to clear the trees before plows could get through. Snow accumulations were about 2 to 4 inches over the lower elevations, but 9 to 17 inches were over the higher ground. A few samples of snow accumulations are 17 inches at Freeland, 15 inches in sections of Toga, Bradford and Sullivan Counties, 13 inches at Hazelton. Lightning and thunder accompanied the snow as well as strong winds which added greatly to the number of downed trees. Thundershowers, heavy rain and strong winds occurred across the southern half of Eastern Pennsylvania and preceded the snow over northern sections. Some minor flooding occurred in a few locations and a few lightning fires were reported. The winds resulted in damage in a few locations, one being a 70-ft. silo under construction which blew over at Curryville. There was also some small hail reported in some areas. Many storm-related automobile accidents occurred and a number of injuries resulted. Many roads including some interstate highways were closed for a time with many motorists stranded.								
<b>PENNSYLVANIA</b> WESTERN Somerset County Cambria County	17	Morning							Snow, wind
	Occasional snow squalls occurred over these counties through the early morning hours. Snow accumulations up to 3 inches were reported by 6 am. Wind gusts of 50 mph were reported by the Johnstown airport between 5 and 6 am. Two people were killed when the car in which they were riding went out of control in a snow squall on the Pennsylvania Turnpike near Somerset during the early morning hours.								

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<b>PUERTO RICO</b>									
Eastern	7				3	0	*4	C	Heavy Rain
	<p>A tropical wave moving from the east in association with an upper level trough that interacted in the vicinity of Puerto Rico produced a succession of rainy days culminating in a number of high intensity showers over eastern portions of the island. The heaviest activity broke out after 5:00 PM on Friday the 7th, with some stations reporting rainfall totals between six and eight inches along the eastern coast. Civil Defense evacuated a number of families from their homes in this area as most eastern rivers went over their banks including the Espirito Santo, Mameyes, Fajardo, Guayanes and Manabo. One man drowned near Luquillo when he tried to cross a road overrun by the Mameyes River. One twelve year old boy was killed near Arecibo when a landslide brought rocks down a hill over his house. An eleven year old boy was drowned when he tried to cross a creek in the vicinity of Mayaguez. Considerable road damage occurred near Yabucoa at the entrance to the town on Highway #3.</p>								
<b>RHODE ISLAND</b>									
Bristol	7	Evening			0	0	4	0	Wind
	<p>Strong southwest winds blew many boats from their moorings leaving them crashing upon rocks. At least 6 sailboats and 2 powerboats were beached.</p>								
<b>SOUTH CAROLINA</b>									
Northwestern	1	P.M.	-	-	0	0	3	0	Thunderstorm High Winds
	<p>Thunderstorm during the afternoon damaged a mobile home near Abbeville. Scattered thunderstorms also caused other minor damage across state.</p>								
Aiken and McCormick Counties,	2	P.M.	-	-	0	0	3	0	Thunderstorm High Winds
	<p>Strong winds associated with thunderstorm caused minor damage to trees and roofs and utilities.</p>								
Northern Walhalla, Pickens, Greenville, and Spartanburg Counties,	25-26	Night	-	-	0	0	4	3	Flash Flood
	<p>Heavy rains of 4 to 7 inches caused flash flooding across extreme northwestern South Carolina during night hours. Damage mostly to roads and bridges with a few homes flooded.</p>								
<b>SOUTH DAKOTA</b>									
					NONE REPORTED				
<b>TENNESSEE</b>									
Sullivan, Hawkins, Washington, Johnson and Carter Counties in East Tennessee	1-2	AM 1st to PM 2nd			1	8	7		Flash flooding
	<p>Heavy rains in little over 24 hours caused many creeks and streams in the five-county area to overflow their banks. Rainfall amounts of around 5 inches were common.</p> <p>Flood damage in Sullivan County amounted to 3 million dollars, most of which resulted from flooding of downtown Bristol stores to a depth of 3 to 4 feet. This was the most serious flooding in 50 years. Damage in downtown Bristol was along State Street between Front and Piedmont Streets, as well as the shops along Moore Street between Cumberland and State Streets. Most damage occurred around 3:30 a.m. October 2, when Beaver Creek that runs through the city overflowed its banks. Fifty businesses and offices were affected in an eight block area of Bristol's central business district. There were 3 road bridges and 1 railroad bridge destroyed in Sullivan County.</p> <p>In Kingsport there was lesser damage to business establishments along Reedy Creek. Johnson County had one drowning when a member of a rescue team was swept off a bridge while trying to reach families stranded by flood waters near Mountain City. Rain swollen Roan Creek in Mountain City went out of its banks and 100 families had to be evacuated. Three million dollars damage occurred in Johnson County mainly to roads, bridges, and mobile home courts along streams. This includes damage to 50 businesses and offices in downtown Mountain City. Roan Creek in Mountain City crested between 5 A.M. and 6 A.M. on October 2.</p> <p>Bridges and roads were washed out in the Buldeen section of Stoney Creek (Carter County). Damage in the remaining counties was confined to washed out roads and bridges, water and sewage treatment plants, telephone and power plants.</p> <p>Eight persons received injuries, but none were hospitalized.</p>								
<b>TENNESSEE continued)</b>									
Bristol, Sullivan County	1	3:35 P. to 4:05 P.	16	50-100	0	10	6		Tornado
	<p>The tornado struck in the north-central part of Sullivan County and in the southwest Bristol area (between Bluff City and Bristol). The first touchdown was in the vicinity of Hartman Road south of Rt. 11W from Indian Springs between 1W and Route 126. The tornado moved into the area around Highway 37, then veered a little bit south and widening a bit after passing Blountville. It continued moving along Highway 126 and moved east. The B'gai Shalom Synagogue was damaged when it touched down near the Mount Tucker addition in Blountville. Briefly touching down again at Big Hollow Road, south of 126. The tornado then moved toward the Avoca area of town, touching down around 4 p.m., smashing through a restaurant, destroying mobile homes and doing extensive damage to the Bristol Electrical System Building. Final touchdown was at the Brooke Heade subdivision.</p> <p>In all, 12 mobile homes were heavily damaged or destroyed, 12 homes and two churches were partially destroyed. Other commercial buildings and barns were destroyed, and considerable damage to power and telephone lines. The 10 injuries were minor.</p>								
Livingston, Overton County	1	4:30 P.	8	440	0	1	5		Tornado
	<p>The tornado touched down at three places. The first touchdown was in the Greenbriar Community near Hillham (18 miles north of Cookeville), this area suffering the most damage with nine homes destroyed and 27 damaged. The Hillham Church of God was hit, the whole back side of the building ripped off.</p> <p>The storm then took an eastward path, touching down again at the Walnut Grove Community just west of Livingston, and then finally at the Hidden Valley subdivision just outside of Livingston where 14 house trailers and one house were destroyed.</p> <p>One reported minor injury from flying debris.</p>								
Washburn and Powder Springs Areas, Grainger County	1	4:45 P.	2	100 Ft.	0	2	5	4	Tornado
	<p>The tornado took a zig-zagging path across the Washburn Valley, up the ridge between Washburn and Tater Valley, then up the Clinch Mountain Ridge and down the other side of the Powder Springs area. Timber was felled all over the valley and acres of forest were stripped from the mountainside. Several homes and cabins were damaged. Several trailer homes and 20 barns containing tobacco were destroyed.</p>								
Hickory Valley and Communities, Union County	1	8:15 P.	5	440			5		Tornado
	<p>The tornado skipped along the path. The Rose Hill Primitive Baptist Church was damaged. Nine houses, five barns, and two mobile homes were destroyed.</p>								
Laurel Bluff Area, Roane County	2	12:15 A.	1/4	100 Ft.			4		Tornado
	<p>The tornado touched down in the Laurel Bluff area, uprooting and twisting trees in a wooded area near South Lakes Estates subdivision. It twisted cedar and poplar trees as big as two feet around. A wall of a home under construction was bent.</p>								
<b>TEXAS</b>									
<b>NORTHERN</b>									
Terrell, Kaufman County	24	9:00 a			0	0	4	0	Lightning
	<p>Lightning struck and toppled a chimney on the roof of the Terrell Intermediate School. As it collapsed, the chimney did extensive damage to the school roof. Another chimney was cracked but left standing by the same lightning bolt.</p>								
Hopkins County Area	31	10:00 p to 12:00 p			0	0	?	0	Lightning
	<p>Several homes and businesses in Hopkins County received minor damage from lightning strikes. Radar indicated very strong thunderstorm activity in the area during the late evening of October 31.</p>								
<b>TEXAS</b>									
<b>SOUTHERN</b>									
5 SE PORT ARANSAS OPEN GULF	20	7:20a	?	?	0	0	0	0	2 waterspouts
	<p>Observed moving northwest by the Coast Guard.</p>								

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1977

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE	CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS		
<b>TEXAS (continued)</b>										
SOUTHERN SAN ANTONIO Bexar County	22	5:35a - 7:30a			0	1	3	0		Lightning - hail
			A line of thunderstorms moved southeastward across Bexar County dropping 1/4 inch hail in portions of southwest San Antonio. Some 3/4 inch hail fell briefly, but only minor damage to vegetation was reported. Lightning strikes triggered numerous power failures around the city. A route salesman, William English, was struck by lightning while making a delivery to a grocery store. He escaped with only minor burns after being knocked to the ground.							
VICTORIA Victoria County	22	9:04a			0	0	0	0		High wind
			Winds gusted to 52 knots in a thunderstorm that moved across the Weather Service Office at Victoria. Some tree limbs were blown away, but no major damage was reported.							
TEXAS WESTERN			NONE REPORTED							
UTAH			NONE REPORTED							
VERMONT AREAWIDE					0	0	3	6		RAIN
			DURING THE ENTIRE MONTH FOUR TO SIX INCHES OF RAIN, WHICH AVERAGED 200% OF NORMAL PRECIPITATION, CREATED A SEVERE LOSS TO THE STATE AGRICULTURE. CORN, A MAJOR CROP, SUFFERED A 75% LOSS BECAUSE FIELDS WERE TOO WET TO HARVEST THE CROP. ALFALFA AND POTATOES ALSO SUFFERED BECAUSE OF WET GROUNDS. DAIRY FARMERS SUFFERED AN INDIRECT LOSS BECAUSE OF GREATER DIFFICULTY IN OBTAINING FEED.							
<b>VIRGINIA</b>										
Waynesboro	1	Afternoon			0	0	2	0		Wind
			Winds associated with thunderstorm blew portion of tree onto auto.							
Denville area	1	6:00 p			0	0	2	0		Wind
			Wind uprooted trees, resulting in at least four streets blocked. Power interruption also affected nearly 12,000 homes.							
Washington County	1	Evening			0	0	4	0		Wind
			Two barns in the Holston Valley area flattened by high winds, doing considerable damage to stored burley tobacco.							
SW Portion	1-2				0	0	7			Flood
			A series of thunderstorms the evening of the 1st and into the early morning of the 2nd brought a total of as much as six inches of rain to the Big Stone Gap area of Wise County. For the second time in six months, rapidly-rising waters hit Lee, Wise, Scott and Washington Counties. The city of Bristol had its greatest flood crest since the flood of July 1929. In Lee County, where damage was estimated at more than \$2 million, some 200 persons were evacuated and over 100 homes and mobile homes damaged or totally destroyed. Preliminary estimates place total damage over the state, including crop loss, at \$3-6 million.							
Virginia Beach	2	6:00 p	1/4	25	0	0	4	0		Tornado
			Small, short-lived tornado moved in a west-northwest to east-southeast path through the Kempsville area. Several stores in a shopping center sustained broken windows and roof damage. Elsewhere a farm shed was destroyed and a large car was moved 15 feet in a direction perpendicular to the path of the storm. One witness reported seeing a "V-shaped black cloud", while three naval personnel sighted a funnel in the vicinity before it struck and a pilot also reported seeing a funnel aloft after the storm occurrence. Estimated total damage: around \$20,000.							
SW Portion	13	All Day			0	0	0	0		Snow
			Early season snowfall left from 3 to 5 inches accumulation over parts of Floyd and Patrick Counties, necessitating the closing of the Blue Ridge Parkway for a time.							
<b>VIRGINIA (continued)</b>										
Tidewater and Eastern Shore	14	All Day			0	0	4	0		Tidal Flooding
			Strong onshore winds and rain, associated with storm moving up the coast, combined with above normal tides to inundate low-lying sections in the Norfolk-Portsmouth area. The Ocean View area was especially hard hit with roads and homes flooded by tides running more than two feet above normal, along with high waves driven by 40-mile per hour winds. One home suffered damage in excess of \$3,000 from water and also wave-caused erosion around its foundation. Elsewhere a family was rescued by the Coast Guard when high waters threatened their vacation home on Cedar Island, off the Eastern Shore.							
Western Portion	16	All Day			0	0	0	0		Snow
			Snow totaling 4 to 7 inches over the higher elevations stranded thousands of autumn tourists in Shenandoah Park. Treacherous road conditions forced closing of the 105-mile Skyline Drive for a 24-hour period.							
Statewide	25-26				0	0	3	0		Rain, Flooding
			Rain beginning during the night of the 25th into the morning of the 26th totaled 2-4 inches over much of the state, with heaviest amounts over the southern half of the state. Around six inches of rain reported at Big Meadows on the Skyline Drive and in the city of Hopewell. Except for numerous flooded basements and streets, along with stranded motorists, damage was mostly minor. School in Blacksburg had to be evacuated as water, entering through a roof construction, caused parts of ceiling to fall. Rain was otherwise beneficial in helping to bring long-needed relief to depleted reservoirs.							
Southeastern Portion	28-30				0	0	5	0		Wind, High Tides
			The second period of tidal flooding in less than two weeks created a serious erosion situation in the Virginia Beach-Norfolk area. Property owners in the Ocean View and Sandbridge sections faced the task of replacing protective dunes that have been washed away. In addition, water exposed protective jetties, uncovered septic tanks and undermined supporting pilings of several homes.							
<b>VIRGIN ISLANDS</b>										
St. Thomas, St. John and St. Croix	7-8				0	0	6	0		Heavy Rain
			A tropical wave interacting with a complex upper level trough produced a mass of heavy rain showers which drifted slowly southward over the northern Virgin Islands and St. Croix during the period October 5-8. The most severe rains which produced serious flood problems began late in the evening of Friday the 7th and lasted until early morning of the 8th. St. Thomas received rains of up to 8 inches, St. John received 3 to 5 inches and St. Croix to the south was hardest hit with some 24-hour totals of up to 16 inches with most stations reporting from 10 to 14 inches. No deaths were reported but heavy runoff and erosion caused damage to roads, buildings, houses and property inside the homes. This was one of the most severe rain storms to have hit the island of St. Croix in recent years and initial studies of the rainfall amounts indicate values with a return period in the order of two hundred years.							
WASHINGTON			NONE REPORTED							
WEST VIRGINIA			NONE REPORTED							
<b>WISCONSIN</b>										
Lake Michigan shore line	7	evening			0	7	5	2		Wind
			East to southeast winds of gale force developed along the lake shoreline on the evening of the 7th. The strong winds resulted in a "freshwater fury" for marine interests. Most of the damage occurred between 7 p.m. and midnight. At Kenosha in Kenosha County, 3 sailboats were sunk in the harbor with several others reportedly tossed over a seawall. At Two Rivers in Manitowoc County, 2 other boats were reported damaged after breaking loose from their moorings in high surf. In addition to minor damage to several boats in Algona Harbor in Kewaunee County, 30 feet of the bulkhead were destroyed in a severe pounding by high surf. At Port Washington in Oaukee County, the marine damage was especially severe. Damage was reported to 14 sailboats with total destruction occurring to 6 others. These boats were in the \$40,000 class. Total damage to sailboats of Port Washington was estimated between \$100,000 and \$200,000. Harbor piers at Port Washington were also damaged or destroyed.							

# STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1977

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	
					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS		
WYOMING			NONE	REPORTED																
ILLINOIS																				
Kankakee, Iroquois, Ford and Vermillion Counties	1	Early Morning			0	0	?	?	Heavy Rains, Flash Flooding											
<p>The heavy rains which started September 30 continued into the early morning hours of October 1. Minor flash flooding resulted, as creeks and streams rose to just above bankful in the 4-county area.</p>																				
Central and East Central Illinois	1	Early Morning			0	1	5	?	Wind, Lightning											
<p>High winds during thunderstorms hit scattered areas of Central and East Central Illinois early in the morning. Strong winds snapped 16 wooden utility power poles just west of Illiopolis, Sangamon County, putting a 138,000 volt power line out of service, knocking out power to the Borden Chemical Division plant in Illiopolis. At Forsyth in Macon County, considerable damage was caused by a strong wind which occurred during a heavy rainstorm. The winds began at about 1:20am. Much of the damage was on the northwest side of Forsyth. One injury resulted. A man on a farm near U.S. 51 in Forsyth received facial injuries. His farm was extensively damaged. Several farm homes and outbuildings were hit and damaged by the high winds and 2 horses and a dog were reported killed. The Forsyth grade school had windows broken, roof damage and guttering and overhangs torn off. A tree at the school collapsed and fell on the school building on the south side, hitting utility lines as it fell. At the Phillips Pipeline Company, 4 large storage tanks buckled. Also in Forsyth, a cement block building was destroyed and a garage and storage unit of the Maurice Transport Company was smashed. Also severely damaged was a garage on County Highway 20 inside the village limits. In the Boody area, south of Decatur on U.S. 48 in Macon County, trees were reported heavily damaged in the early morning hours. In Robinson, Crawford County, the storm hit at about 3:00am. The high winds knocked out utility lines as trees and tree limbs were snapped by the high winds. Lightning caused a power outage in Crawford County when a power line was burned in two about 1 mile east of Oblong.</p>																				



# STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	
					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS		
<b>THE FOLLOWING ARE LATE REPORTS, CORRECTIONS, AND DELETIONS:</b>																				
<b>LATE REPORTS</b>										<b>CORRECTIONS</b>										
<b>ARIZONA</b>										<b>OKLAHOMA</b>										
SEPTEMBER 1977										SEPTEMBER 1977										
Tempe Maricopa County	9	11:00 p.			0	0	5	0	Wind	OKLAHOMA										
Winds gusting to 55 m.p.h. during a thunderstorm, downed thirteen tall power line poles and wires and caused \$100,000 damage to utility property.										Near Frederick Tillman County										
Tucson Pima County	10	Late Afternoon			0	0	5	0	Flooding	17	11:30p				0	0	4	5	Hail	
A severe thunderstorm with intense rain of nearly two inches slammed into the east side and washed out sections of streets, set vehicles afloat, flooded houses and caused numerous tree and power line fires.										Correct crop damage to a 5 from a 6.										
<b>MAINE</b>										O Includes crop damage. C Crop damage. * Miles instead of yards. ** Yards instead of miles. † Storm damages are placed in categories varying from 1 to 9 as follows: 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										
SEPTEMBER 1977 NONE REPORTED										Note: This publication contains our best information on storms but, due to the difficulties inherent in collection of the type of data, it is not all-inclusive. Late Reports and Corrections will be carried in the month following receipt of these data.  SUBSCRIPTION PRICE: \$3.60 a year; \$4.80 additional for foreign mailing; 30c single copy. Make checks payable to Department of Commerce, NOAA; send payments and orders to: National Climatic Center, Federal Building, Asheville, NC 28801. Attn: Publications.  USCOMM-NOAA-ASHEVILLE, N.C. 1977-1700										
<b>NEW HAMPSHIRE</b>																				
SEPTEMBER 1977 NONE REPORTED																				
<b>NEW JERSEY</b>																				
Riverside, Burlington Co.	6	p.m.			1	4	0	0	Lightning											
Lightning killed one youth and injured 4 others while riding wind-bikes in a vacant field.																				
Jobstown, Burlington Co.	21	12 a			0	0	5	0	Lightning											
Lightning caused a fire which killed two brood sows worth \$28,000.																				
New Brunswick, Somerset Co.	26	3:05 p	6	25	0	0	4	0	Tornado											
A tornado touched down and made a skipping path of about 6 miles long and about 25 yards wide. A 108 year old church steeple was blown over and 2 homes damaged along the path.																				
<b>NEW YORK</b>																				
<b>COASTAL</b>																				
Montrose Westchester Co.	26	4:15 p	2	20	0	0	4	0	Tornado											
A tornado touched down briefly, causing damage to windows of a Veterans Hospital. Eight large trees were uprooted.																				
<b>WYOMING</b>																				
SEPTEMBER 1977																				
Niobrara County	21	9:45 p.	?	?	0	0	0	0	Tornado											
Tornado touched down over open grassland 16 miles north of Lusk.																				

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