

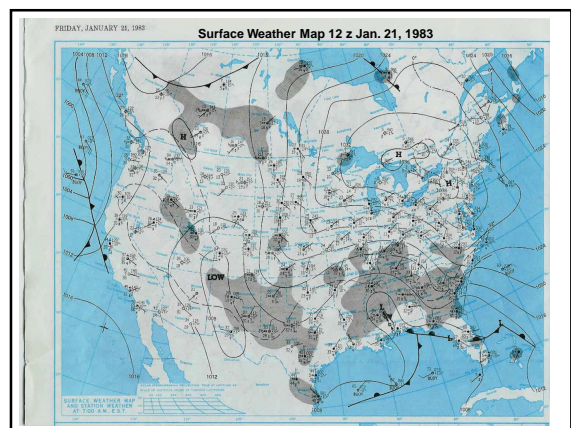
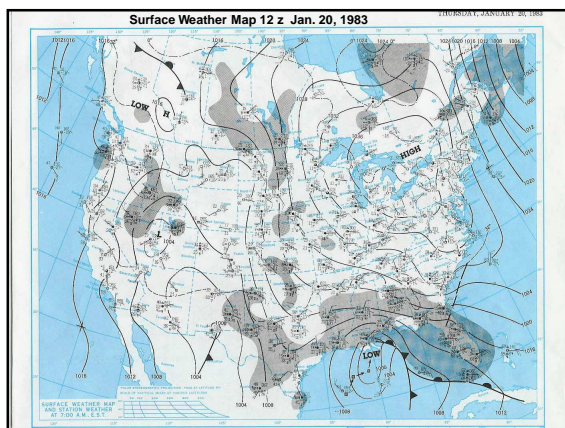
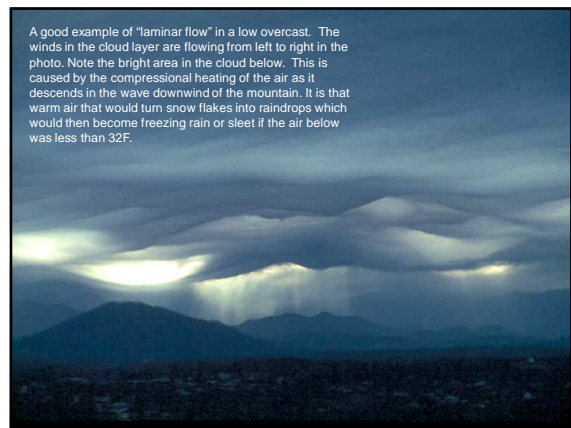
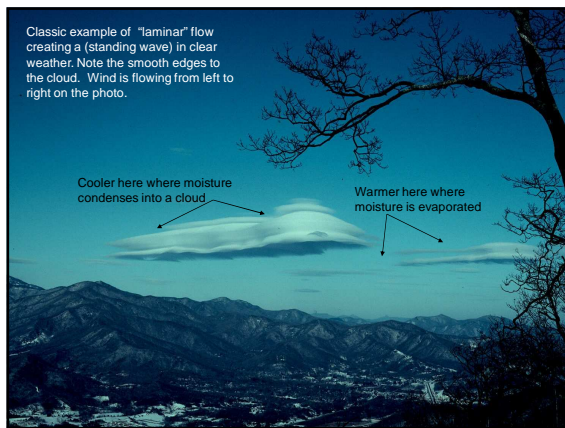
Some Examples of Severe Weather Events in the Southern Appalachians

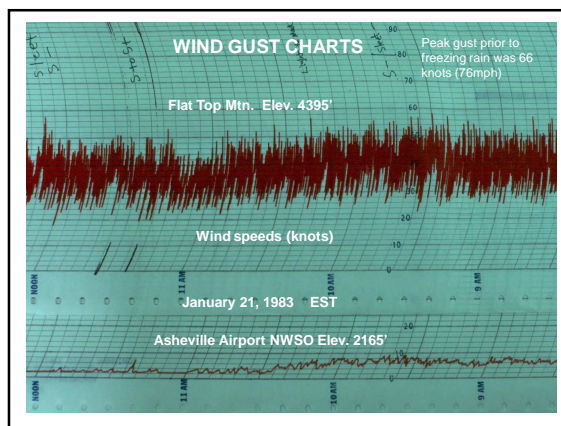
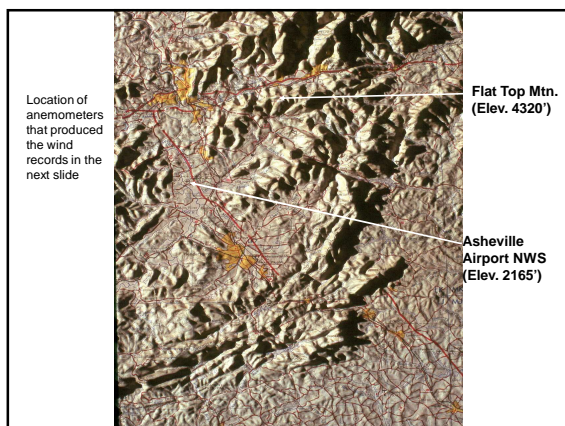
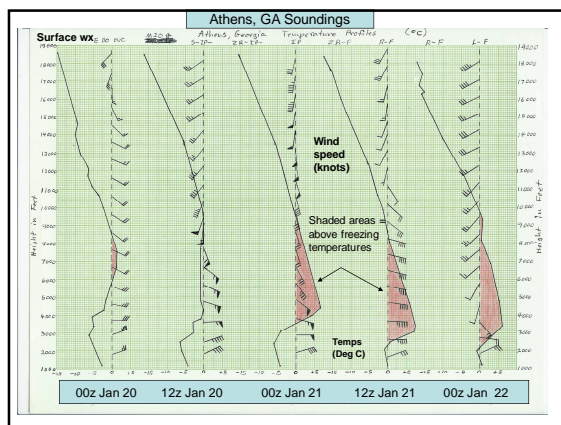
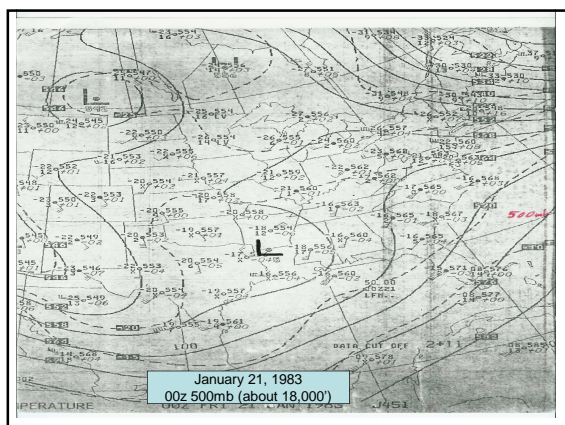
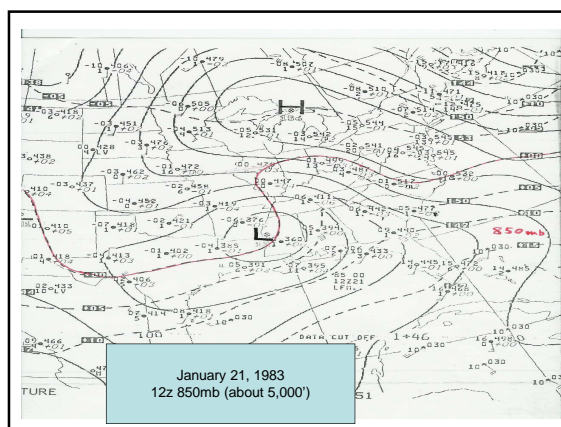
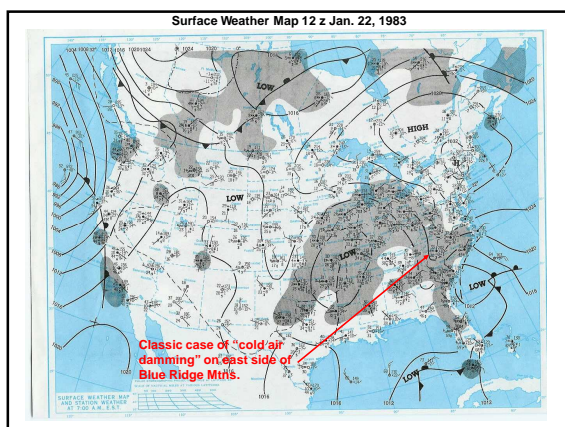
Grant W. Goodge

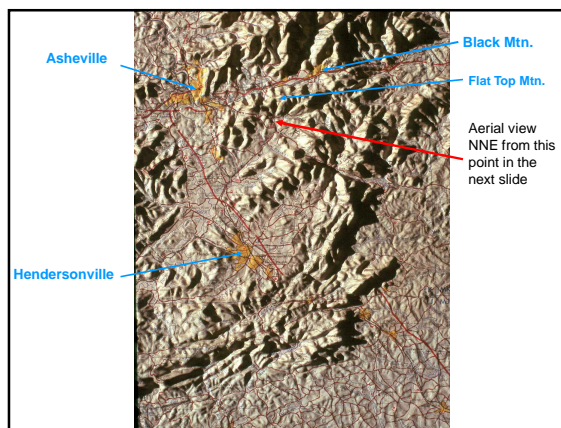
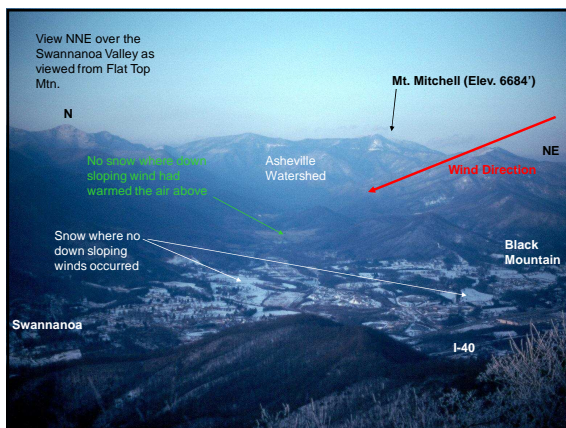
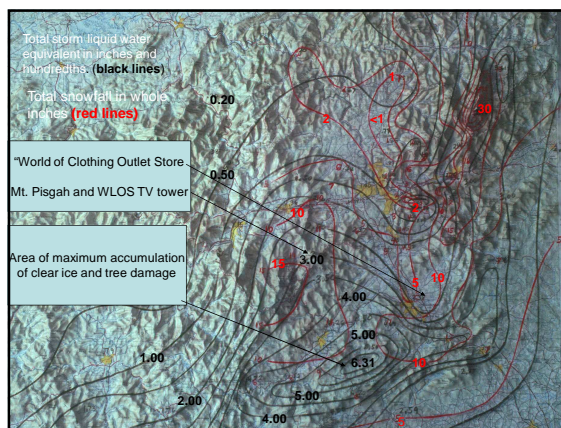
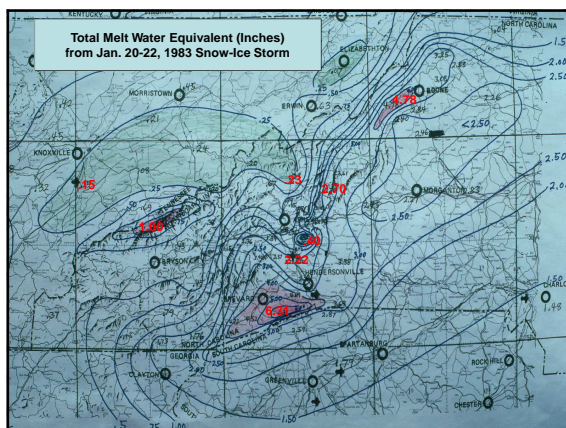
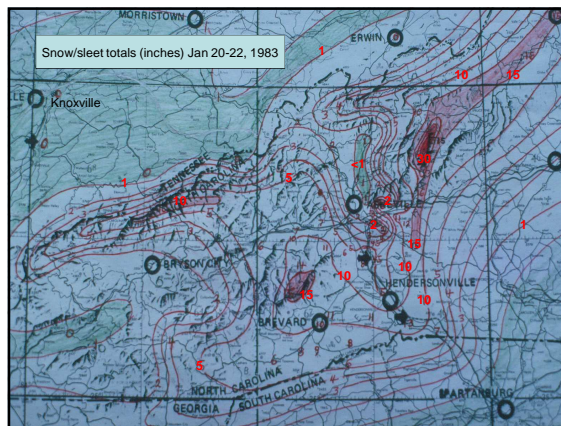
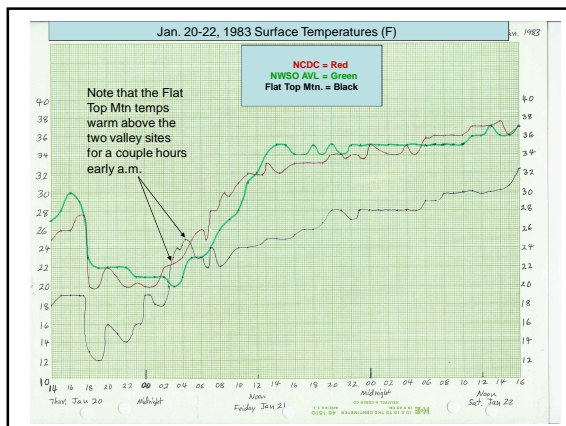
Western North Carolina Ice Storm January 20-22, 1983

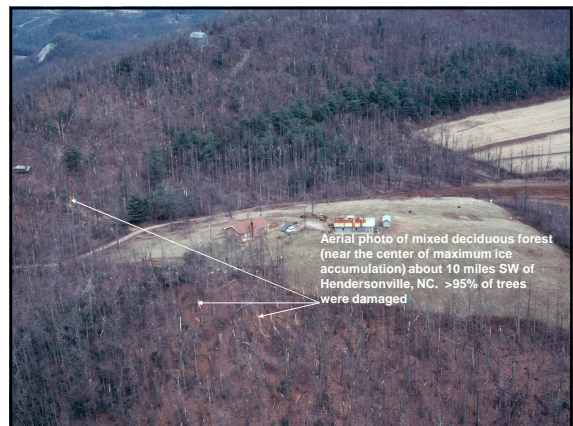
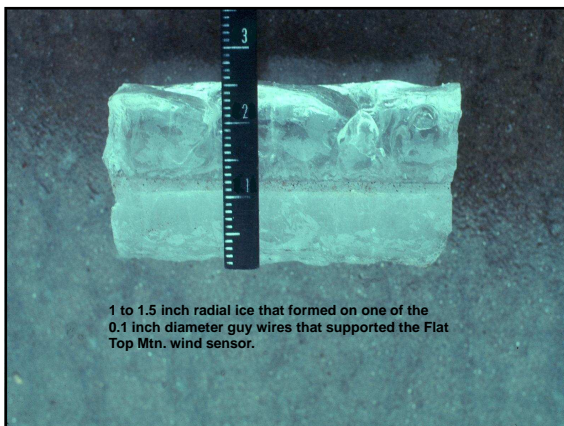
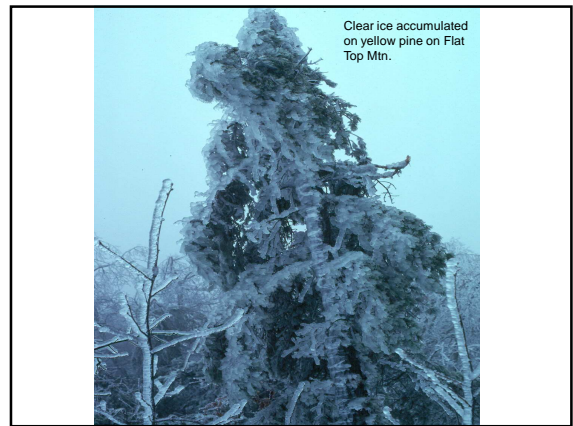
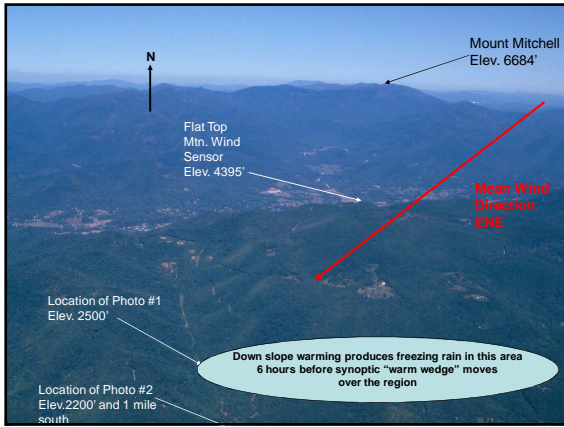
At the time this storm was considered to have been the worst in known WNC history. More than three dozen communication towers fell under the weight of the wind blow freezing rain. A portion of the roof of "The World of Clothing" outlet store, fell in, and tens of thousands were without power.

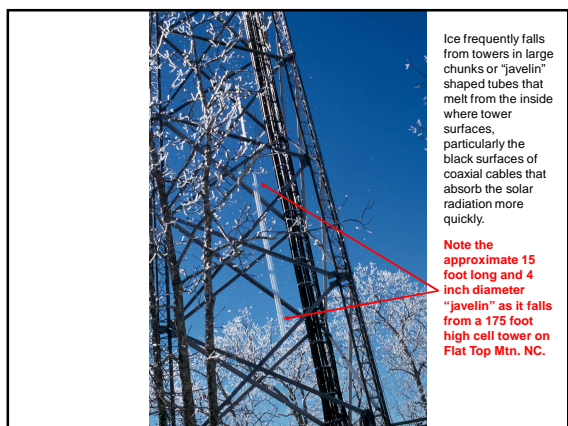
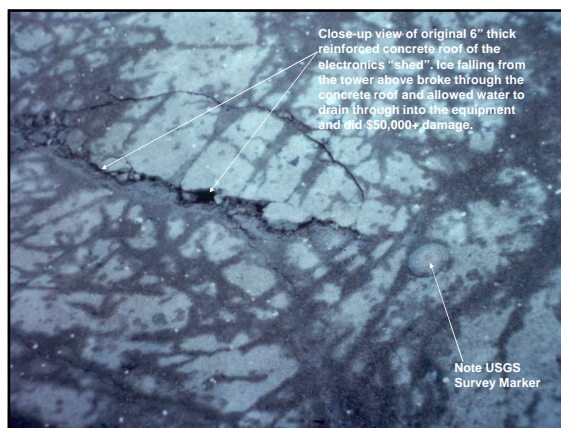
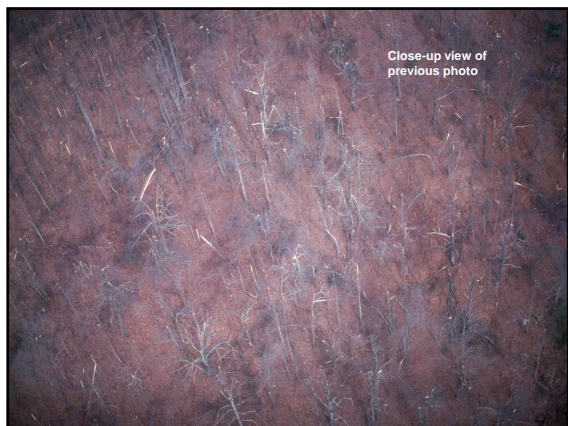
Meteorologically the most interesting aspect to the storm was that mesoscale and microscale "warm wedges" aloft, developed by laminar flow over the mountains, created localized freezing rain more than 6 hours before the synoptic scale "warm wedge" had moved over the region.





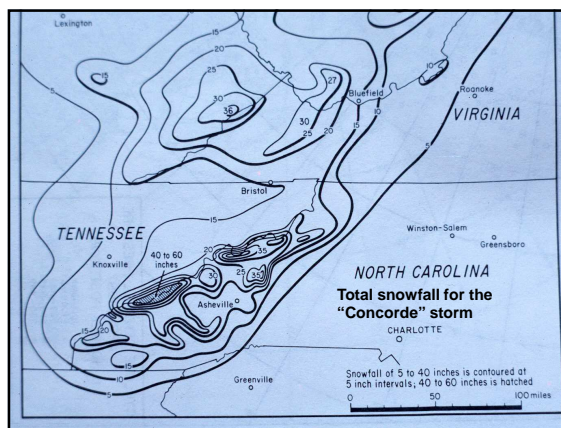
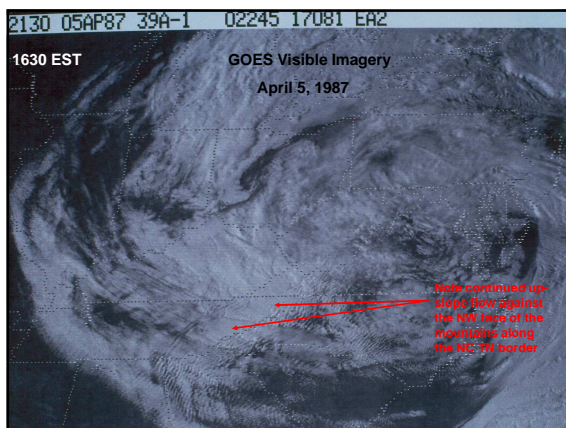
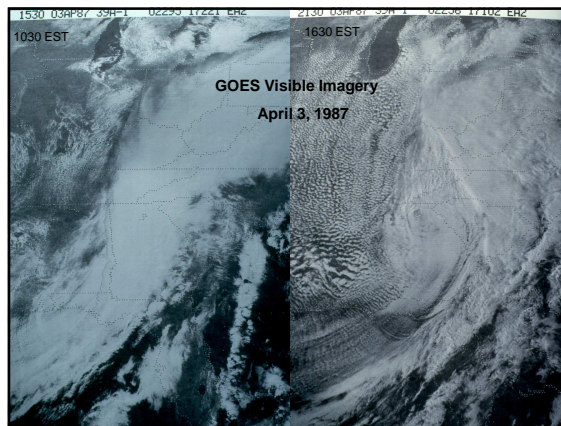






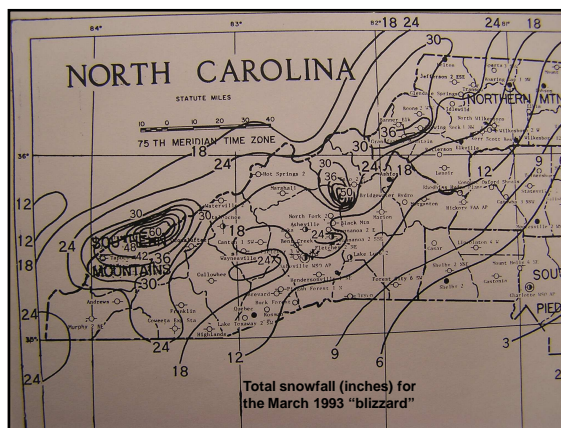
The "Concorde" Snowstorm

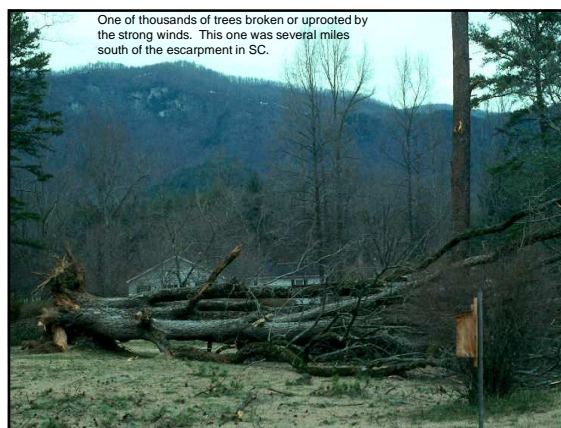
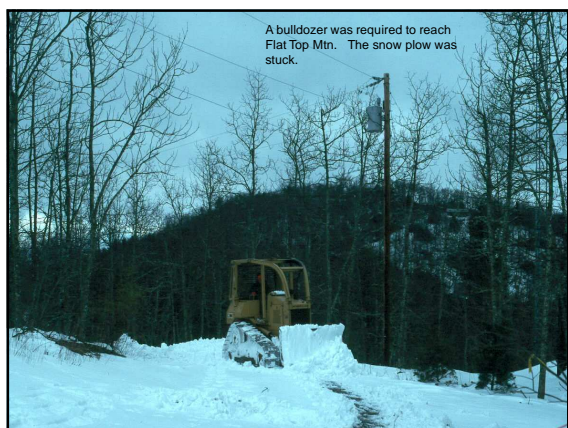
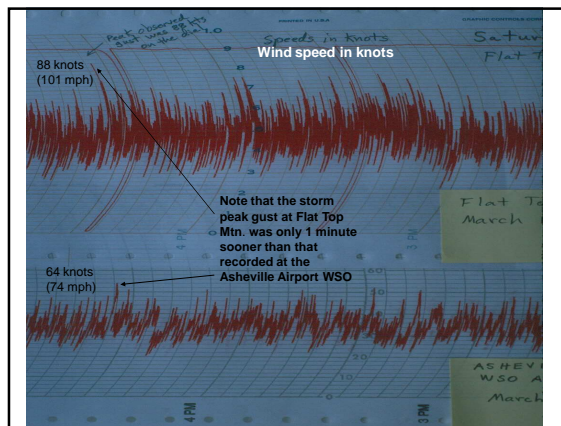
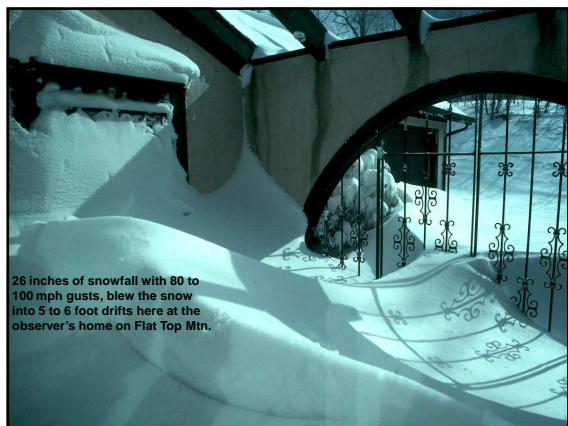
- On April 2, 1987 the British Airways "Concorde" supersonic airliner came to Asheville for a promotional flight back to London, unfortunately for them "mother nature" delayed their scheduled departure time by about 30 hours. The temperatures at the time of landing were in the mid 60's. By midday Friday the 3rd the airport and other valley areas had about one foot of snow on the ground and then the snow became light. However for the NW facing slopes along the NC-TN border, the snow had just begun. Moderate to occasionally heavy snow continued in those areas for another two+ days (see April 5 satellite image). National Park Rangers measured 60 inches at Newfound Gap which was a new record for both TN and NC. This 60 inch amount was matched at Mt. LeConte with the March 1993 "Blizzard".



"The Storm of the Century"

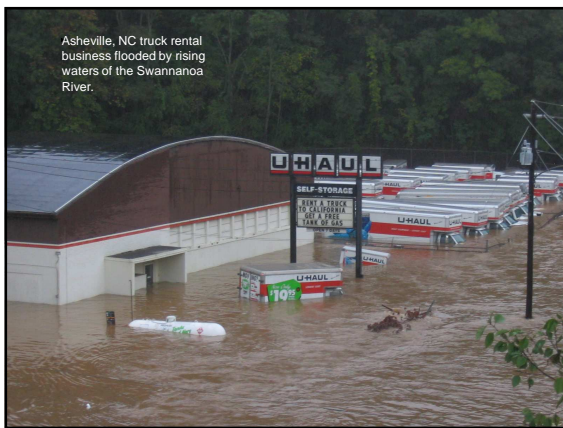
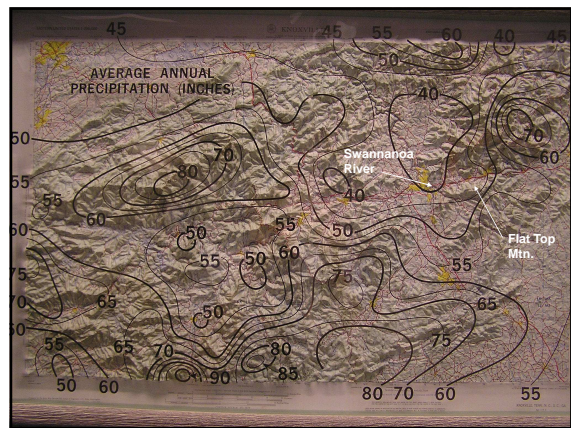
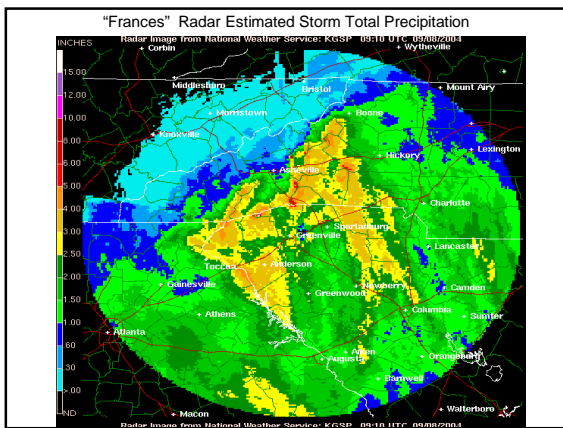
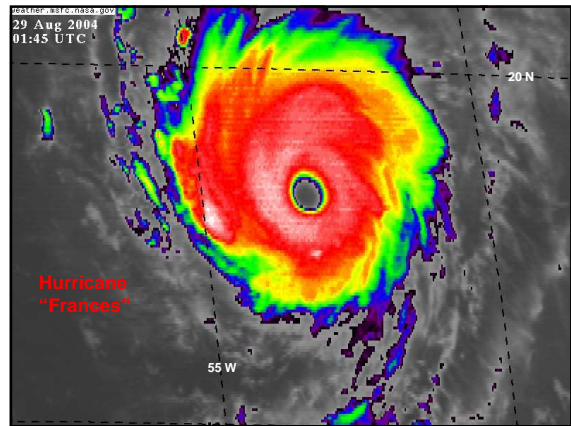
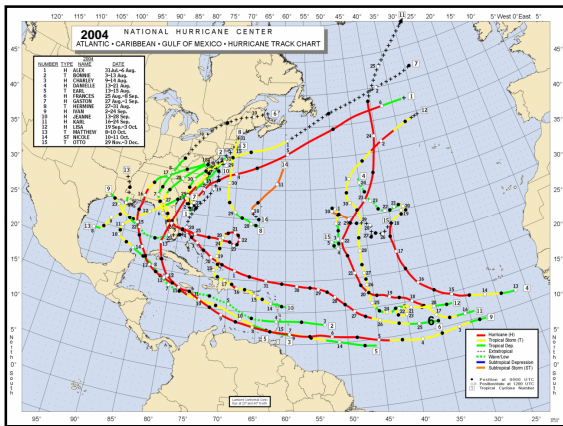
- For most areas of WNC the snow from this storm was measured in feet rather than inches. In addition to the record snow amounts it was also accompanied with hurricane force wind gusts in the valleys as well as the higher elevations of the mountains. Duke Energy reported that more trees fell in their coverage area in this storm than in Hurricane Hugo Sept. 1989.

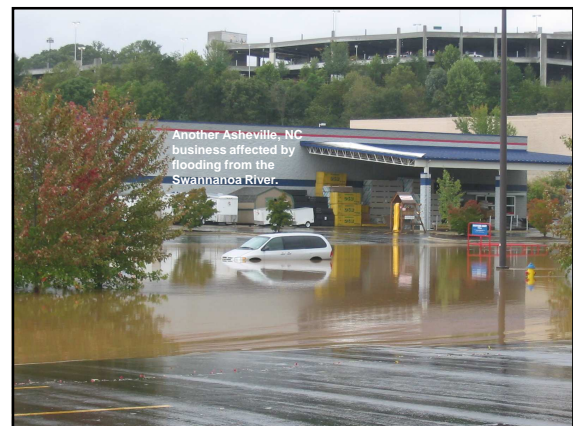
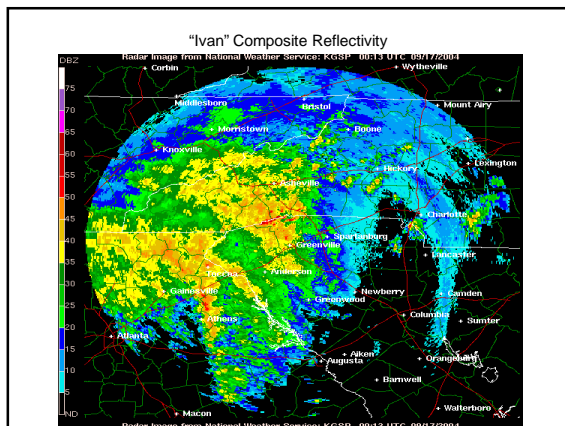
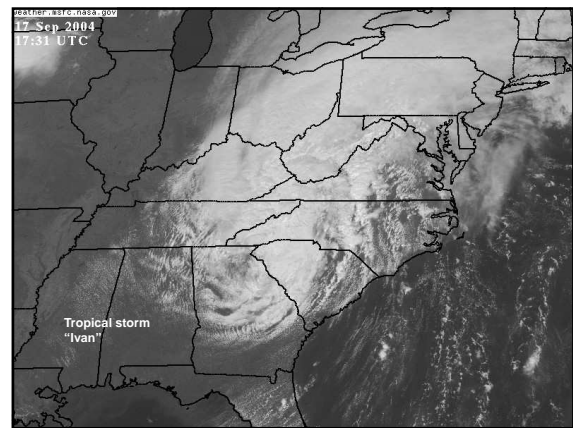
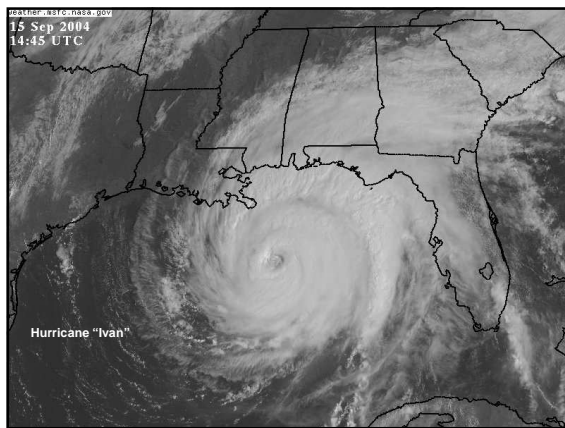
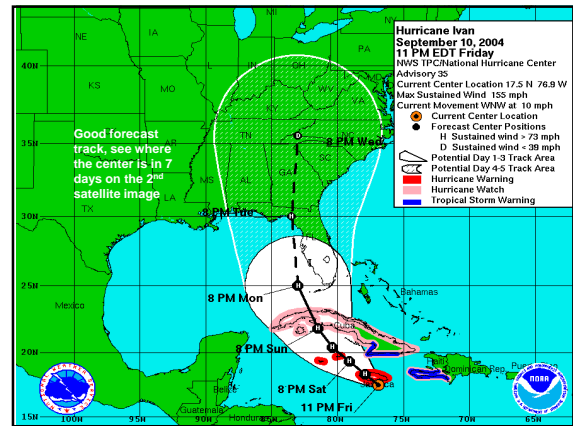
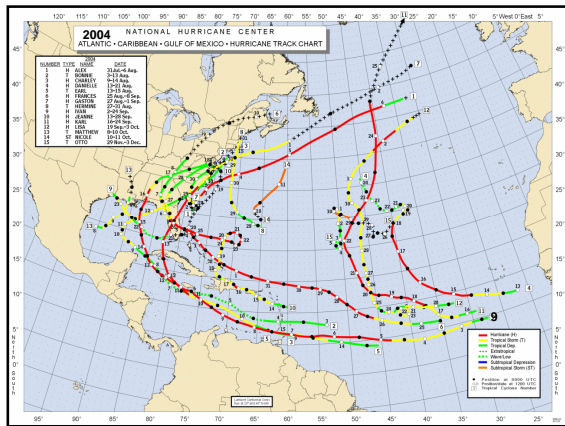


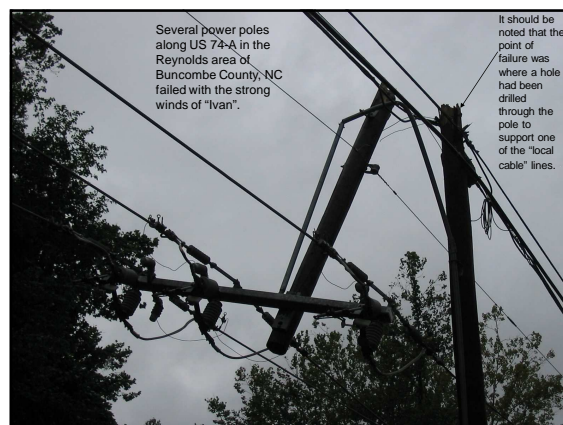
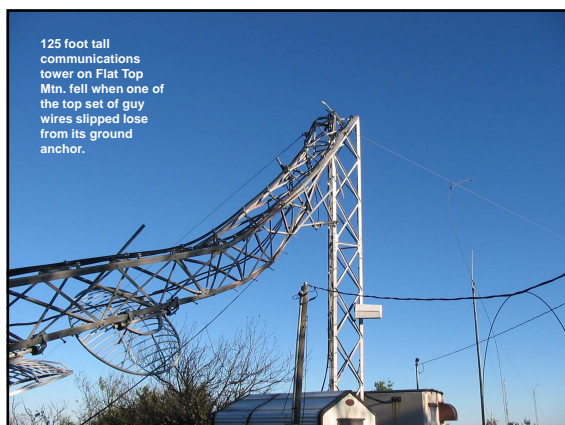
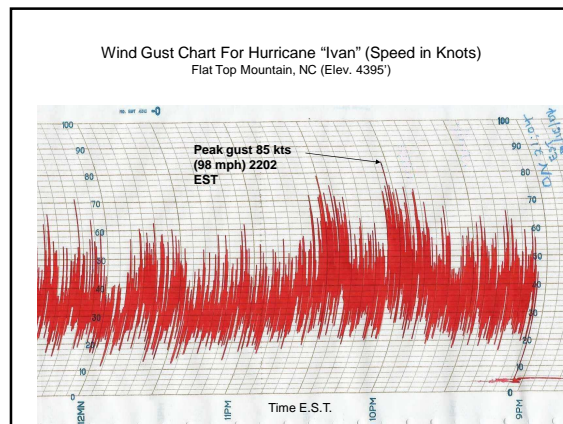
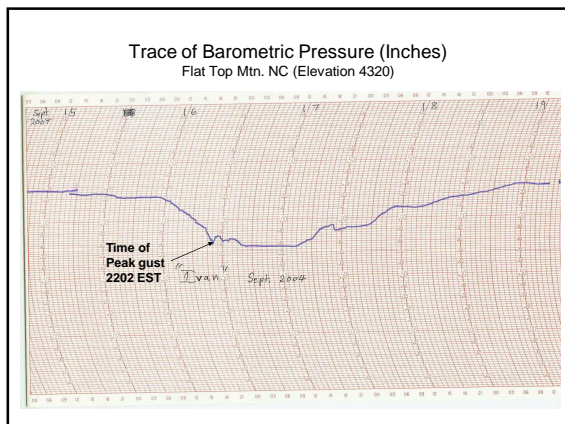


Tropical Storms

Flat Top Mountain Weather History Tropical Weather Seasons Affecting Local Area				
Year	Storm Name	Month	Total Rainfall	Peak Wind Gust
1976	None			
1977	None			
1978	None			
1979	David	September	2.95"	62 mph
	Frederic	September	2.07"	53 mph
1980	None			
1981	None			
1982	None			
1983	None			
1984	None			
1985	Danny	August	2.86"	41
1986	None			
1987	None			
1988	Chris	August	0.67"	36 mph
1989	Hugo	September	2.62"	70 mph
1990	Marco	October	3.82"	71 mph
1991	None			
1992	Andrew	August	1.93"	63 mph
1993	None			
1994	Beryl	August	5.70"	64 mph
1995	Jerry	August	6.23"	64 mph
	Opal	October	6.95"	83 mph
1996	None			
1997	None			
1998	None			
1999	Dennis	August	0.00"	36 mph
	Floyd	September	0.00"	62 mph
2000	Gordon	September	0.24"	32 mph
	Helen	September	0.74"	46 mph
2001	None			
2002	Hanna	September	2.17"	38 mph
	Isidore	September	2.72"	58 mph
2003	Bill	July	2.67"	46 mph
2004	Frances	September	9.30"	62 mph
	Nan	September	8.57"	88 mph
	Jeane	September	3.80"	68 mph

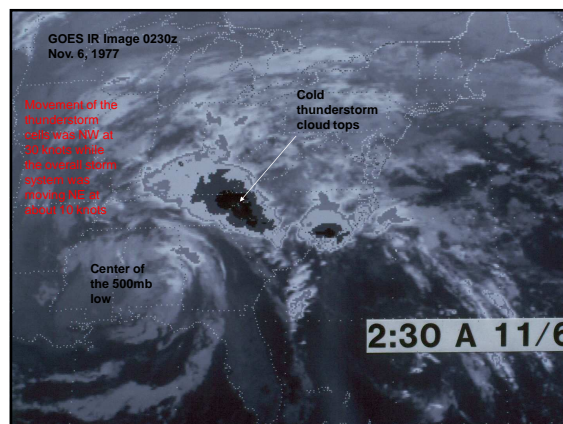


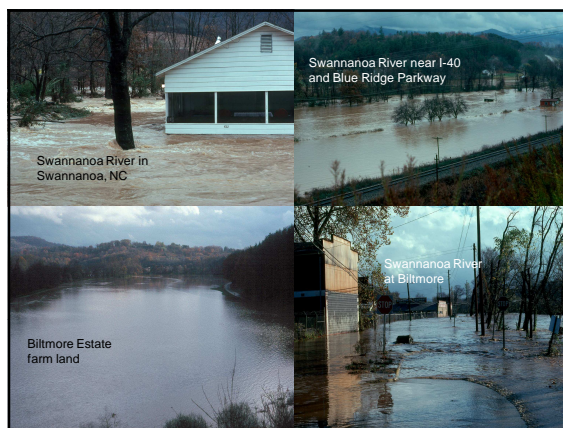
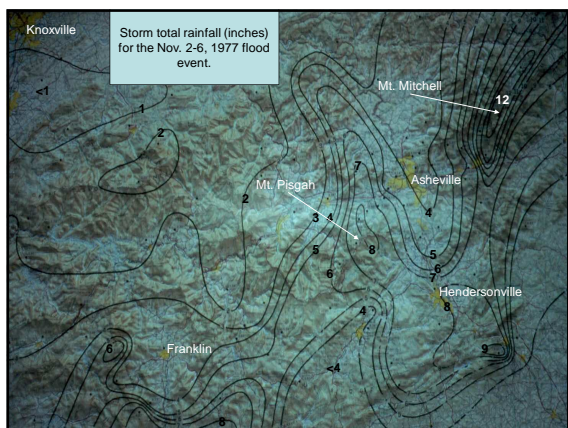
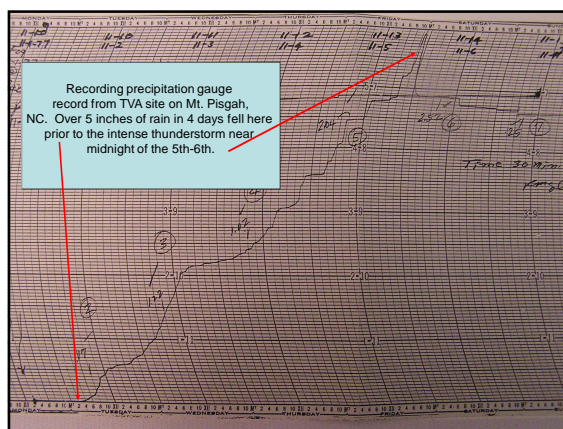
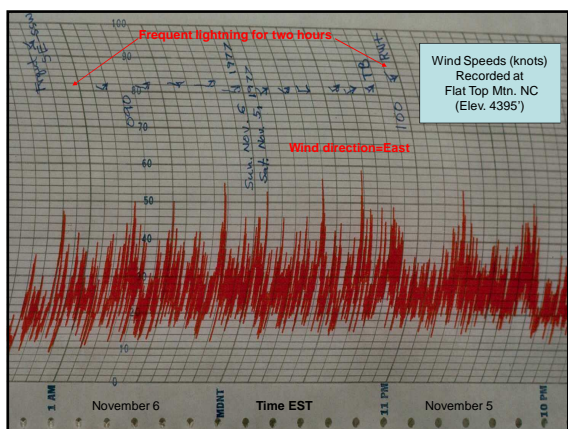


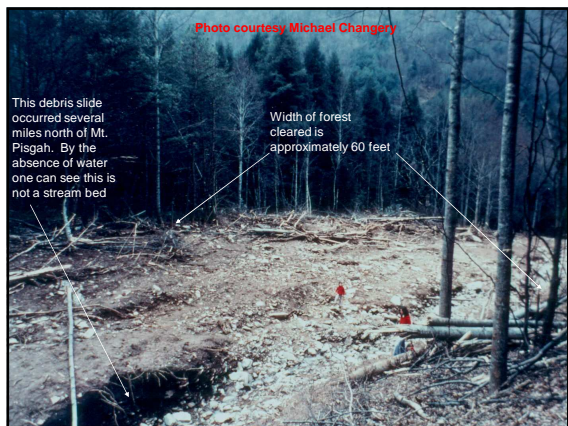


NOVEMBER 1977

- Not all flood events result from tropical storms and hurricanes. This event was the result of a slow moving-vertically stacked 500mb low that tapped late season tropical moisture and forced it over the SE facing slopes of the Southern Appalachians. About 40 deaths in GA and 13 in NC resulted from the event.

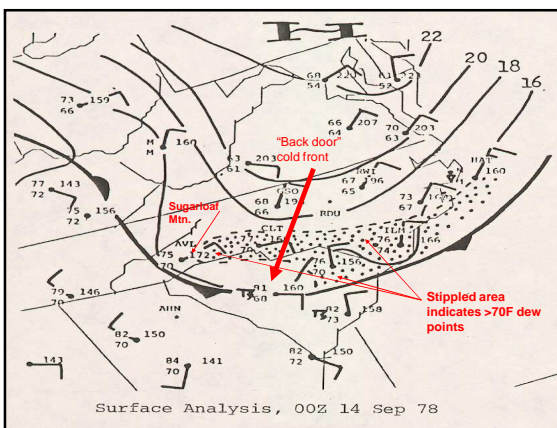
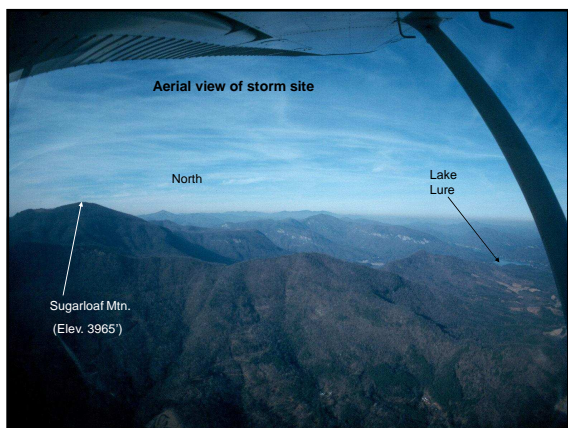
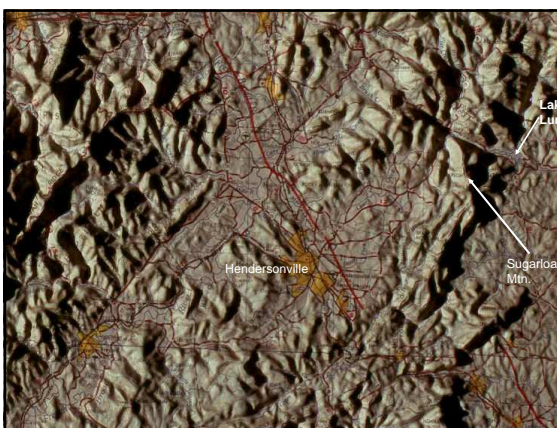
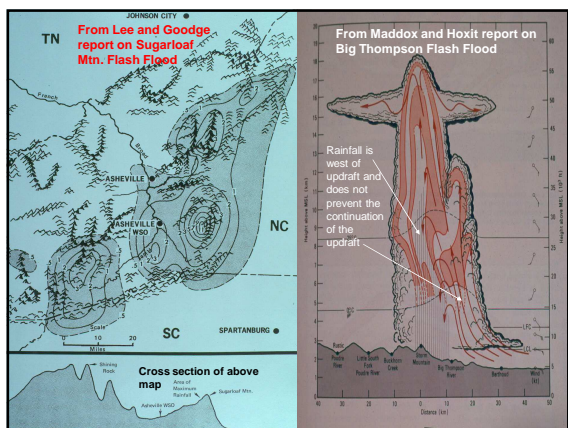


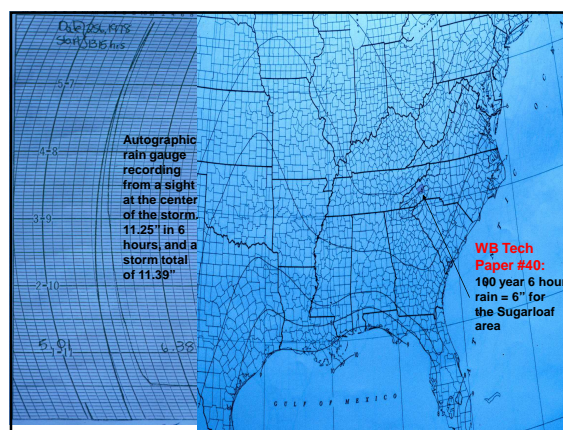
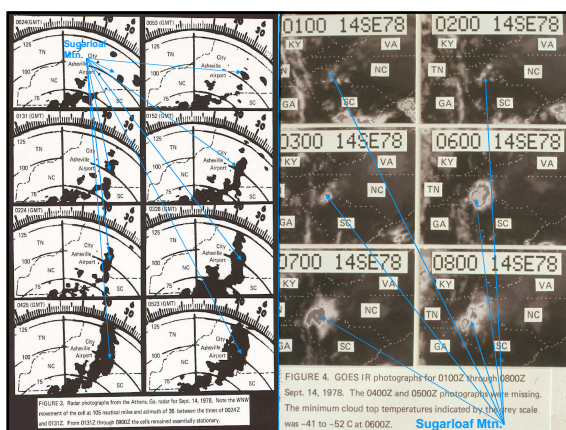
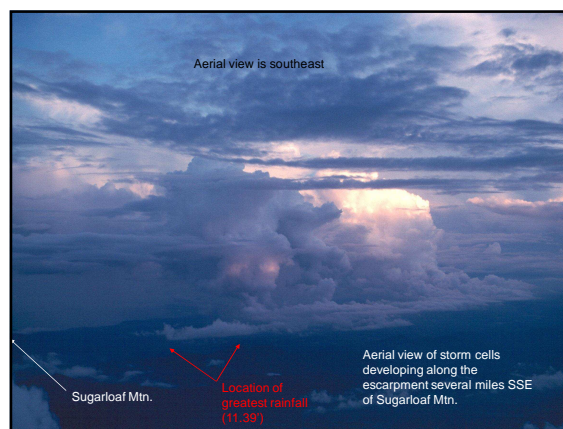
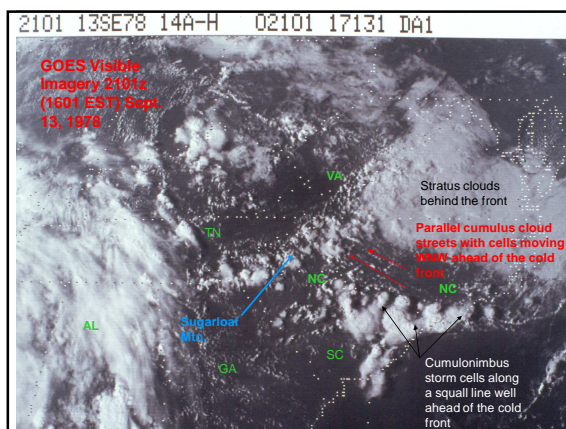




SEPTEMBER 1978 Flash Flood
 Along the eastern escarpment of
 the Blue Ridge Mountains

- This was a terrain locked event similar in nature to the Big Thompson River Canyon Flood in Colorado on July 31, 1976.





Photos of several of the roads and bridges washed out during the storm.

Rains Drench

Primary Trends
The results of primary elections in 14 states Tuesday established major trends already under way in state and national campaigns. See story on page 10.

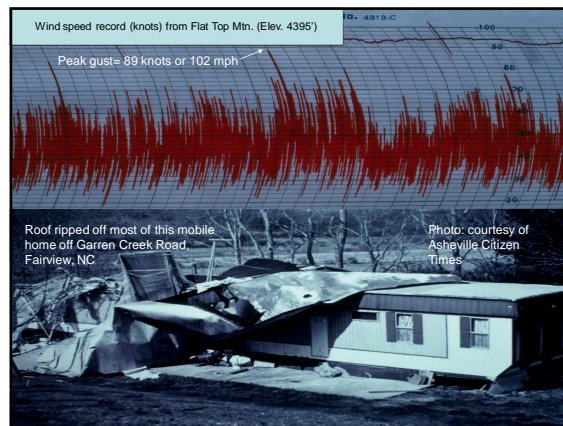
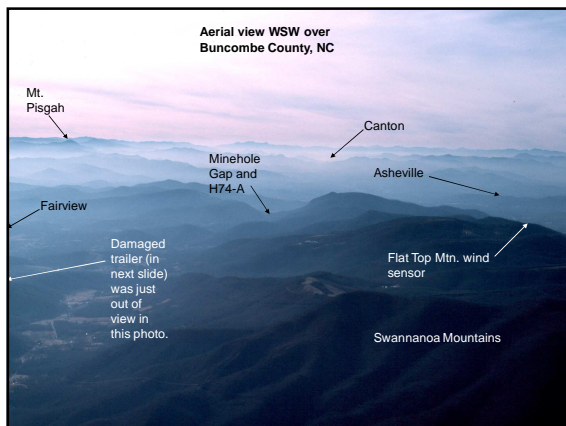
Weather
Cloudy through Friday with some heavy showers, mainly tonight through to 70s, tomorrow.

Damage Bridges

IT'S AS IF THERE HAD NEVER BEEN A BRIDGE," a North Carolina Department of Transportation official said surveying the damage to the Big Sandy River caused by the storm which swept through Henderson County Wednesday morning.

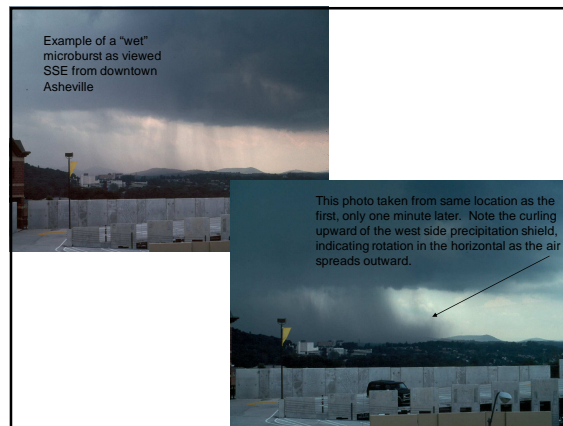
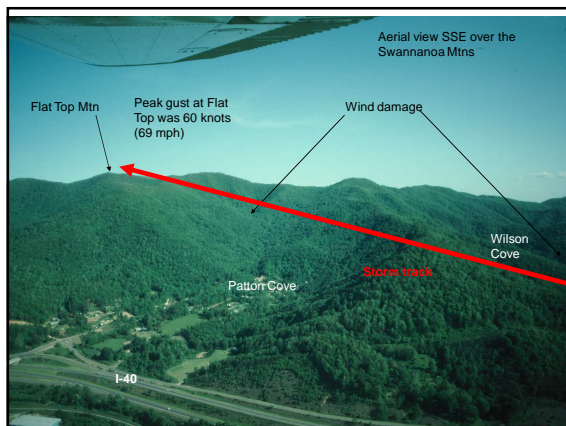
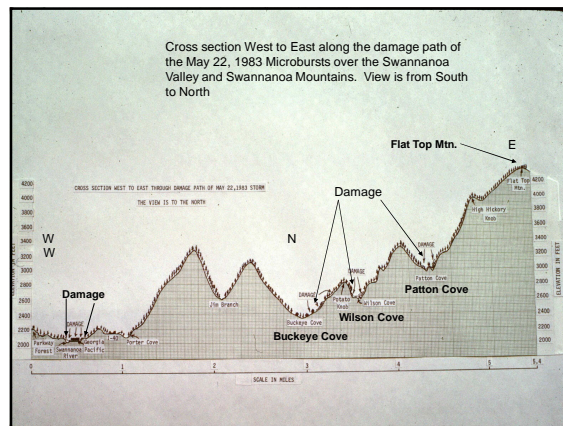
Example of Terrain Induced Acceleration of Winds Through Minehole Gap Buncombe County NC April 6, 1982

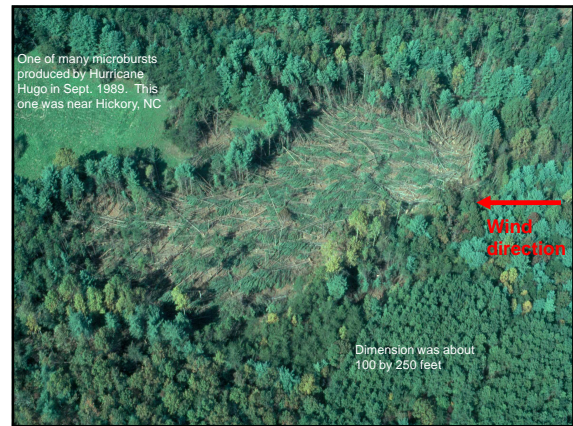
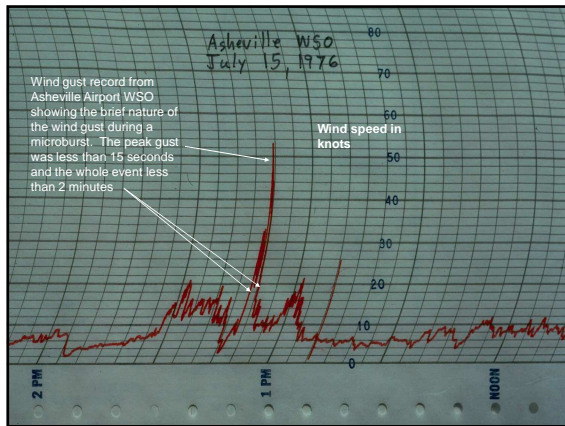
- These strong winds were post-cold frontal, there were no thunderstorms involved. The center of the low pressure was in the Cleveland, OH area at the time of peak winds.



May 22, 1983 Microburst in Eastern Buncombe County

- The initial assessment of the storm ruled that it was a tornado, however an aerial survey and a more detailed ground search clearly indicated that the damage had been the winds from one or more microbursts that were funneled by the local terrain. The majority of the tree fall was down slope to the north which was also the direction of least root strength.





End of Presentation

- Questions?