



# **Local Extreme Weather Events Potential for Societal Disruption**

ATM 362 – NWS Operations

Steve DiRienzo

Warning Coordination Meteorologist

NWS Albany



# Speaker: Steve DiRienzo

- Warning Coordination Meteorologist:
- Liaison with other federal, state and local agencies
- Responsible for: weather related decision support services to emergency managers and first responders
- For evaluating forecast office products and services
- For ensuring that people in the Albany forecast area are aware of local weather hazards by conducting hazardous weather **preparedness and education.**



# Overview

- What is a disaster?
- Local Weather related disaster declarations/FEMA.
- NWS Warning Process.
- What is a credible threat?
- Local Examples (It can happen here...).



# Disaster

- Definition:
- Wikipedia: A **disaster** is a serious disruption, occurring over a relatively short time, of the functioning of a community or a society involving **widespread human, material, economic or environmental loss and impacts**, which exceeds the ability of the affected community or society to cope using its own resources.
- **Various phenomena** like earthquakes, landslides, volcanic eruptions, floods, hurricanes, tornadoes, blizzards, tsunamis, pandemics and cyclones are all natural hazards that kill thousands of people and destroy billions of dollars of habitat and property each year.



# Federal Emergency Management Agency (FEMA)



- **FEMA Mission Statement:** Helping people before, during, and after disasters.
- The Robert T. Stafford Disaster Relief and Emergency Assistance Act (**Stafford Act**) is a United States federal law designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments.
- Stafford Act, signed into law November 23, 1988
- This Act constitutes the statutory authority for most Federal disaster response activities especially as they pertain to FEMA and FEMA programs.
- <https://www.fema.gov/media-library-data/1519395888776-af5f95a1a9237302af7e3fd5b0d07d71/StaffordAct.pdf>



# **WFO Albany Forecast Area**

## **Weather Related Disaster Declarations**

- **Types of weather and hydrologic events that cause disaster declarations ( NY, VT, MA, CT declarations since 1953):**
- Tropical Storms/Hurricanes, Thunderstorms, Tornadoes, Blizzards, Snow Storms, Winter Storms, Ice Storms, Heavy Rains/Flooding, Flash Flooding, Land Slides, Ice Jams, Fire Suppression Authorization, Fire Complex, Water Shortage (drought)
- The National Weather Service issues warnings for the protection of life and property and enhancement of the economy.



# National Weather Service (NWS) Warning Process



## 1. Detection of the Threat

- Computer models and pattern recognition (days in advance)
- Radar, Satellite and Observations (as happening)
- Reports or observations sent to NWS from partners, HAMS, spotters

## 2. Warn on the Threat/Forecast with Message to Take Action

- Impact Based Decision Support Briefings
- Emergency Alert Messages (scrolls on TV)
- NWS warning products to alert people about threat

## 3. Message is Received and Understood

- Warning message received by radio, TV, mobile device, siren?
- Is the threat message understood enough to take necessary actions?

## 4. Appropriate Action is Taken

- Actions are taken in a timely fashion to protect life and property



# National Weather Service Warning Process



- The NWS has concentrated on sections 3 and 4 above: Did the general public get the message? And did they take action?
- Social scientists have been employed to help the NWS craft the message.
- However: The warning process is also highly dependent on forecasters recognizing the scale or severity of an event.





# National Weather Service Warning Process

- There is a breakdown in the warning process when the scale of an event is not recognized by forecasters.
- Much work has been done on forecasters using meteorological field anomalies (eg. GEFS/SREFS/HREF) or return intervals to help recognize a potential high-impact event.
- What happens when an event is so large, it dwarfs previous high impact events in scale?
- This work makes the case for historical research into past weather, water and climate events as a method for scaling events, highlighting impacts and **determining credible threats.**



# Weather Ready Nation – Cataloging High Impact Events

- Goals:
  - Provide Credible Threats (Models say it will rain 20” or snow 40” – Can this happen?)
  - Assign a probability to the threat – ex. probabilistic snowfall or rainfall
  - Manage high-impact events more effectively
  - **Separate high-impact events from *Disasters***
- **Historic Storms Can Shed Light On Possible Impacts**

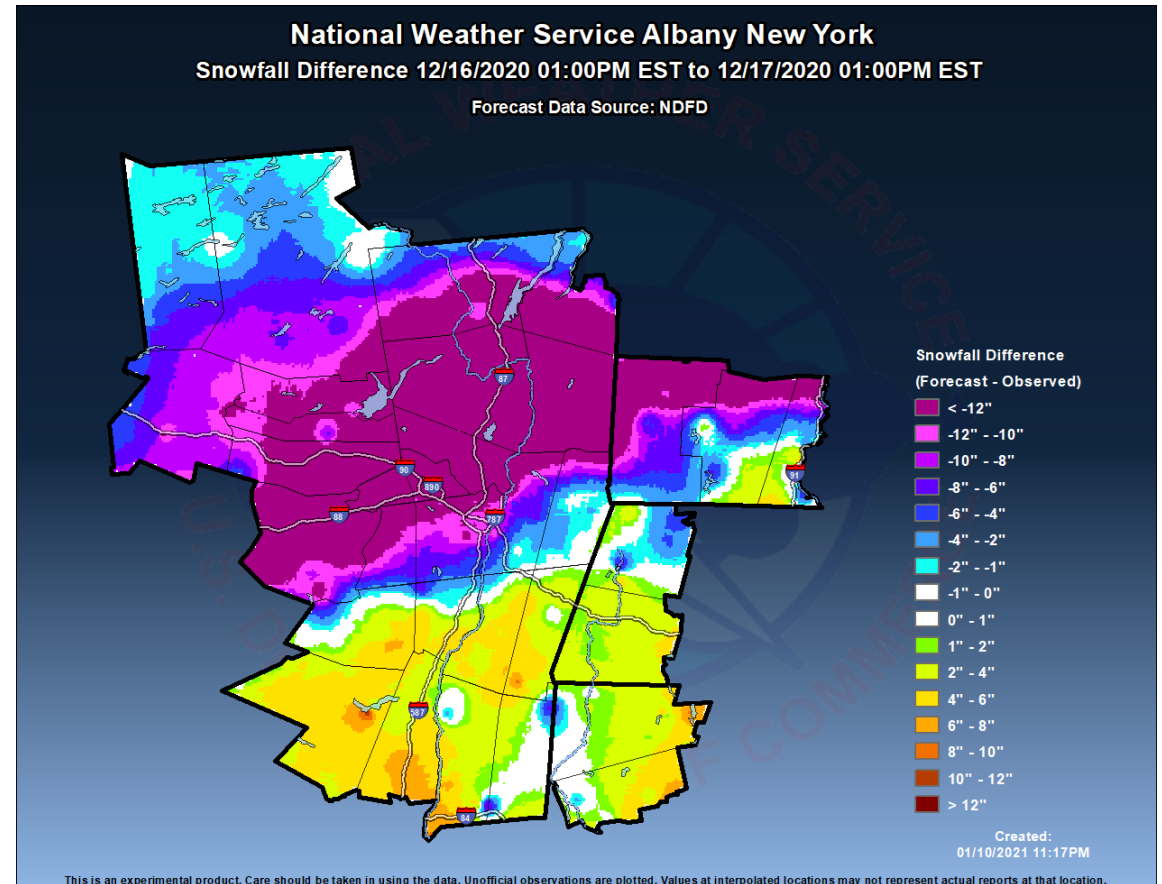
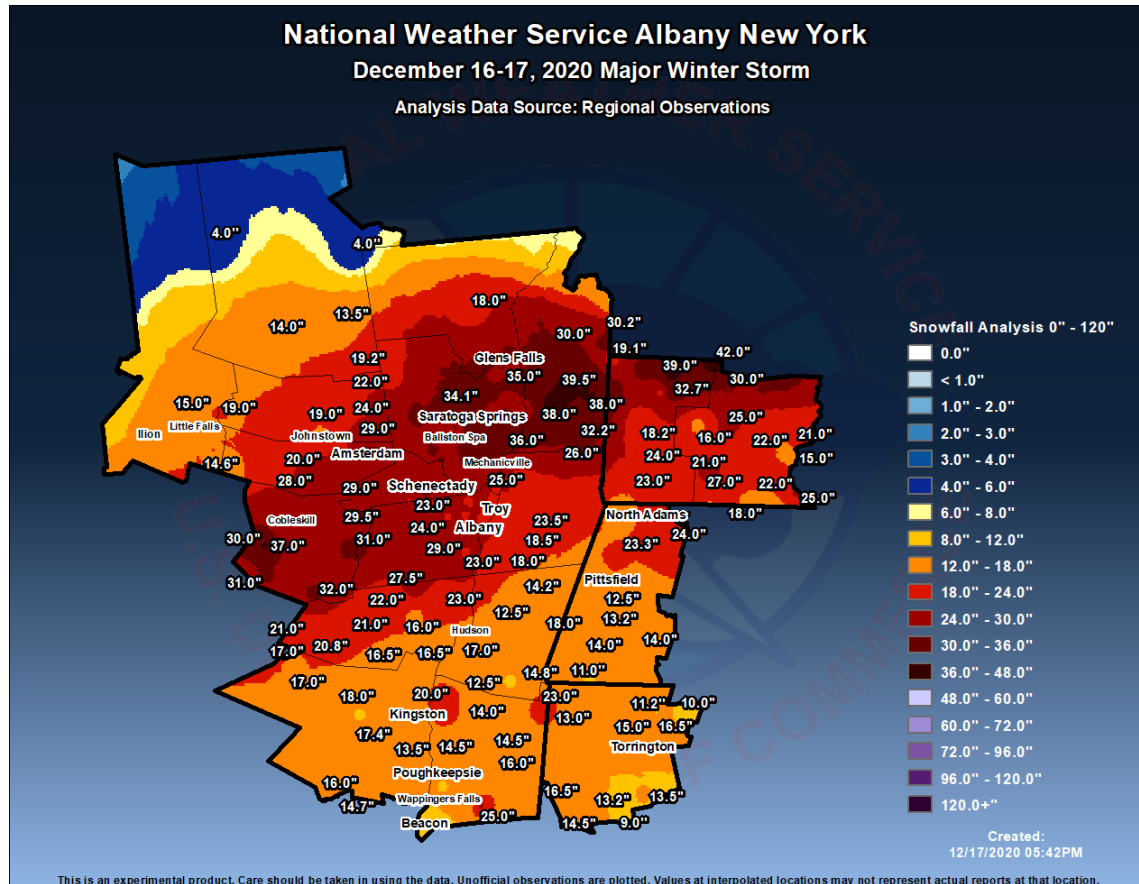


# What is an Extreme Event - Snowfall?

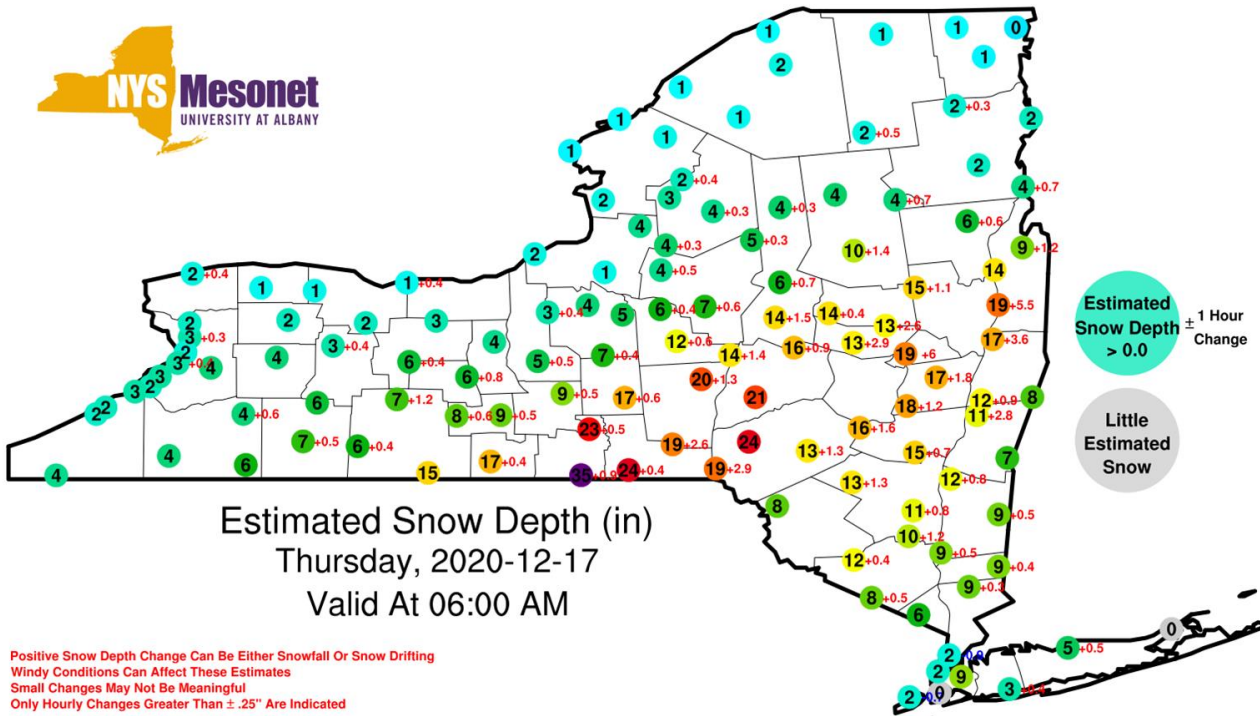
December 16-17, 2020

Snowstorm

# Observed snowfall and forecast error

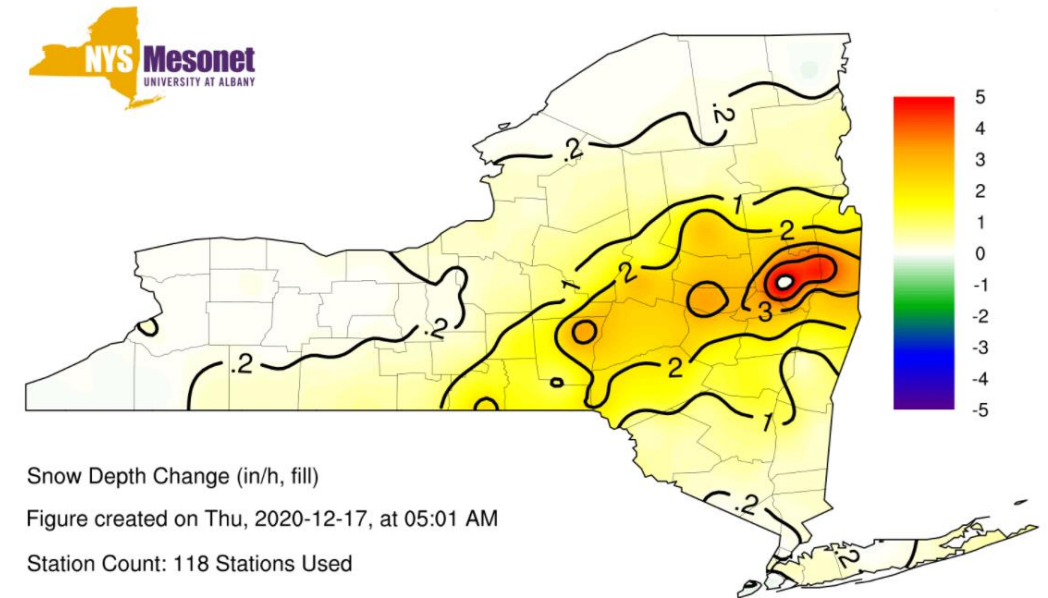


# Mesonet snow depth change

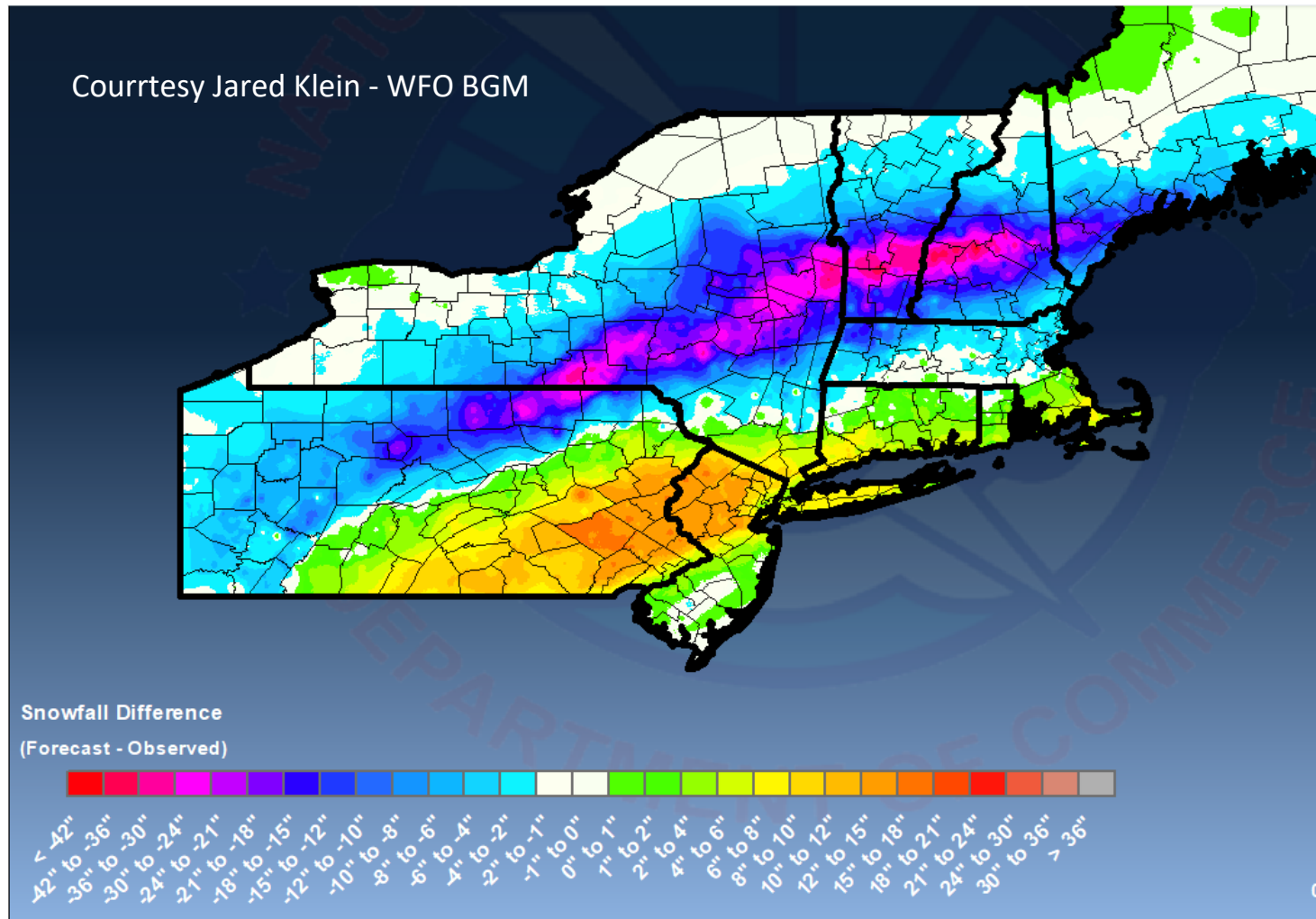


Note: This Is An Archived Product - Click The Image For Direct URL

Please Use With Credit To NYS Mesonet At UAlbany. For Questions & Problems, Contact nbassill AT albany DOT edu



# NWS errors through the northeast





# What is an Extreme Event - Snowfall?

- There is a breakdown in the warning process when the scale and/or location of an event is not recognized by forecasters.
- We were very lucky that the heaviest snow came between 2am and 7am on Dec 17. If the snow had started in the early afternoon businesses and schools would have closed, everyone would have been on the road, and then gotten stuck there – probably through the evening and overnight. Plowing would have taken days with cars stuck in the road.
- There were a few abandoned cars in roadways locally the afternoon of Dec 17.
- “1st rush-hour snow disaster of the season leaves commuters sharing chaos on social media” NYC Metro, Nov 14-15, 2018
- If you’re looking for a storm to study...



# What is an Extreme Event - Rainfall?

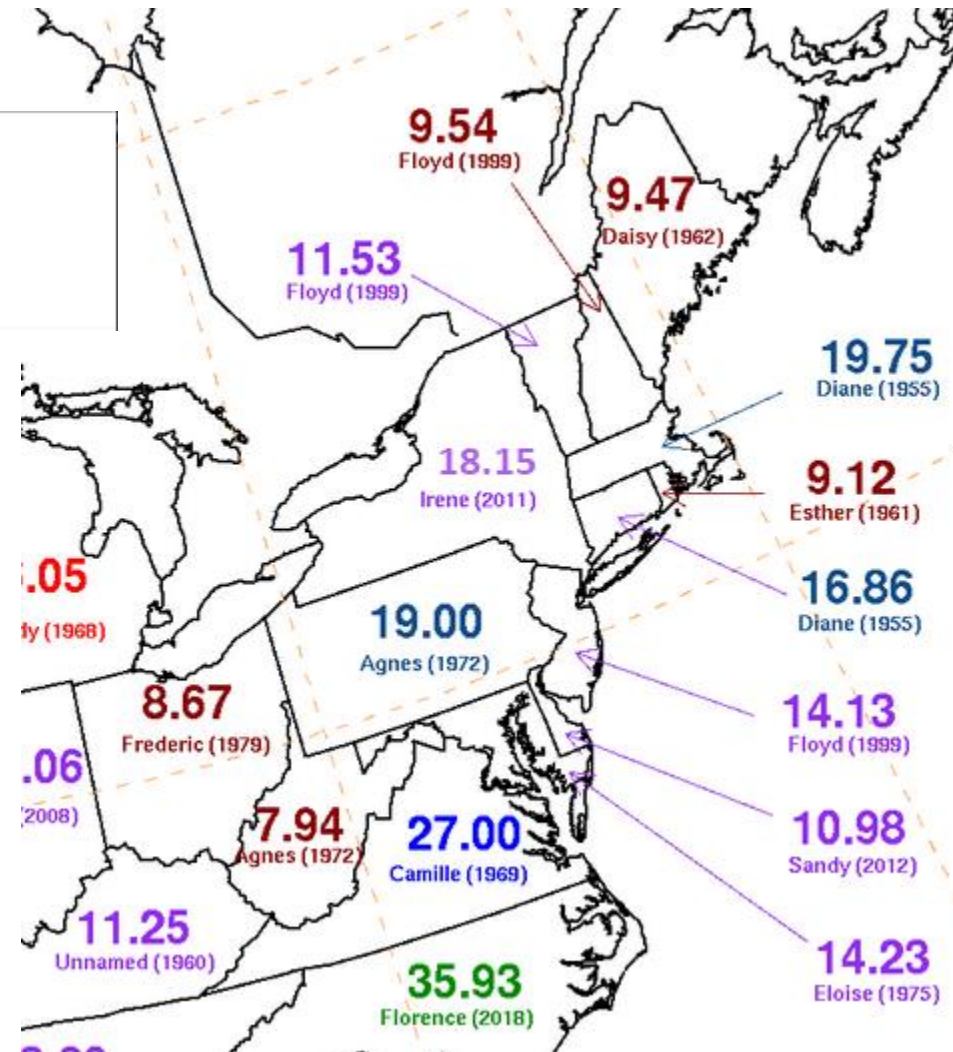




# Tropical Storms Maximum Rainfall



**Maximum Rainfall caused by  
North Atlantic & Northeast  
Tropical Cyclones and  
their remnants per state  
(1950-2018)**





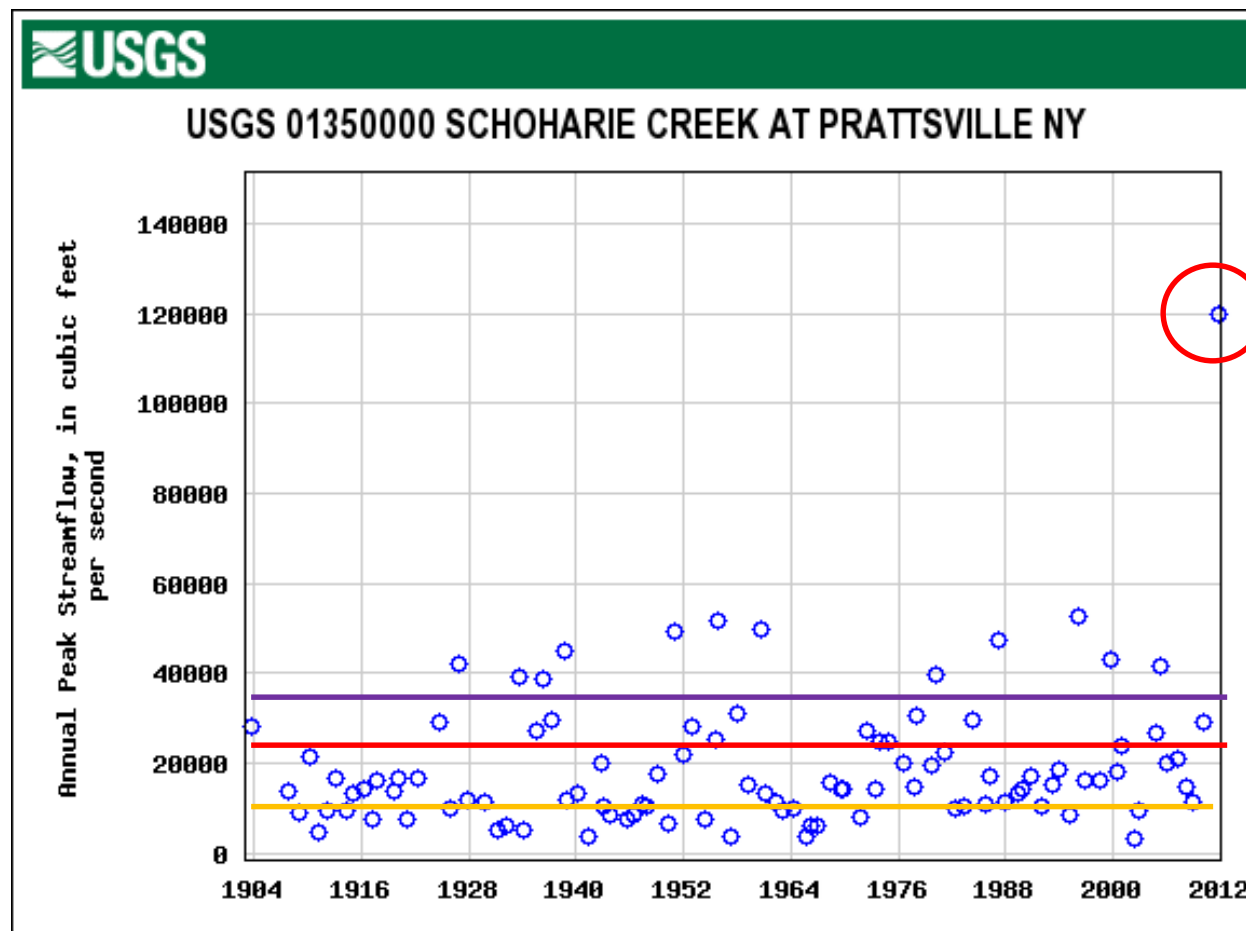
# What is an Extreme Event - Flooding?

- What happens to rivers and streams when you get 15-20 inches of rainfall from one storm?



# Peak River Flows

- Schoharie Creek at Prattsville, New York – Irene 2011 – 18+ inches of rainfall in Catskills





# Catskills – August 2011 - Irene



Windham,  
NY



Tannersville, NY





# Catskills/Mohawk – August 2011 - Irene



Schoharie Valley,  
NY  
Amy Colyer Fogerty

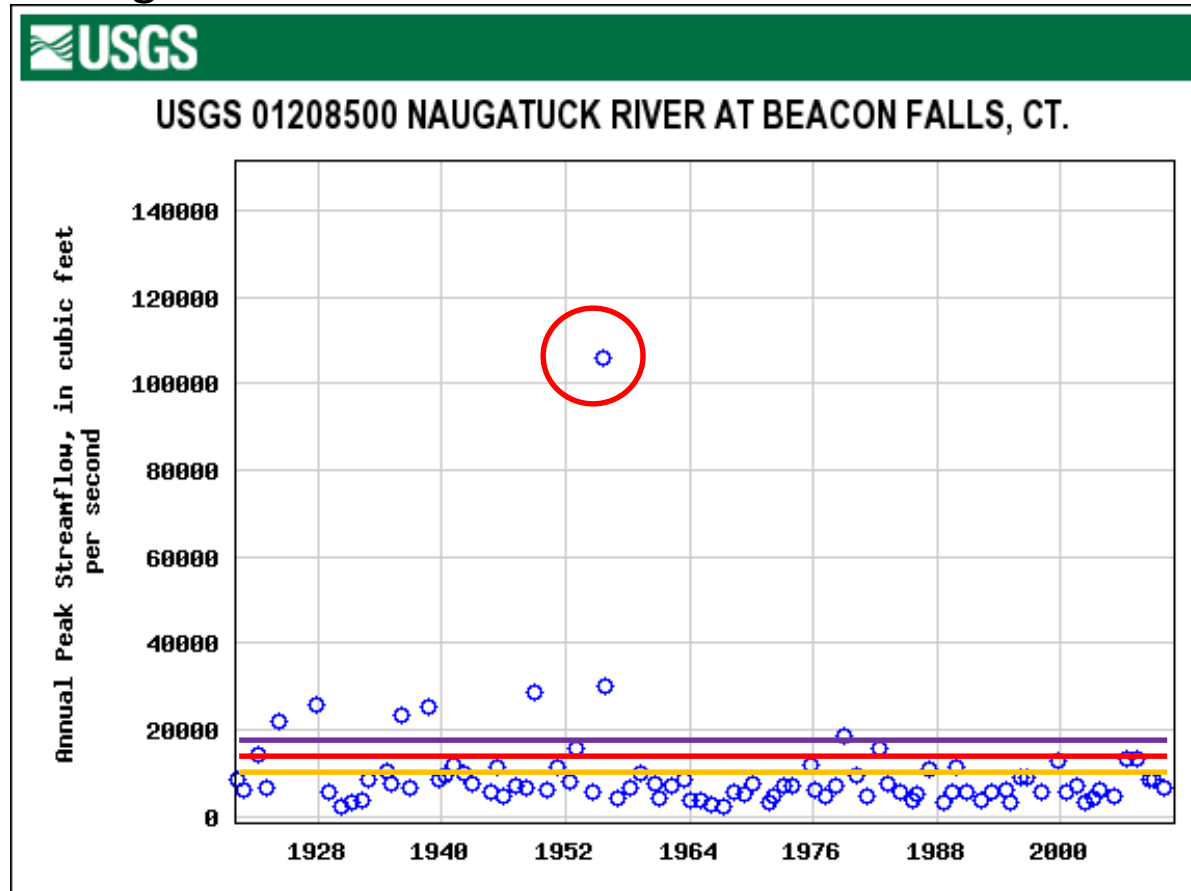


Schenectady,  
NY  
Times Union



# Peak River Flows

Naugatuck River at Beacon Falls, CT – Diane 1955 – 19+ inches of rainfall in western New England



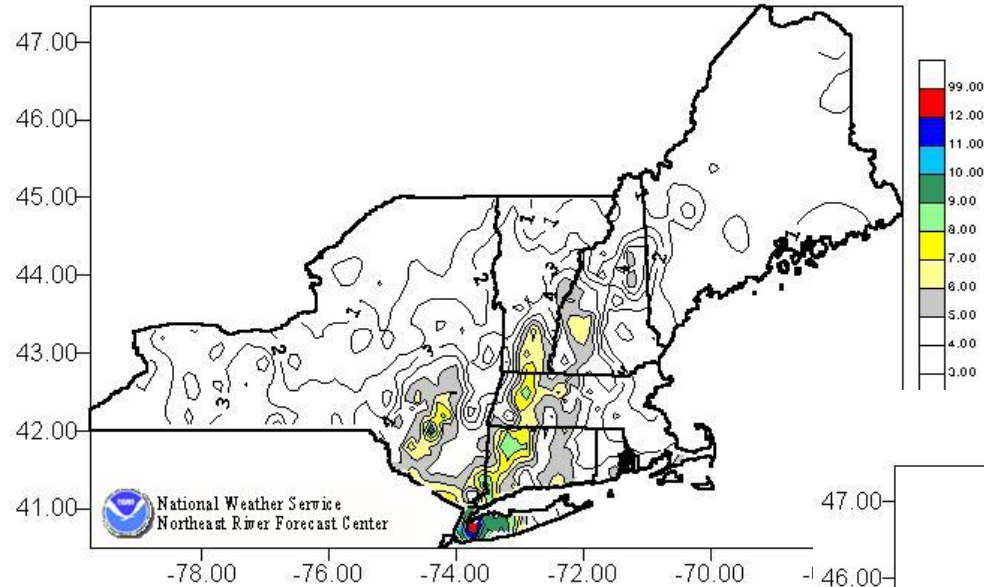
$$106,000 \text{ cfs} / 260 \text{ sq mi} = 408 \text{ cfs/sq mi}$$



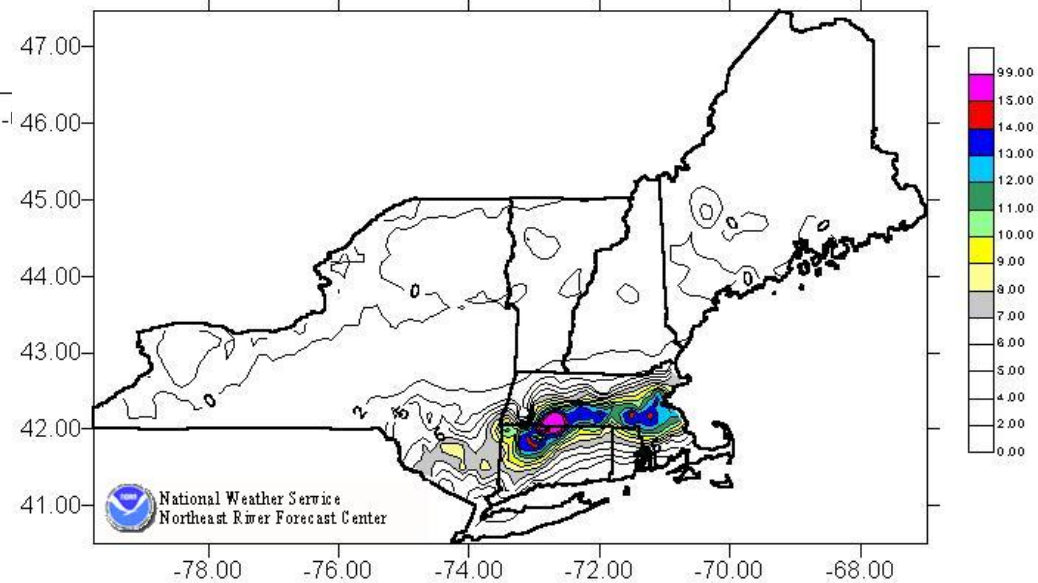
# Northwest Connecticut- 1955 Rainfall



Hurricane Connie Rainfall - August 11-14, 1955



Hurricane Diane Rainfall - August 17-20, 1955





# Mad River – Winstead, Litchfield County, CT



Reproduction information available from the  
Connecticut State Library, State Archives  
File name: 55flood09





# Naugatuck River, Torrington, CT – August 1955



Reproduction information available from the  
Connecticut State Library, State Archives  
File name: 55flood02



Reproduction information available from the  
Connecticut State Library, State Archives  
File name: 55flood05





# Winter - Impacts of Snow



Blizzard, Albany, March 14, 2017

## Impacts of Snow:

- Transportation issues: Slippery driving and walking conditions, airport closures, rail lines shut down.
- High Snowfall Rates: Rapid accumulation and near zero visibility ( 2"/hr = ¼ mile visibility or less).
- Early/Late Season Snows (Oct/Nov/May) : 3+” of snow with leaves on trees = downed trees and widespread power outages.
- Wind Driven Sticky Snow: 6” of heavy, wet snow with strong winds can lead to downed trees and power outages (March 2018 Nor’easter).
- Snow squalls: Biggest cause of pileups in interstate highways (NWS now issues snow squall warnings).
- Blowing Snow: Drifting snow blown back onto previously cleared and treated roads causing slippery driving conditions.
- Prolonged accumulation periods (1-2 months) can lead to weight buildup on roofs and roof collapses.



# Snow With Leaves On Trees

- May 10, 1945 Snowstorm:

Weather  
Fair, cool.  
Today's Temperature  
High 61 Low 32  
Details on Page 2-B

**THE KNICKERBOCKER NEWS** FINAL  
Vol. 8—No. 265  
Friday, May 11, 1945  
Price Four Cents

## 5-Inch Snow Cripples Electric and Phone Lines

Last vestiges of a history-making May snowfall had disappeared from Albany streets by noon today but throughout the city repairmen continued their jobs of clearing debris and restoring communication service.

Disrupted light and telephone service was caused by tree limbs, broken by the weight of the heavy snow, falling across the wires, officials of the utilities said today. Wind in the Capital District was not sufficient to tear down the wires.

In the Helderbergs, four plows of the county highway department were still shoving their way through drifts to aid a number of stranded motorists, some in Knox, Berne and Westerlo.

The storm, which originated in Minnesota and passed over eastern New York, only to belt the New England states with greater fury, laid 5.4 inches of snow in Albany. By noon, a 45-degree temperature had dispersed most of it and higher temperatures were expected tonight.

Tomorrow, the Albany Weather Bureau said, will be cloudy and warmer, with prospects of more rain.

**Snow definitely is out of the picture for the weekend, observers said.**

Damage to early vegetable crops was negligible, according to Walter S. Mason, Albany County Farm Bureau agent. If temperatures drop to the freezing point tonight, he added, the effect in produce will be serious.

New York Power & Light officials said the storm disrupted service to 60,000 customers in its territory but that most of the service had been restored by 7 a. m. today.

Fort Plain reported five inches of snow; Elmira, four inches; Wyoming County, four inches; Glens Falls, three inches; Chautauque County, three inches. In New England, three to eight inches fell in some sections.

At 8:15 a. m. today, it was still snowing in Montpelier, Vt., Concord and Manchester, N. H. (Other details and picture on Page B-3)

## Falling Trees Wreak Havoc Among Wires

Electric service throughout the Capital District was seriously affected by the unprecedented snowstorm that swept over the northeast yesterday.

Working in a brilliant sun and higher temperatures, 600 linemen of the New York Power and Light Corporation still labored today to restore the balance of 60,000 service disruptions in the territory.

In Saratoga and Ballston Spa it was a question this afternoon if street lights would be back in operation by nightfall.

By noon today all but 4,000 of the service breaks had been repaired.

Saratoga Springs and Ballston Spa were heavily hit. Of the 7,000 electricity customers in the Saratoga district, 2,000 were without service during the night and Albany officials said it was doubtful if all service could be restored by nightfall. About 500, it was estimated, will be without lights until tomorrow morning.

Four of Saratoga's six street light circuits were broken last night, throwing two-thirds of the city's streets in darkness. One side of Broadway, however, remained lighted.

## Most Breaks Repaired.

Joseph Terriault, New York Power and Light manager at Saratoga, said the storm's effect was the most serious since the famous sleet storm of 1929.

Power and light officials said the service disruptions were caused entirely by trees and branches, broken by the weight of snow, falling across conductors and lines. The majority of the breaks occurred on the lines extending from poles into homes.

## Albany Service Restored

At 7 a. m. practically all service in Albany had been restored but 1,000 consumers still were without power in Schenectady, 2,000 in the Cobleskill region, 200 at Greenwich, 600 in Glens Falls and 800 in Canajoharie.

The New York Telephone Company reported several hundred phones were put out of operation but most of the service had been restored by noon today.

Tree branches falling into the streets caused a serious traffic impediment in Albany yesterday afternoon and last night. The Police Department received about 50 calls from householders and the Department of Public Works assigned 10 of its trucks and drivers to assist the Park Department in removing the debris.



# May 10, 1945 Snowstorm

- **May 10, 1945 Snowstorm:**
- The 5.4 inches of snow recorded at Albany is the largest May snowstorm to date.
- 60,000 power outages were reported across the Capital District of NY from downed trees and wires. Some locations were without power for a few days.
- Largest number of power outages since ice storm of 1929.
- In the City of Albany alone, 10 DPW trucks were assigned to debris removal.
- Also, **devastating fall snowstorms** with leaves on trees in **Oct 1987** and **Oct 2011**





# Winter – Impacts of Freezing Rain (Glaze)

## Impacts of Ice:

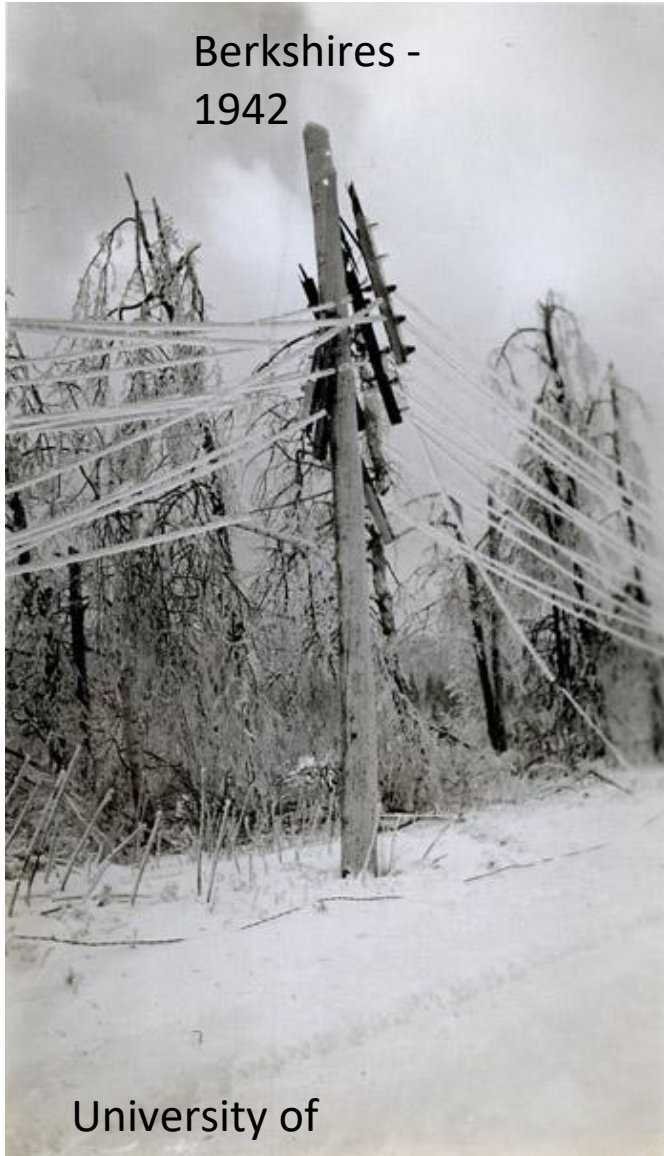
- A trace of ice will cause slippery driving and walking conditions.
- One quarter inch of ice glaze accumulation on trees will start to bring down small branches.
- One half inch of ice glaze accumulation on trees and wires will cause numerous power outages (outages last a day or two).
- One Inch or more of ice glaze accumulation on trees and wires causes widespread power outages (outages may last a week – Dec 2008).
- Any wind with the ice will make matters worse.



Ice Storm, North Colonie, NY, Dec 2008



# Ice Storms





# Winter Hazards – Impacts of Wind



February 2017 High Winds

## Impacts of Wind:

- Winter storms are usually large and powerful.
- Winter storms have the potential to cover large areas with strong winds and cause widespread power outages.
- Summer wind storms (on average) tend to be more localized and isolated.





# Historic Storms – Great Appalachian Storm 1950

# THE KLUICKERBOCKER NEWS

Final Edition  
CLOSING MARKETS

Weather  
High Wind, rain, cold tonight;  
clouds, more squalls, tomorrow.  
Today's Temperatures  
High, 51 Low, 41  
Chills and Sea Run Page 11

Vol. 14—No. 124  
Daily Edition of Kluickerville News  
Printed, Published, Albany, N. Y.

Albany, N. Y., Saturday, November 25, 1950  
18 Pages  
Price Five Cents

## GREAT SNOWSTORM GRIPS EAST ICE, GALE WINDS LASH SEABOARD

### U. N. Push In Korea Posts Big Advances

Tokyo (Sunday)—(UP)—The United Nations "map the war" offensive in Korea pushed to victory in a series of major advances today against stiffening opposition which included heavy cavalry and huge tanks which may be the new United States' mainstay.

General MacArthur's troops, offensive aimed at having the American G. I. home by Christmas, are moving south of Seoul on the northeast and southeast.

The South Korean Capital Division captured the heaviest east coast port of Chongjin without firing a shot.

### High Winds Raise Havoc In District

Strand's Lumber & Ice wharf raised the Capital District wharf, raising waterfront damage, telephone and power lines, but, it is predicted the worst is yet to come.

The wind so far today has hit the Capital District wharf, raising waterfront damage, telephone and power lines, but, it is predicted the worst is yet to come.

### Six Dead In State Gale and Snow

By The Associated Press

Force winds ripped across New York State today and took a heavy toll in life and property along the coast. At least six deaths were reported, and many injuries. The winds, which extended from Virginia to New England, were accompanied by heavy snow.

Western New York. A fall of more than 20 inches was reported in some places. In Albany, a fall of 15 inches was reported. In New York City and environs, the wind was reported to be between 40 and 50 miles an hour. In some parts of the state, the wind was reported to be between 40 and 50 miles an hour.

Power and telephone lines were downed in many parts of the state, particularly in Central and Northeastern New York. Some highways were closed.

Power Lines Down

A few miles, stopped by the

### Cleveland Traffic Bows to King Winter's Snowy Reign



### Big Cities Suffer Heavy Damage; 29 Lose Lives

Gigantic Waves Hammer Coast

New York (AP)—Rain-laden winds of near hurricane force which at times hit as much as 100 mph battered the Eastern Seaboard today, causing at least 11 deaths.

Train, airline and ferry service was disrupted by the storm which extended from Virginia to New England.

Families were evacuated from seaside hotels which were caught by gigantic waves and flooding rains. At least 20 families were rescued from their homes on Norton Bay off New Jersey. Another 200 were rescued from a beach.

The storm was described by the U. S. Weather Bureau as

### Severe Cold Grips Midwest, Florida

By United Press

Heavy snow, winds of hurricane force and record cold leveled the eastern states today. New York City, Philadelphia, Cleveland, Philadelphia and other cities were hard hit with damage and many deaths.

At midday 20 persons were killed, most of them in New York, Pennsylvania, Ohio and West Virginia.

The snowstorm was described by the U. S. Weather Bureau as

[illegible]

THE KINGTON DAILY FREEMAN, KINGTON, N.Y., SATURDAY EVENING, NOVEMBER 25, 1950

The Weather

SATURDAY, Nov. 25, 1950  
Sun shes at 6:54 a. m.; sun sets at 4:16 p. m.  
RAIN.

The Temperature

The lowest temperature recorded so far on the Freeman thermometer during the night was 45 degrees below zero.

The highest figure recorded up to noon today was 53 degrees.

The Forecast

New York city and vicinity—Cloudy, slightly mild with snow or sleet.

WINDY

National rain today, changing to snow and sleet; colder late in afternoon or tonight. High today about 50, low tonight 15 to 20 along the coast and 10 to 15 in and suburbs. Sunday clearing and much colder with falling diminishing winds. High in mid-State. Southeastern weather will go to 60 to 50 miles per hour with gusts to 60 today, and increasing westerly late this afternoon or tonight and diminishing gradually tomorrow morning.

Wind to northwest wind to 20 to 30 mph.

Eastern New York—Strong cold wave from the north with mild weather here today and tonight. Wind may change later to snow wet and south point of Lake Ontario. Windy and cloudy with snow squalls Sunday.

Held for Hearing

General Tubbs, 33, of Highland ave charged by state police with driving while intoxicated and driving without a license after his automobile sidetracked another.

Driving Winds Hit Eastern Seaboard

New York, Nov. 25.—Driving winds, coming out of the southeast and blowing increasing temperatures and snow, hit the northern Atlantic States today with steadily increasing force.

The big blow struck New York first about 10 p. m. (EST) last night, and soon overcasted the State, a 30-mile gale with separate bursts up to 45.

The Weather Bureau forecast a top force of 30 miles per hour later today, with gusts up to 60, and said it would damage trees, windows and signs, and in one place blow tiles off a roof. Within the first few hours some emergency squads answered 28 calls in the harbor, police boats and the Coast Guard worked in choppy water to save small boats tossed and set adrift. The police saved several patients aboard the Hudson, the East River, from Sheepshead Bay, and near Staten Island.

The temperature was mild at dawn but a rapid drop was forecast, with a night low of 10 to 15 expected in the area.

The Weather Bureau said occasional rain would turn from snow by midnight.

Kington Escapes

A one spot. Chilling temperatures spread into southern states and wind-driven snow virtually paralyzed Pittsburgh.

Winds up to 83 miles an hour were reported in New York. The twister tore down trees and knocked over trees as it whipped along the coast. Some persons were rescued from seaside homes, others in the Staten Island area were ordered to evacuate their homes.

Electrified train service on three lines leading into the city was suspended.

Korean War Claims Ex-Army Grid Capt

Mempho, Tenn., Nov. 25.—Second Lt. John C. Trent, 29, who served in the Korean Peninsula's unheated, until 1949 football squad, has been killed in Korea.

A Defense Department telegram was received by his parents here yesterday saying the former United States Military Academy and was killed Nov. 15, three days after he landed on "Whitney Island," the U.S. Infantry Regiment.

No further details are given.

U. S. Offensive Built model weighing nearly 60 tons.

It was the first official designation of a giant land tank in Korea, although its name, the war reported seeing mammoth tanks. Later, however, they encountered only the T-34 medium tank, hundreds were destroyed.

East of the 24th, the ROK First Division was hit twice by a Communist tank force moving southeast of Taechon. The first attack forced the South Korean army to retreat, but the second was repulsed by daylight Saturday, the ROKs punched back. A First Corps spokesman said the enemy Redds back but still faced stiff resistance.

And far behind the front, three nights of marine attacks made a hole in the North Korean defense of Sangsan, 23 miles south of the six battalions of Chinese support of Wonsan. The marine struck Friday night, blowing a fuel dump and setting buildings afire.

Council Meeting

By Gen. Yu Hsiu-chuan, told Secretary Liu yesterday it was prepared to proceed at once with their case on Formosa. Apparently there was no mention of Korea at that time, according to accounts of the conference obtained by the press.

Meanwhile United Nations delegates got a close watch on the Walker-Astoria House in New York, where the Chinese Reds are being held, one who called them. This might be a tipoff on behalf of the Reds.

United States officials have stoutly avoided any contact with the Chinese Reds and have indicated they will not talk with anyone who trades diplomatic punches at the council table.

The Privileges Committee action was witnessed yesterday when the Assembly's 63-nation committee voted 36-8 with 22 abstentions to invite them to testify on Russia's charges of American aggression against China.

The discussion in the Assembly is similar to, but wholly separate from, Security Council deliberations.

Truman Under Fire

without "indiscriminate smearing."

The new Republican attack on the President and Achesone came from Sen. Charles McNary, chief adviser, told a Philadelphia audience last night that some GOP criticisms of the administration's policies "point straight in the direction of a policy of emasculation."

He apparently alluded demands by McNary and other Republicans and others for increased military support of the Nationalist Government on Formosa.

Communists Inked

TOP DOG IN HIS CLASS—Someday the smartest pup in Salina, Kans., will be Brownie, who is a regular scholar in teacher Doris Short's first grade class at Franklin School here. Brownie arrives on time daily, sits at the front of the class while pupils read, and is always joining the students in the pledge of allegiance to the flag.

ELLEUVILLE NEWS

Ellenville, Nov. 25.—Henry F. Hoornbeck was given a testimonial dinner Thursday night at the Ph Jean in Park drive by the board of directors of the Ellenville Savings Bank on the occasion of his completing 50 years of association with the bank. Joining

At Bear Mountain Weather Station one gust of wind reached a velocity of 96 miles per hour. Ten persons were rescued from collapsing seaside cottages on Staten Island. Wind and high waves tore boats from their moorings and battered other small craft. The Weather Bureau warned residents of the New York area to batten down for more of the blow.





# Historic Storms – Great Appalachian Storm

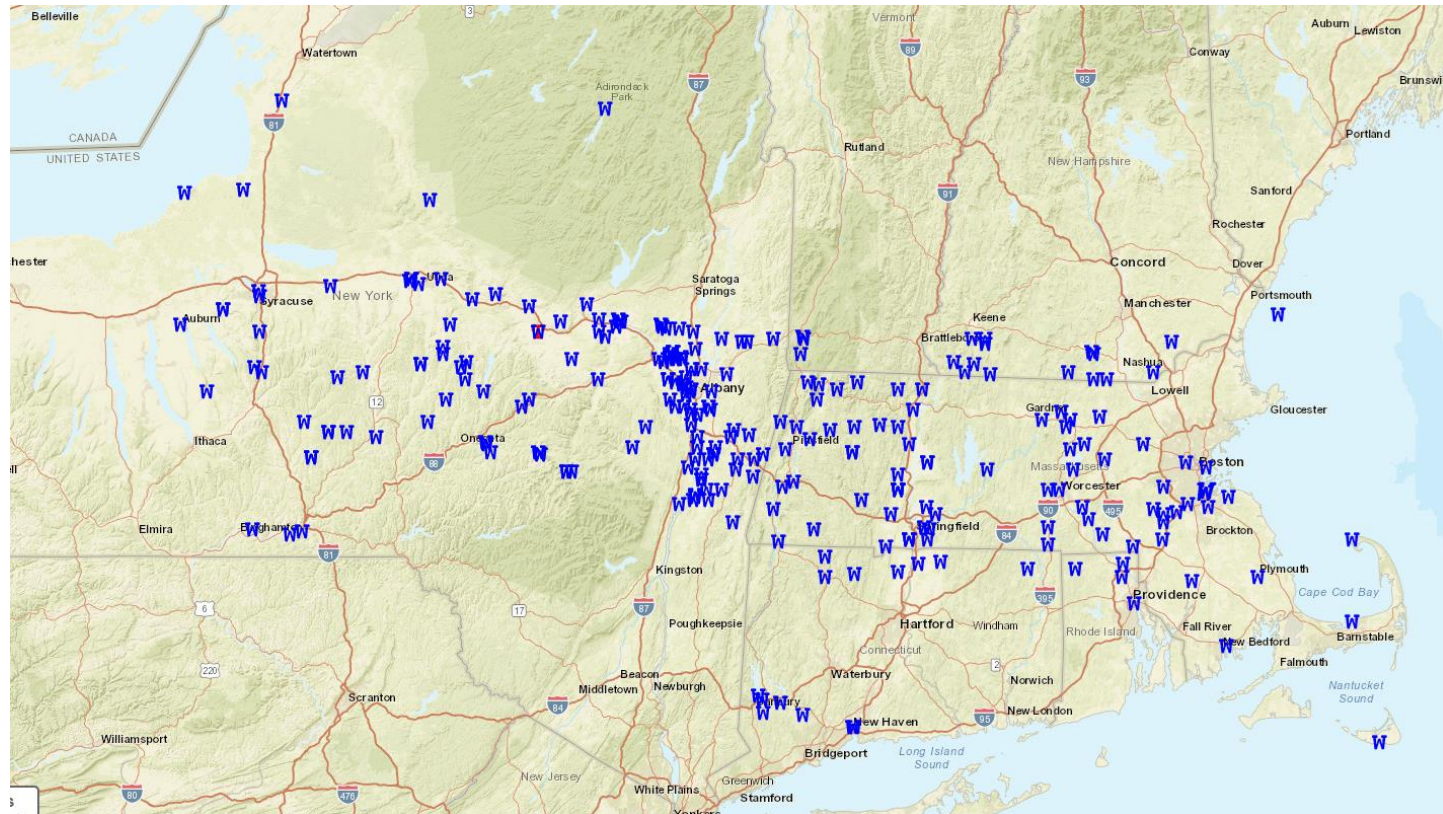
- Great Appalachian Storm, November 24-27, 1950:
- Winter Storm
- Mainly a **wind storm** for the Albany Forecast Area although heavy rain fell in the eastern Catskills. Snow in southwestern NY.
- Sustained winds of 50-60 MPH with a gust to 83 MPH here at Albany. Measured gust of 94 MPH at New York City and Hartford, Connecticut gusted to 100 MPH.
- Wind damage was extensive with many trees and power lines were blown down across New York State and the region.



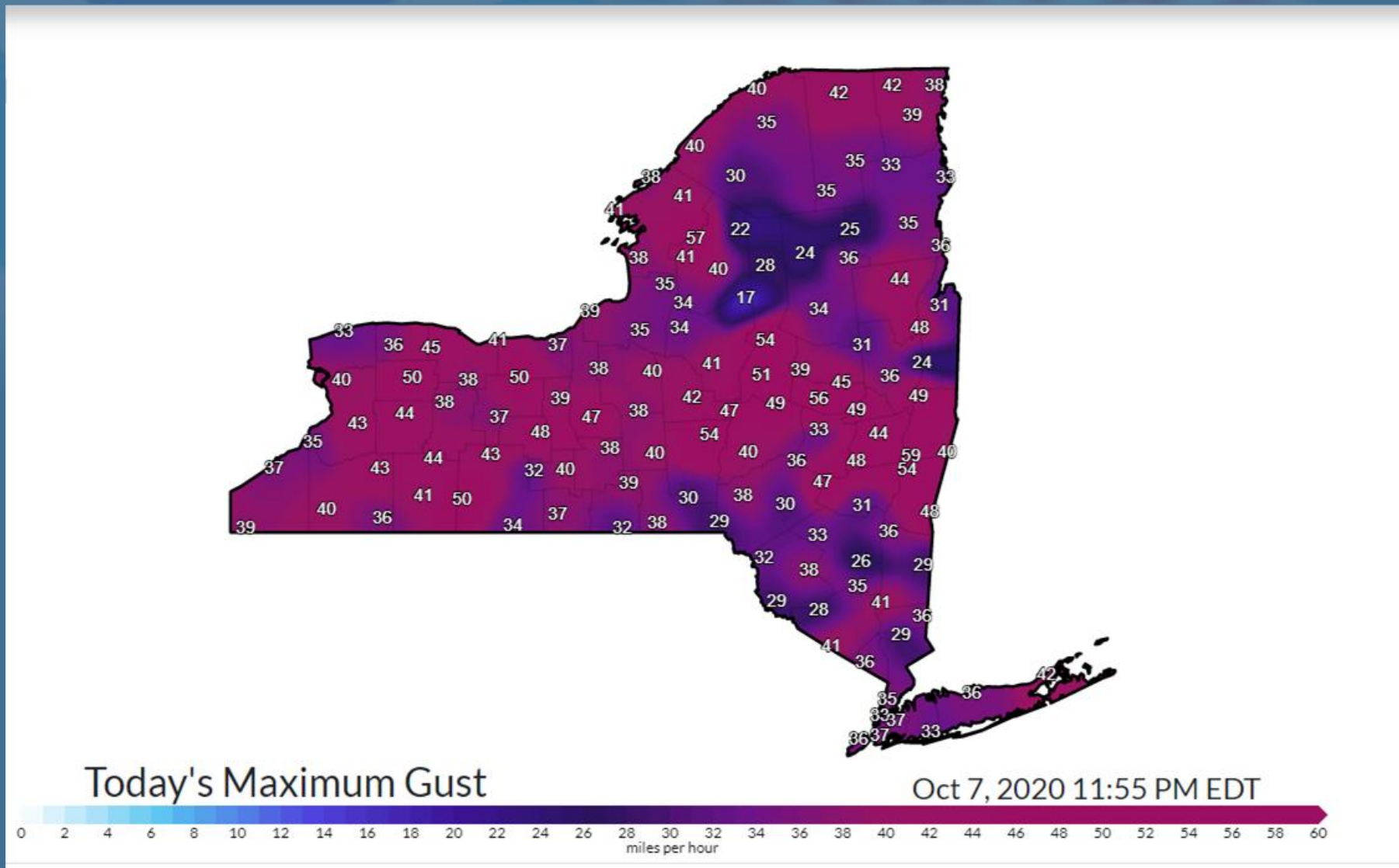
# Severe Weather

**Damaging Winds:** *Usually* isolated from individual thunderstorm downbursts, but can be more widespread (October 7, 2020 Derecho).

**Impacts:** Power outages and debris removal. Some structural damage possible from stronger wind gusts.



# NYS Mesonet Maximum Wind Gusts



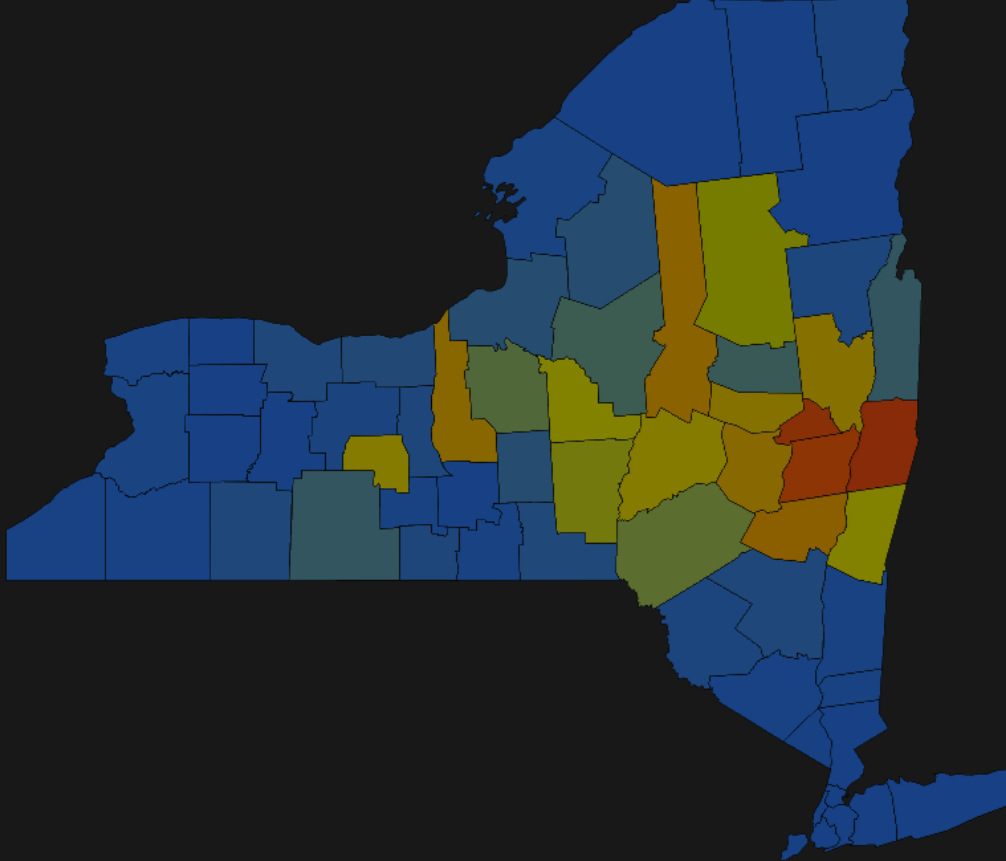
# Power Outages across NY and MA

## New York

Customers Tracked: 8,248,492

State Outages: 216,365

Last Updated: 10/7/2020, 5:06:26 PM



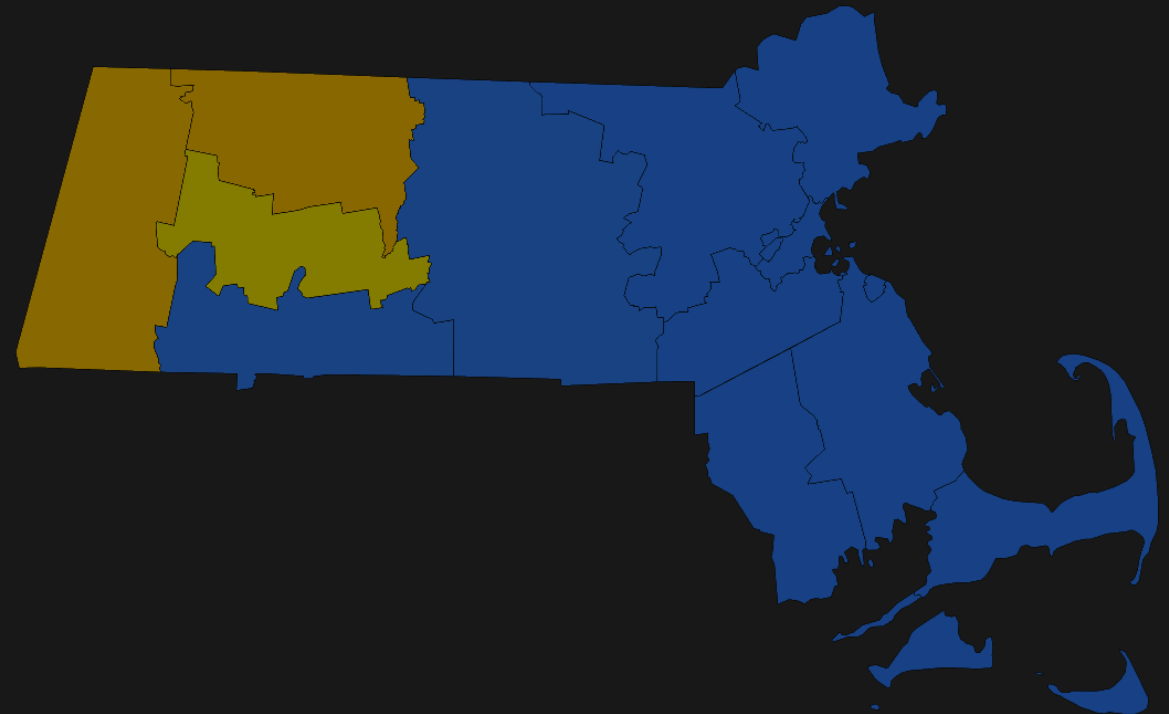
Outage Scale: 0% 10% 30% 60% 100%

## Massachusetts

Customers Tracked: 2,532,072

State Outages: 29,372

Last Updated: 10/7/2020, 5:22:50 PM



National Outage Scale: 0% 10% 30% 60% 100%





Rensselaer County, NY  
Steve DiRienzo







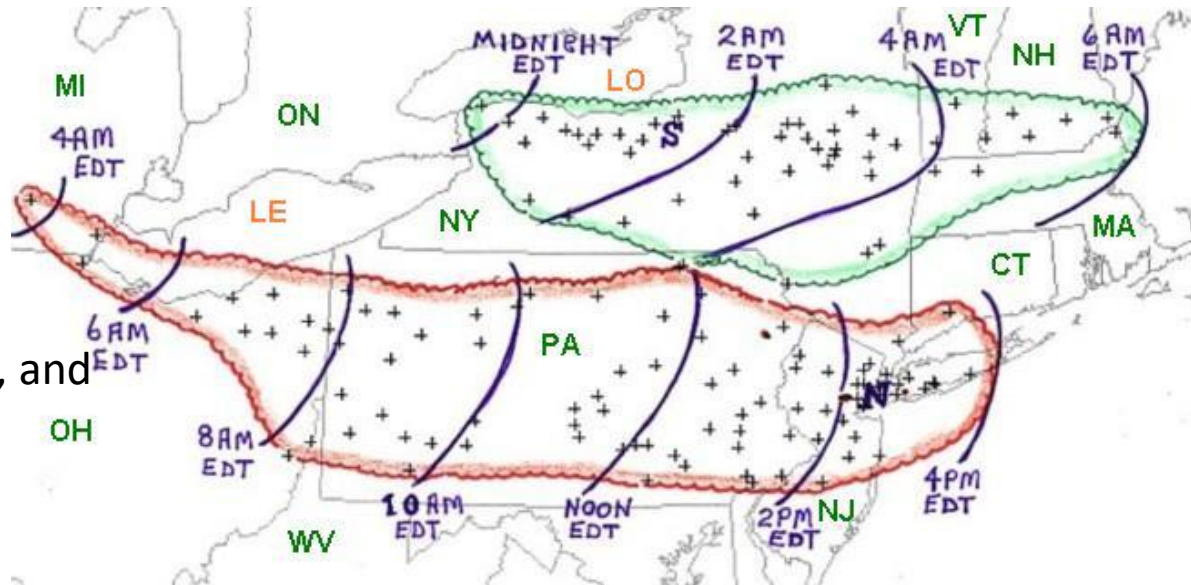
# Historic Storms – Labor Day, 1998 Derechos

- **September 7, 1998 Derechos:**

- Widespread wind damage.
- Three people were killed and 10 were injured in Syracuse.
- Measured wind gusts of 89 mph at the Rochester Airport and 77 mph at the Syracuse airport were recorded. Several hundred thousand people lost electrical power due to the powerful derecho winds some remaining without power for a week.

- **PA, NJ, NYC:**

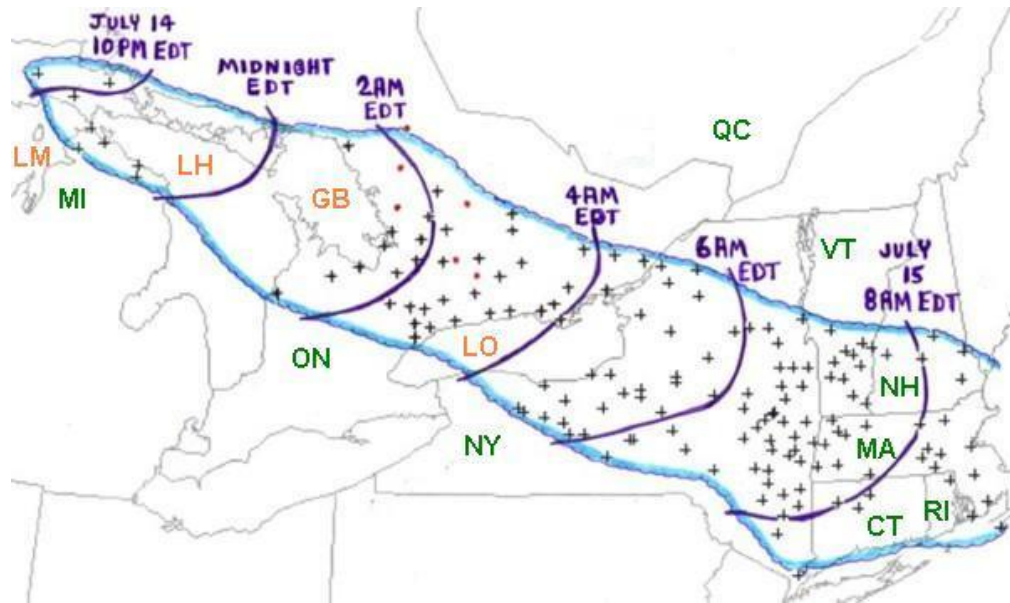
- 4 people were killed and 62 were injured.
- Over 300,000 customers lost power, and some did not get power restored until 5 days after the event.





# Historic Storms – July 15, 1995 Derecho

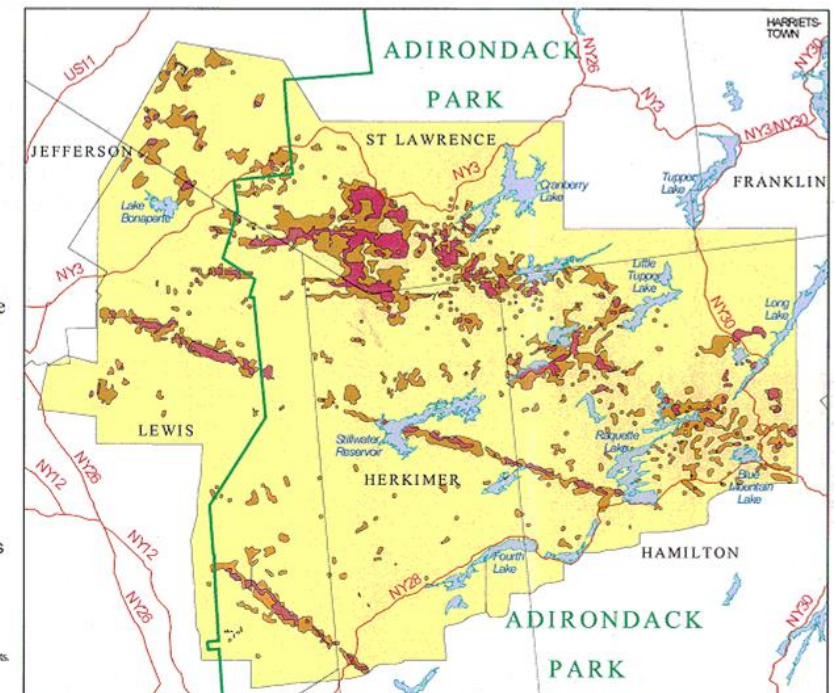
- **July 15, 1995 Derecho:**
- Widespread wind damage
- Large timber blowdown in Adirondacks
- At the Syracuse Airport, a wind gust of 76 mph was measured at 5:30 AM EDT. Less than an hour later, a gust of 77 mph was recorded at the Albany airport. **Several hundred thousand people lost electrical power due to the powerful derecho winds.**



Degree of Damage  
0-30%, Light  
30-60%, Moderate  
60-100%, High  
Adirondack Park Boundary

1:500,000  
5 0 5 Miles

Storm impact data derived from extent of crown damage observed from 1:18,000 color aerial photography by NYSDEC Division of Lands and Forests.  
Judy Marsh Stevens, Bureau of Habitat, NYSDEC, April '98.

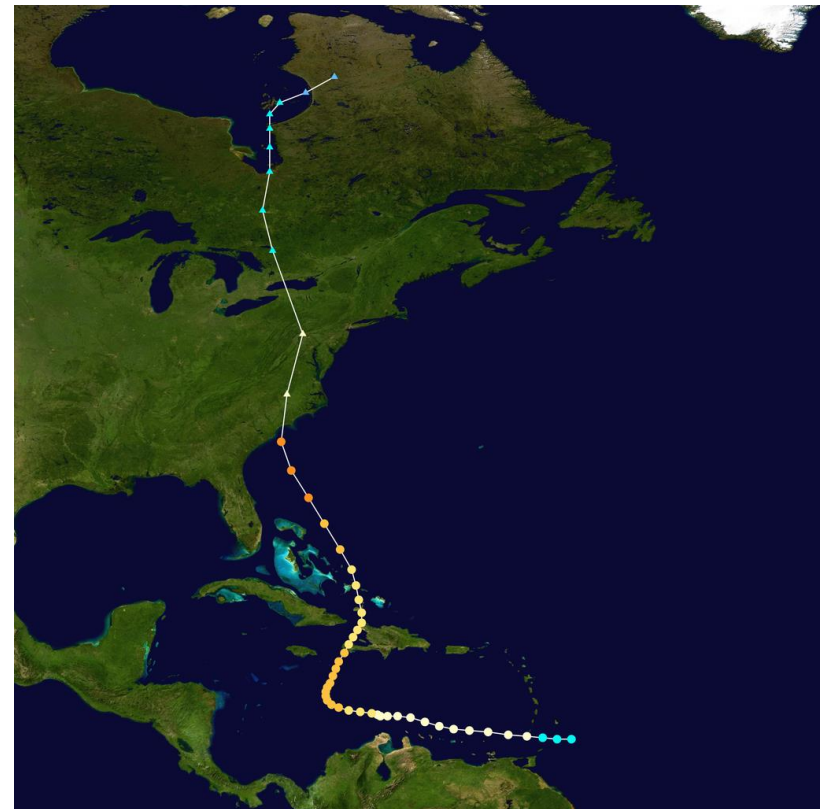




# Historic Storms – Hurricane Hazel - 1954

Tropical Storms can have destructive winds.

In New York, power was knocked out and trees were downed. Wind gusts throughout the area reached 99 mph. A gust of 113 mph was recorded in Battery Park, the highest wind speed ever recorded within the municipal boundaries of New York City.

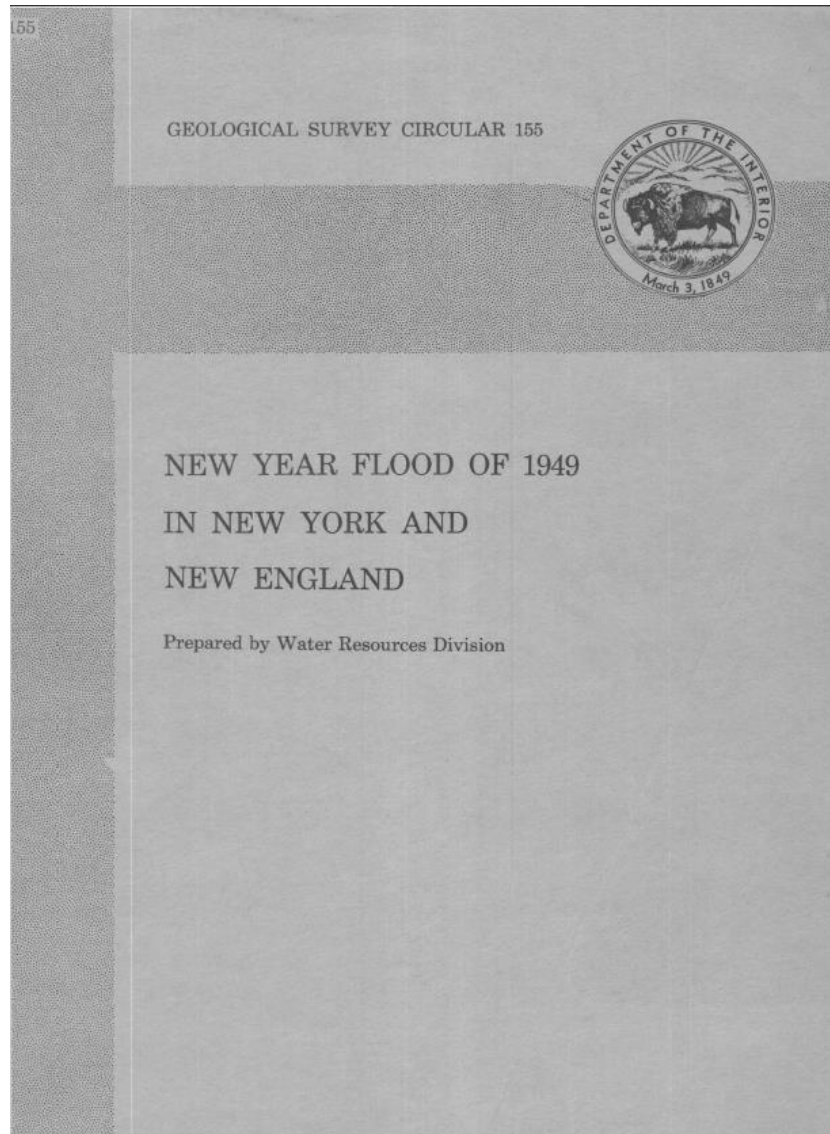


Track of Hurricane Hazel – October  
1954





# Multihazard Storm 1948-1949



- “Precipitation ranging from 5 to 12 in. in depth fell on a 4,500 square-mile area in eastern New York and southwestern New England during the period December 29, 1948 to January 1, 1949.”
- “Most of this precipitation fell as rain. On the morning of December 31 the rain began to freeze; later in the day the rain changed to snow.”



# Liquid Equivalent Precipitation

## Dec 29, 1948 - Jan 1, 1949



- Norfolk, CT: 10.63"
- Slide Mountain, NY: 8.92"
- Conklingville Dam, NY: 8.61"
- Pittsfield, MA: 8.35"
- Mohonk Lake, NY: 7.56"
- North Creek, NY: 6.70"
- Glens Falls, NY: 6.36"
- Albany, NY: 5.80"
- Poughkeepsie, NY: 4.47"
- Westfield, MA: 4.47"



# 1948-1949 Storm Impacts

Weather  
Dark early tonight; Cloudy and  
Cold. Tomorrow  
Today's Temperatures  
7 to 15 P.M.  
High, 15 Low, 11  
Chance and Wind on Page 1-A

**THE KNICKERBOCKER NEWS** **HOME EDITION**  
Vol. 12—No. 154 Daily Record of Albany, N. Y. Friday, December 31, 1948 Price Five Cents

## DISTRICT FAMILIES FLEE FLOODS; ROADS, RAIL LINES WASHED OUT

**4 Rescued As Flood Cuts Off Area Home**  
Rain, Thaw Cause a 100-Ton Highway Hazard on Route 9-W Phone Lines Cut, Rensselaer Co. Residents Routed

Albany and the Capital District faced their greatest flood threat in years today as the Hudson and Mohawk Rivers and numerous other streams spilled over their banks, forcing families from their homes and washing out bridges, highways and railroad tracks.

In Albany, where nearly five inches of rain has fallen in two days, the Hudson went over its banks and Albany's new weatherman, Ernest C. Johnson, predicted the flood would reach 17.5 feet, more than six feet over flood stage.

The latest river reading, taken by the Weather Bureau at 12:30 p. m., was 15.5, more than 10 feet above normal and nearly three feet above flood stage.

At mid-morning the rain in rural areas changed to sleet, bending trees and causing telephone and power wires to sag. The forecast for tonight is rain changing to snow and colder. The snow is expected to start falling in Albany early tonight, stopping shortly after midnight. Tomorrow will be cloudy and slightly colder than today.

**Power Linemen Alert**  
The New York Power & Light Corporation reported no power interruptions in the Albany district and forecast none unless conditions worsen, but it has alerted all linemen and crews.

**Be Thankful! It Could Have Been 40 Inches of Snow**  
Albany's new weatherman



Rescue was rushed for about 100 families in Western Massachusetts today and evacuees were being moved out in Vermont and Connecticut as streams boiled to flood stage in many regions.

In Greene County, a mountain sleet storm was in progress and all mountain roads were covered by an inch of solid ice, with driving very hazardous. Route 23-A one mile west of Route 32 in the Town of Catskill was washed out.

At mid-morning the rain in rural areas changed to sleet, bending trees and causing telephone and power wires to sag.

One death was reported as rail and highway traffic and telephone communication were cut by a 24-hour rain which brought out National Guardsmen and emergency units.





# 1948-1949 Storm Impacts

Net Paid Circulation  
**11,288**  
Month of November  
12 Mo. Average 11,977

**Greenfield Recorder-Gazette**

156th Year—No. 305    Member of Associated Press    Greenfield, Massachusetts—Friday, December 31, 1948.    Franklin County's Own Newspaper    14 Pages—5 Cents

**WEATHER**  
Freezing rain changing to snow and ending early tonight. Temperatures well below freezing by morning. Saturday partly cloudy and much colder.



**Rising Rivers Block Main Highways At East Charlemont, Mount Tom; North Adams Valley Hardest Hit**

**Scores Of Streams Over Banks; Hundreds Evacuated**

**Floods Cut Off Jersey Towns; Dampen Albany**

**Deerfield Flood Nearing S. F., Charlemont Houses**

**INSIDE A B-36**—M/Sgt. R. S. Bruckbauer of West Allis, Wis., travels in tunnel connecting tail and radio sections of B-36, world's largest bomber, at Carswell Base, Fort Worth, Tex.

**BOSTON (AP)**—The 500 persons living in Risingdale, two miles north of Great Barrington, were ordered evacuated today when Police Chief James McCarthy said a 60-foot power dam on the Housatonic river was in "a very weakened condition."

Water was "near the brink" of the dam despite the fact its flood gates were open, Chief McCarthy said.

**(By The Associated Press)**  
Rain-swelling rivers went on a rampage today in the north-eastern section of the United States.

Some 500 persons were evacuated from homes in New Jersey. Three communities — Marlville, South Bound brook, and Bradley gardens in Bridgewater — were completely

**SHELBURNE FALLS** — Evacuation of families and their belongings from homes on Conway street, Shelburne Falls, was started at 1:30 today as the Deerfield river rose over the street. The family of Richard Hannon is the first house on that street and Ormond's garage, not far away, were making preparations to leave as the river continued upward.

A least six families were forced out of their homes in Pleasant Valley, near Poughkeepsie, when the Wappinger River overflowed. Firemen used canoes to rescue marooned persons.

Other evacuations were ordered at Bennington, Vt., and Farmington, Conn.

The Westfield River Valley, starting at the eastern Berkshires in Massachusetts, reported roads under water and minor landslides at Russell and Blandford.

B. & M. maintenance crews were rushed out as tracks were reported underwater at Petersburg Junction and Hoosick Falls, North Pownal, Vt., and North Adams, Mass.

**WEATHER**  
Freezing rain changing to snow and ending early tonight. Temperatures well below freezing by morning. Saturday partly cloudy and much colder.

**BOSTON (AP)** — The 500 persons living in Risingdale, two miles north of Great Barrington, were ordered evacuated today when Police Chief James McCarthy said a 60-foot power dam on the Housatonic river was in "a very weakened condition."



# 1948-1949 Storm Impacts

FRIDAY, DECEMBER 31, 1948

## Freezing Rain Knocks Down Power, Telephone Lines; Snow Reportedly On Way

### Utility Heads Note Considerable Trouble In Wake of Storm; Firemen Called Out Twice; Motoring Called Hazardous

Rain, falling steadily for more than two days, began early this morning to freeze on power and telephone lines, trees, houses and buildings. By noon lights were going off, phones were getting out of order, and the end of the storm was not in sight.

Temperatures hovered just below the freezing mark during the morning, and a falling barometer indicated more rain, snow, or sleet—depending on the thermometer.

The freezing rain came exactly six years and two days after the memorable ice storm of 1942, during which William W. Strong, Albany Mayor, was killed.

THE LEADER-REPUBLICAN, GLOVERSVILLE AND JOHNSTOWN, N. Y.

## Schlusberg Named Assistant D. A.

District Attorney Allen H. Folscher announced today that he will appoint Mr. Andrew Schlusberg to be assistant district attorney effective Jan. 1.

Mr. Folscher said he has received information from Albany that his own appointment will be effective tomorrow, and he will name Mr. Schlusberg as his assistant immediately.

It was learned today that County Judge-elect Arthur C. Aulisi had notified Governor Dewey yesterday of his resignation as district attorney to take up the duties of his new office.

## County Judge Aulisi Takes Oath in Simple Ceremony

Arthur C. Aulisi took the oath of office as Fulton county judge in a brief, simple ceremony this afternoon in the Supreme Court chambers on North Main street.

Supreme Court Justice Willard L. Best administered the oath, placing his hand on a Bible brought by County Clerk Herbert M. Finch. Judge Aulisi swore to support the constitutions of the United States and New York and faithfully to discharge the duties of county judge.

The sole guests present were Mrs. Aulisi and their three children: Joseph, Rosalind and Richard.

Judge Aulisi has been practicing law for 17 years. His career includes a private practice, city judge of Gloversville, assistant district attorney and district attorney, Albany Law Graduate.

He graduated from Amsterdam High school and attended Union College, Schenectady, in 1926-27. In 1930 he graduated from the Albany Law School and served as a law clerk with his brother, Surrogate Judge Felix J. Aulisi, Amsterdam. Later he was admitted to the New York bar.

## Perkins Expected To Be Named To Health Post

### Would Take Office Being Vacated By Dr. Ellithorpe

Mayor Robert H. Ramsey and the Common Council will hold the 1949 organizational meeting in the City Hall at 10 tomorrow morning.

Mayor Ramsey said today the meeting will be brief. Business is expected to include the appointment of committees, the appointment of a new health commissioner, and possibly other city officials.

Dr. Everett N. Perkins is reported to be the leading candidate to replace retiring health commissioner Dr. Robert L. Ellithorpe, but no formal announcement has yet been made.

No changes in major committee assignments are expected, but minor

## Stormy Weather Conditions Cause Many Residents to Change Plans For New Year's Eve Celebrations

### Clubs, Other Groups Go Ahead With Plans To Greet Infant 1949

Gloversville residents, despite the unusual winter weather, made ready to usher out the tottering year of 1948 and to welcome the infant 1949 at 12 tonight.

Parties or observances have been planned by night spots, fraternal clubs, hotels and churches.

Hazardous weather conditions today caused many residents to change holiday weekend plans. The weatherman promised the Gloversville area snow and much colder for tonight, Saturday, according to the report, to bring snow flurries and a drop in temperature.

Most of the churches have planned special services for tonight and tomorrow to welcome

## Becomes Judge



## Social Topics Of the Day

## Mercury Dip Aids Flood Relief; Loss Estimated at \$4,000,000

Telephone and Power Lines Being Restored; Roads Open, Buses and Trains Normal; Cold, Rain or Snow Tonight Forecast

Colder weather promised for today is expected to accelerate the Albany area's slow but steady recovery from the paralyzing weekend of floods and storm which caused an estimated \$4,000,000 damage.

Power and telephone lines were being gradually restored yesterday, and train and bus service was back to normal. Most of the roads were open to traffic and a "mopping-up" program by firemen, police and public service units in Troy, Rensselaer, Waterford and Cohoes reported "progress" against flooded cellars and debris. Local public health personnel and Red Cross disaster units, aided hundreds of families still without light and heat in the river area in Troy and Rensselaer.

The Hudson lake yesterday was reported at seven feet below the flood crest of 17.4 feet in Albany.

**THE WEATHER BUREAU** forecast a temperature low of about 15 degrees for today, with increased cloudiness during the day and rain or snow late tonight. The heavy storm reported in the mid-west was expected to be modified before reaching this area. Yesterday's 36° degree temperatures and sunshine was reported to have greatly aided relief of ice from power lines, particularly in the Columbia county area.

The New York Telephone company reported that approximately 5,000 phones were still out of order in the Albany-Troy-Schenectady area, about one-third of the total area, without service during the week-end.

## Flood Waters Raging Rivers Take Toll in New England



**TWO ESCAPED INJURY** — Caught in the greatest year-end flood in history, this automobile nose-dived into raging flood waters that washed out a wooden bridge on Brodie Mountain road in Haverhill, Mass. The two occupants of the car were not injured.

**NEW ENGLAND'S DAMAGES HIGH**

BOSTON, Jan. 3 (AP)—Western New England's flood and storm losses stood at some \$10,000,000 and three dead today as cleanup and repair crews labored in the wake of receding waters.

Unofficial estimates placed Connecticut's property damage at "several millions" and that of Berkshire county, Mass., at \$2,000,000.

Rhode Island gale winds and flood tide sank five Navy craft and damaged three more. Many fishing boats were blown ashore.

Seven Bay State communities still had polluted water systems and state public health officers warned that drinking water should be boiled 20 minutes.

**THEY WERE** North Adams, Williamstown, Adams, Lenox, Lee, West, Brookfield and Great Barrington, all in Western Massachusetts. A Thomas crew chartered water supplies and portable food for the 1,000,000 people in the area.

U. S. Army engineers said possible disaster in the Westford River valley of Western Mass. was averted by the 13,000,000 Knappton flood control dam in Huntington, built after the disastrous 1928 flood.

Although the Westford overrun its banks and the flood stage in its narrow valley, the communities of Huntington, Westford, Russell, West Springfield and Andover probably escaped heavy losses because of the dam.

**BERKSHIRE** county losses were caused by the rampaging Stockton River, which included extensive damage to the north-west run, way from 1,000 to 1,500 feet, and widening it from 100 to 150 feet, was completed in 1942.

**THE** addition to School 10, which will be constructed at an estimated cost of more than \$500,000.

## Albany's Net Debt Lowest Since 1925

### Total Down for 8th Year, Corning Tells Council



Albany's net general city debt is at its lowest since 1925, Mayor Corning announced last night in his annual message to the Common Council.

The gross city debt is the lowest in 20 years.

Albany's debt has been dipping each year for the last eight years. The general city debt as of December 31, 1948 was \$11,920,963.50. The gross debt was \$22,440,500.30.

**IN 1948**, THE NET general debt was reduced by \$118,923.50, the water debt by \$400,000.

Albany still maintains its "no outside" credit position, the Mayor said. During the year, \$1,377,000 in bonds were sold at an interest rate of 1.50 per cent.

He expressed hope that new lighting systems will be installed in public schools during the summer of 1949. Schools 10 and 11 have new lighting which he said had worked out satisfactorily.

**THE** maximum gain in the city's net debt for the year was \$1,377,000.

**1**—The second phase of the city's post improvement program, which will consist of construction of a new concrete runway 1,500 feet long and 150 feet wide.

The \$200,000 first stage of the improvement, which included extension of the north-west runway from 1,000 to 1,500 feet, and widening it from 100 to 150 feet, was completed in 1942.

**2**—The addition to School 10, which will be constructed at an estimated cost of more than \$500,000.

The State Labor Authority today will continue to hear the application of the Playden corporation for a regular wage increase at Ontario street and Park avenue.

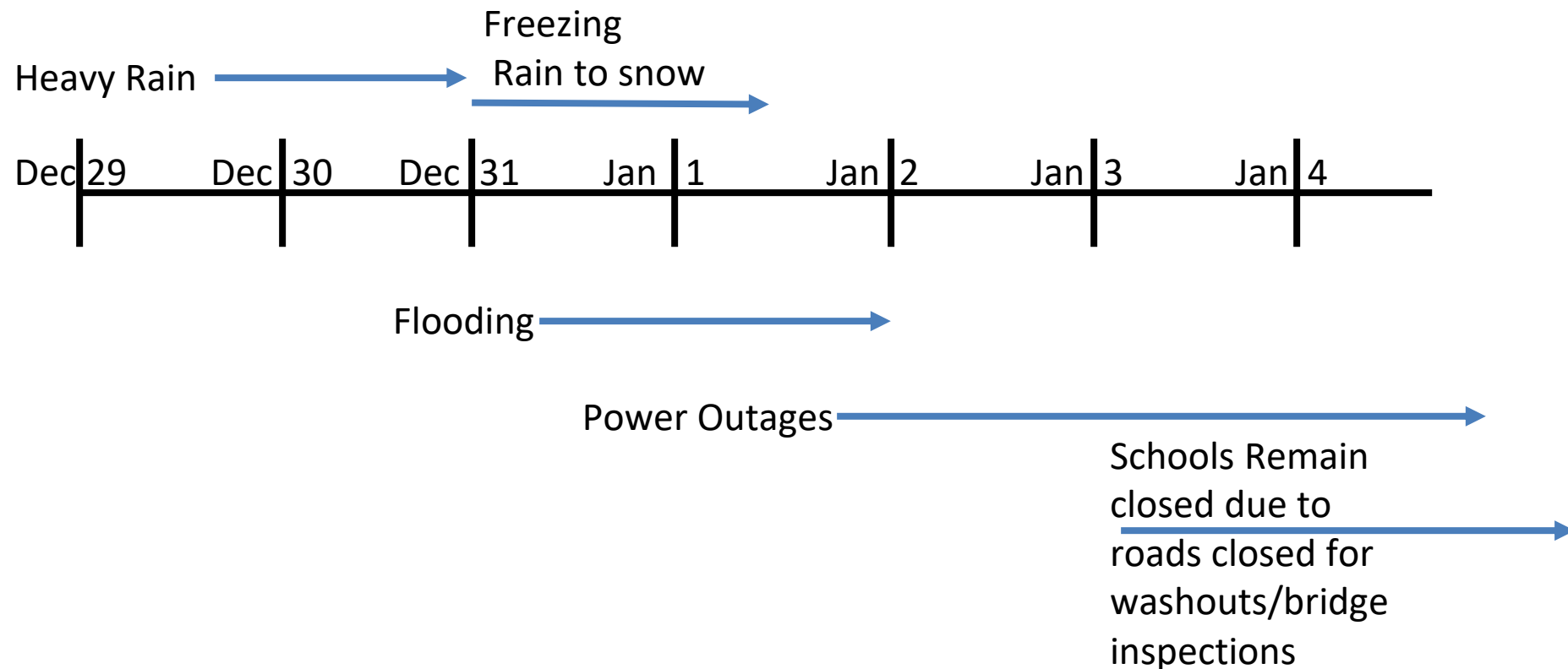
The application has been opposed by the Power-Playden Association of Vincennes Institute and by the Vincennes Institute Men's club. Each group





# Messaging Impacts

- *Timeline* can be useful to message multi-hazard storm impacts?





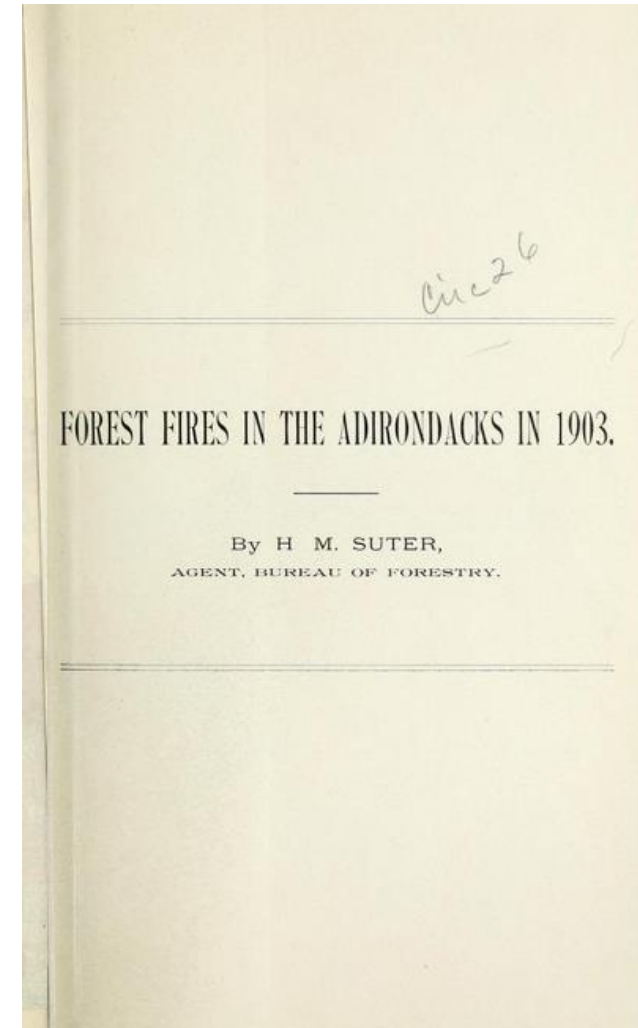
# Historic Storms – Forest Fires

Adirondack Fires, 1903.



# Forest Fire

- The **August Complex (Mendocino NF, 2020)** is largest California fire to date. It covered an area of over 846,000 acres (over 1300 sq. miles)
- **Adirondack NY Fires, 1903:** Fires began in April and lingered into June. Between April 20 and June 8, 1903, over **600,000 acres** (over 937 sq. miles) of timberland in northern New York were burned over.
- Winter snow was less than normal and valleys were bare of snow by early March. Rain in March was plentiful, but from April 17th through June 7th, average precipitation over the area was only 0.2 inches. The fires were extinguished by heavy rains in June.
- <https://archive.org/details/forestfiresinadi26suite/page/n4>







# Conclusion

- Goal of NWS warning process is to communicate impacts/hazards that will result from weather events so that people can take protective measures.
- Extreme events can cause serious disruption of the functioning of a community or a society involving **widespread human, material, economic or environmental loss and impacts**
- Information about impacts from past significant/extreme weather events can shed light on possible impacts from future events.



# References

- Atwood, R.E. (1927). Stories and pictures of the Vermont flood November, 1927. Burlington, VT: Free Press Printing Co.
- U.S. Department Of Commerce Weather Bureau (1956). Hurricane Rains and Floods of August 1955 Carolinas to New England (Technical Paper No.26). Washington D.C.: U.S. Government Printing Office.
- U.S. Department of The Interior (1952). The New Year Flood of 1949 in New York and New England (Geological Survey Circular 155). Washington D.C.: U.S. Government Printing Office.
- <https://www.spc.noaa.gov/misc/AbtDerechos/derechofacts.htm#july4>
- <https://www.spc.noaa.gov/exper/outbreaks/>
- <http://www.fultonhistory.com/Fulton.html> (Newspaper search engine.)