New York State
Winter Weather Awareness Week
November 2nd to 8th, 2014

David J. Nicosia

Warning Coordination Meteorologist

NOAA's National Weather Service

Binghamton, NY

Why do we need to be prepared for the upcoming winter?

New York State is known for its cold, snowy and icy winters. Winter weather can be dangerous if you are not prepared.

Fatalities

- Over the past 30 years, 42 people are directly killed nationwide from winter storms and cold.
- Last winter, New York State had the most direct fatalities from winter storms in the nation with 7 people perishing.
- Nationwide, thousands more are killed in winter-related motor vehicle accidents. Many more are injured.
- Motor vehicle accidents continue to be the number one way people die during wintry weather.

Winter Hazards

- Heavy Snow
- Ice
- Cold Outbreaks

Snowstorm Definitions

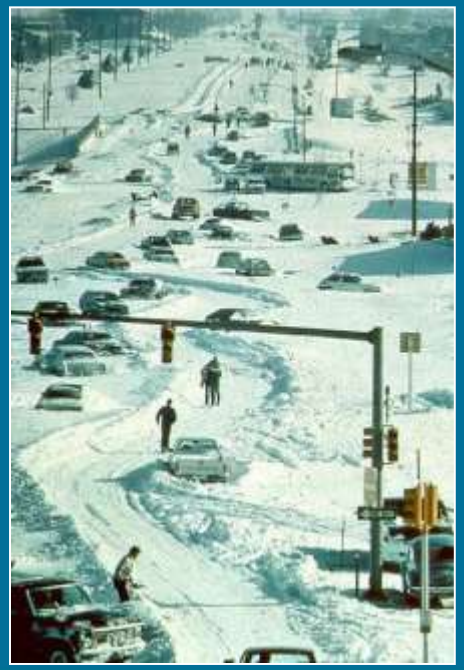
- Heavy Snow: 7 inches of snow or more in 12 hours or less; or 9 inches of snow or more in 24 hours or less.
- Blizzard: the most severe winter storm. Wind or wind gusts exceeding 35 mph for 3 hours or more combined with blowing and/or falling snow. Visibilities near zero. Widespread whiteout conditions.

Blizzards are a serious life-threatening weather hazard!!!!!

- Snow Squall: intense periods of snow with near blizzard or blizzard conditions lasting less than 3 hours, usually 20 to 30 minutes in duration.
- Snow Shower: intermittent accumulating snow.
- Snow Flurries: very light snow with little or no accumulation.

Heavy Snow Impacts

- **Disrupts Transportation**



Heavy Snow Impacts

- **Traffic Accidents**
  - ***Driving too fast for conditions.***
  - ***Suddenly driving into white-out conditions***
    - **Poor visibility.**
    - **Hitting a snow drift at high speeds.**
    - **Hitting snowy or icy patches at high speeds.**

Heavy Snow Impacts

- **Closes Schools and Businesses**

Heavy Snow Impacts

- **Cost of Plowing and Snow Removal**

Heavy Snow Impacts

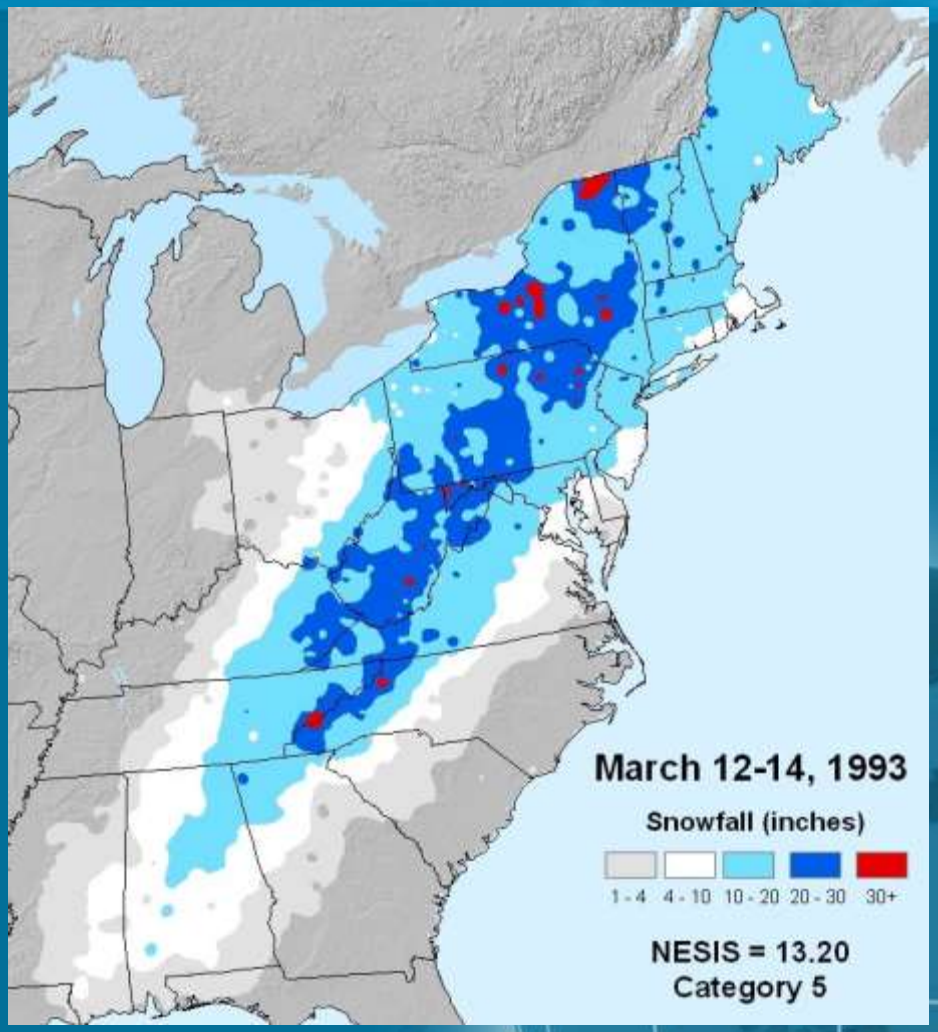
- Weight of heavy snow can cause roof collapse.
- Break tree limbs and utility lines.

Dangerous Snow Squalls

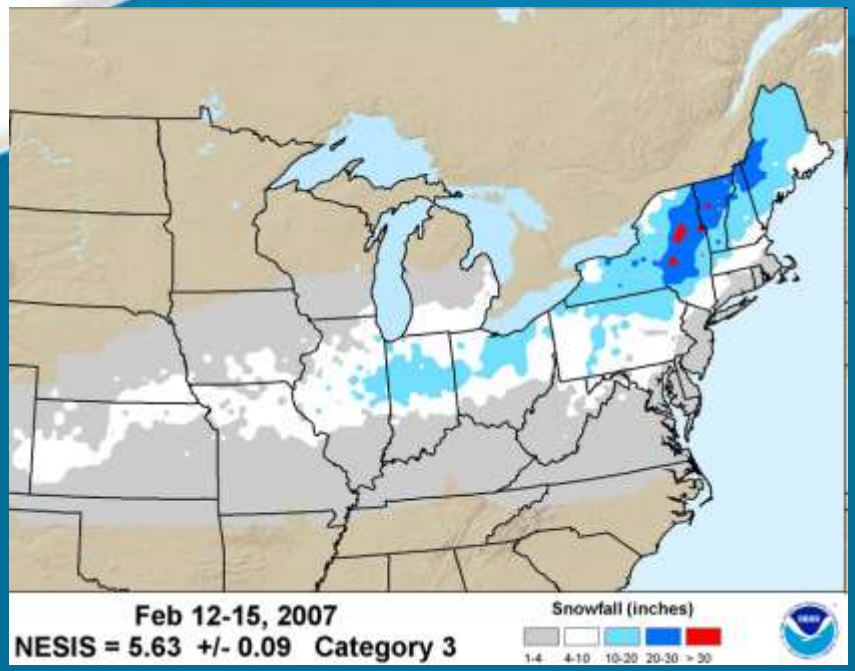
- Often occur along arctic frontal boundaries. Generally only minor snow accumulations.
- But near zero visibility in heavy snow, and dangerous road conditions occur quickly.

Blizzards

- The March 12-14 1993 Blizzard affected over 100 million people.
- Up to three feet of snow from Alabama to New York impacted 26 states.
- Crippled economic activities of one-third of the U.S., economic losses exceeding $2 billion, property losses at $4 billion.
- All East Coast airports closed, 25% of nation's flights cancelled.
- Millions without power.
- 250 fatalities.



Valentine's Day Snowstorm – 2007

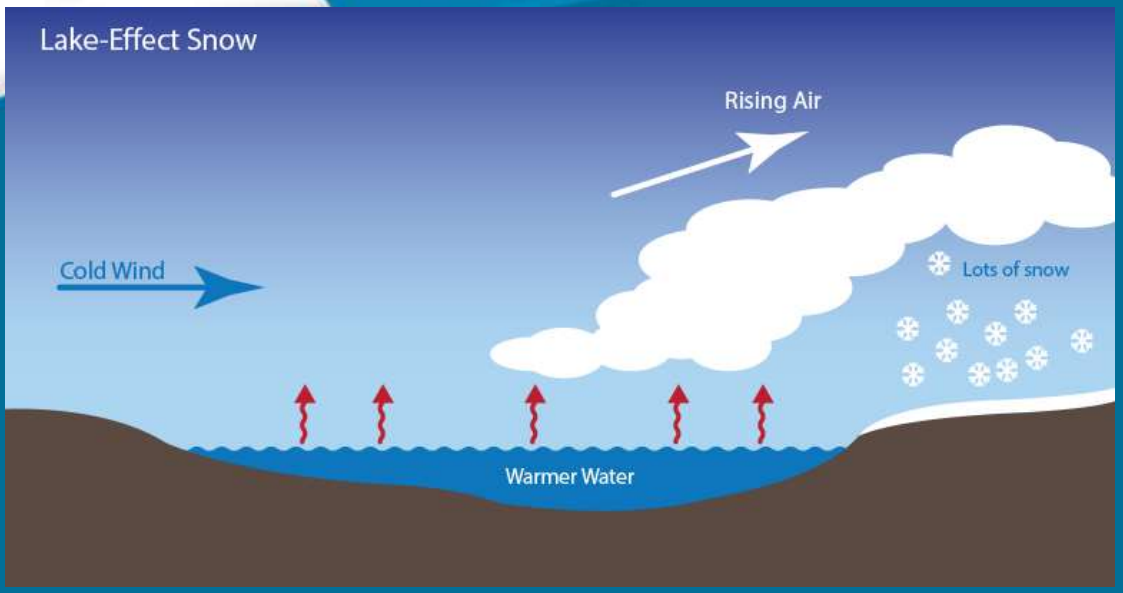


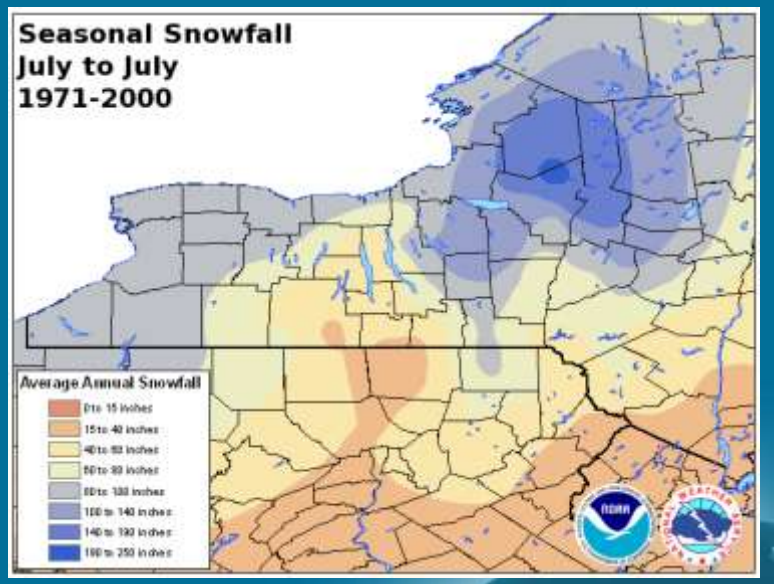
- Over 30 in. of snow across the Catskills
- Highest = 39 inches in Roseboom (Otsego County)
- Most locations around central NY averaged between 15-30 inches
- Snow began Tuesday evening (2/13) and continued through the early morning hours on the 15th

- Most intense portion of the storm occurred during the early morning on the 14th, with heavy snow and near blizzard conditions.
- Roof collapses occurred

Delhi NY

Lake Effect Snow: Common in Upstate New York





- Warm water heats air above.
- Warm air is unstable and rises.
- Snow bands form.
- Mountains add additional lift.

Record Lake Effect Snows

- **Record Lake Effect Snow of February 2007**
  - ***10+ feet of snow fell in the lake effect snow belts of northern NY!***
- ***January 2014 Lake Effect Snows***
  - ***Bitter cold air crossing Lake Ontario.***
  - ***5 feet of snow fell in the snow belts of northern NY.***

Ice Storms in New York

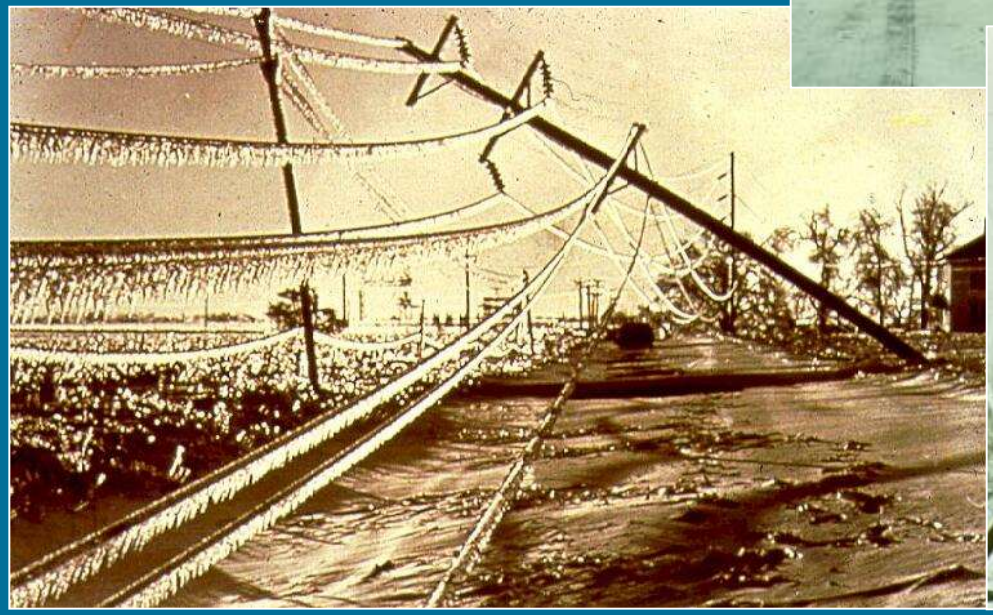
- **Heavy weight of ice brings down trees and power lines.**

Ice Storms: Definitions

- **Freezing rain:** rain that freezes on contact with all exposed surfaces. Objects become encased in ice and can damage trees and power lines.
- **Sleet:** Frozen raindrops that bounce on impact with the ground. Does NOT glaze over or encase objects with ice.

Ice Impacts

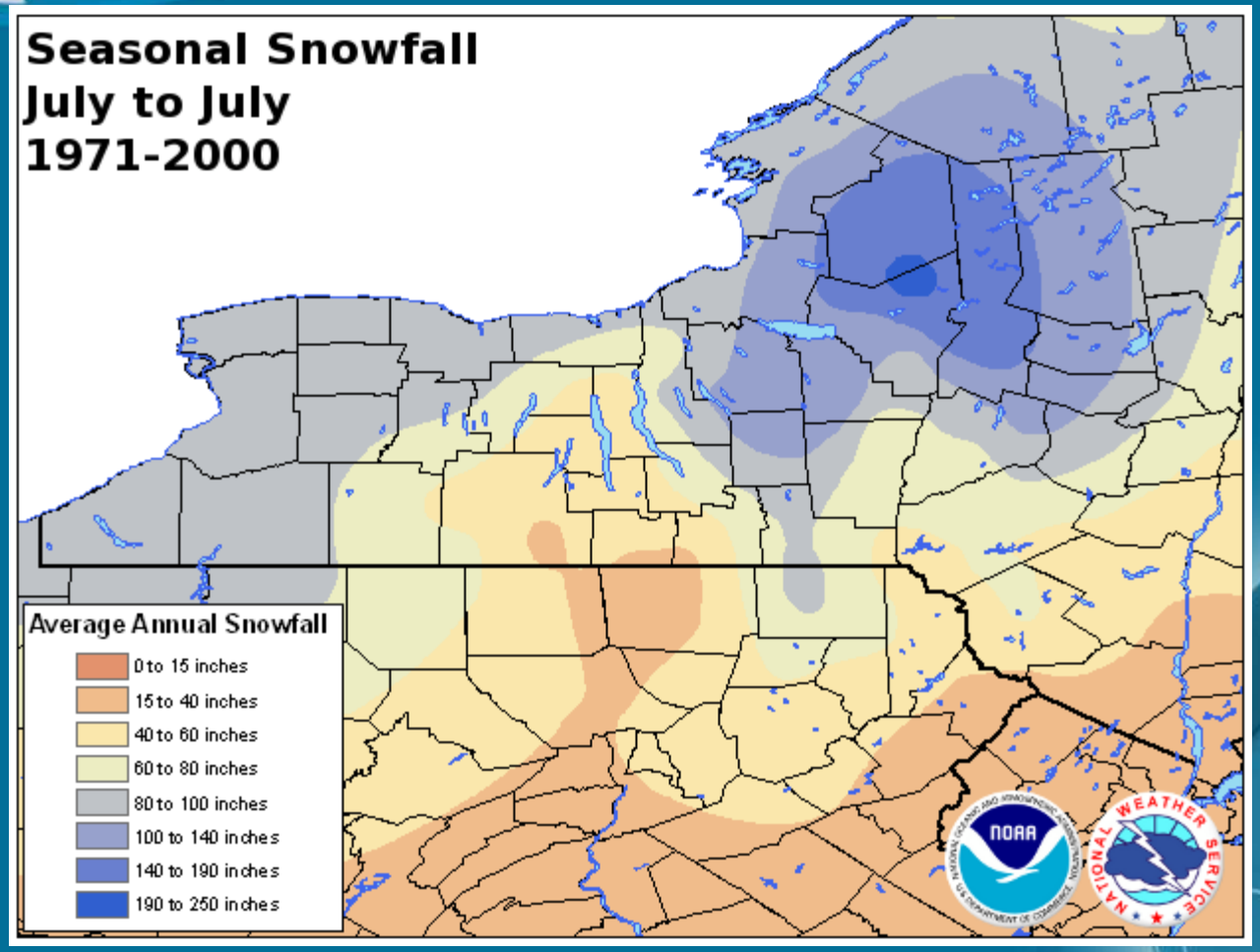
- Power and communication lines come down.
- Traffic accidents.
- Pedestrian falls.



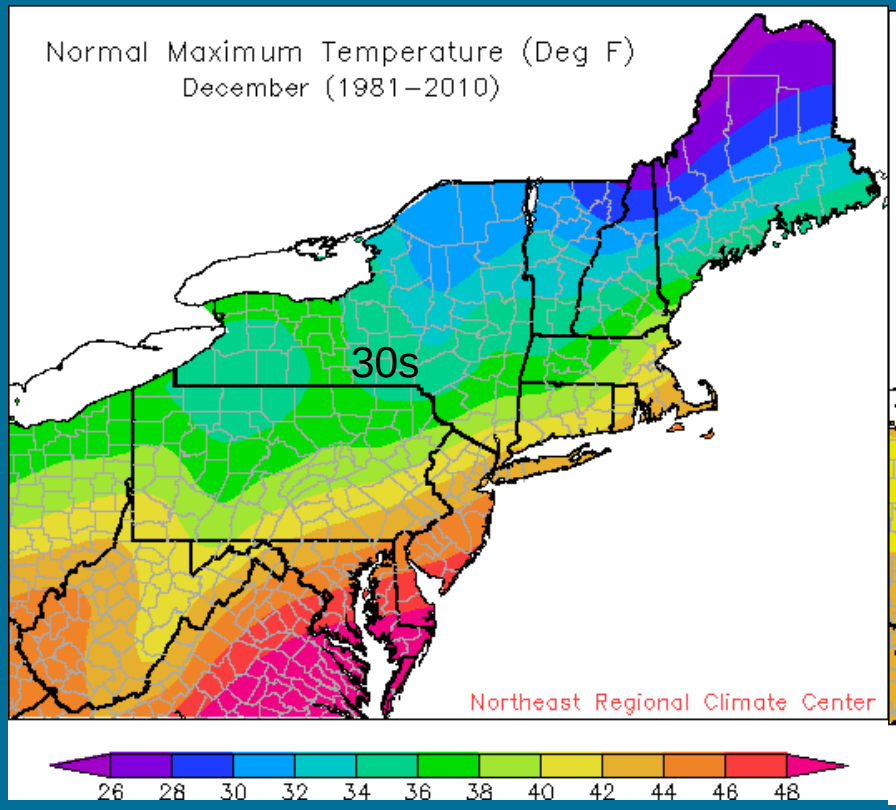
What's normal for winter in New York

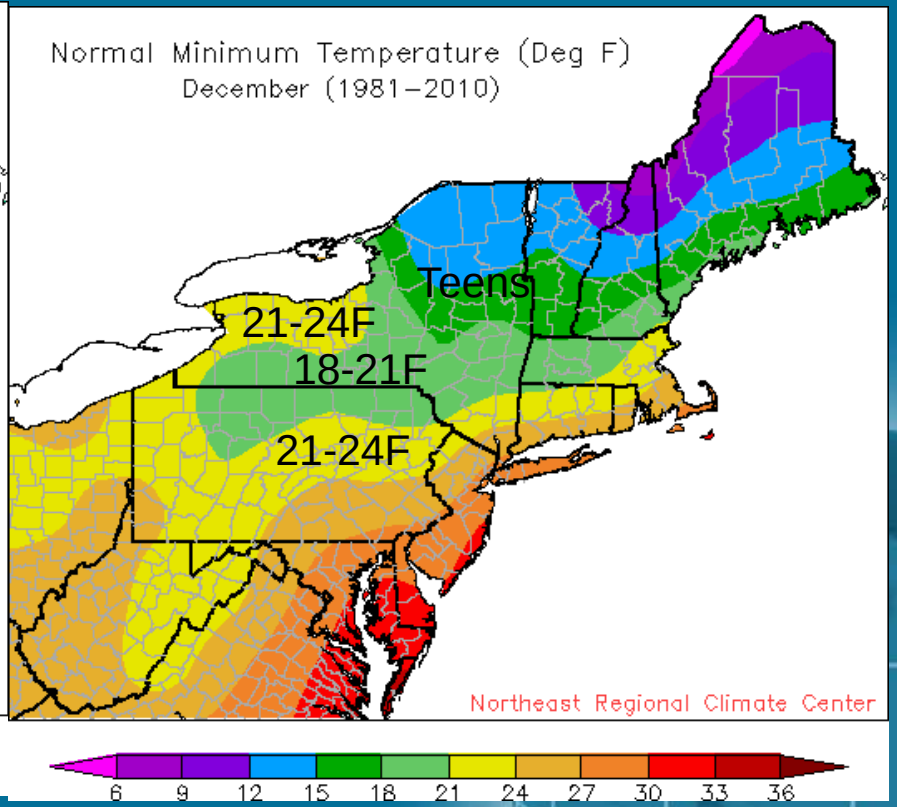
18

Normal Seasonal Snowfall

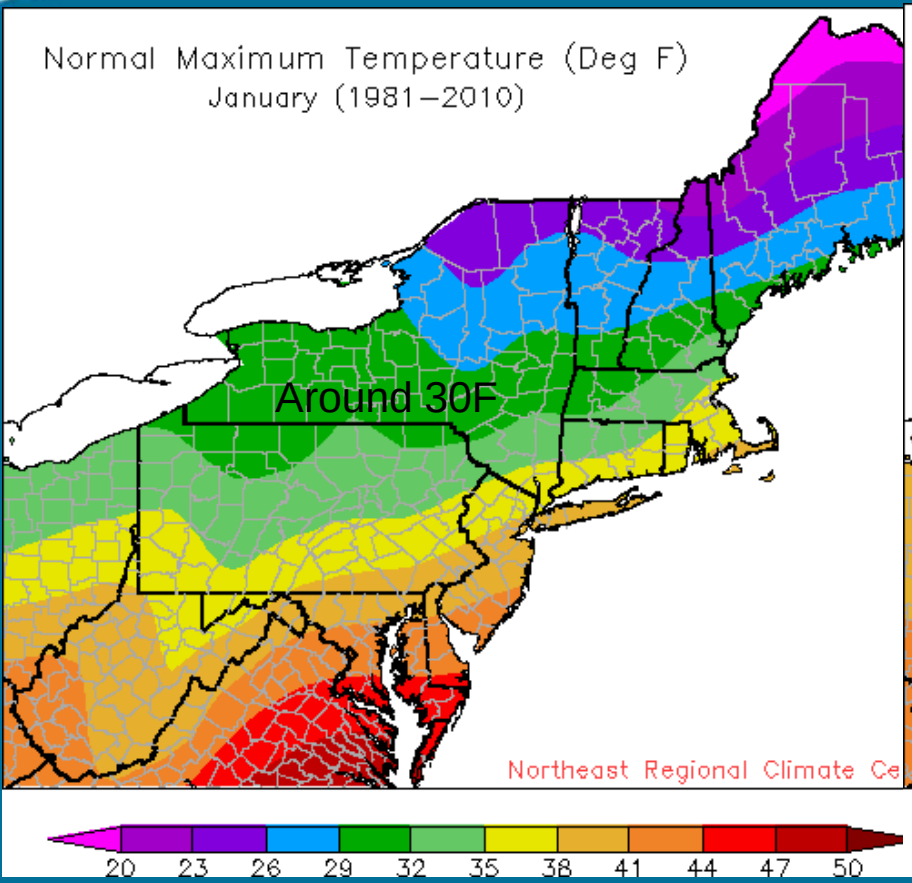


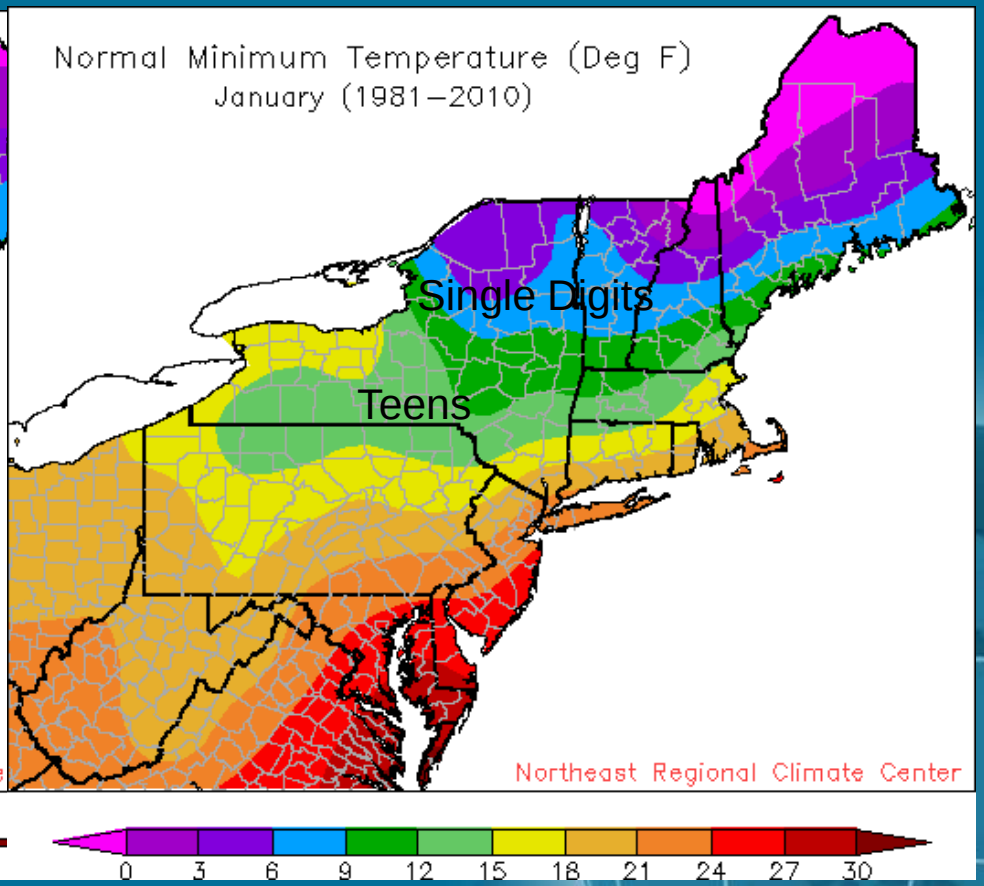
December Normal Temperatures (F)



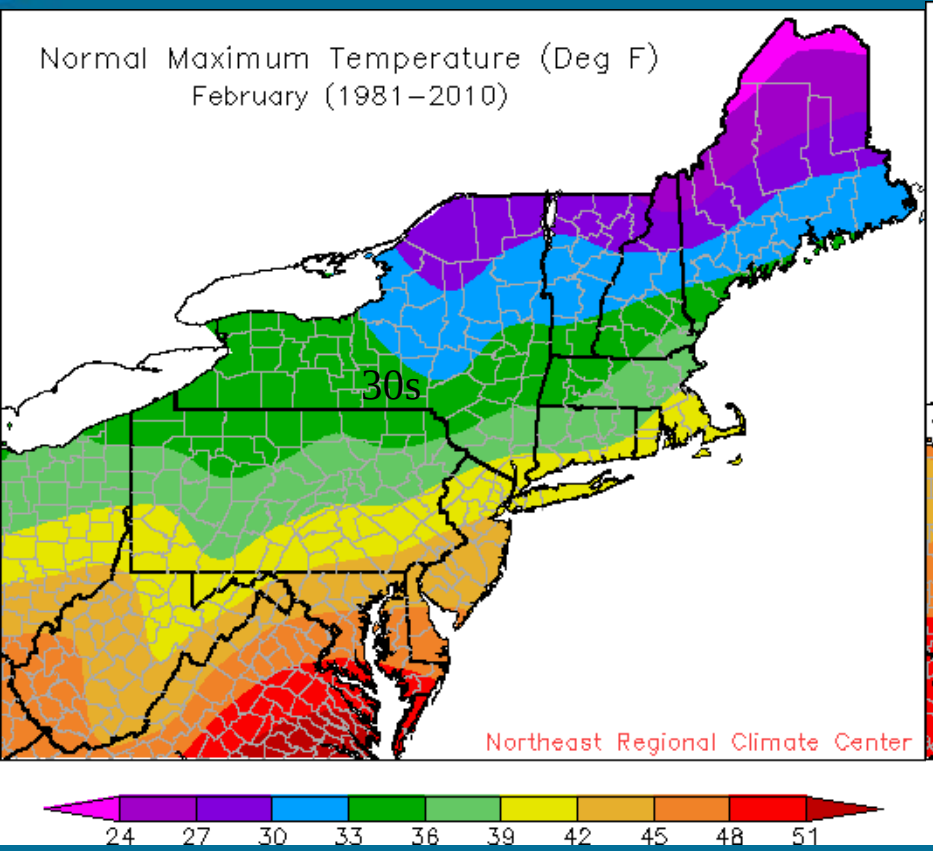


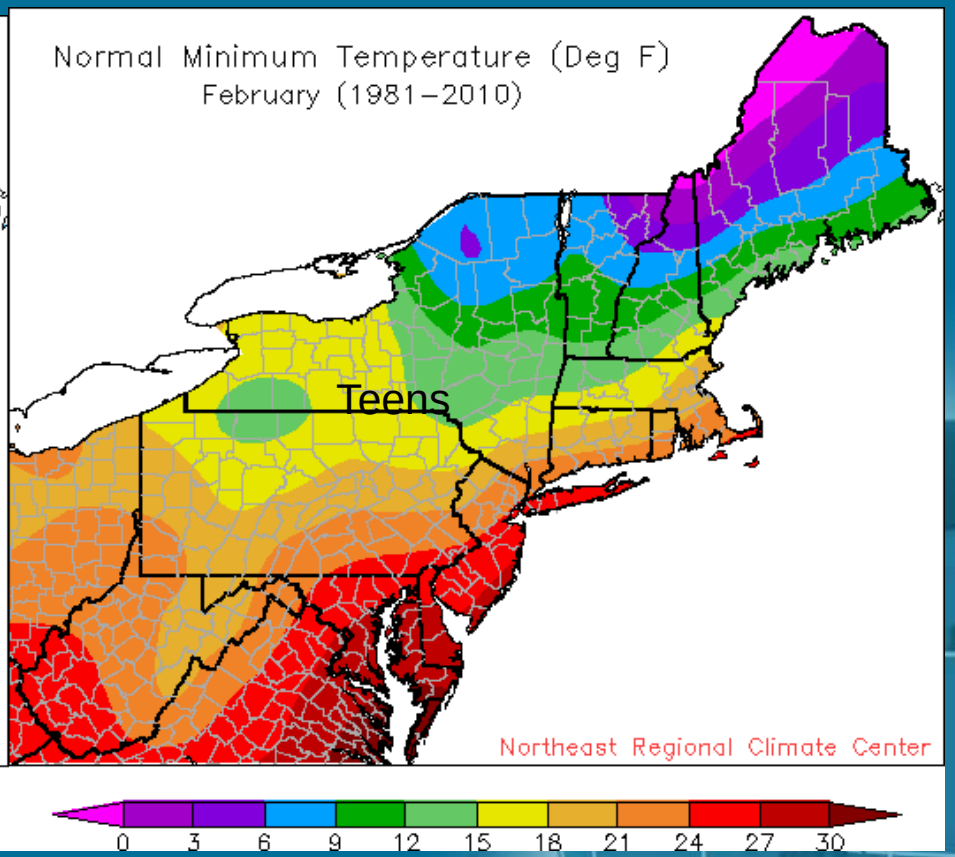
January
Normal Temperatures (F)





February
Normal Temperatures (F)





Number of Days with sub-zero minimums

Location	Number of Days with Low Temps < 0F
Syracuse	7 days
Binghamton	5 days
Elmira	7 days
Ithaca	10 days
Boonville	19 days
Walton	15 days

Winter Weather Safety- At Home

- *Flashlight and extra batteries.*
- *Battery-powered NOAA Weather Radio and portable radio to receive emergency information.*
- *Extra food and water – at least a 3-day supply.*
- *Extra medicine and baby items.*
- *First-aid supplies.*
- *Heating fuel.*
- *Emergency heating source, such as a fireplace, wood stove, space heater, etc.*
- *Fire extinguisher and smoke detector.*

Winter Storm Survival Kit- Automobiles

- Blankets/sleeping bags;
- Flashlight with extra batteries;
- First-aid kit;
- Knife;
- High-calorie, non-perishable food;
- Extra clothing to keep dry;
- A large empty can and plastic cover with tissues and paper towels for sanitary purposes;
- A smaller can and matches to melt snow for drinking water;
- Sack of sand (or cat litter);
- Shovel;
- Windshield scraper and brush;
- Tool kit;
- Tow rope;
- Booster cables;
- Water container;
- Cell Phone;
- GPS and/or road maps.

Automobile Safety in Winter Storms

- Plan your travel and check the latest weather reports to avoid the storm!
- Fully check and winterize your vehicle before the winter season begins. Bring a winter storm survival kit.
- Keep your gas tank near full to avoid ice in the tank and fuel lines.
- Try not to travel alone.
- Let someone know your timetable and primary and alternate routes.

What is the difference between Winter Watches and Warnings?

Winter Watches are issued when there is at least a 50% chance that a dangerous winter storm will occur. **The winter storm is a possibility, not a certainty.** The winter storm could still miss or just graze our area. Winter Watches are usually issued 2 to 3 days in advance.

Winter Warnings are issued when there is an 80% chance or greater that a dangerous winter storm will impact our region. Winter Warnings are usually issued 1 to 2 days in advance. The likelihood that our area will get hit by the winter storm is much more certain when a warning is issued.

Winter Watches

- ***Winter Storm Watch:*** ***Potential*** **(50% chance or more) for a winter storm. A winter storm watch is used to cover all of the potential hazards from snow to ice to wind and extreme cold.**
  - ***Potential exists for 7 inches of snow or more in 12 hours or less; 9 inches of snow or more in 24 hours or less.***
  - ***Potential exists for ½ inch or more of ice.***
- ***Blizzard Watch:*** ***Potential*** **exists for blizzard conditions.**
- ***Lake Effect Snow Watch:*** **7 inches or more of lake effect snow is *possible.***
- ***Wind Chill Watch:*** ***Potential exists*** **for wind chills of -25°F or less, with winds of ≥ 5 mph, lasting longer than one hour.**

Winter Warnings

- **Winter Storm Warning**
  - *7 inches of snow or more in 12 hours or 9 inches of snow or more in 24 hours.*
  - *Dangerous combination of snow, ice, low wind chill, and/or blowing/drifting snow.*
- **Lake Effect Snow Warning**
  - *7 inches or more of lake effect snow in 12 hours or less.*
  - *Localized accumulations; not all areas will see heavy lake effect snow.*
- **Ice Storm Warning**
  - *1/2 inch or more of ice.*
- **Blizzard Warning**
  - *Blizzard conditions expected: Wind or wind gusts exceeding 35 mph for 3 hours or more combined with blowing and/or falling snow. Visibilities near zero. Widespread whiteout conditions.*
- **Wind Chill Warning**
  - *Wind Chills of -25F or less*

Winter Advisories

- **Winter Weather Advisory:**
  - *4 to 6 inches of snow in 12 hours or less.*
  - *Hazardous combination of snow, ice, low wind chill, and/or blowing/drifting snow.*
- **Freezing Rain Advisory**
  - *<u>Any</u> accumulation of ice*
- **Lake Effect Snow Advisory**
  - *4 to 6 inches of lake effect snow in 12 hours or less.*
- **Wind Chill Advisory:**
  - *Wind chills of -15ºF to -24ºF*

Advisories vs. Warnings

- **Advisories** are issued for significant winter weather events that **could be** life-threatening if **proper precautions** are **not** taken.
- **Warnings** are issued when the event **can be** life-threatening **even with precautions.**

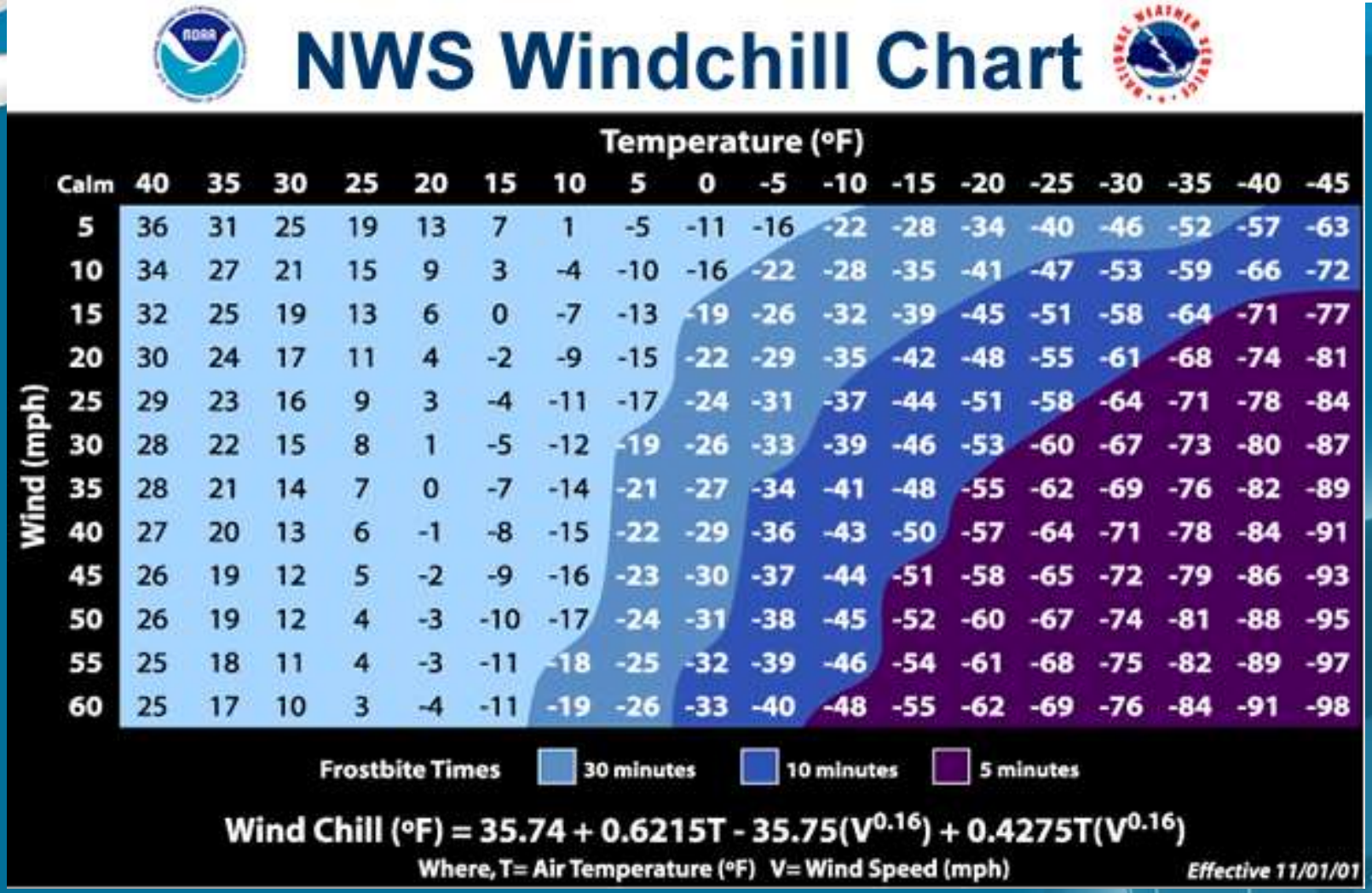
U.S. Winter Outlook
Temperature
>50%
>40%
Warmer
>33%
Equal Chances
>40%
Warmer
>33%
Equal Chances
>33%
>40%
Cooler
>33%
Warmer
>40%
Temperature Probability
Dec - Jan - Feb

Winter Terminology

See http://www.noaanews.noaa.gov/stories/s794c.htm

For more details on winter terminology.

NWS Windchill Chart



Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times — 30 minutes — 10 minutes — 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

http://www.nws.noaa.gov/om/windchill/index.shtml

Keeping Informed This Winter

Hazardous Weather Outlook

1 to 7 Day Outlook

Text Product

Issued daily at 5 am, 4 pm and updated as needed

Go to http://weather.gov/bgm

ZCZC ALBHWOBGM
FLUS41 KBGM 110103
HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE BINGHAMTON NY
803 PM EST SAT FEB 10 2007

NYZ023>025-044>046-055>057-062-PAZ038>040-043-044-047-048-072-120115-
SCHUYLER-CHEMUNG-TOMPKINS-CORTLAND-CHENANGO-OTSEGO-TIOGA-BROOME-
DELAWARE-SULLIVAN-BRADFORD-SUSQUEHANNA-NORTHERN WAYNE-WYOMING-
LACKAWANNA-LUZERNE-PIKE-SOUTHERN WAYNE-
803 PM EST SAT FEB 10 2007

THIS HAZARDOUS WEATHER OUTLOOK IS FOR PORTIONS OF CENTRAL NEW YORK...SOUTHEASTERN NEW YORK AND NORTHEAST PENNSYLVANIA.

.DAY ONE...TONIGHT

NO HAZARDOUS CONDITIONS ARE EXPECTED THIS PERIOD.

.DAYS TWO THROUGH SEVEN...
THE POTENTIAL EXISTS FOR SIGNIFICANT SNOWFALL TUESDAY AND WEDNESDAY. THE POTENTIAL EXISTS FOR SIGNIFICANT SNOWFALL FROM A COASTAL STORM TUESDAY INTO WEDNESDAY. THERE IS STILL MUCH UNCERTAINTY AS TO THE TRACK OF THIS STORM. THERE IS STILL A CHANCE THAT THE HEAVIEST SNOW STAYS SOUTH AND EAST OF THE REGION.

.SPOTTER CALL TO ACTION STATEMENT...
FORMAL SKYWARN ACTIVATION IS NOT ANTICIPATED TODAY OR TONIGHT. HOWEVER...SNOW SPOTTERS ARE ENCOURAGED TO CALL IN THEIR REPORTS TO THE NATIONAL WEATHER SERVICE IN BINGHAMTON.
$$

NY-ALERT
Andrew M. Cuomo
Governor

All Hazards
NOAA
Weather Radio
NOAA's National Weather Service ™

EAS
Emergency Alert System

HOW DO YOU RECEIVE WEATHER INFORMATION??

38

NOAA Weather Radio: The Voice of the National Weather Service

with S.A.M.E.

- All NY state residents are urged to sign up for NY Alert.
- Receive customized alerts from weather and travel alerts to AMBER alerts.
- Alerts can be received via email, text, phone call, pagers or fax.
- Website: http://www.nyalert.gov/

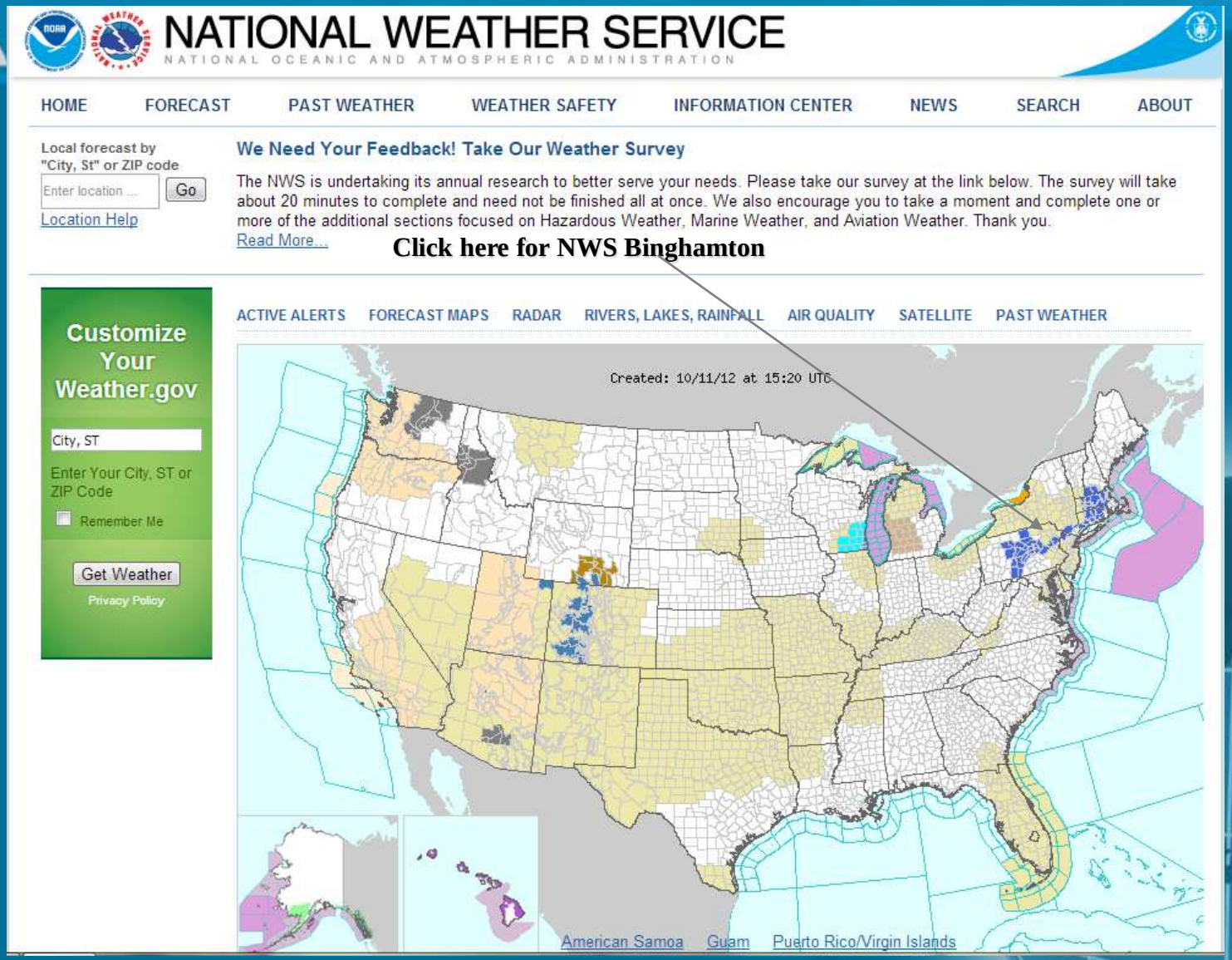
Facebook

http://www.facebook.com/NWSBinghamton

Twitter

http://twitter.com/NWSBinghamton

http://weather.gov



http://weather.gov/bgm

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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Local forecast by "City, St" or ZIP code
Enter location ... Go
Location Help

News Headlines
- Winter SKYWARN October 29th Utica, NY
- Get climate data through NOWData
- Past Weather Events, tornadoes, flooding, etc.
- Winter SKYWARN November 7 Binghamton, NY

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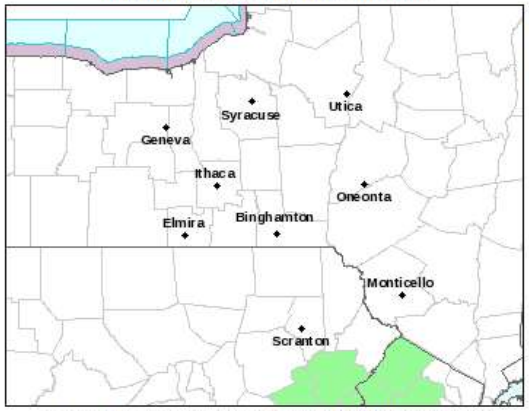
NWS Forecast Office Binghamton, NY

Weather.gov > Binghamton, NY

Binghamton, NY
Weather Forecast Office

Current Hazards | Current Conditions | Radar | Forecasts | Rivers and Lakes | Climate and Past Weather | Local Programs

Click on the map below to zoom in.

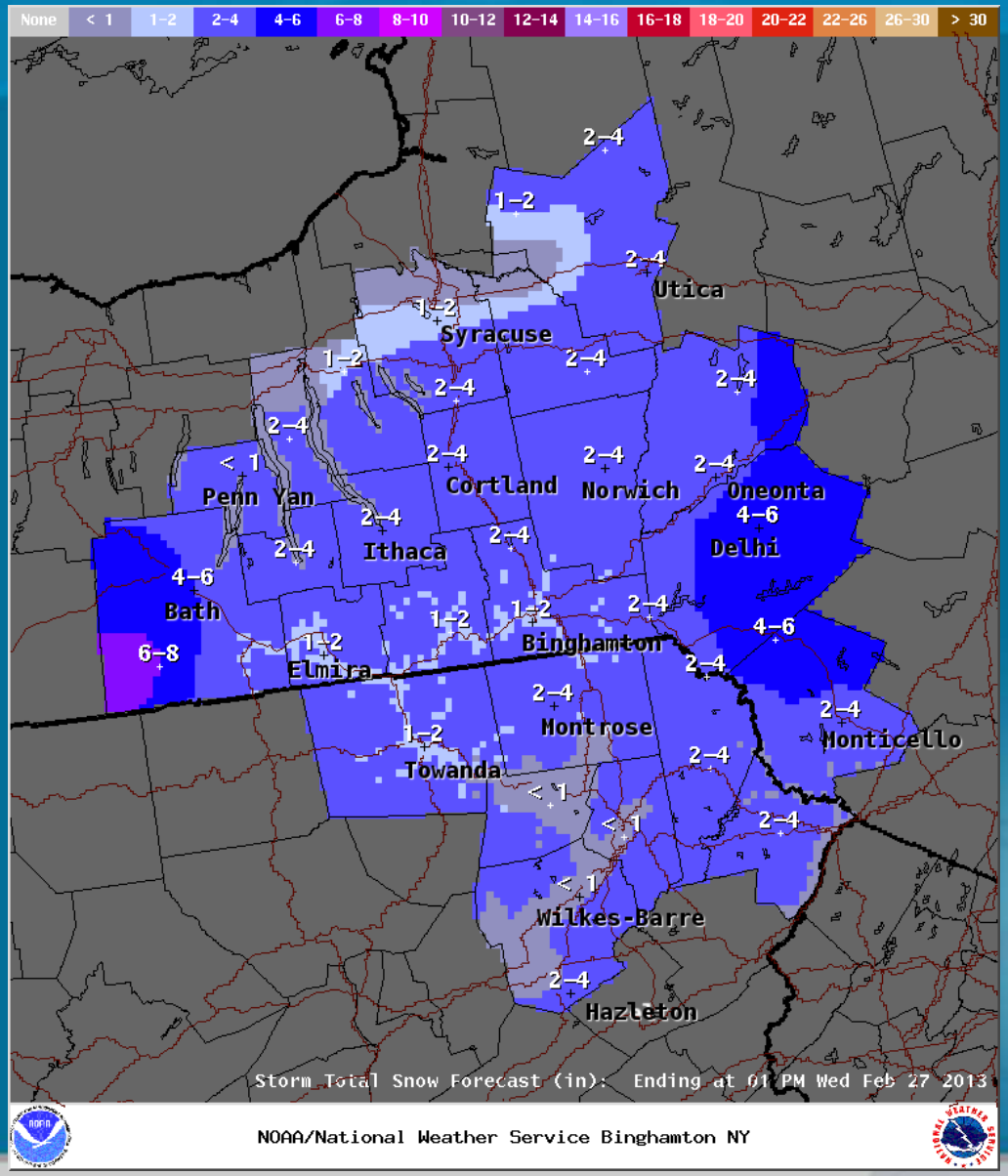


Watches, Warnings & Advisories
Zoom Out
Small Craft Advisory
Short Term Forecast

Last Map Update: Wed, Oct. 29, 2014 at 2:05:07 pm EDT

Radar | Current Weather | Rivers & Lakes | Satellite | Weather Information Display | Forecast Maps

Snowfall Forecasts on Website



Mobile Weather

- Current Conditions at an observing site closest to the place entered.
- Quick Forecast
- Click to get full forecast.
- Click to see latest radar.
- Latest satellite.
- Forecast Discussions.
- Forecast Graphics
- Rivers/Lakes observations and forecasts.
- Tropical Weather
- Marine/Tides
- Astronomical Data
- Tsunami
- Tweet a weather report.

http://mobile.weather.gov

Enter in your Zip Code,
City or Place.

Use your smart phone or tablet to get the latest forecasts, weather conditions, radar, satellite and other weather related information at,

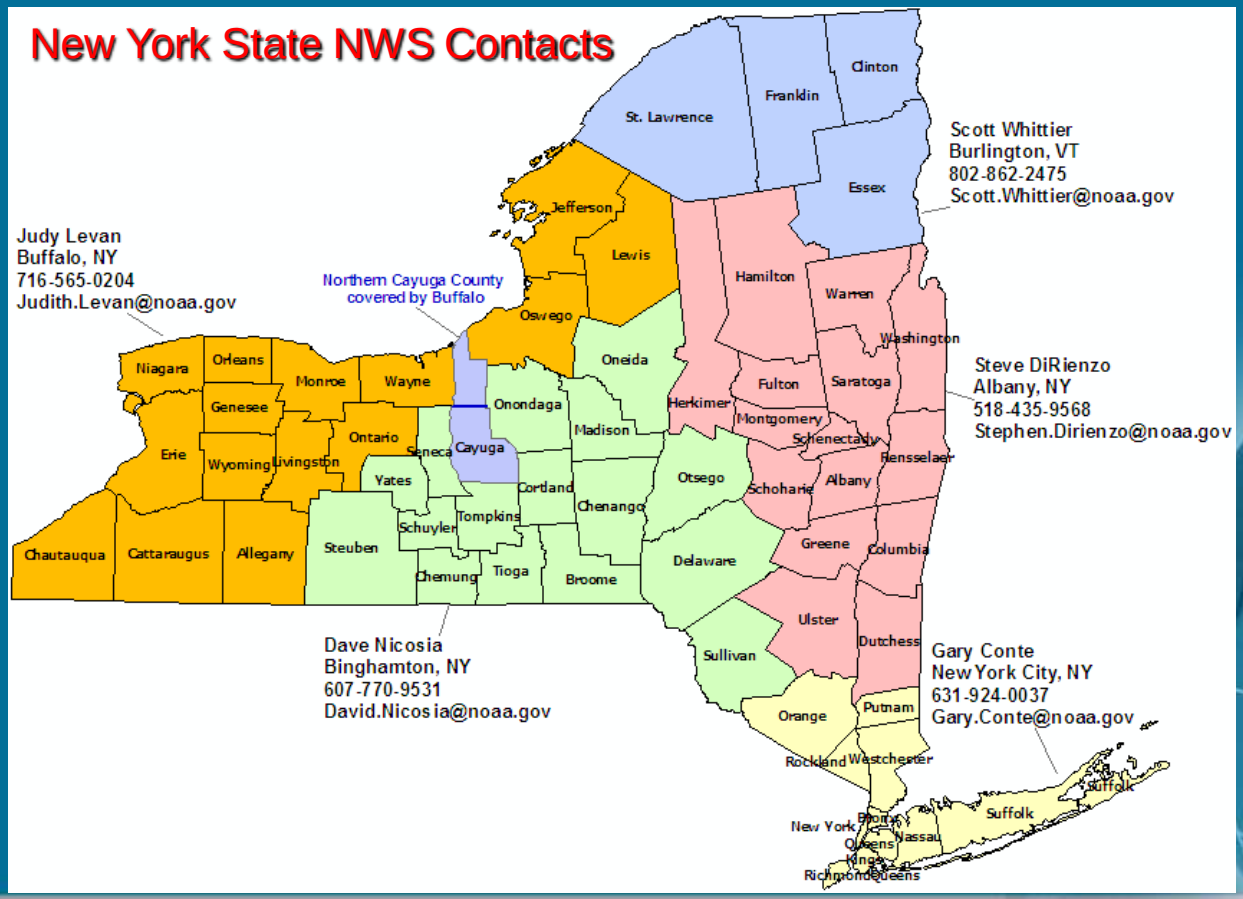
http://mobile.weather.gov

NWS Binghamton Contact

David Nicosia, Warning Coordination Meteorologist

607-770-9531 x 223 (business hours)

david.nicosia@noaa.gov



More on Winter Weather Preparedness

http://www.nws.noaa.gov/om/winter/index.shtml