

A Case Study of the 6-7 February 2020 Northeast Winter Storm: A Forecasting Perspective

Kaitlyn E. Lardeo, Bruno S. Rojas, Nicholas F. Rodick, Scott M. Steiger, Paige E. Jansen

SUNY Oswego, Department of Atmospheric & Geological Sciences

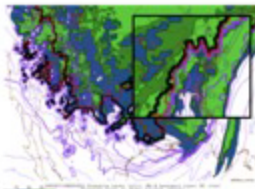


Purpose and Meteorological Background

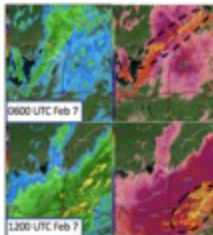
- ❖ The aim of this study is to better understand how decision makers use weather information in high impact winter weather.
- ❖ A long duration mixed precipitation event followed by brief and heavy snowfall over Central NY was selected for the case study
- ❖ SUNY Oswego class cancellation
 - Interview with University Decision Maker, what conditions persuaded them to cancel classes, conditions that were most prominent, etc.
 - Cancelled late (8:30 AM EST) after classes began at 8 AM



Mean sea level pressure at 09Z on 7 February contoured in black, surface wind bars in orange. An elongated and deepening low pressure over the eastern US is visible, obtained from SPC Hourly Mesoscale Analysis.



Freezing level height (kft) shown above, black line indicating 0°C surface isotherm, with values of relative humidity shaded. Inset zoomed over the area of interest, obtained from SPC Hourly Mesoscale Analysis.



Radar images showing base reflectivity and correlation coefficient (CC). Mixed phase precipitation can be identified by circled lower CC values

Lake-Effect Snow Prediction and Research Center (LESPaRC)

- ❖ Operational forecasting office at SUNY Oswego
- ❖ Staff
 - One SUNY Oswego faculty supervisor
 - Two student forecast leaders
 - One long-range forecaster
 - Sixteen short-range forecasters
- ❖ Responsibilities
 - Forecasting various aspects of the weather for Central New York
- ❖ Clients
 - NYS Department of Transportation
 - Oswego City School District
 - Jefferson Community College

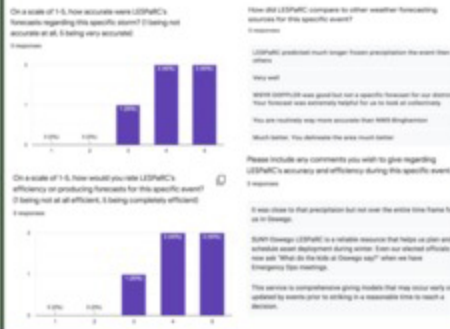


Interview with a University Decision Maker

- ❖ An audio-recorded face-to-face interview with VP of Administration and Finance Nick Lyons (Interviewers: Kaitlyn E. Lardeo & Paige E. Jansen)
 - Mr. Lyons, the Provost, and the President consult with University Police Chief and a contracted meteorologist
- ❖ Interviewers asked questions about the decision-making process as well as a timeline regarding analysis of this event
 - SUNY Oswego has one private company contracted for their weather information (Does not consult LESPaRC)
 - School officials need a 2-hour window to inform media outlets
- ❖ Details cited during the interview included:
 - Analysis for event started at 4:30 AM EST on February 7
 - "Re-analysis" for event from 5 AM to 6 AM
 - Main influence to cancel classes was when "snow picked up" around 7 AM
 - Too late to cancel 8 AM classes
 - School officials weren't aware of other weather conditions besides increasing snowfall rate
 - Pre-existing ice accumulation before snowfall
 - Confusion on whether this event was lake-effect or not, believes it was difficult to forecast lake-effect

Survey of LESPaRC's Accuracy and Efficiency

- ❖ With short notice (~1 week to respond), all of LESPaRC's clients (~120 people) were asked questions on LESPaRC's accuracy regarding predictions and efficiency of producing forecasts for the 6-7 February event
- ❖ Responses to the survey reflected positively regarding LESPaRC's weather forecasting for this specific event



Conclusions

- Decision makers seem to rely on current conditions
- Do not consult multiple sources
- No clear thresholds under what conditions classes should be cancelled
- Possible break down of communication and weather information between decision committee and members receiving weather forecasts
- Unsure how current conditions are monitored by the college
- Looking forward for more responses to our survey in the future
- Positive comments from clients about LESPaRC's performance