Photo by Mike Cempa

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Chris Kimble

Editors:
Stacie Hanes
Margaret Curtis
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Lia Hoffman

Meteorologist in Charge (MIC):
Hendricus Lulofs

Science and Operations Officer (SOO):
Justin Arnott

Warning Coordination Meteorologist (WCM):
John Jensenius

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The Coastal Front

Fall 2015

Volume VI-2

Lightning Safety at Storyland

By Mike Kistner, Meteorologist Intern

Story Land Amusement Park in North Conway, New Hampshire hosted the national kickoff event for Lightning Safety Awareness Week on June 20th, 2015. The campaign ran from June 21st – 27th and marked the 15th annual event since the National Weather Service (NWS) initiated the nationwide effort back in 2001. Since its launch, there has been a significant drop in lightning fatalities across the United States.

Figure 1: Dr. Lightning and Leon the Lightning Lion visited Storyland in New Hampshire to educate kids about lightning safety.

Staff from NWS Gray joined with the Lightning Protection Institute at this year's kickoff event, which focused on "Building Lightning Safe Communities." The goal was to educate people on the danger of lightning and the threats to personal safety and property.

The event began with a press conference to recognize Story Land for becoming StormReady. StormReady is a program which encourages businesses and communities to take specific steps to be prepared for severe weather. The park is the first in the NWS Gray forecast area to receive this badge of honor. There is a lightning protection system on many of its buildings to safeguard patrons and workers from lightning.

The park opened after the ceremony and the Lightning Safety Awareness Team greeted children and families from 9:30 a.m. to 12:00 p.m. Leon the Lightning Lion and Dr. Lightning were there to provide safety materials and information. However, it wasn't strictly businesses, as many children got "high fives," hugs, and even their picture taken with Leon and Dr. Lightning. When it was all said and done, Leon was tired, but very thankful that temperatures were actually quite cool for the month of June.

Severe Thunderstorm Outbreak – August 3-4, 2015

By Stacie Hanes, Senior Forecaster

Most of the summer was quiet from a severe weather perspective. Up until mid-July, the National Weather Service in Gray had issued fewer than 40 Severe Thunderstorm Warnings. By late July and early August the weather turned more violent as a warm, unstable air mass brought all the ingredients together for severe thunderstorms. One of the largest outbreaks of severe weather in northern New England this year occurred on August 3rd and 4th. A total of 45 Severe Thunderstorm Warnings were issued and large portions of the area were impacted by damaging winds or large hail.

The two-day outbreak featured a warm, moist, unstable air mass combined with a slow-moving upper level trough. The upper level trough provided lift, increased the instability, and added enough wind shear to generate supercell thunderstorms. On August 3rd, most of the severe weather reports received were related to wind damage, although a few large hail reports were also received. Damage ranged from trees blown down, power lines snapped, and even canoes blown off their racks.

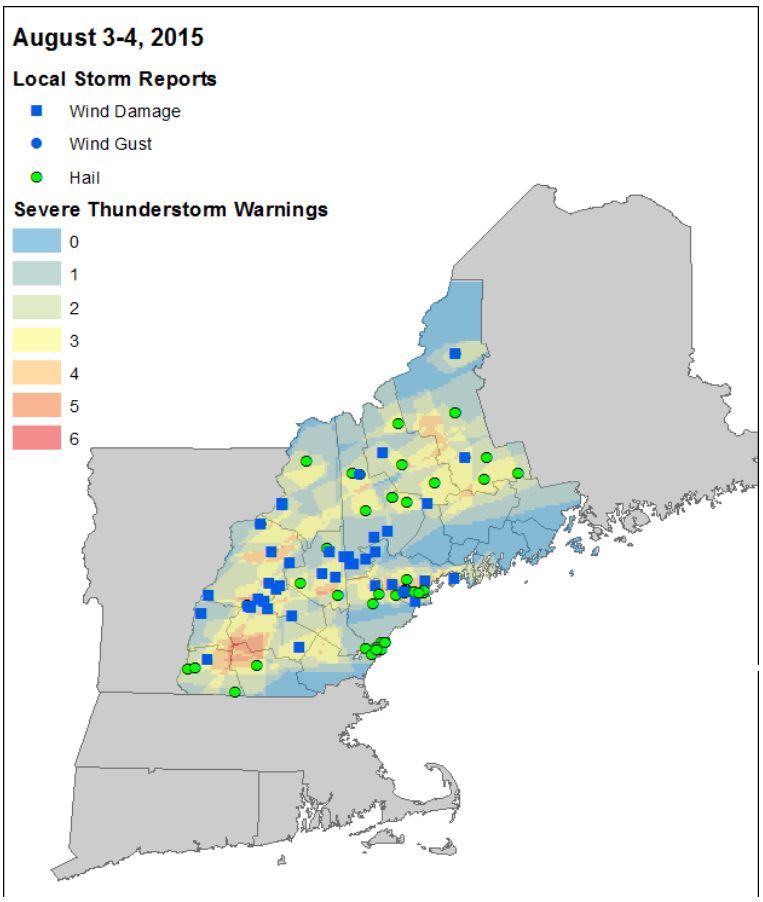

Figure 2: Map of the severe weather outbreak of August 3 and 4, 2015. Shaded colors indicate the number of Severe Thunderstorm Warnings issued at each location, with severe weather reports overlaid.

By far the worst storm-related damage that occurred on August 3rd was a microburst that caused the collapse of a large circus tent in Lancaster, NH. A microburst is a brief convective downdraft with a small area of damaging outflow winds. As many as 100 people were trapped in the tent, with 15 to 20 injuries and 2 fatalities. Areal and ground surveys conducted by the NWS Survey Team and the state of New Hampshire found nearby softwood trees blown over and snapped trees but no other structural damage to buildings. This was consistent with wind speeds of 55 to 60 mph with localized gusts up to 75 mph. Most of the trees that were damaged were located in the Connecticut River Valley.

Severe Thunderstorm Outbreak (continued)

While the damage done on August 3rd was bad enough, the severe weather threat was not quite over for Maine and New Hampshire. As the upper trough moved closer on August 4th, cooler air moved in aloft above the warm, moist surface air. This increased the instability and the likelihood for large hail. For the second day in a row supercell thunderstorms formed, this time a little further to the east. Large hail was more widespread, with some of the largest hail reports occurring in more populated areas near the coast. These locations are ordinarily spared from more violent thunderstorms due to the proximity to the cool ocean water. Hail up to the size of half dollar coins was reported in Westbrook and Portland, Maine, while hail the size of tennis balls fell in the town of York, Maine. This hail was large enough to dent cars and destroy windows. The severe thunderstorms producing large hail were not limited to New Hampshire and Maine. Even the downtown area of Boston, Massachusetts got pummeled with large hail up to the size of golf balls.

Figure 3: Large hail was reported at the Portland/Westbrook town line (left) and in the town of York, Maine (right) on August 4. Picture submitted by Facebook user Leah Brandi Deragon (left) and Lexi Barnes (right).

NWS Staff Profile

By Margaret Curtis, Meteorologist Intern

The staff profile column introduces you to a new NWS staff member every issue. This issue we introduce you to Meteorologist Intern Mike Kistner.

What is your role at the office? Hired as a Meteorologist Intern, my original role was to complete required training to become an NWS Forecaster. That training is now complete, and my role has expanded to do just about anything here at the office. Working the Public Service Desk, I launch weather balloons and collect observations from our many volunteer Cooperative Observers throughout Maine and New Hampshire. Also, during severe weather, I answer phones and make calls to weather spotters and local emergency officials to find reports of damage or flooding, as well as perform interviews with local media. I am a regular fill in for the forecast desk, too. At this position, I not only issue short term and long term forecasts, but also issue weather watches and warnings when needed.

How long have you worked for the NWS in Gray? I started working at the office December 20, 2010, so going on 5 years here now.

Where else have you worked? Before entering the NWS, I had a career as an Officer in the United States Air Force and served for nearly 8 years. I was stationed in some great locations including Hawaii, Alaska, and the Mississippi Gulf Coast.

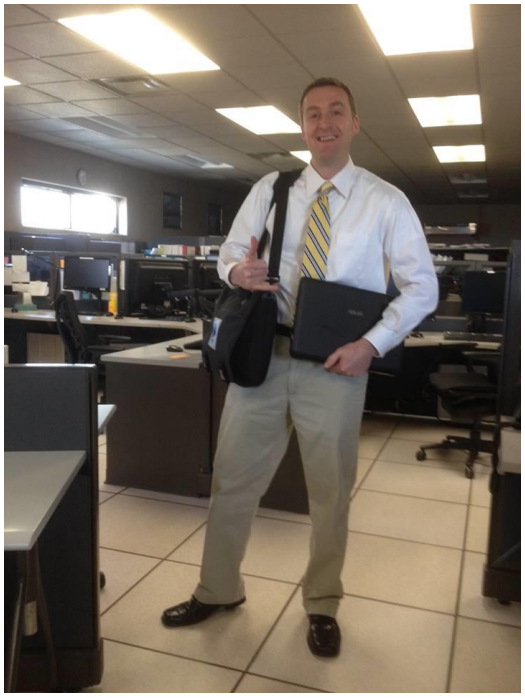

Figure 4: Meteorologist Intern Mike Kistner at the NWS Gray office preparing to give a Storm Spotter training session in Gorham, Maine.

Where did you grow up? I grew up in a small town in the Hudson Valley called Stanfordville, NY. The town has grown a bit over the years, but to this day there are still no traffic lights!

Where did you get your education? I received my undergrad at State University of New York at Oneonta and completed my masters from Mississippi State University.

How did you first get interested in weather? My family had planned a summer vacation to Cape Hatteras, NC back when I was 12 years old, but Hurricane Bob had different plans. Bob was forecast to make a direct hit on Cape Hatteras the day we were supposed to arrive for our vacation. My dad had said that we would not be going unless the storm misses. I stayed up until 2 AM watching The Weather Channel's nonstop

coverage (it was actually all weather back then) and remember running upstairs and waking my parents up after seeing the eye slide to the east of Cape Hatteras, sparing it from damaging winds and storm surge. We packed the car and left in the morning, although we did still lose one day of our vacation. After that night, I became hooked on The Weather Channel and meteorology.

What is the most interesting part of your job? Outreach! Getting out in the field and talking to people about weather or just giving tours here at our office to different groups. Also, working a severe weather event knowing that the warnings we issue may help save someone's life.

What is the most challenging aspect of your job? Forecasting winter weather! Forecasting in New England is already challenging with so many variables that affect the weather such as the mountains and ocean, but when it comes to winter weather the challenge grows even more. How much snow? Will there be mixed precipitation? Where will the rain/snow line be? We must find the answer to these questions and then decide what watches, warnings, or advisories we are going to issue and for what locations.

What is the most memorable weather event that you have worked? There have actually been several here in the past 5 years. The Blizzards of 2013 and 2015 come to mind as well as Hurricanes Irene (2011) and Sandy (2012). All four were high end rare events for our area and it was fascinating observing the forecast process and watching these events unfold.

NWS Comings and Goings

By Hendricus Lulofs, Meteorologist-in-Charge

In May, NWS Gray welcomed Justin Arnott as its new Science and Operations Officer. Justin arrived from the NWS office in Gaylord, Michigan, where he was the Science and Operations Officer since 2010.

Justin is a native of New England, having grown up in Clinton, Massachusetts with family currently in southern New Hampshire. Justin has his Bachelor's degrees in Meteorology and Mathematics from Lyndon State College in Vermont and his Master's degree in Meteorology from Penn State.

Justin's NWS career began in Fairbanks, Alaska where he spent one year before returning to the Lower 48 as a General Forecaster at Binghamton, NY where he spent two years. He then moved to northern Indiana as a Senior Forecaster for just over a year.

"I am excited to return to New England and be involved with the types of weather that got me interested in meteorology. My goal is to help ensure that NWS Gray remains at the forefront of the science, using the latest scientific advances to bring more timely and accurate forecasts and warnings to the residents of New Hampshire and western Maine."

COOP Observers Recognized

By Nichole Becker, Observing Program Leader

The NWS Weather Forecast Office in Gray, Maine, has and will present a total of 15 Length of Service Awards to individuals and institutions ranging from 10 to 125 years of service across Maine and New Hampshire in 2015. We are very lucky and proud to have every Cooperative Weather Observer who volunteers their time to report daily precipitation and temperatures. Their dedicated service is important to the NWS daily forecasting mission and the backbone of our national climate records. Not only were we able to present a golden jubilee for individual service, we also had the honor of presenting an award for 125 years of service to an institution, which dates back to the inception of the program in 1890. The following locations received Length of Service Awards in 2015:

125 Years: Dartmouth College, NH
75 Years: Manchester Water Works, NH and Surry Mountain Lake, NH
50 Years: Newcastle, ME
35 Years: Francestown and Walpole, NH
30 Years: Bethel, ME and Hudson, NH
25 Years: Hollis, ME and Colebrook, Greenville, and Lancaster, NH
20 Years: Hartford, ME
10 Years: Pittston Farm, ME

NWS Gray also honored two observers with prestigious awards for their exceptional quality of observations. There was one John Campanius Holm Award given to the observer of Bath, ME. In order to be eligible for the Holm Award, the observer has to have at least 20 years of service and there are only up to 25 given out in a year. The highest award for exceptional service an observer can receive is the Thomas Jefferson Award, which was given to the observer in Livermore Falls, ME. No more than 5 Thomas Jefferson Awards are given out each year out of the 8,700 observers.

Figure 5: Observers were recognized with Length of Service Awards at Newcastle, ME (top) – 50 years and Dartmouth College, NH (middle) – 125 years. The John Campanius Holm Award was given to the observer in Bath, ME (bottom).

Figure 6: The observer in Livermore Falls, ME receives the Thomas Jefferson Award.

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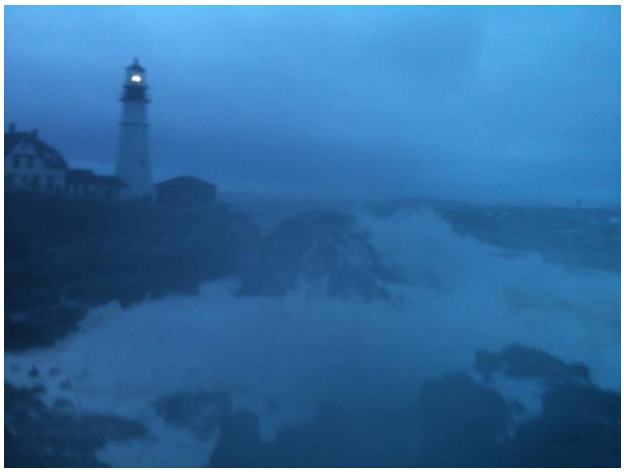

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