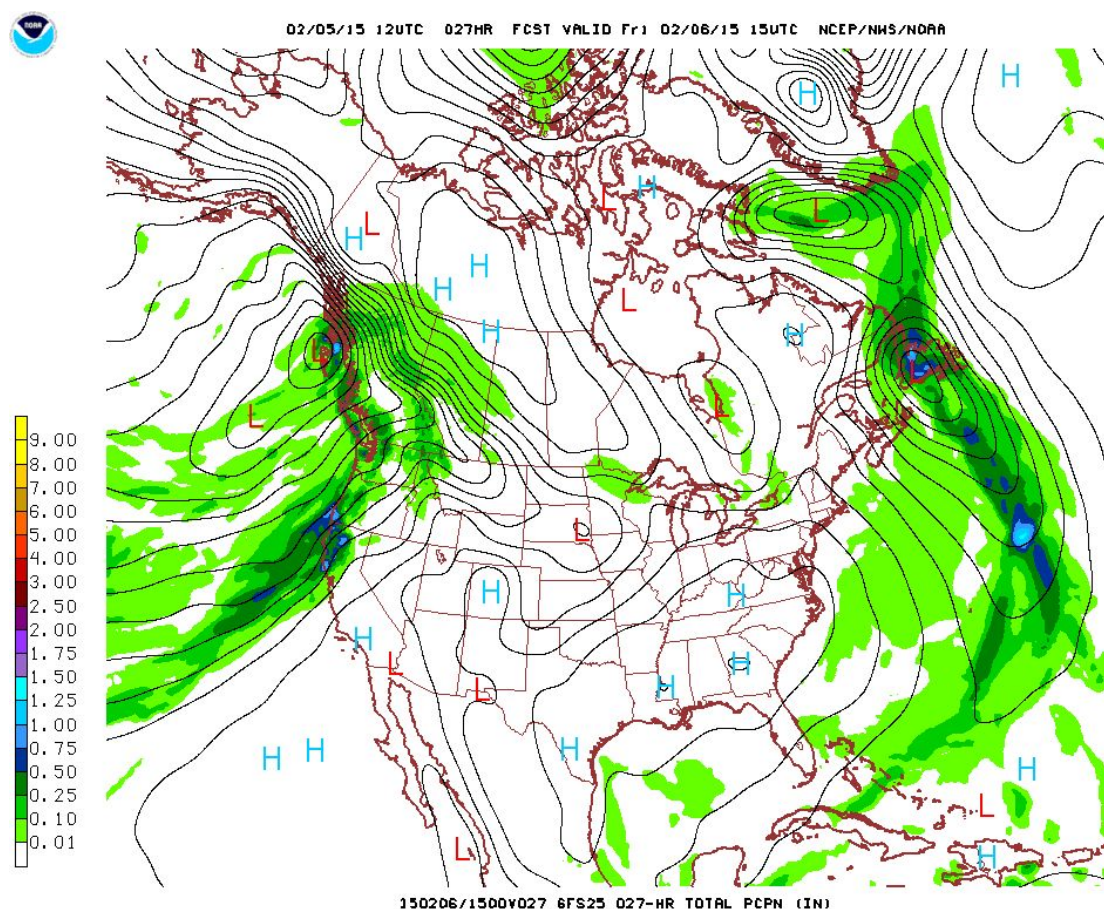


GFS Model Upgrade on WCOSS

On January 14, 2015, an upgrade to the [Global Forecast System \(GFS\)](#) model was implemented on [NOAA's Weather and Climate Operational Supercomputing System \(WCOSS\)](#). This major upgrade included an increase in the resolution from 27km to 13km out to 10 days and from 55km to 33km at 11 to 16 days. The model physics were upgraded, along with enhancements to the Hybrid 3D-VAR EnKF data assimilation. The success of this implementation was evident when this new model produced one of the best model forecasts for the New York and East Coast Snow storm of Jan. 25-26, 2015, clearly outperforming the most accurate European models. In particular, the new global model accurately predicted the 9in snowfall in Manhattan, whereas the European model predicted more than twice the observed snowfall.

On March 10, four new datasets were added to NOAAPORT for use in Advanced Weather Interactive Processing System ([AWIPS](#)) by the Weather Forecast Offices (WFOs). The datasets included a 1-degree global grid and three 20km grids centered over CONUS, Alaska, and Puerto Rico. A fifth dataset centered over the Pacific Region will be added in the upcoming months once the network capacity is upgraded.



GFS 0.25 degree Output for Total Precipitation.

NOAA Enters a New Orbit and Space Weather Enters and New Era

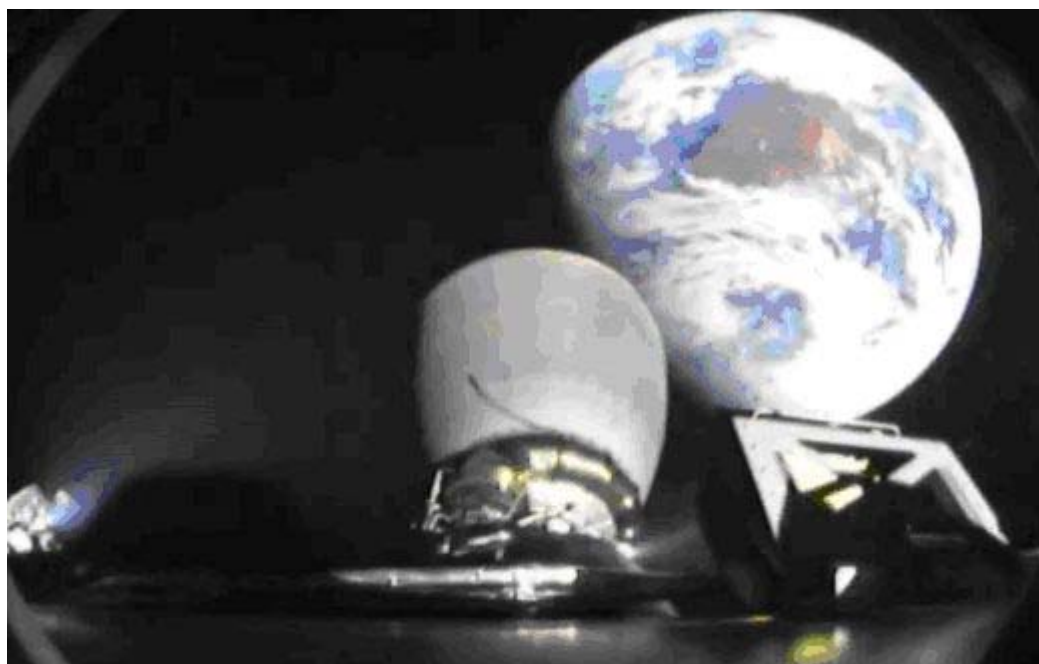
On Feb 11, 2015, [NOAA](#) entered a new era with the launch of the Deep Space Climate Observatory, also known as [DSCOVR](#). The primary mission of [DSCOVR](#) is space weather monitoring from a point 1 million miles from Earth on the Sun-Earth line called the "L1 Lagrangian point". [DSCOVR](#) is the first [NOAA](#) satellite mission with space weather as the primary focus and the first [NOAA](#) satellite in a deep space orbit. [NCEP's Space Weather Prediction Center \(SWPC\)](#) has been relying on [NASA's ACE](#) research satellite since 1998 to provide critical warnings of

approaching solar storms. [DSCOVR](#) will now be serving this role, providing 15-60 minutes warning of approaching solar wind streams and storms that cause geomagnetic storms. Geomagnetic storms impact the nation's power industry by causing large-scale DC currents in high-voltage transmission lines. Geomagnetic storms also cause Earth's Van Allen radiation belts to be disrupted, creating potentially hazardous conditions for satellites in Earth's orbit. Earth's ionosphere is affected as well, creating problems for GPS/GNSS users, particularly users of precision GPS and the [FAA's](#) Wide Area Augmentation System (WAAS) that aids commercial aviation navigation. Larger solar and geomagnetic storms can also increase radiation levels at commercial aviation altitudes making warnings from [DSCOVR](#) a critical safety function of the [SWPC](#). And while they can negatively impact many of our critical infrastructure systems, solar storms can also bring beautiful aurora down to latitudes where they can be seen from the United States. [NCEP's](#) [SWPC](#) will use [DSCOVR](#) to provide highly accurate warnings of incoming solar storms and imminent geomagnetic disturbances to this broad swath of customers. Providing these warnings allows our customers to take mitigating action to protect people and critical infrastructure from harm.

[DSCOVR](#) was made possible by a joint program between [NOAA](#), [NASA](#), and the [US Air Force](#). [NASA](#) provided the spacecraft, the Air Force provided the [SpaceX Falcon-9](#) launch, and [NOAA](#) will operate [DSCOVR](#) as the first operational space weather satellite in deep space. [DSCOVR](#) will complete its journey to the L1 point on June 8. Following instrument checkout, [NASA](#) will transition [DSCOVR](#) to [NOAA](#) to begin its formal operational period in mid-July.



Image of the Falcon-9 rocket that carried DSCOVR into orbit just after ignition of the engines.



A view of the nozzle of the second stage of the Falcon-9 with a view of the gibbous Earth.

Both images courtesy of SpaceX. These images come from the SpaceX Flickr page and are labeled as Public Domain. (<https://www.flickr.com/photos/spacexphotos/with/16673034486/>)

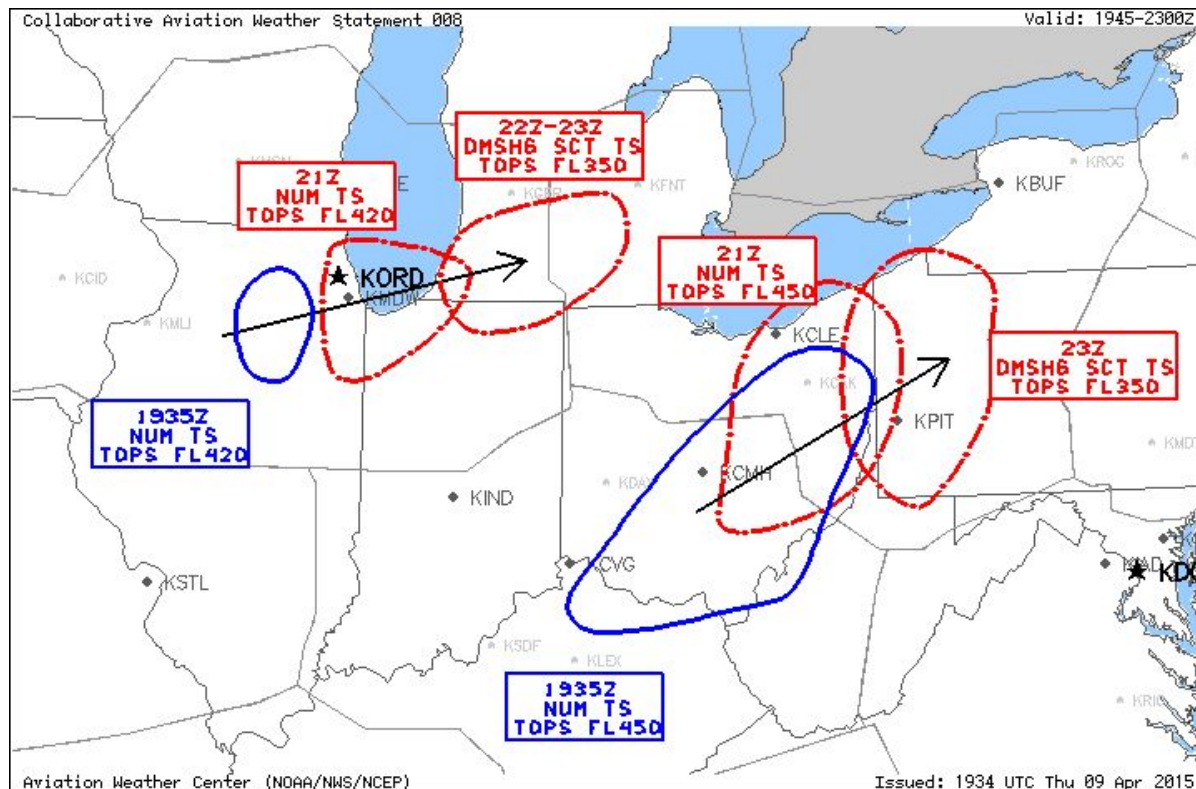
Operational Demonstration of a New Collaborative Aviation Weather Statement

On March 3, 2015, the [Aviation Weather Center \(AWC\)](#) began an operational demonstration of a new continuous collaborative process called Operational Bridging (OB) and a resultant product, the Collaborative Aviation Weather Statement ([CAWS](#)). [National Weather Service \(NWS\)](#) meteorologists, airline meteorologists, and other airline and Federal Aviation Administration ([FAA](#)) personnel, collaborate throughout the day using NWSChat. This collaboration results in specific, high-impact, thunderstorm event forecasts focused on the United States' major airports and high traffic, sensitive regions. The [CAWS](#) replaces the collaborative component of the Collaborative Convective Forecast Product (CCFP), which has been replaced by an objectively generated product during the demonstration. The [CAWS](#) supports the identification of National Airspace System (NAS) constraints due to thunderstorms that impact strategic NAS planning. It supports the [FAA](#) and the airline's ability to more effectively initiate, adjust, or terminate planned or active Traffic Management Initiatives (TMI), to balance traffic demand in the constraint locations resulting in more efficient use of available airspace. The expected benefits to the aviation community should be a reduction in fuel costs and expenses associated with flight delays, cancellations, and diversions, due to timely adjustments to the forecast weather and more efficient TMI management.

The [FAA](#), pursuant to Title 49 United States Code Section 44720, established requirements for this weather information and service which is necessary for the safe and efficient conduct of operations in the NAS. The initial [FAA](#) requirements focus on convective weather, since convection has historically caused the greatest number of NAS constraints. If proven successful, the OB/[CAWS](#) is planned to be expanded to all aviation hazards. During the operational demonstration of OB/[CAWS](#) which will be conducted throughout the 2015 convective season the [FAA](#) will lead an assessment to refine [CAWS](#) requirements. During the evaluation, input focusing on usability, effectiveness, and areas of potential improvement for OB and the [CAWS](#), will be collected.

Public comments will be collected via a survey at <http://www.nws.noaa.gov/survey/nws-survey.php?code=CCFPG>

The current [CAWS](#) product may be found online at



Collaborative Aviation Weather Statement issued on April 9, 2015, for thunderstorms impacting Chicago and high traffic areas over Ohio and Pennsylvania.

Collaborative Aviation Weather Statement 008
NWS Aviation Weather Center Kansas City MO
1934 UTC Thu 09 Apr 2015

Weather: Thunderstorms
Valid: 1945-2300Z

ARTCCs affected: ZAU, ZID, ZOB
Terminals affected: KDTW, KMDW, KORD

SUMMARY: Numerous TS expected over central IL/northeastern IL/southeastern MI thru 22Z and over eastern OH/western PA thru 23Z.

DISCUSSION: Numerous TS over central IL, with tops FL420, are expected to move north eastward, where it will diminish between 22Z-23Z. The MDW/ORD terminal will be affected 20Z thru 2130Z. Numerous TS over eastern OH, with tops FL450, are expected to move north eastward thru 23Z, where it will diminish around 23Z over western PA.

Collaborative Aviation Weather Statement issued on April 9, 2015, for thunderstorms impacting Chicago and high traffic areas over Ohio and Pennsylvania.

Unprecedented Winter Weather Collaboration

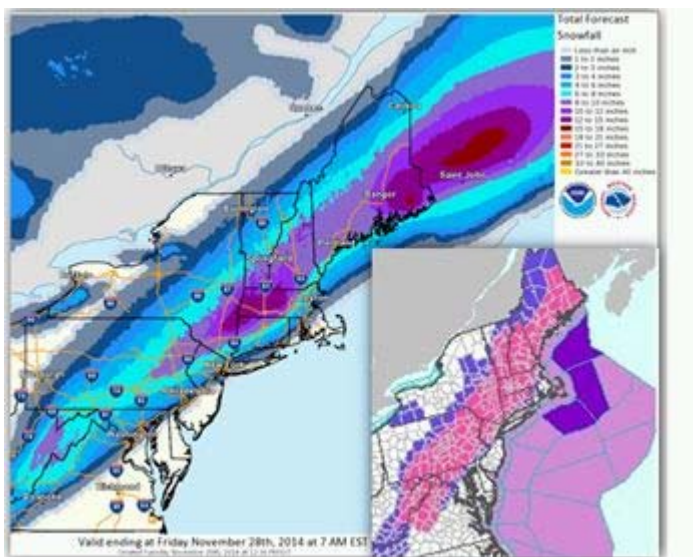
The winter of 2015-16 was unrelenting in the northeast U.S. Boston. It set an all-time snowfall record and numerous low temperature records across the east. The [Weather Prediction Center](#) took a leadership role in the integrated field structure for this national weather extreme. [WPC](#) provided an unprecedented level of field unit collaboration and [WPC](#) was involved with 41 multi-office collaboration calls, among 143 participants in every part of the United States.

At the same time as providing unprecedented collaboration internally, WPC extended capability to conduct 156 media interviews just in February, with 115 of them being radio interviews and 41 print news. Frequent interviews included Bloomberg News, Reuters, CBS, and the Associated Press. The enhanced national media attention established NWS as the nation's trusted source for weather information and is critical for appropriate public response during threatening weather.

Two storms particularly stand out, the first being the pre-Thanksgiving storm of 2014. This was a difficult forecast with potential high impact on major metropolitan areas during the busiest travel days of the year. Awareness was raised up to 7 days in advance with the WPC Medium Range forecasts. As the event drew closer, collaboration calls were held between WPC and local forecast offices. Forecasters emphasized it would be a close call for the big cities, with the heaviest snow just to the west. The forecast snowfall amounts were used to make Warning and Advisory decisions which were very accurate (Fig. 1). NWS Director Dr. Uccellini commented, "I was more than impressed with how NCEP and Eastern Region worked the collaborative effort to bring about the coherent forecast and communication of the evolution of this event."

Second was the blizzard of January 25-27, 2015, which set an all-time record snowfall in Worster, MA, while producing over a foot of snow from New York to Portland, ME. Amazingly, the potential for a coastal storm was predicted seven days in advance, with the specific threat to the Northeast highlighted consistently up to five days in advance. Special collaboration calls among WPC and northeast forecast offices yielded a consistent picture of heavy snow from New Jersey to Maine, even in the face of model uncertainty 24-36 hours in advance of the storm. Attendant national media interviews sent a consistent message of a major event. For the event as a whole, the winter storm warning accuracy was 98% with an amazing 37 hour lead time – well above typical performance. The result of the accurate, consistent, and understandable message, in this case, was appropriate preparations and a quick recovery throughout the region.

The unprecedented collaboration and intense media messaging is building a Weather Ready Nation.



Example of the WPC deterministic snowfall forecast and the associated Warnings and Advisories (insert) issued by local forecast offices for the pre-Thanksgiving storm of 2014.

NOAA's Weather and Climate Operational Supercomputing System: A Status Report

On February 18, 2015, The WCOSS Phase II upgrade was formally accepted by NOAA's Contracting Officer. IBM delivered 1,080 additional compute nodes and 2 petabytes of additional storage for WCOSS. With the addition of Phase II, the total capacity of WCOSS has increased from 213 Teraflops (TF) (peak) to 776 TF (peak). On the day after formal acceptance, the operational High-Resolution Rapid Refresh (HRRR) model was moved onto the Phase 2 nodes. The NCEP Production Suite now runs across the integrated Phase 1 and Phase 2 systems.

On February 15, task order 005 was awarded. This task order separated the cost and billing for the electrical power and cooling from task orders 002, 003, and 004. The expectation is that **NCEP** should realize some cost savings over time. A contract modification was made to task Order 002 adding additional storage hardware and software to improve the overall performance of the storage architecture delivered as part to task orders 002 and 003.

On February 27, the contract award for task Order 004 was completed, adding 2 Petaflops (PF) of additional compute capacity, providing a total of 2.8 PF for the entire **WCOSS**, per site. Equipment delivery will begin in June 2015 with system acceptance planned to be completed by October 2015.



Picture of WCOSS Gyre (Phases 1 and 2) located in Orlando, Florida.

Service Center Activities

National Hurricane Conference Takes Place in Austin

The 37th annual National Hurricane Conference took place in Austin, Texas, from March 30 to April 2, 2015. Throughout the four-day program, **NHC** hurricane specialists joined with experts from other federal agencies, academia, and emergency management, to conduct and participate in workshops and panel discussions regarding tropical cyclones. The primary goal of the conference was to improve hurricane preparedness, response, recovery, and mitigation, in order to save lives and property in the United States and the tropical islands of the Caribbean and Pacific. In addition, the conference served as a national forum for federal, state, and local officials, to exchange ideas and recommend new policies to improve Emergency Management. There were nearly 100 panel discussions that dealt with the above goals.

There were more than three dozen media interviews conducted over the span of the conference, arranged and facilitated by **NOAA/NHC** Communications PAO Dennis Feltgen. In addition, a press conference was conducted with **NHC** Director Rick Knabb and **FEMA** Administrator Craig Fugate, also facilitated by Feltgen.

The principle themes were:

- 1) Focus on the hazards of the tropical cyclone, not just the category of intensity.
- 2) The prototype storm surge watch/warning graphic will debut this season.
- 3) The potential storm surge flooding map will continue experimentally this season.
- 4) The seasonal outlook should never be used as a guide to preparation.

The main interviewees were **NHC** Director Rick Knabb, Hurricane Specialist Unit Branch Chief James Franklin, **NHC** Storm Surge team leader Jamie Rhome, Science and Operations Officer Chris Landsea, and the Hurricane Specialists. They were interviewed primarily by the print and television media with stations along the gulf and southeast coasts.



Former NHC Director Bill Read, now a consultant to a Houston TV station, interviews current NHC Director Dr. Rick Knabb at the National Hurricane Conference.

Space Weather at NOAA Satellite Science Week

The [Space Weather Prediction Center \(SWPC\)](#) provided several talks in support of the space weather session at [NOAA's](#) Satellite Science Week meeting. The meeting was held in Boulder, Colorado the week of February 23, 2015, and covered a wide range of topics with the intention of discussing the state of the science portfolios of the [GOES-R](#) and [JPSS](#) programs.

Dr. Tom Berger, [SWPC](#) Director, gave the Space Weather session keynote, which provided the audience an excellent overview of space weather and the way satellite and ground data are used in nowcast and forecast. Dr. Steve Hill then gave a talk on the progress of migrating to [AWIPS 2](#) and how present and future [GOES](#) data is being integrated with the support of [NCO](#). Dr. Rodney Viereck provided updates on the major ongoing efforts in the Space Weather Prediction Testbed (SWPT) at [SWPC](#), including the Whole Atmosphere Model, Geospace Modeling, and the WSA-Enlil solar wind model. Dr. Terry Onsager spoke about international coordination on space weather, to include the following: [WMO](#) (World Meteorological Organization), [ICAO](#) (International Civil Aviation Organization), [CGMS](#) (Coordination Group for Meteorological Satellites), [COPUOS](#) (United Nations Committee on the Peaceful Uses of Outer Space) and [ISES](#) (International Space Environment Service). Additional supporting talks were given by Bill Denig ([NESDIS](#)) and Dr. Greg Kopp (University of Colorado).

The Space Weather session presentations provided an introduction to those in the audience with terrestrial weather backgrounds and depth to help inform decision makers within the [NOAA](#) satellite community.



Group picture of participants at NOAA's Satellite Science Week meeting.

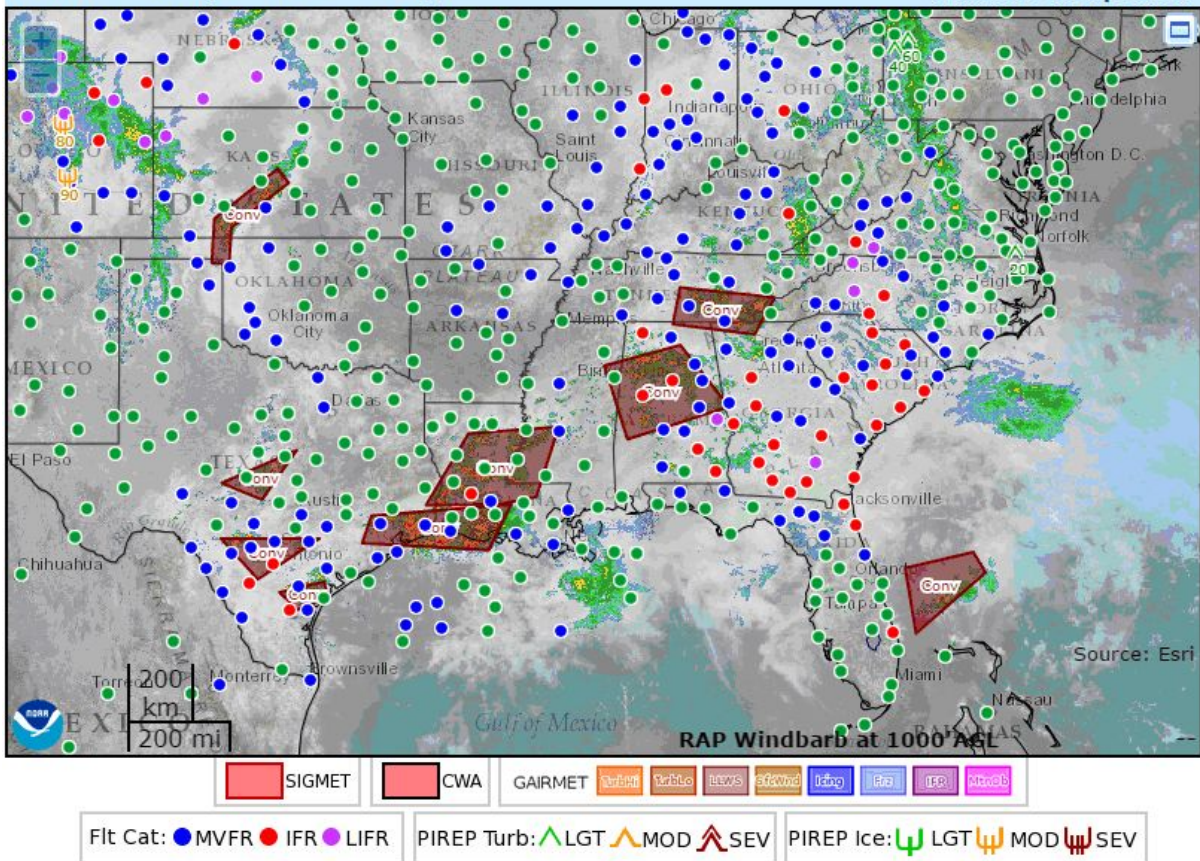
Operational Implementation of the Helicopter Emergency Medical Services (HEMS) Tool

The [Aviation Weather Center \(AWC\)](#) will commence operational production of the Helicopter Emergency Medical Services (HEMS) Tool on May 4th, 2015. The operational implementation follows a public comment period, in which all responses were positive. In reference to the [HEMS Tool](#), one user stated, "It is always up on a large screen in our Air Medical Communications Center and we check it before every flight request is given to our pilots."

HEMS operates in a demanding environment. They give an invaluable service to the public by providing crucial, safe, and efficient transportation of critically ill and injured patients to medical care facilities. While the contribution of HEMS is a profound component of the nation's medical infrastructure from an operational standpoint, it is a commercial aviation activity performed by Federal Aviation Administration ([FAA](#)) certificated air carrier operators. As such, operations must have the highest level of safety. The [HEMS Tool](#) is designed to provide a one-stop shop for weather information pertinent to the low-level, short-duration flights common among the HEMS community. By using a highly interactive and intuitive tool that focuses on small, localized regions, HEMS operators gain critical weather awareness to make their flights safer for crews and patients.

The [HEMS Tool](#) can overlay multiple fields of high resolution grids of critical weather parameters: ceiling, visibility, flight category, winds, relative humidity, temperature, icing severity, satellite, radar, G-AIRMETs, SIGMETs, METARs, TAFs, and PIREPs. All 3D data is interpolated to AGL altitudes and can be sliced horizontally on 1000 ft. intervals, up to 5000 ft. All data is time synchronized to go back, up to 6 hours and forward, up to 6 hours. The tool has high-resolution ESRI basemaps, including colored-relief and satellite. The user can also display navigational aids, airports, and heliports, for the entire United States. More detail is revealed as the user zooms in on the display.

The [HEMS Tool](#) may be found online at <https://aviationweather.gov/hemst>.



Screen capture of the HEMS Tool display.

Senator Mikulski Visits NHC

NHC hosted a visit by U.S. Senator Barbara Mikulski (D-Maryland) on April 9th, 2015. After meeting with NHC's branch chiefs, the Senator toured the hurricane operations area, the FEMA/NOAA Hurricane Liaison Team office, and CARCAH (Air Force hurricane hunters liaison). Our thanks to the Senator for her continued support.

The purpose of the visit was familiarization, as this was her first visit to NHC. NHC's branch chiefs, storm surge team lead, public affairs officer and Miami MIC helped the NHC deputy director host the Senator and her staffer Jean Toal-Eisen. The Senator was very engaged (and engaging) and perceptive. She praised NOAA/NWS from the start and took pride in helping move NCEP to its new facility. After an overview briefing, we took a walking tour through the NHC hurricane operations area, FEMA/NOAA Hurricane Liaison Team office (briefing by FEMA's HLT member), and CARCAH (Air Force hurricane hunters liaison) area as presented by that unit's chief. The Senator expressed interest in knowing what it takes to improve hurricane forecasting.

The Senator made it clear she still has two more years where she can be a factor. We discussed the importance of observations, the models, and how they, along with increasing computational capabilities, are what have driven us to better forecasts, especially for track. We shared with her the challenges of intensity forecasting and highlighted the promise of the Hurricane Forecast Improvement Project. We touched on the Joint Hurricane Testbed, about the role of weather satellites, and the importance of real-time communication, as well as the training we provide and our outreach and education program.

We were prepared for her questions about Hurricanes Katrina, Isabel (including her own experience) and Sandy (the impact for her area). We had an extended discussion about our work on storm surge and fielded questions she asked about the effect of sequestration and how the Sandy Supplemental has benefited us.



U.S. Senator Barbara Mikulski discusses a dropwindsonde instrument with CARCAH chief John Pavone.



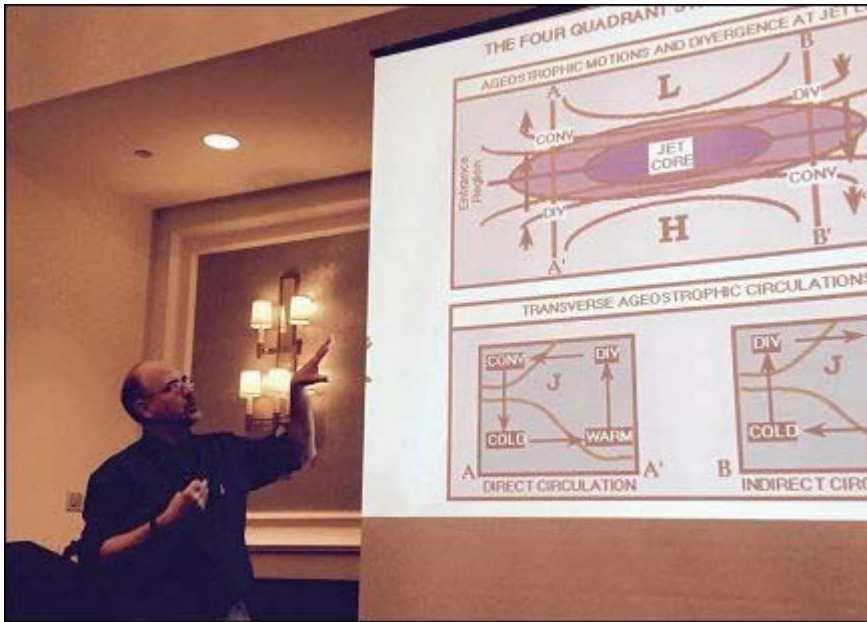
U.S. Senator Barbara Mikulski standing in front of a display showing a hurricane event.

Tall Ships America Conference

Acting [Ocean Prediction Center \(OPC\)](#) Director Joseph Sienkiewicz participated in the annual Tall Ships America Conference in Philadelphia. The main conference was held February 4-6, and the Practical Weather Workshop was held February 7-8. Tall ships events are excellent outreach opportunities for [OPC](#) because the attendees appreciate the work done by [OPC](#) and the [National Weather Service \(NWS\)](#) for the maritime community. They understand the challenges of the industry and are an important part of the international weather services network. The vessels in the tall ship community are slow moving, extremely weather sensitive, and, most importantly, carry students as cargo. The loss S/V Concordia in 2012 and Bounty in Hurricane Sandy (2012) still ring clear in this community; tall ships sailors continue to make marine weather information a key topic during their national and international conferences.

For Mr. Sienkiewicz's session talk, he described the evolution of a North Pacific extratropical cyclone and highlighted the predictive capabilities that [OPC](#) routinely sees in forecast operations. The instructive session was attended by approximately half of the conference attendees.

In preparation for hosting the Practical Weather Workshop, Mr. Sienkiewicz worked with Captain Rick Miller of the Maine Maritime and Sea Education Association and Captain Jonathan Kabak of the [United States Merchant Marine Academy](#), to assemble an agenda appropriate for a wide spectrum of traditional vessel sailors. There were approximately 30 students for the two workshops. Participants ranged from trainees to some of the most seasoned captains from United States vessels. Mr. Sienkiewicz led exercises designed to help solidify the instructional goals and to clarify a variety of text and graphical products the [OPC](#) and [National Hurricane Center \(NHC\)](#) produce. The workshop was held in the [Independence Seaport Museum](#) at Penns Landing on the Delaware River in Philadelphia.



Acting OPC Director Joseph Sienkiewicz leading marine weather tutorials during the Tall Ships America Conference.



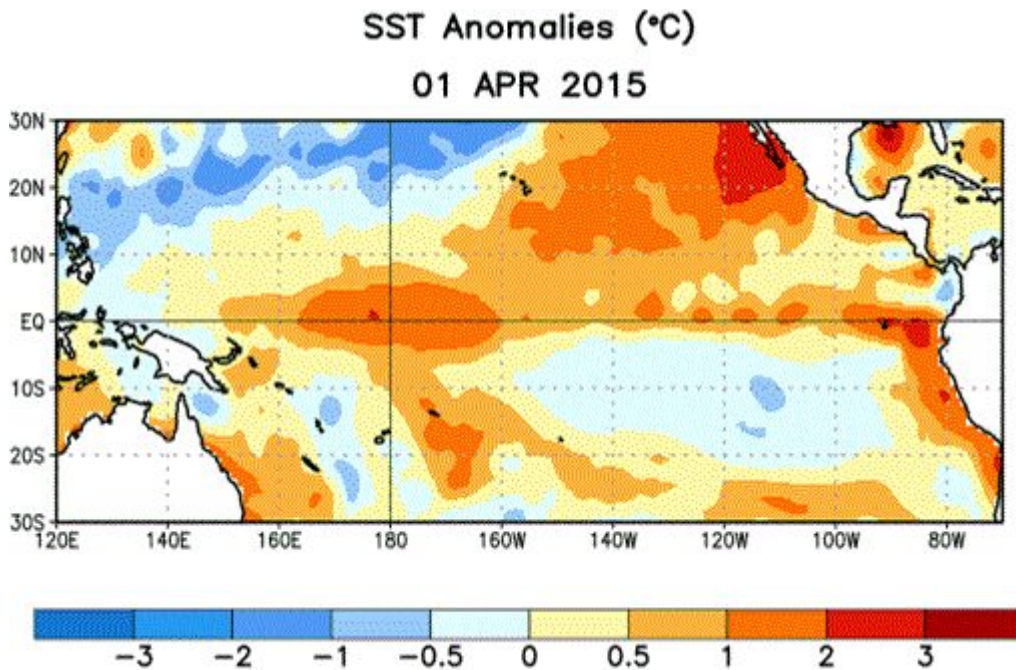
Penns Landing with Dewey's Flagship Olympia, Philadelphia.

Climate Prediction Center Issues El Niño Advisory

The [Climate Prediction Center \(CPC\)](#) upgraded the previously issued El Niño Watch to an El Niño Advisory on March 5, 2015. Above-average sea surface temperatures (SSTs) across the western and central Pacific, which had been observed since late 2014, became weakly coupled to the tropical atmosphere. The advisory was continued in April, with forecasters stating that odds are roughly 70% that El Niño conditions will persist through summer and above 60% that they will last through the fall. This forecast relies on current observations, including a substantial supply of warmer-than-average subsurface waters in the equatorial Pacific. In addition, most of the dynamical models predict continued equatorial Pacific surface temperature anomalies above $+0.5^{\circ}$. With the exception of one model, the forecasts are closely grouped, indicating they are fairly confident in the forecast. However, in spring 2014 the dynamical climate models were also confident that we were headed for a significant El Niño in the second half of 2014, which did not materialize. In addition, models historically have a harder time making successful forecasts for El Niño during the spring, known as the “spring predictability barrier”.

The late start, combined with the weak conditions, implies that El Niño is unlikely to exert significant impacts outside of the Tropics for the next few months. For example, historical precipitation patterns associated with El Niño show that only about 3 of the past 10 El Niño years exhibited above-average rainfall in California during March-April-May. Another way of looking at the historical relationships shows that ENSO has very little correlation to precipitation over North America during the spring or summer. Historically, El Niño is generally associated with suppressed tropical cyclone activity in the Atlantic and enhanced activity in the Eastern Pacific. However, El Niño is only one factor, and the CPC will release its forecasts for the 2015 North Atlantic and Eastern Pacific Hurricane Seasons on May 27th.

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.html



Average sea surface temperature (SST) anomalies (°C) for the week centered on 1 April 2015. Anomalies are computed with respect to the 1981-2010 base period weekly means.

5th Annual HMT-WPC Winter Weather Experiment

From January 12th to February 13, 2015, the HydroMeteorology Testbed-[Weather Prediction Center](#) (HMT-WPC) hosted its annual Winter Weather Experiment. Now in the fifth year, the experiment brought together 28 forecasters, researchers, and model developers, from across the weather enterprise to conduct exercises aimed at continuing improvement of winter weather forecasts. Additionally, this year's experiment featured a daily webinar, where participants shared their forecast thoughts and discussed experimental model data with remote participants across the [National Weather Service](#) (NWS).

One focus of the experiment was the continued exploration of model micro-physics based snowfall forecasting methods. The idea is to use the explicit information coming from the model microphysics instead of making assumptions and using algorithms based on temperature and humidity to derive the snow amounts. Current algorithms are prone to error and are not necessarily what the model is actually predicting. Fig. 1 shows two new, different approaches using the amount of riming on hydrometeors and percent frozen precipitation applied to the North American Model (NAM) forecasts for the Jan 27-28 northeast U.S. Blizzard. These new approaches were found to be helpful in making snowfall forecasts, particularly in rain-to-snow transition zones. The testbed will continue to work with the [Environmental Modeling Center](#) (EMC) and others to implement these new approaches in operations, as well as expand to other modeling systems.

A second focus was expanding medium range probabilistic winter weather forecasts to include forecasts of heavy snow and freezing rain from Days 4-7. The experiment found that Day 4-7 probabilistic winter weather guidance

was well received. Objective verification of the lower threshold of the probability of 1" showed positive probabilistic skill through Day 7. However, higher thresholds were not as skillful and more work is required. Thus, the Day 4-7 probabilistic winter weather outlook will use the 1" threshold and be a public experimental product for the 2015-16 season.

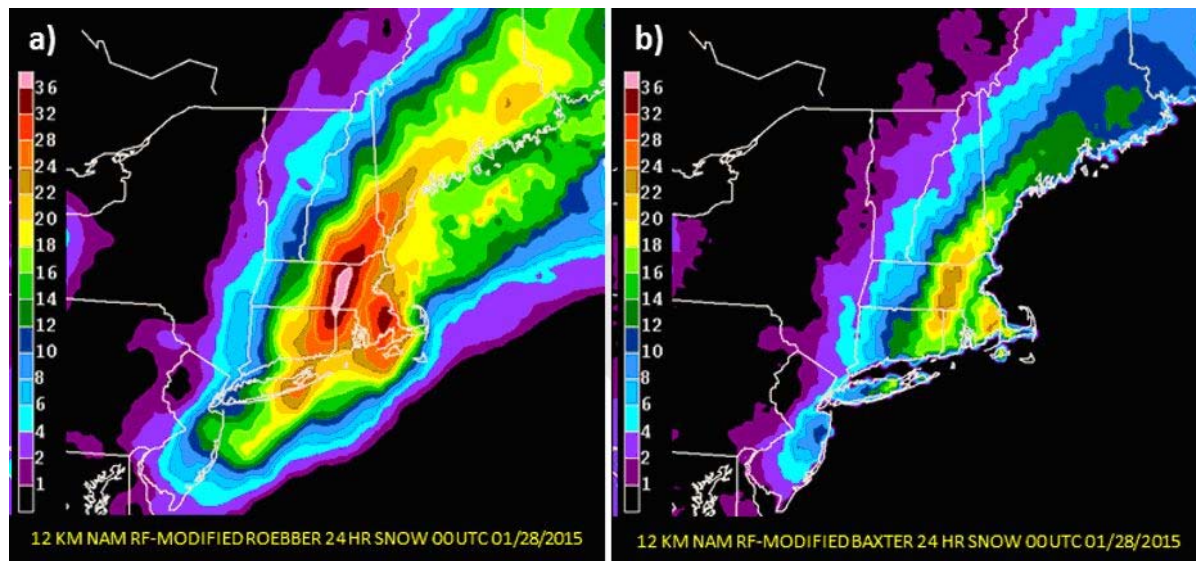


Figure 1. Comparison of two different new approaches using explicit microphysical information from the NAM model from forecasts of the Jan 26-27 northeast U.S. Blizzard.

MADIS Operational on NOAA's Integrated Dissemination Program (IDP) System

On January 21, 2015, the Meteorological Assimilation Data Ingest System ([MADIS](#)) running on NOAA's Integrated Dissemination Program (IDP) system in College Park, MD, became operational. This came after many years of development by NOAA's Global Systems Division ([GSD](#)) of the [Earth System Research Laboratory \(ESRL\)](#), and a commitment from [GSD](#) and [National Weather Service \(NWS\)](#) to complete the research-to-operations process for [MADIS](#).

The [MADIS](#) system ingests data from [NOAA](#) data sources and non-[NOAA](#) providers, decodes data then encodes all of the observational data into a common format with uniform observational units and time stamps. Quality control (QC) checks are conducted and the integrated data sets are stored along with a series of flags indicating the results of the various QC checks. [MADIS](#) provides several methods for users to access the data to meet their needs. Users can request data from July of 2001, which is when [MADIS](#) was first available to the public, to present.

The [NWS](#) Initial Operational Capability (IOC) [MADIS](#) on Weather and Climate Operational Supercomputing System ([WCOSS](#)) was decommissioned on April 1. The operational instance of [MADIS](#) on [WCOSS](#) was turned off. Research to Operations (R2O) process will continue for [MADIS](#) as users are transitioned to the operational servers. This will be finalized when [GSD](#) can turn off their servers at the end of May 2015.

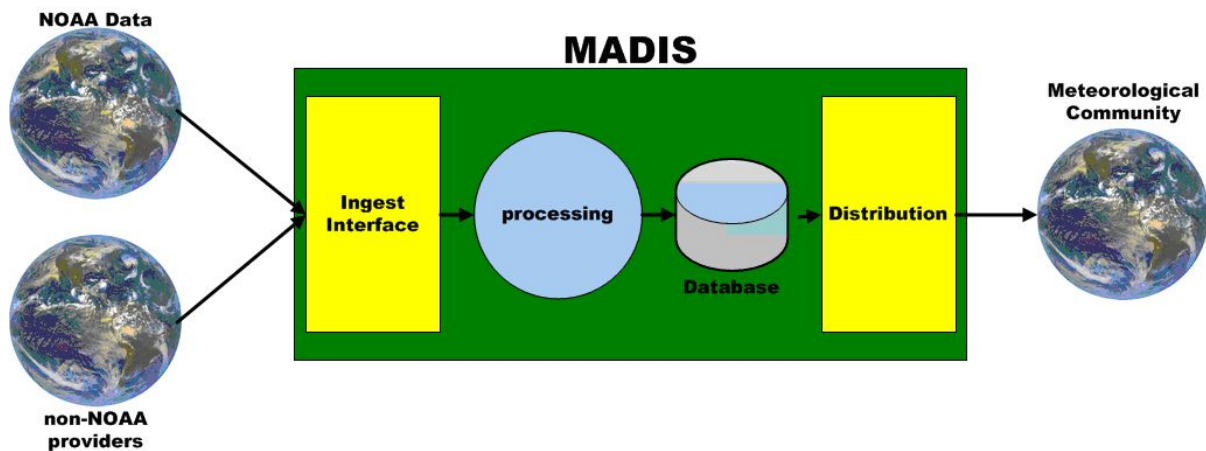


Figure above depicts the data ingest, processing, and distribution components, of the system.

NHC Trains Emergency Managers

During the hurricane off-season months, **NHC** plays a key role in the training of emergency managers and decision makers in the use of **NHC** products. In just the first two months of this year, **NHC** hosted five week-long training sessions. This includes three **FEMA** L-0324 courses - "Hurricane Preparedness for Decision Makers", the first ever **World Meteorological Organization** Region IV International Storm Surge Workshop, and the **NWS** Effective Messaging Workshop.

The emergency managers and decision makers are local and state employees from the Gulf, Southeast, and Northeast United States coasts. The three **FEMA** L-0324 courses are conducted for emergency managers from each of those regions and the subject matter is tailored for each region. Several **FEMA** regional or national headquarter employees also participated. The classes are technically run by **FEMA**'s Emergency Management Institute and funding is through **FEMA**'s National Hurricane Program. Instructors include **NHC** Hurricane Specialists, **FEMA** regional hurricane program managers, and U.S. Army Corps of Engineer (USACE) personnel.

The participants learned about the tools available to make better evacuation decisions during tropical cyclone threats. They also learned about the dangers of storm surge and why they need to evacuate residents from coastal communities that are at risk of inundation from storm surge. The students gained an understanding of **NHC** forecast products, the hurricane evacuation study process, and about the Hurricane Evacuation (HURREVAC) decision support tool.

The overall objectives of the course have changed little from year to year, but the course has become more hands-on the past 5 to 10 years. Students are shown how the **NHC** makes tropical cyclone forecasts with several breakout sessions conducted to help them learn about **NHC** products, the hurricane evacuation study process, and hands-on time with the tools available to them to make better decisions. This year's training incorporated the new **NHC** storm surge products (Potential Storm Surge Flooding Map and prototype Storm Surge Watch/Warning Graphic).

The course began in 1992 and is extremely important given the large amount of turnover in the emergency management field from year to year. The states continually ask **FEMA** for more slots in the course and additional hurricane preparedness training courses to meet the needs of new coastal emergency managers. Besides the three courses held at **NHC** every January and February, the **NHC** and **FEMA** offer one-day training courses annually at the National Hurricane Conference and the Florida Governor's Hurricane Conference. A three-day version of the week-long Miami course is taken to one state each year. The **NHC**, **FEMA**, and USACE instructors will provide training the week of April 27 in Norfolk, Virginia for about 30 local and state emergency managers from Virginia.



NHC Outreach and Education January – February 2015



Three FEMA Emergency Manager Courses



Northeast U.S.
12-16 January



World Meteorological Organization
Storm Surge Workshop 20-23 January

Gulf Coast
26-30 January



Southeast Coast
2-6 February



NWS Effective Hurricane
Messaging Course 23-27 February

Class photos of each NHC training session, January & February, 2015.

OPC Staff Attend Safety at Sea Seminar

The [Ocean Prediction Center's \(OPC's\)](#) Acting Director, Joseph Sienkiewicz, and Lead Marine Forecaster, Paul Vukits, took part in the 36th annual Safety At Sea Seminar hosted by the U.S. Naval Academy Sailing Squadron and the Marine Trades Association of Maryland. The two day event was held March 28-29, 2015, at Alumni Hall on the [United States Naval Academy](#) campus in Annapolis, Maryland.

This two-day seminar is required for sailors who plan on participating in the Annapolis-Newport race later this season, or in any other offshore race. The first day of the seminar is geared toward offshore racers and covers topics such as safety equipment, search and rescue communications, marine weather, sailing in heavy weather, and reacting to emergencies, such as man overboard situations. The second day is a seminar geared towards cruising instead of racing, but covers the same types of safety material discussed in the racing seminar.

The Safety At Sea Seminar has been held annually for the past 35 years, working to keep ocean racers and recreational sailors trained for preventing and handling emergencies at sea. The seminar's roots lie in the 1979 Fastnet Race disaster where a storm exceeded the severity of its forecast and wreaked havoc on the sailors and their vessels. Five boats sank, nearly 100 boats were knocked down, and 18 people died, including several rescuers.

Approximately 400 cruising sailors, racing sailors, and United States Naval Academy midshipmen took part in the seminar. Mr. Sienkiewicz and Mr. Vukits staffed a booth, distributed informational flyers, and answered many questions. They gave a formal weather safety seminar and co-hosted 3 one-hour panel discussions. Many sailors expressed their thanks for the marine services provided by [National Weather Service \(NWS\)](#) and for their participation in this important event.



Sailors participating in the Safety At Sea Seminar in the US Naval Academy's Alumni Hall.

Bill Bunting Hosts Webinar for Emergency Management Personnel

The [Storm Prediction Center \(SPC\)](#) hosted a webinar on January 23, 2015, for emergency management personnel across the nation. The webinar, which was sponsored by the [NWS](#) and the [International Association of Emergency Managers \(IAEM\)](#), emphasized the use of [SPC](#) services by emergency managers for effective decision making. Operations Branch Chief Bill Bunting discussed the [SPC](#) mission, provided an overview of [SPC](#) forecast services, and highlighted recent changes to the convective outlook risk categories. There were 605 emergency managers participating in the webinar, which was recorded and made available for use by emergency officials nationwide. This was the second in a continuing series of webinars jointly sponsored by [NWS](#) and [IAEM](#), and feedback was very positive.

Somer Erickson FEMA Liaison to Storm Prediction Center

Ms. Somer Erickson was officially selected as the first permanent Federal [FEMA](#) Liaison to the [Storm Prediction Center \(SPC\)](#). Ms. Erickson began her career at [FEMA](#) as part of the National Preparedness Division at Region VII in Kansas City, Missouri, but later became a part of the [FEMA](#) Region VII Regional Watch Center (RWC) under the Response Division. Prior to joining [FEMA](#), she spent seven years as an Emergency Management Assistant/Volunteer Coordinator for the City of Norman, Oklahoma. While in Norman, she was involved with various facets of emergency management including disaster preparedness, planning and operations at both the local and state levels. In addition to her work with [FEMA](#) and in Emergency Management, she has worked as a Research Associate for the University of Oklahoma (OU)/Cooperative Institute for Mesoscale Meteorology Studies ([CIMMS](#)).

Greg Carbin Interviewed on Weather Geeks Program

[Storm Prediction Center \(SPC\)](#) Warning Coordination Meteorologist, Greg Carbin was interviewed on The Weather Channel program "Weather Geeks". The 30 minute program aired nationally on March 8 and will later appear

online. The interview topics ranged from [SPC](#) products and services, including recent additions to [SPC](#) tornado and severe weather prediction products.

