Aware

Aware is published by NOAA's National Weather Service to enhance communications within the Agency and with the emergency management community.

July 2011

NWS Roadmap Paves Way to Building Weather-Ready Nation

By Dr. Jack Hayes, NWS Director

NWS Director Dr. Jack Hayes

For 140 years, NWS has provided weather, water and climate information to protect life and property and enhance the national economy. By its 150th anniversary, NWS envisions a Weather-Ready Nation in which society is prepared for and responds to weather-dependent events. A new Strategic Plan, published online July 1, lays out the anticipated future service needs and developments in science and technology, as well as setting meaningful goals and objectives that define a Weather-Ready Nation.

This long-term goal of a Weather-Ready Nation is especially critical as America becomes increasingly vulnerable to high-impact events. So far this year, tornadoes have killed more than 530 people. The nation already has experienced eight separate billion-dollar weather disasters, approaching $32 billion in damages. This total is the highest damage cost-to-date number since NOAA began tracking the statistic in 1980. Population growth, growing infrastructure threats and an increasingly interdependent economy are creating new challenges for the country.

In response to this changing landscape, NWS is developing a Roadmap, to be completed in the coming months, which outlines the key activities and milestones critical to achieving the goals of the Strategic Plan. The Roadmap paves the way for a new model of doing business that emphasizes an environment of services in which products and warnings are coupled with NWS partner efforts to better prepare the American public for environmental events. Combining four separate plans, the Roadmap covers the following four plans:

- **Services:** Defines future NWS services and how they will be managed, communicated, promoted and executed
- **Science and Technology:** Defines technological solutions to meet future services needs and IT infrastructure issues
- **Workforce Evolution:** Addresses the strategic management of the workforce during the next 5-10 years and outlines the training and tools required to enable the implementation of future services
- **Business:** Lays out the current cost of services, the investment required to implement new initiatives and calculates the anticipated return on investment

Inside Aware

Disaster Management

2 Massive Fuel Spill Exercise Tests Government Response Capability

Dissemination Services

3 Personal Localized Alerting Network, aka CMAS, Roll Out Update
4 National EAS Test Preparations Ramping Up
5 IPAWS Changes Impact HazCollect Users
6 NWS Spinning Up CAP v1.2: Your Input Welcome
6 New NOAA Weather Wire Service to be Released in 2012
6 NWS Seeks Comments on Future Service Delivery Architecture Through July 31
7 Emergency Response Technology Goes On Demand
8 NWS Public and Staff Training Resource Gets Facelift

Flooding/Hydrology

8 NWS Responds to Midwest Flooding with Onsite Support

Hurricanes

8 NWS Seeks Feedback on Tropical Cyclone Impact Graphics
9 Follow NHC on Facebook, Twitter

Outreach Action

10 Pirates Weather Day is a Hit
10 Job Shadowing Ensures Better Prepared Workforce
11 NWS Helps Prepare Deaf, Hard of Hearing Community for Disasters
12 Nearly 200 People Attend New York SKYWARN® classes
12 Collaboration Enhances Weather Services at National Park

Rip Currents

13 Rip Current Awareness Updates

Severe Weather

14 Historic Tornado Outbreaks of April 2011 Service Assessment
14 NWS Uses Decision Support to Benefit Partners
15 Lightning Safety Awareness Campaign Targets Outdoor Venues
16 Kansas City Committee Posts 1,000 Lightning Safety Signs

Space Weather

16 Weather, Not Aliens Space Threat

Winter Weather/Climate and Links

17 Arctic Ice Melt Focus of High Level Meeting
17 Water, Weather and Climate links

This new path laid out by the Roadmap will enable NWS to achieve three key outcomes:

- Help ensure the United States becomes a Weather-Ready Nation through superior Impact-Based Decision Support Services (IDSS). IDSS will allow NWS personnel to better understand core partner and user needs, thresholds and decision criteria.
- Save more lives and further enhance the U.S. economy in an environment of continuous improvement through increasingly accurate and timely forecasts, warnings and information.
- Ensure federal, state and local governments can increasingly depend on NWS as a trusted and reliable source of weather, water and climate information from the community to the global level

It is an exciting time for NWS as we prepare to become more capable, better equipped and more agile in service delivery. Ultimately, the NWS role remains saving lives and livelihoods. The need for that today is even greater than it was 20 years ago.

The Roadmap represents an important step in building a Weather-Ready Nation by enabling the NWS to adapt to new challenges and innovatively meet the country's changing needs through the combined strengths of the agency and its partners. ☼

Disaster Management

Massive Fuel Spill Exercise Tests Government Response Capability

By Carl Cerniglia, Incident Meteorologist, NWS Seattle

The inland waterways of Washington and British Columbia, Canada, are home to several large seaports with a significant amount of daily cargo ships, tankers and cruise ships. Due to the complex terrain of the region and numerous islands and strong tidal currents, responding to a large fuel spill would be particularly complex. Adding to that complexity is the range of local, state, tribal and federal agencies in both the U.S and Canada that would be involved.

Participants in a drill simulating massive fuel spill gather for the morning briefing.

To help improve the odds of a smooth response to a large spill, NWS took part in the US-CAN Salish Sea 2011 exercise, a 3-day drill involving more than 200 participants from 25 government agencies.

For this exercise, the responsible party was unknown, leaving the spill response to government agencies. Industry partners from eight different corporations evaluated the event to identify strengths and weaknesses in the response. Containment booming operations, oil-skimming vessels and other boats and aircraft operated during the full-scale exercise.

The test included an Environmental Unit in which NWS provided support. NWS produced aviation and marine-specific forecasts as well as forecasts for the cleanup teams working the beaches. NWS briefed participants on weather and water conditions and provided data that helped participants decide whether to use dispersants and in-situ burning operations.

Aware

NWS
Office of Climate, Water and Weather Services

OCWWS Director
Dave Caldwell

Awareness
Branch Chief
Mike Szkil

Managing Editor
Melody Magnus
Melody.Magnus@noaa.gov

Editors:
Donna Franklin

Aware online
www.weather.gov/os/Aware/

Subscribe
www.weather.gov/os/Aware/awarelist.shtml

ISSN 1936-8178

This exercise showcased NWS' ability to support the spill response effort. NWS provided general forecasts as well as oil and smoke trajectory forecasts to numerous agencies, providing critical information that guided the response, saved valuable time and resources, and limited the impact of the operations on the public. That theme was well stated by U.S. Coast Guard Capt. Scott J. Ferguson, the federal commander for the exercise, "Success is about collaboration. With this scenario we learn to come together as a community." ☼

Dissemination Services

Personal Localized Alerting Network, aka CMAS, Roll Out Update

By Herb White, NWS Dissemination Services Manager

On May 10, top government and industry officials announced they will make the Personal Localized Alerting Network (PLAN) available in New York City by the end of 2011. PLAN, also known as the Commercial Mobile Alert System (CMAS), will leverage the FEMA Open Platform for Emergency Networks (OPEN). Authorities will be able to send 90-character text messages to cellular users within a specific geographic area, alerting the public to an imminent threat, AMBER Alert, or Presidential Message. Individuals in an alert area will be able to receive a PLAN/CMAS alert even if cellular towers in their location can no longer support person to person calls.

PLAN/CMAS also complements the NWS's experimental iNWS service. PLAN/CMAS differs from the iNWS service as follows:

- PLAN/CMAS is available to the general public; iNWS is restricted to NWS partners, community decision leaders, emergency responders and members of the electronic media
- PLAN/CMAS messages are a maximum of 90 characters and do not contain embedded links; iNWS messages are traditional Short Message Service (SMS) text messages with a maximum of 160 characters and contain an embedded link to more detailed information
- PLAN/CMAS is an opt-out service that targets cell phones within an imminent threat area; iNWS is an opt-in subscription based service that sends alerts based on user configurable alert types and geographic areas
- Individuals in an alert area will be able to receive a PLAN/CMAS alert even if cellular towers in their location can no longer support person to person calls; iNWS alerts may be subject to network congestion.

PLAN/CMAS is not a FEMA-developed technology but rather a commercial mobile industry standard. The mobile industry is implementing new technology nationwide to support alert delivery. The IPAWS Program Management Office is working closely with cellular service providers and the Federal Communication Commission (FCC) to expand communication pathways for alerts and warnings.

Although taking part in CMAS is voluntary, 142 mobile service providers have filed their intent to participate. The FCC defined the rules for carrier participation and the basic architecture, which requires one federal agency to authenticate users. The FCC also manages a list of participating carriers.

IPAWS is the technical and operational interface between public safety/alert authorities and carriers. IPAWS OPEN authenticates alerting authorities. FCC regulations require CMAS participants to be prepared to roll out PLAN/CMAS starting in April 2012.

PLAN/CMAS is a powerful warning dissemination tool that will benefit the NWS warning program. PLAN/CMAS will allow NWS imminent threat warnings to reach the public via their PLAN/CMAS-compatible cell phone.

Imminent threat alerts (i.e., what is sent to cell phones) will be based on urgency, severity and certainty elements as well as other elements in Common Alert Protocol (CAP) messages. PLAN/CMAS will get its alerts through the IPAWS-OPEN alerts aggregator. NWS plans to produce experimental CAP v1.2 IPAWS-compliant messages by this fall and push operational alerts to the aggregator by the time PLAN/CMAS is ready for operation.

CAP v1.2 production updates CAP v1.1, which was released on March 15. NWS will produce and send CAP messages centrally; the process will be transparent to NWS Weather Forecast Offices (WFO) until 2013, when the Integrated Hazards Information System, NWS's next generation warning tool, is implemented at local WFOs.

Look for more information from the cellular industry, FEMA and NWS, including details on when cell phones will be capable of receiving PLAN/CMAS alerts. NWS anticipates a series of Webinars, Public Service Announcements (PSA) and leaflets in cell phone bills. Below are sources for more information:

- News Release
- PLAN/CMAS Factsheet
- IPAWS PLAN/CMAS Project

FEMA IPAWS overview: Get Alerts, Stay Alive: Public Alerts and Warnings, Summer 2010 NWS Aware Report, cover article by Wade Witmer, Deputy Director, FEMA IPAWS. ☼

National EAS Test Preparations Ramping Up

By Herb White, NWS Dissemination Services Manager

FCC Public Safety and Homeland Security Bureau Chief Jamie Barnett announced that the agency will conduct the first nationwide test of the Emergency Alert System (EAS) at 2 pm, EST, Nov. 9, 2011. The test will assess the reliability and effectiveness of EAS as a public alert mechanism. The FCC, along with the FEMA, will use the results in conjunction with EAS stakeholders, to improve the system.

The EAS test is not a pass or fail measure, nor will it specifically test CAP-compliant equipment, which must pass through Emergency Action Notification (EAN) live code, as does legacy EAS equipment. Future EAS testing will assess the effectiveness and reliability of other technologies to meet the ultimate goal of timely alert and warning to protect life and property.

NOAA Weather Radio All Hazards® (NWR) stations will not carry the national EAS test. Broadcasting a Presidential or national EAS message over NWR requires capabilities of the NWR Improvement Project (WRIP), under development. During the EAS test, NWS will demonstrate the capabilities of its interfaces for receiving and capturing EAN live-code and audio messages. WRIP Phase II will be installed at NWS headquarters and at WFOs through 2012.

From 2013-2016, NWS will install updates, which will include the ability to send national EAS message broadcasts. These follow-on capabilities include broadcast of the EAN live code and audio over all NWR stations nationwide as provided by FEMA.

To prepare for the national EAS test, IPAWS is hosting a series of online events with industry and leaders in the emergency alert and warning field. The first events were held June 9 and July 7. Future online events include:

- **August 15**—EAS Participant Virtual Roundtable: First Draft of the Best Practices Guide
- **September 1**—Nationwide EAS Test Update Webinar: EAS Equipment Operation and Maintenance

- **September 30**—EAS Participant Virtual Roundtable: Best Practices Guide Final Recap Discussion & Release
- **October 13**—Nationwide EAS Test Update Webinar: Test Preparations and Procedures

FEMA IPAWS staff has developed a Website for idea sharing: A National Dialogue on the Emergency Alert System, to discuss best practices and lessons learned from the EAS Community on Webinar and roundtable event topics.

Other online resources include:

- Emergency Alert System Nationwide Test | FCC.gov
- EAS Community Information Updates and Test Preparations | FEMA.gov ☼

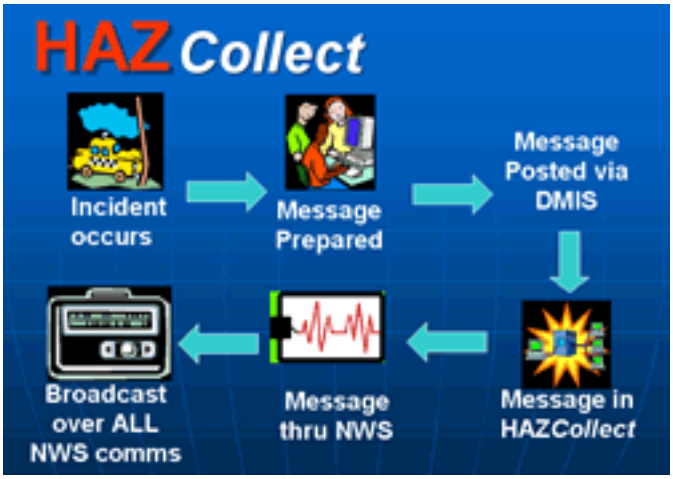
IPAWS Changes Impact HazCollect Users

By Herb White, NWS Dissemination Services Manager

All software currently connecting to FEMA's legacy IPAWS OPEN application must migrate to OPEN 2.0 by July 31, when the legacy Disaster Management (DM)-OPEN 1.0 is decommissioned. After that time, you can use only OPEN 2.0.

Existing DM-OPEN 1.0 Collaborative Operations Groups (COG) need to reapply for access to OPEN 2.0 and NWS All-Hazards Emergency Message Collection System (HazCollect). Even government and emergency management agencies with functioning COGs, using the original DM-OPEN and HazCollect, must do the following:

- Execute a Memorandum of Agreement (MOA) on system security between the sponsoring organization and FEMA
- Obtain a new COG identification number



Please review the COG information section on the IPAWS-OPEN Aggregator Web page for the steps and MOA application. IPAWS-OPEN 2.0 initial functionality will include:

- Ability to exchange standards-compliant messages and content between COGs
- Access to HazCollect for NWS-approved alerting authorities

IPAWS-OPEN 3.0, to be released later this year, will offer EAS and CMAS access.

For emergency managers (EM) using DM Interoperability Services (DMIS) Tools, the most important change likely is that after July 31, you will be unable to use federal government software to author CAP alerts for HazCollect, EAS, CMAS, etc.

FEMA is decommissioning Disaster Management Interoperability Services tools and has canceled the DM framework. Several vendors have said they are or will soon be able to provide interoperable services with IPAWS-OPEN 2.0. To help emergency managers and other officials select alternatives, FEMA staff is working with vendors to provide more information on the IPAWS Website about each vendor's intent to support CAP and its alert authoring tools. Information about IPAWS-OPEN and HazCollect is online at:

- FEMA IPAWS-OPEN Aggregator
- NWS HazCollect ☼

NWS Spinning Up CAP v1.2: Your Input Welcome

By Herb White, NWS Dissemination Services Manager

By fall 2011, the NWS plans to experimentally produce CAP v1.2 IPAWS profile-compliant messages. To help you prepare, the NWS has created an online and publicly accessible "wiki."

The wiki includes documentation and collaboration discussion pages for each CAP element that the NWS will be producing. This new venue is available to the national and international community and will be especially useful for developers and re-distributors of NWS watches, warnings, advisories, and special statements. Once you register for a user account, you can join the discussion and will be notified when there are changes to these pages. To register, go to the CAP wiki Website and click Login/Create at the top right of the page. ☼

New NOAA Weather Wire Service to be Released in 2012

By Marty Baron, NWWS Program Leader, NWS

A vital change is in the works for NOAA Weather Wire Service (NWWS), the only NWS data dissemination system delivering warnings and watches from all forecast offices and national centers within 10 seconds of issuance time. Beginning September 2011, NWWS will start testing a new system known as the WRIP. System evaluation will involve integration testing between WRIP and its users to ensure a smooth transition. The new system will operate like the current system does, with dissemination of weather data via either:

- C-band satellite
- Internet-based method known as the Open Interface
- International Justice and Pubic Safety Network (NLETS)

C-band satellite users can use existing outdoor antennas. Antennas will not require repointing, but will need a new satellite receiver, a new Low Noise Block Converter (LNB), and new or modified weather data display software. Open Interface users will need the new or modified display software. NLETS is a private law enforcement/emergency management network not open to the general public.

More information about the transition to the new system will be online soon on the Weather Wire Website.

During the transition to the new system, NWS needs your help to ensure a smooth changeover. In 2012, when NWS verifies the new system is operational and working properly, it will decommission the old system, operated under contract with Computer Sciences Corporation. For more information, email Marty Baron or call 301-713-0644, ext. 137. ☼

NWS Seeks Comments on Future Service Delivery Architecture Through July 31, 2011

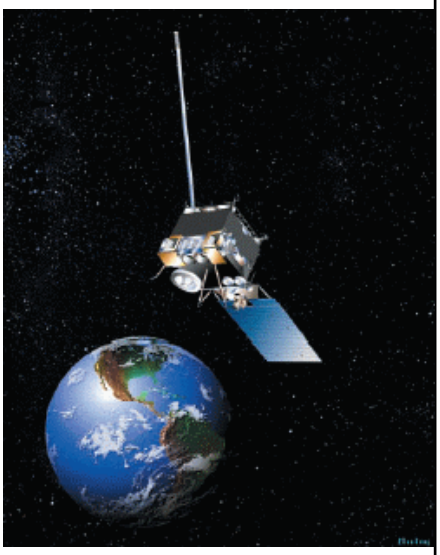
By Robert Bunge, Chief, Telecommunication Software Branch

NWS is looking at ways to improve its service delivery architecture to ensure it can meet 21st century data requirements. To meet this goal, NWS is trying to determine user requirements to develop a clear roadmap. The roadmap, in turn, will help NWS create a future-facing service delivery architecture to better serve your needs.

NWS is requesting comments to better understand current and future service needs. The primary goal is to fulfill the NWS mission to protect life, property and enhance the national economy. NWS wants to better meet these goals by disseminating the necessary data using new and emerging technology. Users, such as you, of NWS dissemination services are the most important group affected by this process. Your involvement is vital to the success of this effort.

NWS infrastructure includes all dissemination media currently supported, such as the NWS Telecommunications Gateway, NWR, NWWS, Family of Services, NOAAPORT, Emergency Managers Weather Information Network, NWSChat, iNWS, as well as all Web-based email and telephone services. As the NWS begins to consider how best to improve and expand these current services through the new NWS Dissemination Architecture, research will be conducted in the following areas:

- **Data Sets:** Types required by users
- **Dissemination Methods:** For example, the use of part of selected datasets through stable Web services, e.g., Simple Object Access Protocol, Representational State Transfer services, Geographic Information System, or through complete datasets such as traditional meteorological formats
- **Best Practices of Existing Dissemination Systems:** For example, NOAA's National Operational Model Archive and Distribution System, which is Web-based and provides both real-time and retrospective format with independent access to climate and weather model data
- **Operational Level:** For example, requirements to deliver time-critical information, e.g., within 1 minute of issuance and to improve NWS' ability to prioritize urgent information over non-urgent information
- **Service level:** Expansion of fee-for-service dissemination similar to the Family of Services program, adding stringent delivery performance requirements for those customers



User input on these points will help NWS improve its services. If you have information you believe would help in this analysis, please provide your input by July 31, 2011, to Robert Bunge: 301-713-0882 x 114, nwsrearch@noaa.gov. ☼

Emergency Response Technology Goes On Demand

When the American Red Cross responded the morning after the May 24 tornado outbreak in central Oklahoma, it had a new tool in its pocket: the Warning Decision Support System—Integrated Information (WDSS-II), developed by NOAA's National Severe Storm Lab. The new tool cut disaster assessment time from 72 hours to 24, a major improvement that could save lives when it comes to rescue in the wake of a disaster.

The WDSS-II works by narrowing when and where the severe weather most likely occurred. Using radar, satellites and other observation systems, the On Demand feature of the tool records tracks of rotation and hail swath images that can be opened in Google Earth. When street maps are overlaid with these images, disaster teams can assess which areas likely need assistance first as well as the most accessible routes to take.

"They no longer have to put boots on the ground to visually assess the situation before planning how they will deploy response teams," comments Kurt Hondl, National Severe Storms Lab (NSSL) research meteorologist. "It makes the coordination and planning of the American Red Cross's response so much more efficient."

The WDSS-II On Demand software is available to Red Cross officers and other assessment organizations. The Red Cross has already trained more than 250 volunteers in Oklahoma and Texas to use the software. Other organizations, like FEMA and the Department of Homeland Security, have begun to take advantage of the technology as well. Emergency managers are encouraged to register on the On-Demand site. No registration for the On-Demand data is required if you are already on a .gov, .edu, or.mil domain.

For more information, contact Travis Smith at NSSL.☼

NWS Public and Staff Training Resource Gets Facelift

By Elizabeth Page, Associate, COMET

COMET unveiled a new version of its Meteorologic Education (MetEd) Website this spring. The newly redesigned interface presents a clean new look that help users access modules and their personal information with ease. For users who access the modules through the Commerce Learning Center, the changes will be transparent; however, if you explore MetEd directly you will notice the new look and features. ☼

Flooding/Hydrology

NWS Responds to Midwest Flooding with Onsite Support

By Mike Moritz, WCM, NWS Hastings, NE

Flooding in the Midwest made national news in June. NWS meteorologists from North Platte and Hastings, NE, provided Impact-Based Decision Support Services at the Nebraska Emergency Operations Center (EOC) in Lincoln, NE, for this extreme event. Excessive snowmelt runoff combined with heavy late spring rains resulted in widespread flooding along the Platte and Missouri River basins across Nebraska. Since June 7, NWS meteorologists have supported the state EMA by providing daily weather briefings to the Incident Commander, political dignitaries, the Nebraska National Guard and various state agencies.

Nebraska Governor Dave Heineman, seated at right front, hears Al Berndt, Assistant Director of NEMA Operations Center, standing at right, brief on the Platte and Missouri River Flooding in Nebraska. Also pictured, is Jeremy Wesely, NWS Senior Forecaster.

Most critical have been the impacts at gaging stations downstream of reservoirs that were opened. In addition to flood related information, NWS meteorologists provided critical information during a widespread severe weather outbreak on June 20, during which more than a dozen tornadoes occurred in south central Nebraska alone.

Both NWS North Platte and Hastings will continue to provide staff for the EOC for the rest of the summer, along with providing remote weather briefings and assistance. Spearheading the effort are Rick Ewald, Science and Operations Officer at Hastings; Cindy Fay, Senior Meteorologist at Hastings; and Rebecca Kern, Meteorologist, NWS Valley/Omaha office. ☼

Hurricanes

Follow the National Hurricane Center on Facebook and Twitter

By Dan Brown, Senior Hurricane Specialist, National Hurricane Center

The National Hurricane Center (NHC) joined Facebook and Twitter in time for the start of the 2011 Hurricane Season. NWS is currently providing Facebook pages as an experimental

service across the country. NHC is using Facebook to highlight its outreach and educational efforts. For example, during National Hurricane Awareness Week, the NHC added daily hurricane forecasting and preparedness posts. The posts included links to new PSAs created by NWS, NHC and FEMA. The page also has been used to educate the public about hurricane forecasting and the NHC advisory products.

During the hurricane season, NHC plans to add daily posts summarizing the tropical activity in the Atlantic and eastern North Pacific basins. NHC will not replicate its Website on Facebook. For the latest storm information go to www.hurricanes.gov.

NHC's presence on Twitter is part of an NWS prototype activity. NHC is using Twitter to help decision makers and the public receive notifications of the latest hazardous tropical weather systems. A Tweet will be sent whenever NHC issues:

- A public advisory regarding a tropical cyclone (TCP)
- A tropical cyclone update (TCU)
- A position estimate (TCE)
- A tropical weather outlook (TWO)

Each tweet will contain a link to an NHC product. NHC has two Twitter accounts:

- Atlantic basin, which includes the Gulf of Mexico and the Caribbean Sea: @NHC_Atlantic
- Eastern North Pacific basin: @NHC_Pacific.

NHC Tropical Weather Outlooks and tropical cyclone advisory products are also available via e-mail.☼

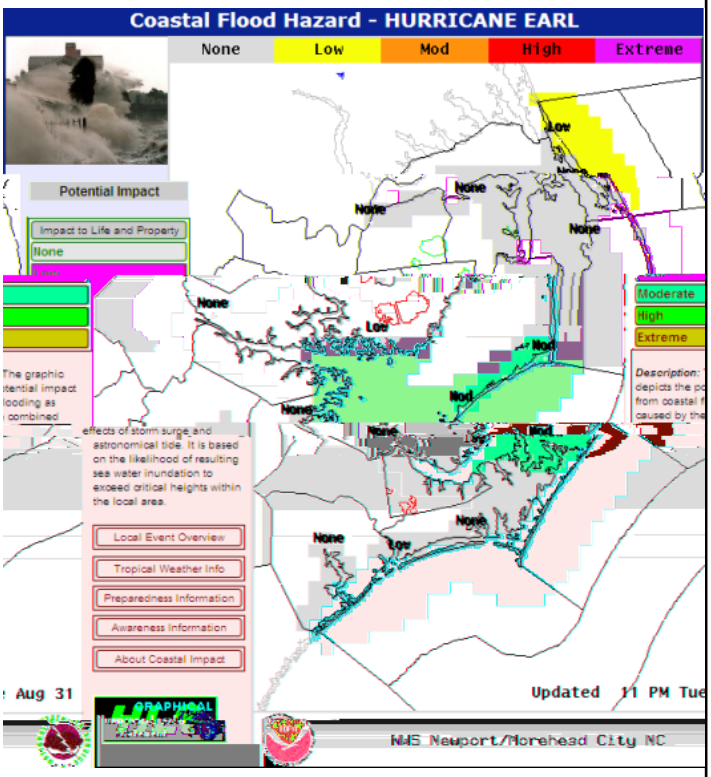
NWS Seeks Feedback on Tropical Cyclone Impact Graphics

By John Kuhn, Meteorologist, NWS Marine and Coastal Services Branch

To help us improve our products, please provide your feedback on Experimental Tropical Cyclone Impact Graphics. The four graphics are an Internet-based, decision-support service that illustrate impacts for the following:

- High wind
- Coastal flooding
- Inland flooding
- Tornadoes

Each graphic shows potential impact using descriptions unique to the local WFO's area. Coastal WFOs—Atlantic and Gulf Coasts, San Juan, San Diego and Los Angeles—create the graphics whenever tropical cyclone watches or warnings are in effect. The graphics are available in KML and NetCDF formats. Please provide your comments through an NWS User Survey. ☼



Example of Tropical Cyclone Impact Graphic for coastal flooding

Outreach Action

Pirates Weather Day is a Hit for NWS Pittsburgh

By Charlie Woodrum, Meteorologist, NWS Pittsburgh, PA

This spring, NWS Pittsburgh, PA, teamed up with the Pittsburgh Pirates to teach nearly 5,000 elementary and middle school students weather safety and science during Weather Day at PNC Ballpark. The WFO coordinated the event, which included the media, the Carnegie Science Center, the American Red Cross and the Southwest Pennsylvania Chapter of the American Meteorological Society.

Students from Martin Luther King School sport the When Thunder Roars, Go Indoors! visors.

The event began with Meteorologist Jeff Verzyla from KDKA-TV and our staff quizzing students on weather knowledge. A video of the Hempfield Township tornado of March 23, 2011, played on the jumbo-tron and was a powerful reminder that tornadoes can happen in western Pennsylvania. The students learned the two safety mottoes: "When Thunder Roars, Go Indoors" and "Turn Around, Don't Drown." The Pirate Parrot mascot sported a rain coat and held a weather radio as students learned how weather radios save lives.

After the presentation, students went to weather-themed booths. At the NWS booth, staff quizzed students on lightning safety and explained clouds, precipitation types and the difference between watches and warnings. The Red Cross conducted emergency preparedness education. The Carnegie Science Center provided hands-on activities for the students. The local AMS chapter, led by students from California University, PA, taught how to make weather maps and demonstrated the tornado-in-a-jar experiment.

The Pirates were so impressed with the success of the event, they plan to make Weather Day an annual event at PNC Park. ☼

Job Shadowing Ensures Better Prepared Workforce

Job shadowing in SPC: Oklahoma City, OK Harding Charter Prep High School student Ashley Sebree, right, and SPC Lead Forecaster John Hart.

By Jeff Peters, Forecaster, NWS Storm Prediction Center

Every year, an estimated one million students get to see the work world as a job shadow at 100,000 U.S. businesses, with the annual kickoff on Feb. 2, Groundhog Job Shadow Day. Students benefit by making the connection between what they learn in the classroom and how it's applied in a career field. Employers benefit by having a better prepared workforce.

I had seen the benefits of job shadowing as a host and mentor at NWS Chanhassen, MN, and suggested starting a program at the Storm Prediction Center (SPC) in 2004. With full support from SPC management and staff and the Norman, OK, public school district, the first student shadows arrived that spring.

The program initially was geared toward high school students interested in meteorology. By shadowing a severe weather forecaster, students saw firsthand the need for a strong foundation in math, science and writing skills. In addition, students also gained information

about NOAA scholarships and job opportunities. In 2005, the program was expanded to include college students. In all, the SPC has hosted 60 students for full and half-day job shadow sessions.

In spring of 2009, the Norman Chamber of Commerce sought to expand job shadow opportunities for Cleveland County, OK, high school students. Given the success of the SPC job shadow program, I agreed to lead this effort with support from Andrea Melvin, Outreach Program Manager at the Oklahoma Climate Survey, Melissa Hurlbut, SPC Forecaster, and Tim Marquis, NWS Student Career Experience Program student.

Our team hosted training for Norman government agencies and companies dealing with weather. Students applied for job shadow slots in weather-associated jobs with SPC, NWS Radar Operations Center, WFO Norman, NWS Public Relations, and the Oklahoma Climate Survey. The initial event was such a success that we plan to expand the program to include college students. ☼

NWS Helps Prepare Deaf, Hard of Hearing Community for Disasters

By Tom Johnstone, WCM, NWS Nashville, TN

In Tennessee alone there are at least 500,000 residents who are deaf or suffer from significant hearing loss. This community has traditionally been underrepresented in disaster preparation and response. To fill this gap, a committee consisting of local, state and federal agencies was formed in Nashville to better prepare this community. The Emergency Awareness and Readiness Services (EARS) committee includes NWS and the Nashville Office of Emergency Management.

EARS was formed by Donicé Kaufman, Director of the Wellness and Youth Program at Hearing Bridges of Nashville, a Deaf/Hard of Hearing advocacy group.

To better familiarize EARS committee members with the challenges the deaf/hard of hearing community faces, in August 2010 Kaufman arranged a workshop taught by the Community Emergency Preparedness Information Network. Many EARS members were surprised to learn that American Sign Language (ASL) is as different from spoken English as is Sanskrit or Mandarin. It was also enlightening to discover the broad spectrum of communication abilities in the deaf community. Many who lose their hearing later in life do not know ASL and many who were born deaf cannot read English.

To help meet EARS goals, NWS Nashville developed a special SKYWARN® Spotter Training Class. In addition to featuring closed captioned videos, the training is taught in ASL. Espotter, Facebook and other electronic means are highlighted as the primary reporting systems, as opposed to telephone and amateur radio.

*NWS Nashville staff uses American Sign Language to teach **SKYWARN®** Training for the Deaf/Hard of Hearing.*

The interpreted SKYWARN® class was taught for the first time at the July 2011 Tennessee Association of the Deaf biennial meeting. NWS Nashville Meteorologist Trevor Boucher, an ASL communicator, instructed the class.

"Teaching the spotter class to a deaf audience was a much different experience than teaching to a hearing class," says Boucher. "The audience focus is on the interpreter not the speaker. Also, there is a considerable lag between speaking and interpretation. It can take 10 or 15 seconds for the audience to acknowledge a point or laugh at a joke." The class was well received by the 35 attendees. ☼

Nearly 200 People Attend New York SKYWARN® classes

By NWS News Staff

SKYWARN® severe weather spotters provide critical weather information to NWS. To ensure NWS they have qualified spotters, WFO Binghamton, NY, stepped up recruitment efforts. The office partnered with two local TV stations—WSTM in Syracuse and WKTV in Utica—to draw attendees. They also advertised in local newspapers, through NWR, Facebook and the WFO Webpage.

NWS General Forecaster Erik Heden explained how to submit reports to the office via e-mail during SKYWARN training class held at the East Syracuse-Minoa High School. Photo by Patricia Douglass, NWS.

"The response was overwhelming," said NWS General Forecaster Erik Heden. "Enrollment went from 12 people to 75 in a matter of 2 days."

Retirees, teachers, middle school students, amateur radio users and individuals in local law enforcement showed up to become SKYWARN® severe weather spotters.

The first class was scheduled for WSTM studios in Syracuse, but due to the overwhelming response —around 150 people—organizers moved it to a local high school. Chief Meteorologist Wayne Mahar from WSTM broadcast live from the school during the 5 pm, 5:30 pm and 6 pm newscasts.

The second class drew 50 people and took place about an hour east of Syracuse at a newly-opened training center. WKTV Meteorologists Bill Kardas and Jill Reale promoted the event during their newscasts and on the station's Facebook page. WKTV also conducted an interview with Heden during the noon newscast the day before the event.

Both classes provided an opportunity for all ages to learn more about weather. Several people couldn't wait to sign up and attend an advanced course. Future meteorologists were even discussing which college to attend to major in meteorology. ☼

Collaboration Enhances Weather Services at National Park

By Pat Vesper, WCM, NWS Midland, TX; Todd Lindley, Meteorologist, NWS Lubbock, TX

The strongest wind gust officially measured at Guadalupe Pass, TX, was 128 mph on January 17, 1996, well above hurricane force. Guadalupe National Park Service (NPS) rangers believe even stronger winds occur near the visitor center, posing a significant risk to visitors.

In October 2006, NWS Forecasters Todd Lindley, WFO Lubbock, and Cody Lindsey, WFO Midland, presented research on severe mountain winds to rangers at Guadalupe Mountains National Park, TX. These two forecasters worked on improving high wind forecasts and warnings for the park based on mountain wave signatures in high-resolution forecast computer models.

WFO Lubbock staff had recently developed an education weather kiosk in Lubbock's Science Spectrum. Lindley and Lindsey felt a similar kiosk at the park could reduce felt a similar kiosk at the park could reduce injuries and property damage during wind events. Park staff was interested but by early 2009, concerns over display space and funding threatened to derail the project. In an attempt to keep the process alive, the forecasters enlisted Texas Tech University staff.

During a presentation at Texas Tech on the mountain wave study, Lindley met with Wes Burgett, Operations Manager of the university's West Texas Mesonet (WTM). Burgett expressed interest in acquiring wind data from the Guadalupe Mountains and a willingness to install an

automated research-caliber weather station there. By late 2009, Burgett was prepared to deploy a weather station in the park that would supplement the proposed kiosk with online weather data updated minute-by-minute, pending NPS approval.

The kiosk was installed at the park in December 2010. It provides easy touch-screen access to weather observations and forecasts at sites across the park and the broader west Texas/New Mexico region. The kiosk also alerts users to park weather hazards and provides safety information customized to hikers and campers. Finally, an educational section explains the science of the infamous Guadalupe Mountains winds.

Completing this ground-breaking project required the work of many staff members at both WFO Midland and WFO Lubbock. Perhaps the most important support came from Wes Burgett of Texas Tech.

Expanding the project through the WTM and integrating high-quality data from one of the most visited and wind-susceptible parts of the park, including critical information used during periods of wildfire potential, provided park officials, forecasters and academia the justification to complete the project. ☼

A new weather kiosk at Guadalupe National Park Service provides easy touch-screen access to weather observations and forecasts at sites across the park and the broader west Texas/ New Mexico region.

Rip Currents

Rip Current Awareness Program Updated

By Wayne Presnell, Meteorologist, Marine and Coastal Services Branch, OCWWS

Last year, more than 100 people died in the United States because they were caught in "The Grip of the Rip." This year's Rip Current Awareness Week, held June 5-11, shows rip current awareness is at an all-time high.

To further promote safety, the NWS rip current Website was redesigned for a more streamlined appearance. The site also includes a widget that hotels, local government and emergency management agencies can add to their Websites to promote awareness. Also new in 2011 are additional videos, updated tips and an updated Mark Trail comic.

The Associated Press ran the NWS press release about Rip Current Awareness Week, and the Facebook page is gaining notice with "likes" for the NWS rip current video. The NWS YouTube page ran the captioned rip current video for the Awareness Week.

Last year was a particularly deadly one for rip currents in the Great Lakes. In response, NWS offices partnered with local emergency services agencies to step up awareness efforts. The Michigan State Legislature officially declared June 5-11, 2011, as Rip Current Awareness Week for Michigan.

The majority of the rip current fatalities in the Great Lakes occur along the southern and eastern shores of Lake Michigan where there are many

popular beaches. To help reduce the number of fatalities, Grand Haven State Park hosts an annual Beach Survival Challenge that highlights beach and rip current safety. This year's event was the most popular ever. NWS Marquette, MI, has installed a rip current meter at the Picnic Rocks area in Lake Superior, which measures current speed and water temperature. The device relays the information to the Marquette City Police every 15 minutes, which shares the data with the local community. ☼

Severe Weather

Historic Tornado Outbreaks of April 2011 Service Assessment

By Sal Romano, Service Assessment Meteorologist, NWS Performance Branch

In May, the NWS began a service assessment to evaluate the response to the 362 reported tornadoes from April 25-28. This event included a record setting 312 tornadoes in one 24-hour period beating the record set by the event occurred April 3-4, 1974, when 148 tornadoes were reported.

This service assessment team focused on the locations most severely affected by the weather-related hazards: Alabama, Arkansas, Georgia, Kentucky, Illinois, Mississippi, Missouri and Tennessee. The 16-member team investigated:

- Timeliness, quality, accuracy and usefulness of NWS hazardous weather products and services
- Effectiveness of NWS internal and external coordination and collaboration for the tornadic events, including specialized decision support services and activities
- Effectiveness of NWS end-to-end information dissemination
- Value of social media
- Efficiency of product delivery
- Effectiveness of NWS office procedures
- Effectiveness of NWS severe weather awareness activities
- Public response contributing to the high fatality rate, including social science issues and the effectiveness of being a StormReady® community

The team completed the field state and is now writing the first draft of the Service Assessment. The report is scheduled for release by November. ☼

Before and after imagery depicting tornado damage in southeast Tuscaloosa, AL. The before imagery is courtesy of Google; the after imagery was acquired from an altitude of 5,000 feet above ground level by the NOAA King Air April 29, 2011.

NWS Uses Decision Support to Benefit Partners

By NWS News Staff

On April 27, violent tornadoes moved through Alabama, causing tragic deaths and massive destruction. Before, during and after the storms, NWS provided extensive decision support services to emergency management and the general public.

Alabama Power recognized the work of WFO Birmingham during the severe storm outbreak. Charles McCrary, President and CEO of Alabama Power, said in a letter addressed to NWS Director Jack Hayes, "The service Jim [Stefkovich] and his team provide is invaluable to Alabama Power. On numerous occasions, including April 27, their accurate forecasts allowed us to mobilize our resources and make preparations in advance of storms, resulting in reduced outage times."

Alabama Power, like many NWS customers, typically listens to WFO Birmingham's Daily Multimedia Impact Weather Briefing. When there is a significant threat of widespread damage, the office may get a call from Alabama Power to clarify their understanding of the weather situation so that they are better able to make internal decisions needed to support this critical community infrastructure.

Meteorologist-in-Charge Jim Stefkovich, WFO Birmingham, says "NWS Chat was developed in Alabama. WFO Birmingham was one of the first offices to use Daily Multimedia Impact Weather Briefings and put tremendous effort into our graphicasts. We are constantly looking for new methods to reach customers in social media platforms." ☼

Lightning Safety Awareness Campaign Targets Outdoor Venues

By Donna Franklin, NWS Lightning Safety Program Lead

In 2011, eight adults, including a first responder, and three children aged 11-13, have been killed by lightning in the United States. Summer is the time for backyard barbecues, trips to the beach and lots of outdoor fun, but it's also a time when the atmosphere heats up and dangerous thunderstorms become more frequent. After a 10-year campaign to reduce fatalities, the average annual number of lightning deaths has dropped from 73 to 55, but that's still too many. Remember, "*When Thunder Roars, Go Indoors!*"

This year, the NWS unveiled a new community-based volunteer program to increase awareness about the danger of lightning at outdoor recreational venues, such as local parks, ball fields, outdoor concert arenas, golf courses and swimming pools. NWS created lightning safety awareness signs local communities can install at public places to encourage people to go indoors when they hear thunder.

Most people know lightning is dangerous, but many victims wait too long to get to safety. Thunder is the early warning for lightning. Nearly 85 percent of lightning victims are male, a fact since NWS began keeping records in 1959, so it's especially important to teach young men to make smart decisions during thunderstorms. When people hear thunder, they need to immediately stop what they are doing and go inside.

To learn more about how your community can get involved in the new volunteer lightning safety awareness program, go to the Lightning Safety homepage and click on the "toolkit" links.

To avoid being struck by lightning, take these steps:

- Get into a fully enclosed building or hardtop vehicle at the first rumble of thunder
- Stay indoors for 30 minutes after the last thunder clap
- Monitor the weather forecast when you're planning to be outdoors
- Have a plan for getting to safety in case a thunderstorm moves in
- Do not use a corded phone during a thunderstorm unless it's an emergency; cell phones are safe to use
- Keep away from plumbing, electrical equipment and wiring during a thunderstorm. ☼

Kansas City Committee Posts 1,000 Lightning Safety Signs

By NWS News Staff

A short conversation during last fall's International Association of Emergency Management (IAEM) conference translated into a metrowide lightning education effort in Kansas City, MO, this summer. Captain Mark Owen of the Platte County, MO, Emergency Services Division discussed getting more attention for lightning safety at the IAEM conference with Donna Franklin, NWS Lightning Safety Lead.

Franklin explained a new program in which localities post NWS lightning safety awareness signs in public parks, football and baseball stadiums, pools, bike trails and other outdoor recreation venues. Other members of the Metropolitan EM Committee were just as enthusiastic and the project was born.

Metropolitan Emergency Management Committee members tabbed Owen as the project leader. Working with Franklin, Owen and the committee took the free NWS sign artwork and had signs made, which were posted during national Lightning Safety Awareness Week, June 19-25.

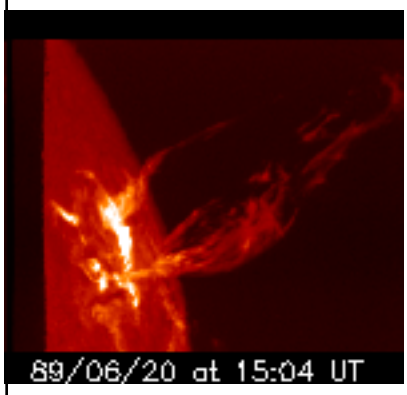
"When these people get behind something, it really flies," said WCM Andy Bailey, NWS Kansas City, MO. "If this project is as successful as Project Community Alert, there may be another order for lightning safety signs." Bailey noted the committee has conducted excellent promotions for NWR and StormReady® already.

According to committee figures, Project Community Alert has generated purchases of more than 90,000 NWR receivers to residents of the Kansas City metropolitan area. ☼

Space Weather

Weather, Not Aliens is the Threat from Space

By Genene Fisher, NWS Space Weather Program Lead, William Murtagh, Program Coordinator SWPC



The NOAA Space Weather Prediction Center (SWPC) is working closely with the EM community to increase awareness of how space weather can disrupt critical infrastructure. Space weather poses a serious threat through its potential to disrupt energy supplies, air transport, telecommunications and GPS operations. SWPC, the nation's official source of space weather forecasts, alerts and warnings, is providing education and training at FEMA Regions, Department of Homeland Security conferences and EM meetings.

In 2009, FEMA Region VIII was designated as the FEMA Region of Excellence for space weather and an effort began in collaboration with SWPC to educate federal, state and local EMs. To optimize situational awareness, telephone and email notification procedures are now in place. In addition, FEMA will be notified immediately when severe space weather storms are occurring or are expected.

Last year, FEMA completed an internal assessment of space weather impacts on critical infrastructure. That assessment led to a space weather preparedness workshop that included European private and public sector officials. The workshop increased awareness among both U.S. and European Union stakeholders and helped identify several specific opportunities to increase preparedness and enhance transatlantic ties and communication.

Last year, FEMA commissioned a research effort involving more than a dozen federal agencies and major commercial service providers to determine the critical communications impacts of extreme solar weather. Participants looked at potential impacts on radio and satellite communications, as well as wire line and wireless telecommunications. Knowing which communications systems will work and for how long, allows FEMA to more effectively plan.

This month, FEMA began a Federal Operations Plan to address space weather. The plan will detail how federal capabilities can be used following a severe space weather event to augment state and local government's capabilities. The goal is to have a defined, comprehensive federal capability responsible for responding to space weather events.

For more information, see the NWS Space Weather Website. ☼

Winter Weather/Climate

Arctic Ice Melt Focus of High Level Meeting

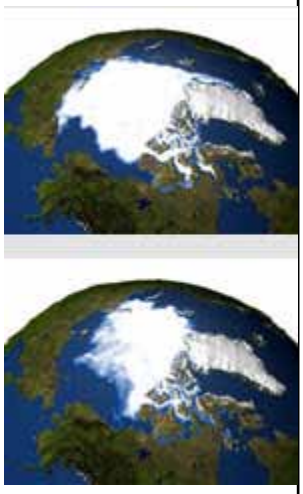
By Wayne Weeks, Meteorologist, NWS Marine Services Branch

The impacts of ice diminishing in the Arctic on naval and maritime operations were the topic of a major symposium in Washington, D.C., June 20-22. The meeting, hosted by the National Ice Center, featured top keynote speakers: NOAA Director Jane Lubchenco; U.S. Coast Guard Commandant Adm. Robert Papp Jr.; Chief of Naval Operations Adm. Gary Roughead; U.S. Sen. Lisa Murkowski (R-AK); U.S. Sen. Mark Begich (D-AK).

Three key needs were cited for the Arctic: More weather and ice observations, better forecast models and improved forecasts.

Dr. Lubchenco stated that it is not a lack of NOAA expertise, but rather a lack of resources which prevents NOAA from providing better services. Among other key needs for the Arctic were better communications, satellite imagery and synthetic aperture radar (SAR). Attendees proposed increased use of unmanned aerial vehicles, which could obtain SAR data. Under U.S. law, the Alaskan Arctic is most of the area north of the Aleutians, not just the area north of the Arctic Circle.

The information learned at the symposium will help NOAA write a new Interagency Arctic Research Policy Committee 5-year plan to be submitted to the White House Office of Science and Technology. If you would like to assist in the review, please contact Wayne Weeks or David Soroka. ☼



Side-by-side comparisons of sea ice from 1979 and 2003.

Online Summer and Fall Awareness Resources Available

Spring is here and summer approaching. You can find severe weather, flood, rip current and hurricane tips to ensure you are ready. Check out these sites for posters, videos, animations, photos, survivor stories, children's and teachers' resources, policy statements and much more. If you know of additional resources, contact Melody Magnus. ❄

Climate, Water and Weather Links

- National Weather Service Home Page
- Aviation Weather, Information and Resources
- Weather Safety and Awareness Brochures, Booklets, Posters
- Education and Outreach Videos, Multimedia and More
- NWS Local Office Key Contact List
- NOAA Weather Radio All-Hazards
- Past Weather and Climate from the National Climatic Data Center
- StormReady Home Page
- TsunamiReady Home Page
- Weather Fatality and Injury Statistics