

Aware

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to enhance communications within the Agency
and with the emergency management community.

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Climate, Water, Weather

Designated Weather Watchers: Focal Points for Awareness

By Dennis McCarthy, Director, Office of Climate, Weather and Water Services

As we begin preparations for the 2007 severe storm and flash flood seasons, I thought this might be a good time to give the Designated Weather Watcher concept a little more emphasis.

Throughout my career, some of the most unfortunate weather and flood related deaths and injuries have been those where people were unaware of a hazardous threat or event in progress. Even though timely watch and warning information was available, these people were unaware because they were not paying attention.

Even more unfortunate are the cases where large numbers of people are gathered at work, school, church and stores and were unaware of a developing hazardous event.

The Designated Weather Watcher is a person assigned to pay attention to the weather, while others go about their business. While there have been many great examples of the successful use of this concept over the past several years, the example receiving the most attention is one relating to the Parsons Manufacturing Company near Peoria, IL.

In July 2004, an F4 tornado struck the plant, leaving behind a mangled pile of manufacturing equipment, employee vehicles and building material; however, none of the 150 people in the building was killed or seriously injured. A well organized safety plan, a NOAA Weather Radio All Hazards relaying timely watches and warnings, and a Designated Weather Watcher made the difference between life and death.

At a recent Severe Storms Conference of the American Meteorological Society, NWS Integrated Services Coordinator and former Alaska Region Warning Coordination Meteorologist (WCM) Aimee Devaris gave a great presentation on Designated Weather Watchers. Her PowerPoint presentation is online at www.weather.gov/os/severeweather/resources/DWW1.ppt.

We invite you to make use of all or part of this presentation to promote the Designated Weather Watcher concept in preparedness and safety events for the upcoming severe storm and flash flood seasons.

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Aviation News

Free Aviation Safety Tips Available in *The Front*

By Melody Magnus, Editor, The Front
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The NWS Aviation Branch released a new edition of *The Front* in November. The Front offers aviation weather tips to pilots of private and commercial planes, balloons and other aircraft. NWS encourages pilots to download this free newsletter. Articles in the latest edition include:

- Creating an Improved Understanding of Flight Weather
- Radar Talk Turned into Plain Speaking



To be notified when *The Front* is released, email nws.postmaster@noaa.gov. To download the November edition, go to <http://weather.gov/os/aviation/front.shtml>. If you have article suggestions or comments, contact Michael.Graf@noaa.gov. ❄

Digital Services

Growing Up Behind the Scenes

By Glenn S. Austin, National Digital Services Program Manager
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Who uses the National Digital Forecast Database (NDFD)? There is no simple answer. Directly or indirectly, millions of people are reaping the benefits of the NDFD, many without even knowing it.

Since NDFD was first implemented in 2004, it has become a comprehensive repository of NWS weather forecasts. Currently, NDFD contains 16 unique forecast elements. Go to www.weather.gov/ndfd/ to find the complete list. Ten of these forecast elements are now operational. The remaining experimental forecasts will be individually assessed before shifting to operational status. NWS plans to add at least four new experimental forecast elements to the database in 2007.

We all make daily decisions based on weather forecasts. Besides getting the forecast through traditional media outlets, an increasing number of people prefer to use the Internet or mobile communication devices. Industries that use NDFD for decision making include transportation, agriculture, energy, real estate, forestry, public health and recreation. Many users have started getting their weather information online through the use of the NWS extensible markup language (XML) web service that became operational in December. The XML service usage has grown dramatically and now exceeds the use of our other text and graphical web-based services. Go to www.weather.gov/xml/ for more information on how to use this new service.

The NWS has created additional online tools for users who want to download the NDFD data in their format of choice. (See www.weather.gov/ndfd/technical.htm). This data integration functionality allows for automatic downloads into decision support systems like geographic information systems (GIS). In this framework, weather can be combined with other data layers and used to support a multitude of applications.

Aware

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Weather remains a huge factor for first responders and emergency managers as well as security and business continuity planners. These user groups, and others, will benefit from NDFD enhancements planned for the near future including the creation of digital weather datasets made available at higher temporal and spatial resolution. More collaboration is needed with users as we validate requirements and move forward to implement these changes. Information on these activities will be made available in future *Aware* issues. ✱

NWS Hosts National Digital Forecast Database Technical Workshop

By Glenn Austin and Andy Horvitz, Digital Services Transition Staff, and Kevin Barjenbruch, NWS Salt Lake City, UT
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On November 2, NWS hosted the second NDFD Technical Workshop at its Silver Spring headquarters. The more than 70 participants included partners and users from the private and commercial sectors, media and federal agencies. Attendees engaged in a wide range of discussions on using data formats, sharing digital data and developing new NDFD elements.

Ken Graham, Acting NWS Services Evolution Director, set the meeting's tone by stating the importance of working with the weather enterprise as NWS transitions to an impact-based concept of operations. In doing so Ken stated, "We can improve productivity, fit into the missions of other agencies and better address societal impacts. If these key objectives are accomplished, the NWS will be relevant in providing environmental services in 2015 and beyond." This message was well received by the group.

Attendees asked questions about the relationship of NDFD, the Next Generation Air Transportation System (NGATS) and the DOT Intelligent Transportation Systems Vehicle Infrastructure Integration (VII) initiative. NWS is part of the Joint Planning and Development Office (JPDO) for NGATS and is also involved with the Federal Highway Administration on VII.

The workshop was highly interactive with partners providing feedback on the content of the current database as well as comments on the accessibility of the data. Presentations were made on methods customers can use to download, convert and use the data.

Attendees were very interested in learning more about the processes created by the NWS and NOAA's Coastal Services Center to allow GIS users to access and download the data. Participants were also interested in learning more about acquiring archived NDFD datasets from the National Operational Model Archive and Distribution System, part of the National Climatic Data Center.



Attendees all agreed that to keep the lines of communication open and keep pace with the ever-changing technology, NWS should schedule annual technical workshops. Joe Koval of The Weather Channel noted, "The technical workshop was a good opportunity to discuss the promise that the NDFD holds. The presentations on data retrieval were especially informative. As the NDFD continues evolving in its importance to the community at large, we certainly look forward to attending future workshops."

For a summary of the 2006 NDFD Technical Workshop and to download presentations, visit www.weather.gov/ndfd/tech_workshop.htm. The NWS tentatively plans to host another NDFD Technical Workshop in November 2007. Read future issues of *Aware* for more information about next year's workshop. ✱

NWS Prepares Move to Operational VTEC for Selected Flood Watches, Warnings, Advisories

By Tom Donaldson, Hydrologic Services Branch
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In April, selected NWS Weather Forecast Offices (WFO) began issuing operational Flood Warnings, Watches and Advisories for forecast points with experimental VTEC using the X code. WFOs prepare these products using the RiverPro software application on AWIPS. Specifically, the products involved include:

- Flood Warning for Forecast Points (FLW)
- Flood Statement: Follow-up for Flood Warning for Forecast Points (FLS)
- Flood Advisory for Forecast Points (FLS)
- Flood Watch for Forecast Points (FFA)

NWS ended its formal Operational Test and Evaluation (OT&E) for these products on November 30. Offices taking part in the OT&E will continue to use Experimental VTEC until July 17, the Initial Operating Capability (IOC) date. Those offices will then change from experimental to operational. The remaining NWS offices will start using experimental VTEC as they complete the training and will change to operational on the IOC date. Next year, NWS plans to test other products containing Hydrologic VTEC, such as Flash Flood Warnings.

For a list of WFOs taking part in the test and other related information, go to www.weather.gov/os/vtec/hydro_vtec.shtml. For information on VTEC, including the phenomenon and significance codes associated with these hydrologic products, go to www.nws.noaa.gov/os/vtec/. ✱

EMWIN-N Team Release RFI for Development

By Robert Wagner, NWS Office of the Chief Information Officer
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Last fall, the EMWIN Team successfully tested the prototype EMWIN-N receiving system using the GOES-13 satellite. A formal test report posted on the EMWIN-N Website shows the performance of the prototype fully met the design criteria and had a more than ample operating margin against adverse radio broadcast conditions. These findings proved EMWIN-N is ready for further development. To alert the manufacturing community to the business opportunity presented by the EMWIN-N transition, the EMWIN team released an updated Request for Information (RFI) and held an RFI workshop for vendors on December 11, 2006.

At the workshop, staff stressed that the satellite footprint of EMWIN, which covers three-quarters of the world's surface, should provide a great opportunity for marketing EMWIN-N systems capable of handling both current and future broadcasts. Since the GOES-13 satellite will soon be put in storage, NWS is trying to secure the use of a satellite transponder to enable full time broadcast of the EMWIN-N test signal. Because of interest from vendors unable to make the December 11 workshop, NWS may hold a second workshop, possibly in February 2007.

In other developments, the EMWIN team is bolstering its training and public outreach efforts. Since October, we've provided support for two EMWIN sessions:



GOES Satellite

the Southeast U.S. EMWIN Workshop, sponsored by the Birmingham NWS office, and a WCM training course. We will continue to help at conferences and training sessions. We also are planning an EMWIN outreach page for our Website. This Website will offer EMWIN brochures and a general program slide show for use by anyone wanting to provide EMWIN briefings.

We've also teamed with NWS International Affairs to develop a pilot project to help support the Third Border Initiative. This project would supply current generation EMWIN systems to several Caribbean island nations. NWS will provide training and technical support on the installation and use of EMWIN receivers to a small group of meteorological and emergency management representatives from those nations.

To keep abreast of new developments in the EMWIN transition and to view the formal test report, visit the NWS EMWIN Website at www.weather.gov/emwin/index.htm. ❄

Free NWR Programming Events Helps Promote Weather Radio Use in Alabama

By *Tim Troutman, WCM, NWS Huntsville, AL*
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Since WAFF-TV in Alabama began an NOAA Weather Radio All Hazards (NWR) programming campaign with Midland radios in July, around 10,000 weather radios have been sold in the north Alabama area, a region heavily prone to tornadoes and other severe weather. Members of WAFF-TV and WFO Huntsville programmed about 5,000 of these weather radios at the programming events held in Southern Family Supermarkets across northern Alabama.

The events, which have been a huge success, included distribution of numerous weather safety brochures and programming of other types of weather radios.

Several members of the WFO Huntsville outreach team, forecaster Patrick Gatlin; interns Holly Allen and Kurt Weber; Student Career Experience Program member Daniel Lamb, and myself took part in the 14 programming events. ❄



WFO Huntsville WCM Tim Troutman programs a Midland NWR receiver for a north Alabama resident at a recent Midland/WAFF-TV Channel 48 NWR programming event in Albertville, AL.

Fire Weather

NWS Provides Fire Weather Forecasts in Kansas

By *Jennifer Stark, WCM, NWS Topeka, KS*
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Weather is a critical ingredient in the behavior and development of wildfires as well as in planning and executing controlled burns. In early October 2006, NWS offices in Dodge City, Goodland, Wichita and Topeka, KS, and in Hastings, NE, began providing a full suite of fire weather forecast products for the state of Kansas.

For decades, NWS has provided fire weather forecast products and services for many parts of the nation. Last winter, the U.S. dealt with drought and unusual fires in the southern plains. In Kansas, drought conditions over the winter and spring led to numerous fast moving grass fires that caused damage to homes, businesses and emergency vehicles. In support of local, state and federal emergency management staff, land management agencies and firefighters, NWS is now providing the following new forecast products for Kansas:

Fire Weather Planning Forecasts are a 7-day forecast with specific fire weather elements. This product has a short narrative describing the weather pattern, followed by:

- Tabular 1- to 2-day forecast of cloud cover
- Precipitation probability, type and amount
- Maximum and minimum temperatures
- Relative humidities
- Winds
- Mixing height
- Smoke dispersal
- Lightning activity level
- Haines indices (the Lower Atmosphere Stability Index)
- Narrative outlook for days 3 to 7

Spot Forecasts are Point specific forecasts generated at the request of state and federal land management agencies before controlled or prescribed burns. In a wildfire, NWS can generate spot forecasts for local, state or federal emergency management or firefighters. Spot forecasts are requested via the Web page for the servicing NWS office. Once the office receives the request, staff can prepare the spot forecast in 30 to 45 minutes and fax it back to the requesting agency or sent it out via the Web page.

The Red Flag Program warns firefighters of the potential development and growth of large wildfires. When dry fuels or cured vegetation exist in combination with critical fire weather elements, NWS issues a Fire Weather Watch to indicate those conditions are expected to continue for the next 18 to 36 hours. NWS will issue a Red Flag Warning when fire conditions are expected to peak in the next 12 hours. Weather conditions typically prompting NWS to issue a watch or warning are high winds and low relative humidities that last for 3 hours or longer. Dry lightning or rapid wind shifts also cause extremely dangerous fire weather conditions.

Rangeland Fire Danger Index describes the Day 1 fire potential for six divisions of the state where tall grass prairie is the prevailing form of vegetation. The product gives five categories with descriptive ratings from low to extreme. The index is generated using:

- Minimum afternoon dewpoint
- Average afternoon sky condition
- Percent green of the vegetation as determined by satellite observation
- Maximum afternoon temperature
- Average afternoon wind speed

NWS's fire weather program in Kansas contributes to fire safety and preparation, as well as helping local, state and federal officials to determine fire situations requiring additional resources. The Fire Weather Watch and Red Flag Warning program raise the awareness of critical fire weather days to citizens living and traveling in Kansas. If a Fire Weather Watch or Red Flag Warning is issued for your area, information will be included in the Hazardous Weather Outlook product and played over NWR. *

2006 Fire Season a Record Year for the Nation and NWS

By Larry Van Bussum, NWS National Fire Weather Fire Operations Coordinator
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The 2006 fire season turned out to be a record year for number of acres burned and for NWS on-site support for fire. More than 9.5 million acres were burned in 2006, almost 1 million more acres than the previous record set in 2005. Dry conditions and heavy fuels in the nation's forests and grasslands led to the large number of fires.

The NWS Incident Meteorologists (IMET) program also set a record this year for number of dispatches and hours worked in on-site support. IMETs were called on 207 times for on-site support lasting from a few days up to 2 weeks. Almost 60,000 hours (about 29 work-years) were logged by IMETs, trainees, WFO support staff and other NWS employees in the 2006 fire season, marking the largest single mobilization of NWS resources for non-routine emergency operations in the agency's 136-year history. ✱

Flood Safety

Special Events Planned for Flood Safety Week: March 19-23

By Larry Wenzel, NWS Hydrologic Services Branch
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The third annual Flood Safety Awareness Week, scheduled for March 19-23, 2007, is just around the corner. This year's online Flood Safety Awareness Week toolbox, found at www.weather.gov/floodsafety/, has a new look for easier access to an expanded set of outreach and education tools.

As Flood Safety Awareness Week approaches, the NWS and local communities are gearing up for the event. Mark your calendars now and keep checking our Website for additions. Listed below are a sampling of what is planned:

- Eastern Region Headquarters, in partnership with the Susquehanna River Basin Commission, will be promoting Turn Around Don't Drown™
- In West Virginia, work is underway to get a Governor's Proclamation for the week
- The Southeast River Forecast Center and associated U.S. Geologic Survey Science Centers will be installing High Water Mark Signs throughout their areas with the first sign to be unveiled in Rome, Georgia
- Across Oklahoma, schoolchildren have been creating and distributing Turn Around Don't Drown™ posters and calendars to be provided to communities statewide. ✱



Flood Safety is just one focus for the week. Other themes include determining Flood Risk and Insurance, Turn Around Don't Drown™, The Advanced Hydrologic Prediction Service, and Flooding and Related Phenomena such as snowmelt, ice jams, debris flooding, inland tropical flooding and more.

Turn Around Don't Drown™ Signs Funded by Local Public Works Department

By Jerry Orchanian, WCM, NWS Nashville, TN
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One way county and emergency managers have been able to acquire Turn Around Don't Drown™ (TADD) signs for low lying and flood-prone areas in their county is to apply for a \$1,000 grant from Allstate Insurance. The Huntsville, AL, area took this approach with the help from Tim Troutman, WCM, NWS Huntsville, AL, and EMA Director Mike Hall in Lincoln County, TN. Because the TADD signs were made and distributed by a private company, the approximate cost for each of the 30 signs they obtained was only about \$33.

Scott Harris, Acting Deputy Director of Davidson County, TN, Office of Emergency Management, came up with another approach. He arranged for the Public Works Department, under the Tennessee State Highway Department, to make around 40 of the signs using the department's budget. The signs made by Public Works are highly reflective, more so than the original signs. Consider checking with your local Public Works Department to see if this can be done in your area. ❄

HAZMAT Support

WFO Lake Charles Focuses On HAZMAT Forecast Support

By Kent Kuyper, Senior Forecaster, and Montra Lockwood, Service Hydrologist, NWS Lake Charles, LA
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For the past few years, the WFO Lake Charles has become increasingly active in providing spot forecast support for Hazardous Materials (HAZMAT) events. WFO forecasters have been providing this type of support for controlled burns and wildfires through their fire weather program. Recently, NWS has expanded this support to cover all types of HAZMAT events, from oil and gas well blowouts and spills to the Space Shuttle Challenger loss. Since late 2005, the WFO provided time critical environmental information and forecasts for six HAZMAT incidents:

- Two large oil spills in the Gulf of Mexico and on the Calcasieu ship channel
- Two events involving the demolition and clean-up of debris left by Hurricane Rita
- A gas plant fire
- Recovery of a tugboat off the Louisiana coast after it collided with an unknown object and sank to the Gulf floor, also related to Hurricane Rita.



Aerial view of an oil spill on the Calcasieu River in southwest Louisiana on June 25, 2006.

The WFO issued more than 300 HAZMAT Spot Forecasts throughout this period to support hazardous incident clean-up and recovery. For more information about these events, visit the WFO Lake Charles Website at www.srh.noaa.gov/lch/.

Staff of the WFO's forecast and observation programs spent about 500 hours supporting HAZMAT recovery efforts. The WFO received 30 to 40 supplemental surface observations per day from oil rigs in the northwest Gulf of Mexico and compiled and transmitted them during these incidents. Despite the extra effort required, many of these forecasts were produced as part of the daily routine without extra staffing, except during severe weather and flood events.

WFO Lake Charles has promoted HAZMAT forecasts to local, state and federal government officials. State and local emergency managers have provided mutual aid radios to the Lake Charles office to monitor local HAZMAT emergencies. These radios have been useful for communicating directly with on-scene coordinators during rapidly changing weather events.

The relationship between the Lake Charles office and the people it serves has been strengthened through this personalized support. Monica Allison of the U.S. Coast Guard stated, in reference to support during Hurricane Rita debris clean-up, "The recent reports that I have

been receiving from . . . Lake Charles have been outstanding . . . Your continued support of our operation, while it may seem trivial, is vital to our success and the health and safety of the crew working out of Gibbstown. In short, it is greatly appreciated.”

Hurricane Safety

NWS Southern Region Offices to Participate in Hurricane Conference

By Dan Noah, NWS, WFO Tampa Bay Area, FL
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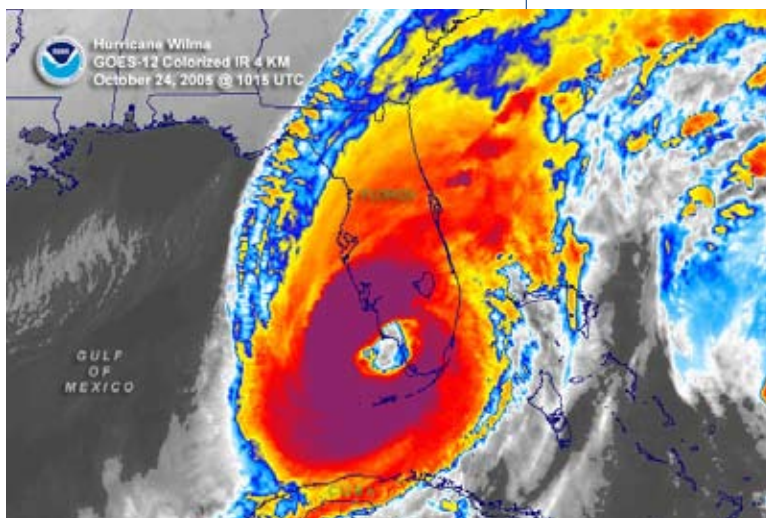
Staff of the NWS Forecast Offices in Tampa, Jacksonville, Melbourne and Miami will be taking part in the 2007 Florida Governor’s Hurricane Conference, May 14-18 in Ft. Lauderdale. Attendees can take part in five training sessions, seven workshops and five tours of the Tropical Prediction Center in Miami. Training sessions scheduled include:

- Tropical cyclone basics
- Forecasting
- Impacts
- Hurricane decision-making scenario

Workshops will include:

- Hurricane mythology
- Inland hazards
- Infamous Florida hurricanes
- Storm surge forecasting
- Effects of El Niño

NWS is a member of the planning committee for this conference, which is Florida’s largest hurricane meeting for emergency managers and responders. Last year, there were more than 4,000 attendees. For more information on the conference, go to www.flghc.org. ❄



Hurricane Wilma, 2004

Marine Services/Rip Currents

Marine Professional Development Series Offers Two New Modules

By Richard May, NWS Marine and Coastal Weather Services Branch
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The Cooperative Program for Operational Meteorology, Education and Training (COMET) has recently released two new marine weather training modules. The modules, available to NWS staff, emergency managers and other partners, are produced by the Marine and Coastal Weather Services Branch, COMET and NWS marine forecaster experts.

- [Wind in the Marine Boundary Layer: A Forecaster's Guide](#). This course completes the “Wind and Wave” series of training topics. The module is intended for experienced forecasters and other users in a coastal or Great Lakes region with over-land and over-water forecast areas. The module highlights the differences between marine and terrestrial boundary layer winds.
- [Understanding Marine Customers](#). The class introduces the marine forecaster to a range of marine customers. All forecasters experience non-marine weather, but most have never been on the ocean. This Webcast gives forecasters an understanding of what is important to marine customers and why and help them create a better marine program.

NWS Forecasters can find the modules above, and other marine modules, in the NOAA Learning Management System (LMS) at e-learning.doc.gov/noaa/. Emergency Managers and other users can find the modules posted at the COMET Website: www.meted.ucar.edu/topics_marine.php. Forecasters are encouraged to take all the marine weather modules on NOAA's LMS for proper credit. ✱

Outreach and Education

NWS Assesses Service in Sparsely Populated Areas

*By Bryan Henry, Senior Forecaster, NWS Missoula, MT
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NWS Missoula, Montana recently concluded Phase 3 of a multi-year service assessment to area communities. The main targets of this latest effort were Grangeville and Orofino, ID; staff also assessed surrounding communities. Much like the first two phases, which centered on Kalispell and Butte, Montana, the primary objectives were to:

- Determine customer needs for information and services
- Evaluate communities' perception of the NWS
- Assess the quality of products and services rendered

Staff placed special emphasis on enhancing partnerships as a means to improve communication of weather information in the sparsely populated areas. Team members developed a master list containing contact information for government agencies, emergency management, law enforcement, road departments, media outlets, schools, private businesses and storm spotters. In addition, teams of two went into the field to meet with customers. Existing partners were questioned about forecast biases, product and service quality, Website use, and overall perception of NWS.

New partners were asked about their needs for information and services. The teams demonstrated NWS Website capabilities, with a focus on meeting customers' needs for information.

Given the numerous microclimates across Central Idaho, partners were asked about local weather and flooding affecting their areas and the resulting impacts, such as downslope wind storms, canyon winds, smoke dispersion during fire season, heavy snow, flash floods and debris flows.

NWS Missoula gained much useful information during this project. Perhaps the most important finding was that the overall perception of NWS in Central Idaho is very favorable. Those surveyed were impressed that NWS devotes time and resources to determine their needs for weather, water and climate information. ✱

NWS Cohosts National Preparedness Town Hall Meeting

By Phil Hysell, WCM, NWS Blacksburg, VA
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In September, WFO Blacksburg, VA, partnered with the city of Roanoke, VA, to host the first ever Town Hall Meeting. The meeting's objectives were to promote safety and awareness of dangerous weather during National Preparedness Month, provide an overview of NWS digital and mobile services and answer questions and address concerns from members of the public.

Approximately 130 individuals took part in this special event. Each attendee was provided with a program and information packet that included FAQs, a list of NWS Websites for weather information and a survey. NWS also provided weather safety brochures.

The Blacksburg office has developed and maintained strong relationships with local media and emergency management. The office's involvement was instrumental in the success of the event. Mike Guzo, Roanoke Emergency Management Coordinator, was gracious in securing and funding the Roanoke Civic Center's auditorium. Local TV stations WDBJ and WSLS helped promote and publicize the event through stories on their local evening news broadcasts.

In addition to local television, the Blacksburg office advertised the meeting through the local newspaper, cable companies, radio stations, several Websites (including their own) and flyers in libraries, Red Cross centers, recreation centers and schools across a six county region. The office also sent out emails to spotters and emergency managers, public information statements and NWR announcements. The meeting also was advertised on the Roanoke Civic Center's marquee.

The event involved much of the Blacksburg staff in administration, promotion and presentation, including Lead Forecaster Jan Jackson; Science Operation Officer Steve Keighton; Forecasters Anita Silverman, Ken Kostura and Will Perry; Administrative Service Assistant Steve Loggains; and Meteorologist In Charge Dave Wert.

One SKYWARN spotter who attended the event said: "My husband and I had a wonderful time at the Town Meeting last night. I turned in a survey but I want to say again how organized and informative and yes, even interesting your presentations are. I guess there is a TV persona in each meteorologist, because all of you were very articulate and interesting speakers. And there must be a teacher in each of you as well because everything was explained in very understandable layman's terms without being condescending. I learn more and more every time I attend one of your activities. Thanks for all your hard work in putting the meeting all together."

The Town Hall format is a rare opportunity for the NWS to promote its products and services as well as obtain direct feedback from the public. To continue this dialog and provide a presence in the local community, the NWS Blacksburg office plans to organize future Town Hall meetings across its forecast area.

For more information about the Town Hall Meeting go to the NWS Blacksburg, VA, Website: www.erh.noaa.gov/rnk/Town_Hall_Mtg/Town_Hall_Summary.htm. ❄



Emergency Management Coordinator for the City of Roanoke, VA, Mike Guzo, addresses the Town Hall audience.

NWS Shares Disaster Preparation Tips With Hospitals and Care Centers

By Vernon Preston, WCM, NWS Pocatello, ID
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Mike Cantin, NWS Pocatello, ID, Forecaster speaks to staff at St. Lukes Medical Center in Ketchum, ID.

In an effort to promote weather safety, NWS Pocatello Forecaster Mike Cantin contacted administrators from local area hospitals and critical care centers to arrange visits to their facilities. Mike's visits included a slide presentation describing the NWS warning program, severe weather found in the area and safety tips.

Mike coordinated planning techniques with hospital administrators, emphasizing the need to obtain NWR receivers and place them in areas where decisions are made. Cantin also described other critical warning decision-making techniques, including how to use the www.weather.gov Web page, the EWARN email transmission program and the Emergency Alert System. Mike also gave out safety pamphlets and brochures to participants.

One of the NWS events coincided with a hospital's Community Outreach Program, with a larger than normal audience. Feedback from attendees was very positive.

These visits are a way to supplement the StormReady program. Having hospitals prepared before a disaster hits and keeping their decision makers informed during an event may assist the community in quicker response for those injured by severe weather. ❄

Special Outreach Program Developed for 911 Dispatch Personnel

By Vernon Preston, WCM, NWS Pocatello, ID
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Following up on its successful StormReady program, NWS Pocatello, ID, developed a special orientation program for 911 Dispatch personnel, enhanced it and added Fire Weather Dispatch Centers to the presentation circuit. The purpose of the new program is to increase dispatch staff awareness of NWS warning operations, severe weather warning criteria and collaboration techniques.

NWS focused the presentations on warning awareness techniques, with an emphasis on obtaining NWR receivers and locating them in user-friendly locations. Staff also described other critical warning decision-making techniques, specifically the benefits of using:

- The NWS Web page at www.weather.gov
- EWARN email transmission program
- Idaho Law Enforcement Telecommunications System
- Emergency Alert System

The final part of the NWS presentation was a scenario developed by COMET, the Cooperative Institute for Research in Environmental Sciences and the Fort Collins, CO, Emergency Management staff. The scenario demonstrates that each time the 911 Dispatch personnel reported severe weather information to the NWS and severe weather statements were forwarded to the media, the 911 center phone call inquiries went down. The decrease in 911 calls is evidence that collaboration between 911 Dispatch Centers and NWS can keep our public informed in real-time disaster situations.

Dispatch centers have been willing to take part, and feedback has been quite positive. One result of this new program has been a marked increase in the number of calls from dispatch centers while working weather events. The 911 Dispatch Centers have a vital role in obtaining real-time weather reports during disasters, and their staff is now aware of the need to collaborate with NWS to assist their communities. ✱

Be Ready Camp a Big Success!

By Tim Troutman, WCM, NWS Huntsville, AL
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Several members of the WFO Huntsville staff took part in the first annual NASA and U.S. Space and Rocket Center's Be Ready Preparedness Camp. Around 100 students received weather education and weather safety training and toured the WFO Huntsville office.

On the last day of the Camp, WFO staff took part in a large outreach event at the U.S. Space and Rocket Center where some 2,000 students and members of the public were provided with outreach materials. ✱



WFO Huntsville lead forecaster David Nadler provides local north Alabama students with outreach materials at the first annual Be Ready Preparedness Day at the U.S. Space and Rocket Center in Huntsville, AL.

Severe Weather/Tornadoes

Early Warnings and Quick Responses Protect Preschoolers and Postal Workers

By Ron Trumbla, NWS Southern Region Public Affairs Director
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Cold, wet and frightened, but safe and sound, best describes the 31 pre-school children carried out of the twisted wreckage of what had been the Fun Zone skating rink and learning center in Montgomery, AL, on November 15th. Alerted to the potential for tornadoes, the center director had them tucked away in the only portion of the building to survive the destructive winds of a powerful F2 tornado.

Directly across the street, approximately 100 people also found safe shelter in a U.S. Post Office after being alerted by NOAA Weather Radio All Hazards receivers located throughout the facility. In addition to the postal facility and rink, a nearby apartment complex and numerous vehicles were heavily damaged. Reports indicate the tornado struck at 10:30 a.m. (CST) - 37 minutes after the NWS Weather Forecast Office (WFO) in Birmingham, AL, issued a Tornado Warning for Montgomery County (9:53 a.m.). Just prior to issuing that warning, NWS Birmingham also notified emergency management Deputy Director Steve Jones via radio, and he ordered 68 warning sirens to be sounded immediately.

Montgomery County is one of 40 NWS StormReady communities in Alabama, and Jones says the citizens understand the need to seek shelter when they hear the siren's wail. There was also a heightened sense of awareness as NWS Birmingham had been issuing Hazardous Weather Outlooks explicitly highlighting the potential for tornadoes, communicating with emergency managers via an 800 MHz radio network and Instant Messaging core partners and the media for several days prior to the event.



Fun Zone Skating Rink and day care center destroyed by an F2 tornado in Montgomery, Ala. (Photo: Courtesy WSFA-TV)

The Montgomery tornado was part of a strong storm system that moved through portions of Arkansas, Alabama, Louisiana, Mississippi, Georgia and Florida during November 14th and 15th. The system spawned at least 16 tornadoes, killing one person and injuring 16 others. The fatality occurred when a tornado destroyed a mobile home in St. Helena Parish, LA. Heavy rainfall caused flash flooding across several areas in Arkansas, resulting in a number of high water rescues.

One notable incident in Jones County, MS, involved a family living in a trailer in their front yard while their Hurricane Katrina damaged home was being renovated. NWS Jackson, MS, had issued a Tornado Warning for the county 58 minutes before an F2 tornado touched down there. That warning was immediately relayed over Sheriff's Department scanners and picked up by the family. The tornado destroyed their trailer, but not before

they had abandoned it for a safer location. WFOs throughout the Southeast issued a total of 134 Tornado Warnings during the outbreak. The average lead time for the warnings was 17.5 minutes, well above the national average. ❄

NWS Evaluates Warning Services for a Tornado in Rogers, MN

By Wayne Presnell, Meteorologist, NWS Performance Branch
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Minnesota is known for its thousands of lakes and cold, snowy weather, but not for tornadoes; however, at 9:54 p.m. on September 16, 2006, an F2 tornado struck Rogers, MN, injuring six and causing one fatality. In November, NWS released its Service Assessment for this significant severe weather event. You can view or download the report at www.weather.gov/os/assessments/index.shtml.

Nine minutes before the tornado touched down and 12 minutes before the fatality occurred, NWS Chanhassen, MN, issued a Severe Thunderstorm Warning for the Rogers area at 9:43 p.m. The Storm Prediction Center (SPC) in Norman, OK, had issued a Tornado Watch for the Rogers area at 5:10 p.m., indicating this was a "particularly dangerous situation." NWS had not issued a Tornado Warning for this event, so the NWS Central Region assembled a team to evaluate NWS services and products and the performance of the NWS Forecast Office in Chanhassen, MN, which has warning responsibility for the area.

The team leader was Steve Piltz, Meteorologist In Charge (MIC) at WFO Tulsa, OK. Team members were Dr. Matthew Bunkers, Science and Operations Officer at WFO Rapid City, SD; Gary Szatkowski, MIC at WFO Mount Holly, NJ; Jim Keeney, Regional Warning Coordination Meteorologist in the Central Region Headquarters; and Wayne Presnell, Service Assessment Program Leader in the NWS Headquarters.

The tornado developed at approximately 9:52 p.m., touching down 3 miles west of Rogers, about 20 miles northwest of Minneapolis. It peaked in intensity as an F2 on the Fujita Scale at about 9:55 p.m. and was on the ground for 12 minutes during its 8-mile path. The first definitive radar evidence that the tornado was likely on the ground occurred at 9:54 p.m.

The fatality occurred at 9:55 p.m. The tornado was difficult to detect on radar because it was embedded within a line of thunderstorms. There were no classic radar signatures beforehand indicating the development of the tornado, which matured rapidly. The tornado dissipated before the office received any reports of damage in Rogers, and there were no reports of a tornado received by the office during the event. On the following day, the damage was determined to have been caused by a tornado.

Local emergency officials from Rogers and Hennepin County and television station meteorologists from the Twin Cities area interviewed by the assessment team were satisfied with the products and services from NWS Chanhassen during this event. They felt the Forecast Office did the best it could under the circumstances. A local Minneapolis newspaper surveyed its readers soon after the event, asking if the warnings and watches from the NWS during the event were adequate; the majority of the respondents indicated they were satisfied with the products and services.

The assessment team determined that issuing a Tornado Warning, with enough lead time to help reduce the chances of the fatality, was almost impossible. The team did find some areas for improvement concerning the WFO's severe weather operations and products. The service assessment report provides four recommendations to improve the efficiency of the WFO's severe weather operations and call to action statements associated with Severe Thunderstorm Warnings.

A number of enhancements currently planned for NWS WSR-88Ds might have helped in this event. The enhancements of faster volume coverage patterns, dual polarization, super resolution and 3-D displays may have allowed the staff to issue a Tornado Warning sooner. Access to local FAA Terminal Doppler Weather Radar Data could also have provided valuable information. These enhancements might have allowed for more lead time but, even if they were in place, a Tornado Warning with enough lead time to help prevent the fatality would have been difficult. ✱



Rogers, MN, Tornado. Damage caused by a tornado on September 16, 2006. Photo courtesy of Todd Krause, Warning Coordination Meteorologist, NWS Chanhassen, MN.

StormReady/TsunamiReady

StormReady Gains New York City, Six Flags Park TsunamiReady Grows on East Coast

By Melody Magnus, Aware Editor
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New York City joined the ranks of StormReady Communities in November and, with more than 8 million inhabitants, takes the honor of being the largest site. Efforts to win the designation for NYC have been going on for several years. This huge accomplishment is credited to the NWS Upton, NY, office on Long Island.

With its ongoing "Ready New York" campaign, the city has been educating millions of New Yorkers to all hazards, including weather, a key requirement of the StormReady program. During the past year, the Office of Emergency Management led a series of 82 presentations

in the five boroughs of New York City. “Household Preparedness” guides, “Beat the Heat” and “Hurricanes and New York City” brochures were printed in nine different languages and distributed. They are now incorporated on the city’s Website.

Working together with their partners at the NWS and the American Red Cross, the city has made sure New Yorkers know what a “Go Bag” is (a collection of items you may need in the event of an evacuation) and understand the importance of evacuating their homes when requested by authorities.

“New York City is proud to be the recipient of the StormReady designation,” said Office of Emergency Management commissioner Joseph F. Bruno. “We take natural hazards very seriously, and are committed to preparing city government and the public for all of the hazards that Mother Nature can bring.”

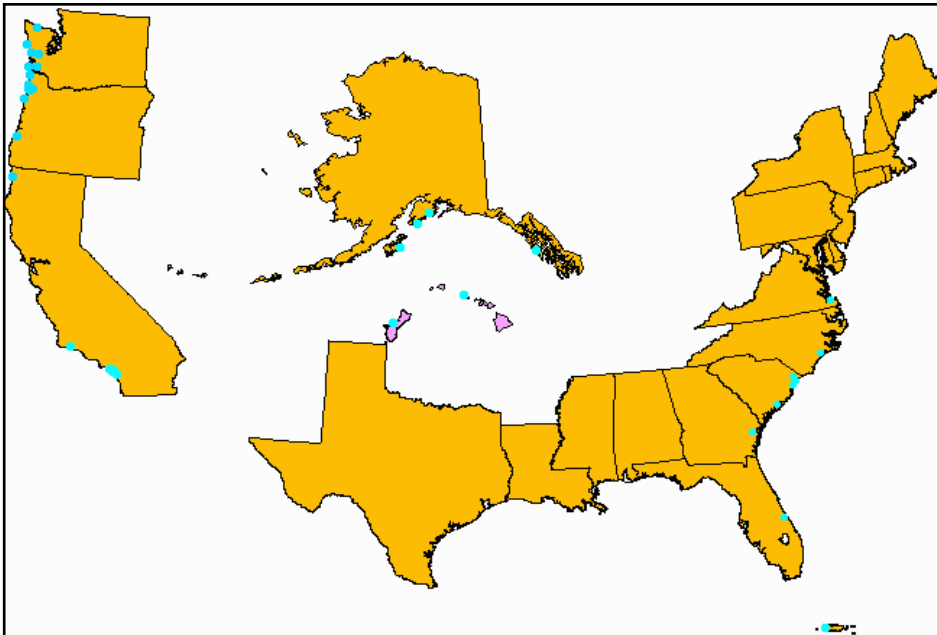
“New York City has been ravaged by excessively snowy winters with more than 40 inches of snow in each of the last 4 years,” said MIC Michael Wyllie, at the NWS forecast office in Upton, N.Y. “This is an unprecedented record. Last February, a blizzard deposited an all-time 24 hour record of 26.9 inches of snow at Central Park.”

The StormReady Program also welcomed Six Flags New England in Agawam, MA, to the program. The park’s Corporate headquarters says the New England designation is just the first of many for the nationwide theme parks. It hopes to eventually have all its sites recognized.

TsunamiReady Grows on East Coast

The TsunamiReady program gained several new East Coast sites in North Carolina, South Carolina and Georgia. New recognitions include Onslow County, NC, home of Marine Corps Base Camp LeJeune; Charleston and Horry Counties, SC, as well as Myrtle Beach and Surfside Beach, SC, some of the top resorts in South Carolina; and Liberty County on the Georgia Coast. Tsunamis are a real threat on the U.S. East Coast but are overshadowed by hurricanes and other hazards.

The StormReady program had almost 1,140 sites as of January 2007. For more information, or to see if your county or community is StormReady or TsunamiReady, go to www.stormready.noaa.gov. ❄



The NWS TsunamiReady program gained new sites in North Carolina, South Carolina and Florida. Guam and Hawaii, center, have all counties TsunamiReady. (Map not to scale.)

SnowNet Involves Schools in Weather Reporting

By Vernon Preston, WCM, NWS Pocatello, ID
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WFO Pocatello Forecaster Mike Cantin has developed a way to get community schools involved in weather reporting as a way to increase the number of snowfall reports. Area schools were contacted and asked to take part in a "SnowNet." Schools selected were mainly in rural areas, where reports are generally sparse. WFO Pocatello staff then taught students and staff where to place a snow board, how to properly measure snow and how to enter data. Data is gathered through the WxCoder program and then displayed on an internal Web page for the public and media to see.

Several school visits were also part of the program. In addition to sharing a variety of winter weather observation techniques, Cantin discussed winter weather safety with the students. Because of the significance of severe weather in the communities, teaching school children about all environmental hazards also sparked their interest in future careers in NOAA.

Because feedback on the program has been positive, WFO Pocatello staff hopes to gather a plethora of snowfall data this season and make it available to the public. In addition, area students who take part should benefit from hands-on science each day during the winter season. ❄

Online Winter Awareness Resources from NWS

By Melody Magnus, Aware Editor
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For information on winter weather awareness brochures, booklets and state awareness event links, go to www.weather.gov/os/winter/. See below for more awareness and safety information event links. ❄

Climate, Water and Weather Links

Aviation Weather:	aviationweather.noaa.gov/
Brochures/Booklets/Posters:	weather.gov/os/brochures.shtml
Education/Outreach:	weather.gov/os/edures.htm
Flooding/Water:	www.floodsafety.noaa.gov/
Hurricane Awareness:	www.weather.gov/om/hurricane/index.shtml
Lightning Safety:	lightningsafety.noaa.gov/
Marine Weather:	weather.gov/os/marine/home.htm
MIC/WCM/SOO/DOH List:	weather.gov/os/wcm-soo.pdf
Natural Hazards Statistics:	weather.gov/os/hazstats.shtml
National Digital Forecast Database:	weather.gov/ndfd/
NOAA Weather Radio Information:	weather.gov/nwr/
Past Weather/Climate:	lwf.ncdc.noaa.gov/oa/ncdc.html
Rip Current Awareness:	www.ripcurrents.noaa.gov/
StormReady Home Page:	stormready.noaa.gov/
Severe Weather Safety:	weather.gov/os/severeweather/index.shtml
Tsunami Information:	www.tsunami.gov