

Aware

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

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Climate, Water, Weather

Communication and Partnership Key in Minimizing Katrina's Impact

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

As we complete this issue of *Aware*, it has been several weeks since Hurricane Katrina made landfall on the Gulf Coast. Katrina took many lives and forever changed so many others with its high winds, storm surge, tornadoes and floods. Only 2 months ago, I sat next to Max Mayfield at a Senate Subcommittee on Disaster Prevention and Prediction hearing, as he testified that, "Storm surge has caused most of this country's tropical cyclone fatalities, and represents our greatest risk for a large loss of life in this country, particularly in hard to evacuate areas like the Florida Keys and New Orleans..."

In the aftermath of Katrina, many in NWS and partner groups and agencies working this catastrophic event are struggling to come to grip with their own feelings, in spite of obvious successes in lives saved and property protected. Many in NWS, other agencies, the media and private sector have lost their own homes. Many others experienced damage or injury, while trying to protect others. Many have worked beyond exhaustion, only to be faced with new frustrations and challenges.

What is clear, however, despite the suffering highlighted in the news, is the positive impact our combined efforts in education and preparedness and our coordinated distribution of timely forecasts and warnings are making. The value and importance of effective partnerships cannot be overstated.

Decisions made and the ability of people to deal with these decisions will be the subject of study for months and years to come. But valuable information was available in nearly unprecedented fashion as Katrina tracked toward the Gulf Coast. Improved observations, computer models, value added to forecasts by experienced meteorologists and hydrologists, and new means of dissemination through web sites, the media, and emergency managers have saved lives.

One of the most basic forms of communication, amateur radio, became even more valuable during Katrina's trek inland, when nearly all other communications systems were lost in some areas. Having benefited myself from amateur radio networks during severe weather outbreaks, I know how valuable these volunteers' services can be. Amateur radio is a way for all of us, NWS field offices, emergency managers, media, and many others to easily communicate during hazardous events and through their disruptive aftermath. The American Radio Relay League can provide information regarding use of amateur radio for emergency communications.

Whatever the means of communications, however, the most important lesson taken away from any catastrophic event is the importance of open and frequent communication.

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Aviation News

Free Aviation Safety Tips Available in *The Front*

By Melody Magnus, Front Editor
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The NWS Aviation Branch released its second 2005 edition of *The Front* in July. The Front offers aviation weather tips to a broad community of NWS partners. Please feel free to download this edition and pass it on to coworkers and partners who work in aviation. Articles in this edition include:

- U.S. Aviation Weather-Related Crashes and Fatalities in 2004
- Operational Use of NWS Aviation Products
- Record Wind Gust Damages at Raleigh Durham Airport

To receive a email when *The Front* is released, write nws.postmaster@noaa.gov. To download the July edition, go to <http://weather.gov/os/aviation/pdfs/front-june05.pdf>. If you have article suggestions or comments, contact Michael.Graf@noaa.gov. *

Digital Services

Aware

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Digital Services Expands with XML, New Elements

By Christopher Hedge, NWS Digital Services Branch
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Use of the National Digital Forecast Database (NDFD) has surged with the advent of the NDFD-XML web service (weather.gov/xml/). Extensible Markup Language (XML) allows programmers to easily access digital forecast data and reformat it for use on web pages, cell phones and other digital devices. Recent statistics indicate digital data is obtained from the NDFD-XML web service more than six million times per month. In addition, NDFD graphics are retrieved on the Web by thousands of customers daily.

On September 20 (September 21st local Guam time) NWS will declare the six operational elements now available for CONUS, Hawaii, and Puerto Rico, operational for Guam: Temperature, Maximum and Minimum Temperature, Dewpoint, Weather, and 12 hour Probability of Precipitation. The next goals are providing experimental gridded forecasts for Alaska and determining which of the remaining NDFD experimental elements should become operational for other parts of the country. These elements include:

- Sky Cover
- Quantitative Precipitation Forecast (not yet available for Hawaii or Guam)
- Snow Amount (not generated for Puerto Rico or Guam)
- Wind Direction
- Wind Speed
- Significant Wave Height
- Relative Humidity
- Apparent Temperature

NWS appreciates your feedback on the NDFD elements. Your suggestions help assess the operational readiness of the experimental elements. The comment period for the first five elements listed above closed September 15. In early October, NWS plans to announce which of these elements will be upgraded to operational status in December. The announcement will be made via Technical Implementation Notices (WMO heading: NOUS41 KWBC; AWIPS ID: PNSWSH).

NWS is accepting comments on the Apparent Temperature and Relative Humidity elements until December 15. To provide comments, go to the NWS Customer Survey for Official and Experimental Products/Services: <http://weather.gov/survey/nws-survey.php?code=ndfd-grids>.

Although budget constraints may limit some activities, Digital Services has ambitious plans slated for the next few years. Some of these projects include:

- Developing experimental products compatible with Geographic Information System (GIS) standards
- Expanding to include broader coverage of marine areas
- Developing new experimental grids such as hazardous weather outlooks and probability forecasts

The demand for digital weather data is constantly increasing. The next few years should be an exciting time for Digital Services. ❄

Disaster Support

IMET Supports Biological Exercise Using AMRS Equipment

By Rick Dittmann, WCM, NWS Great Falls, MT
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From June 20-24, Operation Last Chance was held in Helena, MT. A terrible scenario was played out during this exercise. A biological release onboard an airliner overcomes passengers and crew, causing the plane to crash in Montana's capital. Disaster and Emergency Services of Montana worked with dozens of other agencies to test each partner's response capability and ensure the safety of all participants. Bob Hoenisch, Incident Meteorologist for NWS Great Falls, MT, played a key role.

Bob set up his NOAA All-Hazards Meteorological Response System (AMRS) before the exercise. His main concern for the day was heat since participants were wearing HazMat suits and "victims" were laid on the ground outside in a triage situation.

Bob provided support for exercise participants who were testing their response to chemical releases. He also provided real-time weather support to the exercise planning team to ensure participant safety. On Day 2, Bob made the following log entry:

"A cold front and weak shortwave approached the area by late afternoon and convection developed over the Elkhorn Mountains by 2 p.m. Around 3 p.m. an initially weak cell moved into the valley and intensified as it moved over the incident location around 3:15



A "victim" is sprayed with decontaminant after being subjected to a biological agent released onboard a plane during Operation Last Chance in Helena, MT.

p.m. All operations were over and the team was conducting the hotwash meeting in the ICP building as the storm moved overhead, producing wind gusts to 30 mph, frequent lightning, hail to .5" and .27" of rain in about 15 minutes. During the storm, the satellite signal was lost for about 20 minutes and then intermittently for about an hour due to rain on the dish and [an obstruction] in the dish's line of view."

The planning team was well informed of the impending weather and therefore able to complete all aspects of the exercise before the storm moved in. This marked the second time the AMRS was deployed for HazMat support. ✨

Dissemination/Weather Radio

HazCollect Enters Final Testing Period

*By Herb White, NOAA's NWS Dissemination Services Manager
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The second phase of the HazCollect Development Test and Evaluation will resume in October. Earlier HazCollect testing produced correctly formatted test messages. A "live" message was transmitted end-to-end through NWS operational and test systems. HazCollect needs further testing after message creation and geocoding is fine-tuned by NWS and Battelle, the HazCollect primary contractor.

During an Operational Acceptance Test (OAT) early this winter, select NWS offices nationwide will work with local emergency managers to send test (and actual, if any) emergency messages. The OAT will use installed test versions of the FEMA Disaster Management Interoperability Service (DMIS) Desktop Toolkit.

HazCollect will be available nationally through DMIS this winter when FEMA distributes a scheduled update. Emergency managers and government agencies who wish to use HazCollect to broadcast messages over NWR All Hazards or other NWS dissemination systems must first register as a DMIS user.

NWS plans to start HazCollect registration in November. HazCollect will be a one-stop shop for collection, relay and distribution of non-weather emergency messages (commonly known as Civil Emergency Messages) to the NWS dissemination infrastructure, other national systems such as DMIS, and to the Emergency Alert System. HazCollect will use features of DMIS, such as automated user authentication and authorization.

New information is now on the HazCollect web site at: <http://weather.gov/os/hazcollect>. To become a registered DMIS user, go to <http://dmi-services.org> and click on Register in the left menu.

NWS Poised to Expand VTEC Capabilities

*By Pete Browning, Central Region Meteorological Science Division
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The successful Operational Test and Evaluation (OT&E) of the Graphical Hazard Generation (GHG) on June 24 has prompted NWS to expand Valid Time Event Code (VTEC) to nine more products. The 7-week test included 35 NWS Forecast Offices. In all, the offices generated 5,223

VTEC coded products with GHG software. The total includes operational products and test scenarios. These products were checked for proper VTEC coding, consistent and standardized headlines and formatting. Only 141 products were considered failures, resulting in an impressive 97.3 percent success rate. Based on these results, the NWS Operations Committee decided to implement GHG. NWS issued a Service Change Notification to inform partners of its intent to provide operational VTEC coding starting November 1 for the following products:

- Winter Weather Messages (WSW)
- Non-Precipitation Messages (NPW)
- Fire Weather Watches and Warnings (RFW)
- Flood and Flash Flood Watches (FFA)
- Coastal and Lakeshore Hazard Messages (CFW)
- Coastal Waters Forecasts (CFW)
- Great Lakes Nearshore Waters Forecasts (NSH)
- Watch County Notification (WCN)
- Watch Outline Update (WOU)

These long-fused products will provide VTEC coding (per the VTEC Directive 10-1703) similar to the short-fused products made operational on February 8. The VTEC directive was updated in large part to reflect the new and enhanced GHG functionality and went into effect on August 18, 2005. The short-fused products are:

- Watch Outline Update: Initial and Final only (WOU)
- Severe Thunderstorm Warning (SVR)
- Tornado Warning (TOR)
- Severe Weather Statement (SVS)
- Special Marine Warning (SMW)
- Marine Weather Statement (MWS) when issued as a follow-up for the SMW

Thanks to the lessons learned from the GHG test, NWS has improved training videos and made corrections to GHG software. NWS offices must complete a training and configuration checklist before using VTEC coding in their products. Once the checklists are complete, the offices are given instructions for enabling experimental VTEC coding. NWS expects all CONUS WFOs to have VTEC coding in the products above by the end of September, enabling NWS to switch from experimental to operational on November 1.

Final Phase of VTEC Implementation

The focus of VTEC implementation for the remaining watch, warning and advisory products will be primarily on hydrology. These products are:

- Flood Warning for Forecast Points (FLW)
- Areal Flood Warning (FLW)
- Flood Statement (FLS): follow-up for Flood Warning for Forecast Points
- Flood Statement (FLS): follow-up Areal Flood Warning
- Flood Statement: Areal Advisories (FLS)
- Flood Advisory for Forecast Points (FLS)
- Flood Watch for Forecast Points (FFA)
- Flash Flood Warning (FFW)
- Flash Flood Statement (FFS)
- Marine Weather Statement (MWS): non-severe short-fused marine weather hazards

Early in 2006, NWS will conduct an OT&E at 17 WFOs to test updated AWIPS software programs (RiverPro and WARNGEN), which will be used to generate these products. Some offices will begin issuing these products with experimental VTEC coding this fall as part of a risk reduction activity. If the test goes well, NWS will make these products operational by summer 2006. For more information, visit the web site: <http://www.nws.noaa.gov/om/vtec>. ❄

State Farm Funds Weather Radios

*By Tanja Fransen, WCM, NWS Glasgow, MT
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In August, two Disaster and Emergency Services (DES) coordinators in northeast Montana received a \$5,000 grant from State Farm Insurance to buy NOAA Weather Radios (NWR) for Roosevelt County and Fort Peck Indian Reservation. These two entities are working towards StormReady recognition and have been trying to find sources of funding to complete the most difficult part of becoming StormReady, purchasing and placing NWRs throughout county, city and tribal facilities.

Eastern Montana is rural with a low population and tax base. There isn't much money to purchase a large number of NWR receivers. Roosevelt County DES coordinator Dennis Brockmeyer felt they should go beyond the minimum requirements of NWR placement for StormReady and really promote NWR. He ended up discussing it with the local State Farm agent, who was able to facilitate the grant process with State Farm Headquarters.

Three NWR transmitters cover the county and reservation. Brockmeyer wanted to place as many receivers as possible to maximize the impact of warnings. Thanks to State Farm, receivers will be placed in government offices as well as other places locals gather, such as gas stations, day care centers, grocery stores and even bars.

This grant will allow the county to place about 125 receivers throughout the region. Tribal DES Coordinator Arlynn Headdress will be helping Brockmeyer distribute the receivers. ❄



From left, State Farm Agent Gary Johnson hands over a check for \$5000 to Roosevelt County DES Coordinator Dennis Brockmeyer. Looking on are County Commissioner Vickie Delger, Fort Peck Tribal DES Coordinator Arlynn Headdress and County Commissioner Jim Shanks. Photo by WCM Tanja Fransen, Glasgow, MT.

Instant Messaging and “Blast-Up” Conferencing Speed Warnings

*By Brian LaMarre, WCM, NWS Lubbock, TX
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In April, WFO Lubbock implemented Instant Messaging (IM) and “Blast-Up” conferencing services with local media and emergency management partners. On May 12-13, these two new services were tested and proved to be invaluable links to the integrated warning system.

During a widespread severe thunderstorm and tornado outbreak on May 12-13, WFO Lubbock staff issued 99 warnings, including 57 Severe Thunderstorm Warnings, 32 Tornado Warnings, and 10 Flash Flood Warnings between 1:28 p.m. and 3:06 a.m. The Lubbock office initiated a “Blast-Up” conference call around noon, shortly before the event, to provide a situation briefing with all media partners, local emergency management and our Regional Liaison Officer with the Texas Department of Public Safety's Division of Emergency Management. Following the situation brief, a group IM chat session was started which continued throughout the event.

Thanks to the services provided by WFO Lubbock staff during the event, no lives were lost. In fact, when minutes, if not seconds, counted, critical information was disseminated to the media via IM, resulting in “live” program interruptions.

During a damage survey the following day, MIC Justin Weaver, Senior Service Hydrologist John Lipe, and I interviewed a man whose home was completely destroyed by an F3 tornado in Ralls, TX. Across town, his daughter had learned of information from IM via the local on-camera meteorologist regarding a tornado moving toward her father's home. She phoned her father and he quickly left his home for shelter. This action clearly saved his life! The following are quotes from our media and emergency management partners regarding the services provided during this unprecedented severe weather outbreak for WFO Lubbock.

“The Lubbock WSO was at the top of its game like never before . . . I could not have warned people as fast and as effectively as I did without the help of the local office and its large team of employees. . .” *Bryan Hughes, Chief Meteorologist, Fox News.*

“A Ralls, TX area viewer received warning in time to leave his home and get to safety before the home was blown away by a tornado. All of us working in the Forecast Center at News Channel 11 came to realize the IM link with you was providing real-time information like never before.” *Steve Divine, Morning Meteorologist, NBC News.*

“The blast up messaging system we used during the storms was awesome. It really helped me to monitor my counties better and was extremely helpful in trying to stay ahead of the game when talking to the EMC of the counties affected. . . I appreciate the NWS for all you do!” *Georgia Lucero, Regional Liaison Officer for Emergency Management, Texas Department of Public Safety.* ❄

“A Ralls, TX, area viewer received warning in time to leave his home and get to safety before the home was blown away by a tornado. All of us working in the Forecast Center at News Channel 11 came to realize the IM link with you was providing real-time information like never before .” Steve Divine, Morning Meteorologist, NBC News.

Weather Radio Warning Helps Save Elementary School Children

*By Marcie Katcher, NWS Eastern Region Public Affairs
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Good planning and NWR played a role in potentially saving the lives of 340 students, faculty and staff at Charles F. Johnson Elementary School in Endicott, NY.

On June 6, forecasters at NWS Binghamton, NY, detected a severe thunderstorm on Doppler weather radar with winds estimated up to 70 mph. They issued a severe thunderstorm warning 22 minutes before the storm arrived and tore the roof off the kindergarten wing. The warning activated the school's NWR alarm and provided time for the school to implement its safety plan and evacuate to storm-safe areas.

“While I have always been a big supporter of NOAA's Weather Radio program, at no time has its importance been clearer than on June 6, when severe weather ripped through Charles F. Johnson Elementary,” said Congressman Sherwood Boehlert (R-NY), chair of the House Science Committee.

He continued, “The prompt warning and emergency information principal Tomic received on his weather radio enabled him to



Charles F. Johnson Elementary School in Endicott, NY

immediately implement his safety plan. His quick action no doubt saved the lives of our most precious resources—our children. I hope this serves as a lesson for others to get a NOAA Weather Radio, have a safety plan, practice the plan and take action when alerted to severe weather.”

Along with promoting the use of NWR, NWS Binghamton staff also developed a strong working partnership with the local emergency management agency. Broome County Office of Emergency Services Director Mike Aswad notified the schools and other critical facilities in his county of the NWS warning.

“National Weather Service warnings no doubt prevented injuries and potentially saved lives,” Aswad stated. “This was a fast moving, dangerous storm and there were no reported injuries or deaths in Broome County.” ❄

EMWIN-N Testing Delayed Due To Problems With GOES-N Launch

*By Bill Johnson, Team Leader for the EMWIN Transition
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As of this edition of *Aware*, NWS has completed bench testing of the EMWIN-N prototype receiving system. Staff were anxiously awaiting the launch of the Geostationary Operational Environmental Satellites-N (GOES) satellite to complete the final tests in the field via the satellite transponder. Unfortunately, a series of technical problems with the launch vehicle and schedule changes have delayed the GOES-N launch.

It now appears that NESDIS will not be able to conduct the field tests until early November. In July, NWS staff placed specifications, hardware schematics, and demodulation/decoding software for the new EMWIN-N prototype receive system on the EMWIN web site for review. The link elicited numerous comments and questions from users and vendors. NWS used the questions to update the “Frequently Asked Questions” section of the EMWIN web site. The new web site information will enable vendors or amateur radio builders to construct their own versions in time for the field test.

To further attract the interest of prospective manufacturers of receiving systems, NWS has prepared a draft Request for Information (RFI). The RFI will be placed on FedBizOps for comments. We hope to generate a level of interest from vendors about the EMWIN-N specifications and prototype design.

Following successful field tests of the EMWIN-N prototype this fall, NWS will post the results on the EMWIN web site. To keep EMWIN users informed, NWS staff also will issue a press release to industry related publications. We hope the publicity will encourage vendors to develop their own receive system designs. NWS also plans another user-vendor conference for late this year or early 2006. Details will be posted on the EMWIN web site listed below.

In addition to direct reception of the EMWIN-N broadcast on its own GOES-N frequency, tests are underway on the newly developed software for encapsulating the EMWIN data stream within the Low Rate Information Transmission (LRIT). This NESDIS system is the replacement for the current WEFAX transmission. Deployment of the new EMWIN into LRIT implementation is imminent. To keep abreast of new developments in the EMWIN transition, visit the EMWIN web site at: <http://iwin.nws.noaa.gov/emwin/index.htm>. ❄



GOES Satellite

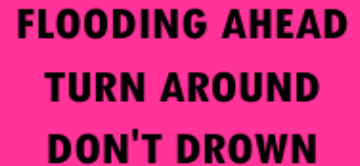
New Incident Sign Directs Drivers and Pedestrians to Safety

By Larry Wenzel, NWS Hydrologic Outreach Program Manager
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Flooding Ahead—Turn Around Don't Drown™ (TADD). That's the message on the new highway sign developed by NWS and the Federal Highway Administration (FHWA). The sign's goal is to alert drivers and pedestrians of a flooded road. Each year, more deaths occur due to flooding than from any other severe weather related hazard because people underestimate the force and power of water. More than half of all flood related deaths result from vehicles being swept downstream.

State and local emergency managers can obtain specifications for the production and use of the Turn Around Don't Drown™ incident sign through the FHWA or the NWS's TADD web site.

A TADD safety brochure, produced in partnership with the National Safety Council, the FHWA, the American Association of Motor Vehicle Administrators, and the Federal Alliance for Safe Homes is also available at the NWS TADD web site along with other TADD resources: <http://www.nws.noaa.gov/om/water/tadd/>. *



**FLOODING AHEAD
TURN AROUND
DON'T DROWN**

*The Turn Around Don't Drown™
official highway sign*

WFO Las Vegas Partners with Albertson's Grocery Stores for Flash Flood Education

By Andy Bailey, WCM, NWS, Las Vegas, NV
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What started as a local NWS effort to partner with grocery store chain Albertson's for flash flood safety outreach quickly developed into a national public education effort. When I contacted Albertson's about including a short flash flood safety message on the bottom of store receipts in Las Vegas area stores, Albertson's responded that while it couldn't add the note, the chain would be able to run 30-second public service announcements on its in-store radio system.

Albertson's took the request one step further and offered to run the spots in all of its roughly 2,100 stores in 35 states for 4 weeks beginning July 6. As a result, Albertson's played the message about 350,000 times this summer.

This is an excellent example of a corporation that cares about its customers. Albertson's generosity has enabled us to get the Turn Around Don't Drown™ message to a massive audience at no cost to taxpayers. *

Historically, flooding has proven to be the most dangerous of all thunderstorm related hazards. Many flooding casualties are a result of careless or unsuspecting motorists who attempt to drive through flooded roads. The Federal Alliance for Safe Homes and the National Weather Service now warn anyone who comes to a flooded roadway, to "Turn Around Don't Drown."

Message broadcast 350,000 times by Albertson's Grocery

Theaters Joins NWS to Promote Heat Safety and NOAA Weather Radio

*By Jim Kramper, WCM, WFO St. Louis, MO
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Wehrenberg Theatres, the oldest family-owned and operated chain in the country, which operates 150 screens in the St. Louis area, joined with NWS to promote heat safety and weather radio.

Over this exceptionally hot summer, whenever the NWS issued a Heat Advisory or Warning, Wehrenberg offered a "Heat Advisory Matinee," during which adults could purchase reduced priced tickets through 6 p.m.

"It's just like the old days—get out of the heat, go to a movie where it is cool and comfy," Wehrenberg spokeswoman Kelly Hoskins said. "We're glad to help people get out of the heat for a couple of hours by reducing ticket prices." Company representatives kept track of the weather by monitoring the NWS St. Louis web site.

The theater company will also help promote NWR through 2006. A slide advertising NWR will be shown, free of charge, before each movie starting this fall and continuing through Christmas. The slide also will be shown in March 2006, Disaster Preparedness Month Missouri.

"NWR is a great way to get critical warning information," Hoskins said. "It seems a lot of people don't know about it, so perhaps this will help." If all goes well, the advertising campaign will continue in future years. ✱

Record Heat Wave Just Barely Beats Records in Southwest

*By Jim Teet, NWS Western Region Public Affairs
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A record-setting heat wave across the Southwest United States was actually just slightly higher than a normal summer, according to NWS staff. On July 10, a heat wave struck the Southwest and lingered for 12 days.

Extreme heat was blamed for at least 30 deaths throughout the region, although this figure is expected to rise. Persistent heat heavily stressed cooling equipment throughout the region, including an overnight cooler failure at a Phoenix shelter that killed 28 dogs.

NWS offices in the West forecasted the heat wave and its long-term effects several days before it arrived. The Phoenix forecast office issued a Special Weather Statement July 8, informing the public that hot weather would continue through the next week. NWS announced temperatures might top 115 degrees (116 degrees was reached on July 17, a record for the date). This statement was forwarded by Arizona Department of Health to all Phoenix metropolitan hospitals to help the staffs prepare for higher heat-related patient cases. Phoenix reached the record high of 116 degrees for July 17, but remained several degrees short of its all-time mark.

Despite setting more than 200 individual daily and all-time temperature records in this period, most meteorologists in the region considered the extreme heat to be only slightly warmer than normal. Las Vegas WCM Andy Bailey said, "While our heat wave was likely the most extreme Las Vegas has ever seen, it was only a few degrees higher than our typical summer." ✱

WFO Billings and Missoula Work with Local Utility Company

by WCM Peter Felsch, Missoula, MT and WCM James Scarlett, Billings, MT
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NWS Billings, MT, WCM James Scarlett is reaching out to a larger audience by working with Northwestern Energy, the local utility company, to get weather safety tips into the utility's *Connections* newsletter, sent with monthly statements. In June, the utility ran lightning safety information, timing it with the NWS Lightning Safety and Awareness Week.

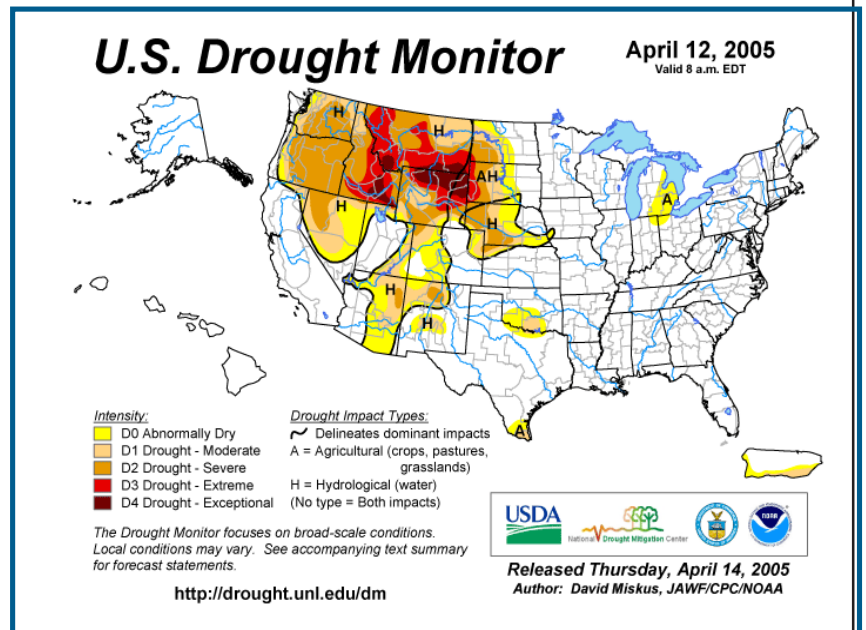
In July, Northwestern Energy ran an article promoting NWS as its weather source for storms that might impact operations, such as wet heavy snowfall or high wind events. The *Connections* newsletter is distributed to approximately 400,000 customers in Montana, South Dakota and Nebraska.

Due to last year's warm and dry winter season, NWS Missoula Service Hydrologist Ray Nickless and WCM Peter Felsch started a weekly drought weather outlook briefing conference call to keep customers in north central Idaho and western Montana abreast of weather conditions affecting the drought.

The briefing consisted of short and long term weather forecasts as well as river conditions, which referenced a web-based briefing page containing weather maps and graphics.

Customers consisted of media reps, emergency managers and agencies such as Public Works and Northwestern Energy employees. The conference calls began in January and ended in June, when the spring rainy season finally reduced the drought impact to portions of the northern Rockies.

"We at NorthWestern found great value in the weekly Drought/Weather briefings that you held. I personally have continued to use most of the weather info links to assess the current conditions and appreciated the explanation of the data for future reference. I want to commend you and your staff for providing a service that obviously took some time to prepare and that provided great value to the customer. I also want to commend you on the efficiency of the calls. The information was straightforward and to the point. I hope that you will find the support within your organization to do these calls again, if the situation arises in the future. Thanks again for providing a value added service to the customer." ❄



Emergency Response Meteorologist Program Responds to Significant Crisis in North Texas

By Gary Woodall, NWS Fort Worth/Dallas, TX
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In partnership with emergency managers, storm spotters, and media outlets, NWS Fort Worth, TX, helped forge an excellent hazardous weather education and warning system. The events of 9/11 and subsequent events in the United States and abroad have shown us the majority of emergency responses require at least some level of weather support.

In response, the Fort Worth office has developed the Emergency Response Meteorologist (ERMET) program. ERMETs are Fort Worth forecasters who can provide hydrometeorological expertise to emergency managers and first responders in a significant emergency situation. Currently, two forecasters have completed the pilot version of ERMET training. The pilot program covers:

- An overview of the Incident Command System
- Meteorological information needs of first responders
- Training in preparing briefings and media interviews
- Training in plume dispersion forecasting
- Use of the CAMEO emergency management and ALOHA plume modeling programs.

The office will provide training to the remainder of the forecast staff this fall. Staff have taken part in tabletop disaster exercises and have discussed services ERMETs can provide.

On July 28, a chemicals and solvents facility exploded in the north part of Fort Worth. The resulting fire and response was the first live test of the ERMET program. Staff provided the Fort Worth Emergency Management

staff with high resolution wind data from the surface to 4,000 feet above ground level as well as updates on precipitation near the fire site. The July 28 support was provided remotely from the NWS Fort Worth office, a mode of operations likely to continue for the near future; however, the office would like to develop a "go kit" that would include a laptop PC, communications devices and possibly local weather monitoring equipment. Such a kit would enable us to provide onsite support during a major or widespread event.

The post 9/11 era has been a time of change for everyone, including this NWS Forecast Office. The ERMET program will be an addition to normal NWS services and should allow NWS to further enhance its relationship with the north Texas emergency management community. ❄



Dan Dixon, WFO FWD Forecaster/ERMET, provides training to members of the office staff on the ALOHA plume dispersion program.

NWS Staffer Recognized for Hispanic Outreach Efforts

By Dan Noah, WCM, WFO Tampa Bay Area, FL
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WFO Tampa Bay, FL, Meteorologist in Charge Shawn Bennett was selected to receive the prestigious *Hermano Award* for his contributions to the Hispanic community of Hillsborough County, FL. Shawn, who is fluent in Spanish, inaugurated a full suite of Spanish language products and services for the NWS Tampa Bay office. Nearly 30 percent of the 1.1 million people in the county are Hispanic.

Shawn's efforts include communicating threat information in Spanish before, during and after natural hazards. He also provides outreach events such as "Hurricanes 2005" (Tampa), live media interviews and hurricane season specials in Florida, Texas and Mexico for TV Azteca America, Univision, Telemundo, Televisa, Radio Unica AM 680. Shawn helps maintain the Spanish version of the NWS Tampa web site, which offers real time translation of all NWS forecast and warnings. Shawn will receive the *Hermano Award* on September 29 at the Hispanic Heritage Festival in Tampa.

For information on the experimental Southern Region Spanish translator, contact Dan Noah at the email above. To see our Spanish language pages and the products they offer, go to <http://www.srh.noaa.gov/tbw/html/tbw/SpanishTampaBayAreaWeather.php>. ✨



Meteorologist in Charge Shawn Bennett was recognized for exceptional support to the Hispanic community.

Churches Step Up for Weather Safety

By Steve Land, Williamson Co. IL EMA Deputy Director; Ricky Shanklin, WCM, WFO Paducah, KY
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The "Local Storm Shelter Program" at the Williamson County, IL, Emergency Management Agency (EMA) is a program born out of necessity. As a part of its efforts to receive StormReady accreditation, the Williamson County EMA placed 220 NWRs in locations frequented by the public in the county.

While in the process of installing these radios, a need became evident. There were many residents, including many people living in mobile homes, without a safe place to go to in the event of severe weather. County staff devised a plan to offer everyone a safe place. They decided churches would be a logical choice since every community has at least one, many churches have basements, and churches support community outreach.

The EMA office sent a letter to every church in Williamson County explaining the idea. The letter explained this was simply a place to go to if severe weather was moving through the area, not an overnight shelter. Thirteen churches responded. Two community buildings were added in areas where no church was available. The EMA Directors inspected each location, chose the safe place and brought a weather radio.

Here's how the program works. If the county is put in a moderate risk category and, based on information obtained through the NWS Paducah EM Conference Call, the plan is activated, the designated contact or backups are called and asked to open the shelter between certain hours when the storms are expected to move through the area.

Next, EMA staff notify local radio and television stations so they can announce the Williamson County "Local Storm Shelter" plan has been activated. Spring 2005 was the first year the program was in place. ✨

Service Assessment Released For Baltimore Thunderstorm Event

By Wayne Presnell, NWS Performance and Awareness Branch
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On August 18, NWS released its "Baltimore Inner Harbor Thunderstorm Event, March 6, 2004" service assessment report. You can view or download the report at <http://www.nws.noaa.gov/om/assessments/>.

At approximately 4:00 p.m. EST on March 6, 2004, a cluster of thunderstorms moved through the Baltimore metropolitan area producing wind gusts of 40 mph to 55 mph. A water taxi loaded with 25 people in Baltimore's Inner Harbor capsized in the thunderstorm winds and five passengers died. These were the first water taxi fatalities since the boats began operating in the Inner Harbor in the late 1970s.

NWS assessed its performance before and during the event. The report provides nine recommendations to improve future warning services.

This service assessment examines issues directly related to NWS services. It does not determine probable cause of the accident or address issues related to the water taxi and operating procedures of mariners in Baltimore's Inner Harbor. Those areas are the responsibility of the National Transportation Safety Board (NTSB).

NWS service assessments significantly enhance ongoing efforts to improve the quality and timeliness of products and services. Findings of this assessment will further the NWS goal of improving forecast techniques and information provided to the American public.

A team already has been formed to evaluate service provided during the devastating strike of Hurricane Katrina. ✪



Increased Verification of Severe Thunderstorms (INVEST) Offers Training for Damage Surveys

By Ernie Ostuno, NWS, Grand Rapids, MI
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Verification of severe weather warnings is a top NWS priority. Unfortunately, thorough ground surveys are time and labor intensive and are usually not done unless an area has incurred major damage. Many, if not most, marginal storm damage reports are not investigated with ground surveys. To address this problem, NWS Grand Rapids, MI, has developed a program called The Increased Verification Effort of Severe Thunderstorms—INVEST.

The goal of INVEST is to increase scientific integrity of the severe weather verification program. This program offers training to county emergency management staff (EMs) and SKYWARN spotters interested in conducting ground surveys in their local area. NWS then can

solicit help from these trained staff and volunteers to survey suspected areas of storm damage in the aftermath of severe weather events. NWS uses the findings, along with archived radar data, to verify warnings. These surveys also augment research such as case studies of particular severe weather events.

The INVEST training consists of two main parts. Part 1 covers estimating wind speeds from structural damage using the Fujita Scale. This part also focuses on tree damage, often the only damage occurring from marginally severe events. Part 2 differentiates between tornado and microburst wind damage by providing visual examples. More accurate wind speed estimates from comprehensive ground surveys, combined with reviews of the radar data and near storm soundings, should lead to a better understanding of which radar signatures and thresholds produce severe weather under various environmental conditions and therefore lead to better NWS warnings.

This training has been presented by NWS staff across the Grand Rapids WFO's County Warning Area in the past several years. Staff have now produced an online version of the training hosted on the office web site. This online version will be augmented with an interactive quiz, allowing for wider participation by EMA and SKYWARN personnel.

NWS plans to create a database of those who completed the training. The database will be organized by county and will be referred to in the wake of severe weather events.

Users can access the training on the NWS Grand Rapids, MI, Education page
a t :
<http://www.crh.noaa.gov/grr/education/>.*

Tornado Machine Helps Draw 12,000 to Weather Safety Booth

*By Michael Davis, Information Technical Officer, WFO Nashville, TN
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In August, I partnered with the Nashville Office of Emergency Management at the 6th Annual Mayor's First Day in Nashville, TN. The event is held each year on the day before students return to school. An estimated crowd of 12,000 toured the Convention Center and viewed educational displays.

This was NWS Nashville's second largest outreach event. The highlight of the weather service's display was a tornado machine. Several educators made requests for us to give weather talks to their schools. The tornado machine was built last year and is a hit with both kids and adults. The machine, which I built, has a humidifier and a fan, and shows a white moist rotating column of air. Speed settings also can be changed to demonstrate different types of tornadoes. *



A tornado machine, developed by ITO Mike Davis, helped draw interest to weather safety from kids of all ages.

Alabama Football Coach Scores with Lightning Safety

*By Tim Troutman, WCM, NWS Huntsville, AL
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To reach a broader audience for its lightning safety message, WFO's Birmingham, AL, WCM Jason Wright; Huntsville, AL, Senior Forecaster Andy Kula and I recruited Alabama University Head Football Coach Mike Shula to record a Public Service Announcement (PSA). The PSA emphasizes Alabama's negative ranking in U.S. lightning fatalities and high lightning fatality rate. The PSA then urges listeners to go inside if they hear thunder, referencing the NWS national lightning safety web site. Coach Shula did not place a time or play limitation on use of the PSA. Huntsville staff now are converting the PSA to a .wav file that can be played on NWR. The PSA also is distributed to Alabama radio stations and lightning safety institutions.

StormReady/TsunamiReady

StormReady/TsunamiReady Board Focuses on East Coast

*By Donna Franklin, Acting NWS StormReady Director
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In July, the NWS National StormReady Advisory Board met to review ways to improve and enlarge the StormReady and TsunamiReady programs. Much of the attention this year focused on the TsunamiReady program and ways to increase its visibility, especially on the East Coast.

The StormReady Board also discussed the possibility of assessing the response of StormReady communities when hazardous weather strikes, such as Hurricane Katrina. This would provide NWS and communities with valuable information on how effectively StormReady communities are prepared for and respond to hazardous weather.

Started in 1999, the StormReady program now includes nearly 950 communities, 23 of which are also TsunamiReady. This summer, Hawaii became the first state to have all counties recognized as both StormReady and TsunamiReady. Indian Harbour Beach, FL, became the first TsunamiReady community on the East Coast.

The StormReady Supporter program, which began last year, includes eight organizations ranging from Agilent Technologies in Spokane, WA, to the Ringling Art Museum in Tampa, FL.

Emergency Managers who want to learn more about the StormReady/TsunamiReady program should contact their local NWS warning coordination meteorologist for details. Find contact information by clicking on "Local Contacts" at www.stormready.noaa.gov. ❄



"StormReady Day" Helps Communities Cut Red Tape

*By Dan Noah, WCM, WFO Tampa Bay Area, FL
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StormReady is a program that helps communities prepare for weather emergencies, such as hurricanes, tornadoes and floods. The StormReady application process usually includes a visit by the NWS to perform SKYWARN training, a visit by the applicant to the NWS office, and a verification visit by two of the local StormReady Board members to the county, city or supporter.

I found these multiple steps discourage some communities from taking part in this great program. To simplify the process, I consolidated these tasks into a single *StormReady Day*. To debut the program, on August 18, I invited officials from Treasure Island, FL, who were working on a StormReady application, to complete all three tasks in a single day rather than three separate days.

The StormReady application was submitted beforehand and StormReady Board approval was contingent on a successful verification visit. This consolidation reduced the number of hours needed to process an application and made managing the StormReady program easier. Our test site, Treasure Island, is one of the newest StormReady communities. ❄

StormReady Supporter Program Reaches Out to Smaller Groups to Expand Disaster Prevention

By Tim Troutman, WCM, NWS Huntsville, AL
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WFO Huntsville, AL, recently began a county warning area wide StormReady Supporter program to further improve upon the StormReady program across north Alabama and southern middle Tennessee. The outreach team began this project as an extension of the StormReady program, since the entire WFO Huntsville County Warning Area had already been designated as StormReady. The goal of the outreach team is to designate 14 entities within the area as StormReady Supporters by 2006. The first StormReady Supporter designated across north Alabama was Redstone Army Arsenal, in Madison County, AL.

To further promote the StormReady program, WFO Huntsville, Alabama WCM Tim Troutman completed a project with Oklahoma Correction Industries (OCI) to add the "Supporter" lettering to StormReady signs. The full StormReady signs with the "Supporter" lettering would be provided to qualified entities within the CWA to promote the StormReady program. This template is now available for all WFOs through OCI: 405-962-7007; FAX: 405-962-7022.

The price for the StormReady Supporter sign is \$23.52 per sign, add 34 cents for a 2005-2008 date sticker and a freight charge for the sign, depending upon the number of signs ordered.

Huntsville staff members plan on continuing the StormReady Supporter project throughout their 14 counties, specifically targeting large factories, universities and other significant partners, including media, within each of the counties. ❄



NWS now offers the option of s StormReady Supporter sign as well as the community and county signs.

Tsunami Program to Expand to 24/7; Increase and Improve Outreach via Team Approach

By Chris Maier, WCM , NWS Juneau, AK
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NWS Tsunami Warning Centers (TWC) are incorporating new areas of responsibility into their operations. Complementing these expanded operations is the need to educate many new customers and partners. The TWCs are expanding their staff, which will allow them to go to 24/7 operation and will also give them new resources to conduct educational outreach.

A great idea for effective tsunami outreach is taking the team approach, as NWS does for severe weather preparedness campaigns. An example of this tactic is our recent visit to the Southeast Alaska communities of Ketchikan and Metlakatla. The team consisted of myself;



An interagency team toured portions of Southeast Alaska recently to conduct tsunami outreach.

Geophysicist Bruce Turner, West Coast and Alaska Tsunami Warning Center; Emergency Management Specialist Erv Petty, Alaska Department of Homeland Security and Emergency Management; Outreach Specialist Cris Nunez, American Red Cross; and Seismic Data Specialist Jamie Roush, Alaska Earthquake Information Center.

This team gave presentations to local schools, hosted evening forums for the public, met with local emergency management and city officials to discuss mitigation planning and the TsunamiReady/StormReady program, and conducted interviews with local media. We combined TV and radio station interviews with inspections of media EAS equipment, critical to the tsunami warning dissemination system.

Given their expanded areas of responsibility, it is not possible for someone from the TWCs to always be able to get to a county warning area and take part in outreach activities. The team will depend on other members of the emergency and hazards awareness communities to present tsunami preparedness information at the local level.

Local NWS WCMs also can help organize and conduct such events. Tapping local experts on seismology, geology, and other related sciences to partner in this outreach is a proven strategy. Asking a local or state emergency

management official and someone from your local Red Cross chapter to take part helps round out the team. When that next tsunami outreach opportunity arises, I encourage you to give the team approach a try. ❄

As of 2002, hurricanes averaged \$5.1 billion in damages and 20 deaths per year. As of 2005, those numbers will change forever. Our sincerest sympathies to the victims of Hurricane Katrina.

Climate, Water and Weather Links

Aviation Weather:	aviationweather.noaa.gov/
Education/Outreach:	weather.gov/os/edures.htm
Flooding/Water:	weather.gov/os/water/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
Publications List:	weather.gov/os/publist.htm
StormReady Home Page:	stormready.noaa.gov/
Severe Weather Safety:	weather.gov/os/severeweather/index.shtml
Tsunami Information: NOAA/NWS	www.tsunami.gov