Aware

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

April 2011

Partnering with the Emergency Management Community

By Dr. Jack Hayes, NWS Director

On March 21, more than 200 NWS partners and constituents crowded the phone lines, Webinar and the Hall of the States building in Washington, D.C., to hear updates on major NWS operations and support the agency's FY 2012 budget request. As NWS Director, I provided a Situation Report on ongoing NWS operations, including the following key topics:

- Pacific Tsunami impact on Japan, Hawaii and the U.S. West Coast
- NWS Spring Flood and Drought Outlook and what communities should be preparing for
- How the nation needs to prepare for the 2013 space weather maximum
- FY 2012 budget request and the NWS vision for improving services to state, local and federal governments during tight fiscal times

We rely on our partnerships to maintain and enhance our performance. Our 2020 Strategic Plan commits us to this partnership. The NWS vision is to "Build a Weather-Ready Nation."

We are in partnership with the Federal Aviation Administration (FAA) and several other federal agencies for our NextGen initiative. The concepts we are developing with the FAA will allow us to change the way we support every mission we do in the United States, from aviation to emergency management for every future product and service.

NWS Jack Hayes expressed his thanks to International Association of Emergency Managers (IAEM) for its support at a budget briefing as the Weather Service faces challenging fiscal time for federal agencies.

Inside Aware

We are going to work closely with local, state and national emergency managers (EMs) to better understand what they need to assess risk and make decisions. We have done this for years with the wildfire community. The NWS fire weather Incident Meteorologist program can serve as a model for future decision support services to EMs everywhere.

IAEM President Eddie Hicks was in the room and took the floor after my remarks. Hicks said, "I want to emphasize the importance of the relationship between the National Weather Service and emergency managers. It is a matter of life and safety."

I want to express my appreciation for IAEM's support. Our partnership with EMs has never been stronger, or more important to the Nation. Please keep up the great work in supporting them! The results for America have been outstanding.

For More Information

- Space Weather Information
- Presentation Slides
- Audio Recording and Text Transcript
- YouTube Video of Dr. Hayes' Remarks and the Question and Answer Session ☼

Air Quality

Volcanos, Factories and Fires: Air Quality Awareness Week: May 2-6

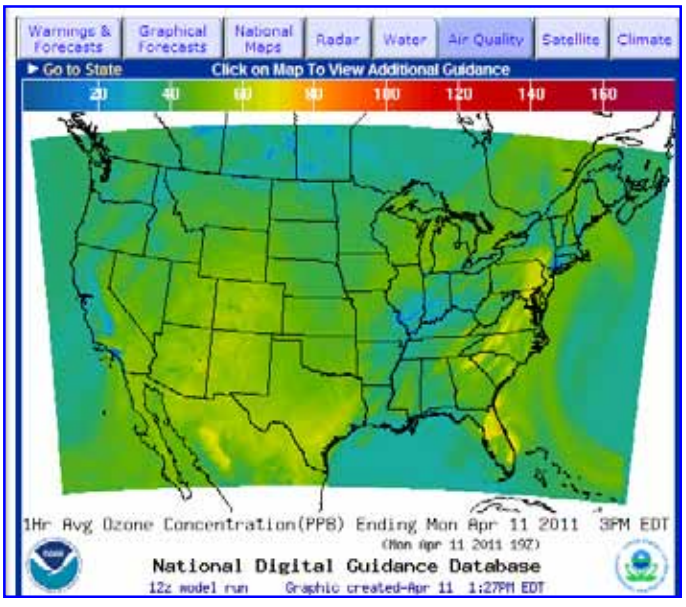
By Chris Maier, National WCM Manager

This year's National Air Quality (AQ) Awareness Week runs from May 2-6. The goal of Air Quality Awareness Week is to provide information on outdoor air pollution and its impact on the quality of the air we breathe. The event is an NWS partnership effort with the U.S. Environmental Protection Agency (EPA).

The goal of the NWS Air Quality Program is to provide the United States with forecasts for ozone, particulate matter and other pollutants with enough accuracy and advance notice to allow people to take action to prevent or reduce adverse effects. NWS, in conjunction with the EPA, produces forecast guidance out to 48 hours for surface ozone concentrations and smoke across the nation. State and local air quality forecasters, in more than 400 communities across the United States, interpret NWS guidance, along with pollution monitoring data and other inputs, to provide next-day alerts of impending poor air quality.

Local NWS offices will broadcast Public Information Notices and special NOAA Weather Radio announcements that week. Links to more air quality information are below:

- NWS Air Quality Website
- Digital AQ forecast guidance
- Collaborative AQ Web portal hosted by our EPA partners
- State and local AQ week activities ☼



NWS Air Quality website.

Aware

NWS
Office of Climate, Water and Weather Services

OCWWS Director
Dave Caldwell

Awareness Branch Chief
Mike Szkil

Managing Editor
Melody Magnus
Melody.Magnus@noaa.gov

Editors
Art Kraus
Nancy Lee

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

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

ISSN 1936-8178

Decision Support

Extraordinary Services Saved Lives: Amarillo Wildfires

By Krissy Scotten, WCM, NWS Amarillo, TX

NWS Amarillo put its decision support program into high gear during the significant wildfires that destroyed more than 70 homes and caused over $13 million in damages across the area earlier this year.

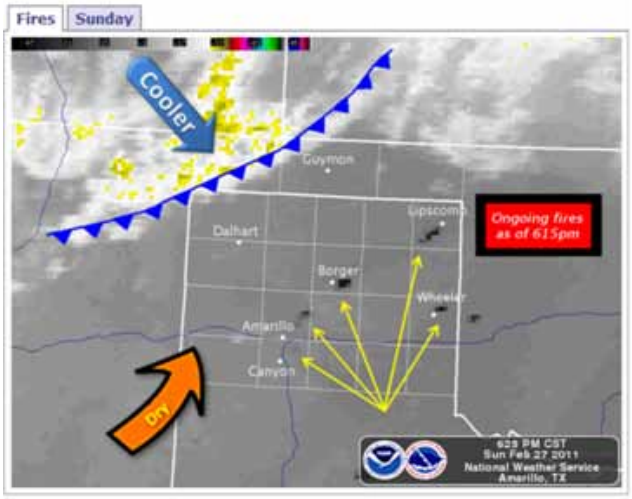
Extremely critical fire weather conditions developed during the afternoon and early evening of Sunday, Feb. 27, across the entire Texas Panhandle. Sustained winds between 40 and 45 mph, with gusts as high as 70 mph, were reported all across the area. Relative humidity values dropped below 10 percent across the Panhandle region in conjunction with the high winds, causing the dangerous conditions.

A Red Flag Warning, High Wind Warning, and Blowing Dust Advisory were all in effect across the Texas and Oklahoma Panhandles on that day. Services provided by the NWS Amarillo Forecast Office did not stop at text products. NWS Amarillo Webinar briefings with core partners began as early as Friday, Feb. 25, detailing the high impacts expected. These highly detailed Webinar briefings continued throughout the next 2 days.

Palisades Fire in Lake Tanglewood, TX. Photo courtesy of NWS Amarillo.

During the event, Graphicasts were updated frequently on the front page of the NWS Amarillo Website with fire weather, blowing dust, and wind information, as often as every 30 minutes during the height of the fires with new fire locations and cold front timing information. NWS Amarillo relayed four different Fire Warnings with critical evacuation orders.

In addition, NWS Amarillo dispatched a forecaster to provide onsite support at the Mobile Operations Center of the Northeast Amarillo fire for almost 8 hours. Two other NWS Amarillo forecasters staffed the Amarillo/Potter/Randall Office of Emergency Management for a combined total of 10 hours. These Decision Support Services were invaluable as the timing of an approaching cold front and the subsequent wind shift threatened the safety of the many firefighters in the field as well as endangering buildings thought to be safe.



Sample Graphicast

"The early issuance of the Fire Weather Watch on Thursday and the Friday conference call for Sunday no doubt saved lives during these fires. The difference between 2011 and the 2006 fires was ...your (decision support) services and the preparations we were able to make because of them," said David Solis, Regional Liaison Officer for Texas Department of Public Safety.

"You guys once again did a fantastic job with the timing of the cold front and the heads up with the fire weather forecasts. Thank you!" said Keith Shadden, Emergency Manager for Beaver County, OK.

"Thank you NWS!! You all were awesome this whole event!" commented Maribel Martinez, PhD, Assistant Emergency Management Coordinator for the Amarillo-Potter-Randall Office of Emergency Management

Only one minor injury was reported despite 10 large wildfires burning almost 100,000 acres in NWS Amarillo's service area. ☼

Unique Decision Support During a Rare Winter Storm in South Texas

By Jason Runyen, Senior Forecaster, NWS Corpus Christi, TX
and Barry Goldsmith, WCM, NWS Brownsville, TX

On February 3-4, significant glaze icing impacted more than a million resident from the Coastal Bend to the Rio Grande Valley of South Texas. Long duration freezing temperatures, in excess of 60 hours in some locations, were punctuated by a 12 to 24 hour period of glaze ice, with some sleet and snow mixed in. Ice accretion ranged from 3/8 inch across the Coastal Bend near Corpus Christi, to 1½ inches in Brownsville. While most of the ice accumulated on exposed surfaces such as trees and grasses, elevated roadways also were coated. Overnight on the 3rd and into early on the 4th, all elevated roads were closed across Deep South Texas.

The widespread icing was the first such event in more than 20 years for the area and required a much higher level of decision support than the previous event thanks to a larger population and an increase in impacted infrastructure, such as roads, businesses and schools. NWS offices in Corpus Christi and Brownsville worked in tandem with EM partners and the media to communicate the threat early and often, resulting in decisions that likely saved lives and money across the region.

Glaze ice hanging from trees in Corpus Christi, TX

WFO Corpus Christi

Several innovative decision support methods were used before and during the ice storm. Three Decision Support Meteorologists were designated to support and monitor several information streams throughout the event, including the following:

- Providing GoToMeeting™ briefings, starting nearly 4 days before the onset of icing
- Issuing a Winter Weather Update, headlined on the front page of the office Website, highlighting information such as accumulations and impacts, and linking to multimedia briefings, graphicasts and road conditions
- Writing an informal Winter Weather update for the Website, updated frequently to provide weather conditions, trends and forecast adjustments throughout the event
- Offering English and Spanish multimedia briefings, recorded and uploaded to YouTube™, then linked from the home page for wider distribution.
- Sending hourly email updates to key EM partners
- Monitoring an array of social media via HootSuite™, including reports from Nuevo Laredo, Mexico
- Participating as a subject matter expert in the *Victoria Advocate's* chat room

WFO Brownsville

Unique decision support and communication methods were provided through the event. For the first time in the Rio Grande Valley, NWS used GoToMeeting™ briefings to provide at least once daily to media and EMs, then posted as breaking news links for others to share. The feedback from partners was so overwhelmingly positive that future widespread significant events will require the audio/visual briefings. Other support included:

- Writing an informal Winter Weather update: Borrowing the idea from WFO Corpus Christi, WFO Brownsville staff frequently updated icing reports, road closures and power outages; the feature also included data tables, photographs, graphics and urgent safety messages
- Having local television and newspaper Web administrators post graphicasts on their front pages

- Receiving hourly email updates of road closure information from the Texas Department of Transportation
- Forwarding hourly email updates of road closure information

Across South Texas, schools and businesses were shuttered before the onset of glaze. Police, fire/rescue and public works personnel were ready to treat and close roads well before glazing began and hospitals were staffed to handle the additional patients injured in accidents.

While hundreds of accidents, dozens of indirect injuries and at least one fatality occurred during the ice storm, tangible evidence suggests those numbers would have been substantially higher without the level and diversity of NWS decision support services provided. ☼

Speedway Drives Weather Support in Tennessee

By Tim Troutman, WCM, NWS Morristown,TN

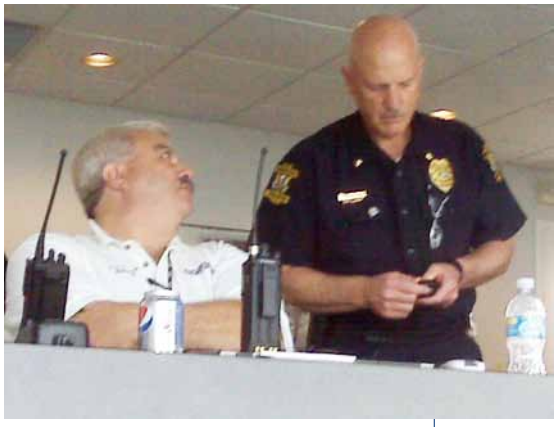
NWS Morristown, TN, learned several lessons while providing weather decision support during the week of the spring 2011 Bristol Motor Speedway races from March 14-19.

The WFO staff started the decision support process with emails on Monday, March 14, and continued with daily briefings to Tennessee Emergency Management, Sullivan County, and Bristol Police department in advance of the races.

NWS Morristown then provided on-site support on Saturday, March 18, and Sunday, March 19, including pre-race briefings in the morning and during the actual race events to EMs and emergency services personnel.

During an upcoming August event, NWS Morristown plans are to connect with event EMs via the office's video teleconferencing system to provide live remote briefings.

EM event staff provided feedback after the event. Comments from these responders included a request for percentage of thunderstorm and lightning occurrence along with detailed timing of precipitation for public safety and weather preparedness. ☼



Decision Support is a team effort: From left: Sullivan County EMA Director Jerry Fleenor and Bristol Tennessee Police Operations Commander Walt Musgrove.

Dissemination and Forecasts

NWS Collaborative Venue for CAP V1.2 Coming Spring 2011

By Mike Gerber, Herbert.White, Meteorologists, NWS Awareness Branch

The NWS plans to make available a Web accessible collaborative venue for users of Common Alerting Protocol (CAP) during spring 2011. The NWS produces CAP alert messages to facilitate the sharing and redistribution of official NWS watches, warnings, advisories and follow-up statements. NWS began issuing CAP v1.1 compliant alert messages March 15, 2011. On September 30, 2010, the Federal Emergency Management Agency (FEMA) adopted CAP v1.2 for the Integrated Public Alert and Warning System (IPAWS). Thus, the most immediate purpose of the Webpage will be to engage users and obtain feedback as NWS prepares to issue CAP v1.2 IPAWS compliant alert messages in the future.

Once it becomes available this site will also include information about the new collaborative venue. More information about the current production of NWS CAP v1.1 is online. ☼

Coded Cities Forecast Discontinued for 5 of 6 NWS Regions

By Andy Horvitz, art.thomas [sic] Meteorologists, NWS Fire and Public Weather Services Branch and Steve Olson, Meteorologist, Meteorological Development Laboratory

On March 15, 2011, NWS discontinued the Coded Cities Forecast (CCF) for five of six of its Regions: Alaska, Central, Eastern, Pacific and Western. All Weather Forecast Offices (WFOs) in the NWS Southern Region will continue issuing the CCF. Discontinuance of the CCF on a NWS regional basis was a result of an evaluation of comments NWS received from a Public Information Statement issued in July 2009. Partners and users in the NWS Southern Region indicated they still use the CCF.

The decades-old CCF is issued twice daily, and provides a one-word forecast description (e.g., sunny), for the daytime only along with expected maximum/minimum temperatures and probability of precipitation.

In the five NWS Regions discontinuing this product, users felt eXtensible Markup Language (XML) products and Point Forecast Matrices (PFMs) met their needs.

Two XML forecast products are issued hourly and contain both nighttime and daytime forecasts for 3 days and 7 days, respectively. These products provide more forecast data than the CCF and are updated more frequently. The PFMs also provide more data and more frequent updates than the CCF. Both of these new classes of products are automatically created from the National Digital Forecast Database (NDFD).

Prior to this change, NWS removed the dependency on the Selected Cities Summary (SCS) products and the Travelers Forecast products to the CCF. The SCS products are now automatically derived from the NDFD; the Travelers Forecast has been discontinued. ☼

Flooding and Oceans

What Are the Main Causes of Boating Deaths?

By David Soroka, National Marine Program Manager, NWS Marine and Coastal Weather Services Branch

Once again, NWS and Safe Boating Council will partner for National Safe Boating Week, May 21-27, the final full week before the Memorial Day holiday. Each agency will create weather and safety-specific Public Service Announcements (PSA). Seven new informational messages relating to boating safety will be highlighted during the week on the NWS Safe Boating Website. Some of the topics covered during the week include:

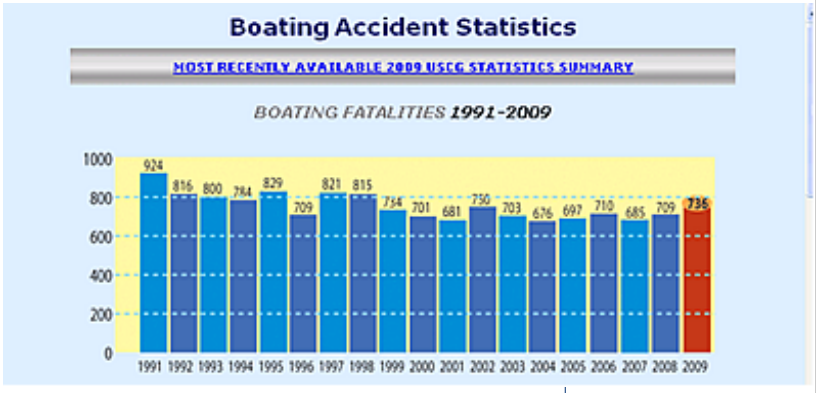
- Thunderstorm safety on the water, in winds and waves
- Navigating in sea fog
- Importance of and correct way to wear a life jacket
- Boating under the influence

In addition, a National PSA and joint press release will be issued. Links to the page will be found on the Webpages of these organizations as well as their Facebook pages. Local NWS coastal offices will highlight the safety messages on local NWS Websites and broadcast them on NOAA Weather Radio.

Each year, more than 50 million Americans enjoy recreational boating and fishing. While recreational boating is fun, the water can be unforgiving. Over the past 10 years, more than

7,000 boaters have died, about 5,000 by drowning. A recent American Boating Association survey found the following grim facts:

- More than two-thirds of all fatal boating accident victims drowned and of those, 90 percent were not wearing a life jacket
- About 90 percent of deaths occurred on boats where the operator had not received adequate boating safety instruction
- Careless operation, operator inattention, lack of proper lookout, operator inexperience and passenger behavior rank as the top five primary contributing factors in accidents
- Alcohol use is the leading contributing factor in fatal boating accidents, attributed to 17 percent of deaths



Boating deaths have risen in the last three years. Many of these tragedies were preventable.

Understanding the critical safety steps a mariner must take before getting underway is vital. Just as you should not drive anywhere without wearing a seat belt, a recreational mariner should complete a safety check before leaving port, one key component of which is checking the marine weather forecast. Weather and wave conditions can change suddenly, catching boaters off guard and creating life threatening conditions.

The Marine and Coastal Weather Services Branch oversees the provision of timely, accurate information relating to the U.S. coast, coastal and offshore waters, the Great Lakes and the open oceans. This information aims to:

- Ensure the safety of life and protection of property
- Promote international and interstate commerce by improving marine operations efficiency
- Mitigate environmental impacts
- Enhance the quality of life for boaters living in the United States ☼

NOAA Studies Atmospheric "Rivers" Using Unmanned Aircraft

By NWS News Staff

NOAA scientists are using unmanned aircraft to study "rivers in the sky" during the Winter Storms and Pacific Atmospheric Rivers (WISPAR) field campaign, which began in February. The research seeks to improve understanding of how atmospheric rivers (AR) form and behave, and to evaluate the use of unmanned aircraft to investigate these phenomena.

ARs are narrow regions in the atmosphere that transport large amounts of water vapor. In 1 day, an average AR transports an amount of water vapor equivalent to a foot of liquid water covering 10 million acres—an area roughly twice the size of New Jersey. This number is about 7 times the average daily water flow from the Mississippi River into the Gulf of Mexico. Only some of the water vapor transported by an AR becomes rain or snow; for example, about 20-40 percent in one AR crossing northern California reaches the surface as precipitation.

The importance of ARs was highlighted recently in a major USGS emergency preparedness scenario that focused on the possibility of a series of strong ARs striking California. That scenario showed the resulting flooding, wind and even mud slides could exceed damages brought on by Hurricane Katrina in 2005.

WISPAR will include demonstrations of new technology, contributions to the science of ARs, and the potential of offshore monitoring of ARs for weather predictions. While ARs can result in flooding, they also contribute to beneficial snowpack. A series of ARs fueled the strong winter

storms that battered the West Coast from western Washington to southern California from Dec. 10-22, 2010, producing 11 to 25 inches of rain in certain areas. The ARs also contributed to the snowpack in the Sierras, which received 75 percent of its normal annual snow by Dec. 22.

NASA's Global Hawk will be equipped with sensors including an advanced water vapor sensor—the high-altitude monolithic microwave integrated circuit sounding radiometer created by NASA's Jet Propulsion Laboratory—and a new dropsonde developed by NOAA's National Center for Atmospheric Research. The dropsondes will be launched from the Global Hawk and take temperature, wind and other readings as they descend through an AR.

Unmanned aircraft are being used in a variety of scientific studies because they are able to fly long distances, stay aloft for more than 24 hours and can travel at high and low altitudes that could be dangerous for humans.

Because microwave satellite techniques that monitor ARs over the oceans do not work well over land and because no direct wind measurements are taken in ARs over the ocean, NOAA researchers are installing an observing network across California that will help monitor ARs as they strike the coast and move inland. The network will measure winds and water vapor. Initial sites provide data for comparison with forecast models. This data will produce adjustments to model predictions of the strength and position of the ARs, conditions that are crucial to determining when and where the most extreme precipitation will occur.

NOAA's Hydrometeorology Testbed staff has helped advance understanding of ARs and develop tools for use in its monitoring and prediction. Results from the Testbed are being used to implement a permanent network of modern observations across California jointly with the California Department of Water Resources and Scripps Institution of Oceanography. A related project with the California Energy Commission and Scripps is studying ARs in a changing climate. Each project derives benefit from WISPAR's unique observations. ☼

Ohio Sees Value in Turn Around Don't Drown™ Signs

*By **Michael Lewis**, WCM, NWS Northern Indiana*

Allen County, OH, emergency staff undertook dozens of swift water rescues when cars like this one tried to cross high water. The county is installing Turn Around Don't Drown™ signs warning drivers to avoid such hazards in the future.

Severe flooding in Allen County, OH, proved how vital Turn Around Don't Drown™ signs can be. On March 1, extensive flooding resulted in more than two dozen cars caught in flood waters and numerous drivers and passengers who had be rescued by emergency personnel. More than 2 inches of rain fell in a short period of time on February 28, 2011, on already saturated soil. This resulted in a rapid rise of water that flooded many roads in the county.

In late March, NWS Northern Indiana gave Allen County, OH, two signs to be placed in a flood prone area. These signs were presented to the Allen County Engineer in a press conference that included the Fire Chief, EMA Director and county and city commissioners.

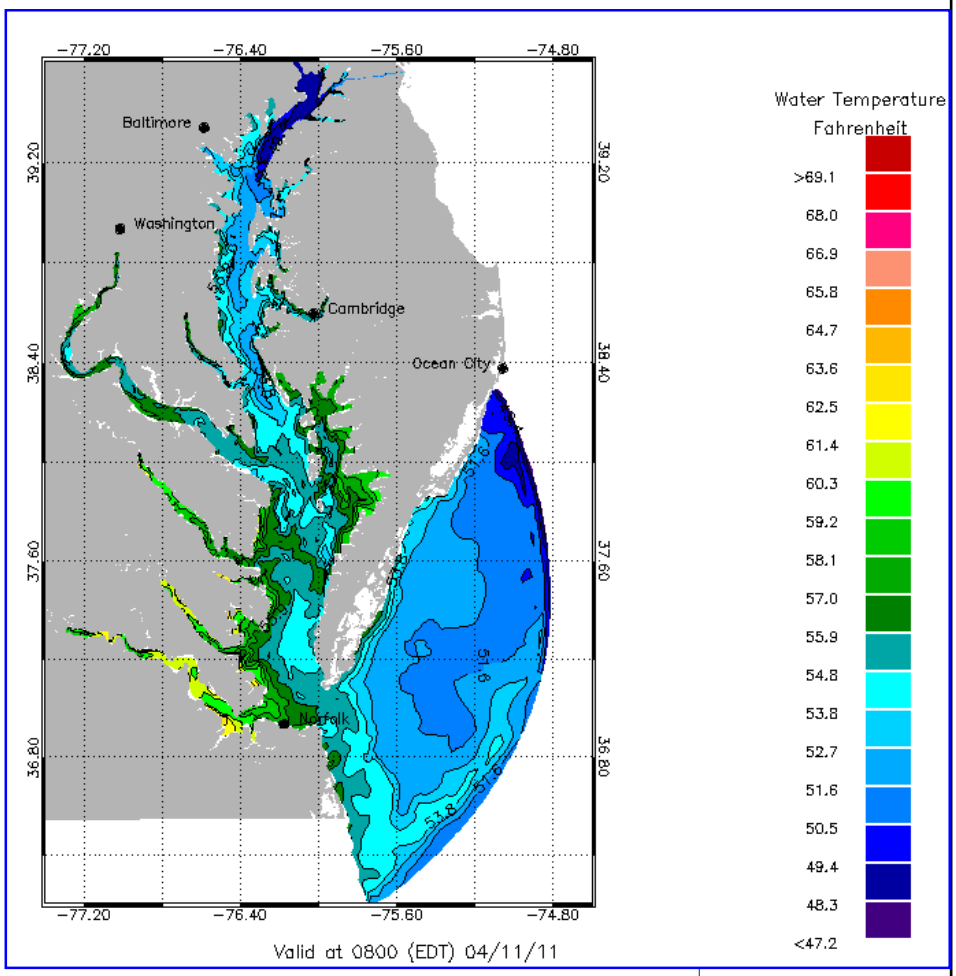
Russ Decker, Director of the County Office of Homeland Security and Emergency Management said, "We knew how important Turn Around Don't Drown™ signs were before this event. If we'd been able to have the signs up sooner, many of our residents would have been saved traumatic water rescues. This flood showed how prevention saves lives and property." ☼

New Coastal Ocean Regional Models Offer Numerous Benefits

By Frank Aikman, NOS; Peter Stone, CO-OPS and Dennis Staley, NCEP

March 26 marked a historic day for NOAA as numerical prediction system models for the Chesapeake, Delaware and Tampa Bays were implemented by the National Ocean Service (NOS)at the National Centers for Environmental Prediction (NCEP) Central Operations. The models will produce 48 hour forecasts of 3-D salinity, temperature and currents as well as 2-D water levels and surface winds.

This addition represents a major step forward for NOS model developers and NCEP toward the goal of using the NCEP central computer as a backbone for NOS computer forecast models and related ocean and coastal services. The Delaware and Tampa Bays operational forecast systems are new and NOS has made several key enhancements to the Chesapeake Bay Operational Forecast System, including:



Field Surface Water Temperature Nowcast

- Going from 2-D to 3-D, which has yielded marked improvements in water level forecasts as well as providing 3-D currents, temperature and salinity
- Increased horizontal resolution, now ranging from 5 km down to 50 m, and greater vertical celerity (resolution) of the water stratification
- Providing reliable and fast access to NWS weather model fields, such as forecast winds
- Using the boundary conditions derived from global and basin-scale ocean models such as the NCEP North Atlantic HYCOM model
- Distributing the output via the Web, OPENDAP/THREDDS Servers, the NOWCOAST Web-mapping Portal, and the NOMADS system

The models run nearly four times faster than originally planned, due in part to the excellent partnership that developed between the NOS modelers and NCEP Central Operations. In addition, the models will be part of the overall model suite running with 99.98 percent on-time delivery.

Given the success of these models, it's now possible for NOS and other NOAA agencies to pursue ecological forecast systems in these bays. The next areas scheduled to benefit from these products will be the northern Gulf of Mexico, Columbia River area of Oregon and Washington, the San Francisco Bay Area, and Cook Inlet, AK ☼

Hurricanes

NHC to Offer Audio and Video PSAs for National Hurricane Week

By John F. Kuhn, Meteorologist, NWS Marine and Coastal Services Weather Branch

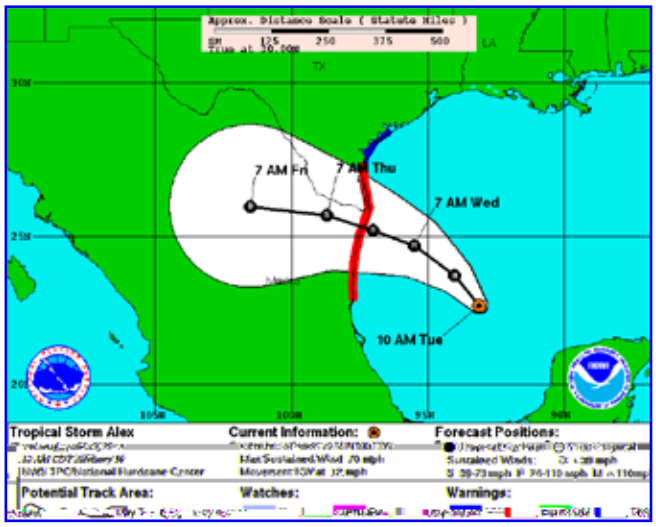
During National Hurricane Preparedness Week, May 22-28, the NWS will be rolling out a new series of Public Service Announcements (PSA) detailing hurricane hazards and how to protect life and property. There will be a total of 14 public service announcements: 7 radio PSAs, each 30 seconds long, and 7 video PSAs, each 75 seconds long. The PSAs were created by National Hurricane Center, NWS Miami and FEMA staff. ☼

Changes Coming for WFO Tropical Cyclone Watches and Warnings

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

For the 2011 tropical cyclone season, WFOs issuing the Hurricane Local Statement (HLS) will no longer issue Tropical Cyclone ***Wind*** Watches and Warnings for affected inland (public) zones in their areas of responsibility. Specifically, WFOs will no longer issue the following products for inland zones:

- Tropical Storm ***Wind*** Watch
- Tropical Storm ***Wind*** Warning
- Hurricane ***Wind*** Watch
- Hurricane ***Wind*** Warning



Depicted above is the track of Hurricane Alex, which struck Mexico and south Texas in 2009.

Instead, WFOs will issue Tropical Cyclone Watches and Warnings for inland (public) zones in their area of responsibility using the HLS product for the following watches and warning:

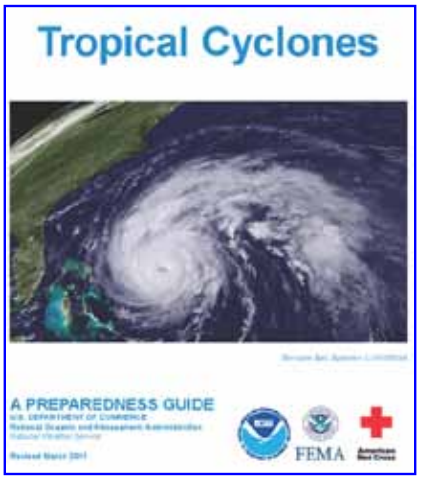
- Tropical Storm Watch
- Tropical Storm Warning
- Hurricane Watch
- Hurricane Warning

For 2011, Valid Time Event Code (VTEC) Event Tracking Numbers (ETN) watches will be unified for tropical cyclone watches and warnings across inland and coastal (public) zones, and marine zones for a given event. In short, if the NHC has issued a Tropical Cyclone VTEC product, then the ETN in the Time Event Code will be the same as the ETN in all WFO-issued HLS products for the event. Additional information on this change can be found at in the Service Change Notice. ☼

New Tropical Cyclones Booklet Posted Online

By Melody Magnus, Aware Managing Editor

NWS updated and streamlined the former *Hurricanes… Unleashing Nature's Fury* booklet into a more current, concise booklet titled Tropical Cyclones. This new booklet continues to offer science and preparedness information in a high quality, informative, color package available for download from NWS Websites. Topics include the following:



- What is a Tropical Cyclone?
- Saffir-Simpson Hurricane Wind Scales
- Hurricane Hazards
  - Storm Surge/Tide
  - Tornadoes
  - Wind
  - Rip Currents
  - Rainfall
- Tropical Cyclone Graphical Products
- Ways to Stay Informed
- What To Listen For
- Are You Ready? Tips for Before, During and After the Storm
- Family Emergency Plan ☼

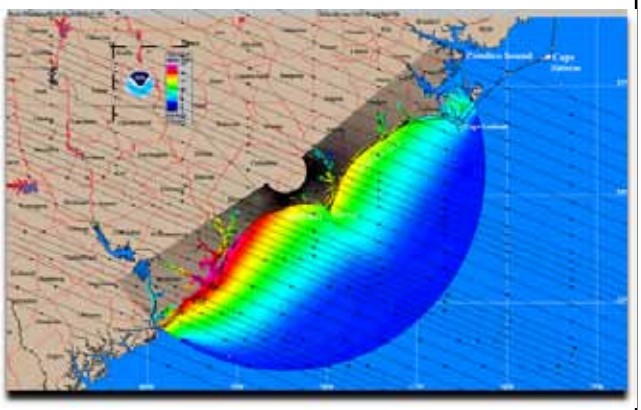
NHC Storm Surge Unit Improves Services

By LTJG Jeffrey Pereira, NOAA Commissioned Officer, NWS National Hurricane Center

Along the coast, storm surge is often the greatest threat to life and property from a hurricane. Look no further than the past 5-10 years when storms such as Hurricane Isabel (2003), Katrina (2005) and Ike (2008), all put storm surge in the spotlight. These storms created devastating flooding and loss of life.

The NHC Storm Surge Unit assesses vulnerability to storm surge related to tropical cyclones using the Sea, Lake and Overland Surges from Hurricanes (SLOSH) computer model. The unit produces operational SLOSH model predictions of the storm surge threat for landfalling hurricanes as well as storm surge simulations for hypothetical storms. These products are provided to federal, state and local EMs for use in evacuation planning and storm preparation.

SLOSH covers the entire U.S. Atlantic and Gulf of Mexico coastlines as well as Hawaii, Puerto Rico, the U.S. Virgin Islands and the Bahamas. Coverage is divided into 37 regions or basins centered on susceptible features such as inlets, large coastal population centers, low-lying topography and ports.



Category 3 Maximum Envelopes of Water (MEOW) for a hurricane moving WNW at 15 mph at high tide

SLOSH Basin Updates

Currently, NHC adds SLOSH updates to an average of six basins per year. Updates are driven by factors such as changes to a basin's topography/bathymetry due to a landfalling hurricane, degree of vulnerability to storm surge, availability of new data, changes to the coast and the addition of engineered flood protection devices, such as levees. Updates planned for 2011 include:

- New Orleans, LA (MS6)
- Wilmington, NC (IL3): *completed Dec. 2010*
- Charleston, SC (CH2)
- Laguna Madre/South Padre Island, TX (BR3): *completed Jan. 2011*
- Galveston, TX (GL3)
- Jacksonville, FL (JX3)

The basin updates may include higher grid size resolution to improve surge representation and an increase in the area covered by hypothetical tracks. All basin updates are converted to the updated vertical datum: NAVD88. They also include the latest topography or bathymetric data for better representation of barriers, gaps, passes and other local features. The update process will not only include average size, represented by the radius of maximum winds, but also will incorporate large storms as a means to broaden the scope of uncertainty.

The newer basins may have a larger storm surge footprint as a result of the inclusion of the large size storms, in some cases contributing to additional SLOSH grid cells being inundated in the newer SLOSH basins. A greater storm surge footprint can also be attributed to the latest LIDAR data ingested in the updated basins, revealing differences in land elevations.

Storm Surge Unit Launches New Website

NHC recently launched a dedicated page on storm surge to its Website. The page serves as an interactive, one-stop shop. There are numerous resources that can be used to highlight the nation's vulnerability to storm surge such as the storm surge risk maps. These maps are a new educational tool aimed at providing a national snapshot of maximum potential storm surge resulting from hurricanes of varying Saffir-Simpson categories. ☼

Rip Currents

Take the Trip of the Rip: Latest Efforts on Rip Currents

By Wayne Presnell, Meteorologist, Marine and Coastal Services Branch

There are two new components in the 2011 NWS Rip Current Program. The first is an expanded test of operational rip current VTEC in the Coastal Hazard Messages at select WFOs. On Thursday, May 12, 10 additional WFOs will start using a VTEC phenomenon event code for rip currents in their Coastal Hazard Messages. For additional information, see the NWS Service Change Notice on this topic.

The second new activity was helping to organize a Great Lakes Rip Current Workshop for Beach Safety. A workshop for rip currents and beach safety was held in New Buffalo, MI, on March 30. The workshop was organized by NWS Northern Indiana and Chicago, IL, along with the Marine and Coastal Services Branch and Meteorological Development Laboratory (MDL) of NWS Headquarters. It was hosted by the New Buffalo, MI, city council and police department and held at the City Hall.

The workshop featured presentations on the science of rip currents, beach safety tips and awareness, and a summary of what the NWS program is doing to improve its services in this area. The science presentations were led by Dr. C-S Wu of MDL and Professor A. Kennedy of Notre Dame University. The safety and awareness presentations were led by local lifeguards and NWS staff. Local media in the NWS Northern Indiana and NWS Chicago areas of

responsibility also joined the event.

After, the workshop, Dr. Wu visited beach locations where lifeguards took part in a rip current spotting program. The program teaches lifeguards to observe signs of dangerous current and wave activity and report them to the local NWS office.

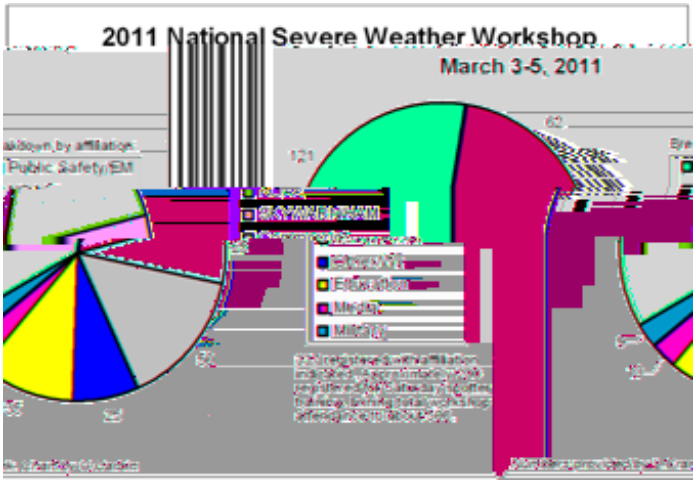
Interest in Great Lakes rip currents has increased significantly due to the number of fatalities associated with Great Lakes rip currents in 2010, rising by 3.5 times the normal amount. ☼

Severe Weather

Key Points from 2011 National Severe Weather Workshop

By Greg Carbin, WCM, NWS/NCEP Storm Prediction Center

EMs, meteorologists and weather enthusiasts gathered in Norman, OK, during the 11th annual National Severe Weather Workshop, March 3-5. This year's workshop was attended by nearly 500 people from across the U.S. and Canada and as far away as New Zealand and South Korea. Each day featured presentations from public and private sector attendees on emergency management, hazardous weather information and mitigation efforts. In addition to NWS leadership, workshop attendees heard from representatives of FEMA and the U.S. Geological Survey, as well as private citizens impacted by significant weather.



The chart above shows the broad array of attendees to the 2011 National Severe Weather Workshop.

The workshop is designed to enhance partnerships between severe weather forecasters and researchers, EMs, broadcast meteorologists, businesses, social scientists, spotters and other weather enthusiasts. Participants identify communities at risk, evaluate current and future tools for hazardous weather assessment, and discuss the challenges involved in conveying warning information about impending weather dangers to decision makers and the public.

A poster session was added to this year's lineup of events, which led to interesting subject diversity and an avenue for students and others to take part. Poster subjects ranged from GIS weather-related research to societal impacts of weather. Breakout sessions were held on both days and covered topics such as media relations, social media and the NWS StormReady® community recognition and renewal process. The complete workshop agenda, along with links to most presentations, is available online.

A successful Trade and Technology Expo took place coincident with the workshop and attracted over 25 exhibitors with company displays and information kiosks specializing in weather information dissemination technologies, storm shelters and the latest in weather observation instrumentation.

The Thursday evening banquet speaker was Ken Graham, Meteorologist-in-Charge, NWS New Orleans/Baton Rouge, LA. Ken reviewed how his local NWS office staff provided substantial weather support and intelligence for the Deepwater Horizon catastrophe in the Gulf of Mexico in 2010.

The annual workshop is hosted by the Storm Prediction Center and the local Norman/Oklahoma City NWS Forecast Office, with additional support from NOAA's Oceanic and Atmospheric Research, National Severe Storms Laboratory, the Oklahoma Emergency Management Association, and the Central Oklahoma Chapter of the American Meteorological Society/National Weather Association. ☼

StormReady®/TsunamiReady™

Why Florida City Opted to Renew StormReady® Status Three Times

By Emily Sugar, Communications Specialist, City of Oldsmar, FL

On March 14, Oldsmar, FL, received its third StormReady renewal. Located at the top of Tampa Bay, Oldsmar has a population of about 14,000. The city has been struck by severe thunderstorms, tornadoes, flooding and hurricanes. But Oldsmar residents feel safer since the city joined the NWS StormReady program in 2004. StormReady helps prepare communities with the safety information and communications skills needed to save lives and protect property. A StormReady city designation benefits Oldsmar by:

- Improving timeliness and effectiveness of hazardous weather warnings to the public
- Providing recommendations for emergency management and operations
- Helping lower Flood Ratings, leading to lower flood Insurance premiums for residents

The StormReady process was started originally in 2003 by the Fire Department, Planning and Redevelopment Department and the Executive Assistant to the City Manager. NWS staff members were invited to conduct a Storm Spotter class hosted by the Fire Department. Shortly after the class was held, Oldsmar employees visited the NWS Tampa Bay Area office in Ruskin, FL. NWS staff provided a tour of the facilities and descriptions of their capabilities for weather forecasting and warning. These exchange visits are a StormReady requirement.

Oldsmar, FL, added its third set of renewal stickers to its StormReady® road sign.

The city then examined its internal processes for notification of hazardous weather to its facilities, its employees in the field and its citizens. City staff then wrote new procedures to improve the rapid notification of impending hazardous weather, and city facilities installed weather alert radios. Opportunities were explored for partnering with Pinellas County to disseminate weather information and to share hazardous weather sightings made by field employees to NWS through the Fire Department.

Next, the completed application was reviewed by an oversight committee. In February 2005, during Florida's annual Hazardous Weather Awareness Week, the Oldsmar City Council was presented with its NWS StormReady recognition, effective that date and lasting 3 years. Oldsmar was the first city in Florida to achieve the StormReady recognition.

In addition to making the city better prepared to react and respond to the various hazardous weather events, the StormReady designation also garnered additional points within the National Flood Insurance Program Community Rating System (CRS). Under the Flood Preparedness-Flood Warning Program, a credit of 25 points has been identified. These points would turn out to be crucial in 2005 as the city went through its CRS re-evaluation.

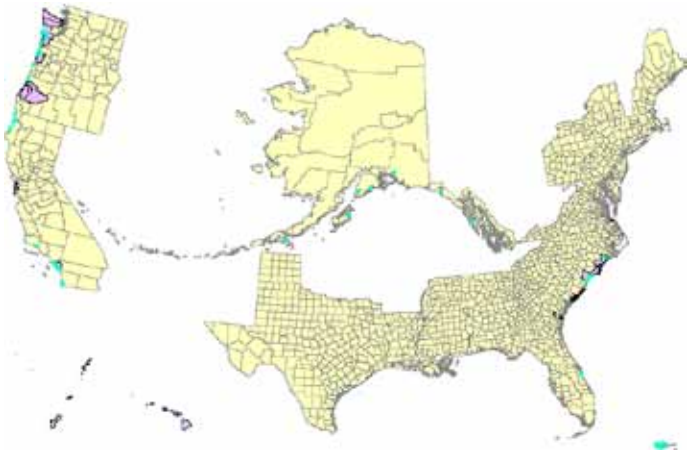
The city was able to lower its rating from a Class 7 to a Class 6 by receiving 33 points over the Class 6 threshold. Without the StormReady designation and its associated inhouse procedures, the lowered rating may not have been achievable. The lower rating will enable Oldsmar residents to save an additional 5 percent on their flood insurance premiums. ☼

TsunamiReady™ Helps U.S. Coasts Prepare for the Great Wave

By Melody Magnus, Aware Managing Editor

There are 84 TsunamiReady™ Communities on the U.S. East and West Coasts, Alaska, Hawaii and Puerto Rico. All the Hawaiian Islands are TsunamiReady; Puerto Rico has 12 TsunamiReady cities, the most recent city, Isabela, joined in April. The San Onofre Nuclear Power Plant in California is a StormReady Supporter.

The U.S. East Coast and Puerto Rico have been hit by tsunamis, though less frequently than the West Coast. But as Japan discovered recently, it only takes one intense tsunami to create untold tragedy. If you live on the coast, see the TsunamiReady™ Website to find out how your community can ensure it's prepared. ☼

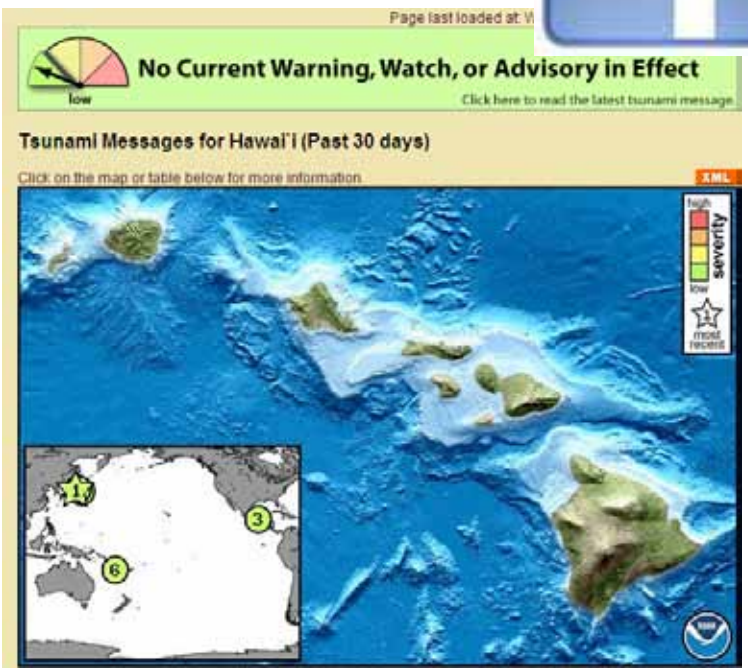


The 84 TsunamiReady sites are shown as blue dots or purple counties.

NWS Honolulu Uses Facebook During Recent Tsunami

By Mike Cantin, WCM, NWS Honolulu, HI

During the late evening of March 10 and early on March 11, NWS Honolulu was in close collaboration with the Pacific Tsunami Warning Center (PTWC) in Ewa Beach, HI, and Hawaii Civil Defense agencies as a potentially devastating tsunami approached the state. During the event, the primary role of NWS Honolulu was to relay warning information from the PTWC to the general public through the office Website and NOAA Weather Radio All Hazards.



Additional links were added to the NWS Honolulu Website directing online visitors to the latest information; EAS tone alerts of the tsunami warning were sent each hour after coordination with state and county officials.

In addition to these traditional venues used to disseminate information, NWS staff used an office Facebook page to keep residents up to date. NWS Honolulu is part of a test being conducted at several local offices around the country reviewing the use of Facebook by NWS.

Early on in the event, the NWS Honolulu office's Facebook page was updated with PTWC warning information, with the location and timing of tsunami arrival for the Hawaiian Islands, and with links directing the public to vital evacuation zone information.

Feedback from the public began to pour in, both in the form of comments/questions and total number of page views and "likes." The number of visitors who "liked" the site jumped from around 340 before the event to more than 3,400 after it. During the peak hours surrounding the arrival of the tsunami, posts by the office were receiving between 28,000 and 31,000 views.

Site visitors from all over the world were accessing the page, including Australia, Korea, France, several Middle Eastern countries and locations all over the United States. Many favorable comments were made about the information flow leading up to and during the event; local Hawaii TV stations relayed information straight from the Facebook page. Here are some comments from page visitors during the event.

"It is great to get instant updates!"
"Amazing effort you are doing to keep everyone update. Keep Safe!"
"Thank you for keeping us informed up to the minute, US NWS."
"Your intelligence is felt. Mahalo for what you're saying."

Significant tsunami-related damage occurred in several locations on both Maui and the Big Island, but there were no reported injuries or deaths in Hawaii resulting from the tsunami. Along with standard warning products, Websites, coordination calls and live media interviews, the local office Facebook page proved to be a powerful source for relaying and sharing potentially life-saving information that helped reach the widest audience possible. ☼

The Good, the Bad and the Also Good

The Good: *Aware* Managing Editor **Melody Magnus** was named NOAA Team Member of the Month for April. She is deeply grateful to the generous coworkers who nominated her for this award. It means a great deal.

The Bad: With regret, *Aware* said goodbye to Editor **Darcey Dodd** this winter. Darcey remains with the Weather Service in its Office of Operational Systems.

The Also Good: the Awareness Branch, which oversees this newsletter, gained a new Branch Chief, **Mike Szkil**. Welcome to the team Mike! ☼

Melody Magnus, NOAA Team Member of the Month for April.

Online Spring and Summer Awareness Resources Available

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

Climate, Water and Weather Links

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