



Aware

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Kīlauea Eruption Spurs Multiagency IDSS Response in Hawaii

By [Charlie Woodrum](#), NWS Pacific Region WCM

On May 3, Kīlauea Volcano in Hawaii began erupting from a series of fissures along the East Rift Zone. Around the same time, a 6.9 magnitude earthquake generated a small tsunami. Over the next 2 weeks, lava drained from Halema'uma'u Crater at Kīlauea's summit, resulting in several explosive eruptions of ash and steam at the summit and a violent eruption on May 17. That eruption sent ash 30,000 feet into the air, leading to light ashfall in nearby communities. In response, NWS Honolulu rapidly spun up its volcanic ash program and issued the office's first-ever Ashfall Advisory.

Since the volcano erupted, NWS staff in Hawaii have supported emergency managers (EM) with onsite and virtual impact-based decision support services (IDSS) nearly daily. Deanna Marks, Official in Charge at the Hilo Data Collection Office, provided onsite support to the Hawaii County Emergency Operations Center and Incident Command Post, including daily briefings to the island mayor and emergency responders. Deployment-ready meteorologist Derek Wroe arrived within a week after the first eruption to help the U.S. Forest Service determine where to place two RAWs stations near the lava fissures.

FEMA Liaison Ashley Sears arrived soon after Derek to serve as coordinator between FEMA and NWS, brief FEMA officials on the latest weather hazards and forecast and act as the NOAA Subject Matter Expert on the Air Quality and Evacuation Task Forces. Pacific Tsunami Warning Center Oceanographer Nathan Becker and Regional Warning Coordination Meteorologist Charlie Woodrum conducted special briefings for NOAA employees from line offices.

At NWS Honolulu, thanks to help from Alaska Aviation Weather Unit Meteorologist in Charge Jeff Osiensky, staff began forecasting volcanic ash. WCM John Bravender leveraged relationships built with the U.S. Geologic Survey and the National Park Service to provide daily coordination calls that included the Washington Volcanic Ash Advisory Center. Bravender also provided daily forecast conference. In addition, NWS Honolulu offered daily video weather briefings to the Hawaii EMA.

Since this new volcanic activity began, Marks has provided onsite support nearly every day at the EOC and been in touch with EMs as needed. Initially, EMs biggest concern was wind speed and direction, but later the heat generated from the eruption fueled localized showers and thunderstorms. Lava entering the ocean also generated "laze," a toxic plume composed of a mixture of hydrochloric acid gas, steam and volcanic glass particles. The volcano also generated "Pele's hair," fine threads of volcanic glass formed when a spray of lava droplets become stretched by wind, then cool rapidly in the air.

The high concentration of sulfur dioxide and particulate matter emitted from the fissures and crater contributed to an air quality hazard known as volcanic haze or vog. This vog is a health risk, making wind forecasts critical. Vog from Kīlauea was reported as far away as Guam, nearly 4,000 miles distant! After more than 2 months of ongoing support for this unique event, this service has become the new normal for the team. It has truly been an outstanding team effort coordinating a consistent message to local, state, regional and federal partners.



NWS Hilo, HI, Official in Charge Deanna Marks provides a briefing at the Pahoa, HI Incident Command Posts.

Rodeo Rides Smoothly with Preparedness Outreach and IDSS Support

By [Tim Troutman](#), WCM, NWS Riverton, WY

Thunderstorms can be more dangerous than a bucking bull but NWS Riverton, WY, helped make sure attendees were aware of the dangers during the National High School Rodeo Finals, held in Rock Springs, WY, in July for some 25,000 fans. Before this year's finals, NWS Riverton staff helped the Sweetwater County Special Events complex complete [lightning safety toolkit requirements](#) to have all six at-risk locations at the complex recognized as lightning safe locations.

NWS Riverton staff also gave all 2,000 rodeo contestants and their families a 10 minute Wyoming weather safety briefing and safety brochures as part of the rodeo kick-off event.

In addition to these preparedness activities, for the event, NWS Riverton staff provided remote daily decision support forecast emails, twice daily situation reports, and weather updates as needed to Sweetwater County EMs. NWS Riverton Forecaster Trevor Lavoie and WCM Tim Troutman also provided onsite briefings and detailed forecasts to EMs throughout the events. Wyoming Office of Homeland Security and Governor Matt Meade both praised WFO Riverton's "outstanding efforts involving their weather support," which included daily detailed decision support briefings and forecasts for the 13 day event!



National High School Finals Rodeo Events: July 12-25 2018

Breaking Down IDSS Walls with Interoffice Collaboration

By [Jonathan Guseman](#), WCM, NWS Jackson, KY



IMET Jon Pelton, and IMET-trainee, Sam Roberts, perusing an AMRS unit used on IMET deployments.

NWS Jackson, KY, Warning Coordination Meteorologist Jonathan Guseman, Senior Meteorologist Chuck Greif, and Senior Meteorologist/Incident Meteorologist (IMET) Jon Pelton visited NWS Morristown, TN, at the end of July to discuss office functions and new approaches to providing highly-actionable Impact-based Decision Support Services (IDSS). NWS Jackson, KY, presented information on the NWS Central Region Weather Ready Nation Roadmap, including ForecastBuilder and Digital Aviation Services.

Other items explored included mountain wave forecasting techniques, fire weather tools, and a review of the fall 2016 drought and wildfires impacting both County Warning Areas.

Morristown staff members shared several newly developed programs currently helping their operations, including a program to enhance alerting of hydrologic concerns. Jackson's ace IMET, Jon Pelton, met with Morristown IMET-trainee Sam Roberts to discuss the program and contents of the All-Hazards Meteorological Response System unit. Finally, both offices explored onsite IDSS at events and how they could better team up to provide support for future events.

This collaborative meeting gave both offices a better understanding of how the other office functions, particularly regarding decision support. Now that staff are more familiar with each other, collaboration efforts will be smoother,

improving services for the residents of eastern Kentucky and Tennessee into southwestern Virginia and North Carolina.

U.S. Border Patrol Citizen's Academy Takes on NWS

By [Gary Zell](#), Meteorologist, NWS Tucson, AZ

As part of the effort to improve the partnership between the U.S. Border Patrol (USBP) and NWS Tucson, NWS Meteorologists Chris Rasmussen and Gary Zell attended the USBP Citizen's Academy. The class met one night a week for 8 weeks and encompassed all aspects of the agency's operations including visits to a Checkpoint location, Mobile Surveillance Vehicle and the Customs and Border Patrol Air and Marine Operations Base.

Getting familiar with the Sector Headquarters included tours of the Joint Information Operation Center, Common Operating Picture room and the Forensics Lab. Attendees also tried their hands on the VirTra V-300 firearms training simulator, were included in a simulated traffic stop and took less-than-lethal firearms training.

Gary and Chris learned about the impacts weather has on USBP equipment and operations. As a result of the training, NWS Tucson now provides more pertinent decision support briefings to the Border Patrol Search, Trauma and Rescue unit, and to the Office of Incident Management. Chris and Gary were also able to coordinate with the Tucson Sector's Operations Division Chief and the Air and Marine pilots, laying the ground work for future decision support opportunities.



NWS Tucson Meteorologist Chris Rasmussen and Gary Zell at the Border Patrol Air Marine Operations Base

HEFS Probabilistic Forecasts: Helping Various Audiences Make Decisions

By [Rachel Hogan Carr](#), Director, Nurture Nature Center, Easton, PA

When a community faces extreme river levels, effective communication of weather and hydrologic forecasts is critical to protect life and property. Residents, EMs and water resource managers need to make fast decisions about how and when to prepare. Uncertainty in forecasting is a critical component, but often poses a confounding factor for understanding forecast products.

In 2016 and 2017, building on previous research about the use of uncertainty forecast products, and with funding from NOAA's CSTAR program, East Carolina University and the Nurture Nature Center, a non-profit organization with a focus on flooding issues, researched how various audiences use and interpret ensemble forecasts showing a range of hydrologic forecast possibilities. These audiences included local residents, water resource managers and EMs.

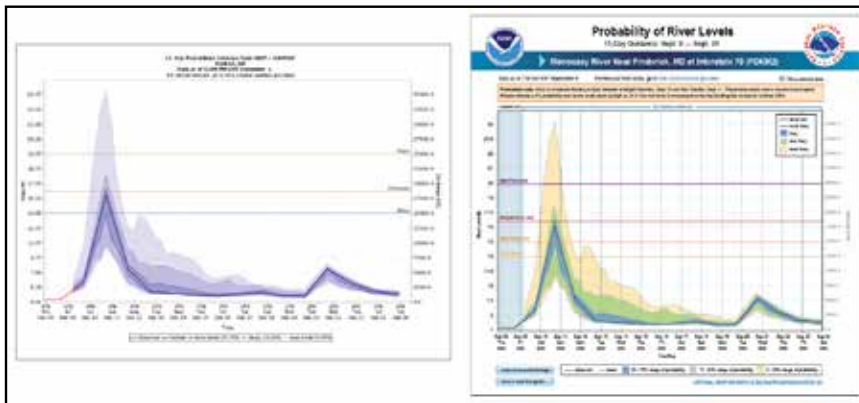
The research team held focus groups in Jefferson County, WV, and Frederick County, MD, to test an experimental suite of products from the NWS Hydrologic Ensemble Forecast System (HEFS). HEFS provides short and long-range forecasts, ranging from 6 hours to 1 year, showing uncertainty in hydrologic forecasts. The study's goal was to assess the effectiveness of the newly developed HEFS products, identify barriers to understanding, and suggest modifications to improve the product.

The research team worked with the Sterling, VA, Weather Forecast Office and the Middle Atlantic River Forecast Center to develop a weather scenario for focus group discussions, which also included pre- and post-session surveys. The study also included two webinar focus groups made up of water resource managers, and an online survey open to all participants.

Findings suggest HEFS is more useful to EMs, including, in some instances, at the longer time frame tested, up to 15 days. Further, refinements in product design and display can improve the understanding and usefulness of the products for both EMs and the public. In contrast, the public, overall, did not find ensemble forecasts easily understandable, preferring products with a shorter forecast time frame.

Modifications to the products, including changes to legend, title and colors improved understanding by both audiences. Participants appreciated changes, such as the addition of a “forecaster’s note” box. Longer-term forecasts, such as 90-day exceedance products, were useful only to water resource managers; EMs focused on short-term products, often around 7 days.

EMs and other participants agreed that hydrologic ensemble forecasts would be one of several tools for decision making and increased experience with the tools could advance how much they relied on HEFS for planning. [The full study, including recommendations for product revisions, is online.](#)



Hydrologic Ensemble Forecast System, before and after changes.

NWS Steps Out with Turn Around Don't Drown® PSA Music Video

By [NWS Communications Staff](#), Silver Spring, MD

This summer, the NWS Communications office launched a music video styled [Public Service Announcement \(PSA\)](#) as part of its Turn Around Don't Drown® (TADD) campaign. The goal of the campaign is to discourage people from driving through flooded roads. Many flooding deaths occur in automobiles swept away because drivers don't realize it takes only 12 inches of rushing water to sweep away a car and just a few more inches for a truck or SUV. Every year, more deaths occur due to flooding than from any other thunderstorm related hazard.

Texas-based singer/songwriter Matt Hawk wrote and donated to NWS his TADD jingle for public outreach. He wrote the jingle following a 2015 flood event involving a high school student who drowned on prom night. He wanted to create a positive, more educational jingle to better reach people so they would not drive through flooded low-water crossings.

With support from the Office of Water Prediction, Matt and the NWS Communications team created a positive PSA, showing drivers using the best practice of turning their vehicles around when they faced a flooded road.

Matt created the 30 second PSA in English and Spanish. As of July, between Twitter, Facebook, and Youtube, the TADD videos had received almost 400,000 views.



Singer/songwriter Matt Hawk in his Turn Around Don't Drown® music video

Aware

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