



Aware

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Challenging Weather Doesn't Stop for COVID-19: NWS is Ready and Resilient

From [Director Louis Uccellini](#), NWS Director

The health and safety of our workforce and operational workplaces is of utmost importance to me and to each of us at the National Weather Service. This has never been more true than now as we face a national emergency related to the rapid spread of the COVID-19. It is clear that we are faced with a situation that will demand a more flexible and rapid decision process at all levels of the NWS.

I am also really appreciative of the work of the entire emergency management community, as you are on the front lines not only working with the NWS for weather preparedness and response to upcoming extreme events, but also in supporting the health and human services community at this critical time. I know that you are ready and responsive to the changing operational conditions and are willing to assist the NWS to ensure the safety and well-being of the citizens of the United States who are also facing weather impacts across the country as we speak. Let's continue to work together to be increasingly flexible, ensuring effective, yet safe, lines of communication for decision support services as we adapt to meet our mission to protect lives and property during this challenging time.

The NWS has a robust continuity of operations plan in place that includes backup plans for all our forecast offices and centers across the NWS. These plans ensure that forecast operations are not disrupted for any reason, including COVID-19.

These plans are updated frequently and rehearsed to ensure the NWS ready for scenarios like COVID-19. Systems are constantly monitored and staff are prepared to ensure operational readiness and continuity. We are making you aware because we realize we cannot meet the vision of a Weather-Ready Nation nor our mission without your partnerships and enhanced services to those who need our support the most in the health and human services sectors.

The National Weather Service is prepared. In the event that any of our facilities are affected by COVID-19, we will keep you informed of our backup procedures and continue to meet our mission.

Thank you for the efforts you are making on behalf of our citizens and residents across the Nation. It is appreciated.



Louis W. Uccellini, NWS Director

Tripling the PetaFLOPS: NWS Ensures Future Direction of NWP

From NWS [Director Louis Uccellini](#)

As our numerical weather prediction models continue to become more sophisticated, ingesting more data and producing output at higher and higher resolutions, computing power requirements remain a limiting factor in how NWS can implement these enhancements. It gives me great pleasure to announce that NWS is taking steps to address this challenge and ensure NOAA remains on the cutting edge of computing and model technology with substantial upgrades to our network of supercomputing systems.

NOAA awarded the [Weather and Climate Operational Supercomputing System](#) contract to CSRA LLC. When it goes fully operational in February 2022, this follow-on contract will triple our operational computing capacity and double storage and interconnect speed. With the availability of two new 12 petaflop Cray supercomputers, we are unlocking possibilities for better forecast model guidance through higher-resolution and more comprehensive Earth-system models, using larger ensembles, advanced physics and improved data assimilation.

We already have many planned upgrades to our suite of Numerical Weather Prediction models in the coming years. For example, the National Blend of Models: V. 3.2 was deemed operational on February 19. We already planning the following upgrades through early 2021:



- ◆ **Q3 2020:** RTMAv2.8, RAPv5, HRRRv4, HMONv3, HWRFv13
- ◆ **Q4 2020:** Probabilistic Storm Surge: PSURGEv2.8, GEFSv12
- ◆ **Q1 2021:** Geospace v2, GFSv16, National Water Model v2.1, HREFv3

All of these upgrades are critical to producing the most accurate and consistent forecasts and warnings, supporting research to operations, providing expert decision-support services to emergency managers, and continuing to build a Weather-Ready Nation, in the face of increasing vulnerability to extreme weather, water and climate events.

After the Wildfires Comes Debris Flow Problems

By [Alex Tardy](#), WCM, NWS San Diego CA; [Bruce Barton](#), Riverside County EMD, [Jason Uhley](#), Riverside Flood Control District

During the summer of 2018, several wildfires occurred across southern California. The largest fires scorched thousands of acres of steep high elevation terrain. The U.S. Forest Service Burn Area Emergency Response Team, U.S. Geological Survey (USGS), CalFire Watershed Emergency Response Team and California Geological Survey conducted field assessments and developed models that assessed the Holy and Cranston burn scars in Riverside County and determined there was high likelihood of debris flows following intense rainfall events.

The runoff volumes from the canyons were expected to increase 3 to 5 times in magnitude. Meetings between NWS, USGS, and the California Geological Survey developed specific thresholds the lead warning agencies would



Debris flow on Hurkey Creek from the Cranston fire scar left a 6 foot mark on the banks.

use in the event of intense rainfall meeting or exceeding debris flow thresholds.

These findings prompted about a dozen partner meetings to develop response protocols for emergency management, local government, fire and police, school districts and the flood control district. Once all partner agencies developed strategic emergency plans and procedures, there were several separate community outreach events to inform potentially impacted citizens, such as schools, home owners associations and other community leaders; attendance at the meetings ranged from 50 to 200 people.

Local agencies, including the Riverside County Flood Control and Water Conservation District, implemented canyon monitoring systems equipped with rain gauges, remotely operated cameras, pressure sensors and other devices to assess and detect potential debris flows.

Infrastructure options to mitigate the impacts of potential debris flows, including levees, debris catch

basins, channels and other devices, were also implemented or enhanced to protect local communities. NWS shared information from the sensor networks and local NWS office services with partner agencies to assist in response activities and refine protocols. NWS San Diego developed special public services and impact-based decision support services for Riverside County that include:

- ◆ Community outreach
- ◆ Specific rainfall rate forecast template for the debris flow task force
- ◆ Internal guidance for issuing Flash Flood Warnings
- ◆ On-site deployment staffing for Emergency Operations Center activations

The winter of 2018-2019 included several intense rainfall events and debris lows that resulted in implementation of evacuation and response protocols as well as EOC activations.

Preparing for Emergencies Events: Workshop Focuses on High Impacts

By [Ron Morales](#), WCM, NWS Charleston, SC

Can you really prepare for an emergency? In light of current events, the answer is even tougher but NWS works hard to prepare its staff and partners.

On February 26, NWS Charleston, SC, hosted an Integrated Partner Workshop (IPW) at the University of South Carolina Beaufort (USCB) – Bluffton Campus. The goal of the workshop was to engage core partners that have a part in producing a unified, coordinated message during high impact weather events and to discuss best practices, challenges and ways to improve preparedness and response.

The workshop kicked off with NWS Charleston’s Warning Coordination Meteorologist Ron Morales leading a presentation on NWS messaging and decision support during high impact events. This session was followed by a group exercise called “Briefing the Briefer.”



NWS Charleston, SC, WCM Ron Morales presents on messaging and decision support during high impact events.

A mix of emergency managers and broadcast media volunteers were briefed by NWS meteorologists on a fictional tropical event and had to translate the message to the remaining workshop attendees. The twist was to cater their message to a particular audience, first the public then elected officials, not just regurgitate the NWS briefing.

Presentations from both NWS meteorologists and local emergency managers ranged from hydrology to tropical weather. After three consecutive years of flooding along the Ashley River in Dorchester County, SC, Emergency Manager Mario Formisano shared how the county obtained a much needed river gauge with the help of USGS.

This presentation was followed by NWS Meteorologist Blair Holloway, who provided an overview on hydrology and coastal flooding programs. To conclude the hydro session, Randall Mathews of Chatham Emergency Management Agency (CEMA) provided attendees with a glimpse of CEMA's new coastal flood project.

Discussions then transitioned back to the tropics with NWS Meteorologist Robert Bright's presentation on tropical messaging, and Emergency Management Project Manager Colt Bowles, of the US Army Corps of Engineers, enlightening overview of the SC Hurricane Evacuation Study.

Spontaneous discussions proved to be incredibly beneficial throughout the entire workshop. Attendees included representatives from multiple NWS offices, SC State Climatology Office, SE River Forecast Center, emergency managers, media, military, law enforcement, first responders including fire agencies, medical and public works.

Think Twice on Ice, Working with Indigenous Populations

By Senior Service Hydrologist [Celine van Breukelen](#) and Meteorologist [Amber Hill](#), NWS Anchorage, AK

In rural Alaska, travel on frozen rivers in the winter is the only method of transportation method between villages. Unfortunately, travel on ice is never completely safe and during the spring and fall, it can be critically dangerous. During the spring of 2019, there were at least six fatalities from snow machines or ATVs breaking through the ice.

To better prepare indigenous populations and other residents, NWS Anchorage, AK, took part in the Alaska Forum on the Environment on February 11. During their presentation, "Think Twice on Ice, River Ice Safety and Observation," NWS staff talked about how travelers could identify and avoid unsafe ice, and described self-rescue techniques when that fails and you have fallen through the ice.



Alaska Forum on the Environment

After the presentation, Meteorologist Intern Amber Hill and Senior Service Hydrologist Celine van Breukelen led a focus group with community leaders from around the state, seeking their input on the most critical and important messages to promote when talking about ice safety.

Key feedback from the meeting was that there is a disconnect between Native American elders and youth; intergenerational learning is not happening to the degree it used to, and as a result, some types of traditional knowledge are being lost. For example, a traditional technique for rescuing oneself after falling through ice is to allow one's fur mittens to freeze onto the ice and then pull up onto the ice. Facebook was widely cited as a very effective means of large-scale information dissemination.

Based on the information received from the focus group, NWS Anchorage plans to work with elders in the region to create three to five ice safety Facebook posts based on indigenous knowledge.

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