Weather-Ready Nation
National Oceanic and Atmospheric Administration

April 2021

Vaccination Centers Require Special Weather Support

*By **Alex Tardy**, WCM, NWS San Diego, CA*

Starting in January 2021, Emergency Managers (EM) reached out to NWS San Diego for weather support to outdoor vaccination centers. These requests began as a request for spot forecasts, but were later consolidated into a daily forecast briefing EMs could use for Incident Action Plans (IAP). Each county had a different approach, but we were able to combine numerous locations into a few separate briefings for major cities in Orange, San Bernardino, and Riverside counties.

One of the first mass vaccination centers was at Petco Park in San Diego, home of the Major League Baseball's Padres. Since the sites were mostly outdoors and consisted of tents, we tailored the forecast briefings to focus on weather and wind.

Working closely with the officials in charge of gathering weather intelligence, we modified the templates to include point-and-click information so partners can easily get the latest forecast data.

Originally, we provided color-coded data based on threat and hazardous impacts, but in response to requests, switched to more printer-friendly black and white. This format also was better for IAP incorporation.

Petco Park Baseball Stadiumj vaccine center was forced to announce an unplanned closure on January 25 and 26, 2021. Despite the weather setback, this site was visited by Governor Newsom and recognized as a state leader in vaccinations.

NWS San Diego continues to issue a daily color-coded 7-day outlook briefing used by each county on its webEOC pandemic dashboard. To manage the workload, the office installed a script from NWS Burlington, VT, to draw forecast tables directly from the National Digital Forecast Database. We also offer direct links to an online forecast database in the briefings.

Since we started vaccination center support, there have numerous weather challenges. On January 25, 12 hours of wind gusts over 45 mph and periods of heavy rain caused an unplanned closure, resulting in a major back up of appointments and forcing the site to turn away vehicles. The event caused considerable damage to tents at the Petco Park parking lot facility, which required the center to remain closed on January 26.

On February 25, NWS closely monitored strong Santa Ana winds that might result in delays based on earlier forecasts and a High Wind Warning. As a result of need and to reduce weather impact, an additional center is now

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open on the San Diego County fairgrounds where there are permanent buildings for shelter. As of mid-February, the San Diego area had 20 mass public vaccination centers, including walk-up availability at Disneyland and just outside our area in a new FEMA-operated center at California State University Los Angeles.

Better Storm Surge Forecasts with Model Upgrade

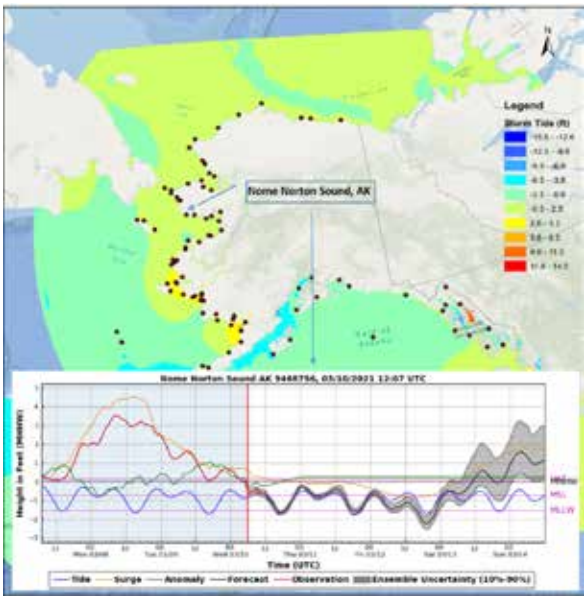
*For questions about this model upgrade, contact MDL Physical Scientists **Arthur Taylor** or **Huiqing Liu***

The NWS Meteorological Development Laboratory (MDL) has upgraded both the Probabilistic Extra-Tropical Storm Surge (P-ETSS) and the Extra-Tropical Storm Surge (ETSS) models before the new hurricane season.

The ETSS model, first launched in 1996, is a modification of the Sea Lake and Overland Surges from Hurricanes (SLOSH) model. ETSS uses the Global Forecast System (GFS) wind and pressure input to predict storm tide (surge + tide) from extra-tropical storms. Four times a day, ETSS creates storm tide guidance such as overland inundation for extra-tropical storms in the continental United States and Alaska. ETSS now will input increased spatial (13 km vs. 55 km) and temporal (1-hourly vs. 3-hourly) resolution of GFS wind and pressure data, resulting in more accurate guidance.

The P-ETSS model, first launched in 2017, is a coastal inundation ensemble model forced by various ensemble wind systems. When NWS first launched it, an ETSS model modification allowed NWS to use the 21 ensemble members from the Global Ensemble Forecast System (GEFS) to generate probabilistic extra-tropical storm surge products 4 times a day.

With this upgrade, P-ETSS will now use finer resolution (0.25 degree vs. 0.5 degree) wind and pressure data from the 31 (instead of 21) ensemble members in GEFS. Additionally, it will use 21 members from the Meteorological Service of Canada's Global Ensemble Prediction System (GEPS) members. This upgrade, which more than doubles the number of ensemble members, enables P-ETSS to provide a more accurate ensemble mean and more reasonable uncertainty estimates.



Sample of the P-ETSS data

Beyond the wind input upgrades, both models' computational domains for the East Coast and Gulf of Mexico were updated with the latest bathymetry and expanded to cover Puerto Rico, the Virgins Islands, and the entire Gulf of Mexico. This expansion was done in anticipation of including wave-coupling in the models.

Additionally, both models now incorporate an initial water condition based on observations. Specifically, the initial water level value is the mean anomaly (observation - (surge + tide)) of all stations within a given computational domain. Use of an initial water condition provides an efficient way to account for various biases such as mean sea level rise, omitted physical terms, and model errors. Accounting for these errors before the model is run enables the model to react to the extra water, which can be as much as a foot in the Gulf of Mexico. The final result is an improved inundation calculation.

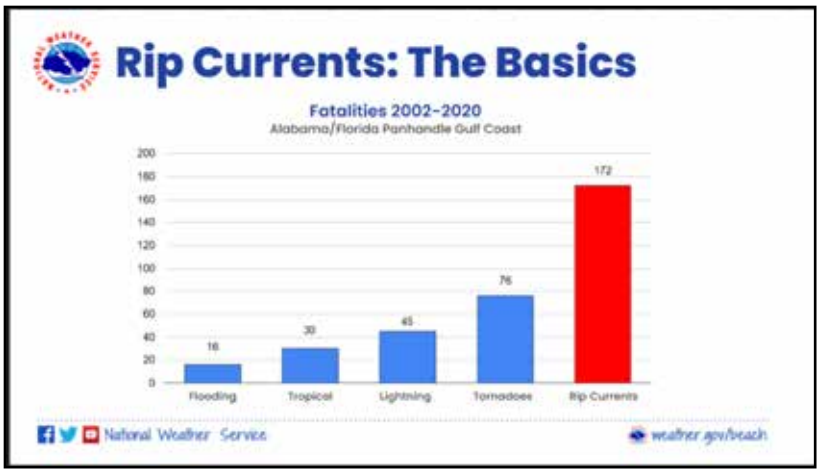
Finally, NWS has increased the number of stations supported by the models by 50 percent, with more coverage in Alaska and the East Coast. Jamie Rhome, Team Leader, Storm Surge Unit, National Hurricane Center, commented, "The advancement of P-ETSS has significantly advanced NHC's ability to forecast coastal inundation arising from subtropical storms, post-tropical storms, or storms which display an asymmetric wind field. The fact that P-ETSS provides outputs and formats that match those of the tropical version, P-Surge, enables us to seamlessly switch or blend P-ETSS guidance into our operational procedures without any disruption to products or services.''

Rip Currents and Tourists from Inland States, Deadly Mix

*For more information, contact **Mark Wool,** WCM, NWS Tallahassee, FL, or **Jason Beaman**, WCM, NWS Mobile, AL*

Did you know that more people die from rip currents along the Alabama and Florida Panhandle coastlines than from tornadoes, hurricanes, lightning and floods combined? A majority of these deaths involve out-of-state residents vacationing at the beach.

To address these concerning statistics, NWS Tallahassee, FL, and Mobile, AL, teamed up to declare February 22-26, 2021, Gulf Coast Rip Current Awareness Week, just ahead of our spring break season. The offices partnered with regional TV stations to get vital safety messaging to a vulnerable public. They also developed an in-depth social media campaign to share safety information. Each day had a different focus, as indicated by the five tabs on the event website.



The teams developed new safety videos in partnership with local beach partners at Orange Beach, AL, Destin, FL, and Walton County, FL. These messages allowed people to hear a local perspective on the importance of rip current safety and awareness. The videos were integrated into each section of the webpage and also made available on NWS YouTube accounts.

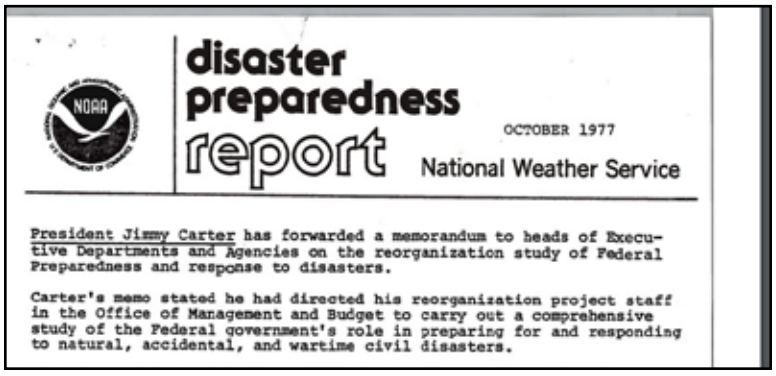
NWS asked its media partners to share their stories with sister stations well inland, as far north as Arkansas and Tennessee. They also asked fellow NWS offices across the Southeast to help amplify the message and reach the target populations of would-be vacationers that may be unaware of the threat posed by rip currents.

Particular thanks go to local media partners in Mobile (WKRG, WALA & WPMI), Pensacola (WEAR), Panama City (WJHG & WMBB), Dothan (WTVY), and Tallahassee (WCTV).

The two NWS offices plan to make this awareness week an annual event and will also do another social media push as we near Memorial Day weekend when more families begin arriving at our beautiful beaches.

History of NWS Aware Report and Grateful Farewell

From Melody Magnus, Aware *Managing Editor: I have been the editor of* Aware *for 18 years and assistant editor for another decade before that. Time to retire! As my swan song, I offer the history of this great little newsletter and my thanks for your interest over the years. Aware will continue under a new managing editor.*



disaster preparedness report

OCTOBER 1977

National Weather Service

President Jimmy Carter has forwarded a memorandum to heads of Executive Departments and Agencies on the reorganization study of Federal Preparedness and response to disasters.

Carter's memo stated he had directed his reorganization project staff in the Office of Management and Budget to carry out a comprehensive study of the Federal government's role in preparing for and responding to natural, accidental, and wartime civil disasters.

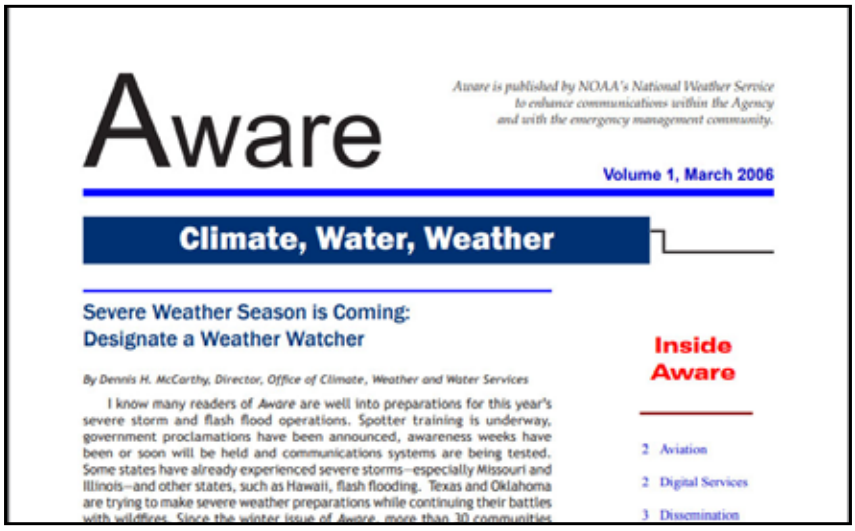
The Disaster Preparedness Report *became* Aware *in 1990.*

Aware has been keeping EMs, media, academics and other partners up to date on news from the agency and weather industry since 1990. NWS newsletters focused on keeping partners informed reach back to at least the 1970s. The first printed publication in our archives is the *Community Preparedness Report*, which reached back to at least 1976, the oldest edition found in the files. That report offered

reviews of major recent weather events as well as weather industry news such as the creation of the fledgling Emergency Alert System. That same year, 1976, NWS renamed the newsletter the *Disaster Preparedness Report*, with similar content.

In 1990, the report once again was renamed and became the *NWS Aware Report*. In the '90s, the newsletter was typically 25-30 pages and included lists of contacts, printed brochures and other resources as well as news and updates.

Since NWS staff created *Aware* in 1990, it has had only two managing editors, Linda Kremkau and myself. Linda's tenure dates back to the 1980s, when she worked on the *Disaster Preparedness Report*. By the late 1980s, she saw the need for change.



Aware

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Volume 1, March 2006

Climate, Water, Weather

Severe Weather Season is Coming: Designate a Weather Watcher

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

I know many readers of *Aware* are well into preparations for this year's severe storm and flash flood operations. Spotter training is underway, government proclamations have been announced, awareness weeks have been or soon will be held and communications systems are being tested. Some states have already experienced severe storms—especially Missouri and Illinois—and other states, such as Hawaii, flash flooding. Texas and Oklahoma are trying to make severe weather preparations while continuing their battles with wildfires. Since the winter issue of *Aware*, more than 30 communities

Inside Aware

2 Aviation

2 Digital Services

3 Dissemination

Aware *got another reboot in the early part of the century.*

In the July 1989 edition, Linda wrote: "The time has come to revamp and revitalize the *Disaster Preparedness Report*. We will broaden the scope to include evolving NWS policy issues affecting the public warning programs. Furthermore, we feel that the publication would be an excellent forum to highlight positive interactions between all levels of government, the private sector, and the entire hazards community toward reducing the losses of life and property due to natural hazards."

She adds, "*Aware* replaces the old *Disaster Preparedness (DP) Report* and is intended to highlight major changes to the public warning, forecast, dissemination, awareness and warning coordination programs of the **NWS.** It is expected to be a key resource for questions on modernization and how the Weather Service will interface with emergency managers, the media, the private sector, and the entire hazards community toward the provision of public warnings and forecasts."

Linda passed the reins to me in 2003 when she retired. By 2005, I knew it was time to move from print to digital and to shorten the newsletter to better reflect the digital age. Through the years, I've added color and new design elements and continued to broaden its scope. In 2013, after a user survey, *Aware* evolved from a quarterly to monthly report, with more topical articles.

This year, *Aware* became part of the Weather-Ready Nation brand, adding the logo and philosophy. NWS also is taking steps to give the report more prominence and better serve its subscribers. To see all our editions, go to *Aware* online.

Aware

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