Aware

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Implementation of Impact-Based Warnings for Flash Floods

By Dan Roman, Hydrologist, Water Resources Services Branch, NWS Silver Spring, MD

NWS Flash Flood Warnings (FFW) will be reformatted into the Impact-Based Warning (IBW) format beginning on or after (if a critical weather day is declared) September 16, 2019. This effort is a part of the overall NWS Hazard Simplification (Haz Simp) project.

The impact-based FFW enhances NWS flash flood services by improving the consistency and clarity of the product formatting and by characterizing the hazard (flash flood), the source of the information (e.g., radar, gauge, trained spotter, emergency manager), and briefly describing the hazard impact.

The IBW messages will include machine-readable tags to characterize the flash flood damage threat, source information and causative event.

Users will see no change to the information in the FFW segment header block, including the Valid Time Event Code (VTEC) and Hydrologic VTEC (H-VTEC) strings. All NWS Weather Forecast Offices will issue FFWs in IBW format by late November 2019. FFWs will fall into three categories:

Flood in Freemont County, IA, March 2019

- **No Threat Tag:** Used for events with the potential for some impacts and damage; most common types of flash floods event, estimated to be about 80 percent of the warnings NWS issues.
- **Considerable:** Reserved for rare flash flood events, capable of unusual severity of impact during which urgent action is needed to protect lives and property.
- **Catastrophic:** Limited to exceedingly rare, violent flash floods that threaten lives and cause disastrous damage when floodwaters are placing or will place people in life-threatening situations by rapidly rising to levels rarely, if ever, seen. Catastrophic flash flood damage threat tags will only appear in FFWs that include flash flood emergency language.

Currently, Wireless Emergency Alerts (WEA) are issued for all FFWs. Once IBW format is fully implemented, WEAs will be limited to FFWs with the damage threat tags of "Considerable" or "Catastrophic." NWS will send a Service Change Notice with the exact date of this WEA transition when the date is available. Additional background information and resources on the transition to impact-based FFWs can be found at in the following resources:

- **Fact Sheet**
- **Service Change Notice**
- **Product Description Document**
- **NWS Flood Safety Warning Page**
- NWS Flood Safety Product Page

NWS Radar Page Proposed Mobile Friendly Face Lift Under Development

*From **NWS Communications Staff**, Silver Spring, MD*

The NWS radar.weather.gov website has been the face of NWS radar data since 2003. When it was developed, the site illustrated what NWS could show using emerging technologies.

The site was a reliable resource for viewing radar and warning data on the web, and pushed the bounds of how NWS could provide data to the public in flexible Geographic Information System (GIS) formats users could integrate into their own data mashups.

The site routinely receives around 1.75 million hits on an average day and hundreds of millions of hits per day during active weather.

The new radar web interface in development

The face of computer technology has changed dramatically throughout the last decade. By 2018, more than 81 percent of Americans 13 years and over owned a smartphone. These devices have changed how and where we browse the Internet. By 2018, mobile devices generated more than half of all website traffic worldwide.

The radar.weather.gov website is not mobile-friendly. The site uses Flash technology that will be obsolete in 2020 when Adobe stops updating and distributing Flash. In April/May 2020, in response to these dramatic changes, NWS is proposing to replace the existing site and features with the following:

- Radar data and warnings presented on a dynamic map that allows zooming and scrolling
- Radar data that includes Multi-Radar Multi-Sensor Level 2 information in quality controlled and a not quality-controlled format, including rain/snow delineation of radar data
- Support on a 24x7 basis from the Integrated Dissemination Program
- Individual and Continental U.S. and Outside Continental U.S.-level consumable GIS services
- Ability to saving animations for use elsewhere, e.g. social media

WFO Monterey Provides Unique Search and Rescue Support

*From **NWS Communications Staff**, Silver Spring, MD*

NWS offices receive spot forecast requests all the time. Most are for fire weather support, some are hazmat, search and rescue and even the occasional county fair for public safety.

On July 10, 2019, NWS San Francisco/Monterey, CA, received one of its most unique and challenging spot requests in recent memory. U.S. Coast Guard Base Alameda, CA, one of the largest on the West Coast, reached out to the Monterey forecast office asking for weather support for a search and rescue (SAR).

To receive a request for SAR support is not unheard of, but it quickly became clear this was not an ordinary request. Coast Guard Alameda was tasked with assisting a fishing vessel that needed immediate medical assistance for injured crew members and help with a disabled vessel.

The difficult part was the fishing vessel was approximately 1,000 miles off the Baja Coast, making it a challenge due to distance offshore and language barriers. The request required extensive coordination between U.S. Air Force, Mexican Navy and U.S. Embassy. And of course, weather played a huge role in the outcome.

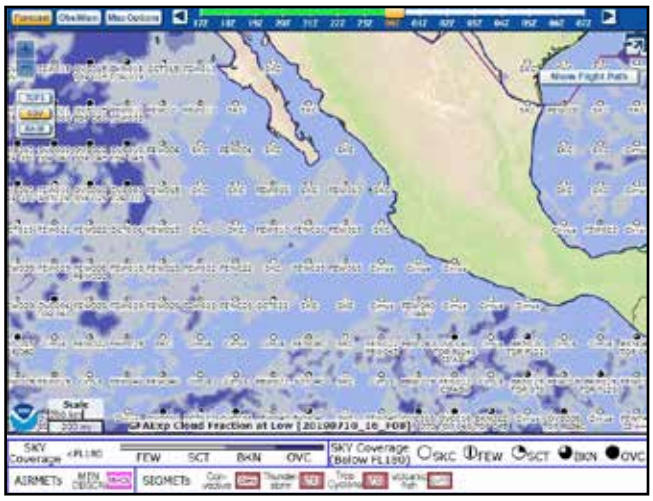
The team established a rendezvous point for the operation on a remote island off the coast of Baja, which contained a Mexican Naval Outpost with a daytime only landing strip.

The U.S. Coast Guard needed a complex forecast for marine and aviation that was clearly outside of our county warning area. Our office brainstormed on how to best aid in the Coast Guard's mission and sought assistance from two national centers to provide additional expertise.

The NWS Aviation Weather Center was more than happy to assist by pointing us in the direction of its experimental graphical web page interface that had information for the two areas of concern.

For the marine forecast assistance, NWS Monterey coordinated with NWS Tropical Analysis and Forecast Branch for an offshore waters forecast.

Ultimately and most importantly the injured parties were rescued and with a prognosis for a full recovery.



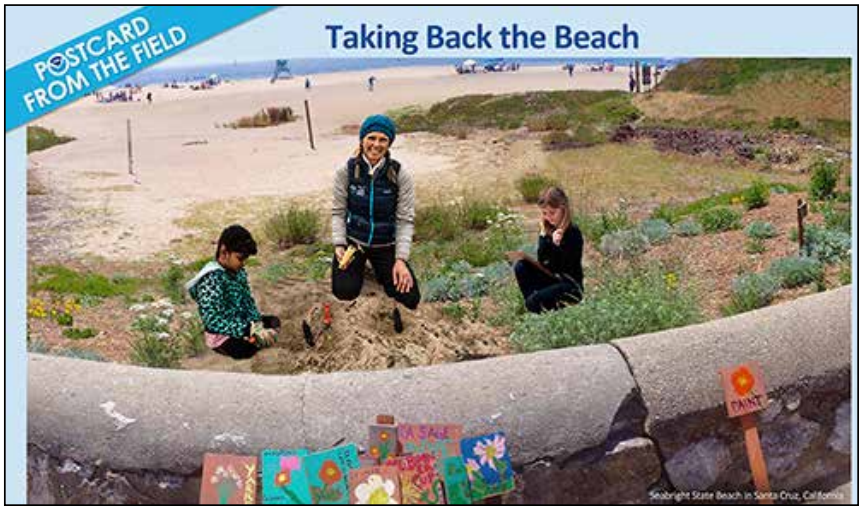
The new radar web interface in development.

Lessons learned: when in doubt, reach out. We in the NWS have many tools at our disposal to enable us to complete our mission. In this case, we took assistance from two national centers to assist a deep core partner.

Taking Back the Beach from Invasive Species

Five years ago invasive plants claimed dunes at the beach, but with more than 3,000 native plantings, the beach is again thriving, and threatened and endangered animals have returned to nest. NOAA's Ocean Guardian School program supported the effort. NOAA's Office of National Marine Sanctuaries coordinates the highly successful school program.

When invasive plants claimed dunes within the Monterey Bay National Marine Sanctuary, students determined to take back the beach. Five years later, the beach is thriving, restored with more than 3,000 native plants and once again home to threatened and endangered animals that have returned to nest. Led by Seaberry Nachbar, NOAA's Ocean Guardian School program supported this effort. NOAA's Office of National Marine Sanctuaries coordinates the highly successful program.



Shown is NOAA Fishery Biologist Seaberry Nachbar, lead for student beach restoration program within the Monterey Bay National Marine Sanctuary.

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