

*Aware is published by NOAA's National Weather Service to enhance communications between NWS and the emergency management community and other government and private sector partners as part of a Weather-Ready Nation.*

**January 2021**

---

## **A Move Toward Consistent NWS Provision of Avalanche Information**

By [Mike Muccilli](#), NWS Winter Program Coordinator, Silver Spring, MD

NWS is hosting a free Avalanche Weather Initiatives webinar on Friday, January 22, at 2 pm EST for all partners who have a stake in avalanche information. [Register to join the session.](#)

Snow avalanches pose a significant risk to winter sports enthusiasts and are responsible for more deaths on National Forest land than any other natural hazard. Avalanches also can cause significant impacts to transportation, infrastructure and waterways.

The U.S. Forest Service operates a network of 14 avalanche centers and supports a number of other local and state non-profit avalanche centers. The mission of this network is to provide avalanche safety information for people vacationing, working or traveling in these areas. NWS has partnered with the avalanche centers since early 1970s and these partnerships have grown steadily stronger.

The NWS provides weather forecast information critical to the avalanche center operations. In turn, NWS relays avalanche forecast and warning information across its dissemination networks. These products include Avalanche Watches and Warnings, and at selected NWS Weather Forecast Offices (WFO), Special Avalanche Bulletins (SAB). This forecast information and subsequent warning information is critical to many other partners as well.

This winter season, NWS has approved the use of SABs at all WFOs supporting avalanche centers. Additionally, the NWS is [experimentally producing](#) the Avalanche Weather Guidance (AVG) product at 24 WFOs across the Continental U.S. and Alaska. This experimental AVG is available as a text-based product via NWS web pages and through other NWS dissemination systems. The AVG provides the avalanche centers with forecast weather parameters critical to the centers' forecasts of avalanche conditions.

NWS intends the forecasts for use by state and local departments of transportation, emergency management, search and rescue operations, commercial entities, recreation areas, and backcountry enthusiasts to help them prepare for weather conditions they may encounter in avalanche-prone areas.

Organized and easy-to-navigate WFO avalanche weather web pages are a critical source of information for partners, ensuring they can easily obtain avalanche products and information. NWS is developing a standardized web page to ensure each WFO avalanche site offers consistent information. NWS will post a prototype web page showcasing this template for comment and review later this year. If feedback is favorable, NWS will implement the page on a wider scope in the winter of 2021-22.

NWS also has shared best practices and recommendations for decision support services, and outreach and education activities with WFOs that support avalanche centers, partners, or other local avalanche-related efforts.



---

## “Lifting” Marine Fog Impacts Along Texas Coast

By [Melissa Huffman](#), WCM, NWS Corpus Christi, TX

The end of the Atlantic hurricane season signals the beginning of a new season along the Gulf Coast: marine fog. The Port of Corpus Christi and WFO Corpus Christi, TX, have worked over the past few months to educate port partners and users about the importance of marine fog forecasts and to expand observations to support marine fog operations.

To raise awareness, in November 2020, the Port of Corpus Christi partnered with NWS Corpus Christi to develop a townhall program for mariners on this vital topic. Marine fog can have significant safety and economic impacts. In addition to resulting in injuries and even fatalities, fog can stop port operations for hours to days, resulting in millions of dollars in economic losses.

Accurate fog forecasting for onset and dissipation are critical to minimize impacts. Townhall topics included types of fog observed along the Texas coast, conditions that favor marine fog formation, and details about how NWS observes and forecasts this hazard. The townhall also included discussions on ways the NWS, Port of Corpus Christi, and mariners can work together to communicate fog impacts during events.

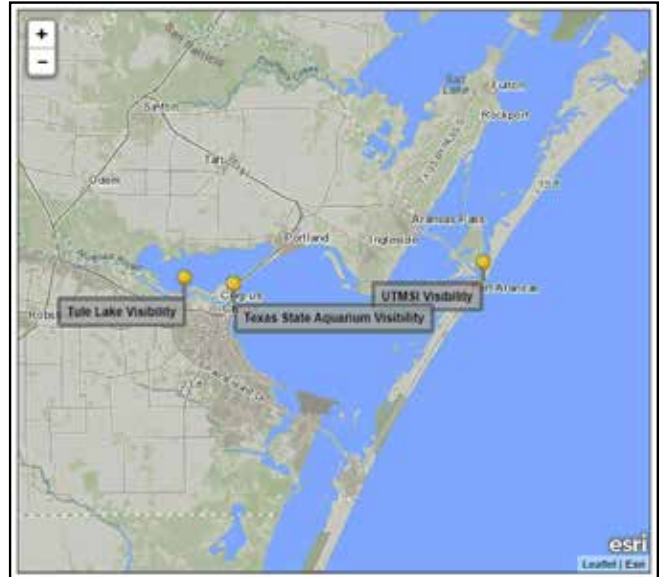
The port has supported the development of a visibility sensor network around Corpus Christi Bay. Two of these sensors became operational in December 2020: Texas State Aquarium and University of Texas Marine Science Institute. A third visibility sensor at Tule Lake went online this month, January. This data is available through the [Corpus Christi PORTS page](#) on the NOAA Tide and Currents website. Additional coordination with the port resulted in NWS Corpus Christi gaining access to selected webcams around the port, offering forecasters better situational awareness for marine fog monitoring.

This month, these partnership efforts provided NWS Corpus Christi with the ability to provide rapid notification of marine fog development. Visibility sensors provided the first indication that fog was beginning to develop. Soon after, the WFO put out a Dense Fog Advisory for Corpus Christi Bay, including the port.

Additionally, NWS Corpus Christi was able to determine the fog was contained to the Corpus Christi Bay and not the nearshore Gulf waters, allowing the office to issue a more exact Dense Fog Advisory. Before gaining access to these sensors, the WFO used inland visibility sensors for fog assessment; however, those sensors can make it difficult to assess the extent of fog within the ship channel and around the port. Access to webcams within the port helped forecasters assess when visibilities were beginning to improve and better determine when to discontinue the Dense Fog Advisory.

“The Port of Corpus Christi is proud to continue our longstanding partnership with the National Weather Service,” said Sean Strawbridge, CEO for the Port of Corpus Christi. “Through continued collaboration, we effectively are enhancing marine fog forecasting and situational awareness to improve the safety of our mariners as well as the communities we serve together. This partnership is critical to our role in the global energy marketplace as the largest crude export port in the U.S.”

Marine fog is a recurrent weather challenge along the Texas coast during the winter months, but strong communication and collaboration between the Port of Corpus Christi and NWS Corpus Christi are working to minimize these impacts have on public safety and the area’s economy.



*Visibility sensors located around Corpus Christi Bay*

---

## Decision Support Services in Remote Alaskan Sites

By [Audrey Rubel](#), Physical Scientist, NWS Alaska Region Office

Over 3 days in late November and early December, southeast Alaska was impacted by record-breaking precipitation and high winds, causing numerous landslides, flooding buildings, washing out roads, and causing power outages and evacuations in more than a dozen communities.

The greatest damage was in the town of Haines where 9.26" of rain fell in 24 hours. This deluge was followed by more rain through December 7. Snowfall totaled 92.0" over a 6-day period from December 1-7 at high elevations in the area. Slides and culvert failures impacted most of Haines' main roads. Tragically, two people died.

WFO Juneau Lead Forecaster Nicole Ferrin and Senior Service Hydrologist Aaron Jacobs deployed by helicopter to Haines to provide decision support services during this 200-500 year storm event. Haines is a cruise ship destination, fishing town and backcountry skiing destination.

On December 2, a landslide roughly 600-feet wide, destroyed four homes in Haines. On December 3, WFO Juneau staff briefed partners at the Haines Emergency Operations Center (EOC) as well as the governor's office. They also began providing support to the Haines EOC, the National Guard, State Troopers and other search and rescue (SAR) team members. Aaron drew on his experience performing cutting-edge techniques to [improve landslide decision support services](#) in Sitka. That evening, a National Guard helicopter pilot tried to bring Nicole and Aaron to the Haines EOC, but had to abort because of low visibility.



*Aftermath of December 2, 2020 landslide in Haines, Alaska. Image taken by Alaska State Troopers on December 3, 2020.*

The next day, Nicole and Aaron began providing twice daily in-person briefings at the Haines EOC to the Alaska State EOC, Alaska State Troopers, US Geologic Survey, Alaska Division of Geological and Geophysical Surveys, Alaska Department of Transportation, Alaska Division of Forestry, Haines Borough Public Works and the Haines Avalanche Center. Nicole and Aaron also provided on-site weather information to support the SAR operations that involved marine and aviation activities along with recovery efforts to the Haines Borough. The NWS Alaska Regional Operation Center included the damage in Haines in their biweekly briefings to the Alaska State Unified Command.

On December 5, Governor Dunleavy declared a disaster for Southeast Alaska. This event was a great example of using deployment-ready staff to provide on-site decision support information to NWS partners.

---

## NWS Releases the Customer Satisfaction Survey Results

By [Patricia Brown](#), Service Assessment Program Leader, Performance and Evaluation Branch

Service Assessments and reviews, along with verification and evaluation, help determine the effectiveness of NWS information and services. NWS uses the Customer Satisfaction Survey (CSS) to determine how well the agency is performing in pursuit of its vision and mission.

NWS now conducts a CSS twice a year. The most recent CSS covers April 1 to September 30, 2020. The Customer Satisfaction Index (CSI) remained strong among both the Weather Enthusiasts and the General Population groups.

Among the Weather Enthusiasts, CSI remained solid with a score of 85, a 1 point decline. CSI among Weather Enthusiasts has remained within a 6-point range for the past 4 years, regardless of the weather event measured.



In the last 4 years, the Weather Enthusiasts group has gradually increased its score for NWS from the low 80s in Fiscal Year (FY) 2016, FY2017, and most of FY2018, to consistent scores in the mid-80s starting in the last quarter of FY2018.

Among General Population respondents, the CSI was 78 for all of the last fiscal year, down 2 points from quarter 4 of FY 2019. Among this group, the CSI has generally remained in the mid- to high-70s during the past 3 years, moving into the low 80s in the later part of FY2018 and FY2019. [See the complete report on our website.](#)

## Graphics Make the Difference in River Flood Functional Exercise

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

WFOs Cheyenne and Riverton, WY, partnered with the state National Guard, state Office of Homeland Security, and Fremont County for an extensive river flood functional exercise November 11-12, 2020. WFO staff provided historical flood simulated graphics for community locations in Fremont County. These graphics helped exercise planners and participants be more effective during the 2-day virtual functional exercise.

WFO Riverton also created flood warnings and engaged participants with a multitude of weather injects. Wyoming National Guard Major Shawn Stensaas said, “The goal of this exercise was to test the state of Wyoming’s coordination capabilities with the Wyoming National Guard and the National Weather Service. Thanks for the excellent coordination and outstanding injects to make the exercise a success.”



# Aware

NOAA’s National Weather Service, Analyze, Forecast and Support Office  
Managing Editor: [Melody Magnus](#), Editor: [Mark Tew](#), [Doug Hilderbrand](#), [Wendy Levine](#)  
Aware online: [www.weather.gov/publications/aware](http://www.weather.gov/publications/aware) ISSN 1936-8178  
Subscribe/Unsubscribe: <https://www.weather.gov/publications/aware>