NOUS41 KWBC 011445
PNSWSH

Service Change Notice 21-21
National Weather Service Headquarters Silver Spring MD
1045 AM EDT Thu Apr 1 2021

To: Subscribers:
-NOAA Weather Wire Service
-Emergency Managers Weather Information Network
-NOAAPort
Other NWS Partners and NWS Employees

From: Allison Allen, Chief
Marine, Tropical and Tsunami Services Branch

Subject: Soliciting comments through April 1, 2022 on experimental Arrival of Tropical-Storm-Force Winds Graphics for the South Pacific and western North Pacific provided by the Central Pacific Hurricane Center (CPHC) based on forecasts from the Joint Typhoon Warning Center (JTWC)

The NWS is soliciting public comments through April 1, 2022, on experimental graphics provided by the Central Pacific Hurricane Center (CPHC) that project the arrival time of tropical-storm-force winds for tropical cyclones in the South Pacific and western North Pacific basins based on Joint Typhoon Warning Center (JTWC) forecasts. These graphics will use the same format as graphics that are operationally provided on hurricanes.gov for the central and eastern North Pacific and the Atlantic basins based on NWS forecasts.

The anticipated arrival of sustained tropical-storm-force winds from a tropical cyclone is a critical threshold for coastal and inland communities. For example, emergency managers use this information to help determine when to begin and complete coastal evacuations. Members of the public need to know when to prepare their homes or businesses in advance of hazardous weather. Once sustained tropical-storm-force winds begin, such preparations usually become too dangerous or difficult.

Historically, many decision makers have inferred the arrival of sustained tropical-storm-force winds from deterministic tropical cyclone forecasts, without accounting for tropical cyclone track or size uncertainty. The risk in not factoring in these elements of uncertainty is that communities may have less time to prepare if a tropical cyclone speeds up or increases in size beyond the initial forecasts.

To better meet users' needs, a set of graphics was developed that depict when sustained tropical-storm-force winds from an approaching tropical cyclone could arrive at individual locations. The maps were developed and tested using social science techniques, including one-on-one telephone interviews, focus groups, and surveys with

emergency managers, broadcast meteorologists, and NWS meteorologists to gather opinions on the idea, content, and design of the products.

The timing graphics are created using the same Monte Carlo wind speed probability model currently used to determine the risk of tropical-storm-force and hurricane-force winds at individual locations. This model constructs 1,000 plausible scenarios using the official NWS and JTWC tropical cyclone forecasts and their historical errors. Additional information on this product and the underlying technique are located online at: https://www.nhc.noaa.gov/about/pdf/About_Windspeed_Probabilities.pdf

There will be two thresholds for experimentally producing the Arrival of Tropical-Storm-Force Winds Graphics for South Pacific and western North Pacific tropical cyclones:

Earliest Reasonable Arrival Time: This graphic identifies the time window that users at individual locations can safely assume will be free from tropical-storm-force winds. Specifically, this is the time before which there is no more than a 1-in-10 (10 percent) chance of seeing the onset of sustained tropical-storm-force winds. This is when preparations should ideally be completed for those with a low tolerance for risk.

Most Likely Arrival Time: This graphic identifies the time before or after which the onset of tropical-storm-force winds is equally likely to occur. This graphic would be more appropriate for users who are willing to risk not having completed all their preparations before the storm arrives.

Timing information will only be available for locations that have at least a 5 percent chance of experiencing sustained tropical-storm-force winds during the next 5 days.

Each of these thresholds will also be available overlaid on top of the cumulative 5-day probability of tropical-storm-force winds, providing a single combined depiction of the likelihood of tropical-storm-force winds at individual locations, along with their possible or likely arrival times.

The experimental graphics for the South Pacific and western North Pacific will be updated using forecast information from the Tropical Cyclone Warning products from JTWC within those basins. Arrival times will be depicted with higher temporal resolution (i.e., in 6-hour intervals) during the first day of the 5-day forecast, increasing to lower temporal resolution (i.e., in 12-hour intervals) after the first day of the 5-day forecast period. Arrival times will be referenced to UTC on the western North Pacific graphics and to Samoa Standard Time (SST) on the South Pacific graphics.

When JTWC advisories are issued for the South Pacific or western North Pacific basins, the experimental graphics will be available within 15 minutes after the release of TC Warning products from JTWC. The TC Warning product is scheduled for issuance at 0300, 0900, 1500, and 2100 Coordinated Universal Time (UTC). JTWC TC Warning products can be found under the following World Meteorological Organization (WMO) identifiers:

JTWC Product	WMO ID
Southern Hemisphere TC Warning	WTPS3[1-5] PGTW
Western North Pacific TC Warning	WTPN3[1-5] PGTW

More information on the products issued by JTWC can be found here:
https://www.metoc.navy.mil/jtwc/jtwc.html?notices

Examples of the Time of Arrival of Tropical-Storm-Force Winds graphics can be found at:

South Pacific:
https://www.weather.gov/hfo/spacTropicalExample

Western North Pacific
https://www.weather.gov/hfo/wpacTropicalExample

When there are active TCs in the South Pacific and western North Pacific basins, the experimental graphics will be provided at the following websites:

South Pacific:
https://www.weather.gov/hfo/spacTropical

Western North Pacific:
https://www.weather.gov/hfo/wpacTropical

CPHC provides the graphics experimentally in KMZ format on the same webpages noted above. Additional information about the content of NWS tropical cyclone wind timing graphics can be found online at:
https://www.nhc.noaa.gov/aboutnhcgraphics.shtml?#TOA

Note: The experimental products will not have a backup production site in a case where conditions or events exist that prevent the product from being issued from the original production source.

Users are encouraged to provide feedback on this experimental product through the following survey:
https://www.surveymonkey.com/r/Arrival_TropicalStormForceWindsGraphics_SouthPacific_WesternNorthPacific

If you have questions regarding this notice, please contact:

Jessica Schauer
Tropical Program Leader

NWS Marine, Tropical and Tsunami Services Branch
Miami, FL
305-229-4476
Tropical.Program@noaa.gov

National Service Change Notices are online at:
https://www.weather.gov/notification/

NNNN