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PNSWSH

Service Change Notice 22-18
National Weather Service Headquarters Silver Spring MD
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From: David Vallee
 Acting Chief, Water Resources Services Branch

Subject: Updating Excessive Rainfall Outlook Probability Definitions on
 or about Thursday February 10, 2022

Effective on or about Thursday February 10, 2022, the NWS National Centers for Environmental Prediction's (NCEP) Weather Prediction Center (WPC) will implement the following changes to the probability ranges of the Excessive Rainfall Outlook (ERO) risk categories.

The ERO provides daily forecasts of the probability of rainfall exceeding flash flood guidance (FFG) within 25 miles (40 km) of a point, over the contiguous United States (CONUS) for the first three days of the forecast (Day 1, 2, and 3 as separate forecasts).

Risk Category	Current Definition	New Definition
Marginal	5%-10%	At least 5%
Slight	10%-20%	At least 15%
Moderate	20-50%	At least 40%
High	At least 50%	At least 70%

Review of verification over the past several years shows that the ERO currently verifies near or just above the top end of existing probability ranges. For example, approximately 25 percent of areas under a Slight Risk have been within 25 miles of an instance of rainfall exceeding FFG.

Improvements in weather forecast models have allowed WPC to draw risk areas with greater precision, which in turn leads to a greater fractional coverage of events in individual risk areas in verification data. Therefore, this change will update the ERO probability ranges to better match the current state of the science, and allow WPC forecasters to maintain a consistent approach with how the ERO currently performs operationally, with no change to users.

WPC will also correct an ambiguity in the existing definition at the boundaries between risk categories by clarifying the lower bound. For example, Marginal Risk is defined as 5 to 10 percent probability, and Slight Risk is defined as 10 to 20 percent probability. The intent is not that both categories should include a 10 percent probability, and this ambiguity can cause unnecessary confusion.

Products affected by this change include the web graphics at

https://www.wpc.ncep.noaa.gov/qpf/excess_rain.shtml

as well as the following products:

Product	WMO Header	AWIPS ID
Day 1 Graphic	PEI745 KWBC	GPH94E
Day 1 Grid	MENC98 KWBC	
Day 2 Grid	MENS98 KWNH	
Day 3 Grid	MENU98 KWNH	

GIS Information: The changes described here will be incorporated into WPC-provided GIS data available at:

<https://www.wpc.ncep.noaa.gov/kml/kmlproducts.php#ero>

An experimental web service for the new changes will also be established at:

https://mapservices.weather.noaa.gov/vector/rest/services/hazards/wpc_precip_hazards/MapServer

The existing web service for the current version of the Excessive Rainfall Outlook found at

https://idpgis.ncep.noaa.gov/arcgis/rest/services/NWS_Forecasts_Guidance_Warnings/wpc_precip_hazards/MapServer will be updated at a later date.

Another change notice will be forthcoming when the existing web service incorporates the updates described herein.

More detailed information about the Excessive Rainfall Outlook can be found in NWS Directive 10-930 and on the WPC Product Information Page at the following URLs:

<https://www.nws.noaa.gov/directives/sym/pd01009030curr.pdf>

<https://www.wpc.ncep.noaa.gov/html/fam2.shtml#excessrain>

If you have questions or comments regarding the implementation of these changes to the ERO, please contact:

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NWS Service Change Notices are available at:

<https://www.weather.gov/notification/>

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