

## **Status Update of the Extreme Precipitation Forecast Improvement Project**

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This presentation will provide an overview of the work being accomplished by the Weather Prediction Center (WPC) along with a team of NWS Science and Operation Officers, who were tasked by the Office of Science and Technology Integration (STI) with exploring and implementing methods to help improve forecaster awareness of extreme precipitation events. This work has been a fully collaborative effort between a National Center, River Forecast Centers (RFCs), and Weather Forecast Offices (WFOs). Their efforts have allowed for new tools and datasets, along with sufficient training, to be successfully implemented into forecast operations. This presentation will demonstrate how some of the products developed by the team have been used in an operational setting.

In this presentation, extreme precipitation events are defined as storms that produce rainfall amounts that have a 1 in 100 (i.e., top 1%) chance of occurring for a specific duration, in any given year. These events are also referred to as having a 100-yr Average Recurrence Interval (ARI). ARIs can be used by forecasters as a decision support tool to express the climatological significance or “rarity” of a forecasted rainfall event. With the introduction of the NOAA Atlas 14 dataset of ARIs into AWIPS in Summer of 2016, the team came up with a tool that utilizes the data called the Extreme Precipitation Forecasting Table (EPFT).

Allowing forecasters to choose from a large set of QPF guidance in AWIPS to compare with an ARI of their choosing (i.e., from 1 to 100 years) is a substantial aspect of EPFT. This aspect directly leads the forecaster to quickly and efficiently identify important signals of extreme or climatologically significant rainfall in the forecast. Along with the EPFT, a tool with a similar framework has been developed called the Extreme Precipitation Assessment Table (EPAT). Like the EPFT, it displays the data in a table format but compares sources of observed rainfall, or QPE, in the context of any ARI. Both the EPFT and EPAT are available to WPC, NWS WFOs, Regional Headquarters, and RFCs within the contiguous United States.

The efforts from this team have furthermore allowed WPC to implement an experimental web product called “The Extreme Precipitation Monitor”, which displays WPC’s deterministic QPF in the context of the ARIs from 1 to 100 years. This product is meant to give a sense to the public of where climatologically significant rainfall is expected to occur, as forecasted by WPC.