

Experimental Probabilistic Precipitation Forecasts Webpage Product Description Document (PDD)

Part 1 – Mission Connection

1. Product Description:

This experimental web page from WFO Tucson, AZ (TWC) displays Probabilistic Quantitative Precipitation Forecasts (PQPF) using calibrated Short Range Ensemble Forecast (SREF) data displayed on a Goggle Earth platform.

2. Purpose/Intended Use:

This experimental web page provides customers with a robust probabilistic precipitation forecast, especially useful in heavy precipitation situations. The experimental page clearly shows the uncertainty depicted in the SREF model along with output from two additional calibration techniques: an artificial neural network and an exponential distribution. The Google Earth display platform makes the forecast easy to retrieve, display and interpret. This service is meant to provide users a range of probabilities for quantitative precipitation amounts, rather than a single probability for measurable precipitation (i.e., 0.01 of an inch). Customers will be able to make better decisions when higher precipitation amounts are expected to occur.

3. Audience:

The primary audience for this service includes decision makers such as emergency managers, hydrological managers, flood control districts, storm water managers, etc. However, it is anticipated that a wide variety of users will migrate to this page over time, including gardeners, building contractors, farmers and others.

4. Presentation:

Two existing WFO Tucson web pages have new links added to support these probabilistic QPF products. The links are associated with the SREF model run times (i.e., 03, 09, 15 and 21Z). A “product info” link describing how to read and interpret the PQPF products is located near the model run time links. The two web pages containing these links (near the bottom of the page) are:

http://www.wrh.noaa.gov/twc/monsoon/monsoon_tracker.php

<http://www.wrh.noaa.gov/twc/models/models.php>

5. Feedback Method:

A link to an approved feedback form will give feedback directly to the WFO TWC MIC. The feedback period for this experimental service will extend from November 1, 2010 through November 1, 2011.

Part 2 – Technical

1. Format and Science Basis:

These products display a threat level indicating the potential for heavy precipitation at locations in the Southwest based on SREF Probabilistic Quantitative Precipitation Forecasts (PQPF) calibrated by an Artificial Neural Network (ANN). The ANN calibrated PQPFs are presented in the form of probability of exceedance (POE) forecasts. The probabilities to exceed .01, .25, .50, and 1.0 inch are provided for each 3-hour period for the 87 hours of the forecast cycle. Experimental probability

thresholds are color coded to four threat categories of None (green), Low (yellow-green), Moderate (yellow), and High (red). These threat categories represent the potential for heavy precipitation at any time in the forecast period. The product table also provides POE forecasts from the uncalibrated (or raw) SREF and an SREF mean QPF fitted to an exponential distribution (EXPO).

2. Availability:

This service is available 24 hours a day and 7 days a week. Data for the page is updated every 6 hours.

Sample web page links

The screenshot shows a web page with a blue sidebar on the left containing navigation links such as 'Monsoon Safety', 'Storm Ready', 'SkyWarn™', 'Additional Information', 'Monsoon info.', 'Education/Outreach', 'Office staff', 'Coyote Crier', 'Storm Reviews', 'Road Conditions', 'Upcoming Tucson conferences', 'Nat. Wx Asscn Oct. 3-7', 'Contact Us', 'Webmaster', and 'Feedback'. Below the sidebar is the 'USA.gov' logo.

The main content area features several sections:

- Satellite Water Vapor Imagery (info)**: Includes a satellite image of the region with a timestamp '6 9 1500Z'.
- Past estimated rainfall total from radar (info)**: Includes a map of the Tucson area with a legend for '100 Mountain 24hr Pcp' and 'Tucson'.
- Upper Air Plots (info)**: Lists locations including Tucson, Phoenix, Flagstaff, Desert Rock, Albuquerque, El Paso, and GPS Precipitable Water Vapor (Uof A). It also mentions 'Real-time cloud animation over the Catalina Mountains (courtesy project CuPIDO)'.
- Rainfall Data**: Divided into 'Pima County Text (24hr total) Maps' and 'Maricopa County Text (24hr total) Phoenix Map Outside PHX Map'. It notes data courtesy of Pima County Regional Flood Control District and Maricopa County.
- Experimental Probabilistic Precipitation Forecasts NEW**: A section with a red arrow pointing to it, containing a '(product info) PDF file' and links for 'KMZ files' and forecast times '03z', '09z', '15z', and '21z'.

At the bottom, there are links for 'Webmaster', 'US Dept of Commerce', 'Disclaimer', 'Information Quality', 'Privacy Policy', and 'Freedom of Information Act'.

Sample Google Earth display

