

# NATIONAL MULTI-SENSOR PRECIPITATION ESTIMATES WEB-BASED SERVICE

## Part I - Mission Connection

a. Product Description - The National Weather Service (NWS) collects rainfall data to support its forecast and warning operations. Individual River Forecast Centers (RFCs) and Weather Forecast Offices typically provide rainfall collectives in text format and graphical format for their areas of responsibility. This service provides unified precipitation estimates for the continental United States (CONUS) and Puerto Rico on the Internet. The service includes graphics that display these precipitation data, as well as the ability to download the information in GIS and netCDF formats.

This suite of graphics includes precipitation estimates for the last 1, 7, 14, 30, 60, 90, and 180 days, month-to-date, and both calendar and water<sup>1</sup> year-to-date. Monthly and yearly archives will be maintained. Except for the 1-day duration, graphics of the normal precipitation, percent of normal precipitation, and departure from normal are generated.

b. Purpose – These Quantitative Precipitation Estimates (QPE) Graphics are representations of rainfall that has occurred for a specific length of time. Currently, each RFC prepares its QPE graphics using different colors, precipitation thresholds, and geographic projections. By producing these graphics centrally, it will enable the public to compare data across the CONUS and Puerto Rico.

Parameter-Elevation Regressions on Independent Slopes Model (PRISM) climate data from a cooperative venture between Oregon State University and the United States Department of Agriculture-Natural Resources Conservation Service provides a grid format of normal precipitation. More information about PRISM can be found at <http://www.ocs.oregonstate.edu/prism/docs/przfact.html>.

c. Audience - The target audience for these graphics is wide ranging. Partners, such as the Army Corps of Engineers, the U.S. Geological Survey, the Federal Emergency Management Agency, the U.S. Department of Agriculture, the National Park Service, state emergency managers, and river authorities have areas of responsibility that span states and often River Forecast Centers. The centralized location of these graphics makes it easy for these partners to view precipitation data for a wide area. Water resources managers and climatologists can use the departures/percent of normal information for drought monitoring and climatological applications. Use will not be limited to those interested in large areas, however. Local emergency managers and the general public will also use these graphics to evaluate conditions at the local level.

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<sup>1</sup> For this analysis, the water year starts on October 1.

d. Presentation Format - The Precipitation Graphics are web-based graphics, and can be viewed at the following URL:

<http://water.weather.gov/>

The information can also be downloaded in GIS and netCDF formats.

e. Feedback Method - We are always seeking to improve our services based on user feedback. Comments regarding the National Multi-Sensor Precipitation service should be sent to the feedback email address on the graphics webpage.

Comments may also be provided to:

[AHPS.Precip@noaa.gov](mailto:AHPS.Precip@noaa.gov)

## **Part II - Technical Description**

a. Format and Science Basis - Rainfall data (gage) are collected from cooperative observers and data collection networks such as GOES Data Collection Platforms and Automated Surface Observing Systems (ASOS). Hourly precipitation estimates from WSR-88D NEXRAD radar are compared with gage precipitation and satellite-derived estimates to derive a multi-sensor precipitation estimate. Using 24-hour multi-sensor precipitation files generated at the CONUS RFCs, software written in C is used to prepare the web-ready precipitation suite for the CONUS and Puerto Rico. Web browsers using standard Hypertext Markup Language (HTML) can be used to display these graphics. A sample graphic is shown in Figure 1. Users can also download the observed precipitation information in shapefile and netCDF formats for use in their projects or research.

b. Product Availability - The Precipitation Graphics are routinely updated twice daily.

c. Additional Information – Please click on the “About NWS Precip Analysis” tab at the top of the graphic.

Local weather forecast by "City, ST"

XML RSS Feeds  
 Warnings  
 Current By State/County...  
 UV Alerts  
 Observations  
 Radar  
 Satellite  
 Snow Cover  
 Surface Weather...  
 Observed Precip  
 Forecasts  
 Local  
 Graphical  
 Aviation  
 Marine  
 Hurricanes  
 Severe Weather  
 Fire Weather  
 Text Messages  
 By State  
 By Message Type  
 National  
 Forecast Models  
 Numerical Models  
 Statistical Models...

Climate  
 Past Weather  
 Predictions  
 Weather Safety  
 Weather Radio  
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On October 16, 2007, the latitude and longitude specifying the position of each grid in the AHPS (Advanced Hydrologic Prediction Service) observed precipitation shapefiles will be shifted from the lower left corner to the center of each 4x4 km grid cell. This provides spatial referencing more commonly used in contemporary geospatial analysis... more

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CONUS + Puerto Rico: Current 7-Day Observed Precipitation  
 Valid at 10/18/2007 1200 UTC - Created 10/18/07 18:34 UTC

Topo  Popn Amount  Counties  Rivers  States  Highway/City  RFC Boundary

1. Timeframe:  Current Data,  Archive: Month/Year,  Archive: Daily  
 2. Product:  Observed,  Normal,  Departure from Normal,  Percent of Normal  
 3. Location:  States,  NWS RFC/Regions,  NWS WFOs  
 4. Units:  English,  Metric

October 18, 2007 - Today  
 October 18, 2007 - Last 7 Days  
 October 18, 2007 - Last 14 Days  
 October 18, 2007 - Last 30 Days  
 October 18, 2007 - Last 60 Days

CONUS + Puerto Rico  
 NWS Southern Region  
 NWS Central Region  
 NWS Eastern Region  
 NWS Western Region

Missing Data

Update URL for Bookmarking | Print/Save Map | Zoom Out to CONUS

NOTE: If you would like to bookmark or share your current view, you must first click the "Update URL for Bookmarking" button. The URL in your browser window can then be bookmarked or shared.

[Ask questions about the Precipitation Analysis website](#)

NWS Information

US Dept of Commerce  
 National Oceanic and Atmospheric Administration  
 National Weather Service  
 1325 East West Highway  
 Silver Spring, MD 20910  
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Figure 1. Screen capture showing estimated precipitation for the seven-day period, ending October 18, 2007.