

The Use of Nationally Consistent 4 Kilometer Daily Precipitation Images for Agriculture and Natural Resources Applications

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NWS Weather Forecast Offices (WFO) and River Forecast Centers (RFC) are tasked with monitoring the hydrometeorological status of the continental United States (CONUS) and Puerto Rico. The NWS RFCs utilize the Weather Surveillance Doppler Radar (WSR-88D) and observed precipitation amounts to create gridded precipitation estimates. The addition of the WSR-88D precipitation estimates to observed precipitation values from first order stations and Co-Operative Observation locations gives a spatial resolution to rainfall distribution that is not available when using gage only information. Each RFC quality controls the WSR-88D precipitation estimates as part of their routine duties to ensure that WSR-88D precipitation estimates align with observed values from gauges which report hourly. If needed, a bias adjustment is calculated for each radar. The product covers the entire CONUS and Puerto Rico. The product is initially updated daily at approximately 14300GMT to encompass the observed precipitation for the 24 hour period ending at 1200GMT. The data is displayed in a GIS format at the following website:
<http://water.weather.gov>

Displayed data which is available for use in the delivery of climate services and products includes observed precipitation, normal precipitation, as well as "percent of normal precipitation" and "departure from normal precipitation". The user can select the time period of record they wish to access the data for and then select the method of displaying the data (i.e. observed, percent of normal, departure from normal). The user can then select the geographic region or the individual state they want the data displayed for.

The database for derived precipitation products for certain user selectable time frames dates back to 2002. Also, individual shape files with a resolution of 4x4 kilometers (km) can be downloaded on demand daily by users to create customized products on demand. Examples of this include the high resolution Keetch-Byrum Drought Index (KBDI) product currently being prepared by the state forest agencies in Florida and Texas. It is envisioned that future downloads and applications of the data will be of great interest to agriculture interests who need to determine remotely how much precipitation has fallen in an area. Future use by the USDA to help determine crop/pasture/rangeland insurance claims is being evaluated.

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