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PNSWSH

Technical Implementation Notice 15-05: Updated
National Weather Service Headquarters Silver Spring, MD
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From: Edward P. Clark
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Subject: Updated: Modification of the National Operational
Hydrologic Remote Sensing Center, (now the Office of
Water Prediction (OWP)) prototype gridded
Snowfall Analysis product effective March 15, 2017

Updated to amend the 2015 Technical Information Notice to
reflect the modified OWP gridded Snowfall Analysis

Effective 1200 Coordinated Universal Time (UTC) Wednesday, March
15, 2017, the OWP in Chanhassen, MN, will change the prototype
analysis of snowfall observations displayed on its interactive
website.

These products are currently viewable at:
http://www.nohrsc.noaa.gov/snowfall_v2

Beginning March 15, they may also be viewed by connecting to the
NOHRSC Interactive Snow Information page at:
<http://www.nohrsc.noaa.gov/interactive/html/map.html> and
selecting from the "Select Physical Element" drop-down item
"Interpolated SF (24 hrs)," "Interpolated SF (48 hrs)" or
"Interpolated SF (72 hrs)."

The current version of the analysis is generated by
interpolating observations of 24-hour snowfall accumulations at
point locations over the coterminous United States (CONUS),
taken primarily from Cooperative observers, CoCoRaHS observers
and NWS spotter reports. The interpolation method is a Barnes
2-pass analysis performed for 1200 UTC each day at a resolution
of 0.04 degrees (144 arc sec). The products originally included
a 0000 UTC analysis, but this was discontinued due to its
poor quality.

The modified products are built upon a 24-hour background
analysis based on Stage IV quantitative precipitation estimates

(QPE), with contributions from High Resolution Rapid Refresh (HRRR) and Rapid Refresh (RAP) quantitative precipitation forecasts, National Snow Analysis (NSA) 2-meter air temperature grids, and a new gridded snowfall-to-liquid ratio climatology. Snowfall observations are assimilated into this background analysis via ordinary kriging. The addition of a background analysis produces a spatial distribution of snowfall that improves upon the previous version, particularly in the Western United States.

Improved automated quality control of station reports has been implemented for the modified analysis, and a new method for accurately subdividing snowfall observations into hourly amounts has made a 0000 UTC analysis possible. Consequently, the modified analysis is performed for 24-hour periods ending on both 0000 UTC and 1200 UTC each day. The first issuance of the analysis is generated about an hour after a given analysis time, then repeated hourly for at least 72 hours following the analysis time so the products can benefit from late-arriving observations and improvements in the QPE input to the background analysis.

The modified analysis uses the same 0.04 degree (144 arc sec) spatial resolution as the previous version. The same file formats (NetCDF, GeoTIFF, and GRIB2), projections and accumulation periods (24-, 48-, and 72-hour, plus seasonal) that were available previously will be available for the modified analysis; however, some changes to file naming conventions will occur. As before, all accumulations for periods exceeding 24 hours are produced by aggregating 24-hour analyses; i.e., no independent 48- or 72-hour-or seasonal-analyses are performed.

For questions regarding these changes, please contact:

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NWS National Technical Implementation Notices are online at:

<http://www.nws.noaa.gov/os/notif.htm>

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