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PNSWSH

Technical Implementation Notice 14-04 Corrected
National Weather Service Headquarters Washington DC
815 AM EDT Wed Mar 19 2014

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 -NOAA Weather Wire Service
 -Emergency Managers Weather Information Network
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From: Tim McClung
 Chief, Science Plans Branch
 Office of Science and Technology

Subject: Corrected: Addition of GEFS/NAEFS Bias-Corrected Products and
Downscaled Products for Alaska and CONUS: Effective March 27, 2014

Corrected an error in the World Meteorological Organization (WMO) headers provided. The third digit (A1) in the WMO header should be A, not E. Also amended to change the effective date from March 18, 2014 to March 27, 2014.

Effective on or about Thursday, March 27, 2014, beginning with the 1200 Coordinated Universal Time (UTC) run, the National Centers for Environmental Prediction (NCEP) will upgrade the Global Ensemble Forecast System (GEFS) and the North American Ensemble Forecast System (NAEFS). The upgrade will include:

- Adding variables to bias-corrected products globally and downscaled probabilistic products for the contiguous U.S. (CONUS) and Alaska from the Global Ensemble Forecast System (GEFS) and the North American Ensemble Forecast System (NAEFS).

- New product generation of calibrated CONUS precipitation.

- Consolidation of the "early" and "late" runs of the NAEFS jobs into one operational run. Today, NCEP disseminates "early" NAEFS output files that only contain output from the GEFS members, followed two hours later by a re-dissemination of these same NAEFS files now populated with the combined GEFS and CMC output. With this upgrade, the files will be posted only one time, roughly 20 minutes after the current early delivery time, but they will be these final GEFS/CMC combined output products.

- In addition, on or about Wednesday, April 9, 2014, beginning with the 1200 UTC run, NCEP will begin disseminating total precipitation and two meter bias-corrected temperature grids from the individual members of the GEFS ensemble forecast. This product will be sent on NOAAPort and the Satellite Broadcast Network (SBN) to support the Eastern Region River Forecast Centers' (RFCs') Ensemble River Forecast System, also known as Model Ensemble River Forecasts (MMEFS):

<http://www.erh.noaa.gov/mmefs/index.php>

There will be no change to the current GEFS and NAEFS output file names. NCEP will only be modifying the output variables from the NCEP GEFS and the NAEFS.

More information about the GEFS and NAEFS upgrade is available on the NCEP server at:

http://www.emc.ncep.noaa.gov/gmb/yzhu/html/imp/201204_imp.html

All filenames given below can be located on the NCEP server via the following URLs (yyyymmdd is the year, month, and day):

<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/gens/prod/gefs.yyyymmdd>

<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/gens/prod/naefs.yyyymmdd>

<http://www.ftp.ncep.noaa.gov/data/nccf/com/gens/prod/gefs.yyyymmdd>

<http://www.ftp.ncep.noaa.gov/data/nccf/com/gens/prod/naefs.yyyymmdd>

Addition of New Variables:

is the number of the ensemble member

CC is the cycle

FFF is the forecast hour

Adding the following two bias-corrected elements:

2-meter relative humidity

2-meter dew point temperature

Ensemble products with the two new variables listed include:

NCEP bias-corrected GEFS forecast for each member:

GEFS filenames pgrb2a_bc/gep##

NCEP bias-corrected GFS forecast:

GEFS filenames pgrb2a_bc/gegfs

10% probability forecast:

GEFS filenames pgrb2a_bc/ge10pt

NAEFS filenames pgrb2a_bc/naefs_ge10pt

50% probability forecast:

GEFS filenames pgrb2a_bc/ge50pt

NAEFS filenames pgrb2a_bc/naefs_ge50pt

90% probability forecast:

GEFS filenames pgrb2a_bc/ge90pt

NAEFS filenames pgrb2a_bc/naefs_ge90pt

Ensemble mean forecast:

GEFS filenames pgrb2a_bc/geavg

NAEFS filenames pgrb2a_bc/naefs_geavg

Ensemble mode forecast:

GEFS filenames pgrb2a_bc/gemode

NAEFS filenames pgrb2a_bc/naefs_gemode

Ensemble spread forecast:

GEFS filenames pgrb2a_bc/gespr

NAEFS filenames pgrb2a_bc/naefs_gespr

Adding the following six new variables for CONUS products:

2-meter maximum temperature
2-meter minimum temperature
2-meter relative humidity
2-meter dew point temperature
10-meter wind speed
10-meter wind direction

Ensemble products with the six new variables listed include:

10% probability forecast:

GEFS filenames ndgd_gb2/ge10pt.tCCz.ndgd_conus
NAEFS filenames ndgd_gb2/naefs_ge10pt.tCCz.ndgd_conus

50% probability forecast:

GEFS filenames ndgd_gb2/ge50pt.tCCz.ndgd_conus
NAEFS filenames ndgd_gb2/naefs_ge50pt.tCCz.ndgd_conus

90% probability forecast:

GEFS filenames ndgd_gb2/ge90pt.tCCz.ndgd_conus
NAEFS filenames ndgd_gb2/naefs_ge90pt.tCCz.ndgd_conus

Ensemble mean forecast:

GEFS filenames ndgd_gb2/geavg.tCCz.ndgd_conus
NAEFS filenames ndgd_gb2/naefs_geavg.tCCz.ndgd_conus

Ensemble mode forecast:

GEFS filenames ndgd_gb2/gemode.tCCz.ndgd_conus
NAEFS filenames ndgd_gb2/naefs_gemode.tCCz.ndgd_conus

Ensemble spread forecast:

GEFS filenames ndgd_gb2/gespr.tCCz.ndgd_conus
NAEFS filenames ndgd_gb2/naefs_gespr.tCCz.ndgd_conus

Adding the following two new variables for Alaska products:

2-meter relative humidity
2-meter dew point temperature

Ensemble products with the two new variables listed include:

10% probability forecast:

GEFS filenames ndgd_gb2/ge10pt.tCCz.ndgd_alaska
NAEFS filenames ndgd_gb2/naefs_ge10pt.tCCz.ndgd_alaska

50% probability forecast:

GEFS filenames ndgd_gb2/ge50pt.tCCz.ndgd_alaska
NAEFS filenames ndgd_gb2/naefs_ge50pt.tCCz.ndgd_alaska

90% probability forecast:

GEFS filenames ndgd_gb2/ge90pt.tCCz.ndgd_alaska
NAEFS filenames ndgd_gb2/naefs_ge90pt.tCCz.ndgd_alaska

Ensemble mean forecast:

GEFS filenames ndgd_gb2/geavg.tCCz.ndgd_alaska
NAEFS filenames ndgd_gb2/naefs_geavg.tCCz.ndgd_alaska

Ensemble mode forecast:

GEFS filenames ndgd_gb2/gemode.tCCz.ndgd_alaska
NAEFS filenames ndgd_gb2/naefs_gemode.tCCz.ndgd_alaska

Ensemble spread forecast:

GEFS filenames ndgd_gb2/gespr.tCCz.ndgd_alaska
NAEFS filenames ndgd_gb2/naefs_gespr.tCCz.ndgd_alaska

New Products Available: There will be one file per forecast hour that contains all forecasts for all ensemble members:

1.0-degree GEFS bias-corrected 6-hourly precipitation projections for forecast hours 00 through 384.

NCEP bias-corrected Global Forecast System (GFS) Quantitative Precipitation Forecast (QPF) and NCEP bias-corrected GEFS QPF for each member:

GEFS filenames prcp_gb2/geprcp.tCCz.pgrb2_bc_06h

NCEP bias-corrected GEFS Probabilistic QPF (PQPF) for 14 thresholds:

GEFS filenames prcp_gb2/gepppf.tCCz.pgrb2_bc_06h

5.0 km National Digital Guidance Database (NDGD) grid GEFS 6-hourly precipitation projections for forecast hours 00 through 384.

NCEP downscaled GFS Quantitative Precipitation Forecast (QPF) and NCEP downscaled GEFS QPF for each member:

GEFS filenames ndgd_prpc_gb2/geprcp.tCCz.ndgd_conus_06h

NCEP downscaled GEFS PQPF for 14 thresholds:

GEFS filenames ndgd_prpc_gb2/gepppf.tCCz.ndgd_conus_06h

Directory Changes:

To maintain consistency, NCEP will move the existing GEFS 24-hour accumulated Probabilistic QPF (PQPF) files into the new prcp_gb2 directory:

prcp/gepppf.tCCz.pgrb2_24hFFFF will now be found in prcp_gb2/

New Products Available on NOAAPort and SBN: The GEFS products being added will be on a Global Latitude/Longitude grid with 1.0-degree resolution. Forecast cycles are four times daily (00Z, 06Z, 12Z and 18Z), with forecast projections at 6-hourly increments from 00 through 180 hours for each 20 members and the control. The total volume throughput will be 252 MB/day. The data will be transmitted in GRIB2 with the following WMO header format:

T1T2A1A2ii cccc where

If T1=L

Then A2 is: A=00, B=06, C=12, D=18, E=24, F=30, G=36, H=42, I=48, J=60, K=72, L=84, M=96, N=108, O=120, P=132, Q=144, R=156, S=168, T=180

If T1=M

Then A2 is: M=54, N=66, T=78, U=90, V=102, W=114, Z=126, Z=138, Z=150, Z=162, Z=174

T2 specifies the parameters as follows:

E = Total precipitation (APCP)

T = Temperature 2 m above ground (TMP)

A1 = A Grid ID #3 (Global Lat/Lon 1 degree resolution)

ii specifies the levels as follows: 98 = surface of Earth

cccc = KWBK

Bias-corrected two meter temperature headers: [LM]TE[A-WZ]98 KWBK

6-hour accumulating total precipitation headers: [LM]EE[A-WZ]98 KWBK

NCEP will offer a consistent parallel feed of both GEFS and NAEFS data via the following URLs:

<http://www.ftp.ncep.noaa.gov/data/nccf/com/gens/para>

<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/gens/para>

NCEP encourages all users to ensure their decoders are flexible and are able to adequately handle changes in content order, changes in the scaling factor component within the product definition section (PDS) of the GRIB files, and also any volume changes which may be forthcoming. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes prior to any implementations.

For questions regarding these changes, please contact:

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For questions regarding the dataflow aspects of these data sets, please contact:

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National Technical Implementation Notices are online at:

<https://www.weather.gov/notification/archive>

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