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Technical Implementation Notice 10-50
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From: Timothy McClung
Chief, Science Plans Branch
Office of Science and Technology

Subject: Changes to the North American Ensemble Forecasting
System (NAEFS): Effective January 11, 2011

Effective Tuesday, January 11, 2011, beginning with the 1200 Coordinated Universal Time (UTC) run, the National Centers for Environmental Prediction (NCEP) will make modifications to the North American Ensemble Forecasting System (NAEFS). The current NAEFS output is derived by combining the NCEP Global Ensemble Forecast System (GEFS) and the Canadian Meteorological Center's GEFS. Starting January 11, the global ensemble system run by the Fleet Numerical Meteorology and Oceanography Center (FNMOC) will also be included in the NAEFS.

The NAEFS output is disseminated only via the NCEP server. Products are available for http and ftp download at the following URLs:

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

In addition to including the FNMOC data in the NAEFS ensemble calculations, NCEP will also be modifying the output available from the NCEP GEFS, CMC GEFS, and the NAEFS. These modifications include:

Adding the following 13 bias-corrected elements to the NCEP GEFS and NAEFS output for all probabilistic products:

- 10 hPa(mb) geopotential height
- 10 hPa(mb) temperature
- 10 hPa(mb) u component of wind
- 10 hPa(mb) v component of wind
- 50 hPa(mb) geopotential height
- 50 hPa(mb) temperature
- 50 hPa(mb) u component of wind

- 50 hPa(mb) v component of wind
- 100 hPa(mb) geopotential height
- 100 hPa(mb) temperature
- 100 hPa(mb) u component of wind
- 100 hPa(mb) v component of wind
- 850 hPa(mb) vertical velocity

The directory location of the raw CMC GEFS data will be changed. Starting on January 11, the GRIB2 output for the individual member and ensemble means and spreads will be online in the following directories, where YYYYMMDD is the date and CC is the model cycle:

<http://www.ftp.ncep.noaa.gov/data/nccf/com/gens/prod/cmce.YYYYMMDD/CC/pgrb2a>

and
<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/gens/prod/cmce.YYYYMMDD/CC/pgrb2a/>

In addition, the following 28 variables will be added to the CMC output:

- 10 hPa(mb) geopotential height
- 10 hPa(mb) temperature
- 10 hPa(mb) relative humidity
- 10 hPa(mb) u component of wind
- 10 hPa(mb) v component of wind
- 50 hPa(mb) geopotential height
- 50 hPa(mb) temperature
- 50 hPa(mb) relative humidity
- 50 hPa(mb) u component of wind
- 50 hPa(mb) v component of wind
- 100 hPa(mb) geopotential height
- 100 hPa(mb) temperature
- 100 hPa(mb) relative humidity
- 100 hPa(mb) u component of wind
- 100 hPa(mb) v component of wind
- 850 hPa(mb) vertical velocity
- Convective inhibition (CIN 180-0 hPa)
- Latent heat net flux
- Sensible heat net flux
- Downward shortwave radiation flux at surface
- Downward longwave radiation flux at surface
- Upward shortwave radiation flux at surface
- Upward longwave radiation flux at surface
- Upward longwave radiation flux at top of atmosphere
- Volumetric soil moisture (0-10cm)
- Water equivalent of accumulated snow depth
- Snow depth (surface)
- Soil temperature (0-10cm down)

Data delivery timing is not expected to be impacted by the implementation. There will only be a minor increase in the data volumes of existing files due to the addition of new variables.

A sample dataset for this NAEFS implementation is available at:

ftp://ftp.emc.ncep.noaa.gov/gc_wmb/yzhu/1q2011

Specific information regarding the NAEFS and scientific implementation is online at:

http://www.emc.ncep.noaa.gov/gmb/yzhu/html/imp/201012_imp.html

By early December, once the model is running in parallel on the NCEP Central Computing System, a consistent parallel feed of data will be available on the NCEP server. The parallel data will be available via the following URLs:

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

NCEP urges all users to ensure their decoders can handle changes in content order, changes in the scaling factor component within the product definition section (PDS) of the GRIB files, and volume changes. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes before implementation.

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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