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PNSWSH

Service Change Notice 23-49 Updated
National Weather Service Headquarters Silver Spring MD
1000 AM EDT Thu May 4 2023

To: Subscribers:
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From: Sarah Perfater
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 Meteorological Development Laboratory

Subject: Updated: Changes to the GFS-based Model Output Statistics (MOS)
Guidance: Effective June 6, 2023

Updated to change the implementation date to Tuesday, June 6, 2023.

On or about Tuesday, June 6, 2023, beginning with the 1200 Coordinated Universal Time (UTC) model run, the NWS Meteorological Development Laboratory (MDL) will implement changes to the Global Forecast System (GFS)--based Model Output Statistics (MOS) station-based guidance. This was previously advertised in Public Notification Statement 22-01:

https://www.weather.gov/media/notification/pdf2/pns22-01_nbm_v4.1.pdf

In the event that the implementation date is declared a Critical Weather Day (CWD), an Enhanced Caution Event (ECE) or other significant weather is occurring or is anticipated to occur, implementation of this change will take place at 1200 UTC on the next weekday not declared a CWD and when no significant weather is occurring.

The implemented changes will include:

1. Updated cool and warm season equations for the following elements contained in the short -range GFS MOS text (MAV) messages for the 0000, 0600, 1200 and 1800 UTC cycles:

- Daytime Maximum and Nighttime Minimum Temperature
- 2-meter Temperature
- 2-meter Dewpoint Temperature
- Wind Speed
- Wind Direction

2. Updated cool and warm season equations for the following elements contained in the extended range GFS MOS text (MEX) messages for the 0000 and 1200 UTC cycles:

- Daytime Maximum and Nighttime Minimum Temperature
- Maximum sustained surface wind speed (12-hour)

3. Station changes (added and dropped sites) which affect the MAV, MEX, Marine (MMG) and Canadian (FECN/FOCN) text messages. These are listed in the following link:

https://blend.mdl.nws.noaa.gov/mos-txt/src/stations/Dev2021_Add_Drop_List.pdf

These updates will bring the GFS MOS product more in line with the underlying currently-operational GFS model. The dependent data samples will now be composed exclusively of data from versions of the GFS run with the FV3 core, with a significant amount from the latest version (v16).

Communication identifiers for the GFS--based MOS public text products affected by this update are shown in the table below. For Air Force messages, xx = 01,...,29.

WMO Heading (Short Range)	AWIPS ID	WMO Heading (Extended Range)	AWIPS ID
FOCN20	KWNO	N/A	
FOUS10	KWN	MCGUSA	
FOPA20	KWNO	MAVPA0	
FOUS21	KWNO	MAVNE1	
FOUS22	KWNO	MAVSE1	
FOUS23	KWNO	MAVNC1	
FOUS24	KWNO	MAVSC1	
FOUS25	KWNO	MAVRM1	
FOUS26	KWNO	MAVWC0	
FOUS30	KWNO	MAVFxx	
FOAK37	KWNO	MAVAJK	
FOAK38	KWNO	MAVAFC	
FOAK39	KWNO	MAVAFG	
FQPA20	KWNO	MMGHI1	
FQUS21	KWNO	MMGNE1	
FQUS22	KWNO	MMGSE1	
FQUS23	KWNO	MMGGL1	
FQUS24	KWNO	MMGGF1	
FQUS25	KWNO	MMGNW1	
FQUS26	KWNO	MMGSW1	
FQAK37	KWNO	MMGAK1	

Dataflow changes will involve the removal of duplicate MAV/MEX text and Binary Universal Form for the Representation of meteorological data (BUFR) products that reside on both the TGFTP and NOAA Operational Model Archive and Distribution Service (NOMADS) servers:

TGFTP:

<https://tgftp.nws.noaa.gov/SL.us008001/DF.c5/DC.mos/> (text)
<https://tgftp.nws.noaa.gov/SL.us008001/DF.bf/DC.mos/> (BUFR)

NOMADS:

https://nomads.ncep.noaa.gov/pub/data/nccf/com/gfs_mos/prod/

The products on the TGFTP server are to be removed, and users are encouraged to only use NOMADS from this point forward.

Current text files on TGFTP have the format sn.####.txt, where #### is a number from 0000-0030 for MAV messages and 0000-0014 for MEX messages.

Current BUFR files on TGFTP have the format sn.####.bin, where #### is a number from 0000-0008 for MAV messages and 0000-0003 for MEX messages.

The corresponding text message files on NOMADS have filenames mdl_gfsmav.tHHz and mdl_gfsmex.tHHz for MAV and MEX messages, respectively (HH refers to the cycle time). BUFR files will have the format mdl_mavbufr.xtrn.tHHz and mdl_mexbufr.xtrn.tHHz for MAV and MEX, respectively. These are in directories labeled as gfs_mos.YYYYMMDD (YYYY is the year, MM is the month, and DD is the day). Note that the files in NOMADS do not contain headers or Advanced Weather Interactive Processing System (AWIPS) IDs. MEX products are only available at the 00 UTC and 12 UTC cycles.

TGFTP	NOMADS
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DF.c5/DC.mos/DS.mavfo/sn.####.txt	mdl_gfsmav.tHHz
DF.c5/DC.mos/DS.mexfe/sn.####.txt	mdl_gfsmex.tHHz
DF.bf/DC.mos/DS.mavjs/sn.####.bin	mdl_mavbufr.xtrn.tHHz
DF.bf/DC.mos/DS.mexjs/sn.####.bin	mdl_mexbufr.xtrn.tHHz

A consistent parallel feed of data will be available on the NCEP parallel NOMADS site beginning at least 30 days prior to implementation at the following locations:

https://nomads.ncep.noaa.gov/pub/data/nccf/com/gfs_mos/para

For questions regarding this change or the station-based GFS MOS guidance, please contact:

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For questions relating to dataflow, please contact:

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Links to MOS products and descriptions are available online at:

<https://vlab.noaa.gov/web/mdl/mos>

National Service Change Notices are online at:

<http://www.weather.gov/notification>

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