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PNSWSH

Service Change Notice 23-80
National Weather Service Headquarters Silver Spring MD
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 -Emergency Managers Weather Information Network
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From: Judy Ghirardelli
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 Meteorological Development Laboratory

Subject: Probabilistic Extra-Tropical Storm Surge (P-ETSS) Model Upgrade
and Extra-Tropical Storm Surge (ETSS) Model Upgrade: Effective August 15,
2023

Effective on or about August 15, 2023, starting with the 1200 Coordinated Universal Time (UTC) cycle, the NWS Meteorological Development Laboratory (MDL) will upgrade the Probabilistic Extra-Tropical Storm Surge (P-ETSS) model to version 1.3. Additionally, MDL has merged the code for the latest Extra-Tropical Storm Surge (ETSS) model version 2.5 into the P-ETSS package. Moving forward, there will no longer be an independent ETSS version number as ETSS will be part of the P-ETSS system. In the event that the implementation date is declared a Critical Weather Day (CWD) or significant weather is occurring or is anticipated to occur, implementation of this change will occur at 1200 UTC on the next weekday not declared a CWD and when no significant weather is occurring.

1. Model Changes

- Incorporation of a spatially varying bottom friction to improve the overland inundation guidance.
- Nesting of five fine resolution basins focused on: Deadhorse, AK (SCC); Wainwright, AK (AWI); Kotzebue, AK (OTZ); Nome, AK (OME) and King Salmon, AK (AKN) within the coarser Bering, Beaufort and Chukchi sea (BBC) basin to enable guidance which is similarly accurate to the comparable guidance for the East Coast and Gulf of Mexico.
- Introduction of a Fourier-based post-processing scheme to improve storm surge guidance at stations.
- Incorporation of 58 additional stations with corresponding observational data.
- P-ETSS will continue to produce results based on both the NWS's Global Ensemble Forecast System (GEFS) and Canada's Global Ensemble Prediction System (GEPS), as is done currently in operations; however, with this upgrade, it will also produce results based strictly on the GEFS.

2. Timing Changes

The model changes will delay the release of P-ETSS final products by 12 minutes and the release of ETSS final products by seven minutes. However, due to the introduction of the Alaska fine resolution basins and restructuring of the ETSS code, the ETSS Alaska text and gridded products along with the ETSS West Coast text products will no longer be released early in the model run but will rather be amongst the final products. Thus, the ETSS Alaska text and gridded products along with the ETSS West Coast text products will see delays of up to 29 minutes.

3. New Products on NCEP Web Services

- P-ETSS: The GEFs-only based gridded products are being provided as gridded binary version two (GRIB2) files labeled:

'petss.tCCz.gefs_stormtide*grib2', where CC is the cycle hour.

- P-ETSS and ETSS: Station bias corrected CSV and Standard Hydrometeorological Exchange Format (SHEF) tarball names are changed to:

```
petss.tCCz.csv_tar -> petss.tCCz.csv.tar.gz,  
petss.tCCz.gefs_csv_tar -> petss.tCCz.gefs_csv.tar.gz,  
etss.tCCz.csv_tar -> etss.tCCz.csv.tar.gz,  
petss.tCCz.shef_tar -> petss.tCCz.shef.tar.gz,  
etss.tCCz.shef_tar -> etss.tCCz.shef.tar.gz
```

After implementation, the products for the new P-ETSS gridded GRIB2 files (based on GEFs-only), the current P-ETSS products, and the current ETSS products will be available here:

<https://nomads.ncep.noaa.gov/pub/data/nccf/com/petss/prod/>
<https://ftp.ncep.noaa.gov/data/nccf/com/petss/prod/>

As part of National Centers for Environmental Prediction's (NCEP) standard 30-day parallel testing, the updated products will be available here beginning at least 30 days prior to implementation:

<https://nomads.ncep.noaa.gov/pub/data/nccf/com/petss/para/>
<https://ftp.ncep.noaa.gov/data/nccf/com/petss/para/>

4. NOAAPort/Satellite Broadcast Network (SBN) Changes

- At this time, no changes are being made to the data on the NOAAPort/SBN area for ETSS and P-ETSS.

As part of the NCEP's standard 30 day parallel testing, samples of the World Meteorological Organization (WMO)-headed products will be available here beginning at least 30 days prior to implementation:

<https://para.nomads.ncep.noaa.gov/pub/data/nccf/noaaport/petss/>
<https://para.nomads.ncep.noaa.gov/pub/data/nccf/noaaport/etss/>

5. Products on NWS Web Services

- At this time, no changes are being made to the data on the NWS website (TGFTP) in the NWS National Digital Gridded Database (NDGD) area for ETSS and P-ETSS. NWS plans to remove the NDGD/TGFTP data with the next implementation (tentatively planned for 2024). Users are strongly encouraged to migrate to the identical data hosted on the NOAA Operational Model Archive and Distribution System (NOMADS) with this implementation.

Output (until 2024) will be available at the following locations:

<https://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndgd/GT.petss/>
<https://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndgd/GT.etss/>

A full description of the GRIB2 directory/file structure on TGFTP is available here:

<https://www.nco.ncep.noaa.gov/pmb/changes/docs/NDGD-PETSS.pdf>

Additionally, some duplicate text data for Alaska is being sent to a specific, non-NDGD, area for ETSS. That data can be found in the following location:

<https://tgftp.nws.noaa.gov/SL.us008001/DF.c5/DC.etss/DS.mrpfq/>

This data will also be removed with the next implementation, so again please migrate to the identical data hosted on NOMADS.

NCEP encourages 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 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.

Any questions, comments or requests regarding this implementation should be directed to the contacts below. We will review any feedback and decide whether to proceed.

For questions regarding these model changes, please contact:

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For questions regarding the data flow aspects, please contact:

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National Service Change Notices are online at:

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

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