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PNSWSH

Service Change Notice 18-65
National Ocean Service Headquarters Silver Spring MD
Related by National Weather Service Silver Spring MD
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From: Pat Burke
            Chief, Oceanographic Division NOS

Subject: Upgrading National Ocean Service (NOS) Operational
            Forecast Systems for the Great Lakes
            Effective July 16, 2018

Effective on or about Monday, July 16, 2018, beginning with the
1200 Coordinated Universal Time (UTC) run, the NOS Operational
Forecast Systems (OFS) for four of the Great Lakes will be
updated on the NOAA Weather Climate Operational Supercomputing
System (WCOSS) operated by NCEP Central Operations (NCO) and
maintained by the Center for Operational Oceanographic Products
and Services (CO-OPS). This change includes Lakes Superior
(LSOFS), Michigan (LMOFS), Huron (LHOFS), and Ontario (LOOFS).
There will be no upgrade to the Lake Erie Operational Forecast
System (LEOFS).

The summary of changes in this upgrade are:

  - No change in the core numerical model
  - Change to the meteorological forcing conditions
  - Change to the run schedule
  - Change in the output files
  - Change to stop OFS if insufficient marine weather
observations and backup fails
  - Change to terminate the posting of BUFR files containing
surface marine observations

1. No Change in the Core Numerical Ocean Model

There will be no changes to LEOFS.

2. Change to Meteorological Forcing Conditions

The nowcast cycles of the present four lake OFSs are forced by
surface meteorological analyses based on adjusted surface
weather observations from land stations and overwater platforms
within a 1-hour window. The new version uses adjusted
observations over a 2-hour window.

Currently the lake-wide daily average water temperatures are produced from the non-operational Great Lakes Environmental Research Lab (GLERL) CoastWatch Great Lakes Surface Environmental Analysis (GLSEA). With this version, the system will be ready to use the NWS/NCEP operational Real-Time Global Sea Surface Temperature High-Resolution (RTGSST HR) analysis as a backup if the GLSEA data are not received. This change will make GLOFS much more reliable.

The new version will use predictions from the NWS/NCEP North American Mesoscale (NAM) Forecast System 12-km parent domain as a backup if there are insufficient surface meteorological observations for GLOFS to generate its own surface analyses.

The forecast cycles are currently forced by surface weather forecasts from the NWS legacy National Digital Forecast Database (NDFD) 5-km spatial resolution. The new version will use output files from the NDFD at a 2.5km resolution.

3. Change to the Run Schedule

 -Current:
The nowcast cycle runs every hour and the forecast cycle runs every 6 hours at 00, 06, 12 and 18 UTC out to a 60-hour forecast.

 -Upgraded:
Both nowcast and forecast cycles will run every 6 hours at 00, 06, 12 and 18 UTC, and forecast cycle will continue to go out to 60 hours. The change to four times/day nowcast cycles was done to be consistent with other OFS run schedules, including the Lake Erie Operational Forecast System.

4. Change to output files on NCEP Web Services
   http://nomads.ncep.noaa.gov/pub/data/nccf/com/nos/prod/

   ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/nos/prod/

   http://www.ftp.ncep.noaa.gov/data/nccf/com/nos/prod/

a) Since the nowcast cycle will now only be run every 6 hours instead of hourly, the station and field nowcast netCDF files for LSOFS, LMOFS, LHOFS and LOOFS will only be 6 hourly:
   glofs.XXXXX.stations.nowcast.YYYYMMDD.tCCz.nc
   glofs.XXXXX.fields.nowcast.YYYYMMDD.tCCz.nc
Where XXXXX is the lake forecast OFS acronym (e.g. LSOFS), CC is cycle hour of 00, 06, 12 and 18, and YYYYMMDD is Year, Month and Day

b) The filename of the NOS CORMS (Continuous Operational Real-Time Monitoring System) Flags text file will change:
   from: glofs.XXXXX_corms_raw.YYYYMMDD.tCCz.txt
   to: glofs.XXXXX.corms.YYYYMMDD.tCCz.log.

The files will now only be 6 hourly instead of hourly. The CORMS flags inside the file have changed to provide improved information to CORMS personnel and forecast system developers.

c) The following files will be removed from NCEP Web Services
   glofs.XXXXX.rst.nowcast.YYYYMMDD.tCCz.bin
where XXXXX is the lake forecast OFS acronym (i.e. lhofs, lmofs, loofs, and lsofs), CC is cycle hour of 01-05, 07-11, 13-17 and 19-23, and YYYYMMDD is Year, Month and Day

d) The following BUFR files containing surface marine observations will be removed from NCEP Web Services
   glofs.tCCz.metars.bufr_d.unblk
   glofs.tCCz.marine.bufr_d.unblk
Under path: /pub/data/nccf/com/hourly/prod/hourly.YYYYMMDD

LMOFS, LHOFS, LSOFS, and LOOFS predictions are used by commercial, recreational mariners, fisherman, emergency managers, search and rescue responders, and NWS marine weather forecasters. The development and implementation of GLOFS is a joint project between the NOS Office of Coast Survey (OCS), the NOS Center for Operational Oceanographic Products and Services (CO-OPS), and NOAA Great Lakes Environmental Research Laboratory. GLOFS is monitored 24x7 by both NCO/NCEP and CO-OPS Continuous Operational Real-Time Monitoring Service (CORMS) personnel.

NCEP urges all users to ensure their decoders can handle changes. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes before implementation.

NOS will evaluate all comments to determine whether to proceed with this upgrade.

If you have any questions concerning these changes, please contact:

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

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