

NOUS41 KWBC 181955
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Service Change Notice 18-65
NOAA's National Ocean Service Headquarters Silver Spring MD
Relayed by National Weather Service Headquarters Silver Spring MD
355 PM EDT Mon Jun 18 2018

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From: Pat Burke
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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 National Ocean Service (NOS) Operational Forecast Systems (OFS) for four of the Great Lakes will be updated on the NOAA Weather Climate Operational Supercomputing System (WCOS) operated by the National Centers for Environmental Prediction (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 Binary Universal Form for the Representation of meteorological data (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 2.5 km resolution.

3. Change to the Run Schedule:

- Current:

The nowcast cycle runs every hour and the forecast cycle runs every six hours at 0000, 0600, 1200 and 1800 UTC out to a 60-hour forecast.

- Upgraded:

Both nowcast and forecast cycles will run every six hours at 0000, 0600, 1200 and 1800 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 LEOFS.

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 six 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, fishermen, 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 National Centers for Environmental Prediction (NCEP) Central Operations (NCO) and CO-OPS 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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National Service Change Notices are online at:

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

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