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PNSWSH

Service Change Notice 17-125 Updated
NOAA's National Ocean Service Headquarters Silver Spring MD
Relayed by National Weather Service Headquarters Silver Spring MD
1135 AM EST Thu Jan 4 2018

To: Subscribers:
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 -Emergency Managers Weather Information Network
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From: Patrick Burke
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 NOS/Center for Operational Oceanographic Products and Services

Subject: Updated: Updating National Ocean Service's Oceanographic Forecast
Modeling Systems: Effective January 10, 2018

Updated to change the implementation date from January 3, 2018 to January
10, 2018.

Effective January 10, 2018 beginning at 1500 Coordinated Universal Time
(UTC), updates of National Ocean Service Operational Forecast Systems will
be implemented on NOAA's Weather Climate Operational Supercomputing System
(WCOSS) 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). The updates
include Regional Ocean Modeling System (ROMS) and Finite Volume Community
Ocean Model (FVCOM) code version updates and updates to the Coastal Ocean
Modeling Framework (COMF) shared by all NOS operational forecast systems.
COMF updates include using NCO standard module files and other
enhancements. The details of this implementation are:

1. ROMS version updates for the Operational Forecast Systems of the
Chesapeake Bay (CBOFS), the Delaware Bay (DBOFS), and the Tampa Bay
(TBOFS).

The core ocean model currently used for CBOFS, DBOFS and TBOFS is ROMS3.6
v90 released in 2007, which is no longer supported by the ROMS community.
The latest ROMS3.7 version 859 released in August 2017 will replace the
ROMS Version 90. The latest ROMS3.7 version 859 fixes many code bugs that
exist in ROMS Version 90, and adds many new features. This new version
also added new biological modules for Chesapeake Bay hypoxia forecasting
and Gulf of Maine harmful algal bloom (HAB) forecasting. This version
also implements a new option of C-preprocessor (CPP) in the surface heat
flux boundary condition subroutine (set_vbc.F) to prevent the water
temperature from decreasing beyond the freezing point of seawater (when a
sea ice model is not active).

There are no major changes regarding hydrodynamics and physics in the
latest ROMS3.7 Version 859 compared with ROMS3.6 Version 90. Therefore,

the results obtained from ROMS3.6 and ROMS3.7 are very similar for CBOFS, DBOFS and TBOFS, and there are no significant changes to CBOFS, DBOFS and TBOFS products (e.g., file name, contents, etc.) for the end users.

2. FVCOM version updates for the Operational Forecast Systems of the Northern Gulf of Mexico (NGOFS), the nested Northeastern Gulf of Mexico (NEGOFS), the nested Northwestern Gulf of Mexico (NWGOFS), and the San Francisco Bay (SFBOFS).

This new version will resolve and enhance the following features:

- Fixed the jetty bug in the present FVCOM version used by NWGOFS (vertvl_edge.F). This bug caused modeled water temperature near jetties to be unrealistically cold.
- Added a new module to calculate heat flux for Great Lakes OFS (mod_solar.F).
- Added a new routine to prevent the water temperature from decreasing beyond the freezing point of water (when an ice model is not active).

3. Delivery Time is delayed about five minutes.

In order to improve numerical instability during extreme weather events, such as Hurricane Harvey and Irma, the integration time step was decreased by half for CBOFS, DBOFS, TBOFS, NGOFS, NEGOFS and NWGOFS. As a result, dissemination of their products will be delayed about five minutes on the NCEP NOAA Operational Model Archive and Distribution System (NOMADS) and the file transfer protocol (FTP) server.

4. Changes in input and output files for CBOFS, DBOFS, and TBOFS.

Changed double precision to single precision for variables of water levels, currents, water temperature and salinity in model output NetCDF files to reduce output file size and improve data dissemination performance for CBOFS, DBOFS, and TBOFS.

4 km nested NAM products replace 12 km NAM products to generate meteorological forcing conditions for CBOFS, DBOFS, and TBOFS

- Files being removed from NCEP Web Services referenced below:
nos.{c,d,t}bofs.fields.f000.YYYYMMDD.tCCz.nc (f000 only)
nos.{c,d,t}bofs.fields.n000.YYYYMMDD.tCCz.nc (n000 only)
nos.sfbofs.obc.el.YYYYMMDD.tCCz.nc nos.sfbofs.obc.ts.YYYYMMDD.tCCz.nc
nos.{OFS}.rst.nowcast.YYYYMMDD.tCCz.* CC is cycle (03, 09, 15, 21)
Where YYYYMMDD is year, month and day; CC is cycle

All hot restart files of nos.{OFS}.rst.nowcast.YYYYMMDD.tCCz.* were removed because they are duplicate with nos.{OFS}.init.nowcast.YYYYMMDD.tCCz.*

Gridded and station/point forecast guidance for NOS models will be available in netCDF format on CO-OPS THREDDS server:

<https://opendap.co-ops.nos.noaa.gov/thredds/catalog.html>

and 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/>

Graphics products are displayed on the CO-OPS webpage at:

<https://tidesandcurrents.noaa.gov/models.html>

NCEP urges all users to ensure their decoders can handle changes in content order 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.

As part of NCEP's standard 30 day parallel testing, the new output products will be available here prior to implementation day:

<http://para.nomads.ncep.noaa.gov/pub/data/nccf/com/nos/para/>

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.

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

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For questions regarding the dataflow aspects, please contact:

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National Service Change Notices are online at:

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

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