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Technical Implementation Notice 15-38
NOAA National Ocean Service Headquarters Washington DC
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From: Pat Burke
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NOS Center for Operational Oceanographic Products
and Services (CO-OPS)

Subject: Updating National Ocean Service's Oceanographic Forecast
Modeling Systems Effective October 6, 2015

Effective October 6, 2015 beginning at 15Z Coordinated Universal Time (UTC) (10AM EST), updates of National Ocean Service Operational Forecast Systems will be implemented on NOAA's Weather Climate Operational Supercomputing System (WCOSS) operated by NCEP Central Operations (NCO). The updates include ROMS and FVCOM version updating and shared framework (COMF) updates. COMF updates include using NCO standard module files and other enhancements. The details of this implementation are:

1. ROMS version Updates for CBOFS, DBOFS, and 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 ROMS developers at Rutgers University. The latest ROMS3.7 Version 766, released in June 2015, will replace the ROMS version 90. Version 766 includes many bug fixes in ROMS version 90 and adds new features.

The horizontal and vertical mixing schemes for tracers are replaced by Fourth-order Akima advection based on recommendations of ROMS developers and semi-operational testing results. A new option of C-preprocessor (CPP) in the surface heat flux boundary condition subroutine (set_vbc.F) was developed by Rutgers University to prevent the water temperature decreasing beyond the freezing point of seawater (when a sea ice model is not active). This option was tested by the CO-OPS Modeling team using CBOFS and DBOFS and the expected results were achieved. This option is critical for Cook Inlet OFS (CIOFS), which will be implemented in FY16. There are not major changes regarding hydrodynamics and physics in this version

compared with ROMS3.6 version 90. Therefore, the results obtained from using ROMS3.6 and ROMS3.7 are similar for CBOFS, DBOFS and TBOFS. There are no changes of CBOFS, DBOFS and TBOFS products (e.g., file name and contents, deliver time, etc.) for end users.

2. FVCOM version updates for NGOFS, NEGOFs, NWGOFS, and SFBOFS

FVCOM version updates will resolve and enhance the following features:

- a. Fix the jetty bug in the present FVCOM version used by NWGOFS (vertvl_edge.F) which will currently impact NWGOFS. This bug causes modeled water temperature near jetties to be unrealistically cold for NWGOFS
- b. Resolve repeatability issue, important for FVCOM model failure debugging
- c. Add a new module to calculate heat flux for Great Lakes OFS (mod_solar.F)
- d. Add similar feature as in ROMS to prevent the water temperature decreasing beyond the freezing point of water when an ice model is not active
- e. Implement other enhancements required by FVCOM-based Lake Erie OFS implementation

Gridded and point forecast guidance from parallel runs will be available in netCDF files on the NCEP NOMADS server (para.nomads.ncep.noaa.gov) in the directory,

/pub/data/nccf/com/nos/para/

Graphics products are displayed on the CO-OPS web page at

<http://tidesandcurrents.noaa.gov/ofs/dev/{OFS}/{OFS}.html>

Where OFS is cbofs, dbofs, tbofs, ngofs, sfbofs, etc.

For concerning these changes, please contact:

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For questions regarding the dataflow aspects with respect to the NCEP FTP server, please contact:

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National Technical Information Notices are online at:

<http://www.weather.gov/os/notif.htm>

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