Service Change Notice 17-108 Updated
NOAA's National Ocean Service Headquarters Silver Spring MD
Relayed by National Weather Service Headquarters Silver Spring MD
100 PM EST Mon Dec 4 2017

To: Subscribers:
            -NOAA Weather Wire Service
            -Emergency Managers Weather Information Network
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            Other NWS and NOS Partners and NWS and NOS Employees

From: Patrick Burke
            Chief, Oceanographic Division
            NOS/Center for Operational Oceanographic Products
            and Services

Subject: Updated: Implementation of new Oceanographic Forecast
            Modeling System for the Gulf of Maine
            Effective January 3, 2018

Updated to change the implementation date from December 19,
2017 to January 3, 2018 and to include major changes to the
details related to the upgrade. Users are urged to read through
this entire notice.

Effective January 3, 2018, beginning at 1800 Coordinated
Universal Time (UTC), the NOAA/National Ocean Service (NOS)
Gulf of Maine Operational Forecast System (GoMOFS) will be
implemented on NOAA's 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).

1) GoMOFS System

GoMOFS will provide users with nowcasts (analyses of near
present) and forecast guidance of the three-dimensional physical
conditions of the Gulf of Maine, including surface water levels
and 3-D water currents, water temperature, and salinity out to
72 hours.

As its core ocean prediction model, GoMOFS uses the Regional
Ocean Modeling System (ROMS) developed by the ocean modeling
community and supported by Rutgers University. ROMS is a free-
surface, terrain-following, primitive equations ocean model
widely used by the scientific and operational community for a
diverse range of applications. GoMOFS operates within the NOS
Coastal Ocean Modeling Framework (COMF) and has four daily
nowcast and forecast cycles at 00, 06, 12, and 18 UTC.

The GoMOFS orthogonal grid has 1173 x 777 horizontal grid points

with roughly 700m horizontal resolution. The vertical grid follows the terrain and consists of 30 model levels. The grid bathymetry of the Gulf of Maine ranges from 3m near the coast to 4,500m along its southern open boundary.

The surface meteorological forcing used to run GoMOFS is based on forecast guidance from the National Weather Service (NWS) North American Mesoscale (NAM) weather prediction model (for both nowcast and forecast). Forecast guidance from the NCEP Global Forecast System (GFS) are used as a backup forcing if forecast guidance from the NAM is not available.

GoMOFS relies on NCEP's Global Real-Time Ocean Forecast System (G-RTOFS) to provide open boundary temperature, salinity and sub-tidal water level. The ADCIRC 2001 Tidal Database is used to generate GoMOFS tidal forcing. Additionally, near real-time observations from USGS river gauges are used to specify river discharge, river temperature and salinity at seven major rivers observations at seven major rivers in the Gulf of Maine.

2) GoMOFS Product Output

Fields and station forecast guidance from GoMOFS will be available in netCDF format on CO-OPS THREDDS server:

http://opendap.co-ops.nos.noaa.gov/thredds/catalog.html

and on NCEP Web services under gomofs.YYYYMMDD
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/

Where YYYYMMDD is year, month, and day

GoMOFS is currently displayed in developmental mode here:
https://tidesandcurrents.noaa.gov/ofs/dev/gomofs/gomofs_info.html

https://tidesandcurrents.noaa.gov/ofs/dev/gomofs/gomofs.html

After it is transitioned to production, it will be displayed here:
https://tidesandcurrents.noaa.gov/ofs/gomofs/gomofs_info.html

https://tidesandcurrents.noaa.gov/ofs/gomofs/gomofs.html

GoMOFS has two types of model output data. Where YYYYMMDD is year, month, day; CC is cycle (00, 06, 12, 18)

- One is field/gridded data which include three-dimensional gridded data with 3 hour interval and two-dimensional gridded surface data with one hour interval.
  nos.gomofs.fields.nHHH.YYYYMMDD.tCCz.nc
  HHH is 003 and 006
  nos.gomofs.fields.fHHH.YYYYMMDD.tCCz.nc
  HHH is 003, 006, ...,072

for surface layer field NetCDF file,
    nos.gomofs.2ds.nHHH.YYYYMMDD.tCCz.nc
    HHH is 001-006
    nos.gomofs.2ds.fHHH.YYYYMMDD.tCCz.nc
    HHH is 001, 002, 003, ..., 072

- Flag log file for generating flags for Continuous Operational
Real-Time Monitoring System (CORMS)
    nos.gomofs.corms.YYYYMMDD.tCCz.log

- Initial files for nowcast:
    nos.gomofs.init.nowcast.YYYYMMDD.tCCz.nc

- ROMS runtime log file:
    nos.gomofs.jlogfile.YYYYMMDD.tCCz.log
    nos.gomofs.nowcast.YYYYMMDD.tCCz.log
    nos.gomofs.forecast.YYYYMMDD.tCCz.log

- The other is station/point output data with 6 minutes
interval. Water lever, surface wind, water temperature, water
salinity and currents are the preliminary output variables.
 nos.gomofs.stations.nowcast.YYYYMMDD.tCCz.nc
 nos.gomofs.stations.forecast.YYYYMMDD.tCCz.nc

3) Model input files

Surface meteorological forcing NetCDF file,
    nos.gomofs.met.nowcast.YYYYMMDD.tCCz.nc
    nos.gomofs.met.forecast.YYYYMMDD.tCCz.nc
River forcing file:
    nos.gomofs.river.YYYYMMDD.tCCz.nc
Open boundary forcing file:
    nos.gomofs.obc.YYYYMMDD.tCCz.nc
Tidal open boundary forcing file:
    nos.gomofs.roms.tides.YYYYMMDD.tCCz.nc
ROMS runtime input file:
    nos.gomofs.nowcast.YYYYMMDD.tCCz.in
    nos.gomofs.forecast.YYYYMMDD.tCCz.in

Climatological nudging file:
    nos.gomofs.clim.YYYYMMDD.tCCz.nc

GoMOFS predictions are used by commercial, recreational
mariners, fisherman, emergency managers, search and rescue
responders, and NWS marine weather forecasters. The development
and implementation of GoMOFS is a joint project between the
NOS/Office of Coast Survey (OCS), the NOS/Center for
Operational Oceanographic Products and Services (CO-OPS), and
NWS/NCEP/NCO. Rutgers University provided technical support
for ROMS. GoMOFS is monitored 24 x 7 by both NCO/NCEP and CO-
OPS Continuous Real-Time Monitoring System (CORMS) personnel.

NCEP urges all users to ensure their decoders can handle
changes in content order and volume changes. These elements

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:

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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NWS National Service Change Notices are online at:

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

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