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Technical Implementation Notice 14-26  
NOAA National Ocean Service Headquarters Washington DC  
Relayed by National Weather Service Headquarters Washington DC  
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From:        Pat Burke  
              Acting Chief, Oceanographic Division  
              NOS Center for Operational Oceanographic Products  
              and Services (CO-OPS)

Subject: Implementation new NOS Oceanographic Forecast Modeling  
System for the Northeast Gulf of Mexico and the Northwest Gulf  
of Mexico: Effective August 12, 2014

Effective August 12, 2014, beginning at 1500 Coordinated  
Universal Time (UTC), 10:00 AM Eastern Standard Time (EST), the  
National Ocean Service (NOS) Northeast Gulf of Mexico  
Operational Forecast System (NEGOFS) and Northwest Gulf of  
Mexico Operational Forecast System (NWGOFS) will be implemented  
on the NOAA Weather Climate Operational Supercomputing System  
(WCOSS) operated by the National Centers for Environmental  
Prediction (NCEP) Central Operations (NCO).

NEGOFS and NWGOFS are two nested operational forecast systems of  
the existing operational forecast system for the Gulf of Mexico  
(NGOFS). These systems now will provide users with higher-  
resolution nowcasts (analyses of near present) and forecast  
guidance of the three-dimensional physical conditions of Gulf of  
Mexico northeast and northwest coastal waters, including surface  
water levels and three-dimensional (3-D) water currents, water  
temperature, and salinity out to 48 hours.

As its core ocean prediction model, NEGOFS and NWGOFS use the  
Finite Volume Coastal Ocean Model (FVCOM) developed jointly by  
the University of Massachusetts, Dartmouth, and the Woods Hole  
Oceanographic Institute. FVCOM is a prognostic, unstructured-  
grid, finite-volume, free-surface, 3-D primitive equation

coastal ocean model. FVCOM has a horizontal grid comprised of unstructured triangular cells where the irregular bottom is presented using generalized terrain-following coordinates.

The NEGOFs grid consists of 68,455 nodes and 130,814 elements and includes three PORTS: Gulfport, Pascagoula and Mobile Bay. The grid resolution ranges from 45m to 2160m. NEGOFs has resolution from 56m to 986m in Gulfport, 45m to 1050m in Pascagoula, and 45m to 1500m in Mobile Bay. The NWGOFs grid consists of 85,707 nodes and 161,518 elements and includes four PORTS: Matagorda Bay, Galveston Bay, Sabine Neches and Lake Charles. The NWGOFs grid resolution ranges from 60m to 3500m, 70m to 550m in Matagorda Bay, 80m to 530m in Galveston Bay, 60m to 540m in Sabine Neches and 70m to 560m in Lake Charles. The higher resolution within the seven PORTS provides more detailed current features.

NEGOFs and NWGOFs operate within the NOS Coastal Ocean Modeling Framework (COMF) and have four daily nowcast and forecast cycles: 03, 09, 15 and 21 UTC.

For the NEGOFs or NWGOFs nowcast cycle, the meteorological forcing is provided by the nested, high resolution (4 km) NCEP North American Mesoscale (NAM) weather prediction model. River discharge and stage are estimated using near-real-time observations from U.S. Geological Survey (USGS) river gauges. Oceanographic conditions of water levels, currents, water temperature and salinity on lateral open boundary on the shelf are provided from NEGOFs nowcast simulation.

For the NEGOFs or NWGOFs forecast cycle, the meteorological forcing is provided by the nested, high resolution (4 km) NCEP North American Mesoscale (NAM) weather prediction model. River discharge and stage are estimated by persistence of the most recent near-real-time observations from USGS river gauges. Oceanographic conditions of water levels, currents, water temperature and salinity on lateral open boundary on the shelf are provided from NEGOFs forecast simulation.

Gridded and point forecast guidance from NEGOFs or NWGOFs will be available in netCDF files on the NCEP server at Web Operations Center (WOC) <ftp://prd.ncep.noaa.gov> in the directory:

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/pub/data/nccfs/com/nos/prod/negofs.yyyymmdd  
/pub/data/nccfs/com/nos/prod/nwgofs.yyyymmdd
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and at CO-OPS THREDDS server:

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

NEGOFS or NWGOFS outputs are displayed on the CO-OPS webpage at:

<https://tidesandcurrents.noaa.gov>

Additional information about NEGOFS or NWGOFS can be found at:

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

NEGOFS or NWGOFS predictions are used by commercial and recreational mariners and fishermen, emergency managers, search and rescue operations, and NWS marine weather forecasters. The development and implementation of NEGOFS and NWGOFS were a joint project of the NOS/Office of Coast Survey (OCS); the NOS/Center for Operational Oceanographic Products and Services (CO-OPS); NWS/NCEP/NCO and the University of Massachusetts, Dartmouth; and the Woods Hole Oceanographic Institute. NEGOFS and NWGOFS are monitored 24x7 by both NCO/NCEP and CO-OPS Continuous Real-Time Monitoring System (CORMS) personnel.

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

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

Rebecca Cosgrove  
NCEP/NCO Dataflow Team  
College Park, MD  
Email: [ncep.list.pmb-dataflow@noaa.gov](mailto:ncep.list.pmb-dataflow@noaa.gov)

For questions on how to access NEGOFs or NWGOFs digital products from CO-OPS servers, please contact:

NOS/CO-OPS/User Services Team  
Silver Spring, MD  
Email: [tide.prediction@noaa.gov](mailto:tide.prediction@noaa.gov)

National Technical Implementation Notices are online at:

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

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