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Public Information Statement 23-01
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From: Edward Myers
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           NOS/Office of Coast Survey/Coast Survey Development Laboratory

Subject: Description of Known Issues and More Details Regarding Upgrade of
the Surge and Tide Operational Forecast System (STOFS, Formerly ESTOFS) to
Version 1.1.1: Effective January 10, 2023

Effective on or about January 10, 2023, beginning with the 1200
Coordinated Universal Time (UTC) cycle, the National Centers for
Environmental Prediction (NCEP) Central Operations (NCO) will upgrade the
Surge and Tide Operational Forecast System (STOFS, formerly ESTOFS) to
Version 1.1.1. This implementation may be delayed if there is declaration
of either an Enhanced Weather situation or Critical Weather Day. The
Coast Survey Development Laboratory (CSDL) in NOAA/NOS/Office of Coast
Survey, the developer of STOFS, would like to alert users to some items:

- An upcoming change in URL for the web graphic display of STOFS water
level forecast guidance, including real-time skill assessment, from
https://polar.ncep.noaa.gov/estofs/ to https://polar.ncep.noaa.gov/stofs/
will take place. Both of the above URLs will stay active until further
notice. Please check with your local National Weather Service forecast
office for the official water level forecast.

- An upcoming change in URL and name for the AWS S3 bucket for the STOFS
global modeling component, called STOFS-2D-Global, from:

https://registry.opendata.aws/noaa-gestofs/ to
https://registry.opendata.aws/noaa-nos-stofs2d/ and

s3://noaa-gestofs-pds/ to s3://noaa-nos-stofs2d-pds/

will take place. All of the above URLs and names will stay active and
both s3 buckets will continue updating through March 2023.

A new AWS S3 bucket for the new STOFS 3D modeling component for the
Atlantic basin, called STOFS-3D-Atlantic:

https://registry.opendata.aws/noaa-nos-stofs3d/
s3://noaa-nos-stofs3d-pds/

The above AWS S3 buckets are courtesy of NOAA Open Data Dissemination (NODD).

The 24/7-supported official operational STOFS products are available at the NOAA Operational Model Archive and Distribution System (NOMADS)/FTPPRD. Please see Service Change Notice (SCN) 22-108 for more details:

https://www.weather.gov/media/notification/pdf2/scn22-108_stofs_v1.1.0_aab.pdf

The above AWS S3 buckets host STOFS long term archives as well as additional files for each cycle (not supported 24/7) in addition to those files available on NOMADS/FTPPRD. For a full listing and description of these additional files, please see the AWS S3 bucket landing page links below as well as the README.html files linked on the respective landing pages:

https://registry.opendata.aws/noaa-gestofs/ (changing to https://registry.opendata.aws/noaa-nos-stofs2d/ as described above)

https://registry.opendata.aws/noaa-nos-stofs3d/

STOFS-3D-Atlantic is providing a new variable called "water level disturbance", which is defined as water level height above NAVD88 for topobathy below NAVD88 (e.g., ocean), and as water level height above ground for topobathy above NAVD88 (e.g., land). Maximum height in the STOFS-3D-Atlantic grid is 10 m above NAVD88.

STOFS-3D-Atlantic V1.1.1 has been observed to sometimes produce erroneous 'ponding' in some watershed areas. The reasons behind this are many-fold, including uncertainties in Digital Elevation Models (DEMs) used for the grid, wrong routing of flow due to the misalignment of National Water Model (NWM) thalwegs with DEM or imagery channels used, and various types of topographic features blocking the flow of water near the land boundary, e.g. inverted slopes from upstream to downstream, insufficient grid resolution that can lead to channel clogging, etc. Users should therefore interpret the inundation in the watersheds with care, and report erroneous results back to CSDL so we can improve the model in future upgrades. For now, some areas should be much more accurate than elsewhere, as channels have been manually aligned there: Mississippi River delta, Galveston Bay, Carolinas, and most of Delaware Bay. Many of these issues will be rectified in the next model upgrade.

Please send any comments or questions on this upgrade of STOFS to Version 1.1.1 to:

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STOFS model forecast guidance can also be viewed at:

nowcoast.noaa.gov

National Public Information Statements are online at:

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

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