**Release Notes**

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| **Model** | Extra-Tropical Storm Surge (ETSS)  |
| **Version** | V2.2 |
| **Implementation date/time** | 6/6/2017 |
| **Purpose**  | The Extra-Tropical Storm Surge model is a modification of the SLOSH model that uses GFS wind and pressure input to predict storm surge from large extra-tropical storms. With version 2.1, it produced storm tide overland (based on storm surge + tide) for the all U.S coastlines (including Alaska region). Additionally, the post processing stage combined ETSS surge guidance with station based tidal predictions and observations (where available) to create bias corrected total water level guidance which was SHEF encoded and sent over the SBN.This upgrade (version 2.2) will 1. Create a single basin (NEP) with overland information that covers Gulf of AK and West Coast. The NEP basin includes updated bathymetry and overland topography.
2. Removed the reported storm surge 'wiggle' for the East Coast and Gulf of Mexico in version 2.1
3. Migrate to Cray
4. Extend forecast from 96 to 102 hours
5. Experimentally generate max surge + tide above NAVD88 for 0–102 hours
6. Discontinue (a) 5.0 km CONUS and (b) 6.0 km AK grids
7. General Enhancements / Bug fixes (-check bounds IT test, improved

merge mask and adjustments to the CSV files so they are self-describing) |
| **Changes being made for this release** | Model:1. New basin (NEP)

Create a basin that covers both Gulf of AK and West Coast1. Migrate to Cray
2. Remove the reported storm surge 'wiggle' for the East coast
3. General Enhancements / Bug fixes
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| **Developed by**  | NOAA/NWS/OST/Meteorological Development Laboratory (MDL) |
| **Runs on**  | The National Weather Service (NWS) Weather and Climate Operational Supercomputing System (WCOSS) |
| **Community software**  | None |
| **Input**  | Model: GRIB2 0.5 degree GFS dataPost-Processing: COOPS’ 6-minute water level observations (from NCEP’s BUFR tanks) |
| **Output and where to find it**  | Gridded Products: Satellite Broadcast Network* Storm Surge and Storm Tide – CONUS 2.5 km GRIB2 files
* Storm Surge and Storm Tide – Alaska 3.0 km GRIB2 files
* Storm Tide and Tide Only – CONUS 625 m GRIB2 files

NCEP NOMADS <http://nomads.ncep.noaa.gov/pub/data/nccf/com/etss/prod/etss.YYYYMMDD>* Storm Surge only – CONUS 2.5 km, Alaska 3.0 km GRIB2 files
* Storm Tide– CONUS 2.5 km, Alaska 3.0 km GRIB2 files
* Storm Tide – CONUS 625 m (missing for West coast) GRIB2 files
* Tide only – CONUS 625 m (missing for West coast) GRIB2 files

NWS NDGDhttp://weather.noaa.gov/pub/SL.us008001/ST.expr/DF.gr2/DC.ndgd/GT.slosh/* Storm Surge only – CONUS 2.5 km, Alaska 3.0 km GRIB2 files
* Storm Tide– CONUS 2.5 km, Alaska 3.0 km GRIB2 files
* Storm Tide – CONUS 625 m (missing for West coast) GRIB2 files
* Tide only – CONUS 625 m (missing for West coast) GRIB2 files

Text Products: Satellite Broadcast Network* SHEF encoded water level guidance for station with NWSLI (typically COOPS or USGS). The type of water level guidance is either surge-only, surge + station tide, or observation based bias corrected surge + station tide
* Model specific text formatted surge only guidance for historic set of stations

NCEP NOMADS <http://nomads.ncep.noaa.gov/pub/data/nccf/com/etss/prod/etss.YYYYMMDD>* SHEF encoded water level guidance for station **with** NWSLI (typically COOPS or USGS). The type of water level guidance is either surge-only, surge + station tide, or observation based bias corrected surge + station tide
* CSV encoded water level guidance for stations **with or without** NWSLI. The type of water level guidance is either surge-only, surge + station tide, or observation based bias corrected surge + station tide.
* Surge only - model specific text formatted for historic set of stations
* Surge only and surge + modeled tide - updated model specific text formatted for a more inclusive set of stations

Websites:MDL also provides a station based total water level guidance websites:* Original site: <http://www.nws.noaa.gov/mdl/etsurge/> based on ETSS output, NOS-COOPs tide gauge data and NOS observations (where available). If observations are available, the total water level guidance is corrected based on the five-day bias.
* Updated site: <http://nws.weather.gov/mdlsurge/etsurge2.0/> using the same method as the original site, but based on the ETSS - CSV output which makes the site more robust.

OPC provides a map based depiction of surge guidance and pressure fields here: <http://www.opc.ncep.noaa.gov/et_surge/et_surge_info.shtml> |
| **Primary users**  | NCEP's Ocean Prediction Center (OPC), NCEP’s National Hurricane Center (NHC), NWS’s Eastern, Alaska, Southern, and Western Regions (HQ, coastal RFCs and WFOs) |
| **In the future**  |  |

For more information on this model, please contact ncep.pmb.dataflow@noaa.gov .