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PNSWSH

TECHNICAL IMPLEMENTATION NOTICE 07-33  
NATIONAL WEATHER SERVICE HEADQUARTERS WASHINGTON DC  
853 AM EDT MON MAY 7 2007

TO: FAMILY OF SERVICES /FOS/ SUBSCRIBERS...NOAA WEATHER  
WIRE SERVICE /NWWS/ SUBSCRIBERS...EMERGENCY MANAGERS  
WEATHER INFORMATION NETWORK /EMWIN/ SUBSCRIBERS...OTHER  
NATIONAL WEATHER SERVICE /NWS/ CUSTOMERS AND PARTNERS  
...NWS EMPLOYEES

FROM: PAUL HIRSCHBERG  
CHIEF...SCIENCE PLANS BRANCH  
OFFICE OF SCIENCE AND TECHNOLOGY /OST/

SUBJECT: NATIONAL CENTERS FOR ENVIRONMENTAL PREDICTION /NCEP/  
REAL TIME OCEAN FORECAST SYSTEM /RTOFS/ MODEL UPGRADE:  
EFFECTIVE JUNE 5 2007

NOTE: NCEP COASTAL OCEAN FORECAST SYSTEM /COFS/ TO BE  
DISCONTINUED 90 DAYS AFTER THE IMPLEMENTATION OF THIS RTOFS  
UPDATE. SEE DETAILS BELOW.

EFFECTIVE TUESDAY JUNE 5 2007...BEGINNING WITH THE 1200  
COORDINATED UNIVERSAL TIME /UTC/ RUN...NCEP WILL UPGRADE THE  
RTOFS FORECAST SYSTEM.

THIS UPGRADE IS EXPECTED TO IMPROVE THE RTOFS ANALYSIS AND  
FORECAST SKILL AS WELL AS EXTEND THE PRODUCTS SUITE FOR THE  
RTOFS ATLANTIC DOMAIN.

DETAILS OF THESE CHANGES ARE AS FOLLOWS:

ALGORITHM CHANGES:

#### A. DATA ASSIMILATION

- FOR SEA SURFACE TEMPERATURE: CHANGES IN NUDGING PARAMETERS...  
REMOVAL OF BIAS FOR GOES SST OBSERVATIONS.
- FOR SEA SURFACE HEIGHT: NEW ALGORITHMS TO ASSIMILATE SEA  
SURFACE HEIGHT ANOMALIES FROM JASON AND GFO.
- FOR VERTICAL PROFILES OF TEMPERATURE AND SALINITY: NEW  
ALGORITHMS TO ASSIMILATE TEMPERATURE AND SALINITY PROFILES.

#### B. HYCOM MODEL

- REMOVE APPROXIMATION TO BOTTOM PRESSURE IN MONTGOMERY POTENTIAL  
CALCULATION.
- IMPROVE STABILITY IN PRESSURE GRADIENT CALCULATIONS.
- THE TWO INVARIANT EXTERNAL MODE BOUNDARY CONDITION IS BEING  
RE-DEPLOYED.

- FOR WATER FLUXES INTO THE OCEAN /RIVERS AND PRECIPITATION MINUS EVAPORATION/: THE WATER COLUMN MIGHT BE REFRESHED TO ARBITRARY DEPTH...AS NEEDED.

#### C. DATA INPUTS AND MODEL PARAMETERS

- USE REVISED AND EXTENDED HYDROBASE CLIMATOLOGY NCEP VERSION 6.
- NUMBER OF VERTICAL LEVELS INCREASED FROM 25 TO 26 WITH IMPROVED DENSITY TARGETS.
- USE REVISED RIVER INFLOW DATA /LOCATION...STRENGTH/ FROM UNITED STATES GEOLOGICAL SURVEY RIVER OUTFLOW DATA IN REAL TIME.
- REMOVE NOISE IN NET HEAT FLUX.
- IMPROVED VALUES OF TRANSPORT AND SURFACE ELEVATION USED AT OPEN BOUNDARIES.

#### D. PRODUCTS

- USE GRIB FILES ON NATIVE GRIDS.
- USE REGIONAL GRIB FILES FOR GULF OF MEXICO NORTH-WEST ATLANTIC /2 SUB-REGIONS/ FOR EFFICIENT TRANSMISSION.

NCEP CENTRAL OPERATIONS IS CURRENTLY RUNNING A PARALLEL REAL-TIME FORECAST EMPLOYING THESE UPGRADES. THE PRODUCTS FROM THIS PARALLEL FORECAST CAN BE FOUND AT /USE LOWER CASE LETTERS/:

[FTP://FTPPRD.NCEP.NOAA.GOV/PUB/DATA2/COM/OFS/PARA/OFS.YYYYMMDD](ftp://ftpprd.ncep.noaa.gov/pub/data2/com/ofc/para/ofc.YYYYMMDD)

IN ADDITION TO THE ABOVE UPGRADE...THE AVAILABILITY OF THE NCEP COFS MODEL ON THE NCEP FTP SERVER WILL BE DISCONTINUED 90 DAYS AFTER THE IMPLEMENTATION OF THE RTOFS UPDATE. THE COFS DATA ARE CURRENTLY FOUND AT /USE LOWER CASE LETTERS/:

[FTP://FTPPRD.NCEP.NOAA.GOV/PUB/DATA2/COM/COFS/PROD/COFS.YYYYMMDD](ftp://ftpprd.ncep.noaa.gov/pub/data2/com/cofs/prod/cofs.YYYYMMDD)

SAMPLES OF NOWCAST AND FORECAST FIELDS... ADDITIONAL INFORMATION AND NOWCAST/FORECAST EVALUATIONS ARE AVAILABLE ONLINE AT /USE LOWER CASE LETTERS/:

[HTTP://POLAR.NCEP.NOAA.GOV/OFS](http://polar.ncep.noaa.gov/ofc)

IF YOU HAVE ANY QUESTIONS ABOUT THIS CHANGE...PLEASE CONTACT:

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THIS AND OTHER NWS TECHNICAL IMPLEMENTATION NOTICES ARE AVAILABLE ONLINE AT /USE LOWER CASE LETTERS/:

[HTTP://WWW.NWS.NOAA.GOV/OM/NOTIF.HTM](http://www.nws.noaa.gov/om/notif.htm)

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