PRODUCT DESCRIPTION DOCUMENT

NWPS Model Experimental Output

Approved: **Date:**
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NWPS Model Output

Part I - Mission Connection

a. <u>Product Description</u> - The Nearshore Wave Prediction System (NWPS) wave model is run locally and used operationally at many coastal WFOs. NWPS output products include displays of winds, significant wave height and peak wave direction, and other wind, wave, and ocean parameters. These displays are now available on an experimental basis on the webpages of Southern Region Coastal WFOs and Southern Region Headquarters (SRH). Displays may become available at non-SR sites TBD.

b. Purpose – This high-resolution model can be used for operational forecasting and research. The NWPS output is used as guidance to produce marine forecasts at the coastal WFOs. The web pages are a convenient way for local users to view the same meteorological forecast data as the local forecaster.

c. Audience – The main audience is NWS coastal offices and the general public.

d. Presentation Format – The NWPS model output includes winds, significant wave height and peak wave direction, and other wind, wave, and ocean parameters. NWPS output is displayed on WFO web pages with static images in 3 hourly forecast time steps out to 132 hours. Some of the pages have loop views. The following WFOs are currently providing NWPS model output:

- Brownsville, Texas –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=BRO
  http://www.srh.noaa.gov/bro/?n=swan
- Corpus Christi, Texas –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=CRP
  http://www.srh.noaa.gov/crp/?n=swan
- Houston/Galveston, Texas -
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=HGX
  http://www.srh.noaa.gov/hgx/?n=swan
- Jacksonville, Florida –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=JAX
- Key West, Florida -
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=KEY
  http://www.srh.noaa.gov/key/?n=nwpsloop
  http://www.srh.noaa.gov/key/?n=swan
- Lake Charles, Louisiana –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=LCH
- Melbourne, Florida -
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=MLB
- Miami-South Florida, Florida –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=MFL
  http://www.srh.noaa.gov/mfl/?n=swan
- Mobile/Pensacola, Alabama/Florida -

http://innovation.srh.noaa.gov/swan/swanloop.php?sid=MOB
http://www.srh.noaa.gov/mob/?n=swan

- New Orleans/Baton Rouge, Louisiana –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=LIX
- San Juan, Puerto Rico –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=SJU
  http://www.srh.noaa.gov/sju/?n=marine1_models
- Southern Region Headquarters, Texas –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=SRH
- Tallahassee, Florida -
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=TAE
  http://www.srh.noaa.gov/tae/?n=swan
- Tampa Bay, Florida –
  http://innovation.srh.noaa.gov/swan/swanloop.php?sid=TBW

e.   Feedback Method - Most feedback will come from Internet users through emails to local WFO web masters and through an electronic survey:

http://www.nws.noaa.gov/survey/nws-survey.php?code=SWNMO

Additionally comments can be sent to:

National Weather Service (NWS)
Attn: Richard May
W/OS21
Marine and Coastal Weather Services Branch
1325 East West Highway
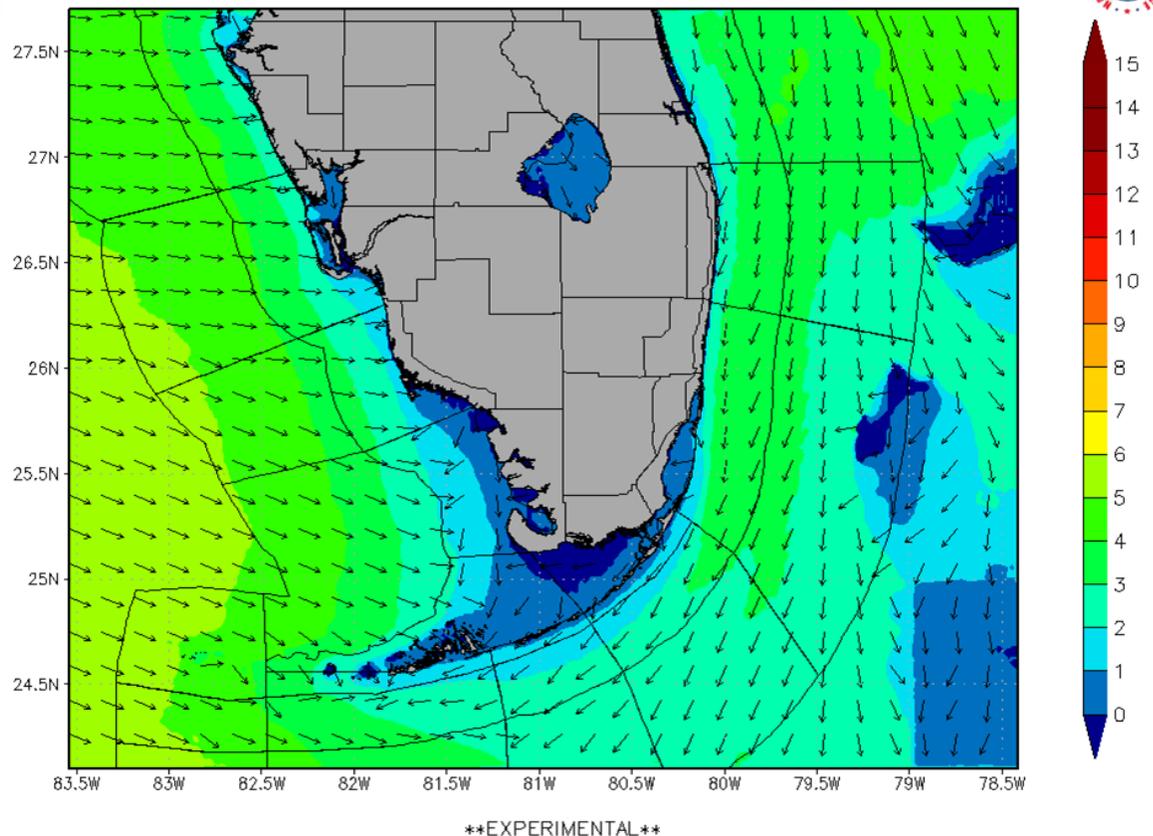Silver Spring, MD 20910

or e-mail to: richard.may@noaa.gov

NWS is seeking user comments on the NWPS Model Experimental Output through June 30, 2014.

f.   Example –
http://www.srh.noaa.gov/images/rtimages/mfl/nwps/CG1/swan_sigwaveheight_hr012.png. See below.

NWPS Significant Wave Height (ft) and Peak Wave Direction
Hour 12 (18Z27DEC2012)

EXPERIMENTAL

Part II - Technical Description

a. <u>Format & Science Basis</u> - The NWPS model is a high-resolution, locally run model fully integrated with the Interactive Forecast Preparation System (IFPS)/Graphical Forecast Editor (GFE). NWPS will perform in waters as shallow as one meter. The model takes into account deep to shallow water effects on wave propagation and surf zone forecasting and enables WFOs to more accurately predict the nearshore environment (within 5 miles of shore). GFE wind grids are used to drive the wave model and the output is piped back into the GFE as wave grids.

The experimental NWPS output products are displayed graphically. Output includes winds, significant wave height and peak wave direction, and other wind, wave, and ocean parameters.

The GRIB2, netCDF, and HDF5 output of the SRH (GMEX) model run can be downloaded from links on innovation.srh.noaa.gov/swan/.

In addition to Florida and Gulf coastal waters, NWPS also covers a large part of the Gulf of Mexico offshore waters and a small part of the southwest North Atlantic waters. See below:

NWPS Wind (knots)
Hour 72 (06Z29MAR2013)

EXPERIMENTAL
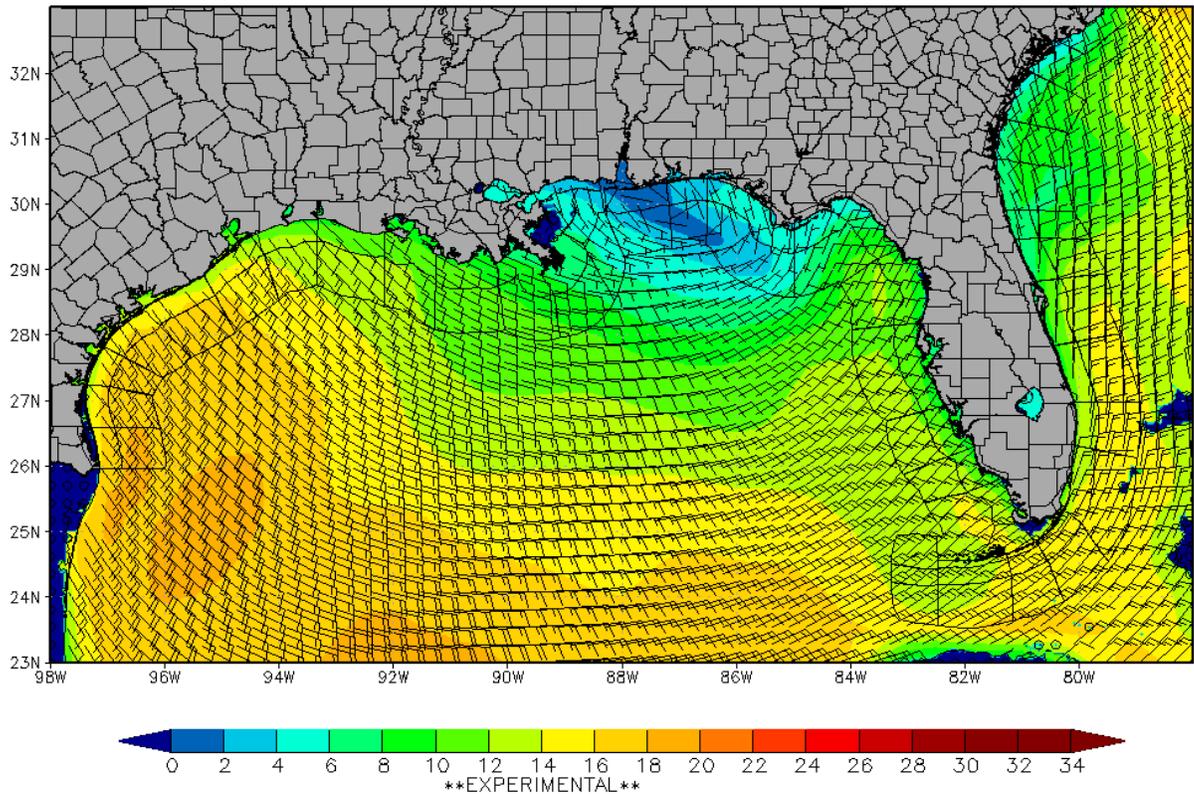
b. Product Availability – The NWPS model is run on-demand, twice per day for the afternoon and early morning forecasts, and more often if conditions evolve differently from forecasts.

The output is available on SR Coastal WFO web pages (see Part 1d) and also can be accessed via links from the NWS Southern Region HQ (SRH) web page (see Part 1d). The NWPS output is experimental and therefore may not be available at all times.

c. Additional Information – NWPS is an NCEP-developed wave modeling system which uses the best of regional implementations of the Simulating Waves Nearshore (SWAN) model and a localized version of NOAA's Wavewatch III. The following offices are already participating as NWPS alpha-testing sites: Eureka, Miami, Charleston, Gray/Maine, and SRH. The NWPS is currently being set for testing at Houston, NHC/TAFB, Morehead City, and Anchorage.