

**Experimental Gridded Marine Offshore and High Seas Forecasts in the
National Digital Forecast Database (NDFD)
Product Description Document
August 3, 2015**

Part I - Mission Connection

- a. Description of Product - The National Weather Service's National Centers for Environmental Prediction (NCEP) Tropical Analysis and Forecast Branch (TAFB) is providing gridded forecasts of five marine weather elements to the National Digital Forecast Database (NDFD) on an experimental basis for their offshore waters and high seas forecast areas of responsibility for the Atlantic and Pacific basins. NCEP's Ocean Prediction Center (OPC) is providing gridded forecasts of five marine weather elements to the NDFD on an experimental basis for their offshore waters in the Atlantic and Pacific basins. The Weather Forecast Offices (WFOs) in Fairbanks, Anchorage, and Juneau, Alaska are currently providing six gridded forecast elements over their offshore waters on an experimental basis to the NDFD in the Arctic Ocean, Bering Sea, and Gulf of Alaska basins.

The marine weather elements are:

For TAFB: 10-m wind speed, 10-m wind direction, 10-m wind gusts, significant wave heights, and marine hazards.

For OPC: 10-m wind speed, 10-m wind direction, 10-m wind gusts, significant wave heights, and marine hazards.

For Alaska WFOs: 10-m wind speed, 10-m wind direction, 10-m wind gusts, significant wave heights, marine hazards, and weather.

TAFB began production of NDFD grids on March 20, 2013 for all of their offshore and high seas Area of Responsibility (AOR). OPC began producing offshore grids on May 1, 2013; high seas forecasts grids are expected to be added during 2017. Offshore and high seas grids from WFO Honolulu are expected to be added in the near future. WFO Honolulu will provide the same elements as OPC and TAFB.

- b. Purpose – The NDFD is the primary means by which digital information is made available to customers and partners. As part of this digital database, experimental offshore and high seas information will continue to be implemented and expanded in response to growing user needs for planning purposes and critical safety decisions. Future digital datasets will continue to be developed in accordance with growing user needs.
- c. Intended Audience – The current audience for the NDFD offshore and high seas grids include the marine transportation industry, emergency managers, commercial fishermen, government agencies, and recreational users. It is also for anyone else who wishes to decode and explore

various potential applications of the NWS digital data; or simply view, post, or distribute the graphic images.

- d. Presentation Method – The offshore and high seas grid domain, hereafter referred to as the NDFD oceanic domain, covers the Atlantic, Pacific and Arctic basins for the offices issuing offshore waters and high seas forecasts. The upper right latitude, longitude for this grid is: 79.99N, 10.71E. The lower left corner lies directly on an NCEP Gridpoint 204, which coincides with all other Pacific region NDFD grids. The lower left lat, lon for this grid is 30.42S, 129.91E. Specific information on the grid domain can be found at: <http://graphical.weather.gov/docs/ndfdSRS.htm>.

Areas of the offshore gridded forecasts that coincide with the NDFD CONUS grid will be included in the CONUS mosaic.

These elements are available at a spatial resolution of 10 km for TAFB and 5 km for OPC. The TAFB data have a temporal resolution of six (6) hours out to 144 hours or six (6) days for the domain. The OPC data have a temporal resolution of three (3) hours out to 144 hours or six (6) days for the domain. Plans are to eventually move all the marine grids toward a temporal resolution of 3 hours for all the marine centers contributing to the NDFD.

The domain of the NDFD 10-km oceanic grid is illustrated in Figure 1 below:

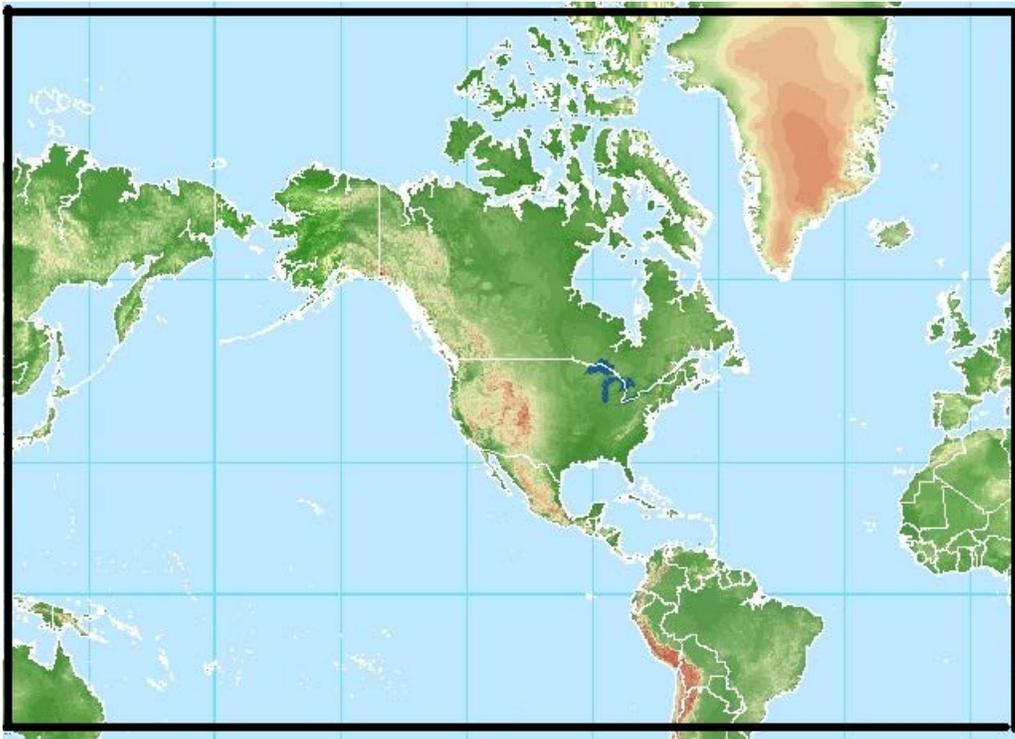


Figure 1: Domain (thick black line) of the new NDFD 10-km oceanic grid that will contain the NDFD Offshore and High Seas Grids from the providers.

The Atlantic Offshore and High Seas Forecast Areas and their corresponding producing offices are shown in Figure 2 below:

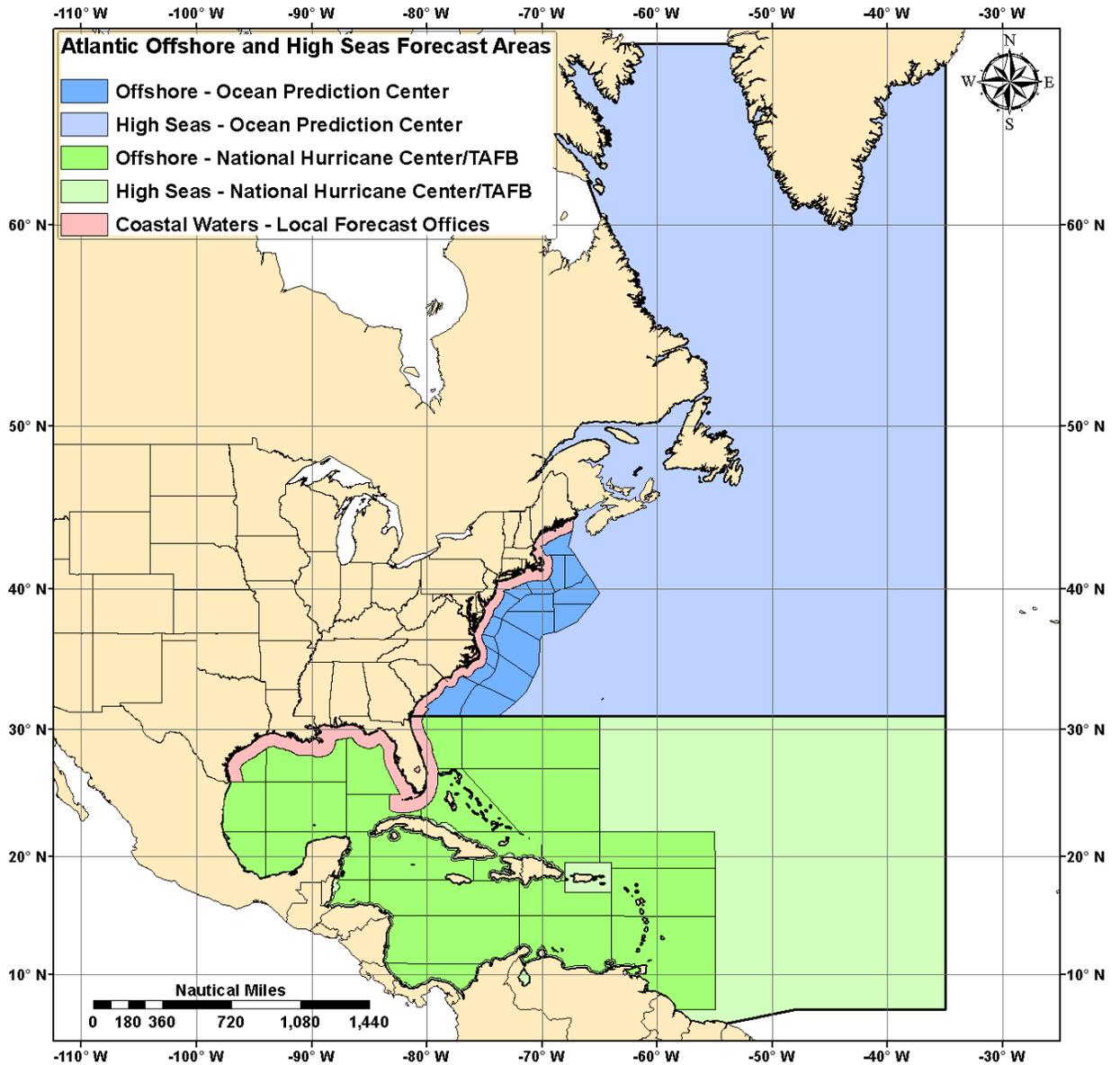


Figure 2: Offshore and High Seas Producers' AORs across the Atlantic.

The Alaska Offshore Forecast Area and the Pacific Offshore and High Seas Forecast Areas and their corresponding producing offices are shown in Figure 3 below:

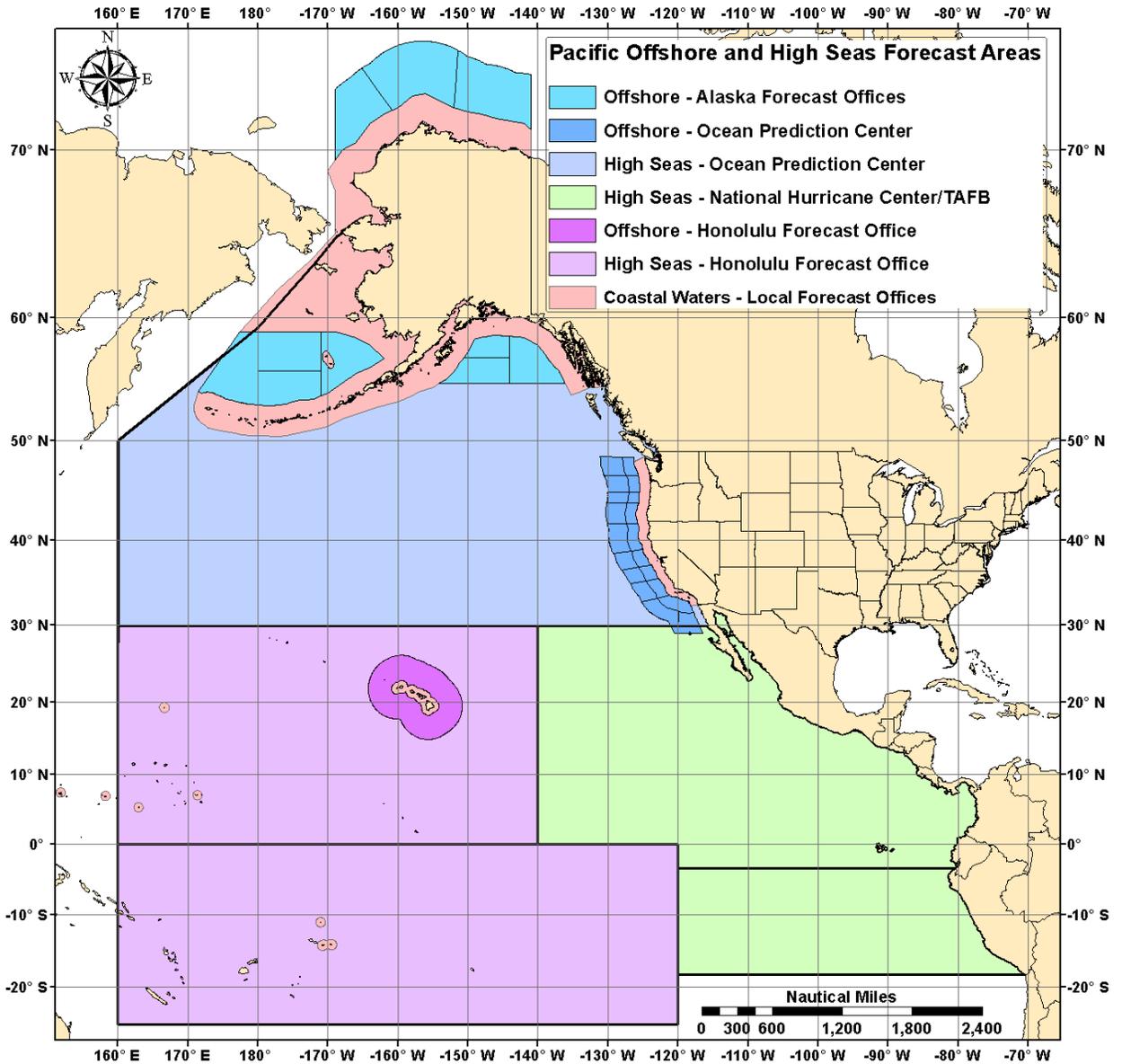


Figure 3: Offshore and High Seas Producers' AORs across the Pacific and Alaska Offshore AOR.

The map viewer image shown below in Figure 4 shows oceanic domain forecasts that are now available via NDFD. It includes the WFOs coastal waters, the Alaska coastal and offshore waters, the TAFB offshore and high seas areas, and the OPC offshore AOR.

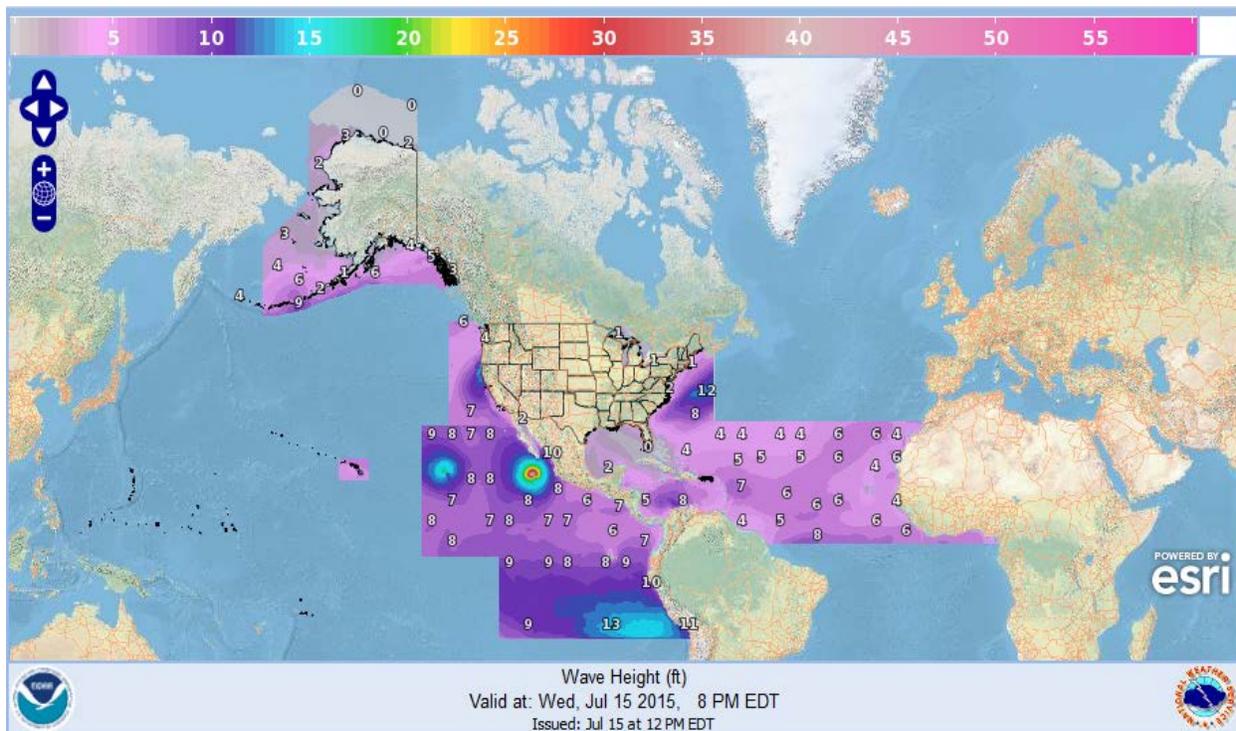


Figure 4: Coastal, Offshore, and High Seas Grids available

e. Feedback Mechanism –

Comments and feedback on these experimental Offshore and High Seas NDFD elements are being compiled here:

<http://www.nws.noaa.gov/survey/nws-survey.php?code=EGOSWHSMF>

Additional comments may also be provided to:

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Experimental Feedback Period: Extended through July 31, 2016.

Part II - Technical Description

- a. Format & Science Basis - The gridded marine elements are produced by the forecasters utilizing the Graphical Forecast Editor (GFE) in the Advanced Weather Interactive Processing System (AWIPS). These are value added grids with forecaster input based on marine forecast expertise over each centers' respective AORs. The forecasters also use GFE "smart tools" to take into account local marine effects and blend numerical model solutions as appropriate. This combination of tools and forecaster expertise allows gridded forecasts based on the best performing model(s), or an ensemble of model runs, in a given forecast scenario.
- b. Product Availability – Each contributing Marine Center updates their grids at least four times per day.

URLs to download the experimental marine grids:

<http://weather.noaa.gov/pub/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.oceanic/VP.001-003/>
<http://weather.noaa.gov/pub/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.oceanic/VP.004-007/>
<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.oceanic/VP.001-003/>
<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.oceanic/VP.004-007/>

URL to view the experimental marine grids:

<http://digital.weather.gov/>