

**NOAA/National Weather Service
National Hurricane Center / Tropical Analysis and Forecast Branch
Experimental Gridded Marine Forecasts
Product Description Document**

Updated 24 August 2010

1. Overview

The Tropical Analysis and Forecast Branch (TAFB) is providing five (5) day forecasts of gridded Mean Sea Level Pressure, Surface (10-m) winds, Significant Wave Heights, Primary Swell Height/Direction and Primary Wave Period on an experimental basis. These grids are produced by the forecaster through the AWIPS Graphical Forecast Editor (GFE).

2. Product Description

There are two grid domains (Atlantic and East Pacific) for the marine weather elements [posted on the NHC web site](#).

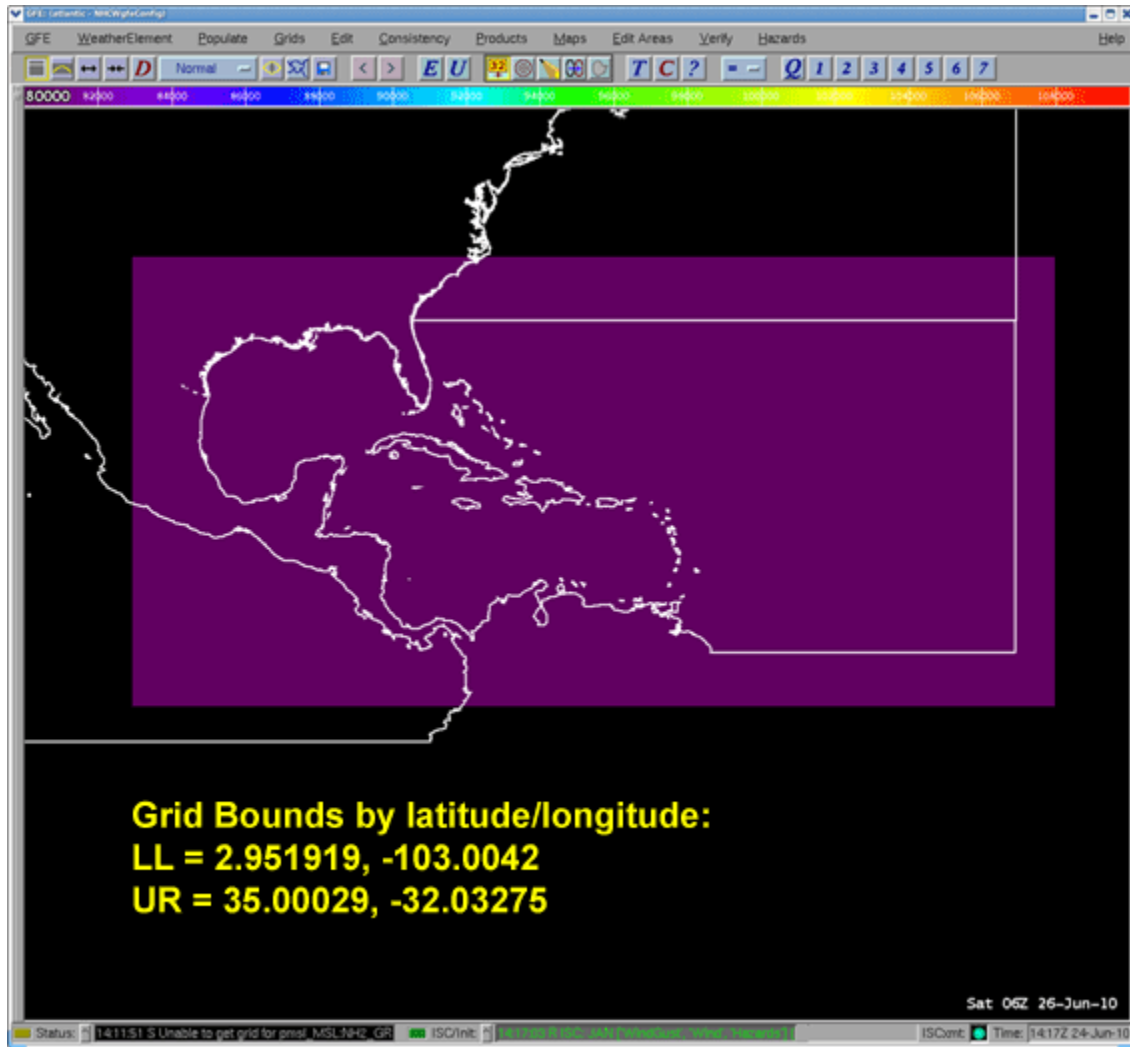
The Atlantic grid encompasses the Atlantic Ocean, Caribbean Sea and the Gulf of Mexico with a lower left boundary of 3N103W and an upper right boundary of 35N32W which covers the TAFB Atlantic Area of responsibility (AOR) from 07N to 31N between 35W and 100W.

The East Pacific grid encompasses the northeast and southeast Pacific Ocean with a lower left boundary of 20S145W and an upper right boundary of 32N65W which covers the TAFB East Pacific AOR.

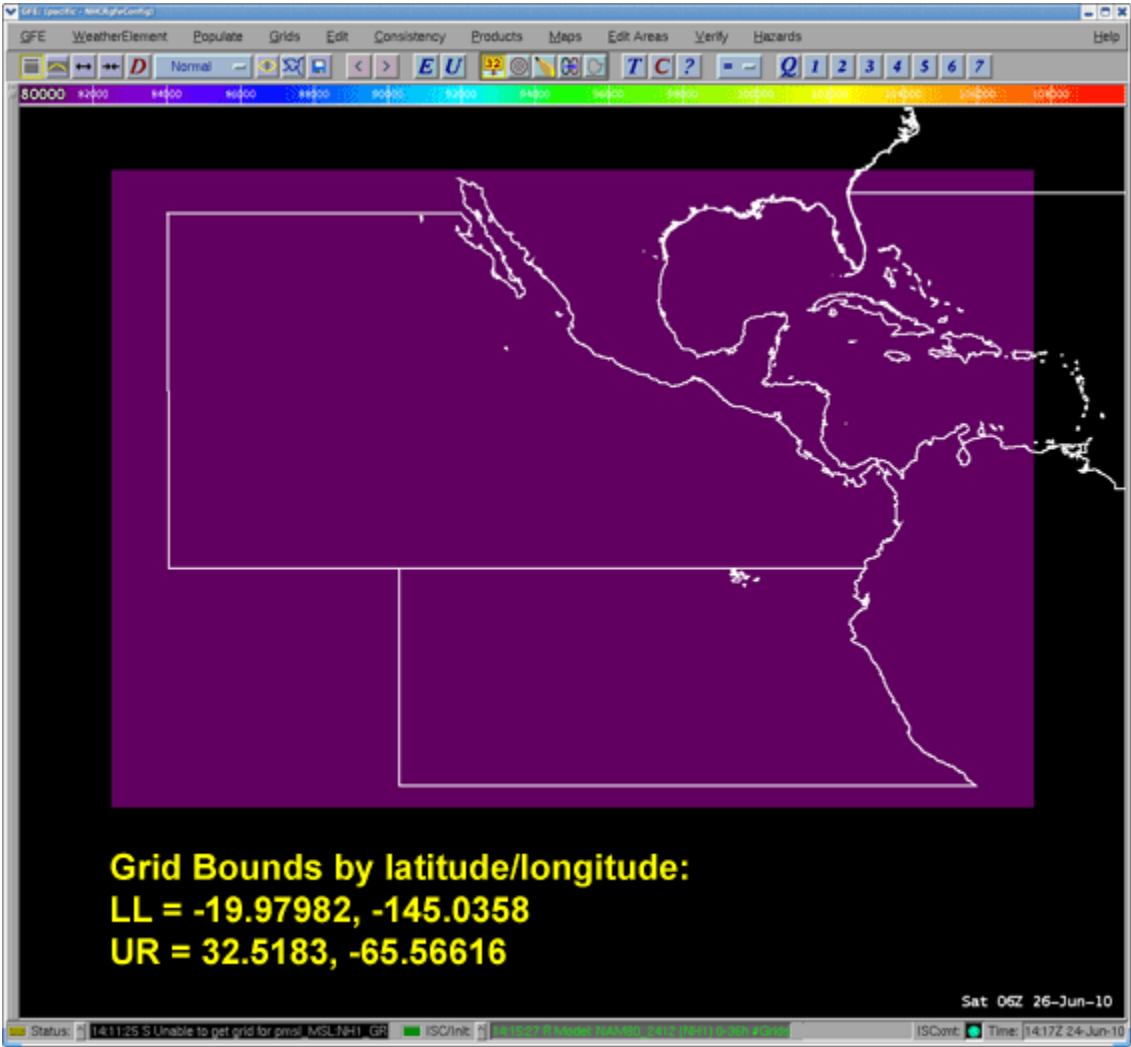
The gridded elements consist of Mean Sea Level Pressure (MSLP) in millibars (mb), surface (10-m) winds in knots (kt), significant wave heights in feet (ft), primary swell height/direction in feet (ft) and primary wave period in seconds (sec). These elements are available at a spatial resolution of 12.5 km and a temporal resolution of six (6) hours out to 120 hours or five (5) days for both basins.

The following pages illustrate the two domains.

NH2 –Atlantic Gridded Marine Forecast Domain



NH1 – East Pacific Gridded Marine Forecast Domain



3. Methodology

Forecasters produce gridded marine elements using the Graphical Forecast Editor (GFD) in AWIPS. These are value added grids with forecaster input based on marine forecast expertise. 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 in a given forecast scenario.

4. Availability

The experimental gridded marine weather elements are available twice daily using the 0000 and 1200 UTC model cycles and are [posted to the web](#) at approximately 0600 UTC and 1800 UTC each day. Grids older than 48 hours are automatically removed.

There are plans to expand the availability of the experimental grids to four (4) times per day at 0000, 0600, 1200 and 1800 UTC in the future.

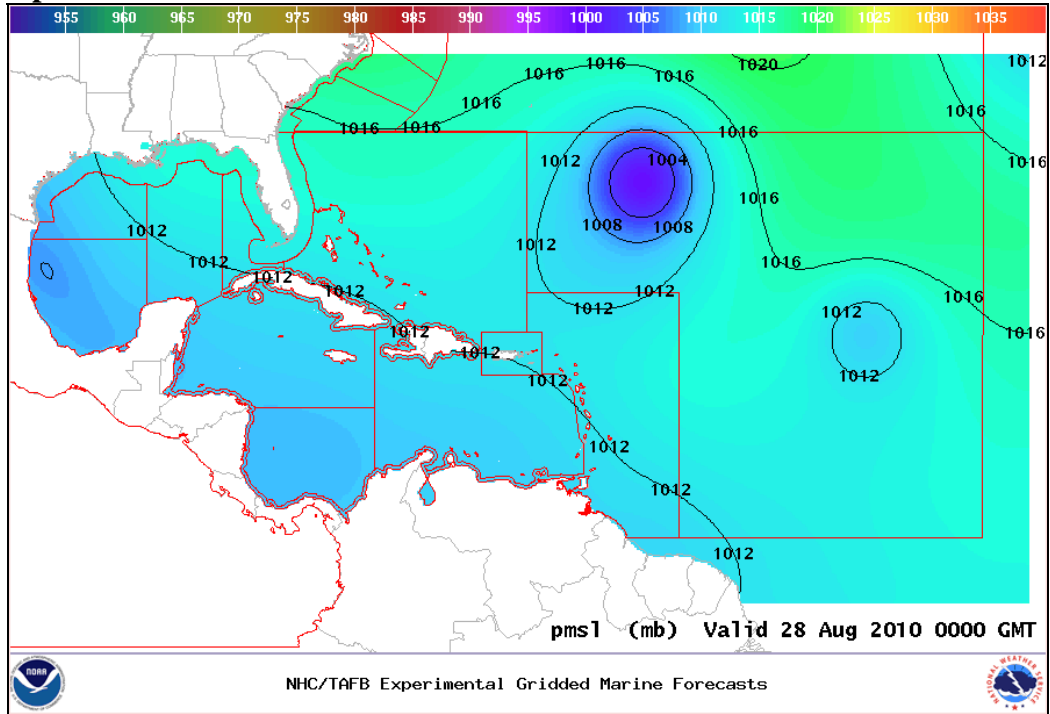
URL for experimental marine grids: http://www.nhc.noaa.gov/tafb/gridded_marine/

5. Examples

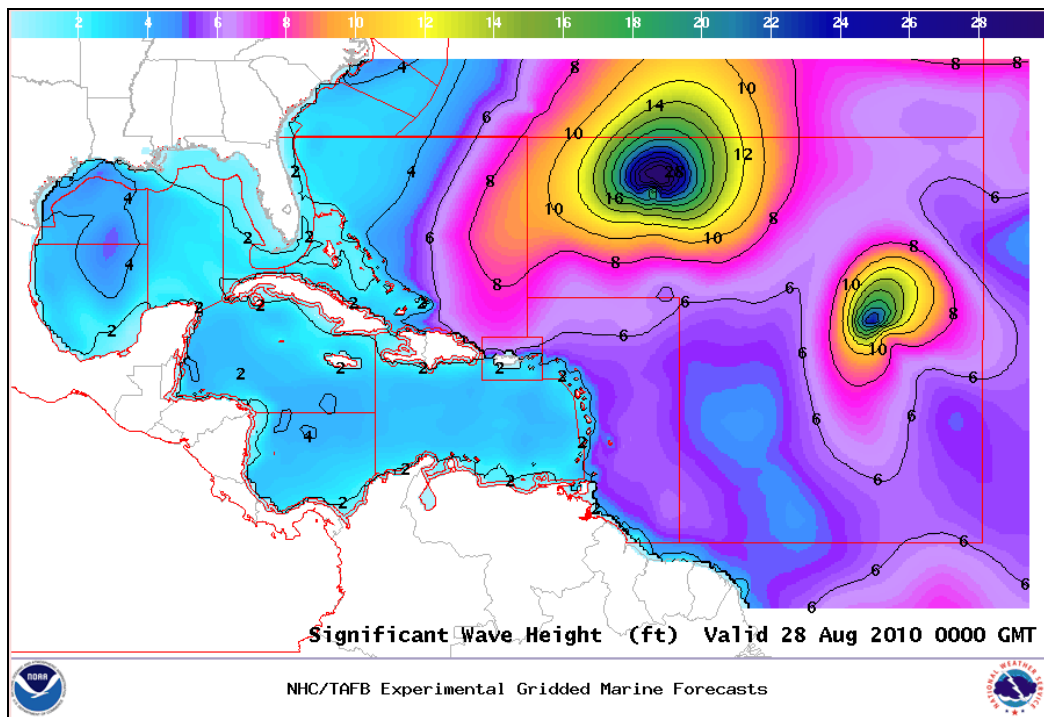
Below are some example images showing the creation of the experimental graphical forecast data in the Graphical Forecast Editor (GFE). After the forecasters create the gridded forecasts, it is saved as [a netCDF file](#) and then [posted to the NHC website](#).

End users may download and display the data using a variety of software packages that decode netCDF files and display it in a similar manner to the GFE. [A list that provides references to netCDF software packages](#) is available from Unidata.

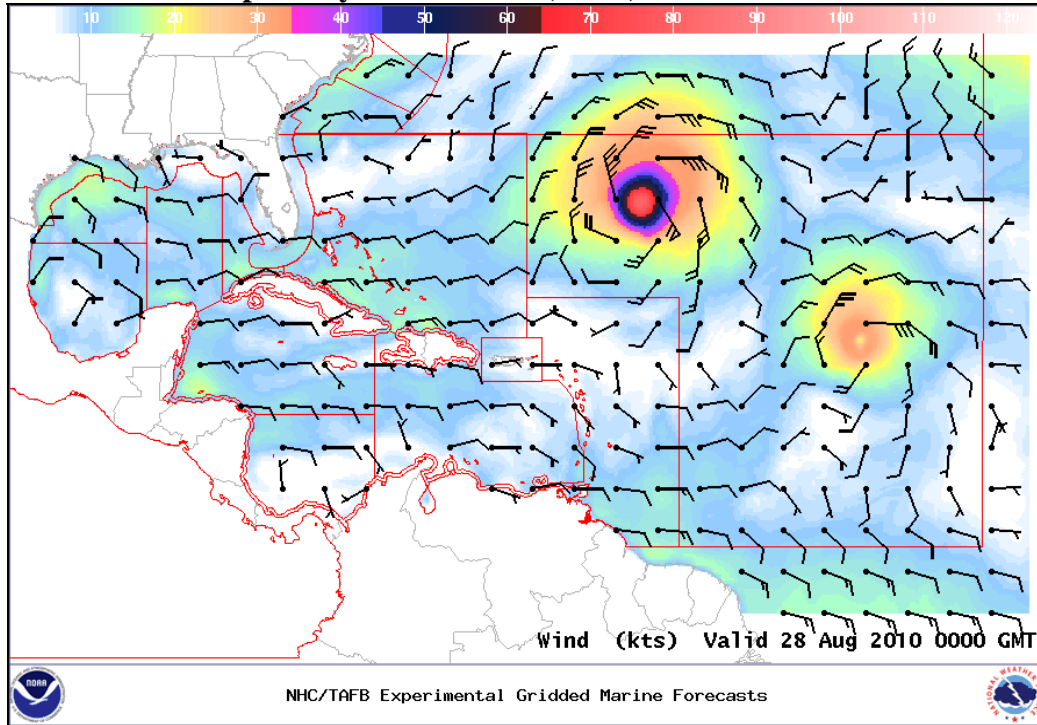
Example 1. Atlantic 84 HR Gridded Marine Forecast for Sea Level Pressure



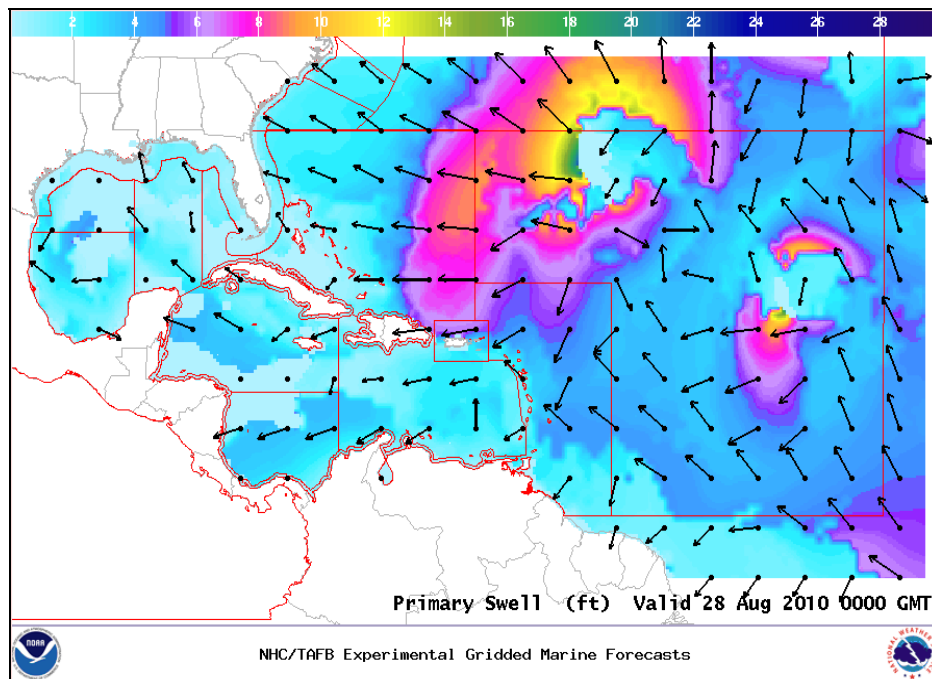
Example 2. Atlantic 84 HR Gridded Marine Forecast for Significant Wave Height



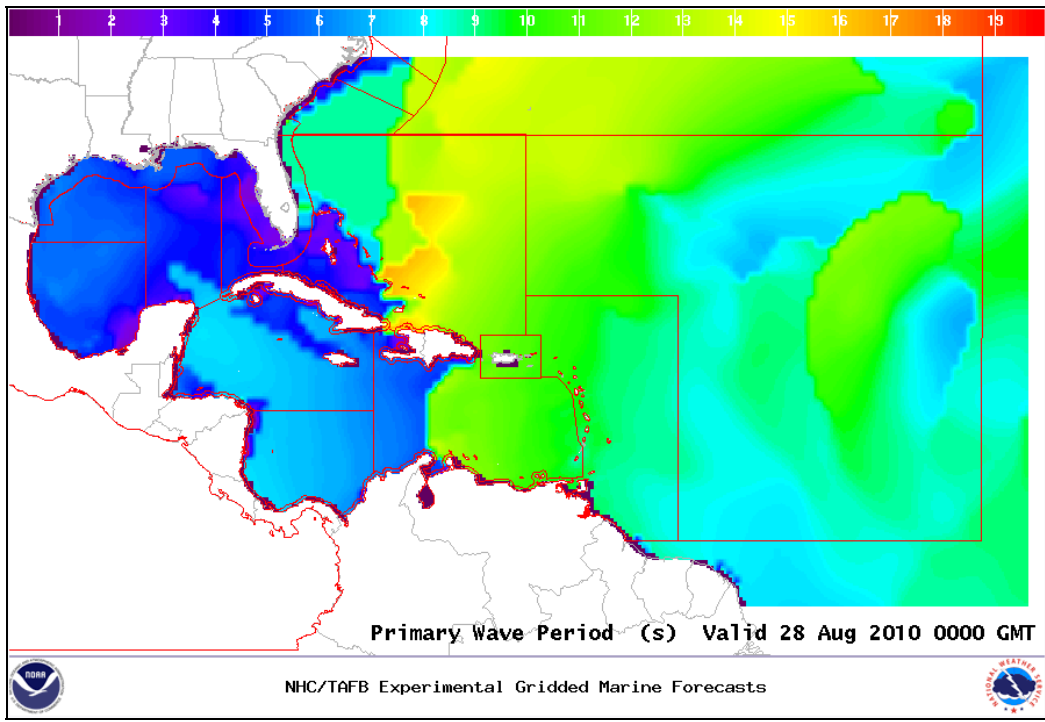
**Example 3. Atlantic 84 HR Gridded Marine Forecast for 10-meter Surface Winds
Use of the GFE Tropical Cyclone Marine (TCM) Wind Tool for Hurricane Danielle**



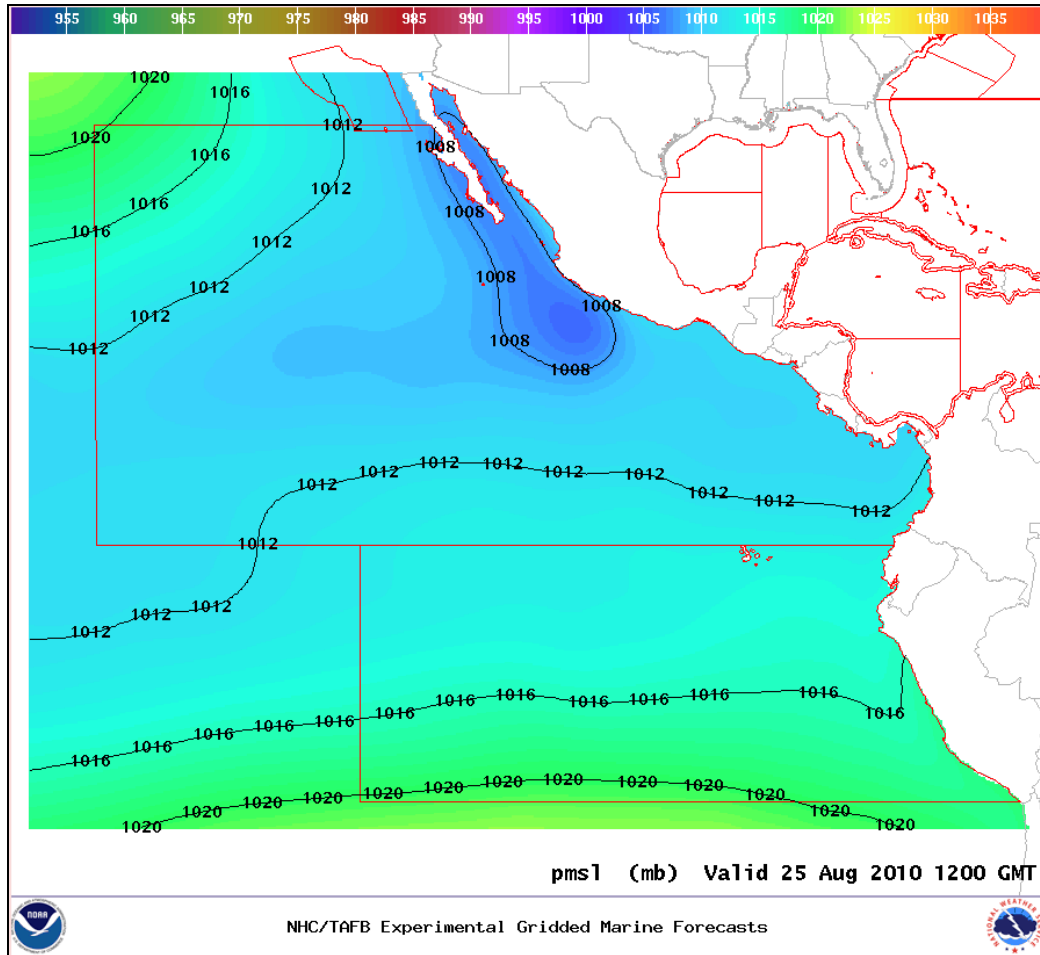
Example 4. Atlantic 84 HR Gridded Marine Forecast for Primary Swell Height and Direction



Example 5. Atlantic 84 HR Gridded Marine Forecast for Primary Swell Period

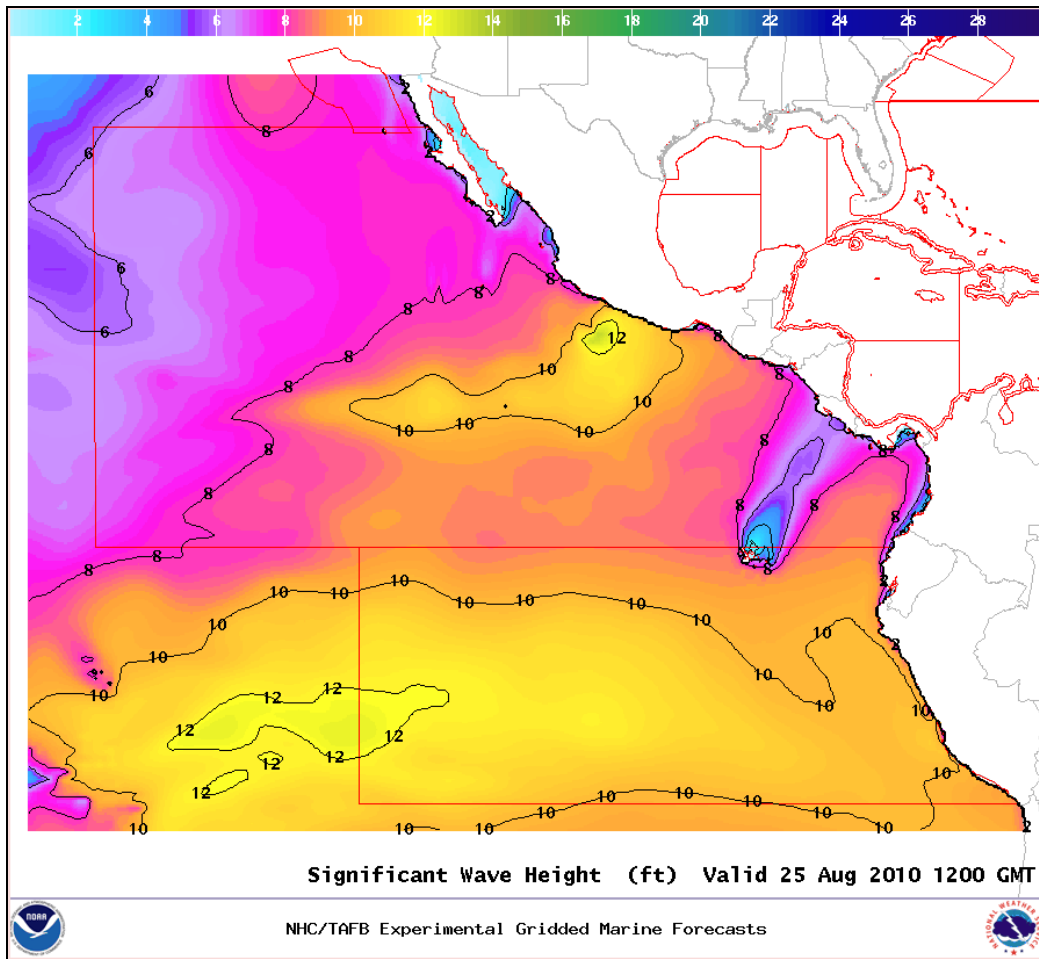


**Example 6. East Pacific 24 HR Gridded Marine Forecast
for Sea Level Pressure.**

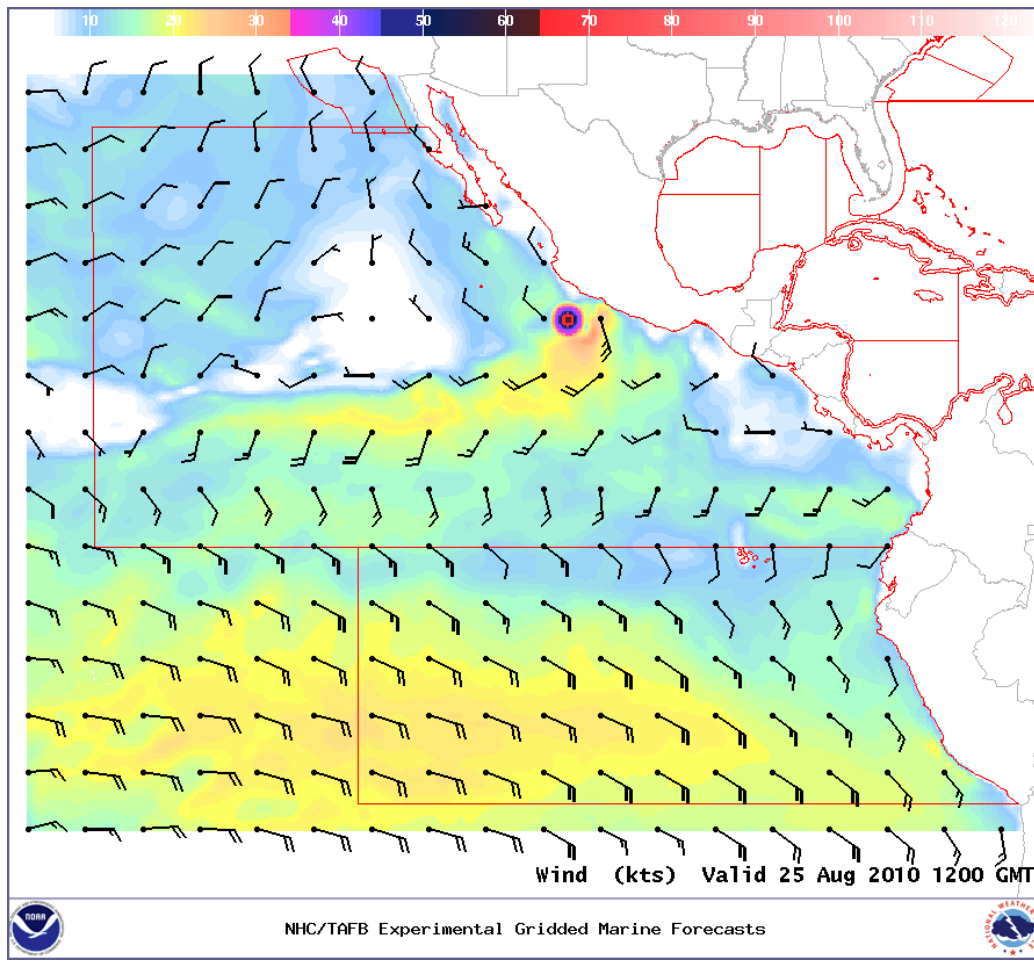


http://www.nhc.noaa.gov/gifs/NH1_pmsl_example.gif

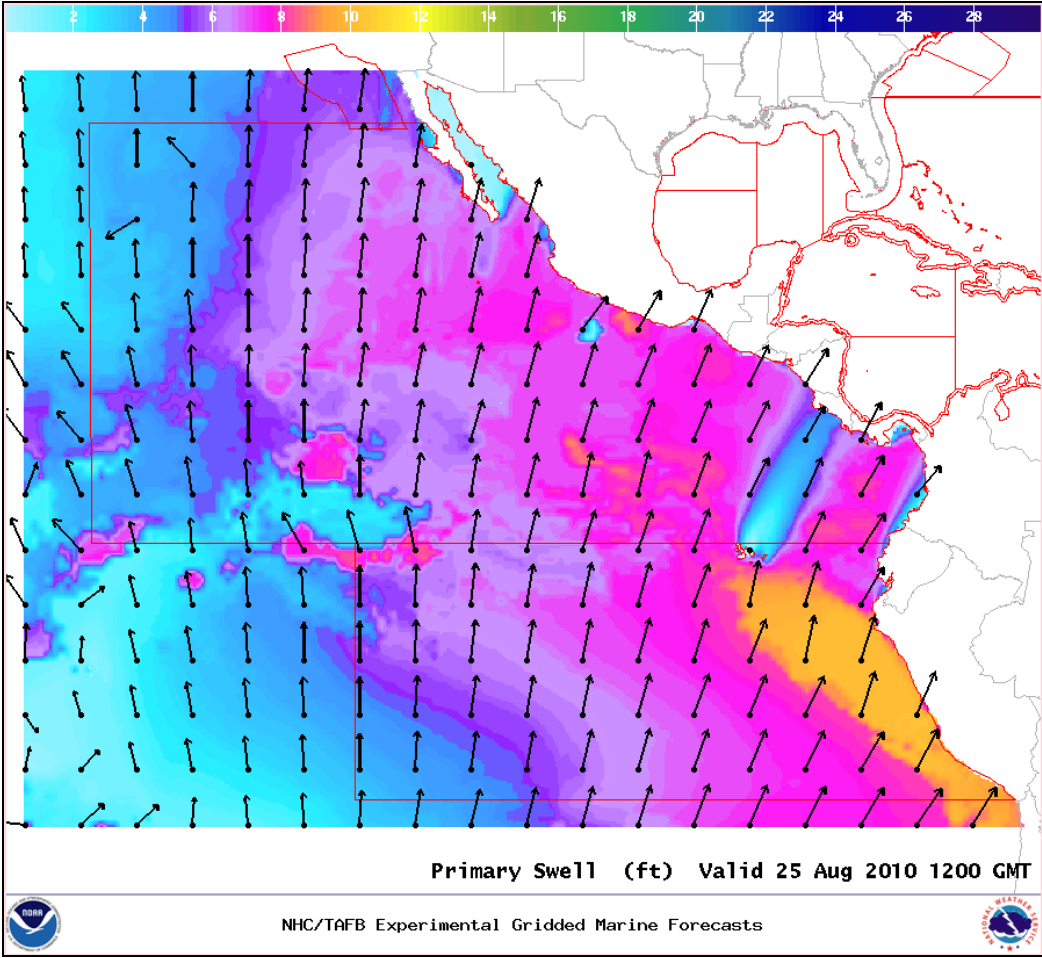
Example 7. East Pacific 24 HR Gridded Marine Forecast for Significant Wave Height



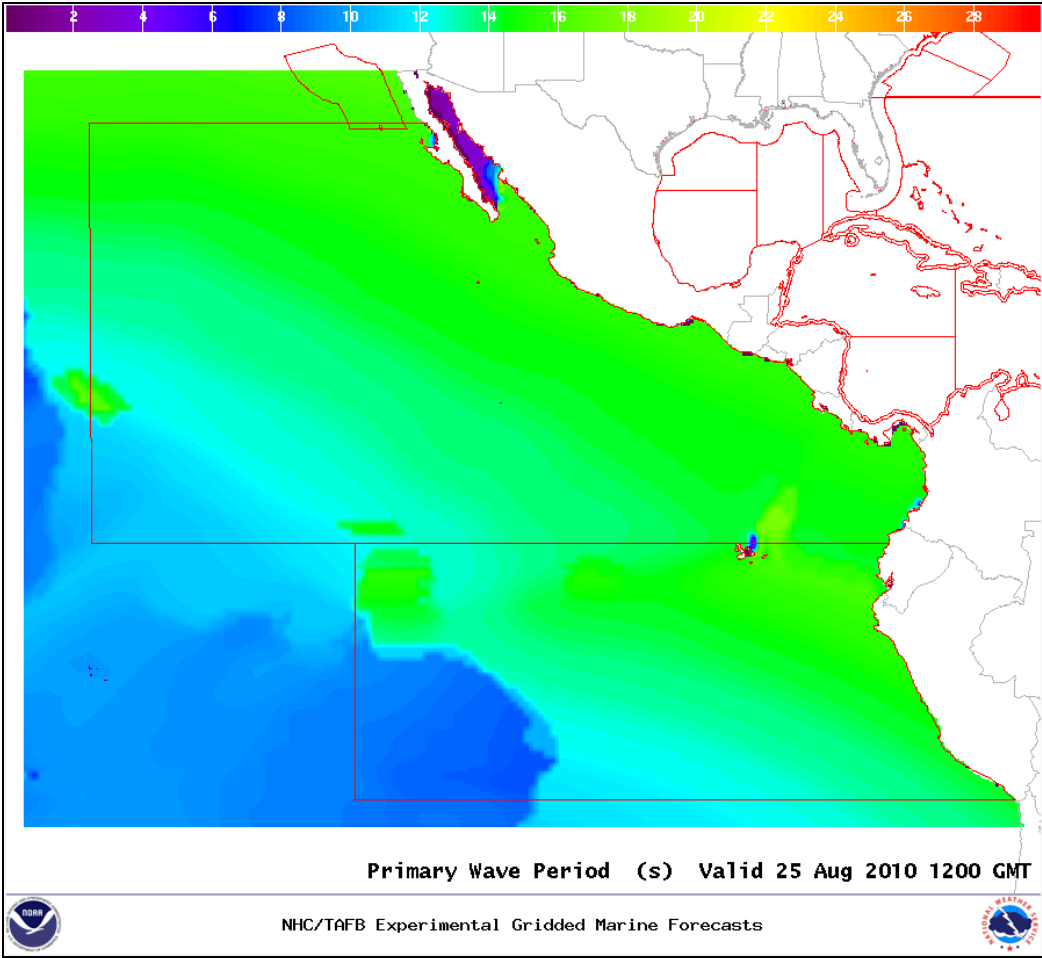
Example 8. East Pacific 24 HR Gridded Marine Forecast for 10-meter Surface Winds. Use of the GFE Tropical Cyclone Marine (TCM) Wind Tool for Tropical Storm Frank



Example 9. East Pacific 24 HR Gridded Marine Forecast for Primary Swell Height and Direction



Example 10. East Pacific 24 HR Gridded Marine Forecast for Primary Swell Period



6. Feedback and Comments

The Tropical Analysis and Forecast Branch is requesting your comments and feedback about these experimental gridded marine weather elements. Please feel free to use the link below for submitting comments.

Via Email: nhcwebmaster@noaa.gov

Via Short Web Survey: <http://www.weather.gov/survey/nws-survey.php?code=TAFB-EGMF>