

Experimental Gerling-Hanson Wind Wave Plots

Part I – Mission Connection

- a. Product Description – WFO Eureka has developed a graphical vector plot of predefined point guidance for up to six wave trains (direction, height, and period), and wind (direction, speed) through a five day period at six hourly increments. If the point is associated with a buoy location, the previous 24 hour observations, partitioned in the same manner as the forecast waves, are plotted in three hour intervals. The forecast wave information is from the partitioned SWAN (Simulating Waves near shore) model output. The wind is forecaster derived.

The capability has been expanded to other regions and national centers for additional feedback and proposed national implementation.

- b. Purpose National Weather Service coastal forecasters use the plot to determine which, and how many, of the six wave trains will be used as initial guidance for the official gridded forecast. It also allows the forecaster to quickly estimate if hazardous marine conditions may occur as a result wave trains coming from significant different directions or periods, or wave steepness. While the primary purpose is model guidance and understanding for the forecaster, it is a quick visual method for any marine customer to view the wave spectrum at a predefined point.

Additional potential enhancements include interactive user defined location plots, sampling the values by dragging the cursor over the plot and expanding to other NWS coastal regions.

- c. Audience - The product is for any marine customer within the coastal waters forecast area of NWS Weather Forecast Offices in the Contiguous United States (CONUS), Puerto Rico, and the offshore waters of the tropical North Atlantic.
- d. Presentation Format – This product will be a graphical vector plot of model/forecaster wave and wind forecast. This guidance will be available at six hour intervals for a 5 day period for predefined points. See the URLs listed in II b for access to this product via internet. A tutorial for interpretation of the product will be available.
- e. Feedback Method. - Feedback on the display and usability of the product will be conducted via an online survey at: <http://www.nws.noaa.gov/survey/nws-survey.php?code=HPGT>.

or via mail to:

Attn: Troy Nicolini
National Weather Service
300 Startare Drive
Eureka, CA 95501-6000.

Experimental Feedback Period: Feedback period will run from October 2014-October 2015.

Part II – Technical Description

- a. Format and Science – National Weather Service Western Region coastal Weather Forecast Offices now run the SWAN model, using the Wavewatch III and forecaster generated wind grids for their coastal waters forecast area. The full wave spectrum is partitioned using the WaveSEP FORTAN algorithm and spatial and temporal tracking, maintaining the highest energy swells. This suite of wave guidance is used as input into the official wave gridded forecasts. The Hanson plots are a graphical vector display of up to the six highest energy wave derived from the Wavewatch III and forecaster wind grids at predefined locations. The locations are WFO determined and include at least one point per CWF zone and at a subset of buoy locations.

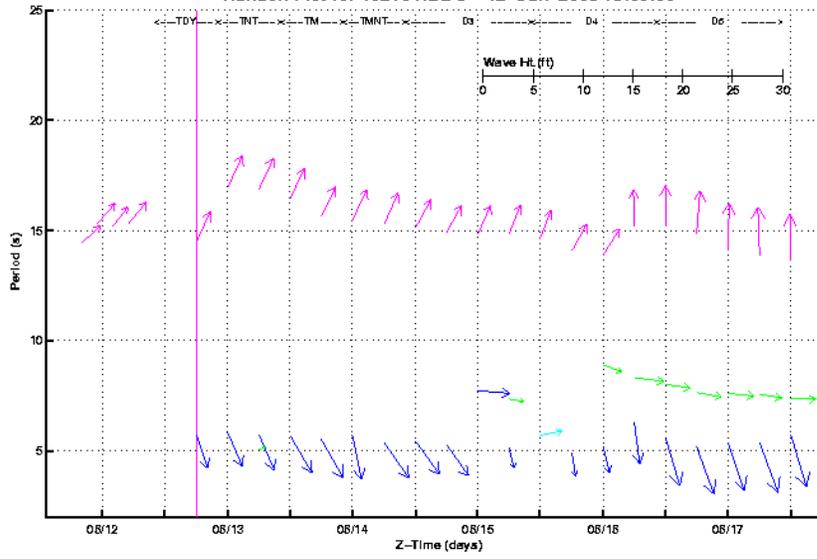
More information can be found at:

- b. Product Availability - This product is currently available at the following locations at least twice per day at approximately 0830 and 2030 UTC. Other National Centers and CWFOs in other regions will display the plots as the capability becomes available.

<http://www.wrh.noaa.gov/eka/marine/hansonPlots/>
<http://www.srh.noaa.gov/rtimages/bro/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/crp/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/hgx/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/lch/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/lix/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/mob/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/tae/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/tbw/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/key/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/mfl/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/mlb/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/jax/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/sju/nwps/partition/CG1>
<http://www.srh.noaa.gov/rtimages/nhc/nwps/partition/CG1/>

- c. Additional Information - Example

Hanson Plot for 46213 NDBC ~ 12-Jun-2009 18:00:00



SWAN RUN
20090612 12Z

ENP RUN
20090612 05Z

Wave Systems

Wave 1

Wave 2

Wave 3

Wave 4

