Western Region Experimental Wave/Wind (Hanson Plots) Graphical Point Forecasts

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.

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 Western Region Weather Forecast Offices.

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. It will be an HTM file on the WFO Eureka, CA internet page at http://www.wrh.noaa.gov/eka/. 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 through meetings with members of the local Marine Advisory Group and general marine public. Feedback will be through an e-mail address on the Web page containing the product to Troy.Nicolini@noaa.gov, via phone at 707-443-6484x223 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 June 29, 2012 to June 30, 2013.

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:

http://www.wrh.noaa.gov/eka/marine/hansonPlots/

b. Product Availability - This product will be available at least twice per day at approximately 0830 and 2030 UTC.

c. Additional Information - Example