

Gridded Graphical Hazardous Weather Outlook

Part 1 - Mission Connection

1. **Product / Service Description:**

The Melbourne Weather Forecast Office (WFO) Gridded Graphical Hazardous Weather Outlook (gHWO) complements the text Hazardous Weather Outlook (HWO) by providing a graphical depiction of threat levels for the following hazards: lightning, tornado, wind, hail, (flash) flood, excessive heat, excessive cold, high wind, dense fog/smoke, fire weather, rip current, coastal flood, waterspout, marine wind/sea, and marine thunderstorm gust. The threat impacts are specific to the WFO county warning area (CWA) and marine area of responsibility (MAOR), and depict the geographical distribution and level of threat of each hazard.

2. **Purpose / Intended Use:**

The hazard graphics are designed primarily as a planning tool for decision makers potentially impacted by a wide variety of weather hazards. The graphics allow forecasters to convey pertinent hazardous weather information in a easy to interpret, consistent, and highly accessible format. The graphics are valid through the current day/night period, and are updated throughout the balance of the period as needed.

3. **Audience:**

The target audience for the suite of graphics includes state/local emergency managers, the general public, and the media. Anyone requiring detailed impact information for advanced planning purposes will benefit from examination of the gHWO.

4. **Presentation Format:**

The Advanced Weather Interactive Processing System (AWIPS) Graphical Forecast Editor (GFE) is used to create plan view maps (one for each valid hazard). The graphics are then uploaded to the World Wide Web (WWW) and are automatically ingested into a highly navigable and interactive web page. To complement each graphic, descriptive information relative to that hazard is extracted from the textual HWO (specifically divided by hazard, e.g. thunderstorm) and displayed simultaneously. The web page also contains an extensive collection of preparedness and safety information as well as a one stop shopping selection of informative links and supportive documentation.

5. **Feedback Method:**

Continuous feedback is available via a web page e-mail link to the developers. A formal evaluation period was established after the experimental product was first introduced. User surveys resulted in valuable comments from state/local emergency managers, nearby government agencies, local media, other WFOs, and the public. In addition, the gHWO has been presented at numerous public and professional forums since 2000. Throughout this process, many worthy suggestions have been received and subsequently incorporated into iterative upgrades of the product suite.

Technical comments for the gHWO product developer may be addressed to:

National Weather Service
Attn: David Sharp
421 Croton Road
Melbourne, FL 32935
or e-mail comments to: david.sharp@noaa.gov

Part 2 - Technical

1. **Format & Science Basis:**

The gHWO is comprised of a series of plan view maps, one for each of 15 possible local hazards listed in Part 1, Section 1, and a map depicting Spotter Activation requests. All gHWO products depict threats specific to the WFO CWA and MAOR for the current day/night period. The levels of threat for each hazard (ranging from no threat to an extreme threat) are precisely defined by considering the magnitude of the hazard forecast together with the likelihood of occurrence. The term threat, as it relates to life, property, and economic interest, serves as a bridge to allow forecasters to specifically address hazards in advance of their (potential) impact.

The graphical forecasts are locally and manually produced using AWIPS GFE, while taking into account guidance from the national centers (e.g. Storm Prediction Center and the Hydrometeorological Prediction Center). Importantly, the WFO adds mesoscale detail to more accurately denote the degree and geographic extent of each threat.

2. **Availability:**

The gHWO is issued routinely each day by 0700 LST and updated by 1100 LST, if necessary. Non-routine updates are issued anytime threats change appreciably from posted depictions. The threat graphics are valid through the current day/night period.

Realtime access to the gHWO can be obtained on the WWW at:
<http://www.srh.noaa.gov/mlb/ghwo/ghwomain.shtml>

3. **Additional Information:**

(a) An overview of the gHWO concept, design, and utility can be accessed in Corel Presentation format from:
http://www.srh.noaa.gov/mlb/ghwo/presentation/ghwo_2004update.shw

(b) Several publications and presentations concerning the gHWO are available at the following URLs:

- <http://www.srh.noaa.gov/mlb/ghwopres00.htm>
Pendergrast, J.C., D.W. Sharp, D.L. Jacobs, 2000: *Graphically Depicting the Hazardous Weather Outlook for East Central Florida*, Preprints, 20th Conference on Severe Local Storms, Amer. Meteor. Soc., Orlando, FL, 289-292.

- <http://www.srh.noaa.gov/mlb/hwofiles/nwaghwo/slide1.html>
Sharp, D.W., J.C. Pendergrast, and D. L. Jacobs, 2000: Graphically Depicting the Daily Hazardous Weather Outlook for Florida, Presented to the National Weather Association 25th Annual Meeting, Gaithersburg, MD.

 - http://www.srh.noaa.gov/mlb/ghwo_ghls_ta.html
Sharp, D.W., D.L. Jacobs, J.C. Pendergrast, S.M. Spratt, P.F. Blottman, and B.C. Hagemeyer, 2000: Graphically depicting east-central Florida hazardous weather forecasts, NOAA Tech. Attach. SR/SSD 2000-27. 4 pp.

 - <http://www.srh.noaa.gov/mlb/floodsymp1.htm>
Sharp, D.W., and S.M. Spratt, 2001: Graphically Depicting Threat Assessment Information for Flood Situations in East Central Florida, Symposium on Precipitation Prediction: Extreme Events and Mitigation; 81st Annual AMS Meeting, Albuquerque, NM, 378-380.
- (c) The gHWO was designed by David Sharp, David Jacobs, Scott Spratt, Matthew Volkmer, Peter Blottman, and John Pendergrast, WFO Melbourne, FL. Critical reviews and significant suggestions were also provided from other Florida WFOs.