This work is part of the project “Assessing Current Storm Surge Information from the Public Perspective” funded by the National Oceanic and Atmospheric Administration/National Ocean Service. This project has two objectives:

1. To explore and assess the public’s awareness and understanding, or lack thereof, concerning storm surge and currently available storm surge information, regardless of the meteorological cause; i.e., “Do they know what storm surge is?”

2. To assess whether the National Weather Service (NWS) should develop new storm surge informational approaches to improve the communication and decision-making with respect to extratropical (ET) and tropical cyclone (TC) storm surge risk.

For this portion of the project, broadcast meteorologists from the major local television stations along the Atlantic, Gulf, and Pacific coasts with extensive experience responding to ETs and TCs completed an on-line survey during June-July 2012 (n = 51).

Findings indicate strong support for separate surge information:

- 90% either strongly agree or agree that storm surge watches should be issued, and
- 95% either strongly agree or agree that storm surge warnings should be issued.

Most believe a storm surge warning will result in the public paying more attention, better informed response, and greater emphasis on surge in their weathercasts.

A map similar to those used for other NWS warnings but with the area under Storm Surge Warning shown in purple was considered effective. Choosing from several possible labels for expressing the amount of storm surge, they choose Height of Water Above Land as the clearest, followed by Depth of Water Above Land.

Of three prototypical storm surge inundation maps – one showing the entire area predicted to be inundated in solid blue, another with depths represented by shades of blue, and a multicolored one (Figure 1) – the last was preferred by 88% and rated high on both clarity and usefulness in communicating to the public their vulnerability.

Those from TC regions assessed three track cones, the current cone and two transparent cones, one of which had dashed borders and the other had no border lines. Half the sample preferred the current cone and a third preferred the cone with no lines. The most common reason given for preferring the current cone was that it contained more information. Because the three cones were not alike on that aspect, this was an inconclusive assessment, requiring further research.

The next map illustrating Potential for Damaging Winds combined with a track cone received positive reviews (Figure 2). An issue was raised about the use of the word Low because it could be interpreted as implying no danger. One suggestion is to label the lowest category Significant instead.

Figure 1. Prototypical multicolored storm surge inundation map

Figure 2. Prototypical potential for damaging winds combined with track cone
The same map with the portion extending over the ocean masked received mixed reviews. Although some thought it emphasizes the risk to land areas, others worried about mariners. A toggle was suggested.

Another map was developed in response to emergency managers’ needs for information about when tropical storm force winds are expected to arrive (Figure 3). This graphic received a positive rating from 95% of broadcast meteorologists on both ease of understanding and usefulness in communicating to the public.

When asked about their relationship with National Weather Service offices serving their areas, the results were very positive, with 56% rating them as excellent. The most common concerns were that the timing of products did not fit their broadcast needs and that text products needed to be shorter with better templates. Although many thought too many warnings were issued, there were some calls for additional or improved products, particularly maps and graphics.

This work was funded by Hurricane Forecast Improvement Program Socioeconomic Working Group and Storm Surge Roadmap. Full report available at:

www.sip.ucar.edu/projects/stormsurge/

http://nldr.library.ucar.edu/repository/collections/TECH-NOTE-000-000-000-864

Figure 3. Tropical storm force wind arrival time

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