



Why a Conference on Hurricane Isabel?

Downtown Annapolis, Alexandria, and Fells Point in Baltimore under water; piers and docks destroyed, cars parked several hundred yards inland inundated; year-plus frustrations with federal and personal insurance recoveries for storm damage. What was so different about this hurricane versus others that have blown over the Bay?

In fact, Isabel was not a hurricane when she arrived but a tropical storm, yet she still caused devastating damage in the tidal areas of the Bay and its tributaries. Why, with the best hurricane projections possible, was the region caught unprepared? Why was there so much damage when everyone knew the storm was approaching and where she would track?

These questions have motivated managers, local government officials, and the scientific community since Isabel visited in September 2003 and inspired a cross-community conference, “Hurricane Isabel in Perspective” held at the Maritime Institute in Linthicum, Maryland in November 2004. Sponsored by the Chesapeake Research Consortium (CRC) and the University of Maryland Center for Environmental Science (UMCES), the conference encouraged participation by scientists, managers, and many emergency responders to explore the reasons for the devastating impacts of the hurricane and to discuss openly why the advanced forecasting tools and preparedness teams were unable to protect property throughout the region.

The conference topic raised sufficient interest in the region that several institutions and organizations co-sponsored the meeting: CRC, UMCES, the Virginia Institute of Marine Sciences, the U.S. Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey (USGS), the MD Department of Natural Resources (MD DNR), the Chesapeake Bay National Estuarine Research Reserves, and the Keith Campbell Foundation. Over 160 participants met for two days to listen to technical presentations by leading national and regional scientists and to participate in open discussion among state and county government officials and emergency response personnel.

Isabel was not unique; she mimicked a hurricane that traversed the Chesapeake Bay in 1933. The fundamental property shared by Isabel and the earlier storm was that both tracked northward along the western side of the Chesapeake, resulting in counterclockwise winds that drove water up the Bay and its tributaries. The storm surge from Isabel, coupled with tide- and wind-induced waves, reached far inland, particularly in the low-lying regions adjacent to the Bay. Even with advanced warning and media-delivered predictions of storm-surge height, the regional population did not grasp the storm surge concept. As a result, citizens did not fully prepare for the flood waters that accompanied the storm’s passage. Had the

storm tracked to the east of the Chesapeake's main stem, with the modest rains that fell during and after the storm, far less property damage and flooding would likely have occurred.

An obvious outcome of the conference has been the recognition that more informative descriptions are needed on the height of storm surge and likely areas of inundation expected in low-lying areas around the Bay and its tributaries. Recognizing the importance of effective and continuous regional distribution of surge and inundation forecasts prior to a storm's arrival may reduce future storm impacts in the basin.

Planners, scientists, emergency responders, and academics alike agreed that the numerous lessons learned from Hurricane Isabel will greatly assist our society's ability to prepare for, respond to, and recover from the next major storm event. The presentation of these lessons forms the contents of this proceedings volume. Most notable, however, is the lesson that planning does reduce impacts. While some need for improvement in terms of regional decision-making processes and institutional response still exists, use of the tremendous amount of scientific and academic research, along with forecast and model outputs, proved invaluable and will remain indispensable into the future.

This proceedings volume includes 31 peer-reviewed manuscripts covering: the history of hurricanes and storms from colonial times along with colonial and late-'70's responses to these major meteorological events; the physics and models describing the hurricane's passage and the effects on water levels; the biological responses in the water and on the land; and management and emergency responder capacities for Isabel and the future.

The region was severely flooded and is still recovering. Hopefully, although the flooding has receded, the effects of this storm will remain in our collective memory to ensure better preparedness in the coming years.

Kevin Sellner (CRC), Zoe Johnson (MD DNR), and Bill Dennison (UMCES)