

NESEC NEWS

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Moderate Earthquakes Produce Serious Impacts



A rescue worker walks past rubble from collapsed buildings in the center of Lorca, Spain.
BBC PHOTO

LORCA, SPAIN- On May 11th 2011, a magnitude 5.2 tremor struck this Spanish village, killing ten, inflicting serious destruction, and serving as a stark reminder of the

danger posed by small-to-moderate earthquakes. Centered just outside the town at a shallow depth, the quake caused many older buildings in the community to crumble or collapse completely, crushing cars and filling sidewalks with rubble. Many residents, fearing aftershocks, spent the night sleeping outdoors or in their cars. The earthquake came as a great surprise in a region where the majority of earthquakes do not exceed perceptible magnitudes, and was the most severe tremor to impact the area in over fifty years.

While smaller in magnitude than many high-profile seismic incidents that have occurred around the world in the past several years, this earthquake is a powerful reminder of the destructive capacity of lesser events. The impacts of this tremor were particularly significant because of the large number of historic, unreinforced masonry buildings (URM's) in the city, which bore the brunt of the damage and are particularly susceptible to ground shaking. Lorca is not unique in this respect; many cities throughout the globe share a similar composition, including some of the older cities in the northeastern United States.

The probability of a similar seismic event occurring in the
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Developing Story: Irene Lashes Northeast Region

WAKEFIELD, MA - Cities and towns up and down the east coast are in the midst of recovering from the impacts of Hurricane Irene. The storm, which has left more than 40 people dead in the United States alone and is projected to cause billions of dollars in damage, wreaked havoc from the Carolinas to northern New England. While the storm itself has dissipated, it left flooding, building damage, downed trees, and

power outages in its wake, and the threat of some of these impacts is expected to continue in the coming days and weeks.

FEMA, various federal, state, and local agencies, volunteer organizations, and other groups have taken active roles in coordinating a response after many days of preparedness planning prior to the storm making landfall. Emergency shelters remain open in many areas, power crews are actively



Despite a downgrade to tropical storm strength, Irene caused significant damage.
BBC PHOTO

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Moderate Earthquakes, Serious Impacts

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northeast is not insignificant. According to the Weston Observatory, the return period for a magnitude 5.0 earthquake in the northeast is about 52 years, meaning that on the long term there is a significant chance the region will experi-



Buildings were evacuated in Washington D.C. following the nearby magnitude 5.8 quake on 8/23/2011. BBC PHOTO

ence mid-size quakes at that frequency. Historic quakes of similar size, including the 1755 Cape Ann earthquake which threw chimneys and building facades to the ground in Boston, and modern events like the 5.8 magnitude earthquake, epicentered in Mineral Virginia, that shook the northeast region on August 23rd 2011, illustrate the precedent for such a forecast and highlight the vulnerability of



Earthquake Damage to the Mineral Virginia Town Hall being repaired. EERI PHOTO

areas closer to home. While there is a particular focus on the larger, more dramatic earthquakes like recent tremors in Japan, Chile and Haiti, smaller localized seismic events pose a more likely challenge for emergency management throughout the northeast region. Still, the potential for casualties, economic losses and widespread disruption following one of these quakes is very real. Images of the damage caused by the Virginia Earthquake can be seen at the website of the [Virginia Earthquake Clearinghouse](#). Emergency plans that recognize the possible impacts of small disaster events along with larger ones will foster realism and further increase sustainability in the face of a multitude of potential hazards and crises.

Irene Lashes Northeast Region

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working to restore electricity to areas without power, and thousands of men and women from the National Guard have been called up to assist in recovery efforts.

Many of the most severe continuing impacts are being felt in Vermont, where more than 200 major roads remain impassable several days after the storm struck. A number of small villages and towns have been rendered completely isolated by the storm and accompanying flooding, with food, water, and other relief supplies expected to arrive via airlift. Senior FEMA officials are scheduled to travel to Vermont and other stricken areas of the region to survey the ongoing recovery effort.

Federal emergency declarations have been issued for many of the northeastern states, freeing up federal aid to augment state and local recovery efforts. Additionally, more than 250 FEMA community relations specialists are in action throughout the region, working to inform survivors about financial assistance and the various resources available to homeowners, businesses and others in the wake of the storm.

Michael Catsos Joins NESEC

WAKEFIELD, MA - NESEC is pleased to announce the addition of Michael Catsos to the NESEC team



Mike Catsos NESEC PHOTO

as GIS and Emergency Management Intern. In this capacity, Mike will work to continue producing and distributing hazard simulation data for State and Municipal governments, pursue initiatives to advance the accuracy and foresight of disaster models, and provide support for other NESEC projects.

Prior to joining NESEC, Mike attended Arizona State University in Tempe, Arizona, where he was awarded a Bachelors of Science degree in Geography and Sustainability in the Spring of 2011. In the past he has applied his GIS skills in various capacities with the Maine Department of Transportation, the School of Geographical Sciences at ASU, and as a land surveyor. He brings a diverse set of experiences, capabilities, and perspectives to the job, along with a strong desire to carry out the NESEC mission in new and innovative ways. Please join us in welcoming Mike to NESEC.

Satellite Imagery of Mass. Tornado Impact Released

SPRINGFIELD, MA- On June 1, 2011, a supercell thunderstorm developed over western Massachusetts. The storm produced an EF3 tornado that cut a 39-mile track of destruction across southwest and south-central Massachusetts. The tornado remained on the ground for many miles and widened to roughly 0.5 miles in Brimfield. The NASA Landsat 5 satellite captured color imagery of the tornado showing part of the tornado track and damage in Sturbridge.

When the tornado first touched down in Westfield, Massachusetts, damage was mostly limited to trees, the National Weather Service reported. It quickly intensified as it traveled to West Springfield. Two deaths were reported in West Springfield, one in Springfield, and another in Brimfield. Thirty-three people were known to have been injured in Springfield alone.

Massachusetts Governor Deval Patrick declared a state of emergency and ordered National Guard troops to assist with cleanup efforts. The White House has approved a Federal Major Disaster Declaration, clearing up to \$2.5 million in relief funding for individuals and businesses. This is not the first deadly tornado to strike Massachusetts. In 1953, one of the single deadliest tornadoes in



Satellite Imagery of the Path of the Massachusetts Tornado.
NASA EARTH OBSERVATORY PHOTO

U.S. history struck Worcester, killing 94 people. For additional information and satellite imagery for the Massachusetts tornado, click on the photo above to link to the NASA Earth Observatory website.

GIS / HAZUS Assistance for State and Local Governments

WAKEFIELD, MA – A central component of hazard mitigation and planning in any community is the ability to estimate, mitigate, prepare for and respond to the social and economic effects of natural disasters. The difference between a swift, coordinated response to a disaster event and a response that becomes a disaster in itself can be often found in a thorough understanding of how impacts and response demands can change in different situations. Also, a community that understands its hazards and risk is a community that can develop and implement an appropriate and cost effective hazard mitigation strategy.

The Northeast States Emergency Consortium (NESEC) can help your community achieve peak mitigation and preparedness by providing your town, city, county or state with an easy-to-understand HAZUS-MH disaster simulation covering the impacts of any earthquake, hurricane or flood in your district. The reports include dollar damage estimates, shelter requirements, debris estimates, and much more. You can even look at what if mitigation strategies to identify cost-effective strategies to reduce potential losses before a disaster strikes. To request your free disaster simulation reports, simply visit <http://www.nesec.org/resources/> and fill out the HAZUS-GIS Assistance Request Form. Forms can then be directed to your state Director of Emergency Management for signature approval.

Donate \$15 and Receive a NOAA Weather Radio as Our Gift to You!

WAKEFIELD, MA - If you donate \$15 to the Northeast States Emergency Consortium, you will receive a FREE gift of a Midland HH-50 All Hazards Weather Radio to keep you and your family informed and safe!

The HH-50 Monitors all 7 NOAA Channels for All Hazards and EAS weather bulletins, warnings and forecasts, has audible tone alert alarm and automatically scans all NOAA weather channels upon power on. The package you will receive includes: One (1) Midland HH50 Radio (MSRP \$29.99), belt clip, hand strap, and owner's manual. Radio runs on 3 AAA batteries (not included). As an added bonus you will receive FREE SHIPPING (US Addresses only). To make a credit card or Pay Pal donation for your FREE Midland Weather Radio please click the Donate button below:



To donate by check, please send a personal \$15 check, payable to "NESEC", to: The Northeast States Emergency Consortium, 1 West Water Street, Suite 205 Wakefield, MA 01880. Supplies are limited so please donate today!

2012 EERI Annual Meeting & National Earthquake Conference

"Learning from the Past to Protect the Future"
Save the Date: April 10-14, 2012, Memphis, Tennessee

Join us at the anchoring event of the New Madrid Bicentennial — engineers, scientists, emergency managers, social scientists, and policy makers.

- Learn the many lessons from recent and historic earthquakes and how to apply them to reduce future impacts and build resiliency.
- Look into the vulnerability of aging large infrastructure.
- Exchange key information on tools for earthquake risk reduction.
- Learn from successful earthquake mitigation and response programs in the public and private sectors.
- Get the latest information on seismic safety improvements for our schools.
- And much more!

Co-organizers:



Check eeri.org for more information and updates



www.earthquakeconference.org/

This space is available in upcoming editions of NESEC NEWS. For a sponsorship donation of \$295, you can place your corporate message or graphic here. For more information, please see <http://www.nesec.org/sponsorships.cfm>.

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