



Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

ACT WEBCAST SERIES

The ACT Webcast Series is a webcast held at the lunch hour on Thursdays, and is made possible through support from The Home Depot Foundation and USDA Forest Service. The goal is to provide training opportunities for local urban and community forestry practitioners. The trainings highlight successful programs and practices that you may want to adapt in your communities. Webcasts are open to all.

Correctly planting and protecting trees is a good thing to do. However, planting and protecting trees also requires coordinating time and resources. ACT minimizes such requirements by sharing the innovative ideas and organized approaches of successful projects and models for members to replicate. We invite you to join the Alliance for Community Trees for more ways to get involved. Together, we create a strong voice on behalf of the urban forest and make a great difference in the health, beauty, and livability of our communities. We strengthen communities by offering action-oriented approaches that bring people together around a common purpose.

TOPIC

Natural disasters can wreak havoc on the lives and landscapes of impacted communities. Hurricanes, floods, ice storms, tornados, and other serious natural hazards have the potential to devastate cities large and small, and to destroy the urban forest in the process. Natural hazard management presents the tools to properly prepare for and respond to the threat of major storms, beginning with a "right tree, right place" approach for planning prior to planting. Coordinated efforts among city leaders and urban forestry managers- including elected officials, nonprofits, municipal agencies, utilities, tree care companies, and citizen foresters- can help minimize damage by and to trees during natural disasters.

More information at: http://actrees.org/site/resources/events/storms_over_the_urban_forest_part_i_natural.php

TRAINERS

Anna America
Executive Director
Up With Trees
1102 S. Boston Avenue
Tulsa, OK 74119
918.401.6834
anna.america@upwithtrees.org

Alessandra Jerolleman
Executive Director
Natural Hazard Mitigation Association
616 Solomon Drive
Covington, LA 70433
404.963.8214
AJerolleman@wittassociates.com

Anna America is Executive Director of the nonprofit organization Up With Trees, in Tulsa, Oklahoma. Since joining in 2007, Anna has grown the organization, more than doubled the number of trees planted annually, and launched many new programs. Prior to her tree planting work, Anna served as Communications Coordinator for the City of Tulsa working in the Public Works and Parks Departments, and as a special aide to Mayor Kathy Taylor. Anna holds a bachelor's in communication with a minor in political science and history from University of Tulsa.

Alessandra Jerolleman is a Senior Hazard Mitigation Planner at Witt Associates, and is the Executive Director of the Natural Hazard Mitigation Association. She also sits on the Executive Committee of the American Society of Public Administration's Section on Emergency and Crisis Management. Alessandra has been responsible for Mitigation consulting and the development of various emergency management plans and programs, including work on the city, county, and state levels in Louisiana, New Jersey, Georgia, Mississippi, and Oklahoma. She was recently awarded the 2009 Petak Prize by the American Society of Public Administration for the best paper in Emergency Management. Alessandra has acquired wide-ranging experience in the private, non-profit, and academic sectors.





Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

SUCCESS STORIES

Up With Trees (Tulsa, OK)

After a destructive 2007 ice storm devastated the city's urban forest, Mayor Kathy Taylor announced a ReGreen Tulsa plan to replace the estimated 20,000 trees lost in the storm by 2010. The Tree Advisory Committee and local non-profit Up With Trees partnered with the city for the plan, which required \$4 million in private contributions over the next three years. A group of citizens raised a \$1.5 million challenge grant, and American Electric Power - Public Service Company of Oklahoma provided \$150,000 over the life of the program. Up With Trees planted about 12,500 of the trees on public property such as schools and parks, and worked with the public on other programs to inspire planting. The city encouraged community support through donations or planting a tree themselves. Residents could also apply to have their neighborhood considered for Up With Trees' NeighborWoods program which provides education and trees for areas hit hardest by the storm.

More information at: http://actrees.org/site/news/newsroom/a_greener_tulsa_will_return_mayor_says.php

State of Louisiana (Baton Rouge, LA)

The Louisiana Legislature unanimously approved the state's first comprehensive master plan for coastal restoration and hurricane protection in June 2007. Passed just ahead of an Atlantic hurricane season forecast to be unusually active, the plan was designed to guide all coastal protection and wetland restoration projects in Louisiana over the next several decades. Entitled "Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast," the plan is the result of more than 18 months of extensive research, writing, planning and public discussion. Integrating coastal restoration with hurricane protection in a system-wide approach, the Master Plan will be the overarching framework for all ongoing and future coastal restoration and protection efforts in the state, such as the Coastal Wetlands Planning, Protection and Restoration Act and the Louisiana Coastal Area Ecosystem Restoration.

More information at: http://actrees.org/site/news/newsroom/louisiana_lawmakers_approve_historic_hurricane.php

Forest ReLeaf of Missouri (Jefferson City, MO)

Dozens of Missouri communities lost trees in parks and other public areas to an ice storm in December 2007. The Missouri Department of Conservation and Forest ReLeaf of Missouri offered ways to deal with damaged trees and repair or replace them affordably: the Tree Resource Improvement and Maintenance (TRIM) program is designed to help communities grow and manage trees that make cities healthy, pleasant places to live. Pre-approved grants through the program help pay for removal or pruning of hazardous trees, tree inventory, tree planting and training volunteers and public employees in tree care.

More information at: http://actrees.org/site/news/newsroom/communities_can_get_help_removing_replacing_t.php

New York Restoration Project (New York, NY)

Maria Hernandez Park in Brooklyn, NY, lost all its trees in a September 2010 storm that produced tornadoes and devastated the city. Just a few months later, hope blossomed in the neighborhood as the New York Restoration Project, which helps keep the city green, donated \$150,000 to plant more than 70 new trees at the Park. "We really felt that this needed to be the focus of our first storm recovery, but we're not stopping here," said Amy Freitag of the New York Restoration Project.

More information at: http://actrees.org/site/news/newsroom/new_trees_to_rise_at_brooklyn_park.php





Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

SUCCESS STORIES (continued)

Parkway Partners (New Orleans, LA)

In New Orleans, planting fruit trees is part of hurricane recovery. Local nonprofit Parkway Partners estimated that the city lost 80 percent of its fruit trees during Hurricane Katrina in 2005. At one time the city boasted over 150 community gardens, but after the storm only 30 returned, meaning that neighbors could no longer share with each other and there was less fruit in residents' diets. To combat this storm-related decline, in 2009 Parkway Partners joined forces with the Fruit Tree Planting Foundation to plant 87 fig, persimmon and citrus trees at sites around the city, with the goal of helping to re-establish some of the old community gardens.

More information at: http://actrees.org/site/news/newsroom/planting_fruit_trees_is_part_of_hurricane_rec.php

Land Trust for MS Coastal Plain (Biloxi, MS)

The Land Trust for Mississippi Coastal Plain was a major player in revitalization efforts in the aftermath of the 2005 hurricanes that decimated the Gulf Coast. In just one example, in the City of Biloxi a number of private partners and volunteers came together to beautify the entirety of Reynoir St. The City partnered with Replant South Mississippi (sponsored by the Land Trust for the Mississippi), East Biloxi Coordination, Relief, and Redevelopment Agency, the Gulf Coast Community Design Studio, and the Imperial Palace Hotel and Casino to help the residents of houses on Reynoir Street in Biloxi to make improvements to their homes and front yards. The City asked the Land Trust to provide trees and expertise for the project. More information at: <http://www.ltmcp.org/>

Baton Rouge Green (Baton Rouge, LA)

Baton Rouge Green mounted a campaign in 2008 to Re-Green Baton Rouge after Hurricane Gustav's devastation of the city's urban forest. The city lost much of its tree canopy three years earlier during hurricanes Katrina and Rita and even more with the construction boom that followed. Early projections indicated that the city lost anywhere from 5 to 20 percent of its remaining trees on Sept. 1 when 80+ mile-an-hour winds of Hurricane Gustav blew through the Capital City. Educational sessions, tree sales, and plantings helped to emphasize that proper selection, placement, and maintenance of trees can greatly reduce the loss of trees and the damage to property caused by future storms.

More information at: http://actrees.org/site/news/newsroom/baton_rouge_green_pushing_to_restore_citys_tr.php

City of New York Department of Parks and Recreation (New York, NY)

The brevity of an August 2009 storm belied its destructive strength: in just over half an hour, it felled more than 500 trees in Central Park and damaged hundreds more so badly that they had to be removed in the months that followed. Parkgoers and park employees were initially horror struck. In the days after the storm, more than 3,000 people, 900 of them first-time donors to the parks, donated \$1.1 million, with an additional \$1 million coming from JPMorgan Chase. One year later the clean-up was mostly completed and parks officials recognized a silver lining: the chance to restore an overgrown park to the original vision of its creators, Frederick Law Olmsted and Calvert Vaux.

More information at: http://actrees.org/site/news/newsroom/year_after_storm_central_park_sees_its_origin.php

Alliance for Community Trees (Gulf Coast region)

Hurricane Gustav, which came ashore in the Gulf Coast on September 1, 2008, with 110 mile-per-hour winds, highlighted the need for storm safety landscaping. The Alliance for Community Trees encouraged a region-wide dialogue about how city agencies and residents can work together to implement stronger storm safety protocols that include smart landscaping, storm-appropriate green infrastructure, and planting the right tree in the right place. To date, there was still little knowledge of tree planting for hurricane resistance and damage prevention in the Gulf Coast region. Citizens need more education about trees that are likely to survive hurricanes. Many tree ordinances, including in Baton Rouge, did not address hurricanes and trees. So many lessons learned by arborists, urban foresters, landscape architects, and horticulturists about selecting and planting hurricane-suited species do not get passed on to city leaders and the general public. More directly, not getting these issues right is costing taxpayers a heavy dollar.

More information at: http://actrees.org/site/news/newsroom/hurricane_gustav_highlights_the_need_for_stor.php





Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

SUCCESS STORIES (continued)

Michigan Department of Natural Resources (Lansing, MI)

On July 2, 1997, a series of tornadoes and straight-line winds resulted in several deaths and millions of dollars damage in southeast Michigan. Communities were faced with downed power lines, blocked streets, downed and damaged trees, and mountains of tree debris. Many of the problems were associated with the infrastructure and building damage impacted by large older trees. The clean up took months. Funding from FEMA's Hazard Mitigation Grant Program allowed the Michigan DNR Forest Management Division, the USDA Forest Service, and the Michigan Department of State Police Emergency Management Division to present a series of seminars to provide information to municipalities on choosing the type of tree to plant, what locations are best for planting, and how to maintain them to increase tree health, decrease hazard trees, and decrease susceptibility to storm damage. The audience consisted of community decision makers and managers, urban foresters and others responsible for tree planting and maintenance, county emergency managers, and the Michigan Department of State Police, Emergency Management Division's district coordinators. Due to strong positive feedback, the DNR decided to continue the educational seminars throughout the State. This continued education is the key to reduction of damages and clean-up costs in Michigan.

More information at: <http://www.fema.gov/mitigationbp/brief.do?mitsId=259>

Prattville ReLeaf (Prattville, AL)

In February 2009 hundreds of volunteers planted trees in the areas hit hardest during a destructive tornado one year earlier. When Beverly Byard, wife of Prattville Mayor Jim Byard, saw all the trees lying in yards after the storm passed through, she couldn't get it out of her mind. That's what prompted her and other garden club members to propose a community effort that became known as the "Prattville Releaf" program. Volunteers arrived from throughout Alabama to help plant the 600 trees, including scout troops, church groups, and the military. One group of volunteers came from Gulf Shores, a distant town which was devastated by Hurricane Frederic in 1979 and remembered the impact on their trees. In addition to planting trees, about 2,000 seedlings were also given away to local residents who might like to plant their own.

More information at: http://actrees.org/site/news/newsroom/hundreds_volunteer_to_releaf_prattville.php

Trees for Viola (Viola, WI)

On August 18, 2005, a strong storm roared through Viola and spawned a tornado that devastated the small village, destroying homes and damaging more than 100 other buildings. About 1,000 of the community's trees were damaged or destroyed. Total damage was estimated at \$2.4 million. Immediately, volunteers began to arrive to assist with the cleanup effort and the replanting of Viola began. The group that formed to put Viola's urban forest back together was named "Trees for Viola." Because FEMA funding was overextended due to multiple disasters, the Wisconsin Department of Commerce contributed a \$600,000 reconstruction grant and another \$821,000 came from a block grant. Trees for Viola raised over \$29,000 for replanting and other restoration projects, which began in spring 2006 when nearly 400 volunteers helped plant 300 trees in a single weekend.

More information at: <http://dnr.wi.gov/forestry/Publications/pdf/FR-317.pdf>





Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

PUBLICATIONS

Storms Over the Urban Forest: Planning, Responding, and Regreening- A Community Guide to Natural Disaster Relief

By Lisa L. Burbank and John W. Anderson

Preparing for natural disasters, which strike urban forests in large cities and small communities, should involve the cooperative effort of a wide array of municipal agencies, private arboricultural companies, utilities, and volunteers. Principles and methods determining how to mitigate or minimize the impact of natural disasters are critical in determining the capability of communities to respond. Similarly, replanting the uprooted urban forest also requires a closely coordinated effort of key civic leaders, elected officials, community foresters, and managers of municipal agencies. This manual is intended to assist community leaders and governmental agencies to prepare for natural disasters, respond appropriately when these natural disasters occur, and recover from the subsequent loss of vegetation. More information at: http://actrees.org/site/resources/research/storms_over_the_urban_forest_planning_respond.php

Making Our Urban Forests Safer

By Neil Letson

This 2001 article by Alabama state urban and community forestry Program Coordinator Neil Letson presents a compendium of suggestions for hazard mitigation planning for urban forests. This publication is written for those involved with or interested in their community's emergency management efforts. It shows how to strengthen a community's emergency management program through mitigation, particularly as it relates to urban trees. The goals of this handbook are to raise awareness of the benefits of the urban forest; describe how an urban forestry program can mitigate disaster damage; and better equip readers to lead their communities in hazard mitigation. More information at: <http://www.aces.edu/pubs/docs/A/ANR-1210/>

Tree Emergency Manual for Public Officials

By Jerry Bond and Frances Tucker

This Emergency Tree Manual is designed to be a practical short guide to managing disastrous tree damage, accompanied by a set of critical documents and standards called the Tree Emergency Compendium. Its focus is upon urban forests in the public realm, where questions of safety and cost are critical, and its target audience is public tree managers. Chapter III specifically addresses planning in advance of "the next one," with pointers for mitigation and limiting damage potential.

More information at: http://actrees.org/site/resources/research/tree_emergency_manual_for_public_officials.php

Catastrophic Storms and Urban Forests

The National Urban and Community Forestry Advisory Council composed this report to the Secretary of Agriculture following Hurricane Katrina and other 2005 storms. In the aftermath of those storms, NUCFAC collected public testimony on the issue of catastrophic storms and urban forest. The goal was to use the widest array of ideas and cross-section of perspectives to develop recommendations to the Secretary of Agriculture on ways to mitigate this national problem. From across the nation, citizens, policy-makers and tree professionals shared their input in places where urban forests were hit hardest: by Hurricane Katrina in the Gulf region, by ice storms in the Midwest, by tornadoes, by wildfires and other devastating storm events.

More information at: http://actrees.org/site/resources/events/public_forum_on_catastrophic_storms_and_urban.php

Dealing with Storm-damaged Trees

By Hallie Dozier

Storms can bring high winds, heavy rains and lightning strikes that cause trees to lose branches, split, break and uproot. Find out what to do after a storm and before the next storm approaches, with this brief two-pager from the Louisiana State University Ag Center Research & Extension catalog of disaster information resources.

More information at http://www.lsuagcenter.com/en/environment/forestry/urban_forestry/Dealing+with+Stormdamaged+Trees.htm





Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

PUBLICATIONS (continued)

Urban Forestry Best Management Practices for Public Works Managers

A city's urban forest management plan can and should have sections devoted to urban forest risk reduction and an emergency response and recovery plan that provides information about general tree risk reduction and gives directions to the public works agency during an extreme storm emergency. This publication by the American Public Works Association, "Urban Forest Management Plan and Trees Inventory Systems," discusses how, when developing an emergency management plan, dealing with serious public safety and health issues is obvious, but including trees and woody debris in mitigation efforts must not be overlooked. A comprehensive urban forest management program reduces storm hazards through proper planting, preventive maintenance, and systematic risk reduction.

More information at: http://actrees.org/site/resources/research/developing_and_managing_an_urban_forestry_pro.php

Trees and Ice Storms: Development of Ice Storm-Resistant Urban Tree Populations

By Richard J. Hauer, Jeffrey O. Dawson and Les P. Werner

Ice storms annually result in millions of dollars in loss, and potentially billions of dollars in losses for extreme and widespread ice storms. Tree species vary in their resistance to ice accumulation. Certain characteristics, such as weak branch junctures indicated by included bark, dead and decaying branches, a broad crown, and fine branching, increase a tree's susceptibility to ice storm damage. Ice storm frequency and severity within the eastern United States necessitates the incorporation of ice storm information into the urban forestry planning process. While we cannot stop ice storms from occurring, we can take steps to reduce the impact of this major forest disturbance on urban forests and the interface between forests, buildings, and infrastructure.

More information at: http://actrees.org/site/resources/research/trees_and_ice_storms-_development_of_ice_stor.php

Restoring Our Hurricane-Ravaged Urban Tree Canopy

By Ken Tilt and Joe Eakes

Best management practices for successful landscape tree establishment in the urban environment depend on the design, site analysis, tree species selection, and proper planting and maintenance. All these factors are interrelated.

Compromises to any of the BMPs are cumulative and affect other establishment factors.

More information at: <http://www.aces.edu/pubs/docs/A/ANR-1295/>

Developing an Urban Forest Management Plan for Hurricane-prone Communities

By Francisco Escobedo, Robert Northrop, and Wayne Zipperer

The process outlined in this chapter of "The Urban Forest Hurricane Recovery Program" is dynamic and adaptable for use by any community. A healthy urban forest is composed of trees that maximize ecosystem benefits and withstand natural and anthropogenic stresses and disturbances, such as wind from hurricanes and tropical storms, flooding, pollution, etc. An effective urban forest management plan should be developed and implemented before damage from a windstorm or hurricane occurs. It also can be used as a blue print for post-hurricane response to damages after a storm. Developing a management plan can minimize the costs of managing your trees and hazards to life and property, as well as improve coordination of management activities with other associations, neighborhoods, departments or offices.

More information at: <http://hort.ifas.ufl.edu/woody/documents/FR176.pdf>

Community Tree Risk Management: Program Planning and Design

By Jill D. Pokorny and Jana S. Albers

A key issue facing communities is how to manage the urban forest, both from an ecological standpoint of promoting resource health, and from a public safety standpoint of ensuring reasonable care is being taken to manage the public safety risks associated with hazardous trees. The best way for a community to confront this issue is to develop a tree risk management plan, which should be fully integrated with the tree planting, tree maintenance, and emergency response programs.

More information at: <http://www.na.fs.fed.us/spfo/pubs/uf/utrm/chnp2.pdf>





Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

WEB TOOLS

Natural Hazard Mitigation Association

NHMA combines efforts from civil engineers, architects, local officials, and foresters to work in the new field of natural hazard mitigation. NHMA was founded to ingrain hazard mitigation as an integral part of the culture of communities by training and offering technical information, develop and provide effective mitigation programs, and to be a voice of hazard mitigation workers and managers to allow for more public awareness on this subject. Regular partners include Association of State Floodplain Managers, International Association of Emergency Managers and more. More information at: <http://www.nhma.info/index.html>

Storm Damage Resource Center

The Storm Damage Resource Center is created and hosted by the USDA Forest Service Northeast Center for Urban & Community Forestry. The Center presents useful documents for download on key storm management topics such as preparation, assessment, response, and re-greening. Specific tools for unique audiences are highlighted, including resources for Utilities and Municipal & Commercial visitors. More information at: <http://www.umass.edu/urbantree/icestorm/index.html>

Urban Forest Strike Team

Arborists can provide disaster planning assistance to communities, risk assessment, and FEMA debris identification following storms. Risk assessment helps communities identify trees that are an unacceptable risk, and trees suitable for retention and management during disaster recovery. The Urban Forest Strike Team is a group of state and federal arborists assembled in recent years to help cities in southern states to identify which public trees damaged by severe storms can be saved through restorative pruning and which should be removed. The Strike Team website provides an array of guides to help state urban & community forestry coordinators prepare for a response to disaster. More information at: <http://www.ufst.org/>

“Storm Preparedness and Damage Assessment: Tools for Strategic Response”

This presentation features Dudley Hartel of the USDA Forest Service and Dr. Jerry Bond of The Davey Institute, who discuss two valuable resources that can assist in the development of strategic storm preparation and response. The latest edition of the Tree Emergency Plan Worksheet will be presented, with a highlight on its planning features. The presenters will also demonstrate the Storm Damage Assessment Protocol, which is part of the i-Tree software suite and which includes field data collection tools, cost calculation software and support information. More information at: http://actrees.org/site/resources/research/storm_preparedness_and_damage_assessment.php

Urban Forest Hurricane Recovery Program

The University of Florida /Institute of Food and Agricultural Sciences (UF/IFAS) created the Urban Forest Hurricane Recovery Program after the devastation of the 2004 and 2005 hurricane seasons. The main goal of the program is to foster a healthy urban forest that is more wind-resistant. The program is aimed at citizens and communities who seek to rebuild and set better management practices so that future storms are less devastating. Topics include what to do following a hurricane, as well as pre-storm planning such as establishing a wind-resistant urban forest. More information at: <http://hort.ifas.ufl.edu/treesandhurricanes/>

Arbor Day Storm Recovery Kit

This online resource contains information about how communities and individuals can save damaged trees after violent storms. All articles and artwork can be downloaded for reprint. Major storms can inflict severe damage to a community's tree canopy in a short period of time. But with every storm, some trees survive with only minor damage. There is a way to reduce tree damage during a storm. Home and property owners can take preventative measures long before a storm hits to help their trees grow stronger and become more resistant to damage. More information at: <http://www.arboday.org/media/stormrecovery/>





Storms Over the Urban Forest- Part I: Natural Hazard Management Planning

A Resource List

EVENTS

Storms Over the Urban Forest National Conference

The 2007 Storms Over the Urban Forest National Conference in Atlanta, Georgia, featured presentations by CNN National Correspondent, Gary Tuchman; Weather Channel host and Climate and Environment Expert, Dr. Heidi Cullen; and Undersecretary, Natural Resources & Environment, of the U.S. Department of Agriculture, Mark Rey. The conference focused on the planning, response and recovery processes necessary to address storms affecting urban and community forests. Attendees learned how to coordinate urban forestry and emergency management responses to storms, which tree species are resistant to hurricane damage and which are most likely to fail, and how to raise funds and mobilize community action to support replanting and recovery efforts.

More information at: http://actrees.org/site/resources/events/storms_over_the_urban_forest_national_confere.php

Mitigating Disaster through Design & Construction

This March 2011 conference in Washington DC will deal with reducing the impact of natural hazards on the built environment. It is evident that the impact of natural disasters on our communities is a critical issue for long-term sustainability. The risks posed to the built environment demonstrate the need to increase the visibility of disaster mitigation issues, and develop better design and construction practices and techniques and ensure that buildings and infrastructure are made more resilient and respond better when disaster strikes. This demands a fundamental shift in priorities among federal, state and local officials in how they view infrastructure threats.

More information at: <http://construction.com/events/2011/mitigatingdisaster/register.asp>

Storm Damage Management and Prevention

Featured in the Rhode Island Tree Council 2007 conference in Warwick, RI, was a lecture on "Storm Damage Management and Prevention" presented by John E. Parry of the USDA-Forest Service. Mr. Parry will discuss what communities need to know concerning new rules governing federal reimbursement for storm related tree damage costs. Other topics he will cover include storm mitigation, safety guidelines and ways to expedite recovery efforts in the event a storm strikes.

More information at: http://actrees.org/site/resources/events/conference_on_global_warming.php

