**Urban & Community Disaster Response & Recovery**

Overview:

A disaster response and recovery pilot project initiated by the U&CF programs in Virginia and North Carolina is being tested at a regional scale by the Southern Group of State Foresters. Urban Forest Strike Teams (UFST) are composed of state forestry agency certified arborists and urban foresters trained to make urban tree risk and damage assessments following natural disasters.

risk—the probability of the occurrence of an event or condition.

risk assessment—a process or method for evaluating risk associated with a specific hazard. It is defined in terms of probability and frequency of occurrence, magnitude and severity, exposure, and consequences.

response—activities that address the immediate and short-term effects of an emergency or disaster. Response activities include immediate actions to save lives, protect property, meet basic human needs, and restore water, sewer, and other essential services

recovery—the process of getting back to normal after a disaster. It includes restoring public or utility services (electricity, water, communications, and public transportation), perhaps starting during but extending beyond the emergency period. Short-term recovery does not include the reconstruction of the built environment, although reconstruction may commence during this period. Long-term recovery is the process of returning all aspects of the community to normal functioning and, to the extent possible, to conditions improved over those that existed before the disaster.

The Initiative involves recruiting, training and deploying professional urban foresters and arborists (required to have basic ICS training, and arboricultural certification or experience) to assess tree damage using FEMA and tree risk management standards. Strike Teams evaluate individual trees, street by street in a defined disaster area to assess storm damaged trees on public property and rights-of-ways to identify removal or pruning hazards, and qualification for FEMA debris reimbursement. GPS systems are used to enter data and identify locations. Maps and data sheets are provided to the community to help them document debris for FEMA, plan the work needed, effectively contract for debris cleanup, document the cost of the damage, and prepare for additional restoration pruning during long-term recovery. The teams can also provide technical assistance with debris estimation during initial response.

Mobilization:

The assessment is not intended to be part of the initial emergency response – but, is typically done in the weeks after the storm during the short-term recovery stage (i.e. communities are still removing debris under FEMA guidelines).

A good fit for the process and UFST response might be a community situation where:

1. There is **significant damage** to public trees in a community,
2. The damage is such that the **community finds it challenging** to decide which storm-damaged trees meet FEMA debris standards or represent a significant risk to the public,
3. The footprint of the **damage area is concise** enough that a team could work efficiently,
4. The **community may not have staff with technical tree expertise**, or their staff may not have the time to do tree assessments because of the scale of the disaster,
5. The community has the capacity to use and follow up on recommendations.
   1. Information compiled by the teams can be used immediately for FEMA documentation and in contracting for debris removal.
   2. Information can be used during long-term recovery for follow-up restoration pruning and inspections.

UFST can work with the community, State Emergency Management and FEMA to meet requirements of the response and recovery process.

Mission ready Packages:

EMAC Mission Ready Packages are being developed that define multiple levels of support that include: reconnaissance, debris estimation, state/local coordination, risk/debris assessment crews, GIS, and UFST training. Packages can be combined to create teams and mobilization for a range of disaster scale and response timelines. Typical team deployments are 11-13 days and follow ICS standards and policy.

Cost:

Teams are fully equipped but require either locally provided lodging and meals, or per diem. Additional expenses include regional travel to the disaster area or command center, reimbursement for local deployment travel, and pre-approved expenses (water, marking paint, expendable safety related purchases).

Hourly, daily, and deployment costs are part of the EMAC Mission Ready Packages.

**A Brief History of the Urban Forest Strike Team Program**

Urban Forest Strike Teams were implemented in 2007 at the request of state U&CF coordinators (Leslie Moorman, and Paul Revell) to provide appropriate tree risk, woody debris, and recovery response by urban forestry professionals following urban natural disasters. The concept was based on the Gulf Coast Tree Assessment project developed by ISA, SMA, Davey Resource Group, and the USDA FS (Region 8) following Hurricane Katrina. Since then, the program has been supported by the Southern Group of State Foresters through the region’s Urban & Community Forestry state coordinators and has been implemented in the Northeastern Area by John Parry and Rob Clark (USDA FS).

**Training:**

2007 Kinston, NC

Training for Task Specialists was held at the [Ralph Winkworth Forestry Center](http://www.dfr.state.nc.us/education/winkworth_facility.htm) in Kinston, NC. The City of Kinston provided park and neighborhood (street) sites for field exercises. Leslie Moorman (U&CF Coordinator) organized this training event. NC Emergency Management, City of Kinston, and NC Division of Forestry fire staff provided guidance during this initial training.

2008 Providence, VA

Team Leader and Task Specialists were trained at the New Kent Conference Center near Providence, VA. Colonial Williamsburg and William & Marry College provided sites appropriate for field exercises. The Northeastern Area (USDA FS) sent 5 representatives for Task Specialist training. Barbara White (U&CF Partnership Coordinator) organized this training event. FEMA representatives from Region 2 (Philadelphia) and Virginia Emergency Management’s debris manager attended. David Stone and Jim Clark (VA Department of Forestry) assisted with this training. Field exercise Team Leaders included: David Stone (VA), Doug White (NC), Barbara White (VA), Paul Revell (VA), Gerald Crowell (VA), Dennis Gaston (VA).

2009 Brooksville, FL

During the week of July 22nd 9 additional Team Leaders and 24 Task Specialists completed training at the Withlacoochee Training Center near Brooksville, Florida. Charlie Marcus, U&CF Coordinator for the Florida Division of Forestry, organized the training event and coordinated with local communities for street, cemetery, and park exercises (Brooksville and Inverness).

Barbara White and David Stone of the Virginia Department of Forestry assisted with the training. Team Leader trainees represented 6 states and began their training on Monday afternoon. Task Specialists began on Wednesday morning and included trainees from 9 southern states. Also assisting with Task Specialist training were Erik Filep (VA), Chris Frey (NC), Hugh Whitehead (VA), and Daniel Wescott (GA) who all completed Team Leader training that week and had response experience on multiple disasters.

2009 Leominster, MA

In September, Paul Revell and David Stone (VA Department of Forestry) assisted the Northeastern Area (USDA FS) with their first UFST training in Leominster, Massachusetts. Urban Forestry South shipped data collection equipment and provided current training materials.

2010 Arkansas

The UFST Advisory Committee, Arkansas Forestry Commission, and Urban Forestry South conducted a UFST workshop during the week of August 9th at the Arkansas 4-H Center near Little Rock. This workshop was open to Northeastern Area (i.e. New England and Midwest) applicants.

Patti Erwin (AFC U&CF Coordinator ) and John Slater (AFC Partnership Coordinator) organized the training event and coordinated with the City of Little Rock for park exercises.

We continue to use our experienced Team Leaders as instructors and field exercise leaders. Five Team Leaders assisted with various aspects of the week long workshop: Jason Ellis (TFS), Daniel Wescott (GFC), Doug White (NCDFR), John Slater (AFC), and David Stone (VDOF).

Two additional Team Leaders were trained and one returned for refresher (all from Virginia DOF). Twenty-six new Task Specialists were trained in Little Rock.

Also joining the workshop were two GIS Specialists (Allen Smith, TFS, and Charles Bailey, GFC) who will begin working with UFST to help strengthen GIS training, data collection and handling, and reporting over the next year.

2011 Oklahoma

Oklahoma Forestry Services (OFS), the UFST Advisory Committee, the University of Tulsa, and Urban Forestry South conducted a workshop in Tulsa during the week of June 20th.

Mark Bays (OFS U&CF Coordinator ) and Alanna McFarland (OFS Partnership Coordinator) organized the training event and coordinated with the University of Tulsa, and City of Tulsa for field exercises.

We continue to use our experienced Team Leaders, State Coordinators, and GIS Specialists as instructors and field exercise leaders. They assisted with various aspects of the week long workshop: Pete Smith and Allen Smith (TFS), Doug White (NCDFR), Patti Erwin and John Slater (AFC), and Paul Revell (VDOF). Doug White and John Slater functions as “deployment” team Leader and Ass’t Team Leader for the workshops.

Three additional Team Leaders were trained and assisted with the Task Specialist workshop that followed in the week (Paul Johnson and Micky Merritt (TFS) and Alanna McFarland (OFS). Twenty-five new Task Specialists were trained in Tulsa.

Also joining the workshop was OFS GIS Specialist Susan Langley.

2011 Joplin, Missouri (in planning stage)

The Northeastern Area (USDA FS) is developing a UFST workshop for July to train Missouri Department of Conservation Certified Arborists as Task Specialists for immediate deployment to Joplin. Experienced Team leaders from Region 8 will conduct this 2 day workshop.

2011 Delaware (in planning stage)

The Northeastern Area (USDA FS) is developing a UFST workshop for late summer in Delaware. This workshop will be open to Southern applicants. UFST experienced Team Leaders from Region 8 will used as instructors and field exercise leaders. Both Team Leader and Task Specialist training will be provided as interest warrants.

Other Training in FY 2011

Team Leaders will be provided several opportunities for more advanced GIS and data handling training to support UFST responses during 2011..

On-line refresher classes are being developed for both Team Leaders and Task Specialists. During 2011, UNRI will host monthly UFST webinars designed for previously trained team members (both Task Specialists and Team Leaders)

Following the Tulsa workshop, Urban Forestry South, in consultation with Team Leaders, is revising training for both Team Leaders and Task Specialists. The revised material will be used and evaluated at the Joplin and Delaware workshops.

**Current Capacity:**

Team Leaders

The Southern Region now has **24 Team Leaders** trained for post-storm risk assessment and woody debris estimation. All of these TLs have been deployed to at least one UFST response. All of these except 1 (Fairfax County, VA) are employees of state forestry agencies.

Task Specialists (Southern Region)

The Southern Region now has **87 Task Specialists** trained for post-storm risk assessment and woody debris estimation. The majority of the UFST members are employees of state forestry agencies, but several municipalities (Fairfax County, VA, and Escambia County, FL) and consulting urban foresters have also been trained. Many of these TSs have been deployed to at least one UFST disaster response. In addition, 8 FEMA and state Emergency Management staff have gone through at least apportion of the training.

Task Specialists (Northeastern Area)

The Northeastern Area now has **43 Task Specialists** trained primarily from Delaware, Rhode Island, Connecticut, Massachusetts, Vermont, New Hampshire, Iowa, and Maine.

State U&CF Coordinators

U&CF coordinators are a critical component in any UFST response and act as the liaison between the UFST Team Leader and each municipality and often as the Logistics Chief (using the ICS designation) for the incident response. At the 2009 SGSFs’ Summer Meeting (Wilmington, NC) and 2010 SGSFs meeting (Biloxi, MS) the coordinators were briefed on their role in the UFST response protocol.

U&CF coordinators (and other state agency staff) have been involved with planning and logistics for several UFST responses. These responses include: Oklahoma, Louisiana, Arkansas, Kentucky, Texas, and Virginia.

Municipal & Consultants

Fairfax County (VA) and Escambia County (FL) arborists, Extension Foresters, and consulting urban foresters/arborists have also been trained and are included in the counts indicated above. In the Northeastern Area, trainees include Tree Wardens, Cooperative Extension, practicing and consulting arborists, and USDA FS personnel.

**Southern Region State Capacity[[1]](#footnote-1):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Team Leaders** | **Task Specialists[[2]](#footnote-2)** | **GIS[[3]](#footnote-3)** | **Total** |
| Alabama |  | 1 |  | 1 |
| Arkansas | 1 | 8 |  | 9 |
| Florida | 1 | 3 |  | 4 |
| Georgia | 1 | 8 | 1 | 10 |
| Kentucky |  | 7 |  | 7 |
| Louisiana |  |  |  |  |
| Mississippi |  | 6 |  | 6 |
| North Carolina | 5 | 6 |  | 11 |
| Oklahoma | 2 | 11 | 1 | 14 |
| South Carolina |  | 6 |  | 6 |
| Tennessee |  | 1 |  | 1 |
| Texas | 3 | 21 | 1 | 24 |
| Virginia | 11 | 9 |  | 20 |
| **Total** | **24** | **87** | **3** | **113** |

**Responses:**

Ice Storm, January 2008 (Oklahoma)

Response included a pre-team (Paul, Dudley, Mark & Alanna), and two full teams. UFST assistance was primarily to Tulsa Parks, but teams also worked in Nichols Hills, Edmond, and Bixby. Most significant (UFST) outcome was the development & acceptance of the Tulsa inspired “FEMA Cost Sheet” which became the basis for debris contracts between FEMA and the municipality.   
see <http://www.urbanforestrysouth.org/resources/ice-blog>

Hurricane Gustav, September 2008 (Baton Rouge)

Response included two full teams. UFST assisted the City Arborist (5,498 street trees; 500+ miles) and to BREC (Baton Rouge Recreation; 1,882 park trees and 208 stumps). Most significant (UFST) outcome was the development of UFST Team Leader capacity from state agencies (NC Division of Forest Resources and VA Department of Forestry).  
see <http://www.ufst.org/resources/storm-response-blogs>

Ice Storm, February 2009 (Northern Arkansas)

Response included one team. UFST assisted 7 communities. Most significant (UFST) outcome was the use of standardized data collection equipment.   
see <http://www.ufst.org/resources/storm-response-blogs>

Ice Storm, March 2009 (Western Kentucky)

Response included one full team. UFST assisted 6 communities. Most significant (UFST) outcome was the use of standardized data collection equipment and continued Team and continued stat agency Team Leader development (VA Department of Forestry).   
see <http://www.ufst.org/resources/storm-response-blogs>

**Other Activity:**

2008 SGSFs’ Summer Meeting

U&CF Coordinators received initial support from Southern Group of State Foresters.

2008 Northeastern Area Meeting

Dudley Hartel and Eric Kuehler (both USDA FS SRS) met with John Parry and Rob Clark from USDA FS Northeastern Area to discuss development of UFST capacity in the NA.

2009 FEMA Region IV Meeting

Paul Revell (TS 2007, TL 2008, OK Ice, Baton Rouge, VA Tornado, KY Ice), Leslie Moorman (TS 2007, TL 2008), Steve Scott (TN State Forester), Ed Macie (USDA FS), John Caffin (USDA FS), Eric Kuehler (USDA FS), and Dudley Hartel (USDA FS) gave a presentation to FEMA Region IV in March.

2009 SGSFs’ Summer Meeting

Continued support from Southern Group of State Foresters. U&CF Coordinators briefed on state coordinator role in UFST response.

2010 SGSFs’ Summer Meeting

Continued support from Southern Group of State Foresters. U&CF Coordinators briefed on state coordinator role in UFST response.

2010 CARPDC, Alabama Emergency Management, and Alabama Forestry Commission

Rachel Barker (CARPDC Urban Forester) and Dudley Hartel UFS) meet with AEM and Alabama Forestry Commission to discuss UFST response for in-state responses. (07Jul10)

2010 Virginia Department of Forestry and Virginia Emergency Management

Paul Revell (U&CF Coordinator) and Dudley Hartel (Urban Forestry South) meet with George Roarty and Neilia Dabney (both VDEM) to discuss MOU for in-state disaster response (tree risk and FEMA debris), planning, and debris estimation. (21Sep10)

2010 U&CF Briefing

Dudley Hartel (UFS) briefs Jan Davis (USDA FS U&CF Program Director) and Keith Cline (USDA FS U&CF Program Manager) on current status of UFST (24Sep10).

2011 Meeting with Alabama Emergency Management

On February 17th, Dudley Hartel met with Michael Johnson and Bill Atchison of AEM to discuss the EMAC system, cost reimbursement, and Mission Ready Packages (MRP).

SMA Presentation

Daniel Wescott (TS 2008, TL 2009, Baton Rouge) gave a presentation on the UFSTs to the Society of Municipal Arborists in Savannah (GA) in October, 2009.  
see <http://www.ufst.org/resources/presentations/UFST%20Presentation%20to%20SMA%20Savannah.ppt/view>

UNRI Webcast

Leslie Moorman (TS 2007, TL 2008) gave a UNRI webcast with Steve Shurtz (City Arborist, Baton Rouge) and John Parry (USDA FS, Durham, NH).  
see <http://www.unri.org/webcasts/archives/november-2009-2/>

Emerging Issues Conference

Daniel Wescott (TS 2008, TL 2009, Baton Rouge) gave a presentation on the UFSTs at the conference in Atlanta (GA) in April, 2010.

Advisory Committee

The Advisory Committee currently consists of: Leslie Moorman (NC), Paul Revell (VA), Barbara White (VA), Pete Smith (TX), Charlie Marcus (FL), and Tom Chamberlain (MA). Dudley Hartel, Eric Kuehler and John Parry (NA) serve as Forest Service technical support. The Northeastern Area representative was added following the Leominster workshop.

www.UFST.org Website

UFS and Team Leaders continue to support the UFST website.

**Equipment & Supplies:**

Data Collection

During the 2009 ice storm responses, Urban Forestry South leased and then purchased necessary data collection equipment to support one full team during a response. The package includes: TDS Nomad data collector, Garmin 17 backpack GPS, and SOLOforest data collection software. We have six of these packages at the Athens (GA) Regional Cache. This package is used by several state forestry agencies for forest management activities, is reliable, and offers excellent urban productivity for the teams.

Beginning with Brookville (2009), UFST Team Leaders and Task Specialists are trained on the same equipment that will be used for future responses. In 2010, the Northeastern Area purchased one UFST data collection package for development, training, and response.

Safety

Hardhats and vests that meet safety standards and requirements have been purchased and are required for all training and response events.

A UFST-specific JHA (Job Hazard Analysis – USDA Forest Service) was introduced at the Tulsa Team leader Workshop by Urban Forestry South that will be used by Team Leaders for daily safety briefings.

Laptops for Responses

Urban Forestry South has purchased two laptops and software (Open Source and licensed) to be used exclusively for UFST responses. These laptops were tested during Team Leader and Task Specialist training in Arkansas and are ready for deployment.

GIS Specialist have developed data folder and file naming conventions based on Incident Command System fire response. The use of a standardized naming system and file structure allows for easy transitions between teams on the same incident, logical data storage and retrieval, data integrity and safety, and documentation of incident progression.

Draft folder and file naming conventions have been setup on the UFST laptops (18Sep10) and the system was tested during the Tulsa workshop.

Southern Regional Cache

Urban Forestry South has developed a UFST Regional Cache at their office in Athens, Georgia. The cache includes data collection and safety equipment, and other supplies needed to support UFST responses and training throughout the eastern US. Final equipment purchases will be completed in 2011 to support the teams. The equipment can be shipped as needed for training or disaster response.

**Agency Acronyms:**

AEM Alabama Emergency Management

AFC Arkansas Forestry Commission

AlFC Alabama Forestry Commission

CARPDC Central Alabama Regional Planning and Development Council (Montgomery, AL)

EFS Emergency Support Function (FEMA); ESF-3 is Public Works

EMAC Emergency Management Assistance Compact

FDF Florida Division of Forestry

FS see USDA FS

GFC Georgia Forestry Commission

KDF Kentucky Division of Forestry

MRP Mission Ready Packages (EMAC)

MFC Mississippi Forestry Commission

NA Northeastern Area, USDA Forest Service (Durham, NH)

NCFS North Carolina Forest Service (Dept of Agriculture and Consumer Services)

OFS Oklahoma Forestry Services

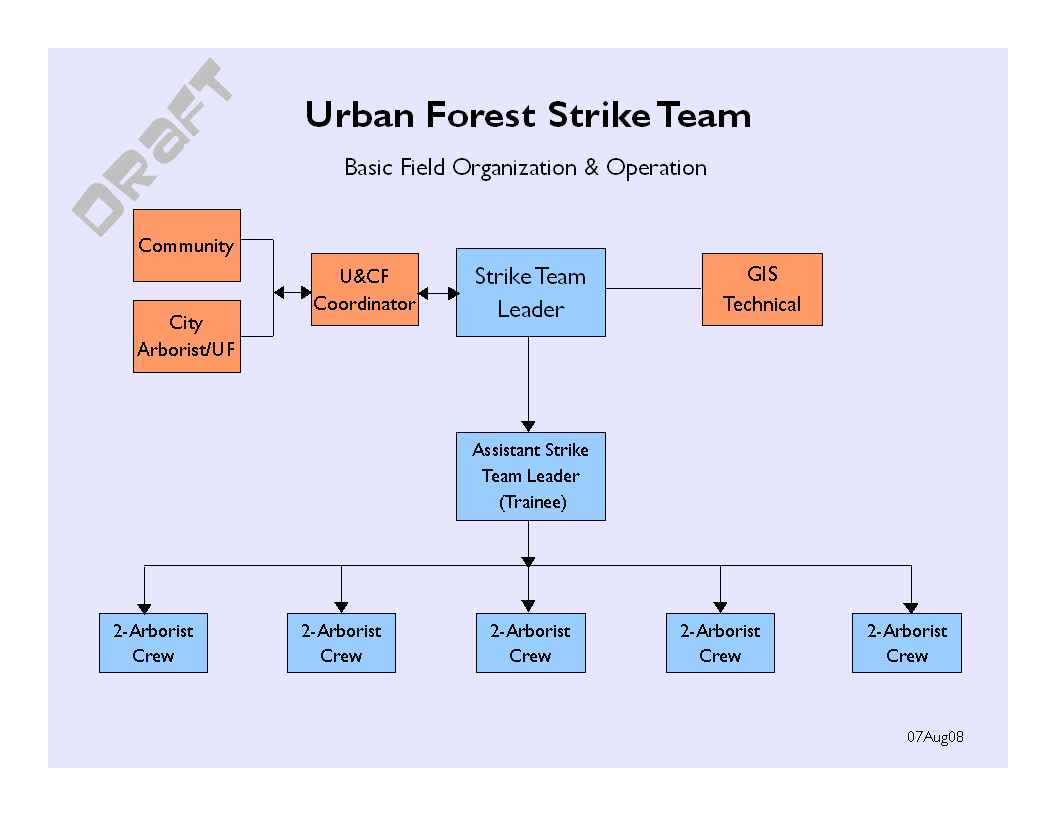
TFS Texas Forest Service

UFS Urban Forestry South (Athens, Georgia; USDA FS)

USDA FS US Department of Agriculture, Forest Service

VDEM Virginia Department of Emergency Management

VDOF Virginia Department of Forestry

**Teams and Crews – UFST Chain of Command**

**Teams and Crews – Code of Conduct**

An UFST incident response or training exercise where each member, crew and team adheres to the following code will ensure effectiveness and success for the UFST program, the SGSFs, our hosts and the community we are serving.

The following general principles[[4]](#footnote-4) apply:

* Lead by example;
* Be proficient in your craft;
* Promote a positive environment;
* Deal with issues directly;
* Empower others to solve problems;
* Treat others as equals and with respect;
* Expect the best;
* Share your knowledge.

Under the UFST Code of Conduct[[5]](#footnote-5) each person is responsible for:

* Being ready and able (physically and mentally) to perform assigned duties;
* Being flexible as duties may change based on community & team needs;
* Conducting yourself in an appropriate manner at all times;
* Interacting positively with your crew, team, state U&CF Coordinator and hosts, and the community.

There is no tolerance for inappropriate behavior while on assignment, including such conduct as:

* Drug and alcohol abuse;
* Unsafe activities;
* Discrimination;
* Sexual harassment;
* Freelancing.

And finally:

* The public deserves and expects your best efforts... let them see us as the professionals that we are.
* Remember, you are a guest in the community where those living in the areas affected by the disaster have suffered loss and trauma.



Here is a quick review of the disaster response timeline from a FEMA standpoint and the role of the state coordinator/state forester with regards to UFST.

After a natural disaster impacts an area, the impacted state gathers information about the severity of the damage and determines if its resources are sufficient to handle the clean-up. Usually within 72 hours the governor of the state will ask the U.S. president (through FEMA) to declare the area a federal disaster. After that declaration, FEMA initiates assistance programs and begins the response phase. Generally, this phase lasts a couple of months, however, depending on the severity of the event (i.e. Hurricane Katrina) it can extend for a longer period. After basic infrastructure has been restored, FEMA switches its programs to recovery phase.

State Coordinator Role:

1. After disaster, the state coordinator assesses communities for severity of damage. They may ask for assistance from UFST to help them determine priorities.
2. After a federal disaster declaration, the coordinator identifies impacted communities, prioritizes disaster area, and requests UFST assistance.
3. While the UFST team is being assembled, the coordinator prepares for their arrival.

**Note:** UFST deployment typically occurs during the last response phase and during short-term recovery while communities continue debris cleanup for FEMA reimbursement.



While the coordinator is preparing for UFST arrival, the UFST team is being assembled (These events for UFST deployment are fluid and may occur anytime after the disaster).

1. Urban Forestry South or the UFST Advisory Committee (AC) will determine who is available for deployment via email request.
2. The UFST teams are assembled based on availability. Team Leaders and Task Specialists begin preparing for deployment by getting proper clearance for deployment through their employer, assembling necessary gear, etc.
3. UFST crews arrive at designated location, receive incident orientation and protocol/equipment refresher from Team Leaders, and begin data collection. Daily routine of data collection continues until the end of the deployment.
4. Task specialists return equipment to Team Leaders and participate in the demobilization process which is used to improve the strike team efficiency in the future.

**Tree Risk Rating Criteria**

This table provides the current UFST risk rating criteria to be used on assessed, storm-damaged trees. The ultimate objective of these ratings is to provide the urban forest manager with a cumulative risk score by which to prioritize mitigation treatment.

|  |  |
| --- | --- |
| **Target** – people or property potentially affected by tree or part of tree failure | |
| 1 | Infrequent |
| 2 | Occasional |
| 3 | Frequent |
| 4 | Constant |
| **Size of Part** – the size of the part of the tree that is likely to fail | |
| 1 | 2-2.9" |
| 2 | 3-5.9" |
| 3 | 6-15.9" |
| 4 | 16"+ |
| **Probability of failure** – the likelihood that the part of the tree that is likely to fail will fail | |
| 1 | Low |
| 2 | Possible |
| 3 | Likely |
| 4 | Imminent |

1. Includes: State Agency, Municipal, Consulting, Cooperative Extension, and non-UFS Federal. [↑](#footnote-ref-1)
2. Team Leaders and UFS (2) can function as Task Specialists. [↑](#footnote-ref-2)
3. One GIS is also a Certified Arborist and qualifies as Task Specialist. [↑](#footnote-ref-3)
4. From Washington Fire Resources Mobilization Plan. [↑](#footnote-ref-4)
5. From Susan Ford (GCTA 2005) and New Kent (VA) Team Leader discussion (2008). [↑](#footnote-ref-5)