USDA Forest Service

Urban Forest Connections

Second Wednesdays | 1:00 – 2:15 pm ET
www.fs.fed.us/research/urban-webinars

USDA is an equal opportunity provider and employer.
**Tree Risk Assessments: Cutting Edge Science Meets Practical Applications**

**Gregory Dahle**  
Assistant Professor  
West Virginia University  
gregory.dahle@mail.wvu.edu

**Andrew Koeser**  
Assistant Professor  
University of Florida Gulf Coast Research & Education Center  
akoeser@ufl.edu

**Mark Duntemann**  
Owner & Urban Forestry Consultant  
Natural Path Urban Forestry  
naturalpathforestry@gmail.com
Risk Assessment in Urban Settings

US Forest Service
Urban Forestry Webinar
May 10, 2017

The Confluence of Risk Assessment and Risk Management

Mark Duntemann
Natural Path Urban Forestry
Risk Assessment is the technical process for:

- Evaluating what unexpected things could happen,
- How likely they are to occur, and
- The consequences if they were to occur.
A Tree Risk Assessment should result in the following outcomes:

1. An overall risk rating for the subject tree.

2. Mitigation options to address the risk identified.
Risk Management is the process by which an agency or company assesses and monitors its risks and selects and implements measures to address those risks.
Risk Management is about making choices at the system level in the presence of uncertainty.
The Confluence of Risk Assessment and Risk Management
Risk Associated with Trees

Depends on the likelihood of two events typically happening at almost concurrent moments:

• The likelihood of a tree part failure (1) within a given time frame (2).
• If the part fails, the likelihood of striking a target (3).

Consequences
If the part fails and if a target is struck what are the potential consequences (4).
The Confluence of Assessment and Management in Litigation

1. A tree is viewed as a hazard in absolute terms. In other words, the subject tree was a hazard or not a hazard.

The risk associated with a tree is complex. Every single tree part has some potential to fail.
2. The context of the non-subject trees are minimized.

The subject tree is not managed in a vacuum. Choices are made as part of a larger system. (Assessor vs Manager)
3. A high inspection and maintenance rigor is assigned to the subject tree. The resources required to achieve this level of rigor is, at times, unreasonable and impractical.
As Low as Reasonably Practical

- **Small Number Of Trees**
  - Cost proportionate to risk reduction
- **Unacceptable Region**
  - Mitigate regardless of the cost
- **Moderate Number Of Trees**
  - Cost/Benefit Choices
- **ALARP Region**
  - Balance risk against benefits
- **Majority of Trees**
  - Large Costs for negligible reduction
- **Broadly Acceptable Region**
  - On-going proactive management practices