

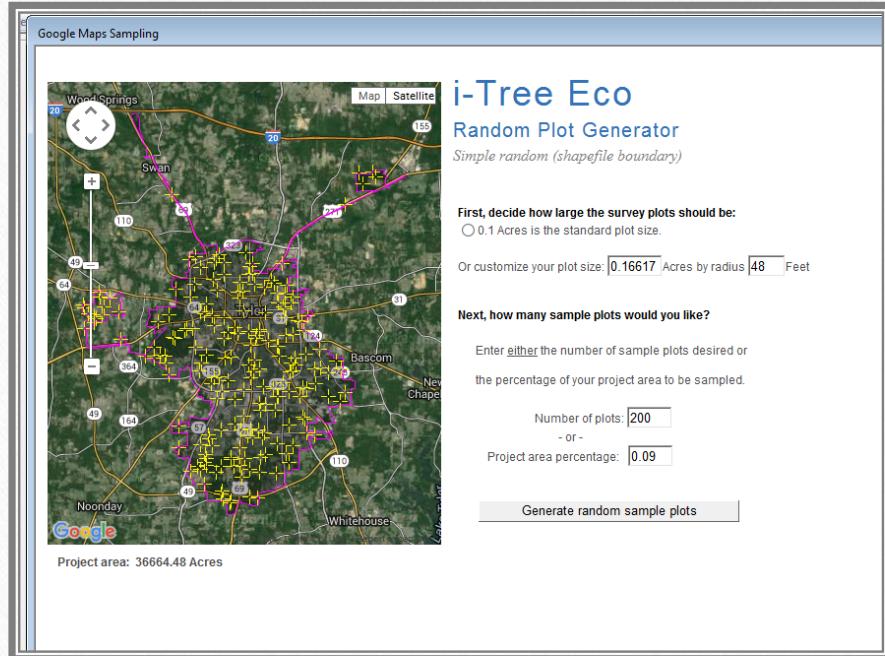
Why Inventory?

- Identify changes in canopy cover
- Identify available planting areas
- Planning, budgeting,
preparedness, and documentation
of management
- Identify trends in forest health
- Calculate benefits and values
- Make comparisons
- Identify stand composition
- You can't manage any resource if
you don't know what you have.

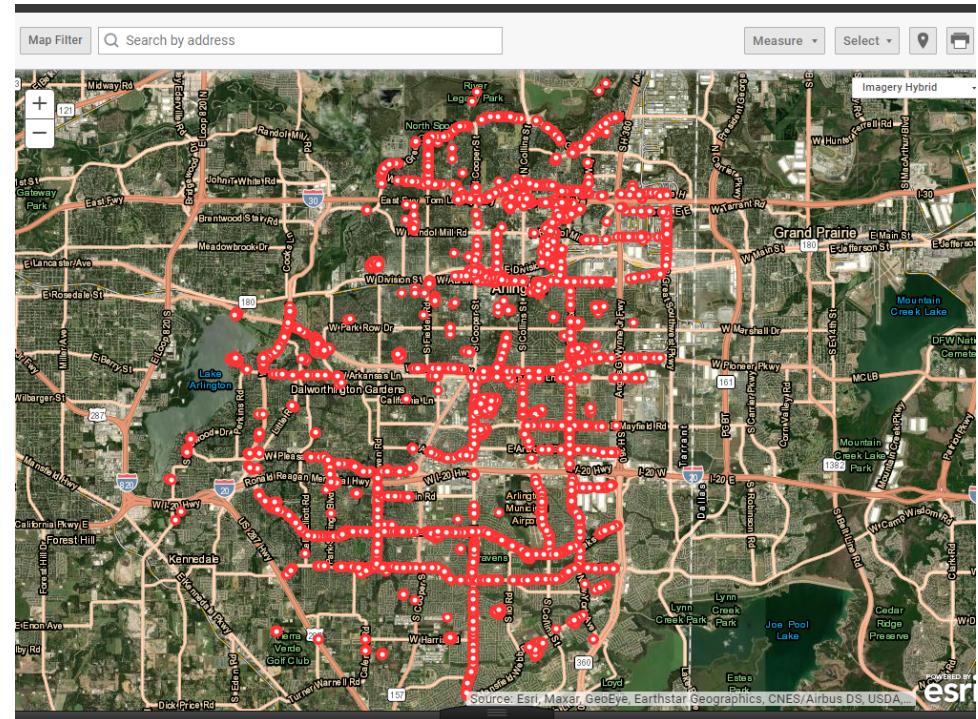
How to Inventory

- Paper, GPS, Data loggers
- Random sampling vs. Complete sampling
- Dependent on budget, time, and staff
- Extensive data on tree condition and characteristics are helpful but should only be done if data is going to be updated, maintained, and utilized

Random Sample Inventory



Complete Street Inventory



Common Parameters

- Tree species
- Diameter
- Location
- Condition
- Mgt Priorities/Recommendations
- Appraised Value
- Mitigation \$
- Notes



Inventory Additional Benefits

- Mgt Cost Estimates and value of urban forest – (i.e. budget justification)
- Educate public on needs for urban forest and how to preserve and enhance

Regulatory and Legal Issues

- Tree Ordinance
- Permits
- Tree Preservation Orders
- Standards and Specifications



Tree Ordinances

- Legal regulations drafted and instituted to protect trees within a given jurisdiction
- Define jurisdiction's authority
- Describe conditions and requirements
- Establish penalties for noncompliance
- Specify responsibility of enforcement



Tree Ordinance

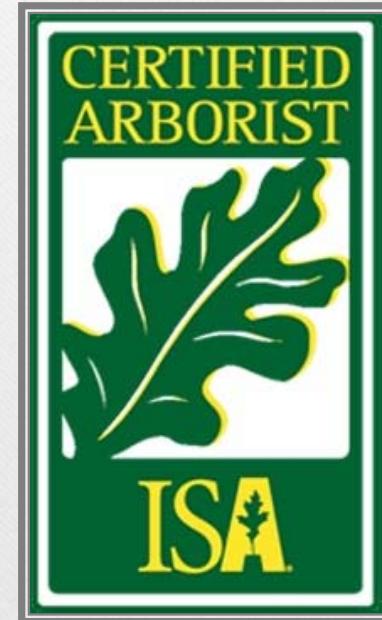
- Urban forester should be involved in drafting and review of tree ordinances
- Ensure tree preservation and maintenance requirements are consistent with best management practices

Examples

- Requirements for property owners to care for trees in ROW zones adjacent to their property
- Guidelines and requirements for obtaining permits for tree planting, maintenance, or removal
- Authorization for public workers to enter private property for tree inspections or to perform required maintenance
- Lists of acceptable species to be planted on the jurisdiction's property
- Regulations prohibiting topping of trees

Permits

- Common for government agencies to require permits for planting, pruning, tree maintenance, or any activity that might affect trees, such as construction
- Should give municipal arborist authority to review and approve all tree-related permits
- Review things in question
- Some jurisdictions require tree care companies to have one ISA certified arborist on staff to work within jurisdiction





Tree Preservation Orders (TPOs)

- Legal regulation, established by local authority, that protects a tree or multiple trees
- Preserve during land development
- Preserve from removal or unapproved pruning and maintenance
- Fixed period or permanent

Standards & Specifications

- Standard – established or widely recognized authority of acceptable performance
- Specification- detailed plans, requirements, and statements of particular procedures and/or standards used to define and guide

Standards

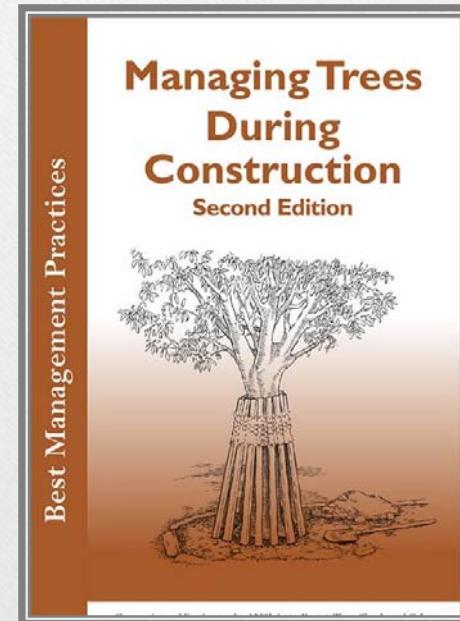
- Legal authority and enforcement varies from one jurisdiction to another
- Failure to comply can result in direct fines or other penalties
- Even where standards do not carry direct legislative authority, they may be recognized in court of law
- Failure to comply has resulted in findings for liability and resultant damages in many court cases

Specifications

- Urban foresters should establish detailed specification for all tree work including....
 - Planting
 - Pruning
 - Fertilization
 - Pest control and monitoring
 - Installation of support or protection systems
 - Construction near trees
 - Removals

Writing Standards & Specs

- Tools
 - ISA Best Management Practices publication
 - American National Standards Institute (ANSI) A300
 - standards for tree care operations
 - Can help urban forester design specifications and standards





Urban Forest Management

- PRIMARY GOAL: Public Safety
- Manage tree resources to maximize their environmental, social, and economic benefits while managing any associated risks and costs
- Additional goals based on individual situations and locations

Urban Forest Management Plan

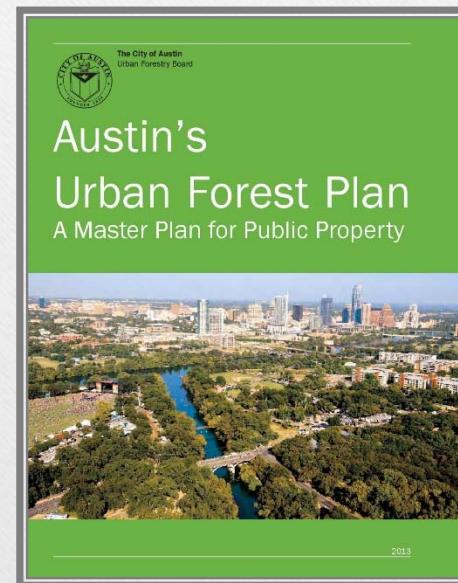
- Formulates & documents the strategies and procedures for managing trees within a predefined area or jurisdiction
- Define goals & objectives, establish guidelines, include key stakeholders, and determine the resources needed to maintain a sustainable urban forest
- Tree inventory is key, but so is Communication!

Subplans in Man. Plan

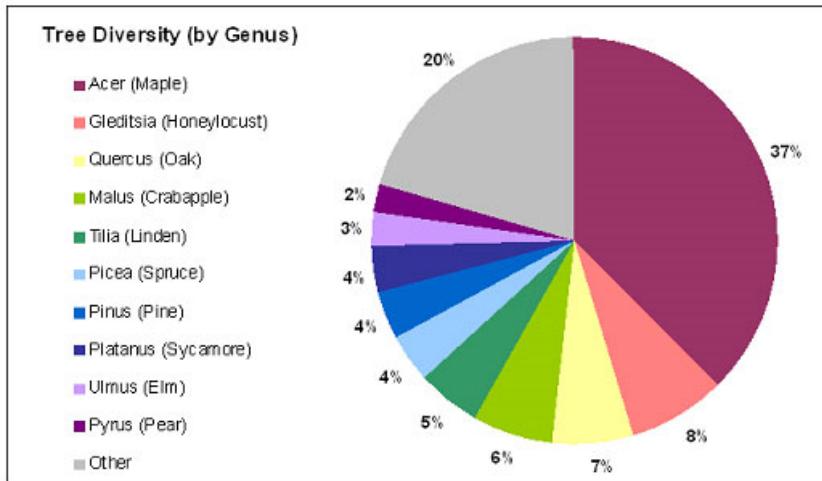
- Planting plan
- Preservation plan
- Maintenance plan
- Tree removal and replacement plan
- Risk management plan
- Operations plan
- Storm response/ emergency plan
- PR/ education plan

Management Plan Updates

- Progress & outcomes should be evaluated in order to make adjustments to achieve wanted outcomes
- Plan should encompass more than just one year
- Many cities use 5 year plan
- Amendments to management plan can be added annually showing progress



Tree Diversity



- “Right Tree, Right Place” – relatively easy for single tree
- Whole population of trees- more difficult to ensure species diversity is adequate

Diversity, continued

- Tropical – huge selection
- Drier, colder, higher – selection drops off
- Goal – <30% same plant family, <20% same genus, <10% single species (guideline, varies with location)
- Diversity should not outweigh need to plant appropriate, sustainable species
- Age and size diversity are included in diversity to reach sustainable urban forest (succession)

Tree Maintenance

- Proactive in pruning – young tree developmental pruning
- Key in on monitoring for potential hazards and tree health issues & trends



Pruning schedule

- Help manage long term costs
- Reduce time and expenses involved with emergency removal
- Without schedule (i.e. reactionary maintenance), higher costs, risks, & reduces benefits of the urban forest
- Temperate climates – 4 to 5 year cycles
- Municipal – contract or in- house work
- Built into plan and budget
- Help protect infrastructure as well

Wood Waste

- Logs, brush, leaves, and stumps
- Disposal fees in landfill
- Sawlogs – large or private mills
- Firewood sales
- Specialty products – artisans
- Mulch
- Composting



Wildlife Habitat

- Wildlife includes animals and vegetation in nature.
- Urban Forest provides habitat and food for wildlife.
- Urban Foresters must understand how their action affect wildlife and make themselves aware of laws and regulations.



Information & Education

- Public relations and communications are key to successful urban forestry program
- Citizen led tree boards and commissions are an integral part
- City arborist must be able to articulate needs, vision, and goals effectively
- Strong communication and partnerships go a long way
- Helps create more realistic budget items

Information & Education

- Explain qualitative & quantitative benefits of trees
- Gains support for planting, preservation, and maintenance
- Informed citizens serve as conduits for information flow



Summary

- Urban Forestry requires both technical, political, planning, and communications skills.
- Proactive planning, especially use of tree inventories is key to long-term sustainable management of the urban forest resource.
- Cost: Benefit Analysis of the resource is useful to justify mgt investment.
- Public Safety is primary role for urban forester.
- Local governments use tree care and protection ordinances to protect and improve trees.

Thank you!
Questions?

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