


Managing a Mature Community Forest



Rick W. Harper
rharper@umass.edu

UMassAmherst Environmental Conservation | The Center for Agriculture, Food and the Environment


1

Environmental Benefits

University of Massachusetts Amherst
Department of Environmental Conservation

National Picture

- Annual Benefits: \$18.3 billion
 - Air pollution removal: \$5.4 bil.
 - Energy conservation: \$5.4 bil.
 - Carbon sequestration: \$4.8 bil.
 - Avoided emissions: \$2.7 bil.



UTCC Loss (2009-2014)

- 1.0% (40.4% – 39.4%)
- 36 mil trees or 175,000 acres/yr
- Annual Benefits Cost \$96 mil
- Impervious Cover +1.0%

Nowak & Greenfield 2012; 2018

2

Why We Love Trees...

University of Massachusetts Amherst
Department of Environmental Conservation

Biophilia (Wilson 1992)

- Connection to Nature

Attention Restoration (ART) (Kaplan & Kaplan 1989)

- Directed Attention = Fatigue
- Involuntary Attention = Restoring

Stress Reduction Theory (SRT) (Ulrich 1983)

- Natural Environment = Lower Anxiety

Individual & Community Level Benefits

- Health & Wellbeing
- Social Cohesion




3

Visible Greenery...

University of Massachusetts Amherst
Department of Environmental Conservation

- Reduce rates of sickness and need for health services among prisoners (Moore 1981)
- Help hospital patients recover more quickly from surgery (Ulrich 1984)
- Improve apartment building tenants' feelings of personal well-being (Kaplan 2001)
- Improve the attention capacity of college students living in dormitories (Tennessen & Cimprich 1996)




4

Urban Greenery...

University of Massachusetts Amherst
Department of Environmental Conservation

Access

- "Privacy", "Refuge", "Escape" from the Built Environment (Hammit 2002)
- "Peacefulness", "Tranquility", "Serenity", "Quiet" (Schroeder 1986)
- Alpha Waves & Wakeful Relaxation Upon Viewing Pictures of Nature/Greenery (Ulrich 1978)
- "Several Blocks", "300m" (Grahn & Stigsdotter 2003, Annerstedt van den Bosch et al. 2016)



5

Greenery & the Community


University of Massachusetts Amherst
Department of Environmental Conservation

Increased Social Ties...

- Sense of Community & Safety (Kuo et al. 1998)
- Vegetation as Territorial Marker; Cues to Care (Brown & Altman 1983, Nassaur 1988)
- Condition of Green Space, Size of Tree is Important (Donovan & Prestemon 2010)
- More Social Gatherings, Social Fabric (Coley et al. 1997; Elmendorf 2003)
- Formation of Citizen Groups (Bloniarz & Ryan 1996; Dwyer et al. 2000; Westphal 2003)



6


 University of Massachusetts Amherst
 Department of Environmental Conservation

Context...

One of the anomalies of modern ecology is that it is the creation of two groups each of which seems barely aware of the existence of the other. The one studies the human community almost as if it were a separate entity, and calls its findings sociology, economics, and history. The other studies the plant and animal community, [and] comfortably relegates the hodgepodge of politics to "the liberal arts." *The inevitable fusion of these two lines of thought will, perhaps, constitute the outstanding advance of the present century.*

– Aldo Leopold, 1935

7

7


 University of Massachusetts Amherst
 Department of Environmental Conservation

Urban Forestry Defined

- Juncture of social-ecological systems (SES)
- Biophysical, social elements
- Complexity
- Recency of Urban Forestry
- Jorgensen 1960's University of Toronto
- Questions/Knowledge Gaps Remain



8

8


 University of Massachusetts Amherst
 Department of Environmental Conservation


Agenda

- 1) Understanding Your Resource
 - a. iTree, Inventories
- 2) Protecting Your Resource
 - b. Tree Protection During Construction
- 3) Managing Your Resource
 - c. Volunteer Engagement



9


9


 University of Massachusetts Amherst
 Department of Environmental Conservation

Definition of an Inventory

The documentation of characteristics of individually-managed trees in a defined area

- Location*
- Tree Species*
- Tree Diameter*
- Tree Height
- Tree Condition
- Other Attributes...



10

10


 University of Massachusetts Amherst
 Department of Environmental Conservation


Goals of an Inventory

- Knowing Your Resource
 - Number of Trees
 - Tree Species
 - Tree Condition
- Management/Maintenance
 - Work Prioritization
- Identify Planting Opportunities




11

11


 University of Massachusetts Amherst
 Department of Environmental Conservation

Goals of an Inventory


- Public Engagement
- Determine Tree Condition (Risk Trees, Pests, etc.)
- Liability
- Understand Benefits of Urban Forest more Fully (\$)
- Budget Justification
- Preservation
 - Mature Trees
 - Canopy
- Planting Needs
- Pests



12

12

Community Tree Inventories



TREE INVENTORY

Northampton now has a complete inventory of the public shade tree!

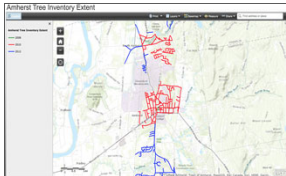
Thanks to a grant from the Massachusetts Department of Conservation and Recreation, Northampton joined the Green, Healthy Places in 2016 to conduct a full tree inventory of the City's public shade tree. For more information on the project, please visit the report: [Inventory Report](#)

The tree inventory, which is actively maintained by the Tree Warden, can be accessed via [GIS/MapServer](#)

Inventory Highlights

- Northampton now has 10,000 public shade trees worth \$10 million, adding \$1.3 million annually in energy savings, carbon sequestration, air-pollution mitigation and property value increases.
- Half the public shade trees are in good to excellent health, and half are in fair to poor health.
- Health issues identified in shade tree inventory (HTI), by species and age are identifying species diversity and planning age & health distribution of the shade tree canopy.
- Over 200 tree inventory data entry to online digital maps have been identified, allowing the City to print GIS/MapServer reports each year.

Amherst Tree Inventory Exhibit



NOHO, MA

Amherst, MA

13

13

UMass Tree Inventory






The Waugh Arboretum

Waugh Arboretum

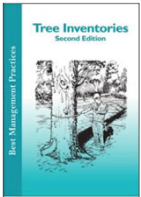
14

14

Types of Inventories



- Partial Inventory
 - Random Sample
 - Phased, "Step-by-Step"
 - Specific
 - Area
 - Species
 - Condition (i.e. Risk Trees)
- Partial Survey
 - "Quick Count"
 - Walking or Windshield Survey
- Complete Inventory
 - All Public Trees/Planting Spaces




www.isa-arbor.com

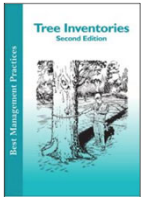
15

15

Types of Inventories



- Periodic
 - Conducted one time
- Continuous
 - Regular updates, as work is carried out




www.isa-arbor.com

16

16

Data Collection




How:

- Existing Staff (Municipal, State Agencies?)
- Volunteers
 - Training is Critical

Important Considerations:

- Paper vs. Electronic?
- Travel (foot vs. vehicle)?

Using Consultants/ Professionals Help Address these Questions, but can be Costly




Diameter Measured @ 4.5 ft or 135 cm.


17

17

Attributes to Inventory...



- Number*
- Location*
- Tree Species*
- Tree Diameter*
- Tree Condition
 - Good
 - Fair
 - Poor
 - Dead/Dying
 - % Dieback



Diameter Measured @ 4.5 ft or 135 cm.


18

18

Attributes to Inventory...

Other Features...

- Recommendations?
- Pruning,
- Pests,
- Conflicts
 - Sidewalk
 - Utilities

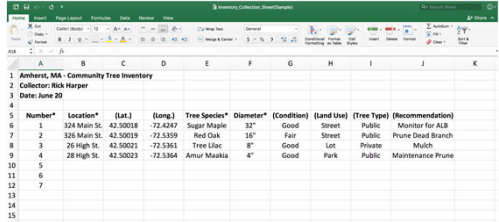


Diameter Measured @ 4.5 ft or 135 cm.

University of Massachusetts Amherst
Department of Environmental Conservation

19

Systematic Collection



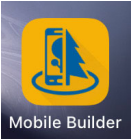
Number*	Location*	[Lat.]	[Long.]	Tree Species*	Diameter*	(Condition)	(Land Use)	(Tree Type)	(Recommendation)
1	324 Main St.	42.50018	-72.4247	Sugar Maple	32"	Good	Street	Public	Monitor for AIB
2	326 Main St.	42.50019	-72.5359	Red Oak	16"	Fair	Street	Public	Prune Dead Branch
3	28 High St.	42.50021	-72.5363	Tree Sycamore	8"	Good	Lot	Private	Mulch
4	28 High St.	42.50023	-72.5364	Amur Maackia	4"	Good	Park	Public	Maintenance Prune

Data Collection App, MS Excel, Google Sheets

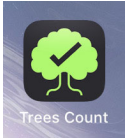
University of Massachusetts Amherst
Department of Environmental Conservation

20

Collection Apps



Trimble



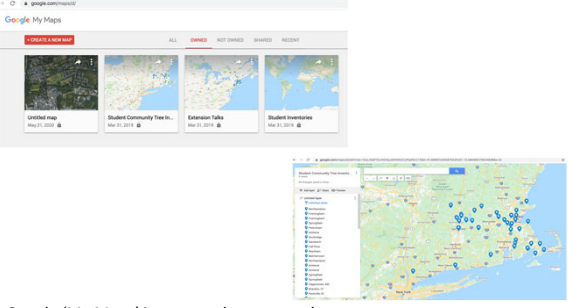
Texas A&M

Research Data Collection Apps – Try Out On Few Trees First

University of Massachusetts Amherst
Department of Environmental Conservation

21

Systematic Collection



Google 'My Maps' is a great place to start!

University of Massachusetts Amherst
Department of Environmental Conservation

22

Resource




www.iTreetools.org www.unri.org - 'webcasts'

University of Massachusetts Amherst
Department of Environmental Conservation

23

Analysis



www.iTreetools.org

University of Massachusetts Amherst
Department of Environmental Conservation


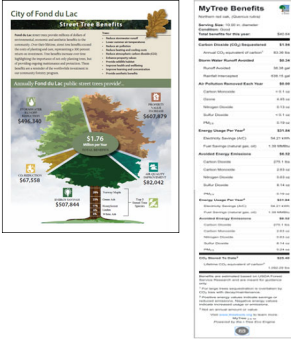
24

University of Massachusetts Amherst
Department of Environmental Conservation

Analysis

iTree 'MyTree'

- Minimal Training
- Great Outreach

City of Ford du Lac
Street Tree Benefits

MyTree Benefits

25


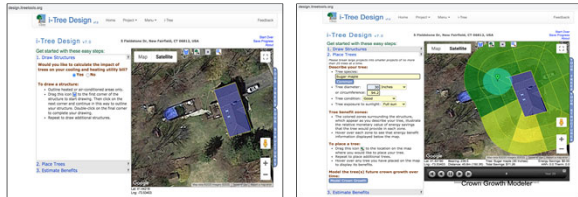
25

University of Massachusetts Amherst
Department of Environmental Conservation

Analysis

iTree 'Design'

- Minimal Training
- Great Outreach

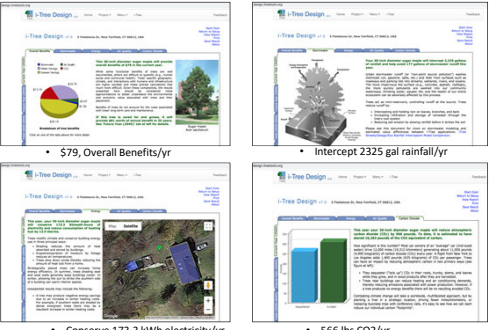
www.iTreetools.org

26

26

University of Massachusetts Amherst
Department of Environmental Conservation

Analysis - iTree 'Design'



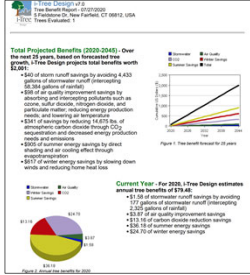
- \$79, Overall Benefits/yr
- Intercept 2325 gal rainfall/yr
- Conserve 173.3 kWh electricity/yr
- 566 lbs CO2/yr

27

27

University of Massachusetts Amherst
Department of Environmental Conservation

Presentation - iTree 'Design'



Total Projected Benefits (2020-2045): Over the next 25 years, based on historical tree growth, iTree Design projects total benefits worth \$242.

- \$40 of storm runoff savings by avoiding 4,432 gallons of stormwater runoff (approximately 300 gallons of runoff)
- \$38 of air quality improvement savings by absorbing and intercepting pollutants such as carbon, sulfur dioxide, nitrogen dioxide, and particulates in other reducing energy production, heating, and increasing air movement.
- \$34 of savings by reducing 14,378 lbs of nonrecyclable waste (approximately 2000 common household items) from landfills and incineration.
- \$22 of carbon energy savings by direct energy use and by reducing fossil fuel usage.
- \$20 of carbon energy savings by slowing down roads and reducing fossil fuel use.

Current Year - For 2020, iTree Design estimates annual tree benefits of \$79.46

- \$1.66 of stormwater runoff savings by avoiding 277 gallons of stormwater runoff (intercepting 277 gallons of runoff)
- \$1.16 of air quality improvement savings
- \$1.16 of carbon dioxide reduction savings
- \$23.16 of carbon energy savings
- \$24.79 of carbon energy savings

iTree - Reports

28

28

University of Massachusetts Amherst
Department of Environmental Conservation

Action Steps

- Locate City, County, State Urban Forester
- Plan Cooperatively
- Start Inventorying with their Permission/Cooperation

"...municipal tree warden is arguably the most important human component of a city or town's community forestry program."
(Ricard & Dreyer 2005 p.154)



A. Snow, Tree Warden, Town of Amherst

(Harper et al. 2017)


29

29

University of Massachusetts Amherst
Department of Environmental Conservation

Inventory

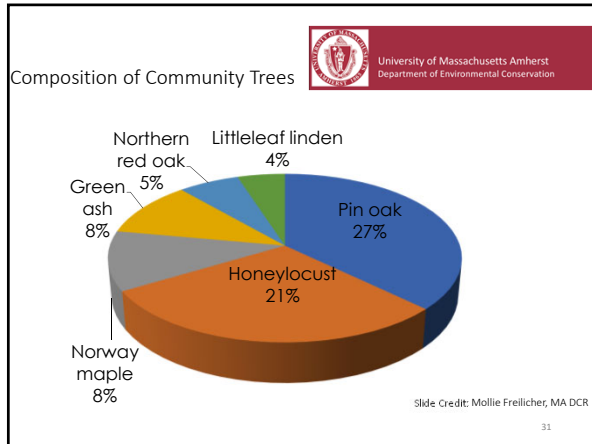
- 1) Planned & Systematic
- 2) Sound Record-Keeping (Including Backing Up)
- 3) Report Generated Should Match Objectives
- 4) Start Modest, Keep it Simple
- 5) Proceed in a Step-by-Step Manner



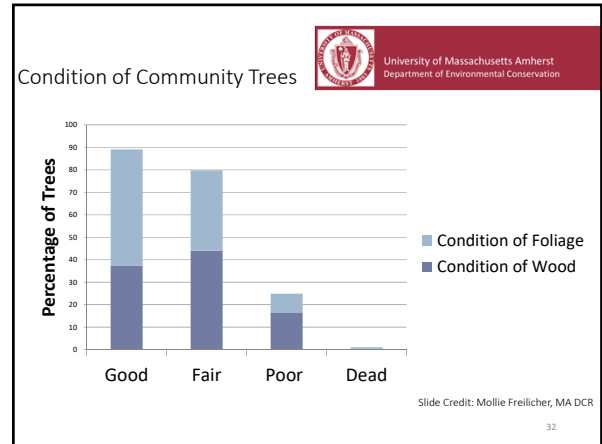
L. Lombard & R. Parasilli, City of Northampton

30

30



31



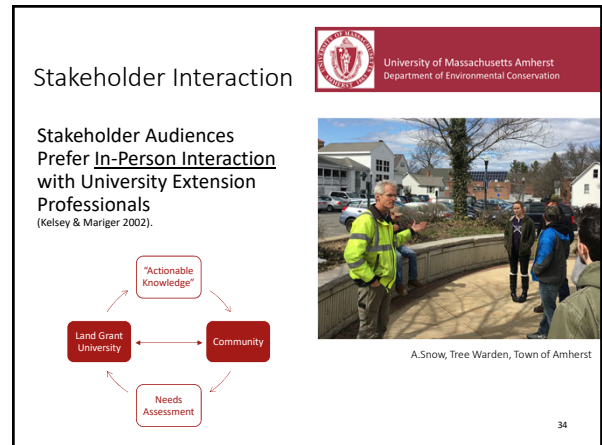
32

Community Tree Benefits

Benefits	Total (\$)	\$/tree
Energy	772,439	0.56
Gross Carbon Sequestration	966,929	0.75
Pollution Removal	1,921,352	1.50
Avoided Runoff	745,016	1.58
Total Benefits	4,355,735	3.39

Slide Credit: Mollie Freilicher, MA DCR

33



34

The Urban Forest

Humans & Nature Interact

- Natural Factors
 - 80% urban forests are within vicinity of forested areas
 - Regeneration (2 in 3 urban trees occur naturally)
 - Climate (Storms)
 - Pests
- Human Factors
 - Planting (1 in 3 urban trees)
 - Maintenance
 - Construction/Development

35

35

Tree Planting

Influence Urban Tree Health

- National, Regional Scale
 - Error of Design

Photo Credit: Dr. N. Bassuk, Cornell U

Photo Credit: Dr. N. Bassuk, Cornell U

36

Tree Planting

Influence Urban Tree Health

- **Too Few Genera** (Richards 1982)
 - Approx. 2/3 MA Street Trees Acer spp. or Quercus spp.
 - Approx. 3/4 MA Street Trees 15" Dia. or Greater





Photo Credits: K. Loeffler, Cornell U
Photo Credits: Dr. D. Herms

37



Tree Planting

Influence Urban Tree Health

- **Individual**
 - Error of Execution

80% Landscape Tree Problems Originate Below Ground

– Dr. G. Watson, Morton Arboretum

38

Tree Planting Depth






Photo Credit: Dr. N. Brazeo, UMass Extension
Photo Credit: Dr. N. Brazeo, UMass Extension

39

For More Information...






Introduction

Dr. Shorna Allred, Cornell University
Routledge Handbook of Urban Forestry (Ch. 6 – Dr. M. van den Bosch 2017)
Urban Forestry (Ch. 3 – Miller et al 2015)

Inventories

Mollie Freilicher, MA Dep't of Conservation & Recreation
Dr. David Bloniarz, USDA Forest Service
www.unri.org

Tree Inventories, 2nd Edition
International Society of Arboriculture.
www.isa-arbor.com

40

Now That We Know What We Have...




41

How Much Space is Needed?





Photo credits: J. Nicoletti

42

How Much Space is Needed?

University of Massachusetts Amherst
Department of Environmental Conservation

Understanding has Changed over the years...

- Up to 2.0 cu. ft. = sq.ft. of Deciduous Canopy (Lindsey & Bassuk '91'92, Cornell University)

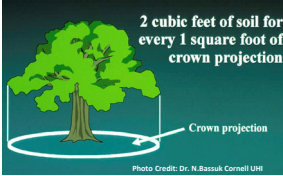




Photo Credit: Dr. N. Bassuk Cornell UMN

43

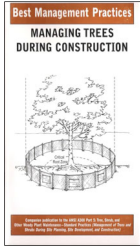

43

Guidance

University of Massachusetts Amherst
Department of Environmental Conservation

Literature

- ISA BMP
- Protecting Trees from Construction Damage (Gary Johnson, UMN)
- Factsheets, Booklets

44

44

Common Types of Damage/Injury

University of Massachusetts Amherst
Department of Environmental Conservation

1) Root Cutting/Damage

- Excavation Equipment
- Trenching




45


45

Common Types of Damage/Injury

University of Massachusetts Amherst
Department of Environmental Conservation

1) Root Cutting/Damage

- Addition of Fill
- Debris
- Changes in Drainage



46

46

Common Types of Damage/Injury

University of Massachusetts Amherst
Department of Environmental Conservation

2) Soil Compaction

- Reduction in Air Exchange
- Pore Space Reduction
- Changes in Drainage



47

47

Common Types of Damage/Injury

University of Massachusetts Amherst
Department of Environmental Conservation

2) Soil Compaction


- Increase in Db
- Increase Resistance/Soil Strength
- Severity – Force/Unit Area Applied to Soil



48


48

Common Types of Damage/Injury



3) Mechanical Injury

- Damage to Trunk, Roots, Crown
- Areas Critical to Structural & Biological Health of the Tree



49


Common Types of Damage/Injury







50

Common Types of Damage/Injury



4) Root Collar Burial

- Decay
- Insects
- Girdling Roots

51

Common Types of Damage/Injury



4) Root Collar Burial

- Tree Failure




52



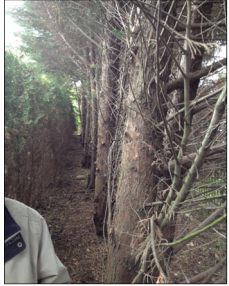
Root Collar Burial





53

Root Collar Burial







54

53

54


Root Collar Burial

55

55

Tree Protection




Planning Phase

1) Identify Trees

- Inventory
- Assess (Biological, Structural Health)


Objective: What's there?



56

56

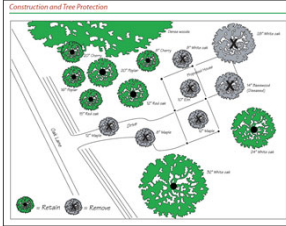
Design Phase



2) Outline/Select Specimens to be Protected

- Tree Protection Strategies

Objective: What Trees are Protected?



57

57

Pre-Construction Phase



3) Protection Strategies

- Dripline Method
- Trunk Diameter Method
- Tree Height
- Soil & Root Protection

Objective: How Do We Protect the Trees?



58

58

Pre-Construction Phase



3) Equipment/Supplies





- Fencing
- Signage
- Stem Guards
- Imagination



59

59

Approaches to Fencing

www.TLCforTrees.info

60

60

Tree Protection Signage




61

61

Creative Solutions





Encounter Roots 1" in Diameter or Greater = Bore

- Root Depth 3'
- Bury Infrastructure

62

62

Creative Solutions





Root Pruning

- Dry Well

63

63

Trunk Protection






Hydration

64

64


Pre-Construction Phase



3) Equipment/Supplies

Soil & Root Protection Strategies

- Wood Chips (6-12")
- Plywood (3/4") + Mulch (4")
- Geotextile + Gravel (4-6")
- Logging Mats



65

65

Construction Phase



4) Monitoring

- Compliance

Objective: Are Parties Adhering to Tree Protection Guidelines?



66

66

Arborists as Educators and Cooperators...

- Planners
 - Buildings & Driveway Designs
 - Factor Tree, Soil Protection
 - Engineering & Engineered Systems (Structural Soils)
- Builders
 - Protect Trees, Soil in Practice (abide by TPZ)
 - Budget TPZ Supplies
 - Facilitate Access to Site
 - Minimal Disturbance
- Communities
 - Educational Programs
 - TP Policies, Permitting
 - Support Expertise




University of Massachusetts Amherst
Department of Environmental Conservation

67

67

Approaches to Tree Protection

- Canopy Method
 - Dripline/Canopy Spread
 - Radius
- Height of Tree
 - $2x = \text{Radius}$
- Stem Diameter
 - DBH 4.5'



University of Massachusetts Amherst
Department of Environmental Conservation

68

68

Tree Protection in Practice

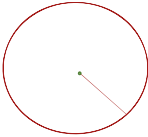
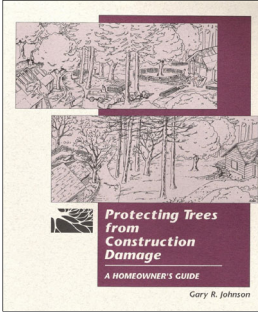
i) Identify Critical Root Radius (CRR)

DBH = Inches

DBH x 1.0 = Younger

DBH x 1.5 = Older

Radius = Distance in Feet

University of Massachusetts Amherst
Department of Environmental Conservation

69

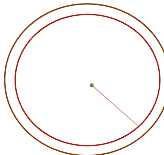
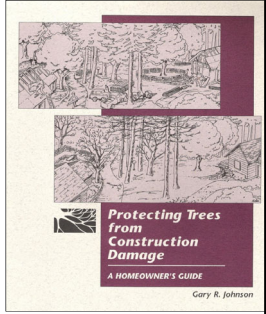
69

Tree Protection in Practice

ii) Establish Protected Root Radius (PRR)

DBH 10" x 1.0 (Green Ash) = Critical Root Radius of 10'

DBH 10" x 1.5 (White Oak) = Critical Root Radius of 15'

University of Massachusetts Amherst
Department of Environmental Conservation

70

70

Tree Protection in Practice

i) Identify Critical Root Zone (CRZ)

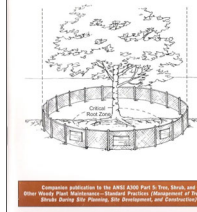
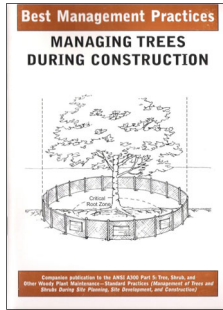
DBH = Inches

DBH x 6 = Younger/Resilient

DBH x 12 = Intermediate

DBH x 18 = Older/Sensitive

Radius = Distance in Inches

University of Massachusetts Amherst
Department of Environmental Conservation

71

71

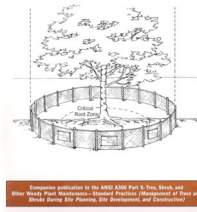
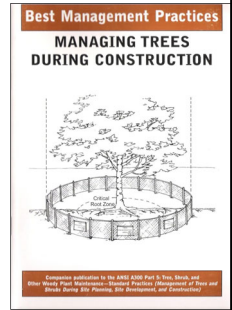
Tree Protection in Practice

ii) Establish Tree Protection Zone (TPZ)

A tree with DBH of 8"

DBH (8) x M (6-18)

Radius = 48" (4') - 144" (12')





University of Massachusetts Amherst
Department of Environmental Conservation

72

72

Tree Protection in Practice




Creative Construction

- Pilings

Engineering Strategies

- Amsterdam Soil
- Skeletal Soil
- Silva Cells




Kieran Timberlake Associates
www.loveproperties.com

73

73


Tree Protection in Practice



5) Clean-up

- Barrier Removal
- Evaluate Soil Conditions
- Tree Evaluation

Objective: Finalizing Details



74

74

For More Information...


Dr. Gary Johnson, Univ of Minnesota
Dr. Jason Grabosky, Rutgers University

Dr. Nina Bassuk, Cornell University
'Urban Horticulture Institute'

Managing Trees During Construction.
International Society of Arboriculture.
www.isa-arbor.com

Protecting Trees During Construction.
Univ of Minnesota. <https://bit.ly/33bXVrr>

Growing the Tree Out of the Box.
Casey Trees. <https://bit.ly/33uQzQ2>



75

75

Volunteerism in the U.S.



Definition: Individuals willing to "freely offer" to carry out tasks

- US Bureau of Labor Statistics
- >60 million U.S. Residents, 16 yrs.+ volunteer annually
- ~7 billion hours volunteered/yr
- ~\$170 billion USD to economy/yr.



76

76

Master Gardener Volunteers





77

77

MGV – Research Support




Photo Credit: P. Weston, PhD




78

78

Volunteerism in the U.S.

University of Massachusetts Amherst
Department of Environmental Conservation

Top States:

- 1) Utah – 50.1%
- 2) Minnesota – 45.1%
- 3) Oregon – 43.2%
- 4) Iowa – 41.5%
- 5) Alaska – 40.6%
- 6) Nebraska – 40.2%
- 7) D.C. – 39.8%
- 8) Montana – 38.8%
- 9) Maine – 38.7%
- 10) Idaho – 37.9%

Nationalservice.gov

79

Volunteerism in the U.S.

University of Massachusetts Amherst
Department of Environmental Conservation

Mid-States:

- 25) Massachusetts – 32.6%
- 26) Colorado – 32.4%
- 27) Oklahoma – 32.0%
- 28) Missouri – 31.9%
- 29) Delaware – 31.8%
- 30) Connecticut – 25.4%
- 31) Tennessee – 31.3%
- 32) South Carolina – 30.8%
- 33) Rhode Island – 30.7%
- 34) Arizona – 30.0%

Nationalservice.gov

80

Volunteerism in the U.S.

University of Massachusetts Amherst
Department of Environmental Conservation

Bottom States:

- 42) Alabama – 27.4%
- 43) New Mexico – 27.1%
- 44) Georgia – 26.5%
- 45) New Jersey – 26.1%
- 46) Louisiana – 25.8%
- 47) California – 25.4%
- 48) New York – 25.3%
- 49) Nevada – 24.4%
- 50) Mississippi – 23.8%
- 51) Florida – 22.8%

Nationalservice.gov

81

Volunteerism in Detail

University of Massachusetts Amherst
Department of Environmental Conservation

- Median # of Hours of Annual Volunteer Work: 50 hours
- Typically one (71.4%) or two (18.6%) organizations
- Types of Organizations:
 - Religious: 33.3%
 - Educational/Youth Service: 25.1%
 - Social/Community Service: 14.4%
 - **Environmental <5%**
- Most Frequent Volunteer Activity:
 - Food Collection/Service: 10.8%
 - Fundraising: 10.3%
 - Tutoring/Teaching: 9.3%

% Distribution of Volunteers by Type of Organization

D. Bloniarz, Ph.D./J.L.Bullard

82

Volunteerism in Detail

University of Massachusetts Amherst
Department of Environmental Conservation

- By Gender:
 - Male – 22.0%
 - Female – 28.3%
- By Age:
 - Most Likely to Volunteer between 35-44 yr. age (29.8%)
 - Lowest Volunteer Rates among Ages 20-24 (18.7%)
- By Ethnicity:
 - Caucasians, African Americans, Asians ~ 20 – 25%
 - Hispanics ~ 15%

D. Bloniarz, Ph.D./J.L.Bullard

83

Volunteerism in Detail

University of Massachusetts Amherst
Department of Environmental Conservation

- Married vs. Single:
 - Married – 30.0%
 - Never Married – 20.2%
 - Other – 21.1%
- Parents:
 - With Children Under 18: 31.6%
 - With Children Over 18: 23.0%

D. Bloniarz, Ph.D./J.L.Bullard

84

Volunteer Trends Vary

University of Massachusetts Amherst
Department of Environmental Conservation

Volunteerism in the U.S.

Age	%
15 to 19	30.4
20 to 24	19.5
25 to 34	25.3
35 to 44	34.5
45 to 54	32.7
55 to 64	30.2
65 and over	24.8

Volunteerism in the U.S.

Year	%
2003	28.8
2009	26.8
2015	24.9
2018	30.3

85

85

Where do Individuals Belong?

University of Massachusetts Amherst
Department of Environmental Conservation

86

86

Finding the Right Fit for You

University of Massachusetts Amherst
Department of Environmental Conservation

Personalities...

- Adventurer
- Campaigner
- Protagonist
- Defender
- Entertainer
- Entrepreneur
- Consul

16personalities.com

87

87

Motivations for Volunteering

University of Massachusetts Amherst
Department of Environmental Conservation

- Recognition
- Altruism/Public Duty
- Affiliation
- Achievement
- Power
- Preservation

Arborday.org 88

88

Tasks

- Public Speaking/Presenting
- Coordination
- Education
- Technical, Laborious Tasks
- Individual vs. Team

University of Massachusetts Amherst
Department of Environmental Conservation

Arborday.org 89

89

Motivation

1) Recognition

“Shine in the Spotlight”

- Gratitude
- Prestige/Status
- High-Visibility Situations
- Well-Defined Outputs

90

90

Assignments

1) Recognition

- Represent TC @ Arbor Day Event
- Speaker @ Community Tree Planting
- Media (TV, Radio, Newspaper Interviews)



University of Massachusetts Amherst
Department of Environmental Conservation

91

91

Motivation

2) Altruism/Public Duty

“Do the Right Thing because it’s the Right Thing to Do”

- Good Policy
- Fair-play
- Equity
- Justice



University of Massachusetts Amherst
Department of Environmental Conservation

92

92

Assignments

2) Altruism/Public Duty

- Tree Committee (Creating Ordinances)
- Planning/Zoning Board
- Parks Committee
- Volunteer Care/Support
- May Work Independently or in Groups



University of Massachusetts Amherst
Department of Environmental Conservation

93

93

Motivation

3) Affiliation

“Good People Doing Good Work”

- Cohesive Partnerships
- Highly Social
- Extroverted
- Helpful, Supportive
- Appreciation is Important



University of Massachusetts Amherst
Department of Environmental Conservation

94

94

Assignments

3) Affiliation

- Work in Groups/Teams
- Participate/Help Plan
 - Tree Planting Event
 - Awards/Appreciation Dinner
- Staffing Booth
- Event Greeting/Welcoming



University of Massachusetts Amherst
Department of Environmental Conservation

95

95

Motivation

4) Achievement

“Good People Doing Good Work”

- Goal/Task Oriented
- Excellence
- Innovation
- Perfectionism
- Order



University of Massachusetts Amherst
Department of Environmental Conservation

96

96

University of Massachusetts Amherst
Department of Environmental Conservation

Assignments

4) Achievement
"Go-getters"

- Challenge
- New Initiatives/Programs
- Building Substantially on Existing Initiatives
- Independent Tasks
 - Forest Health Monitoring
 - Watering
 - Leading Tour



97

97

University of Massachusetts Amherst
Department of Environmental Conservation

Motivation

5) Power
"Good People, Doing Good Work...That / Orchestrated"

- Negotiators
- Representatives
- Advocates
- Influence/Authority
- Giving Direction
- Fearless (Aggressive)



98

98

University of Massachusetts Amherst
Department of Environmental Conservation

Assignments

5) Power

- Enforcement of Ordinance
- Directing/Leading
 - Programs,
 - Volunteer Initiatives
 - Committees
- High-level Negotiations
 - Gov't officials
 - Other Community Leaders



99

99

University of Massachusetts Amherst
Department of Environmental Conservation

Motivation

6) Preservation
Environmental Stewards

- Conservationists
- Concerned with Development/Change
- Conscious of "the Natural"
 - Member of CSA
 - Time Outdoors
- Environment Needs "a Voice"



100


100

University of Massachusetts Amherst
Department of Environmental Conservation

Assignments

6) Preservation

- Teachers, Educators
- Develop Educational Content/Programs
- Help Focus/Remind Others on "Spirit" of an Ordinance or Clean up Day
- Fundraising



101

101


University of Massachusetts Amherst
Department of Environmental Conservation

Volunteering BMP's

- 1) Volunteer Experience is Important
- 2) Professional Background (Positions Held) is Important
- 3) Educational Background (Formal, Informal Training) is Important
- 4) Talents/Abilities are Important

...but "Your Attitude Determines Your Altitude"

- John Maxell

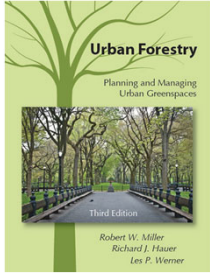


102

102

Good Volunteers Are...

A committed and kind audience...applaud success and help pick up the pieces when things go wrong.
 – Miller, Hauer, Werner (2015; p.424)




University of Massachusetts Amherst
Department of Environmental Conservation

103

103

Volunteers Require

- Investment (Training)
- Support
- Encouragement
- Gratitude
- Direction
- Care (Food, First Aid)
- Accountability




University of Massachusetts Amherst
Department of Environmental Conservation

104

104

Volunteer Support

- Realize Effort First, Before Success
- Be Grateful
- Be Encouraging
- Show Appreciation
- Be Firm (when Needed)
- Show You Care
- Facetime



University of Massachusetts Amherst
Department of Environmental Conservation

105

105

Volunteer Support

Volunteers Tend to...

- Have Little Experience
- Evaluating Initiatives
- Have Little Experience with Conflict Resolution
- Need Some Direction




University of Massachusetts Amherst
Department of Environmental Conservation

106

106

Volunteer Support

- Give Volunteers Opportunity for Input
- Specific Assignments/Goals
- Match Volunteers w/Tasks
- Offer Feedback
- Opportunity to Take Feedback
- Challenge Volunteers
- Train for New Skills
- Be a Role-Model



University of Massachusetts Amherst
Department of Environmental Conservation

107

107

For More Information

Dr. Dave Bloniarz – USDA FS
www.unri.org

Lauren Bullard
 Bureau of Labor Statistics

Arbor Day Foundation
www.16personalities.com



Please email thorper@eco.umass.edu for further references.



108

108