

Welcome to the 2017 TREE Fund Webinar Series

**Municipal Forestry Baseline,
Trends, and Dashboard**
featuring *Dr. Richard Hauer, U. of Wisconsin – Stevens Point*









J. Eric Smith
TREE Fund President and CEO

Free TREE Fund webinar



**"Municipal Forestry Baseline,
Trends, and Dashboard"**

featuring *Dr. Richard Hauer, UWSP*

September 7 at 12:00 p.m. (Central)

Register or Join Webinar [HERE](#)

Pre-registration is recommended. 1 CEU from ISA or SAF.



College of Natural Resources
University of Wisconsin-Stevens Point




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A Division of The Davey Tree Expert Company







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50 YEARS



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Alliance for Community Trees



ISA
International Society of Arboriculture



Bloomington
Urban Forestry
Research Group at
CIPEC



OSU
Oregon State
UNIVERSITY
College of Forestry



Department of
FOREST RESOURCES
UNIVERSITY OF MINNESOTA






Arbor Day Foundation®

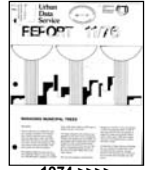


UF IFAS
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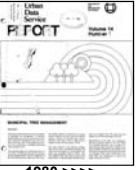
Universities, Non-profits, Government, Industry

Dr. Kielbaso, Ken Ottman, and Colleagues



1974 >>>>



1980 >>>>



1986 >>>>



1993 >>>>

Started Collecting Data Since 1974

Municipal Tree Care & Management in the U.S.



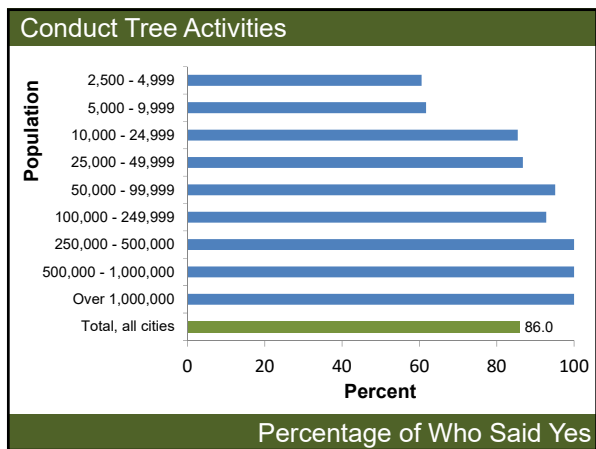
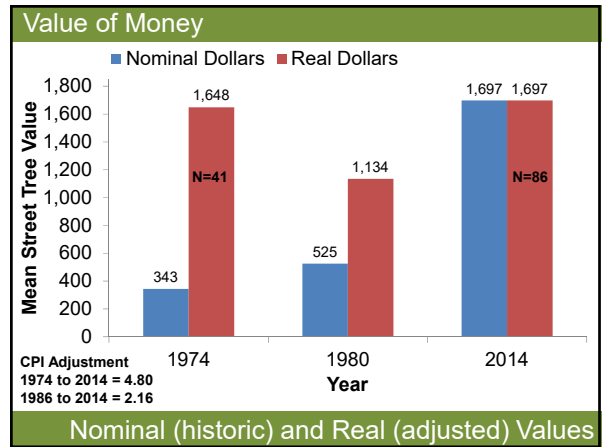
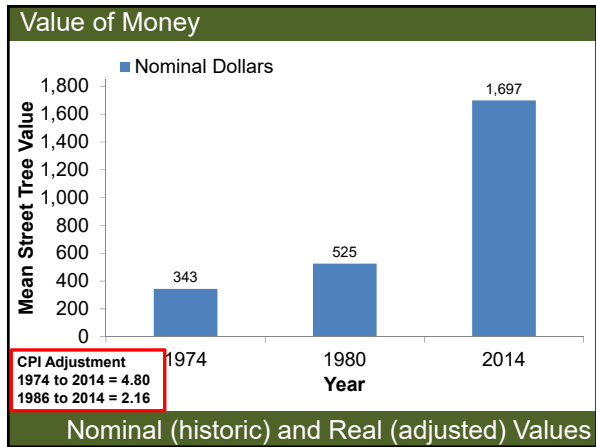
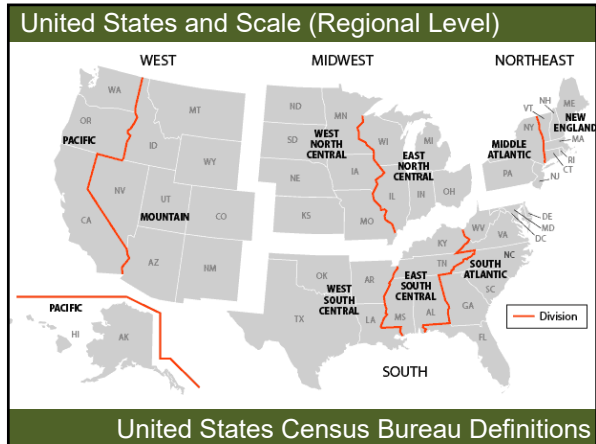


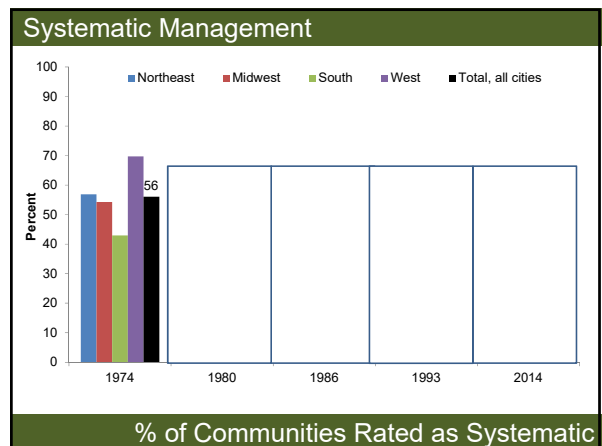
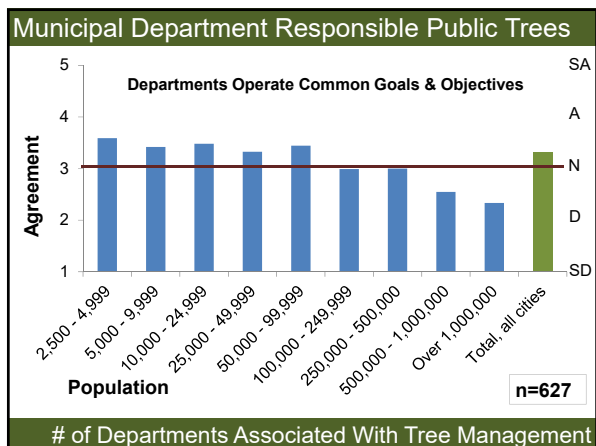
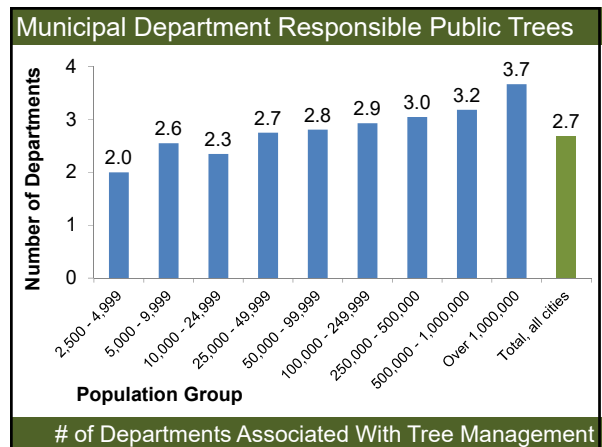
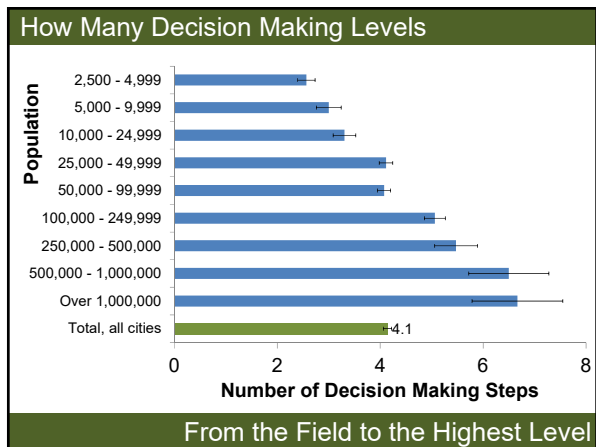
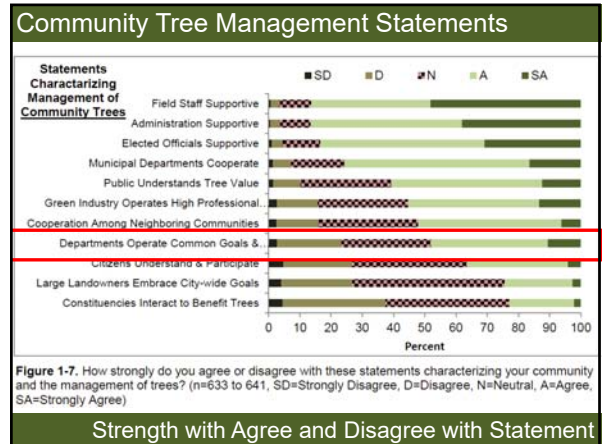
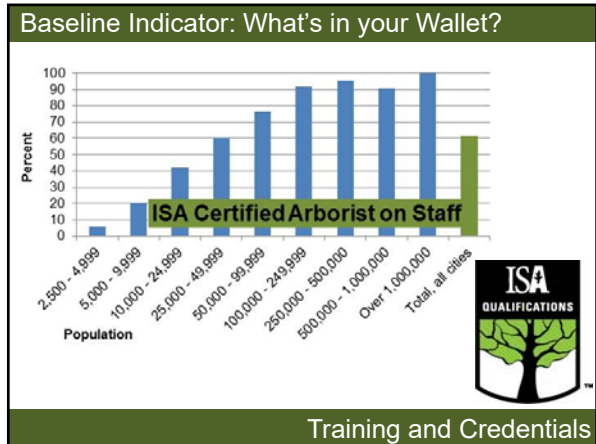


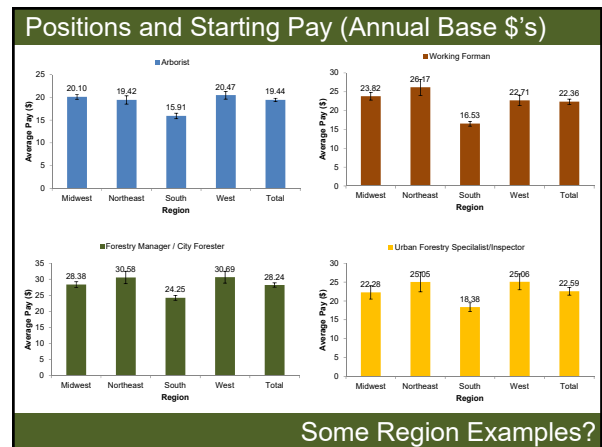
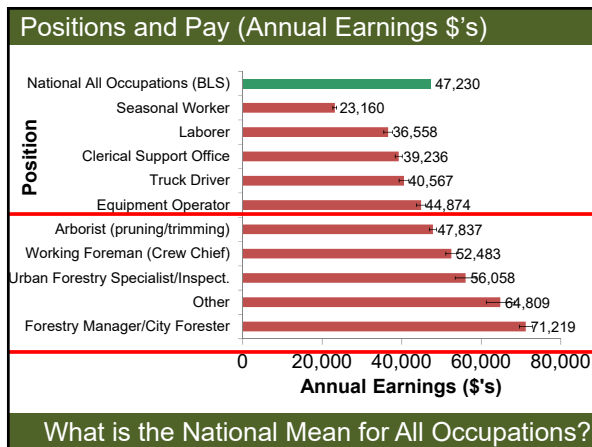
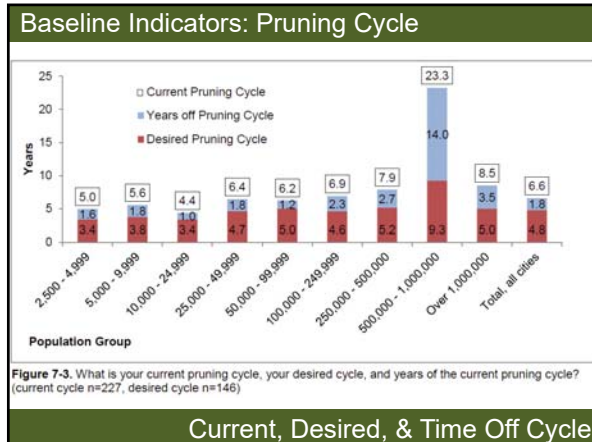
<http://bit.ly/MuniTree>

109 Questions

A 2014 U&CF Forestry Census of Tree Activities







Just How Many Municipal Forestry Jobs

32,588 (± 5,864) Full-Time Equivalents
49,362 (± 9,675) Total Employees

Classification	Full-Time Equivalents					Total Employees				
	Population (n)	Sampled (n)	Mean	SEM	Total CI 95%	Sampled (n)	Mean	SEM	Total CI 95%	
Total, all cities	7,478	508	4.36*	2.10	32,588 5,864	614	6.60*	0.66	49,362 9,675	
Population Group										
2,500 - 4,999	2,344	47	3.31	0.60	7,756 2,758	65	4.90	0.59	11,486 2,712	
5,000 - 9,999	1,883	35	3.10	0.61	5,836 2,253	46	5.10	0.56	9,603 2,048	
10,000 - 24,999	1,750	41	4.70	0.76	8,233 2,609	49	7.00	0.81	12,250 2,780	
25,000 - 49,999	786	121	5.25	0.50	4,127 771	156	8.30	0.49	6,524 756	
50,000 - 99,999	442	146	6.27	0.53	2,770 460	173	9.10	0.63	4,022 547	
100,000 - 249,999	200	87	11.78	1.27	2,356 501	91	14.50	1.45	2,900 572	
250,000 - 500,000	41	20	18.28	4.23	749 351	21	21.40	4.19	877 347	
500,000 - 1,000,000	23	9	18.22	2.10	419 100	10	19.00	2.99	437 143	
Over 1,000,000	9	2	38.00	17.0	342 353	3	140.30	97.24	1,263 2,018	

First time this has been estimated?

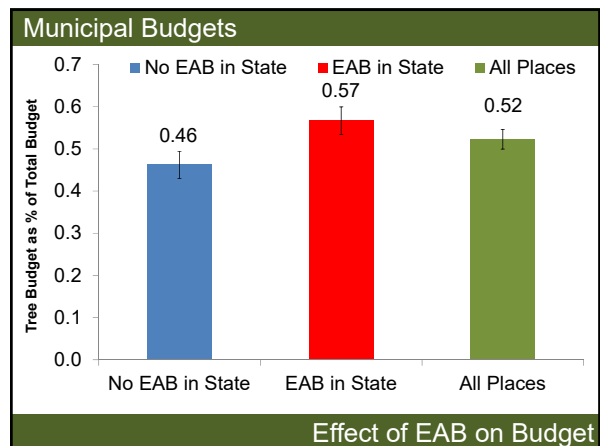
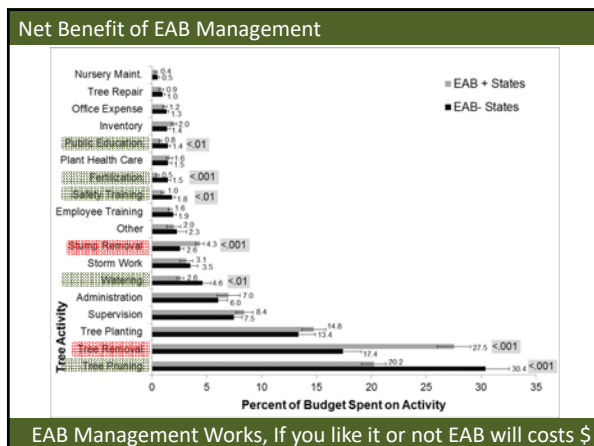
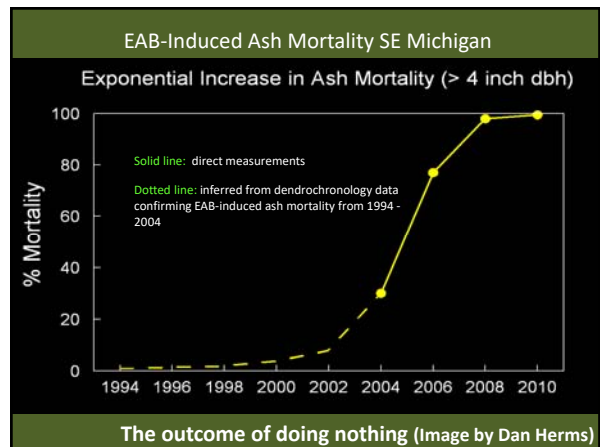
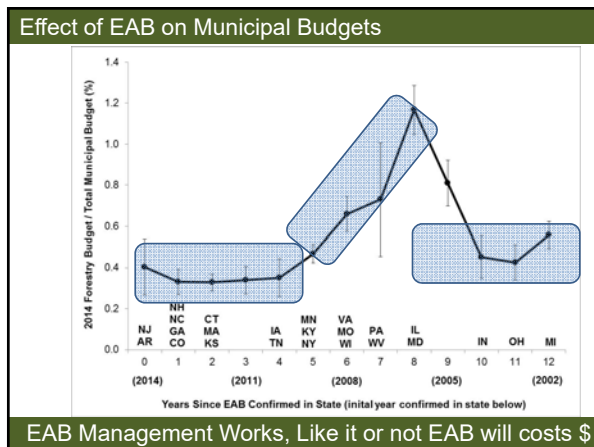
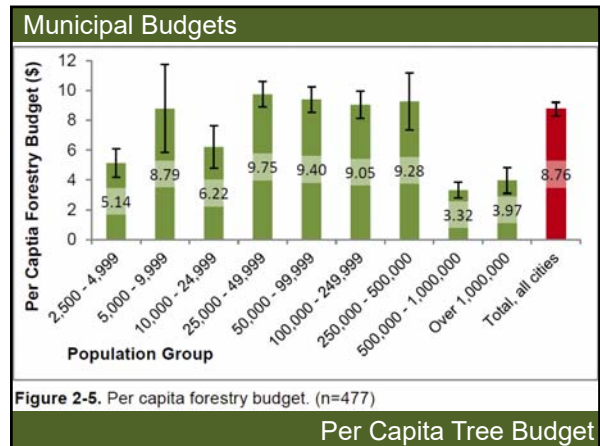
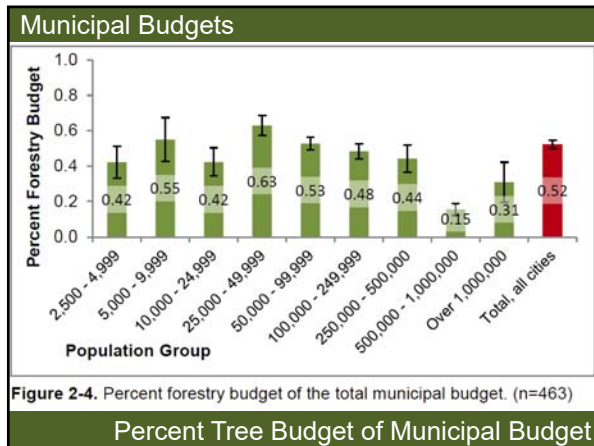
Municipal Budgets

How much **money** is needed?

What's the **best comparison** method?

What's **the context**?

How Much is Needed?



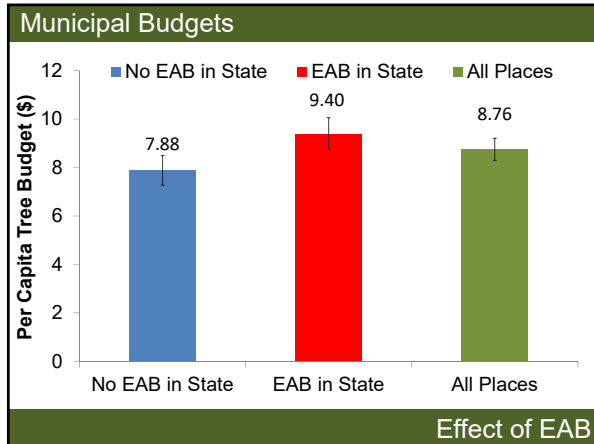
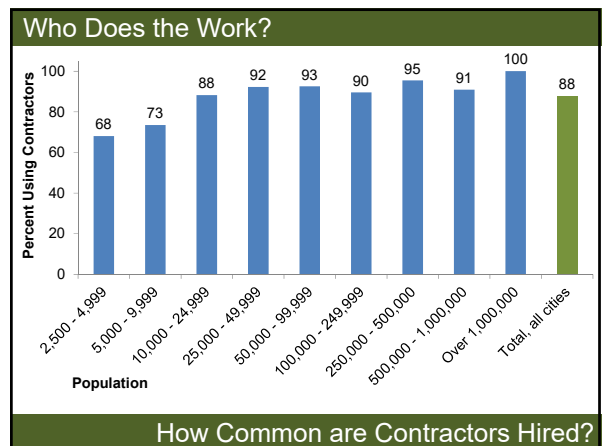
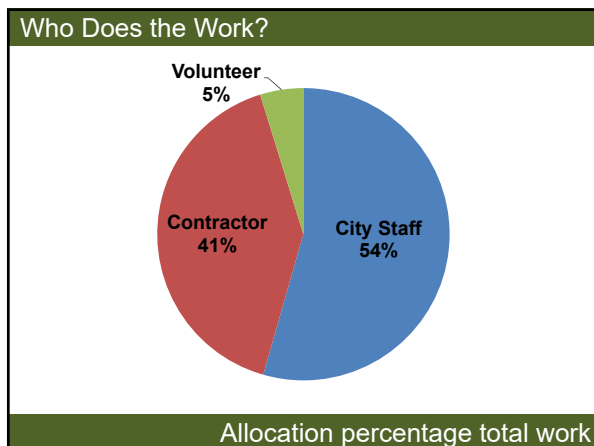
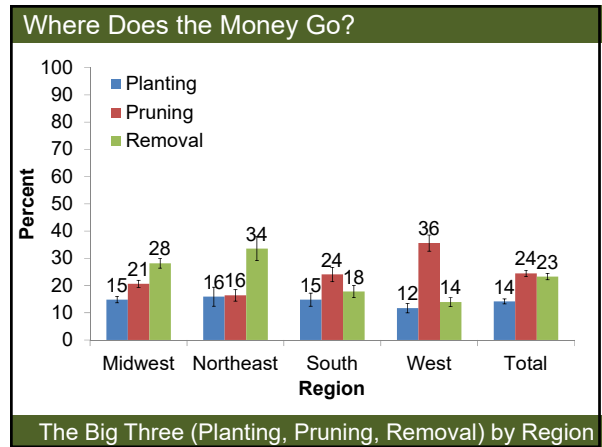
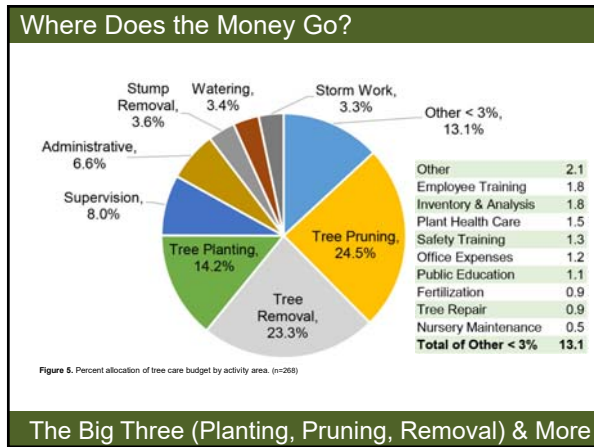
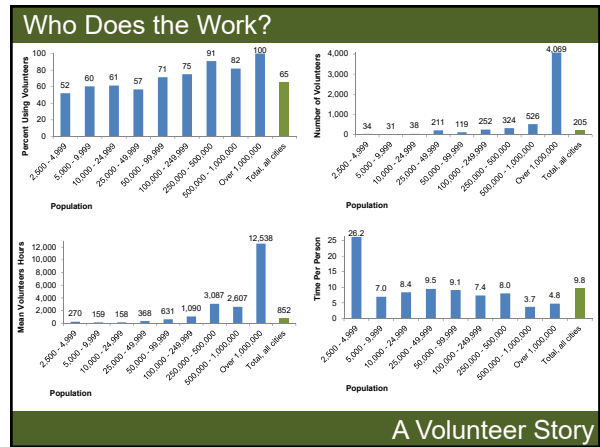
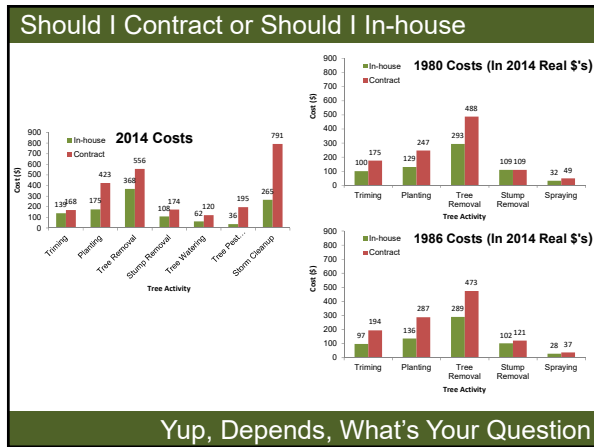
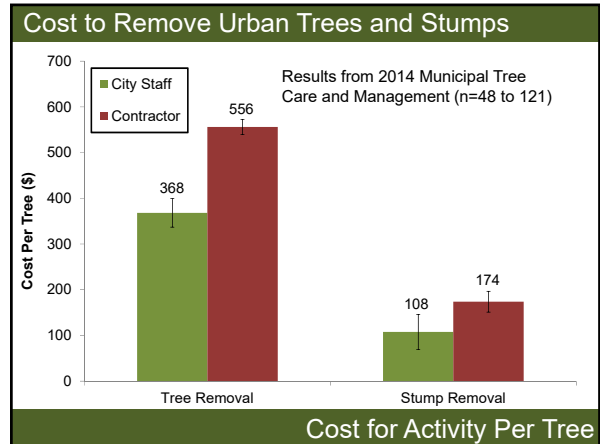
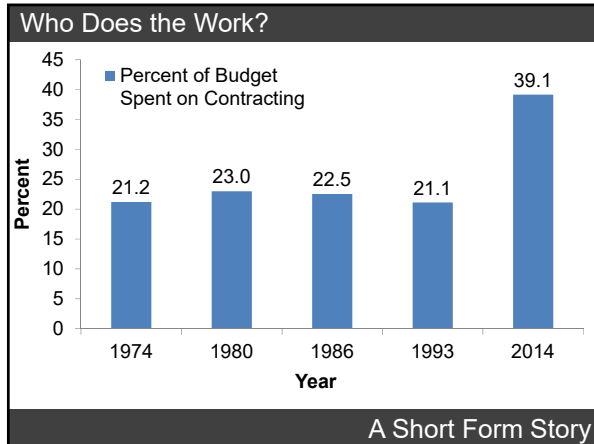


Table 7. Estimated willingness-to-pay (WTP) as derived from the MLE estimation, including conditional WTP for each categorical variable (community size/location and demographic categories) and overall WTP across all respondents.

Variable	Estimated WTP (\$)	Estimate	Standard error
Community			
<5000	7.90	-38.9	36.7
5001 to 10,000	8.21	-38.6	36.7
10,001 to 20,000	12.17	-34.7	36.6
20,001 to 50,000	4.07	-42.8	36.7
50,001 to 150,000	11.53	-35.1	36.5
150,001 to 250,000	14.42	-32.4	36.5
St. Louis suburbs	14.04	-31.9	36.5
Kansas City suburbs	11.94	-34.9	36.6
St. Louis	16.83	-29.9	36.6
Kansas City	15.99	-30.8	36.6
Gender			
Male	10.14	-3.2	2.2
Female	13.37	—	—
Age			
Under 20	22.23	-31.0	18.8
20 to 35	14.60	23.4	3.3
36 to 50	12.40	21.2	3.7
51 to 65	11.14	19.9	2.7
Over 65	9.36	18.1	2.9
Education			
Grade school	-5.78	-1.9	36.0
Some high school	5.14	9.0	36.3
High school	4.29	8.2	36.2
Some college	12.74	16.6	36.2
College	13.47	17.4	36.3
Graduate/professional	19.28	23.2	36.4
Income			
under \$20,000	1.33	2.6	4.4
\$20,000 to \$40,000	11.01	13.2	4.1
\$40,000 to \$60,000	14.20	15.5	4.7
\$60,000 to \$80,000	18.16	19.4	5.3
\$80,000 to \$100,000	18.29	19.6	5.9
income - over \$100,000	20.89	22.2	5.9
Overall WTP	11.56	80.9	13.2





Who Does the Work?

- 345,466 (195,754 SEM) people volunteered
- 1,484,204 (665,460) hours with tree activities
- 714 (320 SEM) FTE's (2080 hour base year)
- \$35 million volunteer impact (\$23.56 per hour)

A Volunteer Story

Likely Reason Volunteers Included

Variable	Estimate	P value	Odds Ratio
Tree Board	0.6492	0.045	1.91
Outreach	0.7689	0.008	2.16
Strategic Plan	0.5761	0.046	1.78
Total Employment	0.044	0.018	1.04
Adequate Budget	-0.6736	0.016	0.51
Percapita Spending	-1.2482	<0.0001	0.29

A Volunteer Story

Likely Reason Volunteers Included

Table 3. The comparison of community sustainability index scores in locations without volunteer and those with volunteers.

	Without Volunteers	With Volunteers		
Index Score	Mean (SEM)	Mean (SEM)	F-statistic	P-value
Resource Management	20.99 (0.44)	21.91 (0.28)	3.364	0.067
Community Framework	14.60 (0.37)	16.35 (0.23)	17.652	0.000
Vegetation Resource	7.13 (0.16)	7.81 (0.13)	6.376	0.012
Composite Score	42.72 (0.50)	46.07 (0.43)	13.952	0.000

A Volunteer Story

Arbicultural Journal
The International Journal of Urban Forestry

ISSN: 0307-1375 (Print) 2148-1074 (Online) journal homepage: <http://www.tandfonline.com/doi/tarh20>

Municipal tree risk assessment in the United States: Findings from a comprehensive survey of urban forest management

Andrew K. Koeser, Richard J. Hauer, Jason W. Miesbauer & Ward Peterson

Table 3. Final logistic regression model variables.

Variable	Coefficient	Standard error	p-value	Odds ratio	95% CI	
					lower	upper
Intercept	-.981	.204	<.001	-	-	-
ISA certified arborist - yes	.567	.219	.010	1.762	1.146	2.709
Strategic plan - yes	.624	.202	.002	1.866	1.255	2.772
Updated inventory - yes	.820	.215	<.001	2.270	1.492	3.463
Inventory risk class - yes	.642	.276	.004	1.900	1.222	2.921
Past claim - yes	.693	.248	<.001	1.999	1.340	2.992

Notes: Model was simplified to only include factors associated with communities that regularly conduct risk management as part of their urban forestry operations. Data only include long-form respondents (n = 513).

Falling Tree Hits Boy Outside School Amid High Winds in Ohio

Witnesses say an 11-year-old boy walking outside an elementary school was hit by a falling tree that apparently was downed by high winds that swept across northern Ohio.

March 9, 2017, at 6:55 a.m.

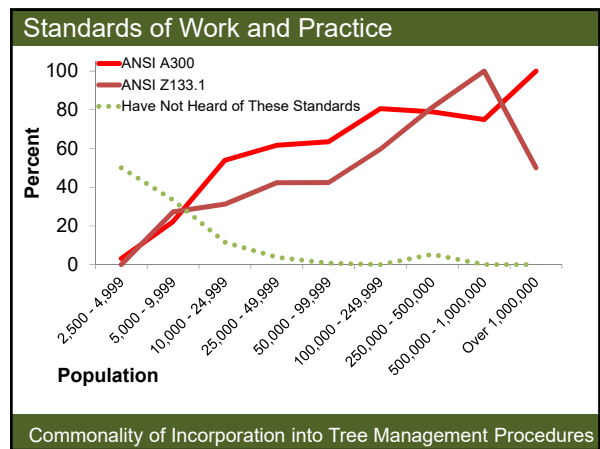
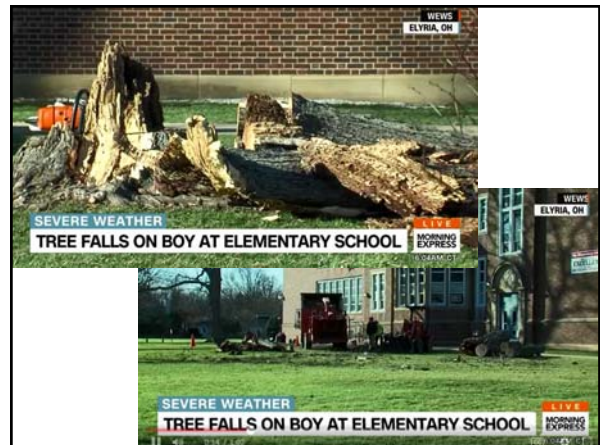
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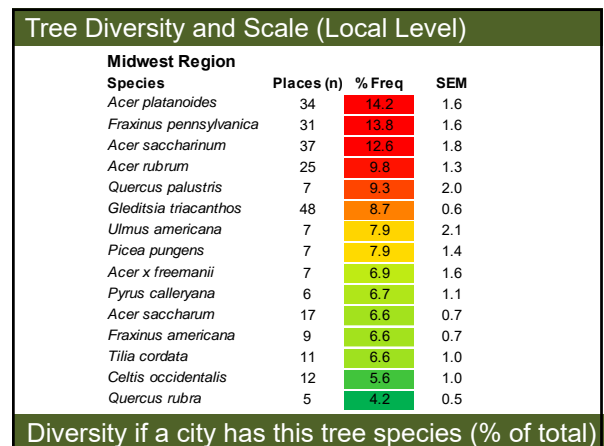
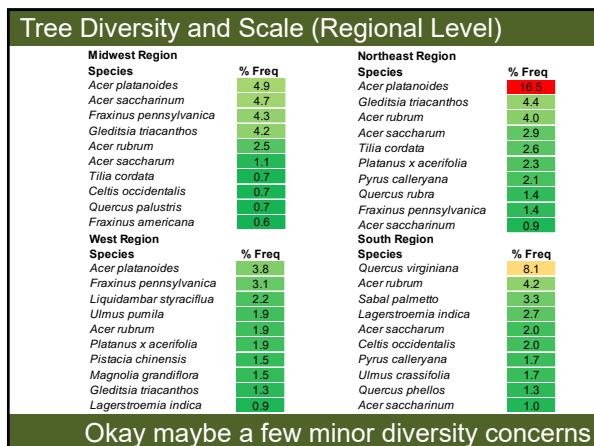
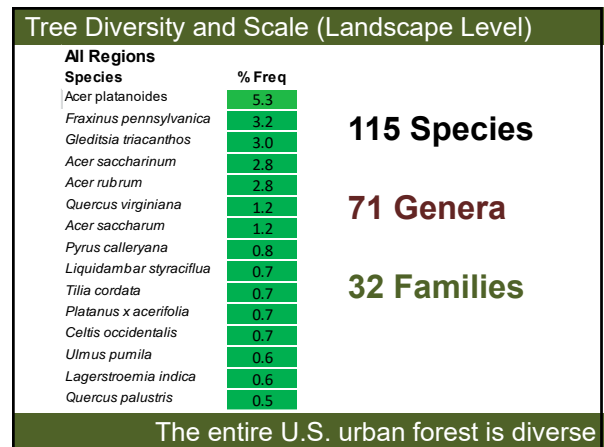
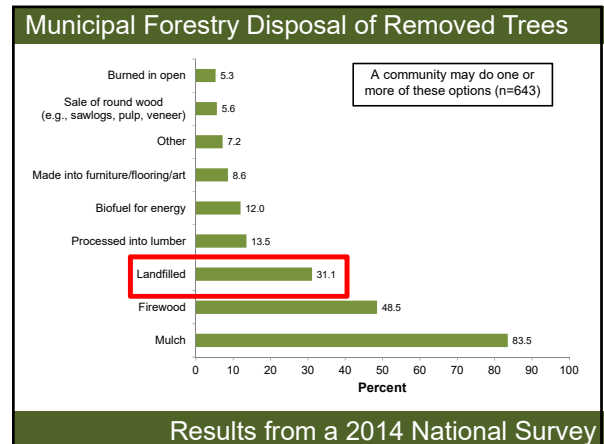
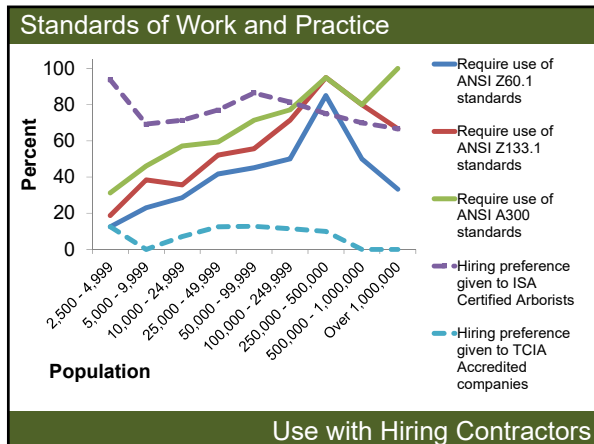
ELYRIA, Ohio (AP) — Witnesses say an 11-year-old boy walking outside an elementary school was hit by a falling tree that apparently was downed by high winds that swept across northern Ohio.

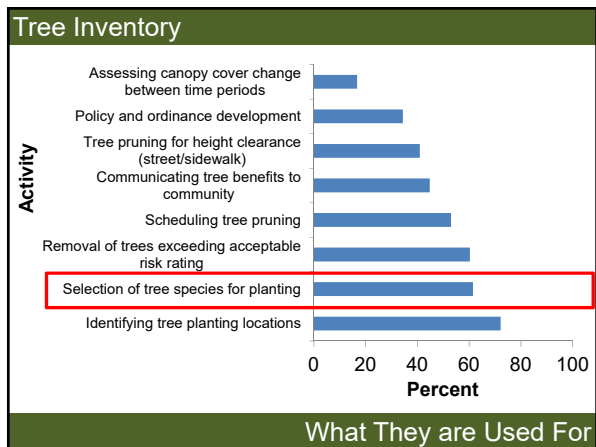
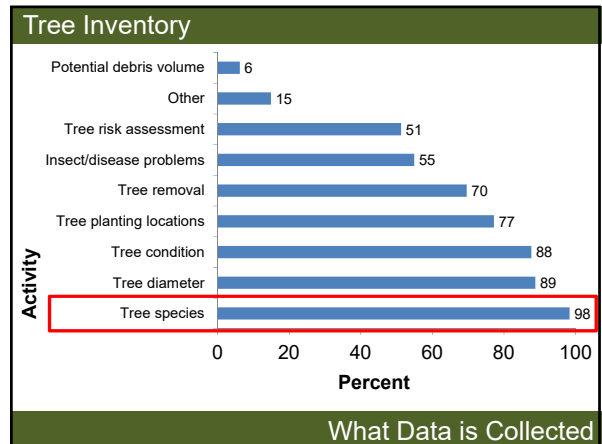
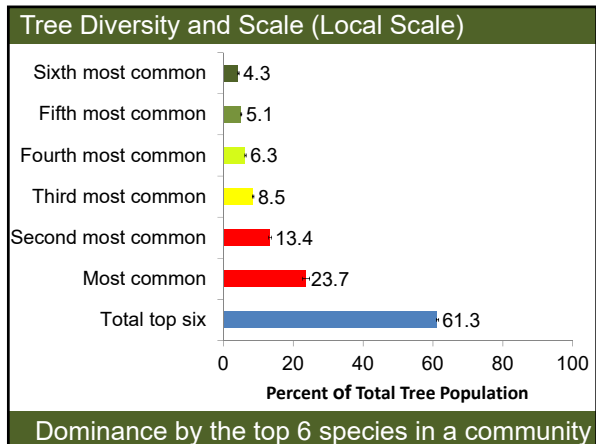
His family tells The Chronicle-Telegram (<http://bit.ly/2mmonJ3>) in Elyria (eh-LEER'-ee-uh) that he was treated for a concussion after the tree fell Wednesday outside Ely Elementary School.

Students who witnessed the scene reported that there were wind gusts as the tree snapped, and screaming students ran away in different directions. The boy got caught under the tree and was later taken to a hospital.

A district spokeswoman says the tree showed no obvious sign of rot or decay and appeared to have been snapped at the trunk by the high winds.







Urban Forestry Program Models

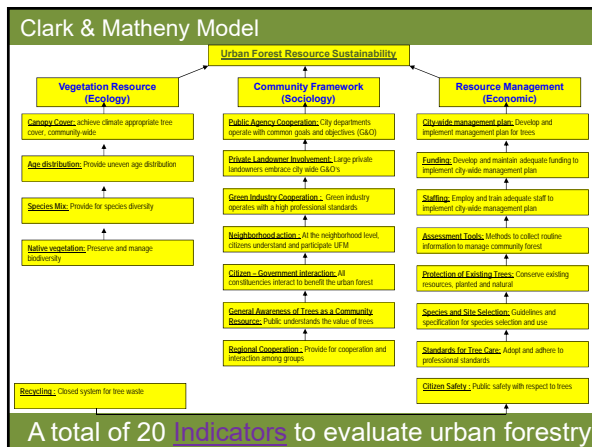
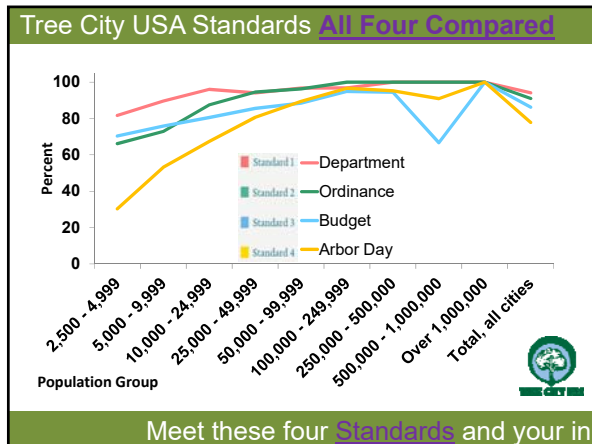
- Tree City USA
- USDA-FS CARS
- SMA Accredited UF Programs
- Clark & Matheny 1997 Model
- Kenney et al. 2011 Updated Model

Tree City USA Standards

- Standard 1: Tree Board or Department
- Standard 2: Tree Care Ordinance
- Standard 3: Budget ≥ \$2 Per Capita Annually
- Standard 4: Arbor Day Observance & Proclamation

Meet these four Standards and your in

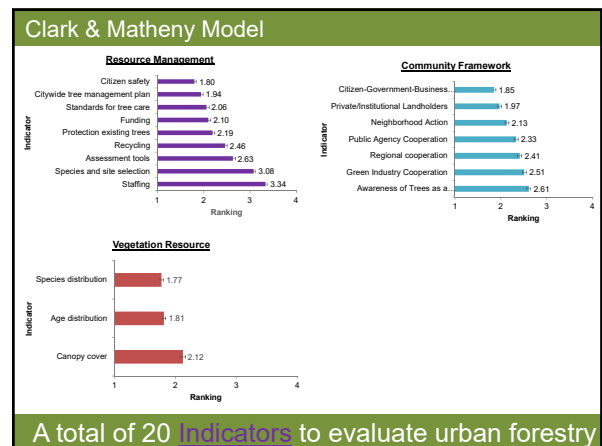
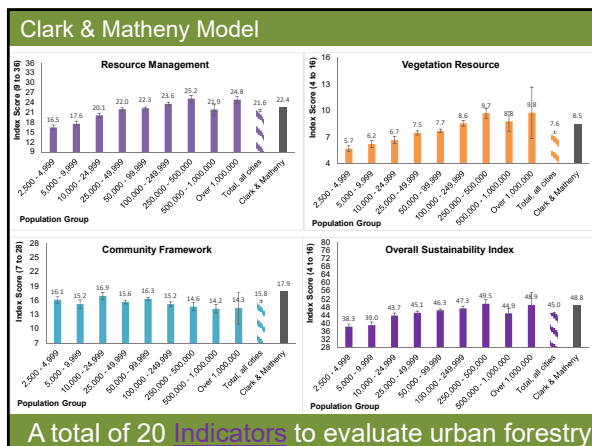


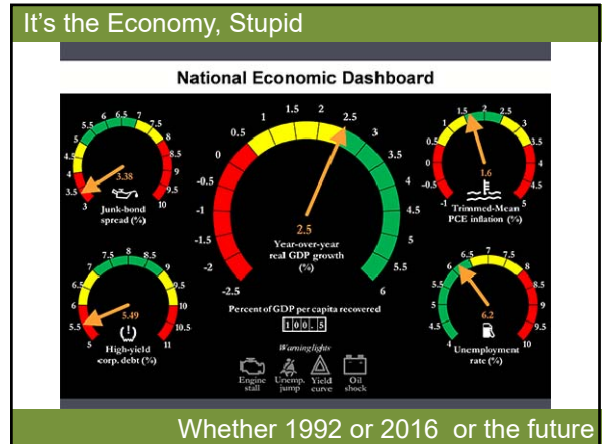


Clark & Matheny Model

Criteria	Performance indicators				Key Objective
	Low	Moderate	Good	Optimal	
City staffing	No staff	No training	Certified arborists on staff	Professional tree care staff	Employ and train adequate staff to implement city-wide management plan.
Assessment tools	No on-going program of assessment	Partial inventory	Complete inventory	Information on urban forests included in city-wide GIS	Develop methods to collect information about the urban forest on a routine basis
Points >>>	1	2	3	4	

A total of 20 Indicators to evaluate urban forestry





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Special thanks to webinar host Alabama Cooperative Extension System (ACES)