State of Urban Forestry in the South
Final Report

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Introduction

A survey of municipal urban forestry professionals was conducted in the 13 states in the United States Forest Service (USFS) Southern region by Dr. W. Todd Watson, Assistant Professor of Urban and Community Forestry at Texas A&M University. Funds were provided by the Southern Region of the USFS to help it meet part of its mission "to promote conservation and management of forests and related natural resources in cities, with a focus on obtaining the highest social, environmental, psychological, and economic benefit." The goal of this research was to compare findings with US Census Bureau data and previous surveys by Michigan State University (Giedraitis, J. and J. Kielbaso. 1980. Municipal Tree Management, Urban Data Service Reports, Vol. 14 No. 1 (Washington, DC: International City Management Association, January 1982)) and The Davey Tree Expert Company (Tschantz, B. and P. Sacamano. 1994. Municipal Tree Management in the United States: A 1994 Report, Davey Resource Group and Community Research Associates, Inc., 1994) to identify trends and emerging issues in the South.

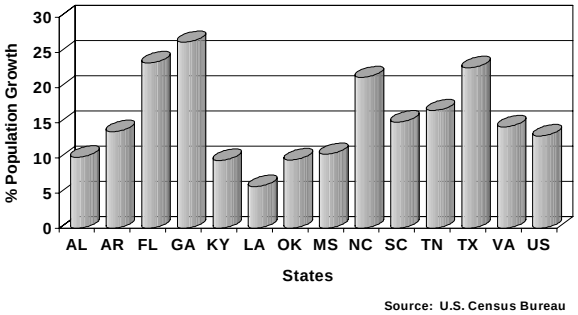

Figure 1. Population growth in the South (1990-2000)

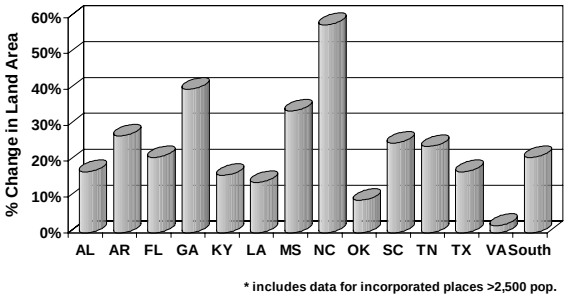

Figure 2. Percentage change in urban land area in the South (1990-2000)

The South is becoming increasingly urbanized. This urbanization has likely had an impact on the management of natural resources in these cities and communities. In some states, like Georgia, population growth exceeded 25% from 1990-2000 (Figure 1). The impact on urban land area was even greater. Some states, like North Carolina, experienced a greater than 50% increase of urban land area (Figure 2). The percentage increase in urbanized land area is greater in the South than any other region of the country. Because urban forestry is an emerging profession, it is a major goal of the USFS Southern Region to determine how this increase in urbanization has impacted the profession of municipal urban forestry.

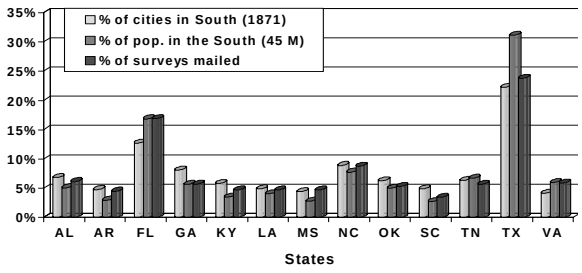

Figure 3. Sample distribution for questionnaire #1 by state

Materials and Methods

Municipalities in the South with populations greater than 2,500 were surveyed (Figures 2 and 3). Out of the 1,871 municipalities, 492 were surveyed. This consisted of surveys of all municipalities with populations greater that 50,000 and a 20% random sample of cities with populations between 2,500 and 50,000. Two different survey instruments were created. Surveys were distributed through a website, by email, and through the mail. The first questionnaire was titled *Investigation of the Urban Forestry Workforce in the South*, and the second was titled *The Composition and Management of Urban Forests in the South.* The first questionnaire contained 75 questions and covered urban forestry organization, urban forest manager and personnel, education and training, and equipment. Survey 2 consisted of 71 questions that asked questions related to tree inventories, urban forest health and safety, management plans, tree inventory software, and urban forest benefits and values.

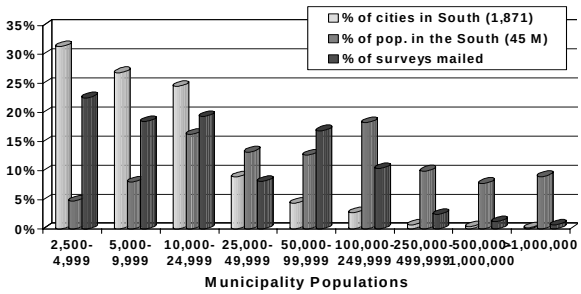

Figure 4. Sample distribution for questionnaire #1 by city size

Table 1. Survey response rates for questionnaire #1 by population

City Size	2003 Response (% of 492)	1994[1] Response (% of 1,228)*	1980[2] Response (% of 2,861)*
2,500-5,000	5	10	45
5,000-9,999	10	15	39
10,000-24,999	22	14	50
25,000-49,999	55	18	58
50,000-99,999	22	17	66
100,000-249,999	49	14	77
250,000-499,999	42	4	79
500,000-1,000,000	67	3	72
>1,000,000	33	1	83
Overall	**22**	**34**	**54**

[1] Tschantz, B. and P. Sacamano. 1994. Municipal Tree Management in the United States: A 1994 Report, Davey Resource Group and Community Research Associates, Inc., 1994

[2] Giedraitis, J. and J. Kielbaso. 1980. Municipal Tree Management, Urban Data Service Reports, Vol. 14 No. 1 (Washington, DC: International City Management Association, January 1982)

Numbers of respondents for the first questionnaire are outlined in Table 1. The response rates are compared to prior surveys conducted by Michigan State University and The Davey Tree Expert Company. Although several areas in the South have Metropolitan Statistical Areas (MSA) that exceed a million in population, only three cities (Dallas, San Antonio, and Houston) have populations that exceed one million in population. Work on these data is ongoing, and phone interviews are currently being conducted to identify reasons why surveys were not returned, especially for cities with populations below 25,000 or greater than one million.

Selected Results

Information collected from the questionnaires demonstrates that many aspects of municipal urban forestry have change since 1980. For one, more federal funding is available. Federal funding first became available for tree inventories after 1990. Also, the business of urban forestry is much more computerized. This has had an impact on tree inventories (Figures 5, 6, and 7). In 1980, only 10% of municipal urban foresters surveyed nationwide had any portion of their tree inventories on computer. This has been a favorable development because it has lead to more communities that have tree management plans, thereby suggesting that urban forests are

better managed (Figure 8). Municipal urban foresters have found management plans to be very useful in managing the urban forest and educating stakeholders about the issues and benefits associated with the urban forest (Figure 9 and 10).

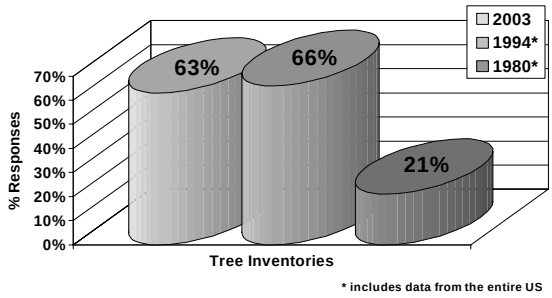

Figure 5. Percentage of municipalities with tree inventories

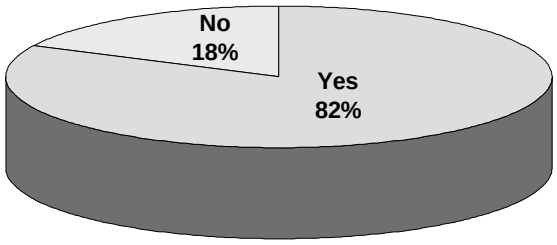

Figure 6. Percentage of respondents with computerized tree inventories

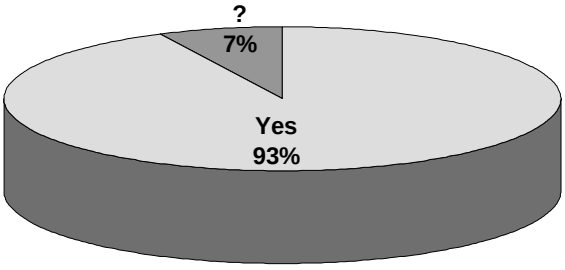

Figure 7. Percentage of respondents that replied that tree Inventories were worth the cost

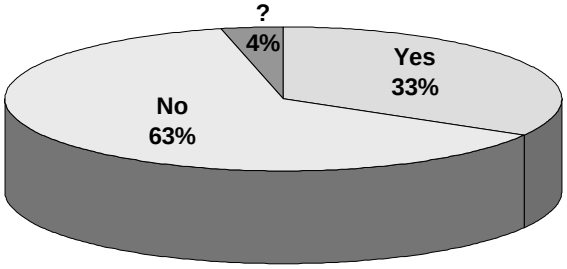

Figure 8. Percentage of respondents with urban forest management plans

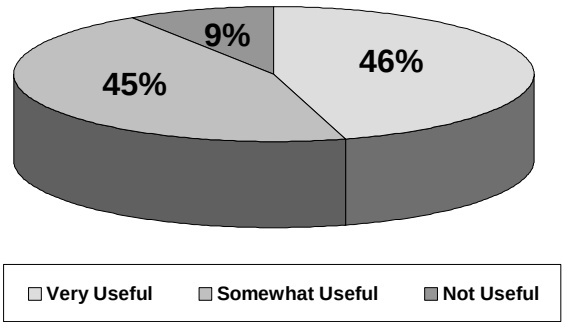

Figure 9. Percentage of responses concerning the usefulness of management plans as a management tool

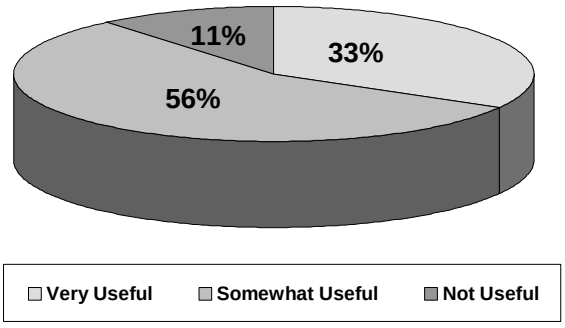

Figure 10. Percentage of responses concerning the usefulness of management plans for educating administrators

Municipal urban forestry departments have grown and become more specialized over time. Although most urban forestry activities continue to be located within a larger department such as Parks and Recreation, there is a small but growing trend to create urban forestry departments that are separate entities within municipalities (Figure 11). However, there is still much room for improvement as 49% of tree care activities are divided among separate departments (Figure 12).

In communities with urban forestry departments, 78% had been created within the last 10 years (Figure 13). In 1980, 25% of tree managers had forester or arborist in their title; whereas, 46% of tree managers had forester or arborist in their titles in 2003. In addition, the number of non-tree related tasks performed by urban foresters had dramatically decreased since 1980 (Figure 14). Overall, salaries have increased when compared to salaries adjusted for inflation from prior studies (Table 2). However, they still tend to lag behind the private sector salaries as reported by the Tree Care Industry Association.

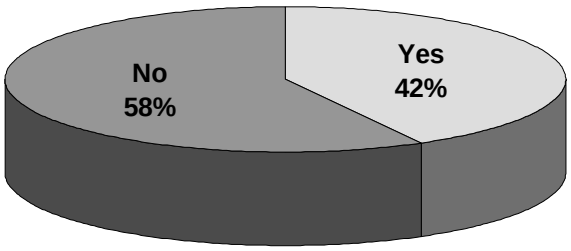

Figure 11. Percentage of respondents stating that urban forestry was a separate entity within their municipality

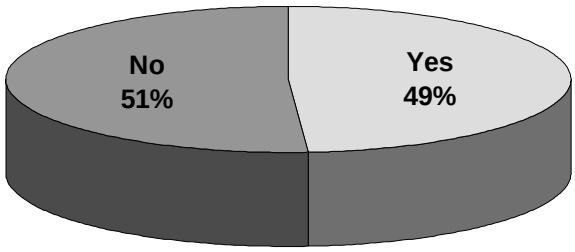

Figure 12. Urban forester responses when asked if other departments are involved in maintaining trees

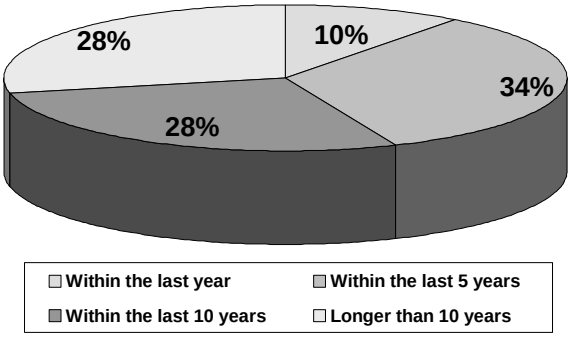

Figure 13. Percentage of respondents reporting the creation of separate urban forestry departments

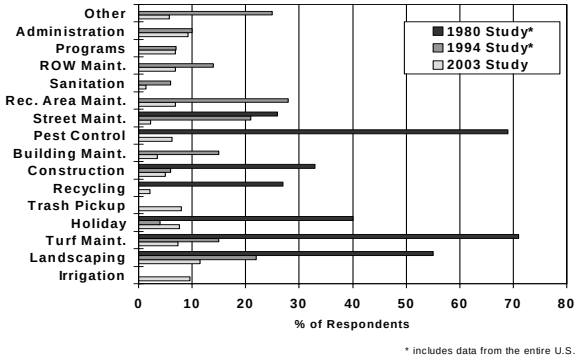

Figure 14. Additional tasks managed by municipal urban foresters

Table 2. Salaries of urban forestry personnel as compared to prior studies and the private sector

	2003 Study (Low)	*2003 Study (High)*	*1994 Study (Avg.)**	*1980 Study* (Avg.)*	*2002 TCIA (Low)*	*2002 TCIA (High)*
Supervisor	$29,740	$41,025				
Urban Forester	$33,637	$48,603	$40,748			
Certified Arborist	$22,675	$38,333				
Working Tree Care Foreman	$22,881	$30,919		$26,428	$29,120	$37,440
Tree Trimmer / Climber	$22,015	$30,601	$20,970	$19,786	$24,960	$33,280
Tree Groundperson / Laborer	$19,534	$29,444	$13,200	$18,486	$17,680	$24,960
Equipment Operator	$35,220	$41,500	$16,135	$22,155		
Truck Driver	$21,971	$33,290	$18,852	$20,947		
Clerical	$12,013	$18,497	$10,995			

Urbanization has had an impact on the composition and management of the urban forests in the South. Survey respondents indicated that urban sprawl has had a negative impact on their urban forests (Figure 15). Over 60% of respondents who were aware of tree hazards indicated that construction damage has resulted in tree hazards over the last five years. Even with the loss of trees due to construction, the expanding boundaries of cities have increased the overall numbers of trees that urban foresters manage (Figure 16). Inner city urban forests are not without problems. A significant portion of urban forests in the South are overmature (Figure 17). Sixty percent of respondents indicated tree problems related to urban decline (Figure 18). As revealed in prior studies, the vast majority (75%) of public trees managed by municipalities in the South are street trees.

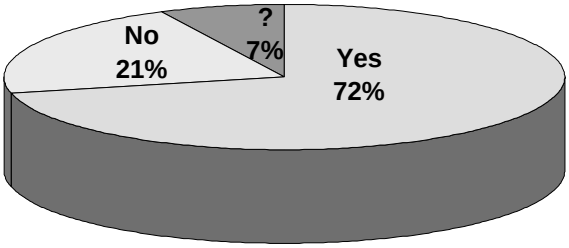

Figure 15. Percentage of respondents indicating that urban sprawl is having a negative impact on their urban forest

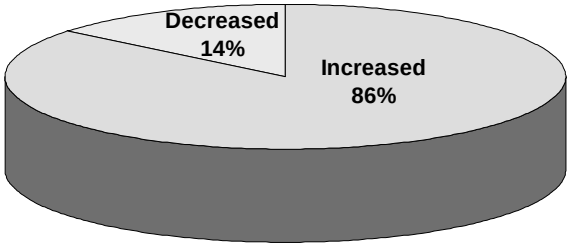

Figure 16. Percentage of respondents indicating a change in the numbers of trees managed over the past 5 years

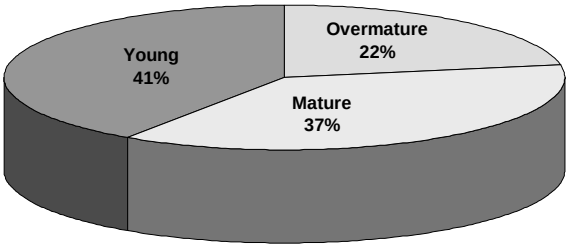

Figure 17. Average age of urban forests in the South

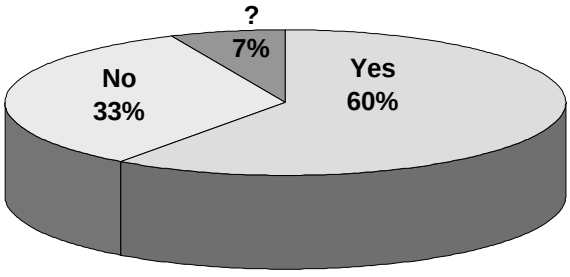

Figure 18. Percentage of respondents indicating that trees are negatively affected by urban decline

Impact of Research

This data has already had an impact on decisionmakers. Ms. Joanne O'Keeffe, a member of the Surveys and Investigations Staff of the U.S. House Committee on Appropriations requested data from the survey to assist in developing the USFS urban forestry budget. A CD of preliminary data was sent to Ms. O'Keefe. Mr. Mark Buscaino and Mr. Ed Macie with the USFS have also requested and received copies of preliminary data.

The following presentations of the survey data have been given:

2004. Watson, W. T. State of Municipal Urban Forestry in the South. Texas Tree Conference and Trade Show. Round Rock, TX.

2003. Watson, W. T. Evolution of Municipal Urban Forestry in the South. National Urban Forestry Conference. San Antonio, TX.

2003. Watson, W. T. Composition and Management of Urban Forests in the South. 79th Annual International Society of Arboriculture's Conference and Trade Show. Montreal, Canada.

2003. Watson, W. T. Urban Forestry Workforce in the South. National Urban and Community Forestry Education and Outreach for Minority and Underserved Communities Conference. Baton Rouge, LA.

2003. Watson, W. T. State of Urban Forestry in the South. Southern Group of State Foresters Annual Meeting. Little Rock, AR. (invited presentation).

2003. Watson, W. T. State of Urban Forestry in the South. International Society of Arboriculture Southern Chapter's Annual Conference. Asheville, NC. (invited presentation).

The following publications have been written:

Watson, W. T. 2003. Evolution of municipal urban forestry in the South, in: *Proceedings of the National Urban Forestry Conference*, (in press).

Watson, W.T., 2003. Minorities and women in the municipal urban forestry workforce in the South, in: *Proceedings of the National Urban and Community Forestry Education and Outreach for Minority and Underserved Communities Conference* (in press).

Watson, W. T., 2003. Evolution of municipal urban forestry in the South, in: *Abstracts of Presentations*, The National Urban Forestry Conference, San Antonio, TX.

Watson, W. T. 2003. Composition and management of urban forests in the South, in: *Arboriculture Research and Education Academy Abstracts of Oral and Poster Presentations*, 79th Annual International Society of Arboriculture's Conference and Trade Show, Montreal, Canada, p. 8.

Watson, W.T. 2002. "The State of Urban Forestry in the South" in: *Texas Urban Forestry Council 2001-2002 Annual Report*.

Watson, W.T. 2002. The State of Urban Forestry in the South, in: *City Trees – The Journal of the Municipal Society of Arboriculture*, July/August 2002.

Data printed in this report provide an overview of results from the State of Urban Forestry in the South study. Data is still being analyzed and will be published in refreed journal articles.