

12-1-2016

Lessons Learned from Conducting Volunteer-Based Urban Forest Inventories on the Gulf Coast

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Recommended Citation

Gordon, J. S., Brodbeck, A. (., & Templeton, B. (2016). Lessons Learned from Conducting Volunteer-Based Urban Forest Inventories on the Gulf Coast. *The Journal of Extension*, 54(6), Article 1. <https://doi.org/10.34068/joe.54.06.01>

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Abstract

Volunteer-based urban forest inventories are a common activity among Extension professionals; however, project facilitators often end up duplicating mistakes experienced previously by others. This article shares lessons learned from conducting several volunteer-based urban forest inventories. The lessons revolve around the themes of volunteer recruitment, communication with the public, private property access, project scope and time line, volunteer management, and efforts to increase efficiency. Through awareness of these lessons, Extension professionals can implement and adapt our successful strategies yet not repeat our mistakes. In turn, readers will increase the likelihood of successfully developing baseline measures while engaging the public in urban forest management.

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Introduction

This article reports lessons learned during the implementation of several volunteer-based urban forest inventories. A limited number of articles focusing on urban tree assessment have been published in the *Journal of Extension*. Cowett and Bassuk (2012) described a street tree inventory project in which university students were paid to collect data. Lorenzo, Blanche, and Henson (2003) compared professional tree appraisal values. Projects by Bennett (2012) and Prochaska and Hoffman (2010) utilized master gardeners to collect tree data; however, neither associated article elaborated on the process of conducting volunteer-based inventories. The lessons documented here will assist Extension professionals in conducting efficient and successful volunteer-based urban forest inventories.

Our discussion is based on the following project attributes:

- Sixteen inventories were conducted in 2014 and 2015 through the use of volunteers and i-Tree Eco protocol (U. S. Forest Service, 2014).
- Inventories addressed various geographic scopes and sampling procedures.

- One inventory employed student interns.

Lessons Learned

Recruit volunteers well before the start of the data collection season. Keeping in mind the potential need for multiple meetings, recruiting should begin no later than 1 or 2 months prior to initiating data collection. The season passes by rapidly, and volunteers usually have competing commitments, so any delay due to slow recruiting may result in an incomplete project at the end of the season. The recruiting meeting should entail a thorough explanation of the project and processes, including information about project objectives, project time line, trainings, benefits to volunteers, and expectations for volunteers and facilitators.

Start with a core group. Master gardeners and master naturalists are useful (and they get volunteer credit), but so are other groups, such as garden club members and farmers' market participants. Recruiting can be conducted through volunteer coordinating organizations present in some communities. In our project, we also contacted student organizations at local colleges. We had little recruiting success using email blasts. Challenges working with youths included varying levels of maturity, lack of transportation, and busy schedules. Youth groups were a better fit for full inventories on school grounds or in parks than for sample-based inventories. We suggest recruiting at least one three-person team for every 50 plots. One or two volunteers should be dedicated to data input if data are not entered directly into i-Tree software. Data input should occur throughout the season.

Recognize that press releases have limited impact. i-Tree protocol suggests sending a press release to local media to publicize the inventory and facilitate private property access. We found that such press releases had little positive effect. Still, they require little effort and demonstrate the project's efforts to communicate with the public. In short, press releases should be used, but not relied on as the sole mode of communication with the public. Having had direct communication with police departments and city officials was beneficial when concerned citizens called about "strangers" on their streets. Also, signage displayed in volunteers' cars informed of a tree inventory in progress.

Make prior contact with property owners, using an access request letter. Prior contact resulted in a slightly lower rate of rejection than contact at the time of plot access. Ideally, addresses should be available through a geographic information database that can be overlaid with the sample plot map. If this approach is not possible, facilitators should distribute letters at the plot location. Addresses for owners of vacant lots can be identified through the use of tax maps.

Limit the project time line to one season. Volunteers required more time than paid data collectors due to scheduling conflicts, inclement weather, and other circumstances. Facilitators should be prepared to complete measurements and data entry. Also, reporting results at the end of the season is critical to showing appreciation for volunteers' efforts, stimulating positive community relations, and creating potential for future collaboration with residents.

Consider dividing the season into sessions, with each team assigned to a session. Volunteers often are accustomed to shorter-term (possibly less physically demanding) projects (e.g., serving at a weekend master gardener plant sale). As such, assigning teams to 1-month terms is helpful, although this approach may necessitate having more volunteers to complete the project within the desired time frame. Nevertheless, in our experience, assigning 50 plots to one team occasionally resulted in incompleteness.

Be exceptionally attentive to volunteers' needs. This should go without saying, but our experience working with various project partners underscores this lesson. Despite addressing expectations during organizational meetings, some facilitators had difficulty maintaining regular and frequent communication with their volunteers (after all, the inventory often was not the facilitator's only responsibility). Consistent communication was needed for addressing procedural questions as well as volunteer management issues. Volunteer safety issues (e.g., traffic hazards, aggressive dogs, ticks, and heatstroke) were a major concern addressed early in the project. Consistent communication made a strong impression on volunteers' morale and increased the likelihood of completing the inventory in a timely fashion.

Seek to improve efficiency. After volunteers became familiar with the i-Tree protocol, we advised them to seek ways to increase efficiency. Strategies included pacing distances, using rope to delineate a plot, accounting for similarly sized trees of the same species and condition, and delegating labor within the team. We used smaller plots (e.g., 1/100 ac) in some dense stands and increased sample size. Although this strategy may have increased the standard error, it was a necessary adaptation to maintain volunteer morale. Another strategy was limiting the project scope to the neighborhood level. This decision may help increase efficiency and attract volunteers who feel a strong connection to the geography where they spend most of their time. Finally, facilitators should invest more time on the front end of the project than the back end. On the basis of photo interpretation, plots with no trees or inaccessible plots should be excluded from volunteers' plot lists. We suggest that facilitators, rather than volunteers, measure inaccessible plots in densely wooded areas.

Conclusion

Volunteer-based inventories are a method of collecting critical data and engaging residents in urban ecosystem management. The purpose of this article was to share lessons learned on the basis of several volunteer-based urban forest inventories. We have provided this information with the hope that Extension professionals can implement and adapt our successful strategies, and avoid repeating our mistakes.

Acknowledgments

The project reported here was supported by the U.S. Department of Commerce National Oceanic and Atmospheric Administration (NOAA) under NOAA Award NA14OAR4170098, the Mississippi-Alabama Sea Grant Consortium, and an internal award from Mississippi State Extension. The views expressed herein do not necessarily reflect the views of any of those organizations.

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