

SOUTHEAST MASTER GARDENERS TRAINED TO TACKLE WATERSHED ISSUES USING COST-EFFECTIVE DISTANCE TEACHING TECHNOLOGY

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Abstract Teams of Master Gardener coordinators, Extension agents and specialists from Georgia, Alabama and South Carolina met and pooled their resources to develop an advanced training for Master Gardener (MG) volunteers on urban water issues. The training, “Advance Concepts in Water Smart Landscape Design,” includes many aspects of watershed management not generally covered in MG training, such as non-point sources of water pollution, the effect of impervious surfaces and infiltration on water quality, the role of sediment as a pollutant, and assessing stream habitat and water quality. Each state team developed one, 2.5 hour training and delivered it to over 250 MGs spread out in 22 locations in four states. The trainings were presented using internet-based “live classroom” technologies. Extension professionals in each location developed hands-on afternoon activities, assuring the trainings were locally relevant and encouraging active participation in the teaching process. MG volunteers often deal directly with home owners and home owner activities have a significant impact on both water quality and quantity in urban watersheds. MG volunteers will deliver this information to homeowners and others in their communities as they make presentations, answer questions and attend public gardens.

an active member, they must volunteer for 25 hours a year. The program is available in all 50 states and Canada.

MG volunteers differ from other home gardeners in their special training in horticulture and their willingness to educate others. They are uniquely positioned to deliver water quality information and resources to homeowners. They are active in their communities and are well respected. Not only do MG volunteers deal with the public in their capacity as volunteers for Extension, but they also apply what they learn in their home, neighborhood, and community, exponentially expanding educational resources for landscape information. A study by O’Callaghan and Robinson (2005) found that 92% of 153 survey respondents stated they were neighborhood resources.

As volunteers for Extension Services, MG volunteers answer office telephones, make site visits, give educational programs, write articles and perform many other outreach functions for agents (Figure 1). In 2007 the Master Gardeners volunteered for 143,200 hours in Alabama, 193,000 hours in Georgia, and 50,000 hours in South Carolina, (personal correspondence, K. Smith, M. Fonseca, and T. Davis). The roll of MG volunteers becomes even more important as the population of homeowners grows each year.

INTRODUCTION

As human populations increase and agent numbers remain the same or decline, urban agriculture agents must develop resources to serve ever increasing numbers of urban clientele. The Master Gardener Volunteers are perhaps the most innovative and vibrant resource to expand urban agriculture education and outreach efforts.

The Master Gardener (MG) program began in 1972 in Washington State (Grieshop, and Rupley, 1984). Teaching, Research and Extension faculty from land-grant universities and Extension professionals teach MG training classes in order to develop educated volunteers. A state coordinator oversees the program. Extension professionals at the local level recruit, manage, schedule, and coordinate individual programs. The volunteers must give 50 hours of volunteer service to Cooperative Extension in order to receive their certificate. To remain

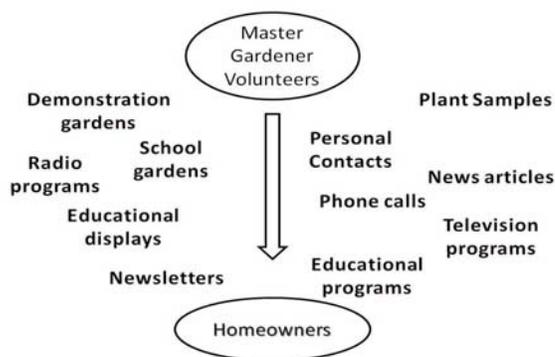


Figure 1. Information flows to homeowners as Master Gardener volunteers perform their routine activities.

MATERIALS, METHODS, AND RESULTS

This project was coordinated by the UGA Center for Urban Agriculture. In December of 2007, teams of MG coordinators, agents and specialists from Georgia, Alabama and South Carolina met to pool their resources to develop an advanced training for MG volunteers on urban water issues. The goal of this training was to define the landscape's impact on water in the watershed and empower MG volunteers to think beyond the yard, to local streams, and ultimately, to the watershed. The objectives were to:

- Create an advanced training in water issues curriculum.
- Expand the knowledge of MGs from the home landscape beyond the boundaries of county and state to the watershed.
- Team-teach the course in Alabama, Georgia, and South Carolina using internet education technology.
- Supply teaching and demonstration resources to accompany the training.
- Empower MG volunteers and agents to educate homeowners of their impact on watersheds, nonpoint source pollution, water quality, and water quantity.

The development team from South Carolina created the first training entitled "Landscape Planning and Design". Designed as a review and to assure a baseline of knowledge among volunteers in the three states, the lecture covered the seven steps of waterSmart landscape design. It also covered the 'waterSmart retrofit', presenting ideas volunteers may use to switch a landscape with many high water-use areas to one with fewer. The Georgia team developed the second training, "The Finer Points of Landscape Design". This training focused on the identification of landscape pollution sources, their transportation and treatment, infiltration and impervious surfaces, irrigation audits, rain gardens and rain harvesting. The Alabama team developed the third and final day of training entitled "Making the Connection: Our Landscape, Our Stream, Our Watershed". This training taught volunteers to identify healthy streams, focusing on visual, chemical, physical, and biological stream assessment. Volunteer opportunities were also discussed.

The groups participated in a wide variety of afternoon educational activities. They designed rain gardens, designed waterSmart landscape retrofits, did irrigation audits, made rain barrels, assessed stream health, and many other activities.

All trainings were conducted using Internet Distance Education Technology. This technology allows a single educator or a small group of educators to make live presentations to volunteers via the internet. It reduces travel costs and can be used to reach many small groups simultaneously, compounding the impact of the

educational efforts. Both Adobe Connect and Horizon Wimba Live were used. Local agents hosted the trainings which were located in libraries, county offices, and other meeting rooms. All agents participating in the project had access to UGA webCT. The development teams placed resources for afternoon, hands-on training sessions organized by agents on the classroom site. Participating agents developed afternoon activities that complimented their programs and/or met local needs or interests.

Pre- and post-training evaluations of subject knowledge were created by development teams and implemented across the region. Over 250 MG volunteers were trained in the four states which participated (Georgia, Alabama, South Carolina and Tennessee). This paper will focus on the results of trainings held within Georgia. The trainings were presented in 11 locations throughout the state. Group size varied from 4-35 volunteers. All groups were more knowledgeable about the subject matter after each training (Table 1).

Table 1. Results of pre-training (Pre) and post-training (Pos) evaluations given to groups of Master Gardener volunteers (n=number of participants) in the locations listed.

<i>Locations (county)</i>	<i>Landscape planning and design</i>			<i>Finer points of landscape design</i>			<i>Our landscape, our stream, our watershed</i>		
	n	Pre	Pos	n	Pre	Pos	n	Pre	Pos
Richmond	35	66	88	30	62	85	31	70	100
Clark	10	75	82	11	68	85	10	74	84
Forsyth	28	75	91	28	69	94	26	78	98
Houston	11	71	83	10	67	86	8	73	88
Gwinnett	23	70	82	25	77	88	25	78	95
Cherokee	23	76	82	20	66	85	16	74	91
Muscogee	25			22	65	87	17	75	90
Coweta	20	76	80	20	68	87	18	71	93
Chatham	19	67	79	14	55	80	11	74	84
Whitfield	4	67	95	4	63	80	4	85	98
Carroll	8	70	93	7	60	81	31	70	100
Total	206			191			166		
Weighted average		71	85		66	87		74	94

Participants were asked "How many homeowners do you normally assist with landscape questions each year?" They reported a total of 9319 homeowners and estimated that 6856 of these homeowners would benefit from this training. Participants were also asked if they would change something they were doing as a result of this training. Virtually all intended to modify a landscape practice they were using and recommending. These practices included changing the direction of gutter spouts, washing the car over turfgrass, installing drip irrigation,

monitoring silt in a local stream, and getting involved with Adopt-A-Stream.

CONCLUSIONS

With the coordination of the UGA Center for Urban Agriculture, the participating state teams were able to successfully pool their knowledge and develop a training that would have been more difficult for any of the participants to do alone. The Internet Distance Education Technologies were successful in reaching both small and large groups throughout the states. Participants' increased their knowledge of urban water issues and clearly indicated they would use this knowledge in their volunteer activities and personal activities.

REFERENCES

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