

# BACKYARD WOODLOTS: LARGE SCALE EDUCATION FOR SMALL ACREAGES

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**Abstract--**Land parcelization in the Eastern United States is resulting in more landowners and smaller holdings. These small acre properties are increasingly important to the environmental health of natural systems. Seventy-three percent of Virginia's privately owned forestland is in ownerships of 10 acres or less, yet little assistance has been available to them. Additionally, we find most small acre owners are first-time landowners with little knowledge of natural systems. There is general agreement that planning and professional assistance lead to better forest stewardship; however, smaller acreage owners are even less likely than larger acreage owners to have written plans or seek assistance.

Locally initiated educational programming using a self-guided planning tool specific to small acreage owners has ushered hundreds individuals, families and Extension Volunteers through the planning process and resulted in high rates of written plan completion (average of 80%). According to exit and follow-up evaluations, most participants have implemented one or more practices based on their self-designed plan to improve and/or expand natural areas on their property. The program materials and design are an effective tool to excite, encourage, and affect stewardship on small acreages. Lessons learned from these interactions with landowners are allowing us to fine-tune outreach methods for this underserved and unique audience.

A parallel issue surrounding small acreage ownerships is the lack of service providers. While some landowners want and are willing to pay for services, related industries and service providers are slow to respond. The work with small acreage landowners is leading to programs to create outreach efforts in the Mid-Atlantic area to potential services providers.

## INTRODUCTION

Today's most underserved forest landowner audience represents a majority. Small acreage forest owners are the majority of owners in the United States, especially in the Northeast and Southeast Regions. Landowners with less than 10 acres of forest represent 59% of the private forest landowners in the Eastern United States (Butler 2008). While the overall acreage of this audience is still relatively small (8%), they represent a growing underserved audience that is potentially a

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significant political base to support forestry programs (Eagan & Luloff 2000, Hull *et al.* 2004). At the rural/urban interface the percentage of land held in small ownerships is significant. A recent study in Pennsylvania found 54% of the forestland in Berks County near Philadelphia was in ownerships smaller than 10 acres. Using statewide average ownership sizes previously estimated that Berks County had 9,400 owners, newer more precise estimates suggests nearly 27,000 forest owners in this urbanizing county (Metcalf *et al.* unpublished).

Traditionally, Natural Resource Professionals have stood on the sidelines watching as Private Forest Landowner (PFL) characteristics have gradually but drastically changed in ownership size and ownership objectives. We have a “new” type of landowner and new resource challenges.

### **The “new” landowner**

Most forestland in the United States is held by Private Forest Landowners (PFLs). In the 17 southern states, for example, 59% of the 215 million acres of forestland is in PFL ownership (Butler 2008). Historically, these private forests have met most of society’s fiber needs. However, as our nation’s population has become increasingly affluent and older, many people have chosen to follow the American Dream of land ownership. Through this process, the finite supply of land is under increasing pressure and we find parcelization is rampant.

In the Southern Region, for example, the average forested tract size in 1978 was 45 acres and by 1994 the average dropped to 38 acres (Birch 1996). Over the next 10 years, it dropped another 10 acres. In a 2004 survey by Butler (2008), the average private forest ownership size was 28 acres in the Southern Region.

In general, small acreage landowners compared to larger landowners cite ecological and amenity values as ownership objectives more frequently. This differs little from the common ownership objectives of forest owners nationally, which are aesthetics, privacy, and family legacy. A major difference emerges when those who harvest firewood are excluded, the less forestland owned, the less likely a owner will harvest trees for timber (Butler 2008). This reinforces the contention that education for smaller acres owners should focus less on timber production and extraction and more on alternative values.

Kendra and Hull (2005) observed that new, small acre, forest owners in Virginia were most motivated by lifestyle concerns such as living simply, near nature and escaping urban stress. They have interests in growing their own food and recreating on their land. They express less interest in financial considerations when deciding what to do with their property. Yet, they are not necessarily preservationist desiring to leave the land “pristine.” For example, management tools such as herbicides, tree pruning, and harvesting are options these landowners would consider using to improve wildlife habitat, forest health, and scenic views. Kendra and Hull (2005) found that landowners cite many reasons for not managing their land, such as, they never thought about it, time and money limitations, parcel size, and lack of knowledge. Many of these are addressed through information, demonstration, consulting, and outreach programs.

Clearly, segments of the new forest owner generation offer challenges and opportunities for resource managers and educators. While these individuals most likely tend to look inside their boundaries, the decisions they make have ecological, economic, and social impacts across the landscape. In this regard, resource professionals should recognize a role interacting with this clientele. Scaled down traditional forest management approaches may work in some cases, but

there is a need to restructure both ideas and approaches to engage this ownership group. Hull *et al.* (2006) suggest management of these lands is important to sustain environmental services and because these owners are politically active. If educators and professional foresters are to remain relevant, they must proactively embrace changes to serve this growing audience and the resources they control.

### **The issue**

Unfortunately, land parcelization in general and forest parcelization specifically are becoming our legacy. Early on, settlement of our country was largely driven by an individual desire for land readily within the reach of the commoner. Today, our transportation systems, recreation uses, economic successes, and individual demands and social expectations exacerbate land consumption. Numerous studies and reports document, quantify, and articulate the potential threats of our land resource consumptions (Egan & Luloff 2000, Macie *et al.* 2002, Sampson & Decoster 2000, Vince *et al.* 2005, Wear & Greiss 2002).

Resource professionals have the training to understand the effects and ramifications of landscape parcelization and its eventual fragmentation – the breaking apart of systems as we impose varying land uses. These same professionals find frustration in the parcelization of the land – the separation of land into different ownerships where objectives, if not land use, change and vary by owner wants and needs. Whether we fragment or parcelize the land, the potential to adversely affect forest and ecosystem health, economic structures, and future management are enormous. Resource professionals need to respond by encouraging responsible stewardship to traditional owners and to the new tenants of the land.

### **The management void**

In the East, less than five percent of PFLs have a written management plan and only about 14 percent have sought management advice in the past five years (Butler 2008). Without a plan, or professionally offered advice, the likelihood any management, let alone sustainable management, decreases. Statistics for small ownerships, less than 10 acres, is not explicitly known; however, we do know large acreage owners are more likely to have a written management plan and seek advice (Butler 2008). Is a written forest management plan for small acreage landowners where timber harvesting and large scale disturbance important or necessary? It is likely a better understanding of basic ecological and management techniques through a local support network may result in the implementation of better stewardship practice that sustain ecological services will result with a level of planning.

The importance of private forestland ownership is indisputable. Increasingly, stakeholders from diverse perspectives recognize the role small ownerships serve as they provide ecological services to the public. Traditional economic benefits remain, but often there is increasing recognition of the social and ecological values forests provide. Eastern forest ownership patterns emphasize the need to consider the role of private forests.

In the past, governmental incentive programs focused on the timber base, encouraging forest owners to manage for products. Recent programs have expanded the discussion to wildlife, water, and recreation. The Forest Stewardship Program, launched in 1991, focuses on private forest management. A specific stewardship goal is to encourage PFLs to write management plans to guide their decision making. By 1997, 329,000 forest owners, controlling 16.5 million acres, received help to reach their goals through economic assistance in planning and education (Esseks

& Moulton 2000). This valuable program targets forest owners owning more than ten acres, leaving smaller acreage owners without publicly-supported technical or cost-share assistance.

Why was the threshold set at ten acres? Foresters argued smaller ownerships are too difficult to manage – it is inefficient. Can we afford this luxury? Weir & Greis (2002) argue we have to change our perspective and reach out to the landowner of smaller forests if we are to meet societal needs. The reliance on the one-on-one model for technical assistance presently used to assist forest owners is not practical for meeting the needs of the multitude of owners in fragmented landscapes.

With the current base of service providers and assistance programs, small acreage landowners rarely interact with resource professionals. This void calls for new tools, including educational material for small acreage forest owners that, to begin with, enable them to develop their own plan. Also needed are educational resources and opportunities to assist them with implementing practices. Cooperative Extension and agency partners are well situated to address this educational void. Perhaps more challenging is the current lack of service providers adept at working with small acreage landowners.

While train-the-trainer programs can provide local education delivery and mentoring and are a proven cost-effective way to leverage limited forestry resources for landowner education, are there alternatives for training potential service providers? New forestry education programs targeting professionals currently working with forest owners with small properties, such as home/landscape and arborist professionals, can equip them to pursue business opportunities servicing this clientele. Along with training opportunities for existing forest professionals such as loggers, foresters, and other natural resource professionals, a whole new cadre of service providers could evolve to fill this void.

## **METHODS**

The objective behind the Woods in Your Backyard project was to reach small acreage landowners (1-10 acres) with research-based information to help them create or enhance natural areas while meeting their personal goals and improving their property's contribution to ecosystem health.

The initial grant from the U.S. Fish & Wildlife Service developed a team approach by Maryland, Virginia, and Pennsylvania Cooperative Extension systems along with a professional writer and targeted the Mid-Atlantic region. The authors initiated the project in early 2003 with publication of the manual in September 2006. While there was one initial meeting of the authors in early 2003, all other communication occurred through conference calls and email.

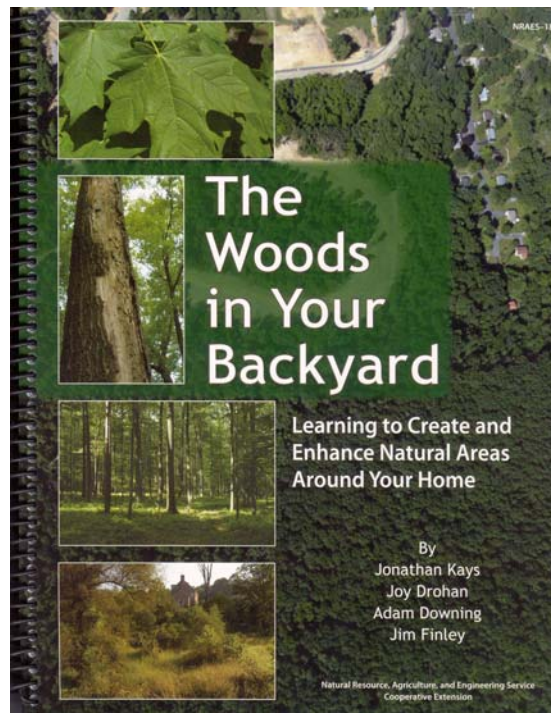
### **Approach**

The first step was to define an approach to reach small acreage woodlot owners. Knowing there are increasingly more of them, and relatively, if not actually, fewer of us, we adopted a train-the-trainer model. The Master Gardener and the newer Master Naturalist programs are excellent examples of extension programs using this approach. Even in the forestry field, there are examples of success using this model (i.e., Coverts, Master Woodland Owners and Forest Steward Volunteers), which have had significant success reaching a greater number of PFLs through a trained volunteer network than by solely relying on trained professionals.

The train-the-trainer model simply attracts interested citizens to participate in training programs with the agreement that they will share information with others in a peer learning approach. Efforts are made to select individuals who are opinion leaders in their communities, have a record of volunteer involvement and are willing to commit some time to the effort. In practice, these individuals have access to networks and opportunities that can not be accessed by trained professionals, resulting in information dissemination by credible citizens in the community that is more highly valued and therefore more likely to be implemented. Additionally, peer-to-peer modeling has an additional advantage in that well-respected peers have more credibility than the “professional” who usually comes in as an outsider.

## Tool

After choosing an approach, the authors began crafting the “tool” for training volunteers. However, we soon realized the product envisioned would also serve as a stand alone product for independent use, or self-assessment. *The Woods in Your Backyard: Learning to Create and Enhance Natural Areas Around your Home* (Kays et al. 2006) is the end result. Development proceeded using the following principles:



**Figure 1: Self-guided planning workbook**

- *Use a case study approach*
- *Focus on better management of existing natural areas and conversion of lawn into natural area*
- *Center on non-timber values*
- *Require no forestry tools or previous knowledge and avoid professional jargon*
- *Provide support materials for volunteers responsible for delivery and mentoring*
- *Include a workbook for personal assessment of the user's property*
- *Design the publication as a guide for group education and outreach efforts with new extension audiences*

- *Assume the user has Internet and/ or computer access to retrieve additional resources and make those resources available on-line and compact disk (cd)*

Before publication, we sought input from landowners in forestry volunteer programs and state agency foresters and wildlife biologists in Maryland, Pennsylvania, and Virginia. Using a focus group format, we found support for the case-study approach and received many useful comments on possible gaps in the tool. The publisher, the Natural Resource, Agriculture, and Engineering Service Cooperative Extension (NRAES), orchestrated a more formal peer-review to further refine the manuscript with input from volunteers and professionals representing a cross-section of stakeholders in the Eastern United States.

## RESULTS

### Training Workbook & Materials

*The Woods In Your Backyard* (Kays *et al.* 2006) uses a case-study approach to guide users through the process of creating their own plan while learning basic forest stewardship concepts. Two central goals of this manual and trainings is a focus on: 1) better managing existing natural areas, and 2) opportunities to convert “excess lawn” to a natural area such as a warm season grass meadow or early successional forest. Table 1 presents to the headings for the four major parts of the publication and incorporated workbook in part five.

**Table 1. Publication contents**

Part	Theme	Lessons
1	Introduction	Identify interests and mapping Family involvement Constraints to management
2	Property Inventory	Landscape view Management unit identification Tree & Plant identification
3	Ecological Processes	Succession Principals of Forestry Water resources Wildlife ecology
4	Putting Knowledge to Practice	Recreation & aesthetics potential Choosing projects Land management techniques Timetable of activities Recording progress
5	Workbook	Twenty activities completed while working through the first four sections and in tandem with a case study

While there are three case-studies in the publication, the users follow the Nelson’s story (a case-study) throughout the manuscript. When we introduce activities (which could become homework assignments, if the trainer chooses to deliver the material as part of a multi-day program) “The Nelsons” serve to demonstrate the results of their activity. For example, Activity 1 is to draw a

property map and the publication highlights the Nelsons. For Activity 2, we ask users to describe property features using a worksheet and present the Nelson's example to help them become more comfortable completing the activity for their property in the workbook portion.

Users who work their way through the material will have, in the end, a self-designed plan, with research-based input, to help them accomplish their goals in a sustainable and ecologically sound manner. Users may complete their plan as either an entirely self-guided process or as part of a facilitated training during which they receive introductory and some detailed instruction on the planning process and management methods.

In addition to the workbook, supplementary materials are available to various training groups. To accommodate different training groups, we created tools for customized training. Experience finds professionals gain familiarity with the material quickly (under an hour), while lay audiences usually require three hours or more to reach a comfort level with the publication and training materials. The training materials consist of the publication and a CD that includes an overview PowerPoint presentation adaptable for different audiences, as well as PowerPoint presentations which breaks the materials into multiple classes and provide additional photos and information.

The CD also includes electronic fill-able worksheets from the manual, a press release, brochure, ordering information, fact sheets from Maryland, Pennsylvania, and Virginia Cooperative Extension and other organizations, as well as web-links to other resources. One component of the manual is a resource list with websites for more information on specific topics (pages 131-138). This resource list is found on the website as a Word document along with website hyperlinked. The CD is only provided at some training sessions, and is not included with the publication when purchased. All resources found on the CD are available free for download at: [www.naturalresources.umd.edu](http://www.naturalresources.umd.edu).

While targeted to the Mid-Atlantic region, the material has application to most areas of the country. Extension and other natural resource professionals can use the core manual and adapt the resource list, PowerPoint presentations, and other CD resources to suit their respective area.

### **Workshops**

To date, this material has been used to train over 2651 volunteers and landowners in Virginia, Maryland, and Pennsylvania. Training has ranged from orientation to the material for state forestry personnel, to extension volunteers to the ultimate target audience of small acreage owners. Table 2 contains a typical agenda for conducting a workshop involving two sessions. The presentations focus on management of existing natural areas and on why and how to convert excess lawn to a more natural state. Depending on the trainer's time and comfort, it is easy to either expand or contract the program.

In Virginia, the initial effort to disseminate the training material was a presentation of the workbook and an overview PowerPoint to 69 field foresters with the Virginia Department of Forestry. This effort translated into several workshops initiated by local personnel, usually in partnership with one or more natural resources related agencies such as Cooperative Extension and Soil and Water Conservation Districts.

Ensuing workshops throughout Virginia have primarily targeted small acreage owners and extension volunteers using 1 or 2 part workshops. Since 2007, 13 workshops have been delivered in the Commonwealth. The participatory workshops integrate homework assignments toward plan development with the aim of providing participants with the first steps toward drafting their management plan and knowledge to implement practices.

As of this paper, evaluation data from six workshops held throughout the northern region of Virginia from 2007 and 2008's is available for analysis and summary. One-hundred and sixty-seven individuals participated in these 6 workshops and on average owned 5 acres. According to exit evaluations, 70 percent planned to complete a written plan at the conclusion of the workshop. In addition, 92 percent intend to better manage natural areas and 53 percent plan to convert excessive lawn to natural areas. In the post-survey, most participants (92%) indicated at least one action they plan to take in the next two months. An electronic evaluation two months after the program found that ideas and material were being used and all participants had begun the planning processes. At two months following the workshop, approximately, 10 percent had completed their written management plan. Following the training, many had made contacts with a local natural resource professional. Additional unsolicited feedback shows a change in attitude and action resulting in improved or expanded natural areas. For example, one participant said, "We have begun many of the improvements. It is a particular pleasure for us to replace non-native plants with native species and we have been actively removing invasive species."

Follow-up surveys found that extension volunteers, in addition to using the material for their own properties, are also using it to work with others.

An additional outreach program has targeted individuals and relevant Home Owner Associations (HOA) committees. To encourage this discussion, we have created a one-page fact sheet "Tending Natural Areas in Home Owner Association Settings" for insert into HOA information packets.

Anecdotally, we have observed first hand unique audience responses. As some researchers have discovered, small acreage landowners interact very differently with their land than traditional landowners (Hull *et al.* 2006). Literally, they know every square foot and they are all important to them. They are willing to invest significant energy, time, and fiscal resources into their property to achieve such non-pecuniary returns as observing wildlife, visual appeal, recreation and newer, non-traditional ecological services such as carbon sequestration, water quality, air purification, and altruistically for "the greater good" of society. We have observed small acre owners accept ideas such as creating edge between woodland and field or lawn and riparian buffers but envision them as a few feet deep rather than the 30-50 foot minimums generally recommended by natural resource professionals. Interestingly, they are often more attuned to the landscape surrounding their properties than larger acreage owners. These differences present additional challenges as well as opportunities.

## **DISCUSSION**

Research into adult learning and the use of information by adults suggests self actualation – wanting to learn and to solve their own problems. is important and leads to higher levels of implementation (Knowles 1984 and Allman 1983). Extending these concepts is central to effective adult learning. We believe it is useful to engage landowners in developing their own



**Table 2: Sample two-session workshop agenda**

Session 1	
20 minutes	Welcome & Introductions
60 min.	General overview Situation & Issues Knowledge areas
30 minutes	Intermediate Use areas: Considerations & Tools Issues (water quality, environ. considerations) Opportunities/Tools (converting to natural area)
10 minutes	Homework assignment Read Lessons 1, 2 & 3 (pages 1 – 11) Complete activities 1, 2, 3, 4 (pages 81 – 86)
5 minutes	Wrap-up
Session 2	
20 minutes	Homework review What did you discover? Any surprises?
30 minutes	Wildlife management principals Wildlife needs Habitat management
45 minutes	Natural use areas: Considerations & Tools Crop tree management Invasive plants – identification and control
10 minutes	Sharing WIYBY with others
5 minutes	Evaluation

plans, which should lead to higher implementation levels. We set out to create a tool for owners of smaller tracts that they would find useful in a guided planning process. We believe we have a responsibility to reach out to the “new” landowner to provide an educational process they can use to guide their stewardship of land. We also believe we lack the capacity to lead this process using traditional materials and approaches. Therefore, we offer the tools and approach outlined in this paper to meaningfully address small acreage ownership issues to eventually affect economic, ecological, and social returns from the changing forests landscape.

Backyard woodlot workshops and the self-guided *The Woods In Your Backyard* workbook is a proven combination for reaching a currently underserved audience with both management information and mechanisms for designing their own plan and putting it into action. Planning leads to more informed decision making and on the ground practices embedded in stewardship (Esseks & Moulton 2000). The hopeful ecologic outcome of this initiative is to stitch back together natural systems interrupted by fragmentation with more seamless, though still parcelized, landscapes. Economically, service provider opportunities and a supply of forest-based resources may yield jobs and niche manufacturing.

A related effort looking to address a wider range of issues in rapidly developing regions was recently completed by the Southern Region of the United States Forest Service in cooperation with the University of Florida, Southern Group of State Foresters, U.S. Fish and Wildlife Service

and others. *Changing Roles: Wildland-Urban Interface Professional Development Program* (Monroe *et al.* 2006) is a training program and material compilation for natural resource professionals. The purposes of this program and the small acreage forestland owner outreach tools and methods described in this paper are compatible and share similar goals. While *Changing Roles* is not geared toward landowners, it is a tool that can and should be used by professionals and trained volunteers in landowner training.

Serving constituents/clients/stakeholders/etc. is the most basic premise of public programs. The challenge is to do this with limited resources. Does it make sense to divert already limited funds dedicated toward traditional landowners, toward this rapidly growing landowner segment? They only control a very small percentage of the overall acreage and ownership turns over rapidly. Can we really expect to affect change? Research by Kendra & Hull (2005) suggests this “new landowner” is very receptive, even “primed” to management input. Inputs dependent solely on professionals is not practical under even the best of funding and public support scenarios for the rapidly growing numbers of small acreage owners. Educational outreach that leverages volunteer energy, expertise and training, however, has the potential to diffuse rapidly through this well educated and receptive audience.

## CONCLUSIONS

While *The Woods in Your Backyard* and associated workshops are a step toward reaching small acreage landowners, this is only one step. It is creating a better informed and active base of landowners ready to do what is best for their property while simultaneously meeting their ownership goals. A second critical step is to train service providers. Basic socio-economic data of small acreage owners suggest they would be willing to pay for professional assistance to achieve their management objectives (Hull *et al.* 2004). Trained service providers might have credentials and experience in a variety of areas such as raw material extraction (logging), resource management (forestry & wildlife), and home landscape care (arboriculture and/or horticulture). There is a clear need for individuals with a mix of skills who can work in the context of myriad ownerships and objectives. We need individuals with the traditional natural resource management skills, but they may also require a set of new skills. On the front of all this, they must have the ability to build trust (Hull *et al.* 2004) with this new clientele.

Professional training to prepare the different groups of professionals with the skills they need to work with this audience are beginning to emerge. Forestry, wildlife, and logging professionals need to partner with home/landscape care professionals to develop business solutions for interested small acreage owners. The training of these potential service providers should include an assessment of business, marketing, and economics that might demonstrate to professionals that serving this audience may improve their existing business model, profits and marketability. The needs related to developing professional service providers are further described in a companion paper in these proceedings called *Backyard Woodlost: Filling the Small Acreage Service Provider Gap with the Green Industry* by Kays J., A. Downing, J. Finley.

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