

## It Takes Many Hands to Control Invasive Plants Along the Appalachian Trail

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### Introduction

The Appalachian National Scenic Trail was first proposed in a 1921 article, “An Appalachian Trail: A Project in Regional Planning,” by Benton MacKaye in the *Journal of the American Institute of Architects* (1928). As a regional planner, he convened an Appalachian Trail “conference” in 1925 in Washington, D.C. That gathering of hikers, foresters, and public officials laid the groundwork for the creation of a trail and envisioned a volunteer organization to build, manage, and protect it. It was completed north-to-south in 1937. Congress designated the trail as America’s first national scenic trail and a National Park Service (NPS) entity in 1968. Today, through the efforts of volunteers, clubs, and agency partners, the trail extends more than 2170 miles from Maine to Georgia within a protected 250,000-acre greenway (ATC 2009).

The Appalachian Trail Conservancy (ATC) coordinates more than 6,000 volunteers who contribute about 200,000 hours every year. They focus on maintaining the trail treadpath, keeping vegetation out of the way of hikers, and recently, conducting citizen-science biological surveys. For quite a number of years, individual trail overseers noted with increasing alarm the biological threats of invasive plants along the trail. Due to the sheer magnitude of work in maintaining the trail’s treadpath, however, the ATC and its 30 member clubs were reluctant to expand their mission to include invasive plant control.

The NPS Mid-Atlantic Exotic Plant Management Team initiated a short-term volunteer program along the trail’s Northern Virginia section in 2008 as a pilot to determine if short-term volunteers could be used effectively to manage invasive plants. While the ATC and its member clubs clearly have successful programs based on long-term volunteer commitments, the pilot program intent is to demonstrate how to plan and execute a program where volunteers might work for only a few hours. It is certainly true that volunteers can be marshaled for such a task. The salient question is whether the resulting structure, activity, support, and outcomes are sustainable over the long-term. This paper describes the interim results of the trail’s Northern Virginia short-term volunteer program to date.

### Program development

As backdrop to the effort, the NPS Mid-Atlantic Team wrote a successful grant proposal in 2004, for the National Park Foundation and Tauck Foundation, to increase volunteerism at Shenandoah National Park. The grant enabled the creation of its short-term volunteer program. College interns helped program start-up, drafting an implementation plan and public outreach materials, and populating a database of potential sponsors and volunteers. The Team and interns set up volunteer events using the database to contact groups and individuals. After two and one-half years of field operations, park staff assumed administration of the program, convinced it was significantly contributing to, and sustainable within, their invasive plant management program (NPS 2008a).

Recognizing the need to augment invasive plant control efforts along the Appalachian Trail, the Mid-Atlantic Team initiated a pilot program in 2008, based on their experience at Shenandoah. Program start-up was rapid. Much of the programmatic material was directly usable. Shenandoah's computer database and public outreach tools were easily modified for use at the trail.

### Activity and outcomes

The short-term volunteer program for the Appalachian Trail contributed hundreds of hours of fieldwork in its first partial year. That labor contributed to real accomplishment on the ground. Invasive plants are being controlled including Oriental lady's thumb, garlic mustard, mulleins, autumn olive, multiflora rose, wineberry, mile-a-minute vine, and Oriental bitter-sweet. When labors are directed at sites of high value, the results are significant. Threatened native species and rare habitats are being protected. Restoration to native and natural conditions is taking place.

From Earth Day through October 2008 (seven months) 377 volunteers contributed 879 hours to help control invasive plants along the Appalachian National Scenic Trail. Their work benefited 13.5 highly infested acres. The equivalent monetary value of their volunteer efforts for the short period equaled \$17,149 (Independent Sector).

America needs an army of volunteers; and Americans are responding. Earth Day, April 2008, was the first volunteer event for this pilot program. Through the year, subsequent volunteer events included schools, summer camps, non-profit organizations, families, and individuals. Word-of-mouth became an important source of new volunteers. As an example, Girl Scout troops learned of other troop field events and called to set up their own events. The

| Outcomes                                      | Values   | Comments   |
|---|----------|--|
| Acres benefited                               | 13.5     | Gross infested acres   |
| Events  | 16       | Spring: 6; Summer: 7; Fall: 3  |
| Number of volunteers                          | 371      | April - October  |
| Number of vol. hours                          | 879      |  |
| Number of volunteers needed to treat one acre | 28       | Average  |
| Average hours / volunteer                     | 2.4      | Range: 1.6 to 48.0   |
| Average acreage /event                        | 0.8      | Range: 0.03 to 2.1   |
| Volunteers / event                            | 23.3     | Range: 6 to 62   |
| Percent children & adults                     | 73   27  | Children: 18 years and younger   |
| Invasive species treated                      |          | Garlic mustard, Oriental lady's thumb, mile-a-minute vine, Oriental bittersweet, mullein, multiflora rose, wineberry, and autumn olive |
| Value of volunteer labor                      | \$17,149 | \$19.51/volunteer hour   |

**Table 1.** Appalachian National Scenic Trail Short-term Volunteer Program, interim summary of outcomes, 2008.

same was true of a few schools. Individuals who heard about the program from previous volunteers initiated calls to be included in subsequent public events. Maintaining a positive public image is therefore essential to keeping the program vibrant and growing. Each event must run well and be led by staff and volunteers who effectively communicate the goals of the program, pass along interesting information, and exhibit appreciation for the contributions of volunteers.

Volunteers are a powerful way to accomplish work and grow a citizen base of support and advocacy. Starting with youngsters, short-term volunteer programs help instill an association of fun with the importance in their service-learning field trips. In an era of decreasing time outside in nature, volunteer programs offer an excellent way to “leave no child inside” (Louv 2006). While running volunteer events, NPS staff and volunteer leaders teach plant identification, discuss implications of exotic species invasions, describe how people can help fight invasives at home, and respond to volunteers’ questions. Events help the public become more knowledgeable about the land and its management. Even if volunteers work only a few hours in a year (or ever), they can become a foundation of informed citizens that can speak about their enjoyment of park sites, and the hazards posed by invasive plants.

Striving for sustainability, an essential program objective is to develop volunteer leaders who can plan and run volunteer events. They become the longer-term linkage for managing short-term volunteers. As the ATC can attest, long-term volunteers naturally take on increasing personal ownership for the overall health and condition of the lands they manage. They become the best champions for resource protection and program augmentation because of their first-hand field knowledge. Typically, volunteer leaders have come from the ranks of senior citizens. Their families and professions take less of their time and they are looking for good ways to make a difference in their communities. High schools and universities are potentially good sources for citizen leaders. So far, that segment has not produced volunteer leaders for either Shenandoah or the Appalachian Trail. Though their energy is a great asset, their commitment is often fleeting due to the demands of school, and a transient lifestyle.

### **Collaboration to grow**

Where work forces and budgets are strained by the current management demands, collaboration with other organizations is essential to expanding organizational potential. The Appalachian Trail short-term volunteer program was made possible by the help of the Appalachian Trail Conservancy, Potomac Appalachian Trail Club, National Audubon Society of Virginia, Defenders of Wildlife, National Parks Conservation Association, along with the National Park Service. As an example, those groups supported the 2008 National Public Lands Day event at Trumbo Hollow, near Linden, Virginia. They provided staffing, email and website advertising, snacks and coffee, and shelter. With the general public, the event attracted people from Girls Scouts of the USA and Boy Scouts of America, who are planning their own events in 2009 (Figure 1).

We believe short-term volunteers offer a productive and energized augmentation to the resource management potential of the Appalachian Trail. Time will tell whether the Appalachian Trail Conservancy and their 30 member clubs will adapt the model for their own needs.



**Figure 1.** Volunteers at the 2008 National Public Lands Day event listen as Biologist Kent Schwarzkopf explains the high value of resources in the area, and the primary reasons for their invasive plant control work that day. National Audubon Society, National Park Conservation Association, and the Potomac Appalachian Trail Club sponsored the event, along with the NPS.

## References

- ATC [Appalachian Trail Conservancy]. Who we are. On-line at [www.appalachiantrail.org/site/c.mqLTIYOWGIF/b.4805391/k.245D/Who\\_We\\_Are.htm](http://www.appalachiantrail.org/site/c.mqLTIYOWGIF/b.4805391/k.245D/Who_We_Are.htm). Accessed February 2009.
- Independent Sector. The value of volunteer efforts. On-line at [www.independentsector.org](http://www.independentsector.org). Accessed February 2009.
- Louv, R. 2006. *Last Child in the Woods: Saving Our Children from Nature-deficit Disorder*. Chapel Hill, N.C.: Algonquin Books.
- MacKaye, B. 1928. *The New Exploration: A Philosophy of Regional Planning*. Champaign, Ill.: The University of Illinois Press.
- NPS [National Park Service]. 2008a. Bringing the public into public lands management: Short-term volunteers and other collaborators aid two national parks in the northeast region. December. NPS Mid-Atlantic Exotic Plant Management Team, Luray, Va. On file at the Mid-Atlantic EPMT office, c/o Shenandoah National Park, Luray, Va.
- . 2008b. Mid-Atlantic Exotic Plant Management Team: Exotic vegetation management annual report for fiscal year 2008. October. NPS Mid-Atlantic Exotic Plant Management Team, Luray, Va. On file at the Mid-Atlantic EPMT office, c/o Shenandoah National Park, Luray, Va.
- . 2008c. Implementation plan: Increasing public involvement to control invasive exotic vegetation; Northern Virginia, West Virginia, and Maryland sections of the Appalach-

ian National Scenic Trail (in draft). NPS Mid-Atlantic Exotic Plant Management Team, Luray, Va. On file at the Mid-Atlantic EPMT office, c/o Shenandoah National Park, Luray, Va.

Pimentel, D., R. Zuniga, and D. Morrison. 2005. Update on the environmental and economic costs associated with alien-invasive species in the United States. *Ecological Economics* 52:3, 273–288.