



## Monitoring the Appalachian Trail Environment: A Scoping Workshop

North Carolina Arboretum  
Asheville, North Carolina  
May 3 & 4, 2000

### 1. Purpose

The workshop was conducted to examine a concept proposed by Charles H.W. Foster and Karen Filipovich of Harvard University's John F. Kennedy School of Government entitled *Monitoring the Appalachian Trail Environment: A New Exploration*. The authors envision a comprehensive, participatory program to benchmark the condition of the environments associated with the Appalachian Trail (AT) and monitor the changes in them.

The intent of this workshop was to begin to explore the potential for utilizing the Appalachian National Scenic Trail and associated lands as a focus for monitoring a variety of environmental health indicators and as a "classroom" for environmental education. The intent was also to suggest how such a program might be organized, to identify participating organization needs and issues that might benefit from such a program, and to get a better sense of the kinds of research and monitoring that are already underway along or near the AT corridor.

The workshop was sponsored by the Southern Appalachian Man and the Biosphere (SAMAB) Program, the Appalachian Trail Conference (ATC), and the National Park Service (NPS) Appalachian Trail Park Office.

A list of participants is included in Attachment 1.

### 2. Existing Research and Monitoring Activities Related to the AT Environment

It was recognized that a large number of research and monitoring activities are already underway and that there was need for greater sharing of information about and from such programs.

Examples of existing activities that were discussed included:

- ATC programs such as monitoring visitor use, and lands associated with the AT that have the potential to be changed in ways that might detract from the Trail experience.
- NPS – such as the state-by-state natural heritage inventories that concentrate on identification of plant and animal species and rare plant communities.
- Aquatic and watershed monitoring along the Upper Little Tennessee River.
- Great Smoky Mountains Air Quality Monitoring.
- Forest Service – Forest Health Monitoring and Forest Inventory and Analysis.
- Fish & Wildlife Service Breeding Bird Monitoring.

These examples provided a beginning for discussions regarding the need for a more coordinated monitoring effort. They also provided some basis for identifying and clarifying some of the issues regarding initiating a comprehensive effort.

### 3. Issues

Key issues that were discussed included the following:

- Suitability of the AT for a comprehensive monitoring program. Are lands associated with the AT more suitable than others for a comprehensive program? Can the AT serve as an organizing principle or focus for such a program?

It was agreed that the AT corridor could have great value as an ecological transect and as a means to link and strengthen existing programs. It was also agreed that the AT has unique value as an organizing principle because of its significance, its constituency, and its wide recognition.

- Concern was expressed that the AT's volunteer-based Cooperative Management System was already overburdened (More than 4,200 volunteers contributed more than 180,000 hours in work on the Trail in 1999.) and that any new initiative should be designed so that it would not place additional burdens on the existing volunteer force.

It was felt that a new monitoring initiative could be started primarily by recruiting new volunteers who were interested in the monitoring activity. Several university professors and students have expressed interest in the proposed activities. For example, Dr. John Bishop who teaches a course on Appalachian Mountain Ecology at Richmond University, VA expressed interest in participating in an AT monitoring project. His course is designed to acquaint students with ecological communities in the Appalachian Mountains, and to help them develop skills in conducting field studies. It was also noted that the Air Quality Monitoring Program scheduled for this summer in the Great Smoky Mountains National Park had more volunteers than were needed.

- Concern was expressed that “the wheel should not be reinvented” in starting any new monitoring activity.

It was generally agreed that the proposed monitoring initiative should be built upon existing efforts and developed as part of a process carried out by participating organizations in which they assess their own needs and identify what they want the new program to accomplish.

It was also recommended that an AT monitoring initiative should be developed using approved protocols, standards and guidelines such as those developed by the Forest Health Monitoring Program of the Forest Service, and the Forest Inventory and Analysis (FIA) programs. The Forest Service's Southern Research Station's Program Managers for Forest Inventory and monitoring offered to share the field manuals and quality assurance control procedures that the Forest Service uses throughout the United States. It was also recommended that a new AT monitoring initiative should be carried out within the context of current national objectives and standards. (Objectives and standards such as those recommended by the National Research Council's 1999 Report, "Ecological Indicators for the Nation," and in the report of the Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests – the "Montreal Process." This approach would help advance the development of internationally agreed criteria and indicators for conservation and sustainable management of ecosystems.

- Participants indicated that AT management problems sometimes occur, not always because of a lack of data or access to data, but because of the overwhelming amount of data regarding some issues. Therefore, the AT management needs help in organizing, analyzing, interpreting, and communicating the data that already exist.

The Southern Appalachian Regional Information System (SARIS) was presented as the major vehicle for dissemination of the Southern Appalachian Assessment data, and as a knowledge base about regional data sources, data sets and their uses. It was suggested that SARIS might eventually be linked with other programs focusing on Appalachian environmental data to form an Appalachian regional information system.

While the primary activity of the project would be environmental monitoring, a key outcome is likely to be a public better educated about the value of protecting the environment of the AT. Educational opportunities range from scouts who see first-hand the relationship between automobile use and land use, to graduate students who learn and apply field research methods, to retirees who monitor plant numbers and types in designated plots. Learning through involvement is more effective than other styles of learning.

- In regard to funding potential, ATC strongly urges a plan of work be developed before approaching funders. Strategies Dr. Foster recommended (via memorandum to our workshop participants, Attachment 2) were to

1. Discuss the sub-regional planning of the AT monitoring project, concentrating on secure funds to cover the costs of several working conferences at the sub-regional level, and one held regionally to conform the individual plans, and funds to cover the costs of a program coordinator over a two year period.
  2. To identify an interested national foundation program officer and, when the sub-regional planning has advanced sufficiently, to ask that individual to host a meeting for other program officers at which advocates could present their aspirations for a Trail-wide environmental monitoring initiative. This Dr. Foster believes could lend to consultation among program officers on how to finance the endeavor.
- A brief summary of the New England AT Monitoring Roundtable held at the Harvard Kennedy School, May 3, was also shared with our workshop participants on the Morning of May 4. (Attachment 3).

#### 4. Conclusions and Next Steps

- A program can be designed that will contribute to management purposes of the Appalachian National Scenic Trail, especially by strengthening the scientific approach to the conservation of the nationally significant scenic and natural qualities of the areas through which the Trail passes. A monitoring program can be designed that will strengthen existing programs and contribute to participating organizations management objectives, through a synergistic effort combining volunteer activities, government programs, university professors and students, and interested conservation organizations. Development of such an approach is compatible with the volunteer-based cooperative management system of the AT. The ATC should not have to divert existing volunteer efforts to the monitoring initiative, but could play a coordinating role.
- The Appalachian Trail Park Office of the National Park Service indicated willingness to assume an overall coordination role if funds are secured for a program coordinator.
- A new draft conceptual document reflecting discussions to date and the collaborative nature of the enterprise should be drafted. Volunteers from SAMAB will initiate the preparations of this draft, so that it can be reviewed and prepared in time to be presented at the ATC Board of Managers meeting in October 2000.
- Each participating organization will continue to identify its management needs, assess existing research and monitoring activities and contribute ideas about how the new monitoring initiative should be designed. (ATC leadership drafted an overview of its management needs and information resources to begin identifying monitoring and assessment needs. This is included as Attachment 4.) It was emphasized that a monitoring program must have focused objectives and that “doable” pilot projects would be a way to learn to work together.
- At the conclusion of the workshop, a field trip was conducted by the Blue Ridge Parkway, Resource Planning and Professional Service Division. The trip demonstrated the value of viewshed monitoring with community involvement, especially for keeping track of parcels of land adjacent to or near the trail.

ATTACHMENT 1

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April 28, 2000

Memorandum: Vernon (Tom) Gilbert  
From: Charles H.W. Foster

In advance of your May 4-5 SAMAB meeting, you have asked for my views on how funds might be raised for the Appalachian Trail monitoring project described in our Foster/Filipovitch paper (October 1999). Let me respond based on the rough estimates contained in that paper. It is assumed that the actual amounts may change once additional details are developed. Given the need to get the monitoring program better defined, I am going to concentrate on the \$200,000 in front-end funds called for in our paper. This includes \$110,000 to cover the costs of convening four working conferences, three at the subregional level and one held regionally to conform the three individual plans, and \$90,000 to cover the costs of a program coordinator over a two year period.

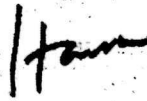
As for raising the required funds, my previous experience as a national foundation officer leads me to recommend strongly an intermediate step before the inevitable preparation of grant proposals begins: We should identify up front an interested foundation program officer and, when the preliminary subregional planning has advanced sufficiently, ask that individual to host a meeting for other program officers at which advocates could present their aspirations for a Trail-wide environmental monitoring initiative. By convening a number of representatives of philanthropy in one place at one time, any requests we submit will gain the benefit of the officers' collective input, thereby making the ultimate proposal(s) that much more convincing. It will also lead to informal consultation among foundation program officers on how to finance our endeavor. We will then be advised on what to submit, to whom, and when. But going into the foundation "consultation", we should have in mind a number of potential cooperating fiduciaries, one in each subregion and one for the Trail region as a whole. Quite often, foundations will express preferences for certain grant recipients.



As for the major monitoring funds, the bulk will have to derive from existing public sources. Simple reprogramming of existing programs may accomplish some of our objectives, but new fund sources are not beyond the realm of possibility. We will need a coordinating group with high level agency representation to uncover such prospects. Among those that I would recommend exploring promptly are Section 204 of the National Parks Omnibus Management Act of 1998, and a remarkable new EPA authorization termed EMPACT, which some feel could produce \$2 million in support from this one source alone.

Finally, I regret that neither Karen Filipovich nor I can attend your May 4-5 meeting to deliver these thoughts in person. However, we will be working on the program's behalf by convening the first meeting of scientists on a New England monitoring program the day before your session. As promised, I will FAX a brief report on our deliberations to provide New England input for your session.

In sum, I remain enthusiastic about this new venture for the AT and immensely grateful to SAMAB for taking the first step in this latest, important journey.

A handwritten signature in black ink, appearing to read "Hann", with a short horizontal line underneath.

Charles H.W. Foster  
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FAX COVER SHEET

**Date:** May 3, 2000

**To:** Vernon (Tom) Gilbert

**Address:** North Carolina Arboretum  
Asheville, NC

**Telephone:**

**Subject:** May 3 New England Meeting

**Message:** Here is a brief summary of what transpired at Harvard today. You are welcome to share the contents or even the memo with the other attendees at the SAMAB working session.

*Tom*

Charles H.W. Foster  
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New England Appalachian Trail Monitoring Roundtable  
Harvard Kennedy School - May 3, 2000

A preliminary discussion of Appalachian Trail environmental monitoring took place today under the auspices of the Kennedy School's Environment and Natural Resources Program. Those in attendance included:

*David Foster*, director of the Harvard Forest and its Long Term Ecological Research Project;

*Mary Foley*, manager for natural resources and science, Boston support office, National Park Service;

*Gregory Hellyer*, environmental ecologist, USEPA (Region 1);

*Paul Somers*, state botanist (MA), Natural Heritage and Endangered Species Program;

*Kevin Peterson*, New England coordinator, Appalachian Trail Conference;

*Charles H.W. Foster*, research associate, Harvard Belfer Center for Science and International Affairs.

Mary Foley delighted the group by announcing a recent lead assignment on inventory and monitoring, Trail-wide, to the Boston support office of the NPS.

Participants began by noting the availability of maps of the Appalachian Trail and its corridor forwarded by Pamela Underhill, an ecoregional map overlain by hydrologic designations prepared by Robert Bailey of the Forest Service, the somewhat different ecoregional map prepared by James Omernik of EPA's Corvallis laboratory, and other materials provided by the participants. After sharing general information on existing data sources and prospective monitoring participants, the following questions were addressed:

Definition of the region to be monitored. It was agreed that the core of the region should be the Trail and its immediate corridor, but expanded to include adjacent areas in public or nonprofit ownership, possibly the geographic, watershed, and ecological attributes identified by Bailey and Omernik, plus aspects of significant viewsheds. Other areas would be added as necessary to make the

region relevant in a social and political as well as ecological sense. It was felt that the Massachusetts portions of the Trail might serve as a pilot for regional definition by piggybacking on the current biomapping project being carried out by the state Natural Heritage Program at the personal request of Environmental Secretary Robert Durand. Paul Somers agreed to explore that possibility.

Available data bases. The Natural Heritage, LTER, wildlands, and watershed data bases would be obvious prospects - also many of the existing atmospheric and environmental quality data bases being collected on a regular basis under EPA and associated institutional auspices. Forest Service participation, and data from the Hubbard Brook (NH) Experimental Forest and the Green and White Mountain national forests, should also be sought. David Foster offered to make available a list of his LTER data sources and cooperators.

Potential cooperative network. The group was particularly impressed by the ten year experience of the Agency of Natural Resources' Vermont Environmental Monitoring Cooperative, with its 60 participants. The Cooperative could serve as a possible model for New England as a whole. Another approach suggested as worth emulating was the Northern Forest Alliance, a coalition of nonprofit organizations funded by foundations and committed to the future well-being of wildlands throughout northern New England.

Resource elements. It was agreed that the objective should be to measure environmental change within the entire region - what the NPS's Mary Foley referred to, in a medical analogy, as the "vital signs of the environment" - not simply design a monitoring program site-specific to the Trail and its immediate corridor. The broader purpose should be to devise an environmental early-warning system for much of the settled eastern seaboard, an objective that would fit well with the expansion of EMPACT next year, Gregory Hellyer advised, which will no longer be limited to activities in metropolitan areas.

Role for Trail users. The group agreed that the use of recreationists and volunteers for supplemental monitoring activities, under proper standards and supervision, could be very beneficial, both to expand the knowledge base and to educate Trail users to the environment they encounter. The ATC's Kevin Peterson felt that monitoring participation could well attract additional volunteers to the Trail program, particularly those who would not

otherwise be candidates for Trail maintenance. A new designation as VIMs (Volunteers In Monitoring) could give the activity a measure of stature and prominence.

Institutional Aspects. The monitoring project will need a measure of institutional structure, but not to the point of discouraging grassroots participation and collaboration, which should be the essence of the program. An important component would be an extensive public outreach capacity connected to those who can follow up promptly any needs revealed by the monitoring. New England's environmental monitoring, while specific to its own region, should also be interconnected with other monitoring efforts at subregional and national levels.

The Next Steps. With respect to future actions, it was agreed that every effort should be made this summer to inventory data sources and to identify prospective data sources and cooperators. Harvard will try to take on that responsibility. The goal will be to have a preliminary inventory available, and a set of potential participants, in time for a special session of EPA's planned Region 1 environmental monitoring conference to be held in September. If agreement is reached there, an appropriate lead organization steps forward, and funds are available, a full-scale New England planning project will be initiated.

In addition, it was felt that the concept of Trail region-related monitoring should be included as an agenda item at the October meeting of ATC's Regional Management Committee, where delegates from member clubs assemble annually to discuss programs and activities. Volunteer groups should be apprised of a possible monitoring project, and asked for their input early on.

A meeting with the heads of the New England states' Natural Heritage Programs will be sought.

Finally, the group was very interested in pursuing funds nationally under EPA's EMPACT program, the submission for which would occur in the spring of 2001 after the New England and other subregional programs had been better defined. Formation of a cooperating monitoring network as described above would materially enhance the prospects for such funding.

ATTACHMENT 4

ISSUES	INFO NEEDS	EXISTING RESOURCE/PROGRAMS
Trail/facility design/const.	Maintenance needs/conditions/resource problems/nat./cultural resource impacts	Trail assessments, TREND, diversity inventories
Recreational use impacts, conflicting uses group use, commercial use, high-use	Resource impacts, visitor impacts	Corridor monitoring, boundary maintenance, campsite-impact analysis, visitor survey(s)
Visitor patterns/preferences/trends	Lots of stuff	Visitor survey, ridgerunner observations
Natural/cultural/resource management	Species occurrences/species health, trends	Inventories/monitoring programs, satellite imagery/GIS
External/treats impact, analysis/mitigation	Visual/auditory, resource impacts	Viewshed analysis, natural/cultural inventories
Land use patterns/trends/controls	Demographics, forest cover, development impacts	Land trust community outreach, NASA/landset, GIS

Other:                      Air/water quality  
                                     Disease/infections  
                                     Indicator species