

Summary Report: A Workshop to Plan the Southern Appalachian Components of an Appalachian-wide Environmental Monitoring Program

September, 2000

On September 8, 2000, representatives of SAMAB, the Great Smoky Mountains National Park, the National Park Service's Appalachian Trail Park Office, the Appalachian Trail Conference, the USGS, universities and independent research groups met to discuss ways to proceed with a southern Appalachian component of an Appalachian-wide Environmental Monitoring Initiative that centers on the Appalachian Trail. Meeting participants discussed the purpose and value of the project, a tool to make existing and newly acquired monitoring data readily available and usable, pilot monitoring activities, considerations for selecting projects, and options for proceeding with the project. This report summarizes the workshop.

1. Introduction

The Southern Appalachian Man and the Biosphere (SAMAB) Program convened and the Great Smoky Mountains National Park (GRSM) hosted a meeting of parties¹ with a potential role in a program to monitor environmental health of the Southern Appalachians. This monitoring program would be part of an Appalachian-wide program that will focus on the 2,167-mile Appalachian Trail and is under development (see the draft "Conceptual Plan" at the SAMAB Website, <http://samab.org>). Participants in the Southern Appalachian monitoring workshop included representatives of SAMAB, GRSM, the National Park Service's Appalachian Trail Park Office (ATPO), the Appalachian Trail Conference (ATC), and others. Planning and implementation of the project will occur at a sub-regional level, with national-level coordination. Two sub-regions—the Northeast and the southern Appalachians—have begun early planning for carrying out the program. Prior to the September meeting, potential players in the Southern Appalachian AT monitoring project had held preliminary discussions, and members of SAMAB, the ATC, the ATPO, the GRSM, the Forest Service, and others met in May to explore the broad concept of Appalachian Trail monitoring (see the May workshop report at <http://samab.org>). The September 8 workshop was held to begin the planning of initial activities for the Southern Appalachian component of the program.²

2. Purpose and Value of the Southern Appalachian Project

The goal of the projects—both the AT-wide and the Southern Appalachian monitoring projects—is to make existing information about the health of the environment in the southern Appalachians available and usable, and fill in the gaps where little or no information exists. The project's goal is consistent with the mission of the Appalachian National Scenic Trail, to conserve the nationally significant scenic, historic, natural, and cultural qualities of the areas

¹ A list of participants is attached.

² The meeting agenda is attached.

through which the Trail passes. The purpose for conducting the project, especially collecting new data, was a focus of discussion.

The Appalachian Trail Park Office and the Appalachian Trail Conference conveyed that their interest in the project is piqued and the greatest benefit to them is primarily the educational opportunity the project offers. SAMAB participants laid out a goal of integrating educational opportunity with every piece of the project.

There are many purposes for which monitoring can occur: to establish a baseline, to work toward determining trends, to compare to a standard, and to assess or model effects, all of which can be used to educate or to be involved in a regulatory process. It was agreed that the purpose for the monitoring excludes advancing the frontiers of science or underpinning regulation, largely because the monitoring is to be carried out through citizen participation. However, if the citizen-conducted monitoring is rigorously planned, uses existing and accepted protocols, and is consistent—as anticipated—the monitoring can then serve multiple purposes, e.g., establishing baselines, comparing geographic areas, discerning trends, and providing enormous educational benefit. The project aims to serve all these purposes. And, as a participatory process, it can also help to filter what people are really concerned about.

3. SARIS: A Tool to Compile and Present Monitoring Data

As a fundamental goal of the project is to make data and information readily available and easily usable, a tool to accomplish this is seen as a necessary early step. The same tool would also serve as a delivery mechanism for newly acquired data and could aid the coordination of monitoring activities and facilitate communication among project participants involved in the southern Appalachian component, as well as the entire Appalachian monitoring program. The collection and presentation of existing information through such a tool is seen by the ATPO and the ATC as a critical, early step in the project.

SAMAB has begun the development of the Southern Appalachian Regional Information System—SARIS—as a means of updating its 1996 Southern Appalachian Assessment. SARIS, when developed, will use a number of Web-interface, database, and GIS technologies to organize and make available various geospatial data sets. The system will produce user-generated maps, i.e., the user will be able to specify the area of interest and the information she wants presented on the map. The system can be tied to any number of other systems and Web sites (including, for example, ATC club sites) to draw data. A wide variety of information can be presented through SARIS, including cultural history information (e.g., what tribes would have occupied particular part of the Appalachian Trail area) and trail-experience information (e.g., what animals and wildflowers might one see along a particular area of the Appalachian Trail), in which both the ATC and the Great Smoky Mountains National Park are interested. The system is expandable, such that with additional data/information and ties to other systems it could serve as an Appalachian-wide Regional Information System (ARIS).

SARIS would serve as a state-of-the-art resource for the development of environmental education that is based on information about environmental status and trends. It could be used

successfully by individuals with a wide range of expertise and experience in any number of situations, such as community information gathering and school projects.

4. “Pilot” Monitoring Activities

Workshop participants reviewed a number of activities that are possible “pilot” projects with which a program of monitoring could begin. The activities represent two distinct conceptual models of monitoring. The first model focuses on a single resource or issue and implements monitoring throughout the southern part of the Appalachian Trail area. The second model captures a view of everything happening in a particular area, e.g., potentially relating what is happening at hilltops and valley bottoms. Examples of both types of monitoring were considered at the meeting.

The GRSM staff presented information about their program of air monitoring, which is extensive and includes some unique data. During the summer of 2000, GRSM carried out a passive ozone monitoring activity with volunteers doing all of the sample collecting. GRSM staff emphasized the planning and coordination needed for such an effort, as well as the need to know who has responsibility for processing samples and analyzing data. The GRSM has a program of tracking acid deposition, but the modeling is at a scale too coarse to discern what is happening in a specific area. Also, although the critical information relates to the inputs to acid deposition, only one cloud monitoring station exists in the southern Appalachians. Co-location of passive ozone samplers with deposition samplers and rain gauges is an attractive possibility. Also suggested by GRSM staff are monitoring of visibility and streamwater quality.

The director of the Upper Little Tennessee River Watershed Project discussed the biotic integrity monitoring that has been conducted by the Little Tennessee Watershed Association with TVA support. The project has accumulated a vast amount of monitoring data for the watershed. The Appalachian Trail comprises the western boundary of half of the watershed and is the point of origin of five of the sub-watersheds of the Little Tennessee Watershed. The project offers a model of watershed-wide biomonitoring and offers a number of examples of how monitoring has practical application at a local level.

A community sustainability partnership that could work to bring together the numerous local sustainability efforts could focus on areas in watersheds originating on the Appalachian spine. The SAMAB Sustainable Communities Initiative proposes to build on earlier SAMAB activities—the Sustainable Community Indicators Workshop and the Southern Appalachian Assessment—and use SARIS to work with communities to identify the indicators of environmental health on which they are focusing. The activity will uncover what information they have and what information they need to understand their status, particularly as it relates to regional environmental health.

Although not discussed at length at this workshop, there was considerable positive response at the May 2000 workshop to the concept of assessing and monitoring watershed integrity by having community members apply an established and tested tool. The Blue Ridge Parkway staff currently uses the method along its corridor. Watershed integrity is a priority for the ATC.

5. Considerations for Selecting Projects

Participants discussed a number of factors to be considered when selecting monitoring projects. It is understood that the project will begin with focused activities that can demonstrate the utility of the concept. “Focus” is to be determined by assessing who will be supportive—whether there are agencies, universities, or others willing to coordinate the project, whether the issue is a near-term threat that will draw public attention, and whether there is good potential for funding. It is recognized that a great deal of activity is ongoing and, although this monitoring program can provide a means of disseminating the information collected by these ongoing activities, there is no desire to have a redundant program of monitoring.

Resources/issues to be monitored should be compatible with the needs of the Cooperative Management System of the Appalachian Trail. The ATPO representative indicated that although the AT is primarily a recreation resource (as opposed to a preservation/ conservation area) its recreation value is underpinned by the quality of the environment through which the trail passes. As such, visibility, air quality (as it relates to the health of trail users and to the health of the environment through which the trail passes) and views are priority resources for the AT. Preserving biodiversity and water quality (and watersheds) is also important for the AT resource. The NPS Natural Resource Challenge provides an indication of the monitoring and assessment needs of the ATPO.

Participants acknowledged a benefit to a program of monitoring whose components add up to an integrated, if not complete, picture of the sub-region. There are also opportunities to increase efficiency by having monitoring of multiple resources or facets of one resource at the same locations and times (e.g., ozone and deposition monitors co-located).

6. Next Steps

Throughout the day-long workshop, participants looked ahead to ways to advance planning to the next level. Several options were considered. The options are not exclusive; in fact, there are multiple fronts on which to advance.

- AT concept paper to be finalized with closer tie to the NPS Natural Resource Challenge
- Concept paper to be reviewed at ATC Board of Managers meeting in October. A letter of endorsement from ATC and NPS could be attached with distributed copies.
- Hold issue- or resource-specific workshops of scientists (at both agencies and universities) to collaborate in providing analysis of the condition of the ecosystem. The workshops would identify the collective state-of-the-knowledge about resources, identify information sources that should be included for distribution through SARIS, and help to define where and on what resources information is needed.
- Proceed with the watershed monitoring project by focusing on stream segments closest to the trail (e.g., in the Betty, Coweeta, Cartoogechaye, Burningtown, and Tellico subwatersheds of the upper Little Tennessee Basin) and tracking changes downstream; use SARIS to disseminate existing watershed monitoring information;

develop a training center around the Little Tennessee Watershed activity, to foster the replication of the activity throughout the Appalachian Trail area.

- Pursue opportunities to hire a program coordinator who will work with all regions on planning and implementing the AT monitoring program.

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Southern Appalachian Component of the Appalachian Trail Environment Monitoring Initiative

September 8, 2000
Great Smoky Mountains National Park Headquarters
Gatlinburg, TN
9:00 a.m. to 3:30 p.m.

Introduction – Robb Turner

Status of the AT monitoring initiative - Tom Gilbert

Development of a strategy for prototype activities

Potential prototypes:

- a. SARIS - focus on the AT environment - Wolf Naegeli
- b. Biomonitoring in a watershed - William McLarney
- c. Sustainable communities along the AT - John Peine
- d. Air pollution monitoring in the Gt. Smoky Mountains - Larry Hartmann
- e. Critical attributes of habitats for endangered species - TBD
- f. other?

Lunch - restaurant in Gatlinburg

Workplan for proposal development and funding

- a. Project management
- b. Prototype activities

Project implementation

- a. Developing partnerships - the cooperative management systems of ATC model.
- b. A university and college network

Conclusion - next steps