

Fred Dieffenbach/MABI/NPS

From: Fred Dieffenbach/MABI/NPS
Sent: Friday, February 17, 2012 3:00 PM
To: Fred_Dieffenbach@nps.gov
Subject: Appalachian Trail Environmental Monitoring Newsletter, February 2012

Email not displaying correctly? View it in your browser.



Introduction

It has been about 8 months since the last Appalachian Trail environmental monitoring newsletter and much has happened. Here in Vermont we endured the remnants of Hurricane Irene, and we are in the midst of one of the mildest winters ever seen in the northeast. But that's not the point of the newsletter! I have a number of updates to offer on a variety of topics:

USGS Water Quality

Three years ago the U.S. Geological Survey (USGS) began a review of existing water quality data from the Appalachian Region. The project is significant because even though there have been plenty of water quality studies around the A.T., and there is certainly a tremendous volume of data, nobody has attempted to synthesize these data from an A.T. perspective. The project team evaluated thousands of records from a multitude of sampling locations, and helped to develop an approach for identifying data that are representative of the Appalachian region. Interestingly, the representative area around the A.T. the GIS team from USGS came up with was independently and simultaneously identified by staff from NETN.

The results from this study stand as a baseline against which future studies can be compared, and they confirm that waters from the Appalachian region are typically low ionic strength and susceptible to impacts from things such as acid deposition. The digital version of the report is available at: <http://pubs.usgs.gov/sir/2011/5151/>

Phenology

Plans are moving forward to build an Appalachian Trail phenology monitoring program in 2012. Phenology, the study of cyclical biological events, has recently generated considerable interest as a way for citizens to document climate related



Contacts:

Fred Dieffenbach,

Environmental Monitoring

Coordinator

Northeast Temperate Network

Casey Reese,

Natural Resource Manager

changes in the natural world.

We began discussions with the National Phenology Network (www.npn.org) a few years ago and have actively participated with them, and others, to develop a monitoring protocol. That protocol, while not finished, is available for use this year in “Draft” form and will serve to guide the program. John O’Dell, from the Southern Appalachian Trail field office in Asheville, NC has stepped up to take the lead on implementing the A.T. phenology program on behalf of ATC.

Rare Plant Monitoring

Several things have happened on the rare plant monitoring front. Data from the past three field seasons have finally been entered; the “Draft” monitoring protocol is undergoing peer review; and, we have developed an adaptable prioritization process for 2012 and future years.

Over the last 3 seasons 49 field forms were submitted by volunteer monitors, and we entered those forms at the end of 2011. In addition to helping managers assess the condition of the monitored plant occurrences, we have also been able to use the forms to gain insight into the way volunteers used, or in some cases struggled with, the new protocol. In response to what we learned from the forms, as well as from comments offered about the protocol from numerous users and reviewers, we have made a series of improvements to the new protocol. Those improvements will appear in the “Final” protocol that we hope to publish later this year.

Monitoring alone isn’t enough! To bring the process fully circle, we developed an analysis system that selects and sorts data in a variety of ways, including: occurrences who’s condition has improved, declined, or remained stable; occurrences that have impacts or damage; occurrences affected by invasive species, and so on. Key information that previously wasn’t easy to grab! Prioritization is part of that process, and the system we have developed will help managers direct monitoring resources to rare plant occurrences that have earned a high numerical score. The numerical score integrates ecological value with data from past monitoring activities. A high score might reflect a species of global significance, or it might be a slightly less significant species that hasn’t been monitored in a while (or one that has experienced a recent decline).

In addition to using the prioritization system to target monitoring resources, Casey Reese has used the list to generate maps that will alert trail maintenance workers, and others, to areas that harbor high value occurrences.

Invasive Species

Knowing how to manage invasive species along the A.T. depends on having a good inventory of existing non-indigenous species (NIS) infestations. In 2011, we worked with ATC to test a detection methodology that relied on

Appalachian National Scenic Trail

[Laura Belleville](#),

Conservation Director

Appalachian Trail Conservancy

random sampling. In the past, detection methods relied entirely on recording only positive detections of NIS, known as opportunistic sampling. Unfortunately, this method makes it difficult to infer anything about the region as a whole. To address this short-coming, we compiled a collection of existing detection methodologies to give managers, researchers, and field personnel a range of detection alternatives. The protocol that contains the sampling alternatives and documents the Appalachian Trail invasive species strategy, is currently available on request as a "Draft." Please contact [Fred Dieffenbach](#) if you would like to obtain a copy.

Forest Protocol

Two years ago a University of Rhode Island field team collected data from 4 northeast trail segments to document the health of mid-elevation forests along the A.T. as part of the NASA funded decision support system (DSS) project. The methods followed by the field crew were modeled after the Northeast Temperate Network forest protocol. Although this "plot-based" forest monitoring protocol was adapted specifically to meet the needs of the URI field crew, it could just as easily be used to gather forest data associated with any other research endeavor. The protocol is currently undergoing peer review, and we hope to publish it later in 2012. Please contact [Fred Dieffenbach](#) if you would like to obtain a copy.

Panoramic Photography

To say that photography is a ubiquitous part of scientific work (or modern life) would be an understatement of colossal proportion, but panoramic photography is somewhat less common -- though no less valuable. Two years ago we worked with ATC to pull together several existing photo-documentation methods, and have combined the results of that effort with recent panoramic techniques to produce a "Draft" panoramic photo protocol that can be used "stand-alone" or as a supplement to other projects. We are continuing to refine the protocol, and plan to begin using it more extensively in 2012. Please contact [Fred Dieffenbach](#) if you would like to obtain a copy.

Ongoing Projects

NASA Decision Support System (DSS) - The University of Rhode Island team is making progress and has begun to release components of the system they are building on their project web site. If you would like to learn more about the DSS, follow this link: <http://www.edc.uri.edu/ATMT-DSS/> to see first-hand what they are doing.

Acid Deposition Effects - I attended the 2011 project team meeting in December 2011, and the project team delivered their annual report in February 2012. The project is on schedule, and most field (soil, water, tissue) data have been collected at this point. While some additional field data will be collected in 2012, the project has begun to turn toward analysis. We hope to see some preliminary results in about a year.

Vegetation Mapping - The USGS/NatureServe team that is

producing the A.T. vegetation map has made considerable progress. There are still several years before the project will be finished, but they are steadily working north. They have been creating vegetation classifications, have built field keys, have spent weeks in the field, and have models for the southern and central parts of the A.T. Region. With respect to aerial photography for the Trail, the final (northern) segment of the trail was flown in late September.

Until next time --

Fred Dieffenbach

Appalachian Trail Environmental Monitoring

 AT MEGA-Transect

Mailing address:
Northeast Temperate Network
54 Elm Street
Woodstock, Vt 05091

Telephone:
802-457-3368 ext. 36

Copyright (C) 2009 National Park Service, Northeast Temperate Network All rights reserved.

[Unsubscribe](#) from this list.