



# ATBI Quarterly

**DLIA**  
Discover Life in America

In partnership with Great Smoky Mountains National Park • Great Smoky Mountains Association • Friends of the Smokies

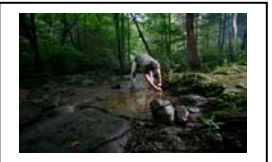
SUMMER 2010  
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## Notes from the Director – Todd Witcher

It is so hard to believe that we are already half way through another year. We had a great start to the year with several research projects beginning and a few finishing up completely. While continuing to work on defining and re-defining DLIA for the future, we are trying to answer the question: how can we accomplish our lofty goals within the context of a downtrodden economy, a Park system with needs beyond current funding, and resource restrictions that prevent us from helping every organization that needs it? We will figure this all out, but we can only do it with your continued help and support.

I find it interesting that, in life, there are so many projects right in our own backyards that we know nothing about. In fact, many times these projects are more revered by people far more removed from ourselves than by those nearby. The Smokies' ATBI is a great example of one of these projects. Below is a link to a fantastic article about the ambitious ATBI of the Smokies, published in the Audubon magazine, demonstrating the aforementioned recognition from afar: <http://www.audubonmagazine.org/features1007/nationalParks.html>.

I just returned from Berlin, Germany where I presented at a conference for ATBIs in the process of launching around Europe as part of a European Union of ATBIs. These are modeled after our great Smokies project! We hope opportunities arise as Discover Life in America becomes more nationally and internationally recognized. We are also very excited about the launch of our new website. Don't forget to check it out soon at [www.dlia.org](http://www.dlia.org)!



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**Heather MacCulloch**,  
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Volunteer Coordinator

## CONFERENCE 2011 – Save the Date!

Discover Life in America is proud to be putting on the 14th annual All Taxa Biodiversity Inventory Conference next Spring. The conference will be held over three days - April 7-9, 2011 - in beautiful Gatlinburg, Tennessee at the Glenstone Lodge. Although the main focus of the event is the presentation of scientific literature, past conferences have included field trips in the Smokies, nature hiking and photography, silent auctions, book signings, and overall good times. The conference is open to scientists, researchers, the press and interested members of the public.

This year, in light of pressing global events, we have decided to take an in-depth look at how the intricate web of biodiversity is tied to climate, both locally and globally. More specifically, we hope to examine the possible effects of global climate change on the complexities of life in the natural world so that we, as scientists and citizens, may make wiser and more informed decisions regarding the future.

More information about the schedule of speakers and presentations will become available as soon as it is known. If you would like to attend, please fill out our online registration form. If you are a scientist interested in presenting at our conference, please fill out our online presenter form. Information on conference lodging and local attractions can be found on our website. For more information, contact us at 865-430-4757.



## Notes from the Board Chair- Pat Parr



The DLIA image scans fascinate me. I have studied the ones available for purchase to figure out which ones I want and how many I can fit into my house. Since I have participated in the fern forays, I am especially partial to the ferns—but there are so many incredibly lovely fern scans and they are all my favorites; how do I decide?

The DLIA Board and Park Service staff are asking similar questions about the All Taxa Biodiversity Inventory. There have been so many discoveries, so much data collected, so many new questions—how do we decide where to place priorities with limited resources and when is enough information really enough?

With a record of over 900 species new to science having been discovered in the park since the ATBI began in 1998 and more than 6,500 species previously undetected in the park identified, expectations are high. At what point do we stop looking for new species? When do we have enough data to analyze? How can what has been collected be used to help the park staff make the kind of management decisions they need to make?

Making these decisions, setting priorities, finding the funding to accomplish the goals set—these are daunting tasks. Teddy Roosevelt said, “In a moment of decision, the best thing you can do is the right thing to do. The worst thing you can do is nothing.” Without adequate operating funds and other pressing needs being met, DLIA and the All Taxa Biodiversity Inventory are, in a very real way, at the “moment of decision.” The DLIA Board and Park Service staff are working together to move forward in a direction that will benefit the natural places we love for others to enjoy and appreciate.

If you are interested in helping with Board projects to raise funds, prepare grant proposals, evaluate plans, analyze data, or help educate, please contact Todd Witcher. Oh- and back to those DLIA image scans... take a look at them and see how hard it is to make a decision! [www.dlia.org](http://www.dlia.org) - Which one is your favorite?



## Data and Technology Update-Tree Team Survey -Chuck Cooper

A new ATBI program was initiated in late spring with a trial collection event. It is being led by Keith Langdon, the Great Smoky Mountains National Park Inventory and Monitoring Chief, and DLIA's Executive Director, Todd Witcher. On June 16th, four teams, consisting of Park and DLIA personnel, DLIA interns, and local college students were sent out, near Park Headquarters, to inventory all arthropods on 4 species of trees deemed by the Park to be "in decline": white ash, red mulberry, flowering dogwood, and butternut. This pilot effort successfully captured various spiders, ants, beetles, and other joint-legged creatures. The unexpected happened when a long horned beetle taken from a red mulberry tree proved to be a new species for the Park. Dr. Adriean Mayor, the Park Curator, identified it as a Small Mulberry Borer, *Dorcashema alternatum*. The overall goal of the project is to collect inventory data that will help Park managers better understand the ecological dynamics of declining trees and their miniscule inhabitants.



I knew when I took the position of DLIA biology intern that I would learn a lot this summer. I thought I would mostly learn about life in the Smokies, one of our nation's richest ecosystems, and I did. Scientists, Park Rangers, and knowledgeable volunteers took me into the field and taught me the names of trees and ferns and birds and salamanders, showed me growing insect larvae, blooming algae, and synchronous fireflies, demonstrated how to take samples and record data, and helped me along the path to becoming a naturalist. Those were the things I expected to learn, and I was not disappointed. There were a few things, however, that I did not expect. I didn't think I would learn how to pack food, shelter, and 60 small mammal traps for a three-day study on Gregory Bald. I wasn't planning on being involved in managing the Park's specimen collections, or organizing a scientific conference. I didn't realize I would gain experience in the fields of website building, bear avoidance, and washing machine repair. And of course, I wasn't expecting to meet such incredible people, make such good friends, and be a part of such an important mission. I didn't expect this summer to be the experience of a lifetime. But perhaps I should have.

**Bio Intern:  
Josh Brumett**



## Volunteer Coordinator-Heather MacCulloch



Another field season is rapidly approaching its end. Thank you to everyone that participated and to those that helped make all of the events thus far a great success! We have a few more dates you need to remember. Friday, August 20 is our Snail Blitz – rescheduled; excellent physical condition is highly recommended for this event as the terrain is very steep and rugged; reservations are required, call me to inquire. Labor Day weekend will be our Biodiversity Hike to Mt. LeConte, reservations are required, call soon to reserve your spot!!! A guided hike, lunch on the trail, a night at the lodge, an evening program @ Clifftops are just some of the great things being offered with this exciting event. Also, September 7 will be our third “Save the Planet Series” at the Hardrock Café @ 6pm; you won't want to miss it. Finally, as our new website is getting ready to “go live”, keep your eyes open for the new Volunteers section. There will be current up-to-date positions listed, forthcoming events and any other announcements there. Thank you for your continued support of DLIA and for making the ATBI project such a great success.

Heather MacCulloch- (865) 430-4756 or [Heather@dlia.org](mailto:Heather@dlia.org)

# Product Spotlight - DLIA Smokies' Wildflower I-Phone App

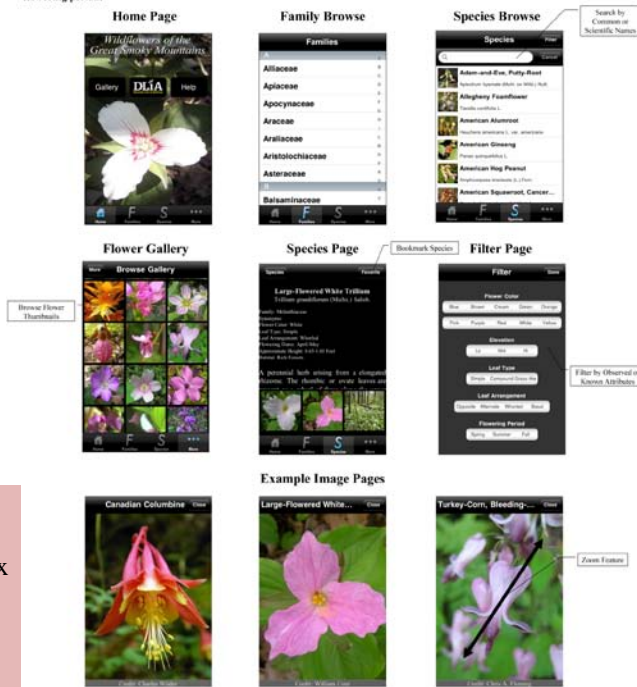
BDY Environmental LLC and our beautiful Great Smoky Mountain wildflowers have partnered to help DLIA. This wildflower application currently covers 178 of the most commonly observed species within Great Smoky Mountains National Park and surrounding regions. The current focus of the project is primarily herbaceous plants, although some shrubs and woody vines have been included. These species are represented by over 450 images with detailed descriptions that include information regarding plant characteristics such as approximate height, flower color, leaf type, leaf arrangement, leaf size and margins, inflorescence types, flower attributes, flowering period, and habitats. The formulation of these original species descriptions utilized regional taxonomic keys, existing plant guides, and personal observations. The primary goal of this project is to raise awareness of the incredible biological diversity of Great Smoky Mountains National Park and surrounding environs. In an effort to achieve this goal BDY will dedicate up to 25% of the proceeds generated from sales of this application to Discover Life in America. See the example at right or go to: <http://itunes.apple.com/us/app/gsmwildflowers/id368637571?mt=8>.

## Interactive Guide to the Wildflowers of the Great Smoky Mountains

For use on the Apple® iPhone or iPod Touch



This interactive application was developed by BDY Environmental LLC in hopes of encouraging further exploration and enjoyment of the vast displays of wildflowers present within the Great Smoky Mountains National Park (GSMNP). While the geographic focus for this application is the GSMNP, the user will find that many of the species included are also found throughout much of the Southern Appalachian Mountains. This first version of the application currently covers 178 of the most commonly observed wildflower species within the GSMNP and surrounding regions. These species are primarily herbaceous plants, although some sub-shrub and woody vines have been included. These species are represented by over 450 images and detailed descriptions. We have attempted to display the information in a way that is easily accessed either through browsing of images or, flowering period.



Developed by:  
**BDY NATURAL SCIENCES CONSULTANTS**  
2014 Elk Avenue South, Nashville, Tennessee 37211 P: 615.862.8792 F: 615.862.8796

With a portion of the proceeds benefiting:



Our beloved Board member, Fern Foray  
Leader, and volunteer extraordinaire, Pat Cox

## Volunteer Spotlight-Patricia Cox

A person who is good at everything, extremely intelligent, forward thinking with groundbreaking ideas, and loved and admired by everyone who is privileged enough to meet or work with him or her is hard to come by. Pat Cox is one of those people, and DLIA is lucky to have her as one of our wonderful volunteers.

Dr. Patricia Cox has been involved with DLIA almost from the start and has supported our organization in so many ways that we don't have enough room in this short article to mention everything. Pat is currently our Board Secretary (her second term), she has volunteered for countless events, she is the creator and leader of one of our most successful ongoing projects, the Fern Foray (which is documenting fern populations throughout the Park using Citizen Scientists), and she has helped DLIA in so many other ways that we are forever thankful that she has chosen DLIA as one of her causes.

We really don't know what we would do without her and don't want to find out. Pat, we appreciate everything you've done for DLIA and look forward to a continued long and happy partnership.

## What do we still need to study? Hemiptera!

Rachel Cameron

The order Hemiptera, containing between 50-80,000 species, is one of the "understudied" orders of insects in the Smokies. We are looking to researchers to tell us more about several of the families. We suspect this group is very diverse in the Park but need this verified through research.

The term "Hemiptera" is a combination of Greek roots meaning "half-wing." The forewings of many of these insects are hardened at the base but membranous at the ends. These include cicadas, aphids, planthoppers, leafhoppers, and both assassin and shield bugs.

The Hemiptera order is commonly known as the order containing "true bugs" and members are set apart from other orders of invertebrates because of their mouthparts. These mouthparts allow them to pierce plant tissues in order to suck out the liquids, commonly sap. However, not all are phytophagous, or plant-eating. Some are parasitic, in this case living off of the blood of larger animals. Other Hemiptera are predatory and eat smaller insects.

Interestingly, members of this order do not undergo metamorphosis from a larval to an adult stage. Instead, the young of the Hemiptera look much like the adults; they are called nymphs. The only significant transformations from youth to adulthood involve the development of wings and the final functioning of sexual organs.

Commercially, some Hemiptera are used in shellac or dyestuff. Many species are also common garden and crop pests, while others of the same order act as pest control for these insects.

So much more can be learned about this order from observation in the Park, specifically about the Miridae, Reduviidae and several other families. If you know of anyone interested in researching Hemiptera, please contact DLIA.

Source: <http://en.wikipedia.org/wiki/Hemiptera>

# CALENDAR OF EVENTS 2010

## DISCOVER LIFE IN AMERICA

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We're on the Web!

See us at:  
[www.dlia.org](http://www.dlia.org)

### August:

- 20—Snail Survey
- 21—NOC/DLIA Event @ NOC in Gatlinburg
- 28—DLIA Board Meeting

### September:

- 1—Exhibit Opens at Bliss in Knoxville, TN
- 4—5—Biodiversity Hike to Mt. LeConte and Overnight at the Lodge
- 7—Save the Planet Series at Hard Rock Café, Gatlinburg
- 20- NOC/DLIA Event @ NOC in Gatlinburg

### October:

- 16-NOC/DLIA Event @ NOC in Gatlinburg

### December:

- 4—DLIA Board Meeting

### January:

- 8—Mini-Grant RFP
- 8—16—Wilderness Wildlife Week (DLIA booth and program)

### February:

- 15—Mini Grant Proposals Due

### March:

- 8—Save the Planet Series at Hard Rock Café Gatlinburg

### April:

- 1—Mini Grant Awards Announcement
- 7-9—DLIA/ATBI Conference, Glenstone Lodge, Gatlinburg
- 13—16 ASB Conference in Huntsville (DLIA booth)
- 26—1—Wildflower Pilgrimage in Gatlinburg (DLIA booth)



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