Appalachian Highlands Science Learning Center

National Park Service
U.S. Department of the Interior

Supporting science and research-based education in the parks of the Appalachian Highlands Monitoring Network.

Photo Jonathan Mays

Big South Fork National River and Recreation Area
Great Smoky Mountains National Park
Blue Ridge Parkway
Obed Wild and Scenic River

The Appalachian Highlands Science Learning Center is part of network of Research Learning Centers in National Parks across the country. A unifying set of goals guide each center, but each operates in a unique fashion shaped by their partnerships.

Facilitate Use of Parks for Scientific Inquiry

The Appalachian Highlands Science Learning Center supports science both by providing facilities (see back) and through less tangible means. Staff at the center work to identify synchronicity between research projects and when possible, bring scientists together to maximize research effectiveness. For instance, scientists who study birds and salamanders collaborated with a graduate student studying mercury bioaccumulation. She took tissue samples from scientists' study animals, increasing the geographic and taxonomic scope of her research at minimal extra cost. This saves her time and effort and gives park managers a better picture of the impact of mercury on park resources.

Support Science-informed Decision Making

Through our partner, the Great Smoky Mountains Association, small research assistance stipends are distributed to attract new researchers into each of the network parks to focus on specific management questions. Research projects supported by funds obtained by the Research Learning Center include:

- effects of varied management practices on grassland bird use of fields
- threats to endemic crayfish species from an introduced crayfish
- population status and genetics of the federal candidate hellbender.

Results from these studies have assisted park managers in making both small choices, such as when is the best time to mow a certain field, to larger decisions, such as whether to manage particular exotic species.

The Center also assists the Smoky's All Taxa Biodiversity Inventory, which, as of January 2007, has identified 829 species new to science, 4,749 species never before recorded in the park, and numerous previously unknown exotic species.

NPS Photo

A NCSU graduate student collects blood for mercury analysis from a Song sparrow.

Photo Martin Hutten

Educators, volunteers and scientists learn how to isolate cellular slime molds during a training held in the Smokies to expand the Eumycetozoan Inventory across the National Park Service. This inventory is a case study for how to economically conduct a single-taxa inventory across the National Park system. Currently, 32 park units are involved in this research.

Major network programs include:

- Research assistance stipends
- Publications about research in the parks
- Citizen science opportunities for middle school aged students through adults
- Internet databases that support citizen science projects
- Teacher training seminars
- Logistical support for research needs such as park orientation, GIS data...

The Center is physically based out of Great Smoky Mountains National Park at Purchase Knob. This facility offers:

- A small wet lab with an array of monitoring equipment
- Internet hookup
- 50-person conference room
- Lodging for 8-10 researchers
- 5 tent platforms
- Public restrooms
- Easy access to high elevation, old growth forest, grassland meadow & stream ecosystems.

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Appalachian Highlands Science Learning Center
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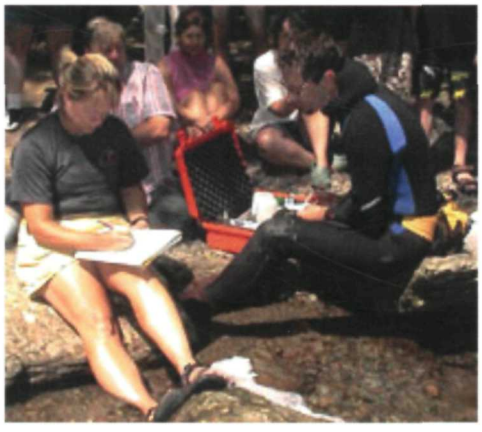
The National Park Service cares for the special places saved by the American people

Connecting Scientists to Parks and People to Science

NPS Photo

Communicate the Relevance of, and Provide Access to, Research Knowledge

At the Appalachian Highlands Science Learning Center, we believe one of the best ways to inform people about science is to involve them directly in the scientific process. Students in 7th grade are trained how to collect data on ozone symptoms while gaining valuable math skills. College & high school interns are placed along-side researchers to assist them in collecting field data. Adults are trained in a variety of specimen collecting and processing skills so they can be called upon to assist in bio-blitzes (intensive field collection days that typically focus on a single taxonomic group).



NPS Photo

Promote Resource Stewardship through Partnerships

We could not accomplish our work without the creative use of partners to assist with managing volunteers, funding projects, organizing events and expanding our capacity. Partner, Hands on the Land, hosts our internet databases that give teachers classroom access to data collected in the park, allowing students to reach their own conclusions from real world data. Partner Discover Life in America handles the logistics of organizing bio-blitzes and training All Taxa Biodiversity Inventory (ATBI) volunteers. Friends of the Smokies assists in funding special programs such as our Teacher Enrichment Seminars, summer high school interns and other education projects.

Photo Becky Johnson

Dr. Michael Freake uses high school interns (left) and teachers attending a training seminar to assist him in Hellbender research (top right and top left). Funding for this work was supported by a research assistance stipend facilitated by the Appalachian Highlands Science Learning Center.

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