

Citizen science a key component of Smokies resource management

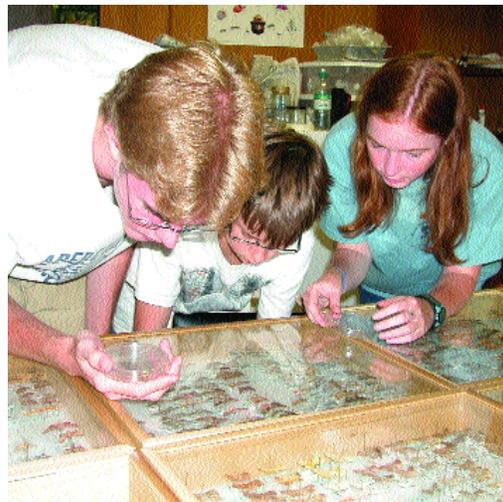
by Michelle Prysby and Paul Super

“Students are part of a growing effort to involve volunteers in the real work of inventorying and monitoring the park’s resources.”

IT’S JULY AND THREE HIGH SCHOOL STUDENTS trek up a sunny slope in Great Smoky Mountains National Park carrying nets and vials. They lay out a strip of brightly colored bowls filled with soapy water, then spend 30 minutes catching bees as they gather nectar from summer wildflowers. By the end of the day, the pan traps will be filled with more than a dozen species of bees that the students will pin and label along with the bees caught on the wing.

These students are part of a growing effort to involve volunteers in the real work of inventorying and monitoring the park’s resources. Without their involvement, most of these projects could not be attempted. In addition, the volunteers benefit from what can be a life-changing experience that could lead them into the fields of scientific research and resource protection. Citizen (or amateur) scientists are collecting data for studies on salamanders, bees, snails, beetles, daddy longlegs, archeology, and more. Many of these projects are part of the All Taxa Biodiversity Inventory (see page 20).

Aided by a summer research assistant at Great Smoky Mountains Institute at Tremont, students identify moths caught the previous night. The youths are part of Teen Science Camp, a 10-day event in which students assist with various research projects at the park. Erin Henegar (far right) is majoring in biology at college. Citizen efforts have added more than 100 new moth species to park lists.



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Great Smoky Mountains Institute at Tremont, Appalachian Highlands Science Learning Center, and the nonprofit Discover Life in America work in conjunction with the park Resource Management and Science and Resource Education Divisions to involve citizens in research in a way that optimizes both the educational and scientific benefits. These citizen science efforts began in 1999, and 2002 saw the launching of several new projects and the expansion of continuing projects.

Surveying along park trails is an excellent way to gather quantitative data on species distributions that can be used for developing habitat models, but most scientists are able to visit only a small area of the park. By 2002, volunteers had collected data on the distribution of more than 40 species of ferns along one-tenth of the park trail system. Using this same model, 54 high school students collected data on Turk’s-cap lily (*Lilium superbum*) in advance of reintroduced elk moving into the lily’s habitat.

Based on an Australian model, the park’s FungiMap project was launched in 2002. Tapping into the expertise of the Asheville Mushroom Club and other mushroom enthusiasts, volunteers are submitting observations of a set of 50 species that are easily identifiable in the field.

Gardens for monitoring the effects of ground-level ozone on native plants have been in place in the park since 2001. With the help of the scientists working on this study, these gardens were being installed in 2002 at sites in school yards, Pisgah National Forest, Blue Ridge Parkway, and Obed Wild and Scenic River to allow students to collect data on local effects while learning about air quality issues.

Using a refrigerator with an attached ultraviolet light, students and adults at the institute monitor moth diversity and abundance on a weekly basis, releasing most of the captured moths alive. A parallel project at the Appalachian Highlands Science Learning Center began in 2002. More than 100 new park species records have been added by these citizen scientists.

Not only is citizen science a useful research tool, it also is a good way to provide visitors with a real connection to park resources. Some students have chosen careers in the National Park Service or in science because of their research experiences. Teacher participants have incorporated more inquiry into their curricula. Through Parks-as-Classrooms and the institute, some teachers are even conducting comparative studies between the park and their school yards. ■

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