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Bid to Catalogue All Life Forms Spreads Among Parks in U.S.

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The ambitious All Taxa Biodiversity Inventory project, which aims to catalogue every life form in Great Smoky Mountains National Park, has already found 3,500 species new to the park and more than 500 previously unknown to scientists.

Now the idea is spreading through the 388-unit national park system and to many state parks -- including the 54-unit Tennessee park system, which began its own ATBI in 2004.

"I think it is really exceeding expectations," Michael Soukup, chief scientist with the National Park Service, said recently. "If this effort could prosper, I think it would have an enormous impact on how people relate to biodiversity in this nation."

The Smokies ATBI began in 1997 as a volunteer-driven, academically oriented exercise modeled after an earlier project in Costa Rica that was never completed for political reasons. Though far from finished, the exercise in the country's most visited national park is now a model for others.

More than 150 scientists and researchers from California to Maine recently attended an annual conference on the Smokies project. They came to report on their own studies in the Smokies, a 520,000-acre preserve on the Tennessee-North Carolina border, as well as on efforts to start similar projects on the Colorado Plateau, in the Adirondacks of New York and at a state park in southern Ohio.

Soukup said the country's 57 national parks and 113 other scenic areas are engaged in a complementary study to identify their major animal and plant inhabitants, so they can manage the resources better.

But an ATBI goes further.

"The ATBI is an intellectual leap," Soukup said. "It is predicated on the value of all the parts of the [ecosystem], and that there is value in knowing even the obscure stuff that might have tremendous value, but we just don't know enough."

Slime molds and fungi, beetles and moths, and salamanders have made up a large portion of the discoveries in the Smokies, so far.

But Smokies chief biologist Keith Langdon said their impact may prove to be huge, noting that a bacterium found in Yellowstone National Park was the basis for DNA fingerprinting and a slime mold found by University of Georgia researchers could help in Alzheimer's research.

"We won't reap the benefit from the scientific knowledge for a few years," he said. "But the importance of management" is immediate, he added. "We are finding so many more things than we thought we had."

That includes foreign invaders, including bugs and blights that are killing beech and hemlock trees and threatening others.

"It is impressive what they can find and what they can alert us to," said Dale Ditmanson, Smokies park superintendent, who credited the studies with helping managers get a jump on the hemlock woolly adelgid invasion.

The Smokies ATBI has a goal of cataloguing everything in the park within 15 years. That may not happen, but interest in the project has grown exponentially.

Discover Life in America, the nonprofit organization that coordinates the project, says that research proposals doubled in 2004, and that Smokies support organizations are helping finance a $4.5 million laboratory that, when completed in 2007, will aid the effort.

"It is fantastic," said Brian Strong, head of resource management for the North Carolina park system, which is trying to bolster its own habitat monitoring program.

LinnAnn Welch, biologist for the Tennessee park system, said she is anxious to see what will be discovered in Tennessee's parks using the Smokies ATBI model.

"We are expecting to find a lot of things we don't know about," she said.