

A superintendent speaks out on the value of inventory and monitoring

Remarks of Superintendent Karen Wade, Great Smoky Mountains National Park

Editor's Note: Late last summer, Great Smoky Mountains National Park (Tennessee & North Carolina) hosted the annual training session of the NPS Inventory and Monitoring Program. The weeklong event featured the following lecture by Superintendent Karen Wade. Abridged here, her remarks to the 25 course participants resulted from a conversation with Keith Langdon, the park I&M Program Manager.

I'm pleased to have an opportunity to talk about the importance of inventory and monitoring from a superintendent's perspective. Having served in both large and small areas, historic and natural, in four regions of the system, I've begun to develop some perspective on resource management that may be of value.

For the most part, parks were established for their scenic and cultural characteristics and their economic value to local or regional communities as an attraction. The National Park Service has always managed them mostly from that standpoint. Therefore, Great Smoky Mountains National Park, for example, has become known more for its huge visitation (10 million visitors a year) rather than for being a refuge for one of the richest and most diverse collections of plants and animals in the temperate world.

Like the Smokies, most of the parks in the national park system are still relatively unknown biologically. We have probably drastically underestimated the biologic value of parks, since we have only just started a servicewide approach to inventorying.

Larger parks are recognized for their natural values largely because the public hears about issues related to charismatic megafauna, catastrophic fire, and so on. But the reality is that most park units are smaller historical parks. A significant percentage of these are military sites originally selected for their importance during the Revolutionary and Civil Wars. As strategic sites, they represent regional geologic prominence or are situated at the confluence of coastal or river systems. Nonmilitary units are also often located on sites with unusual habitats. The interesting result is that these units represent both regional and national biodiversity and contain many rare species and regional endemics.

Many of these units have been protected for many decades, being perhaps only lightly grazed at most, and contain natural habitats that have long-since disappeared from the surrounding landscape.

As an example, when Keith Langdon from my staff visited Shiloh National Military Battlefield in Tennessee several years ago he called attention to the fact that the park contained 150 acres of southern bottomland hardwoods that had never been cut. This is an unusually large and representative sample of that habitat. In addition, Shiloh preserves rare lichens. I really enjoyed a recent exchange with Superintendent Woody Harrell as he bragged about having more species of fish than the Smokies. I thought that was good news...a superintendent who understands that it's the diversity of the resources that matters, whether natural or cultural. I also know that Stones River National Battlefield Park in Tennessee has plants not represented elsewhere.

The superintendents of the Appalachian Cluster have begun to realize that not only have we underestimated the value of the natural resources on these sites, but that the state and federal agencies that normally use public lands for inventory work have always kept a hands-off attitude towards these federal enclaves. Even they don't have a clue what wonders exist on these lands. I wonder if the public has even the remotest idea of the wealth of resources on parklands. Interestingly, we have tended to take credit for and count the large populations of creatures in large parks, but appear to have failed to take credit for the whole range of natural communities represented on smaller properties dispersed throughout the eastern United States.

Inventories are often seen as static lists of "things." I think we don't fully appreciate that almost *any* of our parks contain surprising holdings if all species on the site were known. Inventorying becomes exciting when we think of it as the opportunity to report the treasures of regional endemics, taxa new to science, unusually vigorous populations of uncommon species critical to long-term survival, exemplary natural communities, and so

on. Some large, biologically complex parks may have many more "things," but most parks, regardless of their founding legislation, contain elements that make up an exciting array representative of the diversity of our nation, region, and locality.

If inventories tell managers the full story of (1) *what* resources they have, (2) *where* these resources are, and (3) *associate* the species with other species, sites, and phenological data, then managers will have a potent tool for making intelligent decisions, taking action, and defending parks against misguided and uninformed decisions and actions from within and outside the park. This type of information allows us to be good land stewards within a regional ecosystem context.

In my view the real threat to parks is ignorance. The possession of sound scientific data is often decisive in the political arena in which superintendents, regional directors, and agency directors must operate.

Long-term ecological monitoring is the logical extension of a thorough inventory whether applied to big natural areas or small cultural areas. A monitoring program must be knit together to track key ecological processes within the larger system of which we are a part (we can't track very many individual species). The components of the system should be related to one another so that we can better understand ecosystem function. Once we have data from a site or a watershed, we have an early warning system that we can defend in a public forum or in court if we have to.

I like to use the Smokies as an example of how critical this is. Some areas here receive 300% more air pollution than others. This is significant in choosing the sites where we monitor air pollution and in choosing the watersheds we study. The associations help us understand the system and explain our case, for in the final analysis we need to score for the advantage. We can do that by understanding *all* the relationships of our resources and helping our allies understand them, too. In most places, we cannot hope to ever have the ability to monitor everything, and we have learned that

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indicator species are not the most reliable indicator of what is going on in the ecosystem.

I just spent four days on Hazel Creek in the park with the fisheries crew, representatives of the North Carolina fisheries program, and the North Carolina local chapter of Trout Unlimited. We collected and transported 175 native brook trout to a stream that had died in the 1920s because of silt loading from logging before the park was established. This was the third year I participated. In past years, we have censused streams, collected data, and looked for restoration sites for brook trout. I cannot describe how moved I was to walk along an old railroad bed with park neighbors and allies carrying back into the wilderness descendants of those living creatures that were destroyed so many years ago. To have come to a point where we could overcome ignorance and take yet another step towards full restoration of this significant park, brought this superintendent to tears. I was not alone in that feeling. The Trout Unlimited representatives who had paid for the project shared it, as did the North Carolina agency people who now count park resources as part of theirs.

I have less trouble imagining the National Park Service having the ability to inventory *what* exists in parks than imagining us keeping the momentum going to continue monitoring for all time. In the field last week, I felt perhaps it's being able to communicate those special moments that will enable us to keep people's interest alive in spending the money for monitoring. Let's be sure to share with the public what monitoring really means for our resources.

Finally, let me finish by telling you that the Smokies is now in the initial stages of attempting a feat that has not been accomplished in the world: a complete inventory of all our species including bacteria. One of the main reasons for doing such a project is to heighten public awareness of just how important such a project is in order to provide stewardship for these resources in perpetuity. When you read about the Discover Life in America/All Taxa Biodiversity Inventory in the Smokies, please remember that we are not only trying to share with the world the significance of this park, but also the significance of the treasure house of resources preserved in national parks. Getting people excited about what we find in the Smokies may help all land managers with the challenge of articulating why we need to know and what it means once we do know. **P**