

Protected areas, science, & the 21st century

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Editor's Note: *The following is an edited excerpt from a presentation by John Reynolds, Pacific West Regional Director, given at the Third International Conference on Science and the Management of Protected Areas (SAMPAs III) in Calgary, Alberta, on 16 May 1997. Coauthored by Christine Schonewald, Research Scientist with the USGS Biological Resources Division, these thoughts, as the title suggests, are relevant at the millennium.*

Science will and must occupy a crucial center in the management of protected areas in the future. Our paper does not focus on the biological or physical sciences. It would have, even a decade ago, maybe even five years ago. Rather, it focuses on the interests of people and their values, and the need to bond protected areas to the societies within which they exist. This turns the early 20th century idea of "boundary" inside out—no longer is a boundary a line of certain demarcation (i.e., if a resource lies inside the boundary, it is protected and we will do the protecting). No, today a boundary must be seen as something like a "diffusion filter." But what a change! To a traditionalist, this sounds weak, puny, almost like giving up.... But our societies interact with our protected areas in ways Frederick Law Olmsted might not be surprised about, but many protected area managers would be. What a change!

There is a paper at this conference that's different than all the rest. There's a brave soul out there who's on to something and has guts enough to face his peers with it. The title is "A fuzzy framework for managing landscape modeling concepts." Fuzzy logic in protected area management? What's next?

Well *that's* next. Listen to some of his abstract: "Imprecision, nonspecificity, vagueness, and inconsistency are considered undesirable features when trying to define policies or implementations," and "much of the logic used in human reasoning is a logic with fuzzy truths and fuzzy rules of inference."

Does that ring true for managing protected areas? Having just finished three years as Deputy Director of the National Park Service, it sure rings true for me! There wasn't a park issue that I dealt with that was precise, specific, defined, and consistent, and the superintendents didn't think so either. So what about science in this kind of

world with fuzzy logic, chaos theory, and diffusion filters? We need an explosion in capability. Our technical knowledge must get better. We have to define our technical research more clearly. We must monitor well, keep records well, and analyze the changes well—no difference from a decade ago. We have to do it better, not only so we know what we are talking about, but also so those through the diffusion barrier receive us with credibility, and we communicate results so that they can understand them.

Who's out there through the diffusion filter? What are their values? Do we understand them? Do they understand us? After all, what Teddy Roosevelt's peers thought about parks may not be what the population today feels. We have to know, and we have to relate our values to their needs for the future, and help them have the range of information so they can choose wisely. So, science about people, about vox populi, and the science of education of those whom we serve are essential.

If we are interested in protecting biological diversity and in ecosystem management, the Organic Act (1916) provides a good reminder. It reminds us that protection is associated with some sort of social pleasure, and that social pleasure, or satisfaction, is essential to the survival of these areas. Social pleasure or satisfaction includes, but is more than just direct interaction with, park resources. In a larger sense, it directly implies a cohesive acceptance throughout society that parks are of value. Can there be any doubt that the 21st century will bring more controversies and problems? We will still be asking: how do we interpret the protection process, how does it affect human behavior, and how does it affect our ecosystems and cultures? Finally, we need protected area managers who are creative and can take good biological, physical, landscape, ethnographic, historical, paleontological, social, economic, and political sciences and use them in ways that few have the temerity, guts, or intellect to even try today.

Creativity based on good information of all kinds will be the basic requirement of the future. The logic will be fuzzy, the issues imprecise and vague, and the boundaries more diffuse than ever.

It's a huge challenge, but an exciting world, don't you think?