

## Rapporteur Comments on Panel Discussion

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Over the day we have heard from quite a range of knowledgeable and experienced speakers, about parks and about ecological integrity. I cannot possibly summarize in detail, or even representatively, in the time allotted to me. So I won't even try. What I will do is try to highlight some key points and emphasize three key themes — which inevitably reflect my own take on ecological integrity and protected areas.

Certainly there have been a number of common topics, referred to by at least several, if not most, speakers. These really amount to keywords, or in some cases, criteria, for thinking about ecological integrity in protected areas. For me, the list includes productivity, biodiversity, ecosystems, habitats, functions, limits and cumulative impacts, comprehensiveness, consistency, adequacy, representativeness, scale, connectedness, structure and function, evolutionary complexity and dynamics, and an ecosystem/landscape/bioregional perspective. Clearly, exactly what the substantive and practical role of any of these is in protected areas management is open to discussion, and probably highly situation-specific. But still I suspect these concepts are a useful starting point for thinking about parks and ecological integrity.

I also want to highlight some more general points under three headings – assessment, management, and integration – which I see as key activities for understanding and implementing ecological integrity in a protected areas context.

In the context of assessment, parks and integrity raise a couple of different kinds of questions. First, there are questions about the information and knowledge needed for assessment. What science, how used and acquired? Questions of how we define the boundaries not only of protected areas, but also to recognize the significance of species and ecosystems outside as well as within parks. There are needs to examine data standardization, digital data, the use of technological tools, and the development of informational baselines. There is again growing interest in the use of simulation models, some linked to geographic information systems (GIS), and there is more attention to innovative information products such as CDROMs and web-sites, that allow more information access and even interaction in the course of assessments. On the other hand, I have long argued that there is a need to better use the information we have before going to a lot of trouble to acquire more. Parks have also begun to pay attention to incorporation of traditional knowledge as well as scientific knowledge in the both park planning and effects assessment contexts – which is critical to a full understanding of integrity. Many of these issues and initiatives are illustrated and examined in the growing experience with large-scale ecosystem management – which includes protected area networks, but also much

else (see especially Johnson, *et al.* 1999; Jensen & Bourgeron, 2001).

A number of important points have been made, and even repeated, from a management perspective. Management builds on assessments, and understanding. And increasingly there is a need to assess management itself; to pay attention to identifying goals and assessing progress toward them. Task Forces, panels and studies can have influence, but like legislation and policy, they are part of an ongoing process – which determines their real impact. And change is rarely, if ever, wholly rapid and major. Yes, such things can be useful: as background and support for lobbying, as a baseline, minimum standard, or to demonstrate a consensus. But, high-level studies and initiatives need to be complemented by supporting and encouraging people on the front lines. This is critical. Management must, especially, not only address “big” issues but also make a difference at local levels, and on many fronts. Increasingly such action depends on widening the diversity of people and organizations involved. This may be through participation, stewardship, or co-management among other vehicles. And ultimately (co)management must include parks’ traditional “enemies” as well as traditional friends.

Finally, integration clearly can have many meanings, as alluded to earlier under assessment. It has meaning both within and between assessment and management. There is, in the various kinds of assessment, a need for integration of kinds of information, of information products, of different questions and disciplines, of old and new knowledge, and of qualitative and quantitative. In management, there is a particular need for integrating different kinds of protected areas, protected and unprotected areas, and different management agencies and their activities. Sectoral resource and land management, and its integration with regional or ecosystem management, does matter – for it determines much of the management of the spaces between parks. In practice, and probably ideally, integration in assessment and management contexts is linked, and trying to bring the two together may be a particularly important role for the concept of ecological integrity. There are approaches which seek to achieve this bridging integration. Adaptive management is perhaps the oldest and best known, ecosystem-based management more recent, and collaborative management approaches the most recent. All three are increasingly commingled, perhaps most distinguished by their relative emphases rather than absolute differences. Systems, and complex systems, approaches are a very useful, if still evolving analytic tool. There are also issues of power and co-option in collaborative and participatory management that must be addressed. Power and control, and even ethical, concerns exist in the relationship between different agencies and people, and between people and nature; as evinced by the growing criticism of the metaphor of management in both environmental and business contexts (e.g. Bavington, 1998; Grey, 1999).

In conclusion, I must point out that moving forward on the issue and ideas identified above probably does depend on a few “bottom-lines”. Progress likely presumes, or at least depends for real success, on adoption of a long-term approach,

on adequate funding, on government and public commitment to both parks and wider environmental integrity (without which a commitment to parks is relatively meaningless). There are also strong needs to learn from experience, to think about what success would mean and how to visualize it, to pay more attention to conveying the ecological integrity and parks message to a broad audience; and to better evaluate and monitor what we do and don't do.

## References

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