

Planning and Management Challenges, Research Needs and Actions in Southern Ontario: Crossing the Disciplinary and Scalar Gaps in Parks and Protected Areas

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There is an aphorism from Hollywood (Goldman's rule) that states: "No one knows anything". This is apt, given our discussion today. All of us who participate in fora like these will have strong opinions and often disagree. Most of us believe that this is healthy and necessary in order to do things better. The public and politicians probably disdainfully take this as evidence that we haven't a blessed clue about what to do.

Personally, I'd twist Goldman's rule to *no one knows everything*, though I doubt the appellation "Murphy's Law" will be needed; we have enough "Murphy's Laws" as it is. So no one knows everything. How pithy. How trite. So what? I think the importance for us is that it reminds us that as resources and political will have shrunk dramatically, we must increase our collaborative efforts. We must be willing to let go our empires and some control. I admit that this is easy to suggest but difficult for me to do, since I can be rather hands-on; this is a nice way of saying I am occasionally, an anal-retentive control freak. One reaction to shrinking resources has been to retreat into these controlled, one-person fiefdoms and duck until we think the worst is over; this leads to a lack of communication, a duplication of research, and inaction. Worse, some appear to have settled into a sullen mood, a sense of resignation, and have stopped communicating.

I agree that sometimes we talk too much—like I'm doing now, perhaps?—and end up with too much diversity of collaborators and opinions. Paralysis by analysis sets in like so much *rigor mortis*. However, we have heard today that collaboration is a must. We need to get policy goals and scientific research to actually have the same purpose. This means shedding the often-present mistrust and semantic differences between the policy and science realms. The impetus for this might be a common enemy of inaction. Nonetheless, solving what might be termed institutional problems of communication and resources will be a Sisyphean task. We also need to have effective information transfer to private stewardship and recognize that decentralized protection can work, *albeit there still needs to be a commitment for guidance and monitoring from a central authority*. Sadly, this commitment seems absent under our current political ideology. We need the commitment from the public and private landowners to help us conserve lands. Most of all, we need to do this across scales of existence—genes, populations, communities, ecosystems—and scales of interest—species, private land boundaries, political boundaries.

Now if I believed I could achieve all of the goals outlined in the previous paragraph, I would probably be accused of believing I could walk on water. I can't even swim very well. So I've tried to figure out how I could help address the goals, though certainly not by myself.

Since I believe the fundamental problems are related to disciplinary barriers within and between institutions and spatial scale, then my research should tackle these. This is a mundane logic; the real problem is that these problems are so large that by the time any of us solve them, most protected areas will have been killed off by many smaller phenomena, like invasive exotics, and disinterest by the public and politicians in the more esoteric fundamental problems. If we don't do something tangible, we risk losing support for solving fundamental problems; if we don't address fundamental problems, then our tangible actions will eventually be for naught. This is a classic conundrum that sparks recursive debates. For example, habitat fragmentation is an ultimate cause of species extinction and species extinction speeds habitat fragmentation. Which problem (which scale) do you address first, given limited time, interest, and resources?

My answer is: address both, but in a systematic manner. In my case, I do restoration ecology and environmental monitoring research. Philosophically, I wish we planned better, hadn't caused so much damage, and that restoration ecology wasn't needed. This gives us some ideas for future planning but is moot when it comes to the consequences of previous (in)actions. Consequently, I have restoration ecology projects that address the small-scale population ecology of keystone species. Thus, I examine pollination by insects of forest understorey herbs and the methods needed to manage exotic plants like dame's-rocket (*Hesperis matronalis*). I involve community groups and my undergraduate students in these projects and have partnerships with municipalities, industry, and private landowners. These smaller-scale projects provide valuable information for larger-scale restoration projects but their transparent political purpose is to get institutions talking and keep people interested since they can see immediate results.

On the larger scale, I do research on cross-scale and cross-disciplinary predictive modelling using computer algorithms. With colleagues from universities and government agencies, I ask questions like: "How will the keystone species in a park respond if Canadian trade policy hinders our commitment to the Kyoto Protocols?" This is a rather esoteric question, perhaps even to fellow academics, but it addresses the issue of connecting policy at large scales with small-scale population responses and the subsequent effect of these responses on further climate change, hence future human responses. Since effects are cumulative, using protected areas as case studies helps predict the consequences of a large and otherwise unwieldy set of interactions and ultimately can better help conserve these protected areas.

While larger-scale research may be more vital to human survival and the survival of protected areas in the long-term, few people get much satisfaction out of computer models or institutional questions that smack of bureaucracy. Perhaps if we called it "cutting red-tape", it would be more populist, but less accurate and rather insulting. I think people, including me—a scientist is a person, believe it or not— can more easily understand what restoring a gravel pit is all about. It just looks better. It is tangible. It is action. It is something anyone can do, with a little help. It is a nodal approach that can inspire others.

Still, we cannot rely on volunteers to do the work of professionals. I don't mean this to be condescending. I mean we, as professionals assembled here today, cannot

abdicate our responsibility. We cannot risk "volunteer exhaustion". We must address the institutional barriers so we rely less on volunteers and more on other professionals, though I realize that even the pool of professionals is shrinking and we also are being asked to do too much. However, if we present a convincing case that we can get along with each other, at least in terms of collaborative efforts and actions, and address institutional problems, then we can better convince governments and the public that we're doing our jobs right and that protected areas are worth the time and expense. This makes us more influential outside of our own worlds. It is apparent that we need to be more influential as a group if we are to get on with the job of conservation, despite all of the fiscal restraint and weeping and gnashing of teeth over cutbacks. We need our resources back; let's make ourselves so visible and indispensable that we're viewed as a necessity rather than a luxury.

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