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The Inaugural Issue of *Conservation Ecology*

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INTRODUCTION: TIMES OF CHANGE

For a time, I thought *Conservation Ecology*, by one criterion, would be the best but least read journal in the world. Our rejection rate for the first half-dozen submitted manuscripts was 100%. Now, a high rate of rejection is much treasured by science journals as testament to the rigor of their content — but 100%? Some of our rejections were clearly appropriate, but others seemed to reflect a very different assessment of novelty than my own.

I began to suspect that our double-blind review, combined with the traditional review procedure, was a revealing experiment. Insightful, but nontraditional, papers were being rejected outright because their novelty was so unfamiliar that it was simply unrecognized or was ignored as being irrelevant. Some papers were written by well-known authors, but that fact was hidden in the double-blind review process so that reviewers would have no second thoughts.

This experiment reinforced my sense, and that of others, that, early in a major transition in ecology, traditional peer review procedures could sometimes squeeze out novelty, synthesis, and well-grounded speculation in the laudable effort to eliminate truly bad papers. This is not a critique of the double-blind review, which levels the playing field for both new and established scholars. It is potentially a critique of routine review procedures in ecology and sister fields, in which the culture is changing.

Penalties that traditional review procedures impose on innovation in disciplines undergoing change are not unique to ecology. They are felt elsewhere. For example, Buzz Brock, a well-known mathematical economist, recently despaired over the reaction of economist reviewers to his often novel, nontraditional manuscripts. His experiences, he claims, have the quality of a nightmare triggered by an experience in Zimbabwe, where he watched hyenas ripping apart the carcass of an impala hanging in a tree. His nightmare turned the impala into one of his manuscripts and the hyenas into red-eyed reviewers. Because the dream and its relevance were so appropriate, I commissioned a cartoonist friend and colleague to capture the image, dramatizing the point (see Fig. 1). Economics and ecology perhaps have more than passing similarities.

Fig. 1. Buzz Brock's nightmare of the way his manuscripts are treated in the review process.



Conservation Ecology is a new journal covering a new application of science, using a new medium. It requires novelty and experiment. The question for a review procedure is how to encourage and publish papers that are novel, synthetic, and interdisciplinary; that combine theory and practice; and that contain grounded speculation, while also being able to identify and eliminate junk. There are no rules, only the application of wise judgment by editors and reviewers.

Fortunately, our initial 100% rejection rate did not persist. An insightful editor correctly diagnosed the earlier negative reviews of one paper as a consequence of misinterpreted purpose: not traditional research, but interdisciplinary communication and insight. Other papers were perceptively handled by informed editors and reviewers already well launched in the particular innovative stream of science represented by the paper being reviewed. Increasingly, editors and reviewers used wisdom and judgment in helping authors and me to define iteratively the kind and style of papers for *Conservation Ecology*.

This experience further reinforces the sense that our science, scholarship, policy, and practice are very much in transformation. It is a transformation launched by recent developments in the Ecological Society of America, namely its Sustainable Biosphere Initiative and its pioneering journal *Ecological Applications*, and nurtured by the newly established National Center for Ecological Analysis and Synthesis.

As a consequence, signals are mixed. Because we do not know what the future holds for a field in transformation, *Conservation Ecology* will encourage some boldness and experimentation. Reviewers of submitted papers are asked to be particularly sympathetic to novelty and grounded speculation, even at the price of weakening traditional criteria for precision in method and analysis. We prefer approximate answers to the right questions, not precise answers to the wrong questions.

A field of scholarship and practice in transition must stimulate a variety of low-cost, loosely controlled experiments in communication and information flow. The internet is an admirable way to do just that. What helps this communication will persist; what fails will not. As one such experiment, we encourage readers, authors, editors, and reviewers to respond to each article as they see fit. Include reactions to the paper, brief reviews of relevant readings, and suggestions for novel extensions to theory or practice. Any message will be accepted as long as it is under 250 words, is relevant to the topic, and does not offend common rules of courtesy.

Simply send email to: submit@consecol.org using the subject header "response to 1:3:14 Doe," where 1 is the volume number, 3 is the issue number, 14 is the article number, and Doe is the first author's surname. Volume,

issue, and article numbers are in the citation at the start of each article. Include the response as ASCII text in the body of the message. Please see the [Instructions to Authors](#) for further details. All responses will be linked to the relevant paper, as they are received, under that paper's heading "Readers' Corner." They will accumulate to establish a line (or web) of conversation that will continue as long as interest persists.

KINDS OF NOVELTY

There is a trade-off between "unfamiliar" novelty and traditions of rigor and precision. The easy solution is to emphasize the latter for fear of making mistakes that perpetuate weak arguments, specious conclusions, and dangerous actions. In a slowly maturing body of "normal" science, the priority is clearly rigor and precision. However, conservation, in science and practice, clearly needs, and is experiencing, a transformation that benefits from unfamiliar ideas, unfamiliar methods, and unfamiliar combinations of knowledge. Our inaugural issue highlights four areas where novelty is much needed.

The first concerns theories and methods that deal with system organization and the resulting patterns of dynamic change. Papers in this area should address the ways in which life shapes, and is shaped by, the physical environment, producing patterns of interrelationships that place theories of self-organization on a par with those of evolutionary theory. Thus, theories and examples of complex, adaptive systems from computer science, mathematics, physics, and the social sciences play as central a role in *Conservation Ecology* as do evolutionary theories from biology. The papers by [Ludwig et al.](#), and [van Coller](#) begin to chart this territory. From familiar points of departure, they emphasize communication to a wide audience in novel ways. One need not be a mathematician or ecologist to understand these papers. We want to encourage much more in this area.

The second topic requiring novelty is the question of sustainability. The kind of sustainability needed for human endeavors is not a matter of maintaining processes of nature, or of economies, or of societies. It requires all three. Therefore, research and practice have to discover ways to integrate knowledge from disciplines that have historically remained separate, not only among the natural sciences, but also the social sciences: economics, anthropology, political science, and history. In this issue of *Conservation Ecology*, the paper by [Carpenter and Cottingham](#) integrates knowledge of the essential functioning of lake systems with that of human economic behavior, exposing novel interactions across scales that must be elucidated for understanding and policy. Additionally, [Colding and Folke's](#) paper explicitly takes a human perspective of biodiversity, drawing on both anthropological and biogeographic data to ask if taboo systems are directed toward species that are listed as endangered. [De Leo and Levin](#) place sustainability clearly at the nexus between nature and people, and define the challenge this presents to theory and practice.

The third area of need concerns the multiple scales at which linked human and natural systems function. Until fairly recently, ecological research has been constrained to small scales (the meter quadrat, the bagged tree; days, months, and perhaps a few years) and to exclusively experimental approaches. However, international research on issues of global change, motivated by possible consequences of the accumulation of "greenhouse" gases, demonstrates the need for both large-scale studies and ways to integrate across scales, from centimeters to thousands of kilometers and from days to millennia. Experimental approaches are only possible for isolated elements of causation at small-to-intermediate scales. We need a full range of inferential approaches and novel statistical methods to develop and distinguish among competing hypotheses, using multiple lines of evidence that converge on a credible argument. Natural scientists are just starting these efforts: two papers in this issue of *Conservation Ecology* address the consequences of recognizing a range of scales. [Anderson's](#) paper shows how predictions of ecological theory are changed when multiple scales are considered, and how information about critical communities at appropriate scales can be used to monitor ecosystem changes. The paper by [Keitt et al.](#) provides a lovely spatial analysis of landscapes utilized by Spotted Owls to show how dispersal can connect suitable habitat areas at critically defined scales across heterogeneous landscapes. This is a central problem in conservation: preserving connectance among populations as landscapes become fragmented.

The fourth area requiring novel approaches concerns the gap between ecological science and policy. Since WW

II, there has been a strange separation in biological ecology between fundamental studies and applied ones. In academic departments in the United States and in NSF panels, the view that applied science was "bad science" created something of a self-fulfilling prophecy. That was not true in other natural sciences, physics and chemistry, or in other countries. Now, in the United States, there is broad recognition of the need to link the two. The Ecological Society of America and its journal *Ecological Applications* have been largely responsible for legitimizing this shift in culture.

In order to explore this territory of inquiry in the inaugural issue, we have launched an experiment in policy dialogues: conversations about important issues of science and policy. The topic for the inaugural policy dialogue is "Science, Policy, and Advocacy".

We have seeded this first discussion with invited papers exploring the proposition that well-intentioned advocacy can promulgate bad policy based on inadequate science; that the rules for good, experimental, reductionist science can produce irrelevant, easily misused information; and that the very culture and methods of science can be exploited by power interests in disinformation campaigns. Briefing papers for the conversation include three components:

- 1) A "[Perspective](#)" by Gordon Baskerville, a well-known forest systems ecologist from Canada who has been, at various times, a respected forest ecosystem scientist, an innovative Deputy Minister in a Provincial Department of Natural Resources, a Dean of Forestry, and an advisor to the CEO of a large Forest Industry enterprise. The editorial's subtitle could well be "Traditional ecological science is unsafe practice"!.
- 2) "Commentaries" on the editorial by several senior scholars experienced in the issues, from perspectives of both science and policy. These consist of comments from [Jerry F. Franklin](#), [Koichi Fujii](#), [Gilberto C. Gallopin](#), [Simon A. Levin](#), [Ron Pulliam](#), [Brian Walker](#), and [John A. Wiens](#).
- 3) A "[Young Scholar Dialogue](#)," synthesizing comments triggered by the Baskerville perspective and commentaries during a five-day conversation on the internet among eight young scholars from five different countries: Canada, Italy, The Netherlands, United States, and Australia. Organizers and participants are graduate and postdoctoral students and scientists early in their careers.

These three sets of comments are published [simultaneously](#) in this inaugural issue. The present conversation culminates in an open [Public Forum](#), or mini-conference, on the World Wide Web over the period June 25th to July 1, 1997. The Public Forum will be moderated and is open to *Conservation Ecology* subscribers. Please read the briefing papers and then visit the [Public Forum](#) site for details on how to participate.

CATEGORIES OF PAPERS

Papers in this and future issues will be defined in four categories.

SYNTHESIS: Papers integrating elements that historically have been considered separately, in order to suggest new opportunities for theory, policy, and/or practice. The core article should be 20,000 words; the more succinct the better. Examples in the inaugural issue are papers by [Carpenter and Cottingham](#), and [De Leo and Levin](#).

RESEARCH: Papers presenting results of original research, with text limited to 4000 words, but

containing any number of figures or appendices of any kind (e.g., traditional tables, graphs, and written expansions on the main text, as well as less familiar items, such as downloadable models or statistical software, computer animations of model output, and original databases). The idea is to present the core of the research in a brief and readable form, with details of any depth and extent available in the appendices. This inaugural issue has three Research papers by [Keitt et al.](#), [van Coller](#), and [Colding and Folke](#).

INSIGHT: Papers presenting singular discoveries, specific examples, or assessments that suggest new directions, clarify old ones, or clarify ideas for an interdisciplinary audience, whether on theory, concepts, methods, or practice. The length is 4000 words, with a minimal set of references. In this issue, [Ludwig et al.](#) present the essence of qualitative, mathematical analysis of simplified models of ecological systems, highlighting properties of resilience that are essential for both theory and practice. They use metaphors, models, and examples to communicate clearly to a wide, multidisciplinary audience, specifically biologists, economists, and social scientists. [Anderson's](#) paper demonstrates how a specific ecological theory (the intermediate disturbance hypothesis) has predictive power at one scale, but not at others. It shows that traditional theory is not necessarily wrong, just not quite complex enough; in the process, it shows how ant communities can be used to monitor ecosystem change.

PERSPECTIVE: Invited essays presenting a personal viewpoint on important topics of science, policy, or practice. At times, the Perspective essay will stand alone. At other times (as in this issue), the Perspective will launch a policy conversation.

IS THE MEDIUM THE MESSAGE?

An electronic journal really does show that McLuhan's comment was not just provocative obfuscation: "the medium is the message." The internet medium is certainly opening opportunities for experiments in communication and understanding. At times of transition, when we are groping and learning, a variety of thoughtful experiments is essential. Those experiments that add value are preserved; those that do not, are not. The internet provides a unique, low-cost environment allowing such safe-fail, not fail-safe, experiments. Those are the ones we learn from. The internet foundation for *Conservation Ecology* inexorably led us to develop the following experiments:

- an automated review procedure, drawing on the 18 years of experience of Lee Miller, our Managing Editor, that will, we hope, reduce the time for decision and publication to 3 months;
- a double-blind review-within-a-review procedure that urges reviewers to be sensitive to novelty;
- a set of categories for papers that emphasize brevity, novelty, and relevance, as well as providing access to detail;
- an open-ended Readers' Corner for each paper, so that a network of knowledgeable people can share their knowledge and experience, a value that an electronic journal can promote;
- policy conversations that mimic on-line the useful features of good workshops: briefing papers, commentaries, content-rich facilitation, and summary; and
- [proposals](#) for developing partnerships to motivate a variety of research and communication projects that link science, business, and citizens.

Ecology is experiencing a transformation, one that builds on synthetic and interdisciplinary research, that deals with problems at multiple scales, and that integrates theory, policy, and practice. Our goal is to have *Conservation Ecology* stimulate and focus this transformation and communicate its results. As a consequence, some of the activities it sponsors to foster synthesis will have the feel of an international research institute

without walls. Other activities that develop partnerships among scientists and executives will suggest an organization developing a novel bridge between science and policy.

Yet, at heart, *Conservation Ecology* is a scientific journal and its Board of Editors is a community of scholars, with all the traditions of quality and originality that such journals and Boards demand. It is the internet medium that stimulates exploration of a more explicit connection between the traditional reporting role of journals and a planning role to stimulate projects that generate and apply knowledge. No one knows where that will lead us, but our approach is designed to facilitate learning and to encourage productive experimentation, while retaining the traditions of sound science.

RESPONSES TO THIS ARTICLE

Responses to this article are invited. If accepted for publication, your response will be hyperlinked to the article. To submit a comment, follow [this link](#). To read comments already accepted, follow [this link](#).

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