



EDITOR'S MESSAGE

Cause, Effect, and Observational Studies

A critical niche of the *Journal of Wildlife Management* is to publish research that will help guide wildlife conservation. Hence, nearly every paper concludes with a Management Implications section which is the “so what” part of the paper. In other words, how does the science reported in the paper contribute to the management and conservation of the species or system studied? The “so what” aspect of the paper often comes down to documenting that a certain action or activity will have some effect on a species’ population or habitat. If the paper cannot show an effect, it may not be suitable in the *Journal* and may be more appropriate for another outlet.

We know that wildlife studies occur along a continuum from observations taken at one place and time to strict experiments that are replicated across space and time. Concomitant with this continuum is another related to the level of inference regarding cause and effect. The accepted premise is that you cannot infer effect from observational studies and can only do so from experiments. A reality is that given difficulties of designing and implementing field experiments for wildlife, more studies are observational than experimental. For those of us who have tried, some difficulties of performing field experiments include costs, logistics, true randomization, true replication, and implementation. We might strive for pure experiments but recognize that the field is not a laboratory and we likely fall short. But even the number of tried and flawed experiments is dwarfed by the number observational studies. The fact is that most of the papers published in this journal are the result of observational studies.

Recently, Associate Editor A. J. Kroll shared a paper with Lenny Brennan (Editor-in-Chief for *Wildlife Society Bulletin*) and me titled “Deming, data, and observational studies: a process out of control” (Young and Karr 2011). The premise of the paper is that science works by repeating a design and replicating results. If the results cannot be replicated then the applicability of the study is limited and perhaps questionable. The authors reported alarming results for observational studies in the field of epidemiology. When they compared results of different observational studies addressing the same topic, they found great disparity. When 52 observational claims were compared with results of clinical trials, none of the claims from observational studies were supported.

These results beg the questions, how reliable are the results of observational studies published in *Journal of Wildlife*

Management? How far can we draw inferences from those studies to other places and other times? Is it appropriate to claim cause and effect from observational studies, especially those restricted in time and space? Is it time to move wildlife science forward?

Of course, it is easy for me to ask the questions. It is far more difficult to provide the answers. Likely, a paradigm shift is needed in how we fund, design, implement, and publish science. Morrison (2012) took a stab at initiating the discussion last year. Wildlife professionals have always taken pride in providing reliable information to guide wildlife management. Our progress has been incremental but we need to consider larger, more fundamental changes. I welcome you to weigh in and move the discussion forward.

IN THIS ISSUE

My goal as Editor-in-Chief was to include special sections in nearly every issue of the *Journal*. The reality is that they take time to pull together and this is the first. Lenny Brennan approached me with the idea of a section on density dependence about a year ago and assembled a fine group of papers. When he first broached the subject, he cautioned me that the topic was somewhat acrimonious. After seeing reviews of the manuscripts, I became convinced that to be true. You may agree or you may disagree with the papers in the section, but I suspect you will have an opinion!

Also in this issue, we have a fine collection of papers including a wide range of taxa from across the globe. Conservation and management papers evaluate effects of habitat management on bobwhite and hares, effects of poisoning on predators, effects of roads on deer and bats, using multi-species occupancy modeling to inform management decisions, relationships between hydrology and alligator nesting, and many more. I trust you will find many articles of interest.

—Bill Block
Editor-in-Chief

LITERATURE CITED

- Morrison, M. L. 2012. The habitat sampling and analysis paradigm has limited value in animal conservation: a prequel. *Journal of Wildlife Management* 76:438–450.
- Young, S. S., and A. Karr. 2011. Deming, data, and observational studies: a process out of control. *Significance* 8:116–120.

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