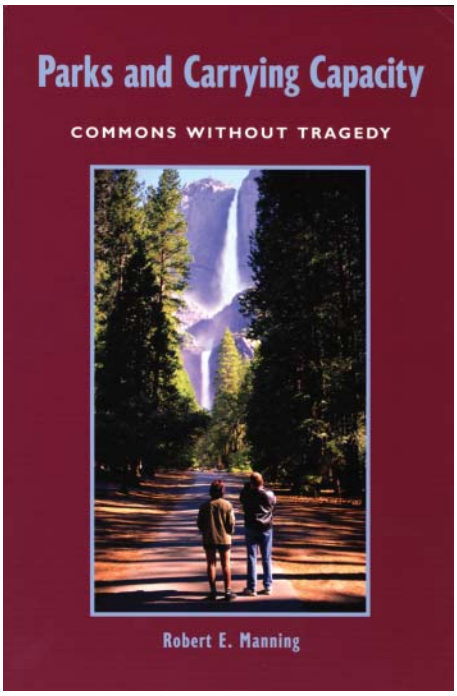
Book Review

Parks and Carrying Capacity: Commons Without Tragedy



By Robert E. Manning
Island Press
Washington, D.C., 2007; 313 pages

Editor's note: The following book review combines two separate but coordinated reviews. We begin with Superintendent Jim Hammett's appraisal of the applicability of carrying capacity research in park management. Social scientist Bill Hammitt then concludes with a brief examination of the science of carrying capacity models for national parks. The two shared similar summaries of the book's premise, incorporated here into the first review. I found their perspectives on "magical" numbers particularly interesting.

The park manager's view

THE NATIONAL PARK SERVICE (NPS) is a responsive bureau. Every park ranger takes pride in responding professionally to emergencies such as an injured climber, lost child, flood, volcanic eruption, vehicle accident, or forest fire. Response is at the core of the NPS psyche. Therefore, it is not surprising that NPS managers react to increasing social, biological, and physical park impacts from visitation primarily through accommodation. We are very good at allowing informal trails to become designated trails, enlarging parking lots, and increasing the number of rafts for rent.

Accommodation has its drawbacks, however. Sooner or later, we run up against the fact that our parks are finite. Furthermore, managing in this way allows the number of visitors and their needs to determine the future of our parks, which can slowly change the resources and visitor experiences that we are mandated to protect. For at least the past 70 years, the National Park Service has struggled with the question "How do we determine how much visitor impact is too much?" Unfortunately, we have not made much progress in answering this crucial question in most national parks. Thankfully, this matter is the central theme of Bob Manning's book, *Parks and Carrying Capacity: Commons Without Tragedy*.

Using the foundation of Garrett Hardin's 1968 article, "The Tragedy of the Commons," which indicates the need for social action to solve shared environmental problems, Manning thoroughly reviews both the concept of visitor carrying capacity and its practical application in national parks. No one is more qualified to write this book than Manning. He has devoted the past 15 years of his career to this issue, working in parks from Acadia in Maine to Yosemite in California and in settings ranging from urban to wilderness.

Manning begins by examining the premise of "The Tragedy of the Commons," why it is applicable to national parks, and how "mutual coercion, mutually agreed upon," as Hardin suggests, is a solution to overuse. He outlines the theoretical as well as empirical thought behind the primary carrying capacity determination processes: Limits of Acceptable Change (LAC) and Visitor Experience and Resource Protection (VERP). Using numerous examples from parks where he has worked, Manning devotes considerable space to the discussion of visitor use capacity indicators and standards, which are the crux of LAC and VERP. He provides an exhaustive summary of how social indicators and standards have been selected using social science and normative theory in a wide variety of settings. While Manning focuses on social indicators, spending less time on biological or physical ones, it is social factors that ultimately are the most difficult for managers to mitigate.

The most important part of the book for park managers is the chapter on trade-offs in park management. Many managers, perhaps most, first try to mitigate obvious visitor impacts that result from crowding. Manning, however, convincingly demonstrates that crowding itself strongly affects visitors' park experiences. Therefore, managing in order to maximize the dependent variables of numbers of visitors and quality of experience becomes mathematically impossible.

This book challenges park managers to switch their operating paradigm from accommodation and mitigation to planning, monitoring, and taking action based on definitive standards of quality for visitor experience and resource condition. This shift is a huge challenge and one that many managers will be reluctant to take on. Selecting indicators and setting standards, for example, take too much research and too much time; funding is unavailable to

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monitor resources; and standards tie the managers' hands. Additionally, many managers think it is impossible to implement VERP or LAC without a huge budget for research. Manning, however, challenges these assumptions and shows how selecting indicators and setting standards are not necessarily a complex or prohibitively expensive process. Furthermore, with numerous examples, he repeatedly takes us back to Hardin's "mutual coercion, mutually agreed upon" premise as the only long-term solution for finite resources under increasing demands from visitors.

If anything is wanting in Manning's book, it is a clear explanation that setting standards is ultimately a subjective decision on the manager's part. Too many managers believe that interviews, surveys, confidence intervals, and data will produce magical standards that absolve them from tough decisions. In reality it rarely works this way. Science may inform managers, but managers still have to make decisions about standards that are rooted in their best professional judgment.

Further complicating the science of VERP and LAC, visitors are often displaced from parks by park conditions. Studies have shown, for example, that many visitors who previously visited Yosemite Valley no longer go there because of crowded conditions, and thus these displaced visitors are not sampled in surveys conducted in the park. Nevertheless, their opinions are still important to NPS managers—or should be. Managers must be aware of this

and other factors that can affect surveys and incorporate this awareness into the decision-making process.

Despite these few shortcomings, *Parks and Carrying Capacity* is very useful and should be on the mandatory reading list for park managers, particularly those who perceive crowding issues at their parks.

—Jim Hammett,
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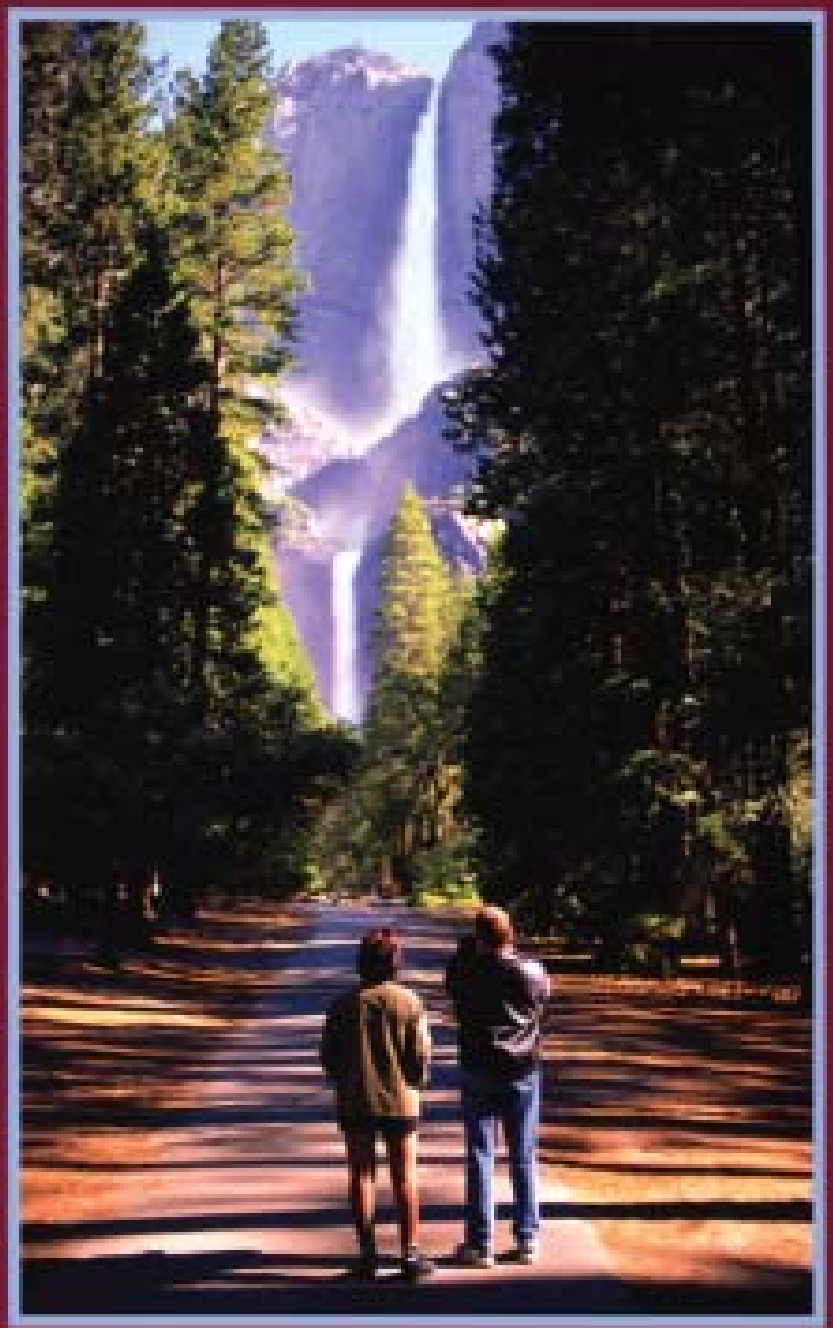
Parks and Carrying Capacity

COMMONS WITHOUT TRAGEDY



Robert E. Manning

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A social scientist's view

IN NORWAY, SCIENTISTS CAN APPLY to the Norwegian National Science Board for a fellowship during the last five years of their careers to compile and publish their lifetime research. This results in a coherent and holistic record of valuable research through the publication of monographs and books. The process of collecting and synthesizing research findings is a valuable alternative to the ordinary practice of U.S. scientists, who are expected to publish brief, disjointed journal manuscripts until their dying days. Bob Manning, with the recent publication of *Parks and Carrying Capacity: Commons Without Tragedy*, has followed the Norwegian practice of composing a comprehensive monograph of his lifetime research concerning resource and visitor experience conditions in national parks.

Researchers and park scientists will find the first half of Manning's book a great resource summary of the concepts and theories that underlie carrying capacity research. The material on social norms, limits of acceptable change, and selection of park management indicators and standards will not be new to many scientists; however, Manning does an excellent job

of packaging this material into a readable format. The information in chapters 2–5, though familiar to many, is essential for what I consider the most valuable contribution of this monograph: the "Visual Research Method." Chapters 6–8 document the visual resource approach and simulation methods for testing visitor use capacities that Manning and his staff have pioneered in the Park Studies Laboratory at the University of Vermont. This is the first comprehensive documentation of this widely used application to study capacity problems in parks, and is a most valuable resource in itself.

While I praise the author for adding this welcome resource to the scientific literature, the research it describes is not without its critics. Many researchers do not believe in the concept of carrying capacity and the setting of magical numbers of users as a park management strategy. Neither does Bob Manning! It is unfortunate that "carrying capacity" appears in the title of the book, for Manning makes it very clear that this book is about managing resource and visitor conditions within acceptable limits.

As a colleague who has respected Bob Manning's research concerning visual resource management, I read his new book before being asked to review it. I recommend that other researchers and students read it as soon as they can for they will find digesting the material well worth the effort.

—William E. Hammitt,
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