Introduction

RESTORING NATURE: HUMAN ACTIONS, INTERACTIONS, AND REACTIONS

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Bill Jordan has eloquently called it a loss of innocence. Ecological restorationists and their critics, speaking more bluntly from the trenches of battle, have labeled it an assault, a travesty, a misguided campaign, and an insidious plot. Always the optimist, John Dwyer, project leader at our Forest Service research office in Chicago, saw it as a challenge and an opportunity to learn.

Regardless of one's viewpoint, the conflict that erupted in the spring of 1996 and became known as the Chicago restoration controversy has left an indelible mark on the region's environmental community and has forever changed the way those involved will think about restoration. Its implications extend far beyond Chicago; since its inception, the controversy has provided a springboard for discussion and debate that has reached national and international audiences. Although the controversy has raised important biological and ecological issues, the pivotal issues have been social ones, exposing questions that are usually ignored or downplayed by researchers and managers dealing with ecological restoration and natural area management. *Restoring Nature* is an attempt to bring these human dimensions of restoration to the forefront. In this book, Bruce Hull and I, along with the contributing authors, hope to capture the stories, the ideas, and—most of all—the lessons from these restoration experiences.

In the first part of this Introduction, I describe the Chicago restoration controversy. As we suggested, many of the contributors to this book use the controversy as a touchstone for their discussions, so this background helps provide necessary context. The anatomy of the controversy also helped us organize the individual contributions to this volume. In the rest of the Introduction I describe the evolution of our thoughts in developing the book, the goal and objectives we hope to achieve, and how the individual chapters contribute to those purposes. I conclude with a brief postscript of sorts reflecting on the progress (or lack thereof) that has occurred since we began working toward this book.

The Chicago Restoration Controversy

In attempting to understand the Chicago restoration controversy, I soon learned that many of the salient "facts" were relative and subject to interpretation (as I suppose they are in most controversies). Restorationists and their critics debated what was a tree and what was brush, what was native and what was exotic, and, ultimately, what was natural and what was an artifact of human meddling in the environment. Even those on the same side and even scientists who were objectively studying the controversy had different interpretations and explanations of issues. What one focused on was dependent on one's perspective. As a social science researcher in the USDA Forest Service whose training fell largely within the area of environmental psychology, I tended to see the controversy in terms of a clash in values. Reid Helford, who was studying the controversy through the lens of sociology, countered, "It's really more about the structure and process of social and political relationships—who's got the power and who doesn't."

I concluded that the only proper way to introduce the controversy to the readers of this book was to write a personal account of how I saw it and how it affected me, fully acknowledging my own perspective and interpretation. Chapters by Helford and by Joanne Vining, Elizabeth Tyler, and Byoung-Suk Kweon provide additional background and perspective on the controversy as it pertains to their research. For those wishing to read other, often quite different perspectives, see articles by Debra Shore (1997) and Alf Siewers (1998).

For me, the controversy began in earnest on Monday, May 13, 1996. On my desk when I entered my office at the North Central Research Station of the Forest Service that morning was the front page of that Sunday's *Chicago Sun-Times,* one of Chicago's two major newspapers. The lead story, headlined in one-inch type, read "Half Million Trees May Face the Ax: DuPage Clears Forest Land to Create Prairies." The reporter, Raymond Coffey, described a developing conflict concerning the Forest Preserve District of DuPage County, a

regional land management agency in west suburban Chicago, where a ten-year, $11.6 million Natural Areas Management Program was under development to restore 7,000 acres of land holdings to the oak savanna and tallgrass prairie conditions that existed in the Chicago region before European settlement.

This was a relatively new venture for DuPage and surrounding county forest preserve districts, whose land managers had traditionally considered a forest as a closed-canopy system and a preserve as a place where natural area management was largely hands-off. Restoration in the forest preserves had in fact historically meant planting trees and preventing fires, so when a citizens group called ATLANTIC—Alliance to Let Nature Take Its Course—complained that instead the district was now cutting trees and setting fires, it became a ready-made news story. Raymond Coffey, who was principally an editorial columnist, would go on to write more than thirty columns over the next two and a half years, blasting restoration efforts throughout the Chicago region from what seemed like every angle possible, with sensationalistic titles such as "Prairie People Compile Tree 'Hit List,'" "Forest Preserve District Is Picking Our Poison," "Smoking Out the County's Tree-Burning Plan," and "Guru's Forest Restoration Plans Read More Like Destruction."

The controversy in DuPage led the forest preserve board to declare a temporary moratorium on restoration activity in the county, but this was just the tip of the iceberg. By early fall of that year, restoration activity in preserves within the city of Chicago, under the management of the Forest Preserve District of Cook County, had also come under attack by citizens from surrounding neighborhoods. After a contentious public hearing, the Cook County Forest Preserve Board joined DuPage in placing a moratorium on all restoration activity in their county's forest preserves.

In the following months, additional hearings, workshops, conference sessions, radio talk shows, Web sites, newsletters, and consistent coverage by the regional and local newspapers kept the controversy in the public eye. Volunteer restoration groups, public land managers, and established environmental organizations fought back against neighborhood critics and animal rights groups (e.g., The Voice for Wildlife), the latter of whom had refocused their agenda on the controversy. New groups formed—Trees for Life and Friends of the Forest Preserves among them—each touting their anti- or pro-restoration messages. A college class was even developed around it—The Controversy over Ecological Restoration—at Chicago's DePaul University.

The May 12 article and media coverage in the weeks and months following it hit our office like bombshells. As an urban outpost of the Forest Service in metropolitan Chicago, we had long assisted local park and forest preserve districts by helping to answer management questions about people's perceptions and use of urban forest environments. Ecological restoration seemed to be a natural extension of our involvement in urban forestry, and in recent years

we had become quite active in assisting with regional efforts at ecological restoration. We were charter members of a newly formed coalition of organizations called Chicago Wilderness, whose aims were to protect and restore biodiversity in a project area that encompasses the six-county Chicago metropolitan region and reaches into southeastern Wisconsin and northwestern Indiana. We were also helping to fund, through a congressional pass-through, a restoration research and demonstration project at Swallow Cliff Woods forest preserve in southern Cook County. Herb Schroeder, an environmental psychologist in our office, had begun studying the motivations and values of restoration volunteers. A number of us had spent free time volunteering in ecological restoration workdays in our local preserves. Thus, on both a professional and a personal level, we believed that restoration was generally consistent with our roles as research employees of the Forest Service and with our values as individuals.

Given this context, these attacks on restoration programs and initiatives surprised us. But what really struck us was the criticism leveled at individuals we knew personally. The Chicago office of The Nature Conservancy (TNC) has been instrumental in the development and execution of Chicago Wilderness, and two individuals at TNC were especially affected. Laurel Ross was a longtime friend and research cooperator, and she and Steve Packard had sought our advice on launching a number of major restoration initiatives in recent years. Ross, sincere and behind-the-scenes, and Packard, charismatic and outgoing, had been active in restoration efforts since the late 1970s. Working in partnership with the Forest Preserve District of Cook County and with other restorationists, they had built the North Branch Prairie Project and TNC's Volunteer Stewardship Network into nationally recognized restoration programs that now included dozens of sites and thousands of volunteers.

In many ways they saw Chicago Wilderness as their magnum opus: a program going far beyond pragmatic aspects of land protection and restoration. With globally significant ecosystems residing within a metropolitan region of 9 million people, protection and restoration efforts would need to be aimed as much at the social aspects of restoration as at the physical and technical ones. From planting wildflowers in one's backyard so that the seeds could be harvested for dispersal in the forest preserves, to supporting bond issues that would acquire new lands, successful implementation of the Chicago Wilderness project would require no less than a new paradigm of participation in nature. As a result of this broad-based change in view, "Chicagoans will feel patriotic about their native landscape," Packard would say. "Cab drivers will point out our savanna and prairie preserves to out-of-town visitors with the same pride they now feel when pointing out the Sears Tower."

So it moved me deeply to see a heavily burdened Ross and Packard, who had given so much of their personal and professional lives to the cause of restoration in Chicago, face this barrage of criticism after coming so far. These

people are the good guys, I wanted to shout, not the enemy that others were making them out to be. The situation they were facing reminded me of the movie *The China Syndrome,* in which investigative reporter Kimberly Wells (played by Jane Fonda) and veteran nuclear engineer Jack Godell (played by Jack Lemmon) are thwarted by the pro-nuclear establishment in their attempts to expose a cover-up of serious construction and maintenance flaws at a nuclear power plant that nearly result in a meltdown. In the final scene, after Godell is killed by plant security agents, Wells provokes one of his co-workers into revealing the truth on camera to the media gathered outside the plant: "There's gonna be an investigation this time. And the truth will come out and people will know my friend Jack Godell wasn't a lunatic, he was a hero. . . . Jack Godell was a hero. . . ."

In their thwarted attempts to reveal what they saw as the truth in the Chicago restoration controversy, Ross and Packard seemed to me much like the Fonda and Lemmon characters (although Packard is still very much alive). Indeed, the comparison was particularly fitting because when *The China Syndrome* hit movie theaters in 1979, Packard and his early band of followers were using the practice of restoration to prevent a real-life meltdown in the Chicago-area forest preserves. Instead of construction and maintenance flaws, they were attempting to raise awareness of the problems posed by fire suppression and invasive exotics. Continuous fire suppression in the Chicago region since the time of European settlement has transformed the landscape from a diverse mixture of tallgrass prairie, open oak woodlands, savanna, and other ecosystems into one where closed forest ecosystems of sugar maples and other hardwoods increasingly dominate unmanaged forest preserves and other natural areas. Remnant pre-European-settlement oaks still remain in uncut areas, but their regeneration without some type of active management is uncommon. European settlers also introduced many new plants to the region, and some, such as the shrub European buckthorn (*Rhamnus cathartica*), have taken hold in many forest areas. While it was originally planted as a hedgerow by early settlers, its popularity as an ornamental increased with the suburbanization of the region. With its wide adaptability to conditions and its seed readily spread by birds and mice, buckthorn can now be found almost everywhere, and in many forest preserves it is a dominant plant growing below the canopy layer.[1]

These powerful forces have dramatically changed the landscape: they have literally changed the nature of nature in the Chicago region. In most places, the prairie and savanna have long been erased or hidden from view to the casual observer. As a Midwesterner nearly all my life, I grew up accepting these changes without question, but now even the woods I played in as a child in suburban Milwaukee have become nearly impenetrable due to buckthorn, and when I take my own young children there to visit they refuse to go in. In seeing these changes and learning about the restoration efforts around Chicago,

I began to develop an appreciation for these heritage landscapes and their possibilities for renewal.

I also became aware that turning back the clock requires a dedicated, intensive human effort that includes periodic burning, cutting and girdling of woody vegetation, herbicide application, seeding, and other activities. By practicing their craft through small-scale experiments and watching how the landscape responded, Packard and his growing group of restorationists pioneered new techniques that have now become accepted by many credentialed environmental scientists, although he and other volunteers for the most part wore a distinctly nonacademic badge of expertise. The full story of Packard's discoveries and the concomitant rise of the volunteer restoration movement in the Chicago area has been captured by William K. Stevens in his book *Miracle under the Oaks: The Revival of Nature in America,* as well as in articles by Packard (e.g., 1988) and Ross (e.g., 1994).

Now all the "progress" they had made was being questioned, criticized, and—what most restorationists feared—reversed as the moratoria on restoration left the buckthorn and other vegetative denizens to flourish unabated. But despite our sympathy for the restorationists, I and others in our office were becoming increasingly dismayed by their responses to their critics, both within and beyond the public eye. At a Chicago Wilderness meeting held shortly after publication of Coffey's May 12 article, for example, a prominent member of the steering committee called critics "a bunch of loonies." Others claimed the opposition was "just the deer people" looking for a way to expand their animal rights agenda, or "just a NIMBY thing" limited to a few neighborhood enclaves near certain preserves. Many restoration proponents saw opponents as misguided and misinformed, and calls rang out for increased political education within the restoration community and environmental education for those members of the public who were less than fully aboard the restoration bandwagon. "Informed people will not resist" was one of the bulleted phrases on a handout distributed by a forest preserve naturalist at a conference talk on "Public Education for Restoration: Why Are We Cutting Down All Those Trees?"

As an employee of the USDA Forest Service, whose mission in part is to harvest timber to meet the nation's demand for fiber, I was all too familiar with the argument that the public needed to be better educated so they would see that cutting trees is good for the forest. To continue the cinematic analogy, this was a movie I'd seen before, and I was increasingly uncomfortable with how the plot was unfolding.

How could the situation be improved? What could be done to facilitate an understanding of the issues and concerns involved? Public forums held to date had seemed only to worsen relations between factions. For our office, which focused on the social science aspects of urban forests, the controversy was a likely topic to study, and I wondered if perhaps a more systematic assessment

would help. Were the opponents truly "just the deer people," or did their concerns extend beyond animal rights? Was the opposition "just a NIMBY thing" limited to a few neighborhood enclaves near certain preserves, or was it more widespread? These were empirical questions that could be readily explored and answered, and we were in the perfect position to do so.

The Natural Areas Conference, a national gathering of natural area managers and researchers, was being held in Chicago that October. With the conference fast approaching, I modified my original presentation idea, offering instead a preliminary effort to examine the restoration controversy from a social science perspective. To explore the scope of issues being raised in opposition to restoration, I analyzed opponents' views as expressed in newspaper articles and letters to the editor, transcripts of hearings and radio interviews, and newsletter articles and fact sheets put out by groups on both sides of the controversy (for more on the study, see Gobster 1997). Surprisingly, I found little in the way of blanket disapproval of restoration. In fact, critics often lauded the basic goals of restoration in protecting and enhancing urban nature. Instead, it was the specific practices people objected to, which I documented as including:

- removal of trees and brush: the killing of healthy trees and large as well as small "brush"; defining too many tree species as "alien" or "exotic";
- herbicide use: types being used; how, when, and at what strength they were being applied; the qualifications of those who applied them;
- prescribed fire: effects on air quality; safety of nearby homes; danger to wildlife; and
- removal of deer: justification for control; concern over methods used.

These practice-related concerns revealed *what* critics objected to. I also identified a number of process- and context-based concerns that related to *how* and *where* restoration was being carried out. These included:

- lack of information on activities where opponents felt out of the loop with regard to activities and in some cases where they felt information was withheld or activities concealed from the public;
- lack of involvement in decision making where opponents desired and felt the right to have a greater voice in decisions;
- insufficient planning for restoration where restoration was being conducted without good plans, both at a particular site and for the forest preserve system in general; and
- questionable use of volunteers where concerns existed as to whether or not the volunteers from private groups working on public lands were receiving sufficient training and supervision.

Finally, I attempted to identify the kinds of values that people expressed in relation to *why* restoration should not occur. These values all seemed to relate

to fundamental ideas about the meaning of nature and included the following concerns:

- functional: the loss of air quality, privacy and solitude, and shade and cooling through prescribed burning and tree and brush removal;
- economic: the fear that restoration would increase taxes and reduce property values of homes near where trees were removed;
- recreation and wildlife: the loss of shady recreation sites and habitat for some species;
- aesthetic: restoration would harm the wooded character of the forest preserves and impose a radically different idea of what is beautiful; and
- symbolic: where some felt that restoration was an attempt to control nature and impose an arbitrary point in time to which nature should be turned back.

The range of issues and values evidenced through this research convinced me that the opponents' concerns were not narrowly conceived, and that there were some serious questions the restoration community needed to address if their programs were to gain wider public acceptance. Although I didn't know it at the time, these what, how, where, and why questions would later assist Bruce and me in selecting and structuring material for this book.

To elicit a more defensible answer to the NIMBY question than my qualitative pilot study had, Sue Barro, a social scientist in our office, and Alan Bright of Washington State University added some questions related to the controversy to a survey they were about to mail out, which was aimed at determining metropolitan Chicago residents' perceptions, attitudes, and knowledge about biodiversity. The results of that quantitative survey, with its statistically representative sampling scheme, verified my study's conclusion: while a large majority of Cook County residents (90 percent) thought that restoring natural areas in the Chicago area was a good idea, most (75 percent) felt it should not be done if it required cutting down mature trees, losing some existing wildlife habitat, or using herbicides (Barro and Bright 1998). More importantly, the study also provided concrete evidence that such feelings were widespread among metropolitan residents, not just localized to those living near the forest preserves.

While I believed we had found the answers to the empirical questions about the breadth and depth of the opposition, these did not seem to be the answers the restorationists wanted to hear. When presenting the findings of my pilot study at forums where restoration proponents were present, I was often questioned about the validity of my methods, and I increasingly felt the need to preface my remarks by saying that I was reporting on what I had found, not advocating a point of view. Barro and Bright's work was also critiqued in a letter published in *Restoration & Management Notes,* with the writer reinterpret-

ing the authors' findings, saying they indicated public "indifference" and "widespread ignorance" (Osmund 1999, 3; see also reply by Barro and Bright 1999). More significantly, I believed our office was perceived by the restoration community as a turncoat of sorts. In a conversation with me, one prominent restorationist implied that I had done a disservice to the restoration community by legitimating the views of the critics. And our Forest Service project leader, John Dwyer, said that when he mentioned, in a meeting of restoration proponents, that their dismissal of opponents' concerns might be perceived as arrogant, the room got so quiet "you could hear a pin drop."

Were we asking the right questions in our attempts to understand the nature of the conflicts and the causes of concern? Were we providing answers to questions in ways that could be used constructively to help resolve the controversy? Ironically, just as we wondered about the naturalist who coined the slogan "Informed people will not resist," we were now wondering how our own messages were being received and interpreted.

Putting the "Constructive" into Constructivism

As a research office, we had in some ways fulfilled what I believed was our obligation to provide answers to questions people had been asking about the restoration controversy. But I also believed that our research could do more, not only to help resolve the controversy but also to help develop a more productive dialogue about managing nature in metropolitan Chicago and beyond.

To this end, in 1997 our office sponsored additional cooperative research related to the controversy, including a study on environmental values and emotions headed by Joanne Vining, an environmental psychologist from the University of Illinois at Urbana–Champaign, and a study on expertise and public involvement by Reid Helford, who at the time was a doctoral student in sociology at Loyola University–Chicago. Combining that research with the more broad-based work we were already conducting in-house and with cooperators, which related to people's experiences and involvement in natural area planning, design, and management, we were beginning to build a critical mass of knowledge on the social aspects of restoration.

One way to begin to bring this information together into a coherent and useful story, I thought, would be to do a session on restoration at the upcoming 1998 International Symposium on Society and Resource Management (ISSRM), a broad-based and well-attended biennial forum for discussing issues of social science and resource management. John Dwyer suggested that I raise the session idea with Bruce Hull, a colleague in the College of Natural Resources at Virginia Tech who was doing related work in a different part of the country. As a longtime research cooperator with our office, Bruce was known for his groundbreaking work in scenic beauty modeling in the 1980s

and more recently for his research on urban nature experience. His new work dealt with understanding how different people construe nature—an issue I was beginning to struggle with in my own work, both on the restoration controversy and on an urban park restoration project.

Our first phone conversation was an eye-opener. Bruce talked about a couple of studies he was involved in that looked at how residents of rural communities in Virginia viewed forested landscapes in terms of concepts such as ecological health and integrity. These concepts, he said, are socially constructed in that their meaning depends on the socially acquired knowledge and life experience of the perceiver. Such concepts can thus mean very different things depending on whether the person expressing them is a longtime resident, an ecologist, a forest pathologist, or a timber sale manager. He had found that many local residents tended to see ecological health or integrity as visual signs of care. This meaning differs from how various experts tend to construe health and integrity, and it is this variability in meanings between and within experts and stakeholder communities that has become a major source of conflict in natural resources management.

I was aware of the recent debates on the social construction of nature (e.g., Cronon 1995, Soule and Lease 1995), and while I found them academically interesting, to date most of the treatments I'd seen were more antagonistic than helpful in terms of what they provided to managers and other practitioners. With the restoration controversy still raging back in Chicago, I wasn't sure if constructivist approaches were going to further burn rather than begin to mend any bridges.

Bruce's take, however, was refreshingly different. While he'd embraced the constructivist paradigm, he also saw it as a tool for achieving better planning and management of natural areas. "We're putting the 'constructive' into constructivism," he enthusiastically said of his work with graduate students David Robertson and Angelina Kendra, and described one example of how they'd been applying landscape architect Joan Nassauer's ideas about "cues to care" (1995) in helping to identify socially meaningful indicators of forest health and integrity. Bruce went on to describe work by other social scientists in the eastern and western United States who'd been looking at similar issues about the meanings of nature in wilderness and wildland settings. I thought back on my pilot study of the Chicago controversy, in which I had concluded that behind many of the concerns expressed by restoration opponents was a deeper set of values related to the meaning of nature that seemed to fundamentally separate them from proponents. Together we realized this was one of the essential stories underlying the restoration controversy that could be further explored in the ISSRM symposium session I'd proposed to Bruce. From that first call, Bruce was committed to helping in the effort.

The Restoration and Management of Nature: The Conference

With Bruce signed on as a co-organizer for the symposium session, things began to move and expand. With my emphasis on restoration, the Chicago controversy, and urban settings and with Bruce's on nature, its management, and rural and wildland settings, we had the breadth and depth to make for a compelling ISSRM discussion.

We set as the goal for our session "to provide a constructive body of knowledge on the social aspects of restoring and managing nature that will lead toward the clarification and resolution of environmental problems." In developing our proposal, we found it necessary to define for ourselves and for the conference review committee just what our topic encompassed. Restoration was an ambiguous concept, with meanings as varied as one's disciplinary or professional orientation. Surely ecological restoration was a central component of what we wanted to include, but even within this boundary there was much debate and discussion as to what should qualify as a restoration (Jordan 1995). Because the social aspects of restoration linked many otherwise disparate issues and concerns, we believed that a broad definition would best satisfy our interests and those we hoped to attract as speakers and audience. Thus we defined restoration as "intentional human practices to actively manage areas for their desired natural qualities." This expansive definition embraced the spectrum of settings we wished to include as subjects of discussion, from wilderness areas, national forests, and geological features to rural agricultural lands, metropolitan parks and forests, and vacant urban land.

If restoration was an ambiguous term, then "nature" was even harder to nail down. Bruce, with his constructivist bent ever-cautioning me on the varied meaning of words we often accept uncritically, opted to leave nature as a socially defined and negotiated term. To borrow an explanation from Neil Evernden in his book *The Social Creation of Nature* (1992):

> It is fair to say that before the word was invented, there was no nature. That is not, of course, to suggest there were not the entities and phenomena we now attribute to nature, but rather to say that people were not conscious of there being any such entity as "nature." For nature is, before all else, a category, a conceptual container that permits the user to conceive of a single, discernible "thing" (89).

We also worked at more explicitly structuring our inquiry, to begin to provide a means for answering the important what, how, where, and why questions about restoration efforts. In doing this, we established the following objectives for the session: (1) to develop a conceptual foundation for the

understanding of restoration issues, (2) to illustrate important issues and conflicts inherent in natural area restoration and management, (3) to provide examples of potential solutions to conflicts and controversies, and illustrate a variety of methodological and disciplinary perspectives in the social sciences and humanities, and (4) to examine case studies from a wide range of settings and locations.

With this goal, definitions, and objectives framing our view, we set out to more fully develop our proposal. While Bruce's ideas about the construction of nature formed an important conceptual piece of the puzzle, a key aspect we still lacked was one dealing with the moral and ethical foundations for restoring nature. Those in philosophy and the humanities had built an important body of work on this topic in recent years, both in academic journals such as *Environmental Ethics* and in *Restoration & Management Notes* (now *Ecological Restoration*), the principal forum of written communication for restoration practitioners, and we hoped to shine the light of those arguments onto our questions and issues in the social sciences. Knowing we would not reach many of these people through our normal conference channels, we sent invitations to prominent writers on the philosophy of natural area restoration and management, asking for their participation. To our surprise, we quickly received several affirmative replies.

By the fall of 1997 the conference was falling into place. We contacted others we knew who were working on issues related to our topic and invited their participation. Through word of mouth and the formal call for papers, we attracted additional interest. As we worked with Robert Gronski of the University of Missouri, who was coordinating the sessions for the symposium, our initial idea of a single session soon expanded to six sessions comprising twenty-eight individual presentations. The actual sessions, held under the theme "The Restoration and Management of Nature" at the University of Missouri in May 1998, were well attended and, we believed, highly successful. (For a more detailed synopsis of the sessions and abstracts of individual papers, see Gobster and Hull 1999.) Given this success, we decided to continue our work to produce this volume.

Restoring Nature: The Book

The papers we selected from our symposium sessions for this volume deal with four interrelated themes: (1) philosophical issues that help us understand why society should or should not support restoration activities, (2) conceptual issues and studies that help us understand the source of conflicts over restoration projects, (3) case studies of process and implementation that suggest ways in which restoration conflicts might be resolved, and (4) case studies of stewardship that suggest how volunteers and local residents can help make and

maintain restored environments. Although Parts I and II of the book deal more with conceptual issues and problems and Parts III and IV deal more with applied principles and lessons, we encouraged our authors to not limit themselves to one approach. We asked the philosophers to relate their ideas about such things as nature–culture dualism and hyperreality to real-world problems in the restoration and management of nature. Likewise, we asked the social science contributors to tie their case-specific findings to broader theories and concepts.

As mentioned at the beginning of this Introduction, we also encouraged the contributing authors to use the Chicago restoration controversy as a touchstone for discussion of ideas and issues where it was appropriate. To further facilitate the development of common ground and the synthesis of ideas, we circulated drafts of the chapters and asked contributors within each section of the book to review each other's chapters. Thanks to these strategies as well as the participation of contributors in the symposium sessions, we think the book provides a good integration and cross-referencing of ideas among the different chapters.

Finally, in attempting to make the book interesting and useful to practitioners as well as researchers, students, and others involved in restoration and natural area management, we aimed to present a diverse range of ideas, case study settings, methodological approaches, and disciplinary perspectives. The remainder of this Introduction is a brief summary of how this diversity is captured by the various contributors to the book.

Philosophy and Rationale of Restoration

The introductory session of our theme area presentations at the ISSRM featured a debate of sorts about the moral and ethical questions regarding the practice of restoration. Underlying many of these questions is the issue of whether restoration corrupts "natural value"—that is, the value of nature independent of human concerns and desires.

We capture and expand upon this debate here. As a longtime proponent of restoration, William Jordan III, editor of *Ecological Restoration* and president of the New Academy for Nature and Culture, questions the nature–culture dichotomy upon which much of our environmental history and philosophy is built, and offers the practice of restoration as a way of reestablishing a relationship between humans and nature. In this opening essay, Jordan extends his ideas about community with nature to the topic of wilderness and argues that restoration provides a unique way for humans to "re-wild" the landscape, in turn creating positive natural value.

Diametrically opposed to Jordan's ideas is Eric Katz, a philosopher from the New Jersey Institute of Technology and a proponent of preserving natural value by maintaining a clear identity of nature apart from human intervention.

In his essay Katz extends his arguments against restoration, which began with publication of his often-cited paper "The Big Lie: Human Restoration of Nature" (1992), and responds to recent critiques of restoration by Robert Elliot (1997), Donald Scherer (1995), and William Throop (1997). Using examples as diverse as ballet performance and wolf reintroduction, Katz compellingly argues that restoring nature is philosophically misguided.

Katz's arguments, particularly one that casts restoration as an unjustifiable form of human domination over nature, are the subject of a systematic reply by Andrew Light, a philosopher from New York University. In refuting Katz's arguments, Light builds a logical case that participation in restoration can create a relationship between humans and the natural world that has a positive value and that can exist despite Katz's strict nature–culture dichotomy. Light argues that Katz's uncompromising ideal of natural value principles restricts the utility of environmental philosophy in addressing real-world problems, and he suggests that a more pragmatic approach can help direct philosophy toward more immediately pressing and productive questions about conducting restorations.

Cheryl Foster, a philosopher from the University of Rhode Island, concludes this section by addressing questions about restoration from an environmental aesthetics perspective. While she sees the nature–culture dichotomy as a tired distinction that is ultimately not very helpful in resolving environmental problems, she cautions us against what she sees as a pervasive trend in modern American culture toward the aesthetics of hyperreality, which can result in humans unquestioningly accepting models or copies of nature as nature. In looking at the topic of geological restorations, Foster argues that we might be able to build a more reasoned case for deciding when restoration is appropriate by discriminating between what is trivial and what is serious appreciation of nature, and by recognizing both the narrative (cognitive) and ambient (perceptual) properties of the environment.

Conflict over Which Nature to Restore

While the authors in the first section show us the philosophical floor plan upon which decisions about restoration can be built, contributors to Part II give us a set of guidelines and cautions about human agency. Central to this discussion is the conflict between differing ideas of how we define nature and, consequently, how we determine who gets to participate in decisions about restoration and management. Bruce Hull and David Robertson, social scientists from Virginia Tech, explain how key restoration-related concepts such as naturalness, health, and integrity not only are normative but have multiple and competing definitions. The understanding and ultimate resolution of these conflicting definitions is critical because such concepts lie at the interface of ecological science and public policy for restoration. In arguing for a more pub-

lic ecology, the authors provide a set of guidelines for understanding and using environmental knowledge in making restoration decisions.

Whitman College sociologist Reid Helford examines the nature of conflict in the Chicago restoration controversy from a sociological perspective, and sees expertise and the public understanding of science as critical elements underlying the issues being debated. Helford, whose chapter stems from his doctoral research at Loyola University–Chicago, shows how expertise is used as a dividing line to present restorationists as expert knowers of nature and exclude those with other forms of knowledge and experience from the decision-making process. The conflict is exacerbated, Helford argues, because restorationists also cast themselves as grassroots activists whose campaign to save nature is value-laden and emotional. How restorationists and their critics differentially see these dual messages of value-free science and value-laden activism is at the heart of the controversy.

Environmental psychologist Joanne Vining and urban planner Elizabeth Tyler, both of the University of Illinois at Urbana–Champaign, and landscape architect Byoung-Suk Kweon of Texas A&M University also examine the Chicago restoration controversy, in their case from a psychological perspective. Using an analysis of the controversy as a basis for developing a list of arguments for and against restoration and a hypothetical scenario of the conflict, the researchers probe the environmental values and emotions of people not directly involved in the conflict. Like the Barro and Bright (1998) work mentioned earlier, Vining et al. show how conflicts can arise due to differences in values and perceptions.

In the final chapter in this section, Andrew Light, in his second contribution to the volume, addresses the potential of professionalization (certification, formal training, regulation) as a means of resolving some of the internal and external conflicts observed by Helford and Vining et al. His concern, as an environmental philosopher, is that professionalization and certification will close the content of the language of restoration, restricting how restoration is defined and in turn narrowing the ranks of who is considered a restorationist. This, Light warns, could harm what he sees as one of restoration's key values, its inherent democratic potential.

Making Restoration Happen: Process and Implementation

The final two sections of the book deal with how managers can make restoration projects succeed given the constraints and considerations discussed in previous chapters. The first of these sections presents planning and design approaches to resolving conflicts that can impede restoration efforts. Paul Gobster and Susan Barro, social scientists with the USDA Forest Service's North Central Research Station in Chicago, lead off the discussion with a case study of urban park restoration in Chicago. The study demonstrates the diver-

sity of issues and stakeholder interests in urban nature and emphasizes the process of negotiation and the dynamics between planners and designers and stakeholder interests. The authors suggest that proactive, participatory planning may provide a way to resolve conflicts by integrating the values and expertise that exist within professional and public groups.

Landscape architect Robert Ryan of the University of Massachusetts, on the other hand, shows how conflicts might be reduced through design. In a study of restoration projects in Michigan, Ryan examines how people's knowledge and experience can affect their attachment to restoration sites and, in turn, their feelings about restoration management activities. Using the findings from his study and other work on environmental preferences, Ryan outlines a four-step process for integrating diverse public values and perceptions into restoration site planning and design.

In the final selection in Part III, social scientist Mark Brunson of Utah State University looks at a planning process called the Limits of Acceptable Change (LAC) and examines how it can be used to make decisions about the restoration of nature given an understanding and acceptance of how nature is socially constructed. Brunson sees the LAC process as a useful planning method in that it readily accounts for a continuum of ideas on what "nature" and "natural" are, a factor that routinely bogs down other planning systems that assume a nature–culture dichotomy. Brunson discusses how the LAC process can be used as a collaborative planning tool to help stakeholders work through management solutions when goals are in conflict.

Making and Maintaining Restored Environments

Environmental psychologist Herbert Schroeder of the USDA Forest Service's North Central Research Station in Chicago leads off the last section of the book, which focuses on maintaining restored environments, by examining the inner psyche of restorationists—their motives, their values, and how they perceive nature. Looking at how volunteer restorationists express themselves through newsletters aimed at those in their own group, Schroeder uncovers a rich set of themes about how restorationists view themselves and their craft. Schroeder also shows how metaphors used by restorationists, particularly those that equate restoration with war, might inadvertently heighten conflicts in situations such as the Chicago restoration controversy.

Landscape architects Robert Grese and Jane Buxton and environmental psychologist Rachel Kaplan, all of the University of Michigan, and Robert Ryan also study the psychological benefits of volunteers, in their case with a more structured survey. The authors uncover a core set of motivations that attract people to restoration as an activity, and distinguish it from motivations that attract people to other types of leisure activities. Together with Schroeder's work, this chapter helps us understand the unique and often profound benefits that participation in restoration can yield; more pragmatically, this knowl-

edge can help managers gain insights into maintaining and expanding the ranks of volunteers.

Anthropologist Carol Raish of the USDA Forest Service's Rocky Mountain Research Station in Albuquerque concludes this section with a different perspective on how environments can be maintained and sustained, in her cases for periods that span centuries. By looking at the worldviews, traditional knowledge, and resource management practices of traditional and indigenous groups in northern New Mexico, Raish provides examples of how restorationists might integrate different ways of knowing and managing the land into the goals of restoration projects.

In the concluding chapter, Bruce Hull and David Robertson draw from the ideas presented in this book and from their own experience as social scientists as they address how we as researchers, practitioners, decision makers, and citizens can help to set goals for restoration and management. "What is possible? What is acceptable? What can be maintained? And why do it?" are the four questions to which the authors direct their attention, and in so doing they provide signposts that communities of stakeholders can use in reaching restoration and management goals.

Conclusion

It is now early November 1999 as I complete the final edits on this Introduction. Although the heat of the Chicago restoration controversy has subsided from what it was three years ago, rapprochement seems unlikely anytime soon, and restorationists and their critics are in some ways more at odds with each other than ever. In Cook County, there is still a full moratorium on restoration activity at some key sites, and at other sites it proceeds under a lengthy set of restrictions applied with careful scrutiny and supervision. Earlier this fall, concern over restoration activities around Chicago spread north to Lake County, where citizens and public officials called into question the cutting of trees to expand a wetland project on forest preserve land. Farther away, restoration logging activities in the Shawnee National Forest in southern Illinois and Coconino National Forest in Arizona raised similar concerns in wilder contexts. In different locations and ecosystems, and with different stakeholders, it seems increasingly clear to me that some fundamental issues underlie the way restoration is currently being practiced and justified within the context of society's concerns.

Yet my contact with restored nature this fall also tells me, on a personal level, that there exist values in restoration that transcend these persistent and expanding concerns of society. As I gaze out at the waves of geese washing over the vast Horicon Marsh in central Wisconsin and think back on how, in the 1910s, this land was drained and unsuccessfully farmed, then abandoned, and now reclaimed, I dwell on the promise that restoration can bring. As I

marvel at the twelve-foot-long root structure of a big bluestem plant on display at a new exhibit on restoration at Chicago's Field Museum of Natural History, I think back on the sea of grass that gave Illinois its nearly forgotten moniker of the Prairie State. As I absorb with all my senses the beauty of the restored savanna at Bunker Hill forest preserve near my home—a beauty after which we named our first daughter, Savanna—I cannot help but know the goodness in restoration.

Restoring Nature is an attempt to work through the ambivalence that exists within all of us as we come to terms with our places in and responsibilities to nature and society. With Bruce Hull and the contributors to this volume, we hope you as a reader will help us build on the efforts we have begun here.

Note

1. This is the majority view of landscape history in the Chicago region, the view currently espoused by most ecologists and land managers in the region and the one that forms the basis of Chicago Wilderness's *An Atlas of Biodiversity* (1998) and draft *Biodiversity Recovery Plan* (1999). However, given the rich diversity of ecological communities and their shifting patterns across the pre-European-settlement landscape, sketchy knowledge of pre-European-settlement land cover and disturbance patterns, and abrupt post-European settlement land cover change due to logging and grazing as well as fire suppression, there is considerable uncertainty as to what a given parcel of land might have looked like in the 1830s. This uncertainty, particularly as to whether certain sites were closed forest or more open and savanna-like, by itself constitutes one of the major disagreements in the controversy. Thus, while my general characterization of the pre-European-settlement landscape emphasizes prairie and savanna components, I am aware of this uncertainty and its implications. For a minority view on this debate, see Mendelson et al. (1992) and Mendelson (1998).

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ISLAND PRESS
Washington, D.C. • Covelo, California