

## It's about Time: Conservation Biology and History

And so, at long last, we find ourselves on the verge of the millennium. As Stephen Jay Gould (1997) reminds us, such chronological milestones are artificial and arbitrary, and different cultures recognize and follow different conceptions and measures of time's passage. That said, the event (especially if the Y2K bug proves to be a hypervirulent sort) does offer us opportunity to pause and consider the role of history in shaping our worldviews. Conservation biologists, as much as any group, would benefit from this self-scrutiny because an appreciation of the past is certainly important, relevant, and helpful as we go about our work. A sense of history, however, implies much more than that: The past shapes and defines who we are, what we do, and where we do it. It conditions our every thought and act. It permeates our being. Far from being an esoteric concern, the development of an historic sensibility ought to be considered fundamental to conservation biology. In fact, any teaching or practice of conservation biology that neglects history is incomplete.

Martin and Szuter in this issue of *Conservation Biology* provide a clear example of the needs, challenges, and possibilities that emerge when history is fully engaged in the conservation discussion. Their premise—that beginning with the extensive extinctions of the late Quaternary “few if any important megafaunal habitats [in North America] escaped potential human influence”—is obviously germane to questions of appropriate protection, management, and restoration strategies. The details of their hypothesis and findings, and the implications of their approach, will no doubt continue to be debated in the pages of this and other journals. Amid the details, however, we should not lose sight of a broader point of their paper: All conservation issues are embedded in time.

As conservation biologists, we are accustomed to thinking and working across various spatial scales, from the local study site to the biosphere. We know that failure to integrate our understanding of biogeographical relationships, ecological processes, conservation threats, and prescriptive measures across these spatial scales can lead to ineffective and even counterproductive actions. We have been less attentive, however, to the temporal scales that define our research questions, our interpretation of results, and our conservation recommendations.

That is not to say we have been inattentive. Indeed, the very term *conservation* has always implied an

awareness of change over time, and conservation biology has grown out of a deepening concern over past, present, and future human impacts on the Earth's biological diversity. The practical workings of basic and applied conservation science (e.g., strengthening monitoring capacities, providing for adaptive management, developing long-term ecological research [LTER] programs) demonstrate that practitioners in these fields appreciate this need. Yet, there still exists a significant gap in the interstices of the disciplines. Natural scientists and historians may gaze upon the same landscape, but they see different things and draw different lessons from what they see.

All of this implies that we need much greater interaction between conservation biologists and environmental historians. This in turn implies the need for clear understanding of their affinities and differences. Over the last two decades, conservation biology and environmental history have developed along parallel paths. Both emerged as responses to more narrow disciplinary approaches within and beyond academe. Both have tried to show the limits of extreme anthropocentrism in understanding the modern condition. In the case of conservation biology, it is the anthropocentric view of landscapes, their biota, and the human role within them that has come under scrutiny. In the case of environmental history, it is the anthropocentric view of the past that has drawn the scholar's ink. Both operate on the assumption, implicit or explicit, that culture shapes our scientific and historical worldview, but that cultures are shaped by the places and ecosystems with and within which they have evolved.

These two synthetic fields, however, are not in complete synch, and perhaps ought not be. These distinctions also need to be explored and understood. Historians and biologists undergo different training, inherit different intellectual traditions, and speak different disciplinary languages. Conservation biology gained its self-conscious identity by proclaiming itself (in Michael Soulé's well-known phrase) as a “crisis-oriented discipline.” It has drawn into its purview any and all disciplines that may be needed to illuminate the dynamics of conservation dilemmas and to craft effective responses. Environmental history was catalyzed by the rise of the environmental movement and the subsequent need to gain greater critical understanding of environmental change and the manner in which nature and human cul-

ture have shaped each other over time. In particular, environmental history has explored the impact of various social factors (especially gender, race, ethnicity, and class) on our response to the world around us. Conservation biology has taken a more or less complementary approach, surveying the living world around us and using the patterns of biotic response to better inform human actions within the landscape. Environmental history seeks primarily to interpret the past; conservation biology seeks to shape the future.

Lately these differences seem to have been amplified, perhaps in part because of the tendency toward specialization to which even adamantly interdisciplinary fields are prone. One might choose any number of illustrative examples. In recent years one major sticking point has been the ascendancy of deconstruction and other elements of post-modernism within the academy. Many historians (and, to be sure, many biologists) have adopted deconstruction's sharp analytic instruments and have used them to reveal the inner workings of political and cultural influence in our lives, identities, and expressions. Many conservation biologists, looking outward, have difficulty appreciating this intricate scalpel work. They see a culture that can never be "post-biological" and that needs emergency care to regain its environmental health. Our perspectives shape our priorities.

Such examples and comparisons obviously oversimplify the relationship between the two fields, and it may be more fruitful to identify opportunities for shared inquiry and exploration. Such opportunities abound. Let us consider just three, varied in temporal scale, that will certainly grow in importance in the years to come.

### **The Sequence of Prehistoric Anthropogenic Extinctions**

Paleontologists, paleobotanists, paleozoologists, and paleoecologists continue to sift the evidence of ancient extinctions and debate the timing and relative importance of causal factors, including the human factor. Over the last 20 years we have seen revolutionary changes in our understanding of extinctions in both "deep time" (the prehuman eons) and "near time" (after the appearance of anatomically and behaviorally modern humans between 40,000 and 120,000 years ago). The implications for modern conservation are enormous, especially in the latter case. As various lines of evidence converge, a consensus view is emerging: While several causal factors interact at any given time and place, there is a clear correlation between the arrival of human beings in new lands and the extinction of especially the larger mammals, birds, and other terrestrial vertebrates (MacPhee, *in press*). The cascading effects that flow from this "dreadful syncopation" (MacPhee & Marx 1997) have profoundly shaped both continental and insular biotas. A working knowledge of prehistoric extinctions, and the unresolved questions of researchers in this field,

should be part of the education and the reasoning of both environmental historians and conservation biologists (Owens-Smith 1989).

### **Pre- and Postcontact Biotic Changes**

Prehistoric extinctions occupy a time scale more removed from our immediate experience; pre- and post-contact changes in the status of biodiversity are more accessible to us. These are changes that often occur at the boundary of recorded human experience. As most commonly used, "precontact" and "postcontact" refer to the meeting of European and Native American cultures, but there is no reason that it should not encompass the meeting of cultural groups in any circumstance. As Martin and Szuter (1999) suggest, this is only part of a larger set of questions involving the impact of intercultural relationships generally. It is important to bear in mind that many—perhaps most—of our contemporary conservation dilemmas are being played out amid the echoes of relatively recent cultural collisions (Quammen 1996). Because we are still experiencing the shock waves, we find it hard to detach ourselves and gain perspective.

### **The Evolution of Conservation Thought and Practice**

Here the time scale is relatively short—in the American context, just the 100 years in which modern conservation has been self-consciously pursued (Meine 1995)—and the gap is large. Too few professional conservationists, scientists, or resource managers know in any detail the history of their own fields, much less those of allied fields. Few professors in the conservation fields offer more than a lecture or two to help their students get their historical bearings. At the same time, we are still groping to understand how science, policy, philosophy, and practice have interacted and evolved over the last century of conservation. Environmental historians have provided important foundations for such an undertaking (e.g., Worster 1985, 1994; Hays 1987; Dunlap 1988; Hirt 1994; Langston 1995; Sellars 1997), but in many ways we are still bogged down in the traditional conservation historiography of "utilitarians" versus "preservationists."

This is a critical problem. Even as resource management agencies are trying to adapt to change, new generations of students are graduating into conservation professions (whether as agency, university, or nongovernmental organization [NGO] employees). Citizens are buffeted by competing ideological winds, and we lack a coherent, underlying conservation story. In the next century of conservation, we must provide more opportunities for students, employees, and citizens to know this history, not merely the index of dates and names, but the changing currents of assumptions, ideas, knowledge, and applications that have carried us to the present. In the case of professionals, such historical training should

not be construed as a pleasant diversion from technical instruction, but as a basic requirement. And as with all history, it works best when it helps us understand who we are and how we fit into the story.

These are only three obvious examples of areas where historians and conservation biologists might lower their disciplinary guards and recognize their common ground. Why should historians pay attention to conservation biology, and why should conservation biologists pay attention to history? For the same reasons: Both need the other to fulfill their potential in answering to current concerns; both liberate us by allowing us to understand more fully the forces that shape our lives and the lives around us; both allow us to step back, however momentarily, from the always confusing mire of current circumstances, not to escape them, but to comprehend them. Only then can we return to the present prepared to meet the future.

#### Note

*I dedicate these remarks to the memory of Walter Kuhlmann, who understood deeply the importance of history in shaping our conservation policy and our convictions.*

#### Curt Meine

International Crane Foundation, E-11376 Shady Lane Road, Baraboo, WI 53913, U.S.A., email [curt.icf@baraboo.com](mailto:curt.icf@baraboo.com)

#### Literature Cited

- Dunlap, T. 1988. Saving America's wildlife. Princeton University Press, Princeton, New Jersey.
- Gould, S. J. 1997. Questioning the millennium: a rationalist's guide to a precisely arbitrary countdown. Harmony Books, New York.
- Hays, S. 1987. Beauty, health, and permanence: environmental politics in the United States, 1955-1985. Cambridge University Press, New York.
- Hirt, P. 1994. A conspiracy of optimism: management of the national forests since World War II. University of Nebraska Press, Lincoln.
- Langston, N. 1995. Forest nightmares, forest dreams: the paradox of old growth in the inland west. University of Washington Press, Seattle.
- Martin, P. S., and C. R. Szuter. 1999. War zones and game sinks in Lewis and Clark's west. *Conservation Biology* 13:36-45.
- MacPhee, R. D. E., editor. In press. Extinctions in near time: contexts, causes, and consequences. Plenum Press, New York.
- MacPhee, R. D. E., and P. A. Marx. 1997. The 40,000-year plague: humans, hyperdisease, and first-contact extinctions. Pages 169-217 in S. Goodman and B. Patterson, editors. Natural change and human impact in Madagascar. Smithsonian Institution Press, Washington, D.C.
- Meine, C. 1995. The oldest task in human history. Pages 7-35 in R. Knight and S. Bates, editors. A new century for natural resources management. Island Press, Washington, D.C.
- Owens-Smith, N. 1989. Megafaunal extinctions: the conservation message from 11,000 years BP. *Conservation Biology* 3:405-412.
- Quammen, D. 1996. The song of the dodo: island biogeography in an age of extinctions. Simon and Schuster, New York.
- Sellers, R. W. 1997. Preserving nature in the national parks. Yale University Press, New Haven.
- Worster, D. 1985. Rivers of empire: water, aridity, and the growth of the American West. Pantheon Books, New York.
- Worster, D. 1994. Nature's economy: a history of ecological ideas. 2nd edition. Cambridge University Press, Cambridge, United Kingdom.

