forms of storytelling." What weary witness to current forms of progress-through-devastation would not want to engage with such texts?

Critical ethical questions are raised in James Barilla's thought-provoking essay on the literature of ecological restoration. "...[T]he desire to return to conditions prior to European contact is primarily a preoccupation in those areas where such a disturbance, *and continued colonization*, has taken place. Thus the ecological restoration narrative expresses certain desires and anxieties while avoiding and disguising others, such as the highly troubling question of land rights" (emphasis mine). The texts considered within this framework include Aldo Leopold's *Sand County almanac*, South African J. M. Coetzee's *Life and times of Michael K*, and Leslie Marmon Silko's *Garden in the dunes*. Those who enjoy honest challenges to comfortably enshrined conventional wisdom will find this essay by itself worth the price of the book.

Other essays in the volume challenge the very concept of "text" as limited to written materials. Songs, buildings, curricula, evolutionary processes, Linnean binomials—all can be read as text in the sense that they actually encode narrative, stories about how we see the world and our place in it. Jennifer Wheat's essay on scientific nomenclature ("Mindless fools and leaves that run") is particularly delightful. We are perhaps accustomed to the notion that indigenous languages often encode rather complex ecological information within their names for organisms; Wheat takes as her point of departure the obvious fact that Linnean binomials of course do the same. Or do they? Taxonomists and ecologists may find this essay by turns hilarious, infuriating, and illuminating. Another personal favorite is Tina Gianquitto's essay on the work and works of Mary Treat, a 19th century naturalist and "...participating member of a famous and controversial circle of professional scientists that includes Charles Darwin and Asay Gray...."

Some of the many pieces I have not discussed may have particular champions within our discipline. For example Amy Patrick provides an interesting discussion of the effectiveness of "apocalyptic" literature in the style of *Silent spring*. David Mazel discusses the work of Annie Dillard in the context of the *Book of Job*. Michael Cohen takes on evolutionary literature as well as the sociobiology debates, apparently still alive and well in some corners of the humanities. The final essay by the courageous lone geologist Jeff Walker ("The great, shaggy barbaric Earth") discusses the work of John Burroughs and is by comparison with most of the foregoing, somewhat tame, but an affectionate and kindly end to the volume.

Jesse Ford

Oregon State University
Department of Fisheries and Wildlife
Corvallis, Oregon 97331-3803
E-mail: jesse.ford@oregonstate.edu

Ecology, 88(11), 2007, pp. 2947–2948
© 2007 by the Ecological Society of America

Everyone Talks About Climate: Here's How To Do Something About It

Moser, Susanne C., and Lisa Dilling, editors. 2007. **Creating a climate for change: communicating climate change and facilitating social change**. Cambridge University Press, New York. xxv + 549 p. $135.00, ISBN: 978-0-521-86923-2.

Key words: climate change; communicating science; facilitating social action; global warming.

How can it be that half of U.S. adults believe that the Earth is 6000 years old when to believe this is to reject evolution, geology, and cosmology? Scientists consider this statistic and shake their heads in bewilderment. How can this be in a technologically and scientifically advanced country such as the United States?

The answer to this question is not clear, but as scientists we know what needs to be done, and we do it. We write articles and give talks to the general public—articles and talks of great clarity and persuasion—recounting the evidence and the reasoning that have led scientists to conclude with confidence that life evolved from simple forms over billions of years, that the Earth is 4.6 billion years old, and that it all started with the Big Bang 13.7 billion years ago. Now, we think, they are surely convinced. But they are not. The survey results remain stuck at 50% of adults rejecting these ideas. We fool ourselves by thinking that, if only we explained the science clearly enough, the public would be convinced.

Global climate change is another case where there is a vast gulf between the science and public attitudes. As for evolution, only about half of the public are "believers" in the sense of believing that global warming is real and that human activity is a major cause. The goal of *Creating a climate for change* is to describe communication strategies that will help increase that fraction.

Communicating the results of science does not play much of a role in persuading the public, according to the authors. Indeed, it is possible for scientists to have negative impacts, especially if they come across as condescending. The authors claim that, when the public rejects a scientific idea, this is *not* because people do not understand the science. (Of course, they often do not, but they also do not understand how gravity works while that does not induce non-belief.) Consequently, it does not help much for scientists to explain the science, no matter how lucidly. This is not easy for a scientist to take.

Creating a climate for change came out of a conference held at the National Center for Atmospheric Research in June, 2004. Apparently, each of the thirty-two chapters is a written version of one of the talks presented at the three-day conference. As a result, the chapters are of uniform length, long enough to make the desired points, and short enough that none drags on.

The book is divided into two parts plus a summary. Part I addresses the question of how to communicate with the public and Part II with how to effect change.

As someone who had given a number of talks on global warming to lay audiences, I was brought up short by some of the insights in Part I. For example, I have been loath to describe the melting of arctic ice as a sign that humans are causing global warming because we know that the ice has melted repeatedly in the past. The skeptics are correct: by itself, the melting could be entirely natural, saying nothing about human causation. But, as more than one author points out, people are convinced by things that are happening now, not by changes that scientists

predict will happen in a hundred years. They are convinced by local changes far more than by those in distant lands. As one scientist said, "People don't make decisions based on global temperatures increasing by a few degrees."

In Arkansas, it is clear that local changes matter. Duck hunters are not the most liberal of voters, but they have become strong, vocal advocates of doing something to reduce global warming ever since the ducks began stopping their southern migrations before reaching Arkansas. As the climate has warmed, ducks no longer need to fly as far south to reach ice-free lakes and rivers. In spreading the word about climate change, it would be a huge strategic blunder not to include such local effects of warming.

These insights are part of a larger theme of "framing" one's presentation so that the issues are significant to the audience. Looked at this way, it is obvious that a presentation of the science by itself, for itself, will be ineffective. The members of the audience are not scientists. They have no interest in the quite wonderful physics of using ice cores to determine the temperatures and atmospheric carbon dioxide from half a million years ago. They are interested in what climate change will mean for them and their family, here and now.

Another theme is a caution against presenting climate change as a looming catastrophe. To do so invites the listener to conclude that all is hopeless, that it is futile to do anything. There is a fine line between inducing so much fear as to produce paralysis and enough concern to motivate the listener to act. The Michael Moore approach is not a model for how we should talk about climate change.

The natural scientist looking for guidance in presenting the science of climate change will find it here, but it comes in small, scattered doses. The chapter entitled "Einstein, Roosevelt, and the atomic bomb" is specifically devoted to advice for scientists and is a fascinating account of Leo Szilard's efforts to get Roosevelt's attention regarding the Nazi threat. In the end, however, the lessons learned are, by now, well known: be patient, brief, and to the point. However, where scientists really need help is in communicating effectively, in choosing what to emphasize and what to avoid, and the book is certainly useful for that.

In Part II, we find a truly depressing idea, namely that informing people about actions they can take to mitigate climate change can make them feel like they have already done something merely by being informed. They feel no need to actually take action. So what is the message here? Surely, it is not that presenting information should be avoided. Unfortunately, little is offered in the way of a solution to this conundrum.

The chapter entitled "Changing the world one household at a time" should inspire readers to rush out and organize their neighborhoods and cities. It describes Portland's 30-day program to reduce CO_2 emissions by individual households by going on a "low carb diet" of simple lifestyle changes. The first 31 households to complete the program reduced their emissions by 22%, or 6700 pounds per household for the month. Part of the program was to reduce the "ignorance tax" that people pay simply by being unaware of choices they make that cost them money, e.g., using incandescent lights rather than compact fluorescents. The downside is that the program required external funding and a dedicated effort over many months, and ended when the funding did. Unanswered is the question of whether the program is exportable to communities that are not as environmental-minded as Portland, and the question of whether the program can be sustained. Certainly, the 31-page "Low carb diet workbook" should become available to others. It required a considerable effort and it would be too bad if it died with the Portland program.

One could wish that all chapters were as effective as this one in showing how to facilitate change by describing "what has worked, what has not," to use the conference organizers' dictum. Many chapters did but many others merely proposed untried strategies without any evidence that they might be effective.

Moser and Dilling also asked the participants to "speak in plain English" and for the most part they did. There were occasional lapses when a speaker wrote as if to colleagues, using stilted academese. The book would have been stronger without those chapters, especially so because they were among the chapters that offered no practical guidance. Also unsuccessful were the chapters written by representatives of state government. These chapters were mostly promos for those states, describing in exalted terms the establishment of commissions of various kinds, information without value to most readers. Given that the editors had limited control over the content, however, the overall result was better than one might expect.

Almost anyone interested in climate change issues will find something of value here. There is even a chapter addressed to church preachers for God's sake! Preachers are cautioned against announcing that it is a sin to drive a Hummer. This reinforces a general principle, discussed elsewhere in the book, that one does not bring others over to your side by telling them they are bad people. While obvious when put this way, this principle is widely violated by speakers of all persuasions when they are certain of the purity of their causes.

This strength of the book—its broad inclusiveness—is also a weakness as it means that many readers will find parts of the book of little personal interest. Nonetheless, this reviewer is glad of the insights gained from reading *Creating a climate for change*. Most readers are likely to agree.

Lawrence A. Coleman

University of Arkansas at Little Rock
Department of Physics and Astronomy (emeritus)
2801 South University Avenue
Little Rock, Arkansas 72204
E-mail: lcoleman@ualr.edu

Submit books and monographs for review to the Book Review Editor, Janet Lanza, Biology Department, University of Arkansas at Little Rock, Little Rock, Arkansas 72204 (telephone (501) 569-3500).

We welcome offers to review books for *Ecology*, but we cannot accept an offer to review a *specific* book. Anyone who wishes to review books for *Ecology* should send a current *curriculum vitae*, a description of competencies, and a statement of reviewing interests to the Book Review Editor. Authors of reviews must verify they they have no conflict of interest that might interfere with their objectivity, and that they have not offered (and will not offer) a review of the same book to another journal.