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THE ESSENCE AND ETHICS OF ECOLOGY AND CONSERVATION

Ehrlich, Paul R. 1997. **A world of wounds: ecologists and the human dilemma**. Ecology Institute, Oldendorf/Luhe, Germany. xxiv + 210 p. 63 DM (students may request a 40% discount; order via internet [http://www.int-res.com], e-mail [ir@int-res.com] or FAX [49-4132-8883]), ISSN: 0932-2205.

Paul Ehrlich has written a refreshingly honest, reflective, and, at times, almost autobiographical exploration of what it should mean to be an ecologist. Nothing is sacred in this book except Ehrlich's ultimate goal of understanding and preserving a functioning and sustainable earth. Ehrlich explores the underlying tenets of conservation biology, academic ecology, and economics with candor. He starts by questioning the very heart of traditional academic ecology: "Ecologists of my generation virtually all started studying systems . . . that we assumed would be around forever. . . . While the things we love to study are disappearing, and human society is in grave jeopardy because of it, traditional professional concerns all too often dominate our actions." ". . . one could read an entire year of *Ecology* and not be made aware that there is an eco-logical crisis."

In excellent opening and closing chapters, Ehrlich asserts that ecology, as a discipline, must change markedly and rapidly. Ecologists, he says, must acknowledge the environmental impacts of humans, must focus at least a portion of their research on these, and must communicate relevant results not just with each other, but with the public and decision makers. Other leaders of the discipline have made similar calls. Ehrlich expands on these by proposing a new code of ethics that highlights the unwritten contract between scientists and the societies that support them.

Ehrlich suggests that the reward system of the discipline is antiquated, causing journals to be "packed with papers describing more and more sophisticated analyses applied to more and more trivial problems. Little attention is being paid to the opportunity costs of that sort of research, a situation senior ecologists have an obligation to try to remedy." One remedy is to encourage research on big issues, such as the search for general ecological principles that can be the basis of sound policy, or the exploration of the implications of human domination of the earth's ecosystems, or the determination of the amount of biodiversity that must be preserved to sustain a functioning planet. In his chapters on ecology and conservation and on ecology and environmentalism, Ehrlich focuses on these big issues, especially those unanswered questions that are of central importance to both the discipline and society. These chapters are rich with controversies and questions, many of which could define a full professional career. They also are rich with evaluations of past approaches. Although these criticisms may sting some readers, Ehrlich is equally critical of his own work, and throughout it is clear that he evaluates the past to better understand what the future should be. Whether or not one agrees with what Ehrlich thinks, the discipline must address the questions that he raises.

The book's title, "A world of wounds: ecologists and the human dilemma," may seem pessimistic, but the book is one of the more optimistic treatments of these issues that I could imagine.

It is a call to join in an endeavor fraught with joy, pain, and deep intellectual challenge. The title comes from Aldo Leopold, who said "One of the penalties of an ecological education is that one lives alone in a world of wounds. . . . An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise." As Ehrlich's review makes clear, ecologists have a meeting with destiny. We might prefer that humans did not dominate the ecosystems of the world, just as physicians might prefer that HIV did not exist. But humans do dominate the world, and are likely to have a 5 to 10 fold increase in their total consumption and impact during the next century. It is our challenge, our responsibility, indeed, our privilege, to be the citizens who have the knowledge and skills needed to deal with the most critical phase of human life on earth.

Ehrlich responds to this challenge with optimism. He expects that, given the right ethic and reward system, ecologists will find and communicate answers with the public, and that the public and decision makers will accept scientifically sound, well-reasoned policy. The pursuit of such policy re-quires the synthesis of ecology, economics, and political science, an area that Ehrlich addresses, again with candor, in two chapters. Perhaps because I am not an economist or social scientist, these chapters seemed long to me. However, they made clear the need to attract to the discipline those who work at this crucial interface.

The final chapter returns to the philosophy and ethics of being an ecologist or conservation biologist. The need to publish scientific results is an ethic that is deeply ingrained, because unpublished work has not weathered peer review and is lost to the discipline. Ehrlich asserts that ecology needs a new ethic—that every scientist also is obliged to communicate pertinent results to decision-makers and the general public. As Ehrlich says, "Since the public pays for much of the scientific enterprise, it has a right to some idea of what it is getting for its money." This responsibility is especially strong in ecology. Ecologists do see the wounds of the world and know what these foretell. Ecologists are ethically obliged, by the unwritten contract between society and the scientific enterprise, to tell the world of these wounds and to help find ways to bind and heal them.

This book contains the wisdom of a senior ecologist who is one of the founding fathers of the environmental movement and of conservation biology. All who are serious about ecology or conservation biology will want to read this stimulating book. In less than 200 pages of text, Ehrlich has explored the soul of ecology, sharing its joys, baring its shortcomings, and visualizing what its future could be.

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