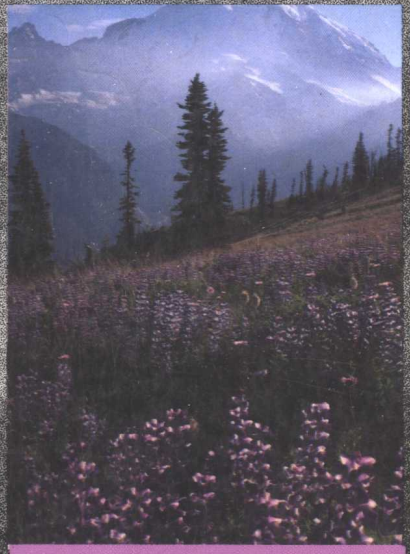
R. F. DASMANN

ENVIRONMENTAL CONSERVATION

FIFTH EDITION



ENVIRONMENTAL CONSERVATION

FIFTH EDITION

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PREFACE

In 1958 when I was putting the finishing touches on the first edition of *Environmental Conservation,* I had no thought that 25 years later I would be writing the preface to the fifth edition. Conservation was then a subject in the college's natural resource management program, predominantly of interest to those who sought to be professionals in one of the resource management fields. There was no environmental movement. Outside of a few long-established conservation organizations—the Sierra Club, National Audubon Society, and the like—there was no great public interest.

Things have changed, and not in the way I had hoped they would. A tidal wave of humanity has flooded the earth, more than two billion more people. Places that seemed wild, remote, secure during the 1950s are no longer so. No remote places remain. Nothing is secure. It would be easy to write a bitter chronicle of destructive change.

But while there were few allies in the 1950s, there are millions today—everywhere. The growth of the environmental movement has been heartening to watch. Whether this new willingness to undertake the task of restoring the environment will grow faster than the accelerated destruction of life on this planet is a question I cannot answer. There is hope, but there are bad times ahead.

I hope this edition has more *answers* than previous editions. It will explore ways to achieve a better balance between human demands and ecological necessities for long-term survival. Any way of life we pursue must be or be able to become ecologically sustainable. There is no time or space for the continuance of ways that deplete or damage the life-support systems of the planet. A change must take place in the attitudes of people toward nature and themselves. It can come voluntarily, or it will be forced by painful circumstances. But it will come.

This book is intended for the beginning university student and the interested public. It provides a text for a course concerned with environmental problems and natural resource management. The emphasis is on the United States, since this country has been a leader in conservation and must continue in this role. But the problems are planetary and cannot be solved by one nation, and in 1983 the United States no longer can claim any position of leadership. This is my effort toward helping us regain it.

To acknowledge my indebtedness to others for the inspiration and ideas that resulted in the various editions of this book is almost impos-

sible. As a student at Berkeley, I was exposed to the ideas of Starker Leopold and, through him, his father Aldo. Later I encountered Carl Sauer, whose teaching had a great impact on my thinking. When I first started teaching conservation at Minnesota and Humboldt, I was aided by the appearance of the most impressive collection of environmental knowledge then available: *Man's Role in Changing the Face of the Earth*, edited by W. L. Thomas. Here I started absorbing Lewis Mumford's words, which I followed in his many books and finally in various meetings with him. My work in Africa brought me in touch with Frank Fraser Darling, who later became my friend and colleague at the Conservation Foundation. I owe him an important karmic debt.

The turmoil in America during the Vietnam War years taught me that government is not a benign force acting in the public interest. I do not know why it took me so long to learn. My wife and co-worker, Elizabeth, through her pursuit of knowledge concerning psychology, anthropology, and the women's movement, helped shatter my original male chauvinism. In this she was aided by Sandra, Marlene, and Lauren. More than that, she introduced me to Carl Jung and later, R. D. Laing, Maslow, and others. But this was a time of turmoil, with rebellion in the air, and new ideas bubbling over. I was influenced by Roszak, Commoner, Schumacher, and Kohr, and later more directly and personally by my friends Jimoh Omo-Fadaka, Gary Snyder, and Peter Berg. This list could go on.

Through it all my working colleagues at Humboldt State, the Conservation Foundation, UNESCO, the International Union for the Conservation of Nature, and now U.C. Santa Cruz have done their bit, and my employers have been tolerant. Here it is, another try. Thank you.

R. F. DASMANN
Santa Cruz
September, 1983

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INTRODUCTION

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CONSERVATION— THE SURVIVAL OPTION

INTRODUCTION

The future of life on earth was once entirely beyond human control. We lived for most of our time on this planet as one species among many, depending on natural processes that functioned without our intervention. Today the future of life on earth depends on human action. At no time during the last hundred thousand years has the survival of the human species along with most other species been so imperiled. We have reached this state through an overwhelming increase in human numbers, made possible through our growing command of energy resources that we have used to modify the surface of the earth. With the dawn of the nuclear age we have achieved access to the power that binds matter together, a power so immense that it exists primarily not as an aid to human endeavor, but as a threat to survival of life. During this process of growth and change we have failed to develop either the self-knowledge or the social institutions needed to accommodate the abundance of people or to control their use of power. We lack understanding of ourselves, of others, and of the environment on which we depend. Most particularly we lack appreciation of the total interdependence that exists among all living creatures and the physical environment that we all inhabit.

During the past several centuries and most markedly in the past 40 years, there has been a severely unbalanced development of human knowledge. In the physical sciences and in the technology derived from them, a sophistication has been gained that permits us to shatter atoms and to send rockets beyond Neptune. In biology, through searching for the factors controlling the growth, development, and reproduction of organisms, we have gained sufficient ability to create new forms of life, not seen before on earth. But there has been no similar growth in the knowledge of how living creatures interact. There has been even less gain in understanding of the factors influencing our social interactions, or the forces affecting the behavior of individuals. We are consequently able to apply great skill and power to physical achievements without necessarily knowing why we are doing so, much less what the full consequences of our actions will be. To go on in that way now holds too much risk. At no time since the earliest beginnings of humanity have the dangers of human extinction been so severe. At no time in the story of the earth has the survival of all life been so linked to the behavior of one species. We do not just stand on the edge of an abyss, we stand, to use Herman Kahn's imagery, on a slippery slope leading to an abyss, where a false step may be irrevocable (Schell, 1982, p. 207).

We are increasingly overwhelmed by ecological crises, each of which

seems to demand our attention and action. None of them need to have happened; all seem to grow worse. The list is long—accumulation of toxic substances, destruction of tropical forests, desertification, loss of soil, loss of species, depletion of vital resources. But to those who have looked carefully at our world situation, the threat of a nuclear holocaust appears the most immediate and the most fearful. Through miscalculation, electronic error, desperation, or madness, a relatively few people could, within less than hours, destroy all of civilization, eliminate most if not all wildlife and land vegetation, possibly exterminate the human species, possibly destroy all life on earth. If there is any cause worth dying for, as individuals, the prevention of nuclear war and the elimination of nuclear armaments is that cause, for if we do not win this one, it will not matter much if we achieve all lesser goals. The threat of human extinction is the ultimate threat. The words of Jonathan Schell in *The Fate of the Earth* (1982) bear repeating here: *As long as politics fails to take up the nuclear issue in a determined way, it lives closer than any other activity to the lie that we have all come to live—the pretense that life lived on top of a nuclear stockpile can last. Meanwhile, we are encouraged not to tackle our predicament but to inure ourselves to it: to develop a special, enfeebled vision, which is capable of overlooking the hugely obvious; a special, sluggish nervous system, which is conditioned not to react even to the most extreme and urgent peril; and a special, constricted mode of political thinking, which is permitted to creep around the edges of the mortal crisis in the life of our species but never to meet it head on. In this timid, crippled thinking, "realism" is the title given to beliefs whose most notable characteristic is their failure to recognize the chief reality of the age, the pit into which our species threatens to jump; "utopian" is the term of scorn for any plan that shows serious promise of enabling the species to keep from killing itself (if it is "utopian" to want to survive, then it must be realistic to be dead); and the political arrangements that keep us on the edge of annihilation are deemed "moderate," and are found to be "respectable," whereas new arrangements, which might enable us to draw a few steps back from the brink, are called "extreme" or "radical." With such fear-filled, thought-stopping epithets as these, the upholders of the status quo defend the anachronistic structure of their thinking, and seek to block the revolution in thought and in action which is necessary if mankind is to go on living.*

It is not enough for us to dismantle our nuclear armaments—they could be assembled again. We must understand the conditions of our minds and souls that have permitted these nuclear arsenals to be built up. How have we become so shut off from ecological reality and empathy for life on earth that we could use atomic weapons and plan for the use of hydrogen bombs? If a person refuses to face reality and lives in a make-believe world, she or he is considered insane. But for decades most of our government leaders, aided and abetted by the voting public, have lived in a make-believe computer world of statistics and symbols,

playing a monstrous military game of threat and counterthreat, unable to comprehend that on our fragile planet, the very possession of such weapons of annihilation is insane.

Unfortunately, the same mental attitudes that have permitted this military madness have directed our actions toward use of our planet, all of its resources, all of its life. Playing political and economic games that confuse symbols with reality, we have sacrificed major elements of the life support systems of the earth, and of life itself, in return for transitory monetary wealth or political power. So today we face ecological crises, second only to the nuclear threat in the peril they hold for life on earth.

When a volcano erupts or there is a major shift along a fault line, we all realize our vulnerability and know that the future cannot be guaranteed. We live in an uncertain universe where suns can explode and comets or asteroids go astray. We can, however, cease to be our own greatest danger. We can enhance the means for continuing life on earth. We can keep from destroying our own environment and with it ourselves. We can create a conserving society that is ecologically sustainable.

We are at a turning point in human history. Astrologists point out that, like it or not, we are entering the Age of Aquarius. More prosaic and perhaps less optimistic folk note only that we are reaching the end of a millennium, the second since the Christian calendar began. We have fewer than 20 years before the beginning of the twenty-first century. During most of that time the human race will face rough going. For reasons to be examined in this book, civilization must change its course, and it will not be easy to do so. For those who relax in the hope that things will go on as they have during the past few decades, there is no basis for that hope. Life will not go on as it has been. There are various options to choose from, but there is no option that allows present trends to continue.

During the history of humanity, people have made many mistakes in their relationship to the world and to one another. Our ancestors, however, were usually able to postpone the day of reckoning. They were able to seek present profit without too much concern for its future effects. There were many who said "let posterity worry about it!" Today, you are the posterity they were talking about. You have no way of postponing the reckoning. Either the major problems that face the world will be solved or alleviated in the lifetime of those already born, or there will be no further posterity. *You* have to change the ways in which human societies operate or none of you will survive.

THE MEANING OF CONSERVATION

The word *conservation* has been derived from the verb "to conserve," defined in *Webster's Dictionary* as "to keep in a safe or sound state." Conservation itself is in the same place defined as "a careful preservation