



Dan Chiras received a Ph.D. in reproductive physiology from the University of Kansas Medical School. In 1976, he accepted a teaching and research position at the University of Colorado, Denver, where he taught a variety of courses, including general biology, cell biology, histology, reproductive biology, and endocrinology. Over the years, Dr. Chiras pursued his interest in environmental issues and developed a number of courses on the environment, including a graduate course on global environmental issues and the environmental and health effects of pollution. He has also taught undergraduate science modules on air pollution, nuclear power, noise pollution, impacts of coal development, and strategies for sustainability.

While at the university, Dr. Chiras worked on several EPA projects, including a study of the health impacts of chlorinated organics from wastewater treatment and the impacts of coal mining in the West. He also prepared an assessment of the impacts of shale oil development in Colorado for the Department of Energy.

In 1981, Dr. Chiras resigned his full-time position at the university to pursue a writing career. Since that time, he has published nearly 300 articles in journals, magazines, encyclopedias, and other publications, including *Environment*, *American Biology Teacher*, *The Amicus Journal*, *Solar Today*, *Natural Home*, *Mother Earth News*, *Sustainable Futures*, *Colorado Outdoors*, *Home Power*, and *Environmental Carcinogenesis and Ecotoxicology Reviews*.

Dr. Chiras has written the environment section for World Book Encyclopedia's Science Year since 1993. He wrote an extensive article titled "The Population Explosion" in Science Year 1998. Dr. Chiras has written articles on ecology, the environment, environmental issues, air pollution, and population articles for *Encyclopedia Americana*.

Dr. Chiras has published 29 books on ecological design, environmental science, sustainable systems design, green building, and residential renewable energy. Included in this list are a college-level textbook titled *Natural Resource Conservation* (with John P. Reganold) and a high-school textbook titled *Environmental Science: Framework for Decision Making*. Dr. Chiras has also published two college-level biology textbooks: *Human Biology* and *Biology: The Web of Life*.

Dr. Chiras has written several books for a more general audience, *Beyond the Fray: Reshaping America's Environmental Response*, which offers advice on building a truly effective response to the environmental crisis, and *Lessons from Nature: Learning to Live Sustainably on the Earth*, which outlines

ways to build a sustainable future. He has also assembled an anthology titled *Voices for the Earth: Vital Ideas from America's Best Environmental Books*. This book includes 14 essays summarizing the key ideas of books nominated by a national committee as America's best environmental books.

Dr. Chiras's more recent books include *Power from the Wind*, *Power from the Sun*, *Wind Energy Basics*, *Solar Electricity Basics*, *Green Home Improvement*, *Green Transportation Basics*, *Solar Home Heating Basics*, *The Natural House: A Complete Guide to Healthy, Energy-Efficient, Environmental Homes*; *The Solar House*; *The New Ecological Home*; *Superbia!*; *31 Ways to Create Sustainable Neighborhoods*; *The Homeowner's Guide to Renewable Energy*; *The Natural Plasters Book*; and *EcoKids: Raising Children Who Care for the Earth*.

Dr. Chiras is a visiting professor in the environmental science and Southwest studies programs at Colorado College, where he teaches courses on renewable energy, green building, and climate change. Dr. Chiras has also served as a visiting professor at the University of Washington in Seattle, where he taught the introductory environmental science course.

Besides teaching and writing, Dr. Chiras has played an active role in the environmental movement. He has served on the Board of Directors of the Colorado Environmental Coalition for five years and was president of this coalition of 40 environmental groups for two years. In 1988, he cofounded Friends of Curbside Recycling, which was instrumental in convincing the city of Denver to begin a curbside recycling program. In 1989, he cofounded Speakers for a Sustainable Future, which offered slide programs on recycling, water conservation, and sustainability. In 1993, Dr. Chiras cofounded another nonprofit organization, the Sustainable Futures Society. He served on the board of directors of the Advanced Technology Environmental Education Library, which has produced a website that serves as a repository for environmental information.

Dr. Chiras has spoken to a wide range of audiences, including the National Association of County Agricultural Agents; the American Society of Interior Designers; the American Home Economics Association; Architects, Designers, Planners for Social Responsibility; the Colorado Renewable Energy Society; the American Solar Energy Society; and many others.

In 2009, Dr. Chiras formed The Evergreen Institute: Center for Renewable Energy and Green Building in east-central Missouri (www.evergreeninstitute.org), where he teaches classes on solar electricity, wind energy, passive solar heating and cooling, green building, natural building, and more. He is currently turning the 50-acre farm and educational center into a net-zero energy facility by implementing efficiency measures and installing solar electric, solar hot water, passive solar, and wind energy systems that will generate all the energy the facility consumes.

In addition to his active scientific pursuits, Dr. Chiras is an organic gardener and bicyclist. He raises homing pigeons and all natural grass-fed cattle, Belted Galloways. He splits his time between Colorado and Missouri.

Environmental Science

Ninth Edition

Daniel D. Chiras

Updated throughout with the latest data from the field, the ninth edition of *Environmental Science* provides a comprehensive, student-friendly introduction to the environmental issues facing society today and offers numerous solutions for how we can create a more sustainable way of life. Chiras focuses on the underlying causes of environmental problems and presents both sides of the issue at hand. Each chapter highlights critical analysis to help students determine how to approach these complex topics and determine the merits of the debates for themselves. The *Ninth Edition* includes updated and expanded coverage of environmental economics, ecology, and the application of science and technology to environmental concerns.

Key Features of the Ninth Edition:

- Updated and revised throughout to keep pace with changes in the field.
- New and updated **Go Green** notes provide helpful, inexpensive, and practical tips that will help us all build a more sustainable future.
- Includes new content on energy conservation options, fuel efficiency standards, electric cars, and “green buildings.”
- **Spotlight on Sustainable Development** boxes give students further insight into timely environmental issues.
- Every new copy of the text includes online access to the companion website environment.jbpub.com/9e.

Instructor's Supplements include:

- PowerPoint Lecture Outlines
- PowerPoint Image Bank
- Instructor's Manual
- Test Bank