

now available in paperback. Simard brings us into her world, the intimate world of the trees, in which she brilliantly illuminates the fascinating and vital truths—that trees are not simply the source of timber or pulp, but are a complicated, interdependent circle of life; that forests are social, cooperative creatures connected through underground networks by which trees communicate their vitality and vulnerabilities with communal lives not that different from our own. Simard writes—in inspiring, illuminating, and accessible ways—how trees, living side by side for hundreds of years, have evolved, how they learn and adapt their behaviors, recognize neighbors, compete and cooperate with one another with sophistication, characteristics ascribed to human intelligence, traits that are the essence of civil societies—and at the center of it all, the Mother Trees: the mysterious, powerful forces that connect and sustain the others that surround them. And Simard writes of her own life, born and raised into a logging world in the rainforests of British Columbia, of her days as a child spent cataloging the trees from the forest and how she came to love and respect them. And as she writes of her scientific quest, she writes of her own journey, making us understand how deeply human scientific inquiry exists beyond data and technology, that it is about understanding who we are and our place in the world.

Covering nearly three-quarters of our planet, the world's oceans are a vast and unique ecosystem from which all life on Earth originated. But each year the marine realm is more susceptible to harm by careless exploitation, and as demands for food, waste disposal, transport, and travel increase, the fate of the world's oceans hangs in the balance. This timely guide explores this expansive—and fragile—frontier. Oceans collects more than thirty thematically arranged articles from the past decade, including recent pieces written in the wake of the 2004 tsunami, and features articles that investigate the origins of the world's oceans, the diversity of life in the water, the state of global fisheries, the dangers of natural disasters, and the perils oceans face, whether induced by nature or by humans. With a breadth of topics as wide as the ocean is deep, this Scientific American anthology will be indispensable for readers interested in the evolution, ecology, and conservation of the oceanic ecosystem. Scientific American, the premier general-interest science magazine, reports the most important developments in modern science, medicine, and technology to more than three million readers worldwide. The oldest continuously published magazine in the United States, it has been at the forefront of science for more than 150 years. Evolution: A Scientific American Reader, is also published by the University of Chicago Press. Book jacket.

This advanced textbook on modeling, data analysis and numerical techniques for marine science has been developed from a course taught by the authors for many years at the Woods Hole Oceanographic Institute. The first part covers statistics: singular value decomposition, error propagation, least squares regression, principal component analysis, time series analysis and objective interpolation. The second part deals with modeling techniques: finite differences, stability analysis and optimization. The third part describes case studies of actual ocean models of ever increasing dimensionality and complexity, starting with zero-dimensional models and finishing with three-dimensional general circulation models. Throughout the book hands-on computational examples are introduced using the MATLAB programming language and the principles of scientific visualization are emphasized. Ideal as a textbook for advanced students of oceanography on courses in data analysis and numerical modeling, the book is also an invaluable resource for a broad range of scientists undertaking modeling in chemical, biological, geological and physical oceanography.

Environmental and Pollution Science, Third Edition, continues its tradition on providing readers with the scientific basis to understand, manage, mitigate, and prevent pollution across the environment, be it air, land, or water. Pollution originates from a wide variety of sources, both natural and man-made, and occurs in a wide variety of forms including, biological, chemical, particulate or even energy, making a multivariate approach to assessment and mitigation essential for success. This third edition has been updated and revised to include topics that are critical to addressing pollution issues, from human-health impacts to environmental justice to developing sustainable solutions. Environmental and Pollution Science, Third Edition is designed to give readers the tools to be able to understand and implement multi-disciplinary approaches to help solve current and future environmental pollution problems. Emphasizes conceptual understanding of environmental systems and can be used by students and professionals from a diversity of backgrounds focusing on the environment Covers many aspects critical to assessing and managing environmental pollution including characterization, risk assessment, regulation, transport and fate, and remediation or restoration New topics to this edition include Ecosystems and Ecosystem Services, Pollution in the Global System, Human Health Impacts, the interrelation between Soil and Human Health, Environmental Justice and Community Engagement, and Sustainability and Sustainable Solutions Includes color photos and diagrams, chapter questions and problems, and highlighted key words

Contexts, Perspectives and Management

Scientific American Environmental Science for a Changing World + Saplingplus for Scientific American Environmental Science for a Changing World 3rd. Ed., Twelve-month Access

A Concise History of the Common Law

Beloved Beasts: Fighting for Life in an Age of Extinction

Global Case Studies of Collaboration and Transformation

Environmental Evolution

Re-imagining the Boundaries of Science and Politics

"Unsettled is a remarkable book—probably the best book on climate change for the intelligent layperson—that achieves the feat of conveying complex information clearly and in depth." —Claremont Review of Books "Surging sea levels are inundating the coasts." "Hurricanes and tornadoes are becoming fiercer and more frequent." "Climate change will be an economic disaster." You've heard all this presented as fact. But according to science, all of these statements are profoundly misleading. When it comes to climate change, the media, politicians, and other prominent voices have declared that "the science is settled." In reality, the long game of telephone from research to reports to the popular media is corrupted by misunderstanding and misinformation. Core questions—about the way the climate is responding to our influence, and what the impacts will be—remain largely unanswered. The climate is changing, but the why and how aren't as clear as you've probably been led to believe. Now, one of America's most distinguished scientists is clearing away the fog to explain what science really says (and doesn't say) about our changing climate. In *Unsettled: What Climate Science Tells Us, What It Doesn't, and Why It Matters*, Steven Koonin draws upon his decades of experience—including as a top science advisor to the Obama administration—to provide up-to-date insights and expert perspective free from political agendas. Fascinating, clear-headed, and full of surprises, this book gives readers the tools to both understand the climate issue and be savvy consumers of science media in general. Koonin takes readers behind the headlines to the more nuanced science itself, showing us where it comes from and guiding us through the implications of the evidence. He dispels popular myths and unveils little-known truths: despite a dramatic rise in greenhouse gas emissions, global temperatures actually decreased from 1940 to 1970. What's more, the models we use to predict the future aren't able to accurately describe the climate of the past, suggesting they are deeply flawed. Koonin also tackles society's response to a changing climate, using data-driven analysis to explain why many proposed "solutions" would be ineffective, and discussing how alternatives like adaptation and, if necessary, geoengineering will ensure humanity continues to prosper. *Unsettled* is a reality check buoyed by hope, offering the truth about climate science that you aren't getting elsewhere—what we know, what we don't, and what it all means for our future.

Covering the last five hundred years of global history, *The Environment in World History* examines the processes that have transformed the Earth and put growing pressure on natural resources. Chapters and case studies explore a wide range of issues, including: the hunting of wildlife and the loss of biodiversity in nearly every part of the globe the clearing of the world's forests and the development of strategies to halt their decline the degradation of soils, one of the most profound and unnoticed ways that humans have altered the planet the impact of urban-industrial growth and the deepening 'ecological footprints' of the world's cities the pollution of air, land and water as the 'inevitable' trade-off for continued economic growth worldwide. *The Environment in World History* offers a fresh environmental perspective on familiar world history narratives of imperialism and colonialism, trade and commerce, and technological progress and the advance of civilisation, and will be invaluable reading for all students of world history and environmental studies.

Environmental Science for a Changing World captivates students with real-world stories while exploring the science concepts in context. Engaging stories plus vivid photos and infographics make the content relevant and visually enticing. The result is a text that emphasizes environmental, scientific, and information literacies in a way that engages students.

Written and illustrated in the style of Scientific American magazine, *Nutrition in a Changing World*, this update includes the latest U.S. dietary guidelines.

A Scientific American Reader

Why Environmental Alarmism Hurts Us All

Knowledge and action for a sustainable future

Facing The Limits Of Knowledge In The Twilight Of The Scientific Age

Why Free Will Is Real

The Surprising, Secret Life of Beavers and Why They Matter

Measuring the Real State of the World

Provides information on the concepts and theories of public speaking along with a variety of real-life examples and visual explanations.

What interests you most about the environment? Are you concerned about water pollution? Air quality? Energy production? Forest fires? Space exploration? Your interests and questions matter. Illustrated with more than 800 photographs, charts, and graphics, this practical guide allows you to start with your curiosity and follow your questions to answers about the environment. The book is organized into units based on the five classical scientific elements of matter: Air, Earth, Fire, Space, and Water. With special call-outs on positive and negative environmental impacts, you'll be challenged to consider your own role in caring for and understanding the environment.

The Environment in World History

The End Of Science

The Practices of Scientific Assessment for Environmental Policy