

AGENDA FOR A SUSTAINABLE AMERICA

John C. Dernbach, Editor

ELI PRESS
Environmental Law Institute
Washington, D.C.

Environmental Law Institute
2000 L Street NW, Washington, DC 20036

Published January 2009.

All rights reserved. No part of this work may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system, without permission in writing.

Copyright is not claimed as to any part of the original work prepared by a United States government officer or employee as part of that person's official duties.

Printed in the United States of America
ISBN 978-1-58576-133-3

For Tess, Becky, and all who will inherit this world

AGENDA FOR A SUSTAINABLE AMERICA

Table of Contents

Preface	ix
Editor and Contributing Author	xiii
Contributing Authors	xv

I. Introduction

Chapter 1: Sustainable Development and the United States <i>by John C. Dernbach</i>	3
Chapter 2: Progress Toward Sustainability: A Report Card <i>by the Contributing Authors</i>	15
Chapter 3: Agenda for a Sustainable America <i>by the Contributing Authors</i>	27

II. Six Areas of Greater Progress

Chapter 4: Local Governance and Sustainability: Major Progress, Significant Challenges <i>by Jonathan D. Weiss</i>	43
Chapter 5: Brownfields Development: From Individual Sites to Smart Growth <i>by Joel B. Eisen</i>	57
Chapter 6: Business and Industry: Transitioning to Sustainability <i>by Ira Robert Feldman</i>	71
Chapter 7: Higher Education: Emerging Laboratories for Inventing a Sustainable Future <i>by Wynn Calder and Julian Dautremont-Smith</i>	93
Chapter 8: Kindergarten Through Twelfth Grade Education: Fragmentary Progress in Equipping Students to Think and Act in a Challenging World <i>by Carmela Federico and Jaimie Cloud</i>	109

Chapter 9: Religion and Ethics Focused on Sustainability <i>by Dieter T. Hessel</i>	129
--------------------------------------------------------------------------------------------------	-----

III. Consumption, Population, and Poverty

Chapter 10: Sustainable and Unsustainable Developments in the U.S. Energy System <i>by Mark D. Levine and Nathaniel T. Aden</i>	145
-------------------------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 11: Materials: From High Consumption to More Sustainable Resource Use <i>by Amit Kapur and Thomas E. Graedel</i>	159
------------------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 12: The Importance of Curbing and Ending Population Growth to Achieve Sustainability <i>by Anne H. Ehrlich and James Salzman</i>	171
----------------------------------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 13: Poverty: Greening the Tax and Transfer System to Create More Opportunities <i>by Jonathan Barry Forman</i>	187
----------------------------------------------------------------------------------------------------------------------------------------	-----

IV. Conservation and Management of Natural Resources

Chapter 14: Freshwater: Sustaining Use by Protecting Ecosystems <i>by Robert W. Adler</i>	205
--------------------------------------------------------------------------------------------------------	-----

Chapter 15: Oceans and Estuaries: The Ocean Commissions' Unfulfilled Vision <i>by Robin Kundis Craig</i>	221
--------------------------------------------------------------------------------------------------------------------------	-----

Chapter 16: Air Quality: The Need to Replace Basic Technologies With Cleaner Alternatives <i>by David M. Driesen</i>	239
--------------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 17: Climate Change: The Unmet Obligation to Reduce Greenhouse Gas Emissions <i>by Donald A. Brown</i>	251
-------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 18: Biodiversity Conservation: An Unrealized Aspiration <i>by A. Dan Tarlock and Andrew Zabel</i>	269
------------------------------------------------------------------------------------------------------------------------	-----

Chapter 19: Sustainable Forestry: Moving From Concept to Consistent Practice <i>by Federico Cheever and Ward J. Scott</i>	285
----------------------------------------------------------------------------------------------------------------------------------------	-----

V. Waste and Toxic Chemicals

Chapter 20: Toxic Chemicals and Pesticides: Not Yet Preventing Pollution <i>by Lynn R. Goldman</i>	305
-----------------------------------------------------------------------------------------------------------------	-----

Chapter 21: Hazardous Waste and Superfund: Few Changes and Little Progress <i>by Joel A. Mintz</i>	321
-----------------------------------------------------------------------------------------------------------------	-----

Chapter 22: Municipal Solid Waste: Building Stronger Connections to Jobs and the Economy <i>by Marian Chertow</i>	335
--------------------------------------------------------------------------------------------------------------------------------	-----

VI. Land Use and Transportation

Chapter 23: Land Use: Blending Smart Growth With Social Equity and Climate Change Mitigation <i>by Patricia Salkin</i>	349
-------------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 24: Transportation: Challenges and Choices <i>by Trip Pollard</i>	365
----------------------------------------------------------------------------------------	-----

VII. International Trade, Finance, and Development Assistance

Chapter 25: International Trade: Sustainability as a Multilateral, Bilateral, and Regional Effort <i>by Kevin C. Kennedy</i>	383
-------------------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 26: Official Development Assistance: Toward Funding for Sustainability <i>by Royal C. Gardner and Ezequiel Lugo</i>	399
------------------------------------------------------------------------------------------------------------------------------------------	-----

Chapter 27: Financing Sustainable Development <i>by Smita Nakhooda, Frances Seymour, and Sabina Ahmed</i>	413
------------------------------------------------------------------------------------------------------------------------	-----

Chapter 28: Lead Poisoning and Pollution: Opportunities for Internationalized Solutions
by K.W. James Rochow 425

VIII. State and Federal Governance

Chapter 29: State Governance: Leadership on Climate Change
by Kirsten H. Engel and Marc L. Miller 441

Chapter 30: Public Access to Information, Participation, and Justice: Forward and Backward Steps Toward an Informed and Engaged Citizenry
by Carl Bruch, Frances Irwin, and Gary D. Bass 459

Chapter 31: National Governance: Still Stumbling Toward Sustainability
by John C. Dernbach 479

Index 497

PREFACE

More than 15 years have passed since the United Nations Conference on Environment and Development, or Earth Summit, took place in Rio de Janeiro in 1992. Over 110 heads of state participated, a greater number than had attended any prior international conference. For the first time, the nations of the world endorsed sustainable development. These nations also adopted a plan of action, called Agenda 21, to achieve it, and a set of principles (the Rio Declaration) to guide the effort.

In simple and direct terms, the world's leaders described the challenge we face: "Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being." They then described the opportunity that sustainable development provides, asserting that it "will lead to the fulfillment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future."

Each nation made a commitment at the Earth Summit: to work to achieve sustainable development within its own borders and as part of its international activities. One of those countries, under the leadership of President George H.W. Bush, was the United States.

This book is the third review in an ongoing project to evaluate U.S. efforts for sustainable development and make recommendations for future actions. The reviews have occurred on or after the fifth, tenth, and fifteenth anniversaries of the Earth Summit. These anniversaries are worth marking because the Earth Summit was not just another international meeting; it put sustainability—one of the 20th century's most important ideas—on the world's stage.

The first review, conducted with the help of my students in a seminar at Widener University School of Law, was published as an article by the *Environmental Law Reporter*.¹ Much to my surprise, given the intense attention that the Earth Summit had received, it was the only assessment by anyone outside of government on the U.S. performance during those five years.

The second review, *Stumbling Toward Sustainability*, was published by the Environmental Law Institute just before the World Summit on Sustainable Development in Johannesburg in 2002.² It contains chapters written by more than three dozen experts. Each chapter focused on a particular topic, evaluated U.S. progress in the decade following the Earth Summit, and made recommendations for the next five to ten years.

Agenda for a Sustainable America follows the 15-year anniversary of the Earth Summit. It has the same essential structure as *Stumbling Toward Sustainability*, but it focuses on the period since 2002. Like the previous book, it also makes recommendations for the next five to ten years. The contributors to this volume have considerable knowledge and experience as well as a range of perspectives. They are from universities, nongovernmental organizations, and the private sector. They also represent a range of disciplines. Their willingness to contribute to this volume indicates the importance of the subject.

This book has both critical and constructive components. It is intended to provide a critical appraisal of U.S. activities, identifying both progress and shortcomings. It is also intended to be constructive, primarily by making recommendations. The broader aim of the book is to help build an analytical and policy foundation for sustainable development in the United States, not only for specific issues and problems but also as a conceptual framework for achieving prosperity and human well-being.

Agenda for a Sustainable America was written before the current economic downturn, yet the severe financial problems the world faces make this book's recommendations more urgent than ever. When we make decisions for sustainability, we make decisions that improve our economic situation, create jobs, improve our infrastructure, enhance environmental quality, and increase our security. In other words, decisions for sustainability give us more value for the investments we make than if we are seeking only economic growth. That makes sense in any situation, but is of particular importance during difficult economic times.

Agenda was also written before the recent presidential election. New administrations provide an opportunity to revisit premises and start afresh. Much of this book could be useful in that effort because many chapters focus on the role of the executive branch in achieving sustainability. Of course, the book is not just about the federal

government or about governance at any level. It is also for all of us in our various roles—as citizens, family members, employees, volunteers, teachers, and students, and as members and leaders of many organizations.

A great many people have inspired and supported this project over the years. The Environmental Law Institute continues to be the publisher; its support has made this effort possible. For this volume, Don Brown, Marian Chertow, Scott Schang, and Marianne Tyrrell have been particularly helpful. Peter Whitten proved to be an exceptionally able and wise editor. Paula Heider, Kim Peterson, and Jessica Snyder afforded secretarial and administrative support. Diane Goltz and Ed Sonnenberg helped locate difficult sources. Allison Miles provided useful research assistance. Special thanks to Josh Hooper for taking the photo on p. xiii. Becky Dernbach proved to be an exceptionally good proofreader. As always, my wife, Kathy Yorkievitz, has been a constant source of support and useful advice. Finally, the contributing authors to this book are its greatest strength, and they have my deepest gratitude.

ENDNOTES

1. John Dernbach & the Widener University Law School Seminar on Law and Sustainability, *U.S. Adherence to Its Agenda 21 Commitments: A Five-Year Review*, 27 ENVTL. L. REP. (Envtl. L. Inst.) 10504 (Oct. 1997).
2. *STUMBLING TOWARD SUSTAINABILITY* (John C. Dernbach ed. 2002).

EDITOR AND CONTRIBUTING AUTHOR



John C. Dernbach

John C. Dernbach is a Distinguished Professor of Law at Widener University in Harrisburg, Pennsylvania. He has written widely on sustainable development, climate change, and environmental law. He edited *Stumbling Toward Sustainability* (Environmental Law Institute 2002), which assessed U.S. sustainable development efforts in the first decade after the Earth Summit and made recommendations for the next 5 to 10 years. Before taking his

teaching position at Widener, he worked in a variety of positions at the Pennsylvania Department of Environmental Protection. He is a council member for the ABA Section on Environment, Energy, and Resources, and former chair of the ABA Committee on Climate Change, Sustainable Development, and Ecosystems.

CONTRIBUTING AUTHORS

Nathaniel Aden is a senior research associate with the China Energy Group of the Lawrence Berkeley National Laboratory, where he specializes in energy policy analysis, industrial energy efficiency, and energy-related carbon emissions mitigation. He has published articles on the environmental implications of energy policy in China, including the unexpected growth of energy-related carbon emissions since 2002.

Robert Adler is the associate dean for academic affairs and James I. Farr Chair in Law at the University of Utah, S.J. Quinney College of Law. Prior to entering academia, he practiced environmental law for 15 years. His most recent books are *Restoring Colorado River Ecosystems: A Troubled Sense of Immensity* (Island Press 2007) and *Environmental Law: A Conceptual and Pragmatic Approach* (Aspen 2007, with David Driesen).

Sabina Ahmed is a program coordinator at the World Resources Institute.

Gary D. Bass is the founder and executive director of OMB Watch, which addresses government accountability and citizen participation. Dr. Bass is also an affiliated professor at Georgetown University's Public Policy Institute, where he teaches about advocacy and social change. He serves on numerous nonprofit boards and advisory committees, and has received numerous awards, including being listed as part of the *NonProfit Times* Power and Influence Top 50 for the past 10 years, being inducted in 2006 into the National Freedom of Information Hall of Fame, and being selected as one of the 2007 Federal 100, which goes to those who had the greatest impact on the government information systems community. In 1989, Dr. Bass started RTK NET (www.rtknet.org), a searchable website providing information about toxic chemicals released into our communities.

Donald A. Brown is an associate professor in the Environmental Ethics, Science, and Law Program in the Program on Science, Technol-

ogy, and Society at The Pennsylvania State University. Before holding this position, Mr. Brown held a number of senior positions in law and policy for the Pennsylvania and New Jersey environmental protection programs and the U.S. Environmental Protection Agency. Mr. Brown is also director of the Pennsylvania Environmental Research Consortium, an organization comprised of 56 Pennsylvania universities and the Pennsylvania Departments of Environmental Protection and Conservation and Natural Resources that works on environmental and sustainable development issues. During the Clinton Administration, Mr. Brown was Program Manager for United Nations Organizations at EPA's Office of International Environmental Policy. In this position, he represented the EPA in U.S. delegations to the United Nations negotiating climate change, biodiversity, and sustainable development issues. Mr. Brown's latest book is *American Heat: Ethical Problems With the United States' Response to Global Warming*.

Carl Bruch is a senior attorney at the Environmental Law Institute, where he also codirects ELI's international programs. He has written extensively on public participation, compliance and enforcement, and environmental governance.

Wynn Calder is director of the Association of University Leaders for a Sustainable Future (ULSF) and principal of Sustainable Schools, LLC. ULSF conducts research on sustainability in higher education and serves as secretariat for signatories of the Talloires Declaration (1990). Sustainable Schools consults with colleges, universities, and K-12 schools to build environmental sustainability into strategic planning, teaching, and institutional practice. Mr. Calder has spoken widely on sustainable operations and sustainability in the curriculum, consults on strategies to green campuses, and conducts campus sustainability assessments. He is review editor for the *Journal of Education for Sustainable Development*, news editor for the *International Journal of Sustainability in Higher Education*, and he has written extensively on the topic of education for sustainability. He is a cofounder of the U.S. Partnership for Education for Sustainable Development. Mr. Calder serves on the senior council of the Association for the Advancement of Sustainability in Higher Education and on the advisory council of the Cloud Institute for Sustainability Education.

Federico Cheever is director of the Environmental and Natural Resources Law Program and professor of law at the University of Denver Sturm College of Law. Professor Cheever is also chair of the Sustainability Council for the University of Denver. He began teaching at the University of Denver College of Law in 1993, specializing in environmental law, wildlife law, public land law, land conservation transactions, and property. Professor Cheever writes extensively about the Endangered Species Act, federal public land law, and land conservation transactions. He coauthored a natural resources casebook, *Natural Resources Law: A Place-Based Book of Problems and Cases*, with Christine Klein and Bret Birdsong (2005). Over the years, Professor Cheever has represented environmental groups in cases under the Endangered Species Act, the National Forest Management Act, the National Environmental Policy Act, the Wilderness Act, and a number of other environmental laws.

Marian R. Chertow is the director of the Industrial Environmental Management Program at the Yale School of Forestry and Environmental Studies. Her publications include a book on environmental policy and numerous articles on the subject. Professor Chertow's teaching and research focus on waste management, industrial ecology, environmental technology innovation, and business/environment issues. She also serves as director of Environmental Reform: the Next Generation Project at the Yale Center for Environmental Law and Policy, leading a three-year effort to shape the future of environmental policy. Prior to Yale, she spent 10 years in environmental business and in state and local government.

Jaimie P. Cloud is the founder and president of the Cloud Institute for Sustainability Education in New York City. The Cloud Institute is dedicated to the vital role of education in creating awareness, fostering commitment, and guiding actions toward a healthy, secure, and sustainable future. Ms. Cloud has written several book chapters and articles, teaches extensively, and writes and facilitates the development of numerous instructional units and programs that are designed to teach core courses across the disciplines through the lens of sustainability. She is a member of the Advisory Committee of The Buckminster Fuller Institute, the International Advisory Committee for the Tbilisi+30 Conference, the cochair of the Commission on Edu-

cation for Sustainability of the North American Association for Environmental Education, and a member of the advisory committee of Greenopolis and the Sustainability Education Planning Committee for the National Association of Independent Schools.

Robin Kundis Craig is the Attorneys' Title Insurance Fund Professor of Law at the Florida State University College of Law. She is nationally recognized for her work on the Clean Water Act, the connection of fresh water regulation to ocean water quality, marine biodiversity and marine protected areas, property rights in fresh water, and science and water resource protection. As a result of her research on the Clean Water Act, including her book *The Clean Water Act and the Constitution* (Environmental Law Institute 2004; 2d ed. 2008), in 2005, the National Research Council of the National Academy of Sciences appointed her to a two-year committee to assess the effects of the Act's regulation of the Mississippi River, then appointed her in 2008 to a follow-up committee to assess the potential for a basinwide nutrient TMDL to improve the hypoxic zone in the Gulf of Mexico.

Julian Dautremont-Smith is the associate director of the Association for the Advancement of Sustainability in Higher Education (AASHE), where he coordinates AASHE work to advance the American College and University Presidents Climate Commitment and development of the Sustainability Tracking, Assessment, and Rating System (STARS) for colleges and universities. While an undergraduate at Lewis & Clark College, he spearheaded a successful and nationally recognized effort to bring the college into compliance with the emissions targets of the Kyoto Protocol on climate change. In the year between graduating from Lewis & Clark and joining AASHE staff, he cofounded a business to produce biodiesel while studying sustainable development in Barbados on a J. William Fulbright scholarship.

David Driesen is University Professor at Syracuse University, one of 13 people to hold this title in the university's history. He specializes in international and domestic environmental law. Professor Driesen's writing includes two books, *Environmental Law: A Conceptual and Pragmatic Approach* (Aspen 2007, with Robert Adler) and *The Economic Dynamics of Environmental Law* (MIT Press 2003), and numerous articles in journals, most of which address the law and eco-

nomics of environmental law. Before entering academe, he served as an attorney in the Natural Resources Defense Council's air and energy program.

Anne Ehrlich is the policy coordinator for the Center for Conservation Biology at Stanford University. She has carried out research and coauthored many technical articles in population biology and has written extensively on population control, environmental protection, and the environmental consequences of nuclear war. Ms. Ehrlich served as one of seven outside consultants to the White House Council on Environmental Quality's *Global 2000 Report*, and has served on the boards of directors of The Sierra Club, Friends of the Earth, The Ploughshares Fund, and the Pacific Institute for Studies in Development, Environment, and Security, among others. She is a member of the American Academy of Arts and Sciences and has been awarded several prizes for environmental achievement. Her most recent book is *The Dominant Animal; Human Evolution and the Environment* (2008), coauthored with Paul Ehrlich.

Joel B. Eisen is a professor at the University of Richmond School of Law, where he teaches environmental law, energy law, and property. He also teaches a course on environmental law and policy to undergraduate students in the University of Richmond's Environmental Studies Program. Professor Eisen has published extensively in law periodicals and general periodicals. He is a coauthor of *Energy, Economics and the Environment*, the 2006 edition of which has been adopted in over 40 energy law and policy courses. In spring 2009, Professor Eisen will be a Fulbright professor of law at the China University of Political Science and Law in Beijing.

Kirsten Engel is a professor of law at the James E. Rogers College of Law at the University of Arizona, having joined the faculty in 2005 with a broad background in environmental law and policy that spans academia and public-sector practice. Professor Engel is widely published on environmental federalism and state and local responses to global climate change. She recently served as a member of Arizona Governor Janet Napolitano's Climate Change Advisory Group, and has held visiting professorships at Harvard Law School and Vanderbilt School of Law. Between leaving her faculty post at Tulane

Law School and joining the law faculty of the University of Arizona, Ms. Engel served as senior counsel for the Public Protection Bureau and acting chief of the Environmental Protection Division of the Massachusetts Office of the Attorney General. Prior to entering teaching, Ms. Engel worked as a staff attorney for the Sierra Club Legal Defense Fund and at the U.S. Environmental Protection Agency.

Carmela Federico is a sustainability education consultant who has worked at The Cloud Institute for Sustainability Education, the Children's Environmental Literacy Foundation, and the New Jersey Higher Education Partnership for Sustainability.

Ira Robert Feldman is president and senior counsel of Greentrack Strategies, a multidisciplinary practice focusing on strategic environmental management, regulatory innovation, and sustainability policy. He originated the greentrack (or dual track/alternate path) approach to environmental regulation and management; championed the implementation of a new generation of environmental management tools; created voluntary environmental excellence initiatives; and advanced the state of the art in environmental auditing and disclosure. He has been a leading proponent for the use of voluntary standards as an adjunct to mandatory regulation. His current research and writing focus on environmental performance metrics, environmental management systems, stakeholder engagement, ecosystem services, and climate change adaptation. He teaches at the University of Pennsylvania's Masters of Environmental Studies Program. He is also an adjunct professor at American University's Washington College of Law.

Jonathan Barry Forman is the Alfred P. Murrah Professor of Law at the University of Oklahoma. Professor Forman is also vice chair of the board of trustees of the Oklahoma Public Employees Retirement System (OPERS), and is active in the American Bar Association, the Association of American Law Professors, and the National Academy of Social Insurance. Professor Forman has also lectured around the world, testified before Congress, and served on numerous federal and state advisory committees. He has more than 250 publications including *Making America Work* (Urban Institute Press 2006). In addition to his many scholarly publications, Professor Forman has published articles and op-eds in numerous newspapers and magazines. Prior to en-

tering academia, he served in all three branches of the federal government, most recently as tax counsel to the late Senator Daniel Patrick Moynihan of New York.

Roy Gardner is a professor of law and the director of the Institute for Biodiversity Law and Policy at Stetson University College of Law. He teaches and does research on environmental and international law and has published extensively on these topics. Prior to teaching at Stetson, he worked for the Department of Defense, where he participated in negotiating international agreements with Russia, Ukraine, Kazakhstan, and Belarus to facilitate the dismantling of the former Soviet Union's nuclear weapons. He has received Stetson University's Homer and Dolly Hand Award for Excellence in Faculty Scholarship and a National Wetlands Award for education and outreach.

Lynn Goldman is a pediatrician and professor of environmental health sciences at John Hopkins Bloomberg School of Public Health, where she specializes in environmental risks to children. Prior to joining Hopkins, she was the chief of the Division of Environmental and Occupational Disease Control at the California Department of Health Services, and the assistant administrator of the Office of Prevention, Pesticides, and Toxic Substances at the U.S. Environmental Protection Agency. She is a member of the Environmental Defense Fund's board of trustees.

Tom Graedel is a professor of industrial ecology, professor of chemical engineering, professor of geology and geophysics, and director of the Center for Industrial Ecology at Yale School of Forestry and Environmental Studies. The author of four textbooks on industrial ecology, he centers his research on developing and enhancing industrial ecology, the organizing framework for the study of the interactions of the modern technological society with the environment. Professor Graedel's current interests include studies of the flows of materials within the industrial ecosystem and the development of analytical tools to assess the environmental characteristics of products, processes, the service industry, and urban infrastructures. He is a member of the U.S. National Academy of Engineering.

Dieter T. Hessel is a Presbyterian minister specializing in social ethics who resides in Cape Elizabeth, Maine, where he directs the ecumenical Program on Ecology, Justice, and Faith, and is an adjunct professor at Bangor Theological Seminary. From 1965 to 1990, he was the social education coordinator and social policy director of the Presbyterian Church (USA). His recent books include *Earth Habitat: Eco-Injustice and the Church's Response* (Fortress, 2001); *Christianity and Ecology: Seeking the Well-Being of Earth and Humans* (Harvard, 2000); *Theology for Earth Community: A Field Guide* (Orbis, 1996).

Frances Irwin is a policy analyst and writer on issues ranging from public access to information and participation, environmental governance, and environmental policy reform to chemicals and materials policy and people and ecosystems. She has worked with state, national, and international civil society groups including the Vermont Natural Resources Council, The Conservation Foundation, and the World Wildlife Fund. As a fellow at the World Resources Institute, she most recently coauthored an action agenda and a guide for decisionmakers and coedited a volume of papers on governance of ecosystem services.

Amit Kapur is a consultant with PE Americas, where he specializes in the emerging field of industrial ecology. His work focuses on life-cycle assessment, material flow analysis, and dynamic modeling of stocks and flows. Prior to joining PE Americas, Dr. Kapur was a research fellow at the Center for Sustainable Systems, University of Michigan. His postdoctoral research focused on sustainable concrete infrastructure materials and systems. He developed a dynamic stock and flow model to analyze the contemporary and historical flows of cement in the United States. Using different lifetime distributions, the model estimated the overall in-use stock of cement in infrastructure in the United States.

Kevin Kennedy is a professor of law at Michigan State University College of Law. Before joining the Michigan State faculty, he practiced law in Hawaii for four years, and then served as a law clerk at the U.S. Court of International Trade in New York. After his clerkship he was a trial attorney for the U.S. Department of Justice, where he repre-

sented the Department of Commerce and U.S. Customs in international trade litigation. In addition to nearly 60 law review articles and book chapters on international law and international trade regulation, Professor Kennedy is the author of a monograph, *Competition Law and the World Trade Organization*, and the coauthor of a treatise, *World Trade Law*.

Mark D. Levine leads the China Energy Group at Lawrence Berkeley National Laboratory (LBNL), a group he created in 1988. From 1996 to 2006, Dr. Levine was director of the Environmental Division at a division of 400 people working on energy efficiency policy analysis and R&D. Dr. Levine is a board member of five leading nonprofits in the United States and is a member of the Energy Advisory Board of Dow Chemical Company, the board of directors of CalCEF, an energy VC firm, and the advisory board of the Asian Pacific Energy Research Centre in Tokyo. In 1999, he was elected a fellow of the California Council on Science and Technology. In 2008, he was selected as the recipient of the Obayashi Prize for his contributions to sustainable urban development. In addition to authoring numerous technical publications, he has led or co-led teams for the Intergovernmental Panel on Climate Change and major energy scenario studies of the United States, China, and the world.

Ezequiel Lugo is a staff attorney to the Hon. Douglas A. Wallace at the Florida Second District Court of Appeal. He has published articles on insect conservation, international law, and ecosystem services.

Marc Miller is a professor of law at the University of Arizona James E. Rogers College of Law. He writes and teaches on biodiversity and sustainability, and on criminal justice. His current work explores the internal administration of executive branch agencies. He is the coeditor of *The Edge*, a new series of books on environmental science, law, and policy. *The Edge* is a joint project of the University of Arizona Institute for the Study of Planet Earth, the Rogers College of Law, the Biosphere 2 Institute, and the University of Arizona Press.

Joel A. Mintz is a professor of law at Nova Southeastern University Law Center and a member scholar of The Center for Progressive Reform. His scholarly interests include environmental enforcement,

hazardous waste regulation, and state and local government finance. Professor Mintz is the author or coauthor of six books and numerous articles, book chapters, book reviews, essays, and op-ed pieces. Before entering legal education, he was an attorney and chief attorney with the U.S. Environmental Protection Agency. He is a recipient of his university's President's Faculty Scholarship Award, and EPA's Special Service Award and the EPA Bronze Medal for Commendable Service.

Smita Nakhooda is a senior associate in the Institutions and Governance Program of the World Resources Institute . She is a member of WRI's International Financial Flows and the Environment Project, which works to align public and private investment with environmentally sustainable development and poverty reduction. Her work has focused on the role of the Multilateral Development Banks in global efforts to address climate change. She also leads the Electricity Governance Initiative, an effort to bring civil society, policymakers, regulators, and sector actors together to assess policy and regulation of the electricity sector using a common framework to define good governance.

Trip Pollard is a senior attorney with the Southern Environmental Law Center (SELC). He is the director of SELC's Land and Community Program, which uses public education, policy reform, and legal advocacy to promote smarter growth and sustainable transportation. Mr. Pollard is involved in shaping policies and decisions throughout the Southeast. He also has written dozens of reports and articles on transportation, land use, energy, and environmental issues. He has lectured widely, and he has served on numerous governmental commissions, advisory bodies, and the boards of many organizations.

K.W. James Rochow is President of the Trust For Lead Poisoning Prevention and an environmental law and policy consultant headquartered in Washington, D.C. He has helped orchestrate the global phaseout of leaded gasoline and initiate integrated approaches to toxics pollution and environmental health. Most recently, Rochow has worked on natural resource sector reform and failed state reconstruction in West Africa for the World Bank, UNDP, and the Government of Liberia. He has also taught international environmental law and pol-

icy at numerous universities in the United States and abroad, most recently at the University of Pennsylvania Law School.

Patricia E. Salkin is the Raymond and Ella Smith Distinguished Professor of Law, associate dean, and director of the Government Law Center at Albany Law School. She teaches courses in land use law, housing law and policy, New York's administrative law, and current legal issues in government and government ethics. She is also on the adjunct faculty at the University at Albany's Department of Geography and Planning, where she teaches courses in planning law and planning ethics. Dean Salkin is a past chair of the ABA's State & Local Government Law Section. She is the vice chair of the Municipal Law Section of the New York State Bar Association and a founding member and chair of the State Bar's Standing Committee on Attorneys in Public Service. She serves as chair of the Amicus Curiae Committee for the American Planning Association, and chaired a task force on eminent domain for the State Bar. Professor Salkin is an appointed member of EPA's National Environmental Justice Advisory Council.

Jim Salzman holds joint appointments at Duke University as the Samuel Fox Mordecai Professor of Law and as the Nicholas Institute Professor of Environmental Policy. In more than fifty articles and five books, his scholarship has addressed topics spanning trade and environment conflicts, the history of drinking water, environmental protection in the service economy, wetlands mitigation banking, and the legal and institutional issues in creating markets for ecosystem services. Elected a Fellow of the Royal Geographical Society, he has delivered lectures on environmental law and policy on every continent except Antarctica, and has been a visiting professor at Yale, Harvard, and Stanford, as well as at Macquarie (Australia), Lund (Sweden), and Tel Aviv (Israel) Universities.

Ward Scott is a recent graduate of the University of Denver College of Law. He holds a B.A. in environmental studies from Denison University.

Frances Seymour is the Director General of the Center for International Forestry Research (CIFOR), with headquarters in Bogor, Indonesia. CIFOR's purpose is to advance human well-being, environ-

mental conservation, and equity by conducting research to inform policies and practices that affect forests in developing countries. During her first year at CIFOR, Ms. Seymour led the development of a new strategy for the organization. She is a coauthor of *Do Trees Grow on Money?*, a CIFOR report released at the UNFCCC climate conference in Bali in December 2007. Prior to joining CIFOR in August 2006, Ms. Seymour founded and directed the Institutions and Governance Program at the World Resources Institute (WRI) in Washington, D.C. At WRI, she guided the launch of The Access Initiative, a global civil society coalition promoting citizen involvement in environment-related decisions. She previously served as Director of Development Assistance Policy at World Wildlife Fund for three years. From 1987 to 1992, Ms. Seymour worked in Indonesia with the Ford Foundation, where her grant making focused on community forestry and human rights. She has served on numerous boards and advisory committees, and is a member of the Council on Foreign Relations.

Dan Tarlock is a Distinguished Professor of Law at the Chicago-Kent College of Law and honorary professor of law at the UNESCO Centre for Water Law, Policy, and Science at the University of Dundee, Scotland. He teaches land use, property, energy and natural resource law, and international environmental law. He has published a treatise about water rights and resources, coauthored four textbooks on related subjects, and recently coauthored, with Holly Doremus, *Water War in the Klamath Basin: Macho Law, Combat Biology, and Dirty Politics*. His current research focuses on the legal aspects of domestic and international aquatic biodiversity protection and drought management. Professor Tarlock is currently one of three U.S. special legal advisors to NAFTA, and is a frequent consultant to local, state, federal, and international agencies. He was the chair of a National Academy of Sciences/National Research Council committee to study water management in the western United States, and was the principal drafter of the Western Water Policy Advisory Review Commission report.

Jonathan Weiss is senior environmental counsel at the national consulting firm of ManTech SRS Technologies, where he advises clients on a broad range of emerging sustainability issues. He is also an adjunct law professor at The George Washington University, where he has taught sustainable regional growth for the past decade. He served

in the Clinton Administration, first at the U.S. Environmental Protection Agency and then as an aide to Vice President Al Gore. As an adviser to the vice president on sustainable community development, he helped develop and implement policy and coordinate the efforts of more than a dozen federal agencies.

Andrew Zabel currently practices law in Seattle, Washington. His practice focuses on environmental issues for tribal, municipal, and corporate clients.