

b19805081
bgr125

GE
170
R68
204

Routledge Handbook of Global Environmental Politics

Edited by Paul G. Harris

 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK



First published 2014
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

and by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2014 for selection and editorial matter, Paul G. Harris; for individual chapters, the contributors

The right of the editor to be identified as the author of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilized in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing-in-Publication Data

Routledge handbook of global environmental politics/
edited by Paul G. Harris.

pages cm

Includes bibliographical references and index.

1. Environmental policy--International cooperation. I. Harris, Paul G.

GE170.R68 2013

304.2--dc23

2013003615

ISBN: 978-0-415-69420-9 (hbk)

ISBN: 978-0-203-79905-5 (ebk)

Typeset in Bembo
by Cenveo Publisher Services



Printed and bound in Great Britain by
TJ International Ltd, Padstow, Cornwall

Contents

<i>Contributors</i>	<i>ix</i>
1 Introduction: delineating global environmental politics <i>Paul G. Harris</i>	1
PART I	
Explaining and understanding global environmental politics	15
2 The discipline of global environmental politics: a short history <i>Loren R. Cass</i>	17
3 Mainstream theories: realism, rationalism and revolutionism <i>John Vogler</i>	30
4 Alternative theories: constructivism, Marxism and critical approaches <i>Hayley Stevenson</i>	42
5 The study of global environmental politics: strategies for research and learning <i>Juliann Emmons Allison</i>	56
6 Advanced scholarship: interdisciplinary research at the science-policy interface <i>Peter M. Haas and Ronald B. Mitchell</i>	72
PART II	
Actors and institutions in global environmental politics	83
7 States: nations, sovereignty and the international system <i>Hugh C. Dyer</i>	85

8 International organizations: global and regional environmental cooperation <i>Kate O'Neill</i>	97
9 International environmental regimes: formation, effectiveness and trends <i>Mary E. Pettenger</i>	111
10 International environmental law: sources, principles, and innovations <i>David B. Hunter</i>	124
11 Environmental foreign policy: crossovers among levels of governance <i>Mihaela Papa</i>	138
12 Comparative environmental politics: domestic institutions and actors <i>Stacy D. VanDeveer and Paul F. Steinberg</i>	150
13 Corporations: business and industrial influence <i>Kyla Tienhaara</i>	164
14 Transnational actors: nongovernmental organizations, civil society and individuals <i>Christian Downie</i>	176
PART III Ideas and themes in global environmental politics	187
15 Sustainability: foundational principles <i>Thomas Princen</i>	189
16 Consumption: institutions and actors <i>Gabriela Kütting</i>	205
17 Expertise: specialized knowledge in environmental politics and sustainability <i>Andrew Karvonen and Ralf Brand</i>	215
18 Uncertainty: risk, technology and the future <i>Karen Hussey and Stephen Dovers</i>	231
19 Environmental security: international, national and human <i>Sabina W. Lautensach and Alexander K. Lautensach</i>	246

20 Environmental diplomacy: international conferences and negotiations <i>Radoslav S. Dimitrov</i>	259
21 North-South relations: colonialism, empire and international order <i>Shangrila Joshi</i>	272
22 Globalization and the environment: markets, finance and trade <i>Lada V. Kochitcheeva</i>	284
23 International justice: rights and obligations of states <i>Steve Vanderheiden</i>	296
24 Environmental justice: pollution, poverty and marginalized communities <i>Hollie Nyseth Brehm and David N. Pellow</i>	308
25 Environmental ethics: philosophy, ecology and other species <i>Sofia Guedes Vaz and Olivia Bina</i>	321
26 Participation: public opinion and environmental action <i>Sandra T. Marquart-Pyatt</i>	333
27 Environmental citizenship: global, local and individual <i>Derek Bell</i>	347
PART IV Key issues and policies in global environmental politics	359
28 Energy and climate change <i>Hugh C. Dyer</i>	361
29 Stratospheric ozone depletion <i>David Downie</i>	373
30 Air pollution and acid rain <i>Loren R. Cass</i>	388
31 Sustainable transport and infrastructure <i>Iain Docherty</i>	400
32 Persistent organic pollutants <i>David Downie and Jessica Templeton</i>	411

Contents	
33 Hazardous wastes <i>Henrik Selin</i>	427
34 Water, rivers and wetlands <i>Jens Newig and Edward Challies</i>	439
35 Pollution and management of oceans and seas <i>Peter J. Jacques</i>	453
36 Fisheries and marine mammals <i>Elizabeth R. DeSombre</i>	468
37 Biodiversity, migratory species and natural heritage <i>Volker Mauerkhofer and Felister Nyacumi</i>	481
38 Forests <i>David Humphreys</i>	494
39 Desertification <i>Meri Juntti</i>	506
40 Food and agriculture <i>Jennifer Clapp and Sarah J. Martin</i>	520
<i>Index</i>	533

Contributors

Juliann Emmons Allison is Associate Professor of Political Science at the University of California, Riverside, USA.

Derek Bell is Senior Lecturer in Political Thought at Newcastle University, UK.

Olivia Bina is a Research Fellow at the Institute of Social Sciences (ICS), University of Lisbon, and Adjunct Assistant Professor in the Department of Geography and Resource Management at the Chinese University of Hong Kong.

Ralf Brand is senior mobility consultant at Rupprecht Consult, Cologne, Germany.

Loren R. Cass is Associate Professor of Political Science and Director of Environmental Studies at the College of the Holy Cross, USA.

Edward Challies is a postdoctoral research associate with the Research Group Governance, Participation and Sustainability at Leuphana University Lüneburg, Germany.

Jennifer Clapp is CIGI Chair in Global Environmental Governance at the Balsillie School of International Affairs and Professor in the Environment and Resource Studies Department at the University of Waterloo, Canada.

Elizabeth R. DeSombre is Frost Professor of Environmental Studies at Wellesley College, USA.

Radoslav S. Dimitrov is Associate Professor of Political Science at Western University, Canada.

Iain Docherty is Professor of Public Policy and Governance at the University of Glasgow Business School, UK.

Stephen Dovers is Director of the Fenner School of Environment and Society at Australian National University.

Christian Downie is a member of the Climate and Environmental Governance Network at the Australian National University.

David Downie is Director of the Program on the Environment at Fairfield University, USA.

Introduction

Delineating global environmental politics

Paul G. Harris

The natural environment is in decline globally. With too few exceptions, environmental indicators are growing worse. For example, water and air pollution are now so poor in some developing countries, such as China and India, that hundreds of millions of people are forced to drink severely tainted water and breathe toxic air. Regionally, acid rain – which has been reduced in North America and Western Europe in recent decades – is on the increase in East Asia and other developing regions, putting ecosystems and agriculture at great risk. The so-called “Asian brown cloud” of smog is so vast that it spreads across the Pacific to the Americas. Coastal seas have been overfished in most oceans, and this phenomenon has extended to regional seas in both the developed and developing worlds. Marine environments are severely degraded by polluting runoff from continents, with the world’s coral reefs shrinking and ocean “dead zones” now extending along the coastlines of all continents. Wildlife around the world is under great threat, with declines and extinctions of species on the rise. These problems are exacerbated by climate change, which is manifested in rising global temperatures, very serious threats to agricultural productivity from droughts and floods, more severe weather events, new threats to species unable to adapt to environmental changes and pollution, declines in marine ecosystems due to warming waters and ocean acidification, and immeasurable dangers posed by sea-level rise, particularly for poor low-lying regions, countries and habitats. These are but a few examples of the environmental challenges that are increasing around the world.

The role that politics plays in these challenges, whether they play out within or among countries, cannot be understated. The continuing decline of the global environment can largely be put down to the failure of governments and other actors to respond in time – or at all. When we do see successes in preventing or responding to adverse environmental changes and pollution, for example in cleaner local environments in many developed countries and a handful of international successes, such as agreements among countries to curb emissions of pollutants that destroy Earth’s protective stratospheric ozone layer, they can often be put down to the willingness of governments and other political actors, including nongovernmental organizations and occasionally businesses, to negotiate and implement policies that prioritize environmental protection over short-term economic gain. Understanding and promoting these kinds of successes is crucially important, and in many cases vital, to the future of all societies and to natural ecosystems. This handbook is intended to be part of the process of promoting those successes: first to bolster basic

understanding of environmental changes and the underlying politics that shape them, and second to provide readers with a foundation of knowledge that can help them to promote new, more environmentally sustainable relationships between humankind and the natural world.

Everyone is affected by global environmental politics, often directly through feeling the impacts of the environmental changes caused by government policies, and at least indirectly through having to watch others suffer from those changes. Many people are now affected, in positive ways, by regulations and policies that have reduced environmental pollution. The manner in which human, financial and governmental resources are used to create and hopefully reverse ecological decline, overuse of natural resources and destruction of the natural environment affects the safety of the water that people drink, the air that they breathe and the nature that they enjoy and draw from to meet their individual and community needs. Global environmental politics can and will shape the climate and even the weather of the future. Sadly, for some people, global environmental politics may be a matter of life and death. For example, the failure of governments and other global actors, such as businesses and individuals, to respond robustly to the causes and consequences of climate change means that millions of vulnerable people in the poorest parts of the world will die in the future from drought-induced famine or severe weather events, and many more will die from the diseases that will spread in a warmer and wetter world.

What this means is that global environmental politics should concern everyone. Whether one is a politician, career government official, entrepreneur, activist or student, understanding global environmental politics will help achieve policy or personal goals. Without knowledge of the global nature of environmental changes, policymakers will fail to see many of the causes of those changes, and indeed the remedies for them. Without recognition that the environment permeates other policy areas, ranging from energy supplies and national security to social justice and food production, policy responses are unlikely to succeed, least of all to be cost-effective and equitable. Without realizing that both the causes and consequences of global environmental change are highly political, being influenced by the distribution of power within and among societies, those who seek to limit pollution and destruction of natural resources will not get very far. With this in mind, this handbook brings together a large group of scholars from around the world to examine these connections and to help illuminate the causes of environmental change and especially the ways that the world has and can respond to them. It is intended to be the most comprehensive treatment of the topic yet published. While the field of global environmental politics is much too large to be fully covered by a single volume, we have sought to survey as much of it as possible, thereby giving anyone interested in (or concerned about) it a solid foundation on which to continue with more in-depth analysis or study.

Before the contributors to this volume proceed to examine global environmental politics more widely, this chapter briefly delineates this important topic. It defines the topic and its related field of study by briefly looking at the *global*, the *environment* and the *politics* in global environmental politics. The chapter then distinguishes between the *practice* of global environmental politics and the *study* of it, in the process suggesting how the two do and should overlap. This chapter also introduces the topics that will follow in subsequent chapters, in the process showing how the field is both wide and deep, in many respects reinforcing the importance of global environmental politics for everyone.

Defining global environmental politics

What is, and what are, "global environmental politics"? Global environmental politics is both an area of activity and practice, on one hand, and a field of research and study, on the other. It is

about how governments, diplomats and other actors influence the global environment, which includes local and regional environments, and how what they do is analyzed and understood by scholars, students and activists. Global environmental politics, in a plural sense, can be interpreted as the various ways in which politics are practiced in different places to alter or protect the environment. That is, there are different politics of the environment in different locations and in different issue areas. Importantly, as the term implies, global environmental politics is about the politics of the environment on a global scale.

The "global" in global environmental politics

Environmental changes and associated politics occur at all geographic and social levels. Environmental changes can occur locally and be caused by what happens locally, as when local water supplies are polluted by domestic sewage or industrial effluents. In contrast, environmental problems can be global, as in the case of global warming and associated climate change. These levels of environmental change are routinely connected, sometimes intimately. For example, global climate change arising from emissions of carbon dioxide and other greenhouse gases all around the world affects local communities and individuals directly. Global problems can have local causes. In contrast, even apparently localized environmental issues can be global problems. For example, addressing local water and air pollution in poor countries may require financial or technological assistance from affluent countries, often those far away, or from the international community, perhaps in the form of an agency of the United Nations or an international nongovernmental organization.

These varying levels of environmental change, and the various levels of causality, impact and response, highlight the role of politics at all levels. We see different environmental politics depending on the location, scale or issue being addressed. For example, some local environmental problems can be addressed through local action, as occurs when a community implements regulatory measures to curb pollution or to protect local natural resources. Other environmental problems are regional, crossing provincial and national boundaries or entire oceans, requiring and sometimes receiving policy responses from a number of communities or national governments. Examples of this kind of environmental politics include responses by North American and European governments to reduce acid rain, action plans to limit pollution of the Mediterranean Sea, and management of fisheries in regional seas. Environmental problems that are more obviously global, such as stratospheric ozone depletion and global warming, require global political responses: the governments of many countries need to cooperate and collaborate to formulate and implement policy responses, and these in turn require action by many more sub-national governmental bodies as well as non-state actors that operate globally (or nearly so), such as multinational corporations and international nongovernmental organizations.

Thus, in using the term "global environmental politics" we mean to encompass all levels of politics (and policy) related to the environment; a global issue is clearly global, but a local one may, by definition, also be encompassed by global politics. Put another way, global environmental politics encompasses local, national, transnational, regional, international and geographically global environmental issues and related political activity. As such, in this volume we are interested in environmental issues at all levels and in related political activity at all levels.

The "environment" in global environmental politics

Global environmental politics is the global politics of the environment. More specifically, the environment in global environmental politics is about the human dimensions of the natural

environment: the human causes of environmental change, pollution and resource use, and the human approaches to solving (or trying to solve) or preventing environmental problems and resource scarcities. The "human" here often equates to government policies and the relationships between those policies and the behaviors of individuals and industries. For our purposes, the human also includes international cooperation, often resulting in environmental treaties. This connection between environment and human society, broadly defined, highlights an important point: while global environmental politics is related to the natural environment, how we define "natural" is problematic. A purist might point out that very little of genuine nature still exists; with climate change and the spread of persistent organic pollutants, for example, nearly every part of what was once the natural world has been affected, and often utterly transformed (or destroyed), by humanity. Nevertheless, one expects that for most people "nature" can be defined as the nonhuman world, encompassing the plants, animals, minerals, air, water and ecosystems on which humanity depends for its survival and wellbeing.

Simply put, the "environment" in global environmental politics is roughly equated to "ecology" – natural systems, including humanity and all its influences – but with the important caveat that we are interested in the human–environment relationship, often in the context of governance. This means that the environment of global environmental politics is not about the built environment per se, except insofar as this affects the natural environment. This would be the case with, for example, energy use by buildings (because most of the electricity used by buildings comes from the burning of fossil fuels, which in turn contributes to air pollution and climate change) and transport infrastructure (which can greatly affect air quality and local environmental habitats). In some sense, the environment in global environmental politics is about stewardship of the natural environment. Increasingly this means stewardship of the *global* environment – of the whole planet – implying that truly global cooperation is required to ensure an environmentally sustainable future for all people regardless of where they might live.

The "politics" in global environmental politics

"Politics" can be and is defined in a number of ways. It can refer to the struggle for and distribution of power, and thus resources, within and among national communities. This is routinely associated with the role of governments, notably their policies and actions for regulating behaviors in society, and the manner in which governments are chosen, the institutions from which they obtain their legitimacy, and the way that they rule. Thus global environmental politics is largely about how government policies contribute to environmental problems and about specifically environmental policies (often environmental regulations) and their effects. It is about how environmental resources and pollution are distributed in society, and the role that power and influence play in that distribution. More commonly, the politics in global environmental politics is about international cooperation related to the environment. This might include addressing transboundary, regional and global problems through international conferences of diplomats negotiating environmental treaties, efforts by governments to manage shared resources in natural "commons" areas (such as fish in the open ocean beyond territorial waters), or attempts to formulate and implement international policies on sustainable development that benefit individual countries, reduce local and global pollution, and support environmentally less harmful economic development.

Although global environmental politics routinely involves governments in some way, it is not always about governments relating to one another. It is often about non-state actors trying to influence government policies in ways that affect the environment. It may also involve struggles related to the environment by nongovernmental organizations, businesses and communities

that largely ignore governments, at least directly. At the risk of upsetting purists, one must even acknowledge that the field of global environmental politics goes beyond politics strictly defined. Scholars of global environmental politics thus include those with interest and expertise in economics, sociology and other social sciences, and even the humanities. Ultimately, the politics of global environmental politics is most often the process whereby the constellation of disparate interests – government agencies, corporations, communities and people, and some would add nonhuman species – are represented (or not) in actions that harm the natural environment or in efforts to protect it.

The practice and study of global environmental politics

The field of global environmental politics encompasses both practice (or praxis) and study (and analysis) of politics and policies related to the environment. The former interpretation tends to fit definitions of politics oriented toward activities of governments and traditional political players, although increasingly non-traditional actors, such as civil society groups, often organized via the Internet, have growing importance in environmental politics at all levels. The latter interpretation of global environmental politics is oriented toward research and teaching related to the politics of the environment, although it is important to note the overlap with practice: research about global environmental politics is routinely about, and very importantly can inform, the practice of global environmental politics, and students of global environmental politics might apply what they learn to environmental activism, work in industry or service in government.

The practice of global environmental politics

Global environmental politics is above all about activities – policies, actions, behaviors – that affect the environment, whether negatively (e.g., through pollution or harm to natural resources) or positively (e.g., by reducing or preventing pollution, or using resources sustainably). In its simplest form, the practice of global environmental politics includes those activities of governments that relate to the environment in some way. This might involve the work of environmental ministries, particularly when their work affects what happens in other countries, and it would include the environment-related roles and activities of political executives (presidents, prime ministers) and legislatures, notably the environmental policies, laws and regulations they deliberate, formulate and implement. It follows that the practice of global environmental politics is also about the activities of all those actors trying to influence and shape government policies related to the environment, and the responses of those and other actors to environmental regulation. Thus the practice of global environmental politics within countries includes the activities of special interests, notably corporations and, in many places, environmental advocacy groups, and the processes whereby those interests attempt to shape government policies related to the environment.

The practice of global environmental politics of course includes the actors working across national borders. For example, environmental diplomacy and the complex processes of international environmental negotiations on all manner of issues – such as fishing, whaling, ocean pollution, trade in hazardous wastes, stratospheric ozone depletion and climate change – are most definitely the stuff of global environmental politics. Indeed, some scholars of global environmental politics focus almost entirely on this aspect of the topic – what might be labeled *international* environmental politics – including the roles of important or powerful national actors (such as the United States and China), foreign policy processes (including the roles of influential politicians or diplomats and their relationships with colleagues nationally and internationally),

and the impact of international organizations and regimes (such as the United Nations and the constellation of international agreements and new practices associated with, say, biodiversity and especially climate change). In short, at least for some scholars, global environmental politics is primarily about what governments do at home and abroad to respond to environmental changes or to prevent them from happening.

The study of global environmental politics

As a field of analysis and learning, global environmental politics is about trying to understand and explain the practices of governments and other actors related to the environment, especially insofar as this is associated with international affairs or transboundary environmental issues. For most scholars this involves analyzing the practice of global environmental politics, finding explanations for what happens, and conveying this knowledge to others, often to the practitioners being studied. For many scholars this includes sharing their knowledge via publications of different kinds, sometimes in the form of policy papers intended to shape ("improve") the policies of governments, international organizations and other actors, such as corporations, and to help them arrive at policies more conducive to environmental protection. Most scholars maintain a certain level of disinterestedness in their research: they attempt to find the "truth" behind environmental policies, for example, and to convey what they have learned to the scholarly and policy communities. Other scholars and researchers have more normative objectives: they want to see the environment and natural resources protected, so their research is aimed at finding ways to make that happen, possibly including advocacy work toward that end. A few (sometimes self-styled) scholars, such as the so-called "climate skeptics" and "climate deniers," have just the opposite objective: to use their work to *prevent* governmental regulation for environmental protection.

For many scholars of global environmental politics, their work includes teaching others what they have learned about the practices of global environmental politics, notably in college and university courses (sometimes titled "global environmental politics," "international environmental politics" or something similar). These courses are often geared toward helping students who will join industries to better understand the role of environment in their future work, or to provide training for students who will join government ministries working on environmental and international affairs. Some teachers of global environmental politics no doubt hope that their students will become environmental activists. Regardless of their individual motivations, most of the contributors to this volume both conduct research on global environmental politics and teach about it.

Surveying global environmental politics

This volume brings together a diverse group of scholars from around the world. Their contributions are organized into four parts: (I) explaining and understanding global environmental politics; (II) actors and institutions in global environmental politics; (III) ideas and themes in global environmental politics; and (IV) key issues and policies in global environmental politics. Together the contributors cover most topics in both the practice and study (or research) of global environmental politics, thereby giving readers, whether students, government officials, industry sustainability officers, environmentalists or ordinary concerned citizens, a scope of knowledge that is wider than that found in other books. Chapters describe the topic at hand in enough detail to provide a foundation for policy work and more in-depth reading and study. Most contributors also draw on their experiences to provide some assessment of real-world

events. As such, in the whole the handbook serves as a valuable primer for anyone interested in, or concerned about, humanity's relationship with the global environment.

Explaining and understanding global environmental politics

In Part I, contributors describe the theories and methods used to explain global environmental politics. In Chapter 2, Loren R. Cass provides a historical overview of global environmental politics as a field of study. In a wide-ranging survey of the literature, he shows how the field has advanced from one that was primarily about international environmental cooperation to one that is more inter- and multi-disciplinary, encompassing the full range of political and policy activity related to the environment while still being oriented toward international relations. In Chapters 3 and 4, John Vogler and Hayley Stevenson describe and assess all of the major theoretical approaches, and more than a few of the less common theoretical frameworks, used to analyze and understand global environmental politics. Vogler focuses on mainstream theories of global environmental politics, notably realism and rationalism (which some might say are not always realistic or rational), which have been most commonly used by scholars, and sometimes even by practitioners, to explain the international politics of the environment. In contrast, Stevenson looks at alternative theories, such as constructivism and Marxism, which challenge the mainstream approaches. The alternative perspectives are often about showing that global environmental politics is just as much about ideas as it is about states per se.

The final chapters of Part I turn to questions of how global environmental politics is studied and taught. In Chapter 5 Juliann Emmons Allison draws on a wide literature to craft a framework for doing research and teaching of global environmental politics. She shows how the theories described in the preceding chapters can be brought to bear in explaining global environmental politics to laypersons, and she proposes innovative pedagogies that can be deployed to help students learn about it. In Chapter 6, Peter M. Haas and Ronald B. Mitchell make a strong case for interdisciplinary scholarship that bridges the science-policy interface. Such research is more likely to lead to publications and other outputs that will result in concrete improvements in environmental conditions. Together, the chapters in Part I serve as a theoretical foundation for the rest of the handbook and a guide for further research and study by readers of all kinds.

Actors and institutions in global environmental politics

Global environmental politics is shaped by a variety of major actors and institutions operating at all levels of human activity – from the local to the global. In Part II, contributors describe the most prominent actors and some of the common practices, norms and institutions they often follow in their relations with one another in the context of environmental change. In Chapter 7, Hugh C. Dyer takes a critical look at what are very likely the most important and most powerful actors, if far from the only important ones, in global environmental politics: nation-states. For some scholars and no doubt for many practitioners, especially diplomats, states are *the* chief actors, often receiving all of the attention. As Dyer points out, the international system, and the notion of state sovereignty that serves as its foundation, has the potential both to solve environmental problems and to make them much worse. What may be most interesting and most important, and is certainly germane to other chapters here, is that environmental change, while partly a consequence of the behaviors of sovereign states, is challenging the very idea of sovereignty like nothing else. It may be for this reason that states quite often find it necessary to cooperate at both regional and global levels to seek common approaches to addressing environmental

issues. This cooperation, and especially its manifestation in international (or, more precisely, inter-governmental) environmental organizations, is examined by Kate O'Neill in Chapter 8. She reviews both the functions and operations of regional and global international organizations, in the process examining the extent to which they are autonomous actors, independent of their member states, or more often tools used by their members to promote their own interests in global environmental politics.

One interesting aspect of global environmental politics is that states (and other actors) frequently cooperate informally. This informal cooperation can take on a life of its own. In Chapter 9, Mary E. Pettenger explores this process through an examination of international environmental regimes and some of the underlying theories that are used to explain their formation and effectiveness. While there is some disagreement among scholars about how to define international regimes, they are quite often described as principles, norms and procedures that governments agree to follow in addressing (in this case) international environmental problems. They may have formal international organizations associated with them, and indeed the most influential regimes usually do, but this is not always the case. What is important is that states, at least the most powerful ones, sometimes recognize and accept that only through voluntarily accepting and (mostly) adhering to a common approach can they solve environmental problems.

Another way that the environment-related behavior of and among states is voluntarily regulated, or at least tempered, is through international environmental law, which is described by David B. Hunter in Chapter 10. International environmental law is largely a consequence of formal agreements among states: governments voluntarily agree, through treaties, to be bound to certain behaviors, for example to stop allowing the use of certain pollutants or environmentally harmful practices within their borders that might harm other countries. Having said this, international environmental law can arise in less predictable ways, whether through common practices that evolve over time or as a result of decisions taken by national and international courts. Hunter shows how these formal and informal practices have resulted in an array of commonly accepted standards in global environmental politics.

Global environmental politics is about much more than cooperation among governments at the international level. It is also about what happens within states and what happens at the domestic-international frontier where international and domestic politics and policies interface, as they do in foreign policy processes. In Chapter 11, Mihaela Papa explores the crossovers among different levels of governance by focusing on foreign policy actors. She explores two approaches to environmental foreign policy, namely one that focuses on states and the roles of government officials (such as diplomats and officials in foreign ministries) as primary actors, and another that focuses more on "multi-level governance" and other actors involved in global environmental politics. Moving one further step down from the purely international, in Chapter 12 Stacy D. Vandever and Paul F. Steinberg describe the roles of domestic actors and institutions in global environmental politics. They do this by focusing on (and advocating) a comparative approach to analyzing global environmental politics, in the process highlighting the importance of national policies in understanding and explaining the field. It is, after all, quite often policies at this level that have the most impact on the environment.

In Chapters 13 and 14, Kyla Tienhaara and Christian Downie focus on the roles of non-state actors in global environmental politics – although even these actors seldom act entirely independently of states. Tienhaara examines some of the actors that some scholars and observers may argue are more important than most states: corporations. She looks at how corporations wield power, influence and authority in global environmental politics, showing that sometimes businesses have inordinate ability to shape events while at other times their own conflicts leave them unable to have their way. Businesses most often work to limit environmental regulation, but

occasionally they can lead in efforts to move closer to a sustainable balance between environmental and economic priorities. Continuing this survey of non-state entities, in the final chapter of Part II Downie describes a variety of transnational actors in global environmental politics, including for-profit actors (like those examined by Tienhaara) and not-for-profit nongovernmental organizations, as well as other broadly civil society actors, including individuals. He shows when and how these types of actors increasingly have an impact in global environmental politics, and he helps explain why they fail to have the impact that many people might like. Ultimately, it is usually some amalgamation of state and non-state actors and their influences that determines environmental outcomes.

Ideas and themes in global environmental politics

Like many other aspects of world affairs, human relationships with the natural environment are influenced by ideas. Even when not directly influenced by them, global environmental politics can be better understood in terms of relatively discrete ideas. For example, official and unofficial responses to environmental change have in recent decades been influenced by the notion of sustainability, or what we might define simply as the idea that there are ecological limits to economic and other human activities. Indeed, the idea of sustainability now permeates global environmental politics, although the degree to which it is implemented is debatable and certainly uneven. Similarly, a number of key themes help to characterize contemporary global environmental politics. Examples of such themes include security, which is central to other aspects of international affairs, and globalization, the powerful forces of global economic integration and opening of borders that is affecting almost every aspect of life, including as it relates to the environment. Part III is devoted to describing these and other ideas and themes in global environmental politics.

Part III begins in Chapter 15 with an essay on environmental sustainability by Thomas Princen. Princen proposes a number of foundational principles that should guide humanity, in the process tying together the environment, human behavior and politics. Closely related to sustainability – arguably the most important aspect of realizing it – is the question of material consumption, which is taken up by Gabriela Kütting in Chapter 16. She recounts the history of consumption before examining the institutionalization of the idea of "sustainable consumption." Following a theme in other chapters, Kütting shows that the problems of realizing truly sustainable consumption can often be a function of politics.

Understanding sustainability and the underlying ecological and human forces at play when environmental commons suffer decline requires scientific knowledge. As Andrew Karvonen and Ralf Brand show in Chapter 17, scientific expertise feeds into the processes of global environmental politics and policymaking, in the process often becoming a political issue itself. This is especially the case in the United States, where a surprising number of politicians and interest groups have become "anti-science" in their efforts to deny the reality of climate change and the importance of responding to it. Closely related to questions of science is that of uncertainty. As Karen Hussey and Stephen Dovers point out in Chapter 18, the role of risk in political calculations and in technological responses to environmental change are influenced by the level of uncertainty. Uncertainty makes predicting the future more difficult and of course is something that science can help alleviate. It can also play a role in defining how secure people and countries feel in the face of environmental change.

Conceptions of security, whether human, national or international, often describe global environmental politics. But whether environmental issues are considered to be threats to security is open to interpretation, as Sabina W. Lautensach and Alexander K. Lautensach reveal

in Chapter 19. For example, global climate change creates enormous national and human insecurity for poor low-lying communities and coastal countries that suffer its profound direct effects, such as sea-level rise (made much worse during storms), and for those that lack the ability to fully cope with these effects, thus making climate change an immediate threat for them. In contrast, many developed countries, while also experiencing the effects of climate change, are much more able to cope with its impacts and generally have more resilient societies. A threat that is existential to some poor countries is a mostly distant concern to some wealthy ones. At least that is what many people in the latter countries believe. Even such a belief has great significance in global environmental politics.

Another important theme in global environmental politics is, not surprisingly, that of diplomacy, which is examined by Radoslav S. Dimitrov in Chapter 20. The processes of negotiation among diplomats, whether at formal international conferences or in backroom bilateral meetings, can greatly shape outcomes. It is during such meetings that concerns about security and insecurity can be tempered or occasionally exacerbated. This is especially true in forums where diplomats from wealthy developed countries confront diplomats from developing countries. As Shangrila Joshi affirms in Chapter 21, diplomats' conceptions of environmental security and how to ensure it, and more generally how to respond to global environmental problems, can be quite different depending on the countries they represent. For developed-country diplomats, environmental problems may be relatively simple questions of technical responses, but for diplomats from developing countries they are often wrapped up with a strong sense of historical injustice as a consequence of colonialism and empire in past centuries. Closely related to these questions are those of economic globalization, addressed in Chapter 22 by Lada Kochtcheeva. Globalization is arguably one of the most powerful drivers of adverse environmental changes because it has enabled wealthy countries to "export" their pollution by buying products from countries where environmental regulations are relatively low. Related to this is the increased availability of finance, still predominantly originating in developed countries, that can determine whether economic development around the world is more environmentally harmful or less so. Too often it is still the latter.

These themes – of the relative power of rich and poor countries, of how countries' diplomats relate to one another in environmental negotiations, and the extent to which globalization has fostered trade, often to the advantage of some over others while exacerbating environmental decline – raise very serious questions of justice, both internationally and locally. In Chapter 23, Steve Vanderheiden examines international justice in global environmental politics, in the process showing how nation-states have both rights and obligations in the context of environmental change. Questions of environmental justice also obtain locally. As Hollie Nyseth and David N. Pellow show in Chapter 24, pollution harms some people more than others. In particular, marginalized communities and the poor are often saddled with waste and overuse of natural resources on which they may depend for their survival. But questions of what is right and wrong in the context of global environmental politics is not restricted to relations among countries internationally or to interactions among individuals (and other actors) locally; they also raise questions about the roles of nonhuman species. With this in mind, in Chapter 25 Sofia Guedes Vaz and Olivia Bina describe the relationships between ethics and philosophy, on one hand, and ecology and other species, on the other. Together, these chapters on ethics and justice show that questions of global environmental politics can often not be answered by focusing only on traditional conceptions of power and rights.

The final two chapters in Part III look in greater detail at one set of actors that are central to global environmental politics at all levels – or should be, at least – but which sometimes get overlooked: the public. In Chapter 26, Sandra T. Marquart-Pyatt describes the role of public

opinion in global environmental politics and its relationship to how and whether people participate in different forms of environmental action. She describes how public opinion related to the environment is measured and assessed, and addresses the importance of cross-national research to better understand the views of publics. Building on such themes, in Chapter 27 Derek Bell defines and analyzes environmental citizenship. He describes how environmental citizenship has been portrayed and studied in theoretical, philosophical and practical terms. Much as Marquart-Pyatt reveals the difficulties of stimulating strong public commitment to environmental causes, Bell shows that it is a challenge to foster environmental citizenship, even as some scholars question whether doing so is a good idea.

Key issues and policies in global environmental politics

Chapters in Parts I, II and III lay the foundation for understanding global environmental politics and the various actors, institutions and ideas that influence it. In Part IV we turn to specific issues in global environmental politics and many of the policy responses to them, in the process reinforcing and further illustrating the material in preceding parts of the handbook. In Chapters 28 and 29, respectively, Hugh C. Dyer and David Downie look at the truly global environmental issues of climate change and stratospheric ozone depletion. Downie's chapter describes the successful negotiations of quite effective international environmental agreements to curb ozone-destroying chemicals. Indeed, these agreements have served as the framework for addressing climate change. Alas, climate change is a far more complicated problem. Both ozone depletion and climate change are caused by pollution from all around the world. However, climate change is both practically and politically more difficult than ozone depletion because the sources of greenhouse gas pollution are in the billions – that is, everyone contributes to climate change in some way. This may help explain why governments have been able to agree on quite successful measures to curb emissions of pollutants causing ozone depletion – in part because the number of factories making these pollutants is relatively limited – whereas they have failed utterly to come to agreement, let alone act on such agreement, on how to finally start reversing the growing emissions of greenhouse gases. As such, Dyer's chapter appropriately takes a critical look at the problem, showing its intimate connections to energy use, particularly the world's reliance on fossil fuels, thereby revealing how difficult it is to take the kind of action described in Downie's more upbeat chapter.

In the next four chapters, contributors look at pollution that often has widespread geographic impacts. Loren R. Cass describes the causes and politics of transboundary air pollution and acid rain in Chapter 30. While both air pollution and acid rain continue to grow worse in many world regions, such as in East Asia, in other places, for example in Europe, there have been successes in tackling both problems. Cass shows how these experiences can help scholars and practitioners understand the causes of, and solutions to, other adverse changes to the environment. The cause of much of the world's air pollution, and certainly of that which most directly affects people on a day-to-day basis, is addressed by Iain Docherty in Chapter 31. Docherty shows how development policies largely determine the level of air pollution coming from transport infrastructure. These policies are often highly contested by governments, industries and civil society actors. Docherty's analysis shows how questions of environment and sustainability can be highly political. Taking on other forms of pollution, in Chapter 32 David Downie and Jessica Templeton describe how persistent organic pollutants have spread throughout ecosystems, presenting very serious threats to both environmental and human health. They also describe how governments, nongovernmental organizations and other actors have responded to this problem. The result is a mixed bag, with real action occurring, but not always quickly or robustly enough.

to keep up with increasing amounts of pollution, notably in the developing world. Henrik Selin expands on this theme in Chapter 33, which is devoted to describing the global politics of hazardous wastes. Selin looks at the science of hazardous waste (and at the politics of the science of hazardous waste), describing how this form of pollution finds its way into oceans in particular. He also shows how hazardous waste is traded around the world, often illicitly. As with other environmental issues, this one has been addressed through international regulation, but this does not yet mean that the problem has been solved.

The final chapters in Part IV look at major concerns related to ecosystems and the species that live within them, and at how governments and other actors have chosen (or not chosen) to address these issues. In Chapter 34, Jens Newig and Edward Challies look at one of the most vital issues in global environmental politics: the governance of water. They show how water has been managed locally and internationally through the collaboration of key actors and stakeholders. Water in lakes and rivers is often polluted, and sadly much of that pollution finds its way to the sea. This and other impacts on the ocean environment are examined in Chapter 35 by Peter J. Jacques as part of his larger analysis of marine politics and what he calls the "world ocean." His chapter describes the myriad threats to the marine environment, ranging from agricultural runoff and dumping at sea to the potentially devastating effects of climate change. Extending this look at Earth's marine environment, in Chapter 36 Elizabeth R. DeSombre describes the international and regional politics of fisheries and marine mammals. As with many other issues examined in this handbook, these have been the subjects of international agreements, sometimes at the global level. Problems persist, but it seems beyond doubt that things would be much worse without such agreements. To some extent the same can be said of international agreements on the protection of biodiversity, migratory species and natural heritage, which are the subjects of Chapter 37 by Volker Mauerhofer and Felister Nyacuru. As they show, environmental agreements can be successful, as demonstrated by some agreements to protect waterfowl that migrate across national borders, but these successes are greatly undermined by the relentless destruction of natural habitats.

Destruction of habitats is starkly revealed by what is happening to the world's forests, which are the subject of David Humphreys's chapter. In Chapter 38 he describes how and why governments have failed to agree on a global forest treaty, in the process tying deforestation back to questions of climate change (and related international and domestic politics). One option for governments in their efforts to limit climate change is to preserve forests, which act as "sinks" for carbon dioxide, the most widespread greenhouse gas. As Humphreys shows, the question of sequestration of carbon in forests is among the most politicized environmental issues. As such, it is the stuff of global environmental politics, revealing how seemingly disconnected issues – in this case, national forest politics and the global politics of climate change – are intimately connected, becoming increasingly complex in both environmental and political terms. The final two chapters of Part IV continue making this link back to climate change. In Chapter 39 Meri Juntti describes the causes of desertification around the world, in the process highlighting the politics of the problem and the roles played by key actors. International agreements have been reached to address desertification. Nevertheless, there is little doubt that the problem will become worse in coming decades. In a closely related and vitally important discussion, in Chapter 40 Jennifer Clapp and Sarah Martin look at food and agriculture. For anyone who might still think that our reliance on the natural environment is not total, or that our connections to it are not political, Clapp and Martin's description of the politics of food should disabuse them of such thinking. Theirs is a classic case study of how the global environment, and specifically our role in shaping it while also being dependent on it, is highly politicized.

The prospects for global environmental politics

What are the prospects for global environmental politics in the future? That is, how likely are scholars and students to garner enough insight into global environmental problems and the world's responses to them to be able (in the case of scholars) to advise policymakers and businesses to be better environmental stewards and (in the case of students) to become sufficiently aware of the environmental crises facing the world to become genuine environmental citizens, and to devote their energies to solving environmental problems – or at the very least to greatly limit their own personal contributions to environmental problems? What are the prospects for the practice of global environmental politics? Will governments and other actors learn from past mistakes and choose to give the natural environment a much higher priority? Will those actors that have failed to do so (meaning most of them) soon realize that the wellbeing of whole societies is intimately linked to environmental sustainability – locally, nationally and globally?

Certainly we cannot predict the future, but in trying to parse these questions we are very likely to arrive at a mixed bag of answers, at best. The world has seen some real progress in addressing environmental problems. In this respect, we might say that global environmental politics has worked. But there is no escaping the stark reality that, broadly and globally speaking, environmental problems continue to grow worse. Climate change is a case in point: despite decades of very serious international negotiations, many resulting treaties, some credible efforts to limit greenhouse gas emissions in some places, and even some progress toward helping those people who are and will be affected by climate change, greenhouse gas pollution continues to increase globally. The problem *will* grow much worse. Developed countries and people living within them have done too little to reduce their use of fossil fuels. Developing countries and their citizens are in the process of becoming addicted to them just as happened in the West. Often this is necessary; the world's poor need inexpensive energy to escape poverty. But this is not the only path to development. The world's affluent people, including the many millions of new middle-class consumers in developing countries, need not make the same mistakes of people in the developed world. The path toward sustainability ought to be followed by all who are capable of doing so. Up to now, too few people around the world have followed this path.

Thus it seems that the work of global environmental politics – the work of government officials, environmental activists and others involved in its practice, as well as the work of scholars who study what those actors do – will be more of the same for the time being. This will involve a growing array of successful efforts by governments around the world to cooperate to address environmental problems and resource scarcities. These agreements will seldom come easily, will require payoffs to vested interests with stakes in continued pollution and overuse of resources, and will no doubt meet with too limited success. But they will be signs of progress in global environmental politics. Similarly, efforts to implement environmental sustainability will spread, thereby reducing the human impact on the environment compared to what it would be without such efforts. But it is likely that coming decades will see increasing environmental pollution at all levels, from the local to the global, as well as the increasing overuse of natural resources and the unsustainable exploitation of environmental commons.

In short, the tide of environmental pollution and decline will not be stemmed anytime soon. Nevertheless, there may still be some room for hope. Scholars and students will continue to observe and learn about what is happening. The tools for doing so will likely improve. Sometimes the work of scholars and analysts, and the understanding of students and future generations, will positively influence policy and the real-world behavior of industries and individuals. At other

times they may understand what is happening but be helpless to do much about it. Insofar as that happens, the scholarship of global environmental politics will be a chronicle of global environmental decline. In the hope that this does not happen, one aim of this handbook is to give those who practice and study global environmental politics some of the information they will need to build the foundations of an environmentally sustainable future.

Part I

Explaining and understanding global environmental politics
