

*Analysis and
Policy Options*

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The 30-Year Legacy

Signs of Progress

This survey of priority environmental issues in North America shows that the region has made notable progress in addressing a number of its most evident and serious environmental problems in the past 30 years:

- since the early 1970s, point sources of nitrogen and phosphorous, principally from the discharge of municipal sewage and industrial wastes, declined significantly;
- in many places, ambient air quality improved, industrial effluents declined, hazardous waste threats were reduced, and community recycling initiatives began;
- increasingly, protected areas were set aside for conservation and recreation;
- a new awareness of the regional and global nature of some environmental issues was aroused during the 1980s as the two countries joined forces to stop producing substances that deplete stratospheric

ozone and control acid rain, and to tackle the grave pollution problems in the Great Lakes;

- during the 1990s, technological change in some sectors of the economy helped to curb a number of environmental pressures through less intensive focus on material production and moderate efficiency gains.

Significant Challenges Remain

While these are encouraging signs of progress, it is clear that significant challenges remain before North America is on a sustainable path. In many instances, the gains made in arresting environmental pollution and degradation have more recently been eroded by choices related to consumption increases and population growth. For example:

- progress in fuel efficiency has been offset by increases in the number of automobiles and the total number of kilometers traveled, and by a trend since 1984 toward heavier and less fuel-efficient passenger vehicles; and

- a consumer lifestyle based on the desire for mobility, convenience, and product disposability has undercut the further advancement of resource efficiency and waste reduction.

In addition, some problems persist despite notable progress. For example:

- soil and wetland losses still outpace gains;
- although withdrawal rates have declined, many aquifers are still being depleted; and
- even with large sulphur reductions, some regions still experience acid rain's long-term effects.

In other areas, new problems are emerging as scientific research reveals that some standards once thought adequate to protect human and environmental health are actually insufficient. For example:

- research in the last decade has demonstrated that ozone (O₃) and fine particulates impose far greater burdens on human health than previously thought;
- children are especially vulnerable to even trace amounts of environmental contaminants; and
- the potential for exposure to persistent toxic substances to cause reproductive and hormonal disruption is of growing concern.

Furthermore, new problems have emerged. For example, the movement of contaminants throughout ecosystems, water- and airsheds is

increasingly recognized as an environmental and health issue:

- we know now that much water pollution is caused by pollutants from the air and that many are carried far from their sources to contaminate areas that appear pristine—some US National Parks and Arctic ecosystems and peoples, for instance; and
- diffuse pollution from non-point sources travels extensively through water courses. Nitrogen runoff into surface waters eventually reaches sensitive coastal ecosystems, contributing to 'dead zones', as in the Gulf of Mexico, and probably to red tides. It also seeps into groundwater and aquifers, where it is difficult to detect and to treat.

In addition, resource conservation has been less successful than local pollution abatement. Non-renewable resources, including water, have been intensively exploited:

- the collapse of the Atlantic cod fishery, increased concern over the fate of Pacific salmon, and international attention to the harvest of old-growth forest in the Pacific Northwest highlight the difficulty in reconciling conservation and economic goals and in persuading people of their inextricable linkage.

Finally, North America's ecological footprint exceeds that of any other region, extending beyond its borders to affect the global climate in particular. The region's energy use and vehicle use are among the pressures implicated in anthropogenic climate

change, one of the world's most pressing environmental challenges.

Major Messages

The Environment Matters

Environment, the basis of existence

The environment is the foundation of human health, well-being, and security. Only with a healthy environment can we meet our physiological needs for air and water; obtain raw materials for food, clothing, shelter, tools, and recreation; and, less obviously, take advantage of the essential, unseen services that fully functioning ecosystems provide, like cleansing water, building soil, and regulating climate. In industrial urbanized societies like North America's, the link between the products we use and their original earthly sources becomes obscured. Failing to see the ecological—not to mention the cultural and spiritual—benefits we derive from nature, we too often take the biosphere's functions for granted, assuming its services to be free, and trusting that it will serve us in perpetuity.

Despite policy commitments to sustainable development and greater recognition of the connectedness of environmental and economic objectives, economic development is still the primary driver in North America. All too often, the environment is still treated as separate from human existence and relatively inessential.

Environment has economic value

Yet the fact remains, environmental goods and services have high international, national, and local value, and their misuse incurs economic and social costs. In recent years, researchers have conducted studies to determine the economic costs of environmental damage. Warning signs of degradation of our ecosystems are increasingly being felt by the economy—this report notes several examples:

- there is a strong correlation, for instance, between episodic, high ground-level ozone and hospitalization and worker absenteeism. The hidden costs of health care and labor losses, and reduced agricultural productivity are borne by society as a whole;
- damage from ozone is also to blame for more than US \$500 million in annual reductions of agricultural and commercial forest yields in the United States;
- damage caused by bioinvasions in North America is also extremely costly to the agricultural industry, as well as to other industries, in terms of human health and outlays for pest control: about a quarter of the annual US agricultural GNP was lost to invasive species in 1998 in direct damage and control costs;
- there are also hidden costs related to the expansion of harmful algal blooms (HABs), which have been linked to excess nitrogen from land-based activities: over the past 20 years, HABs

in the United States led to losses of about US \$100 million per year in medical-related expenses and impacts on the fishing and tourism industries, among others; and

- the collapse of the North Atlantic cod fishery had direct costs including the loss of enormous revenues from this once lucrative industry, considerable hardship inflicted on local communities, and costs to taxpayers through job creation and retraining programs in the Atlantic provinces, not to mention possibly irreparable harm to the marine ecosystem of which the species was a part.

Reforms Are Possible

In view of the world economy's dependence on the environment, respect for its limited carrying and assimilative capacities should be the foundation of sustainable development decision-making.

Need for indicators and environmental accounting

- indicators measuring the use and availability of resources are increasingly being developed in some economic sectors, and there has been progress as well in asset valuation and in developing various approaches to measuring sustainability. Better measures of the economic value of the environment and of the environmental impacts of economic activity are still needed, however.

- in addition to the need for novel indicators of progress, we also need to learn how to use them properly. Setting measurable policy goals and targets that are clearly linked to sustainability is one of the new frontiers. Although many of the natural environmental benefits we enjoy are beyond measure, putting a price on environmental goods and services by integrating environmental accounting within all sectors of the economy and at the company level as well can help heighten our understanding of the environment's crucial importance to human well-being and security.

Underpricing, or implicit subsidization, has stimulated North America's intensive exploitation of non-renewable resources, including energy and water. For example, cheap parking and other hidden subsidies, such as funds for highway development and low fuel prices, continue to promote car dependency and feed into a 'vicious cycle' of urban sprawl and declining transit use.

Need for reformed subsidies, incentives, and taxation

- without energy subsidies, energy prices would rise encouraging the adoption of more efficient vehicles and industrial equipment and reducing pollutant emissions. And without the incentives that road transport subsidies

provide to drivers, traffic congestion, urban air pollution, and carbon-dioxide emissions might well be significantly lowered. Thus, reforming unnecessary subsidies could reduce government expenditures. Another way to reduce the hidden costs of environmental damage is through taxing pollution, resource depletion, or ecosystem degradation.

- energy price increases during the oil shocks, for example, had the effect of reducing energy intensity. Taxation should include pricing the (mostly free) environmental media such as clean air and clean water (such as water pricing). And a means of identifying situations in which environmental protection has contributed to economic development needs to be developed and effective processes disseminated. Green accounting also needs to be integrated into industries and businesses, as well as into local decision-making.

Costs to the environment should also be assessed through environmental assessments, which should continue to be promoted in all development processes, including trade agreements and international protocols.

Policy Performance

Sustainable development is part of government strategies

The establishment of environmental departments in national and state/provincial governments and regional and local agendas, along with new environmental laws and policies such as Clean Air and Clean Water acts, were instrumental in improving North America's environment early in the last 30 years. And following the 1987 Brundtland Report, sustainable development terminology entered environmental policies, although neither country adopted clear and measurable sustainability goals. In 1995, the Government of Canada required that federal departments prepare sustainable development strategies and report systematically on progress, and in 1992, the United States began to craft a national sustainability strategy. Most recently, policies have also taken a more integrated, holistic approach, as reflected in the shift in policy focus in resource-based industries from sustaining yields to environmentally and socially sound stewardship. As shown in this report, wetlands, forests, fish, and fire are increasingly valued over the longer term for the roles they play as parts of larger ecosystems and for the natural services they provide.

Command-and-control has been successful

Command-and-control measures, aided by some successful market instruments, have been successful in addressing issues with clear cause-

and-effect relationships such as stratospheric ozone depletion at the global level and local point-source pollution. The key regulatory tool established early in the 30-year period was controlling the amount of pollution tolerable for human safety. Most of the challenges North America now faces are more diffuse, pervasive, subtle, and complex than those confronted in the past, and are hence more difficult to deal with.

Need for more preventive approaches

As the region continues to address familiar environmental issues, these new problems pose more difficult challenges, and traditional centralized command and control regulations, which focused on controlling and mitigating pollution, and single-issue or sectoral approaches, no longer suffice. Halting POPs to prevent pollution is an example of the shift to more sustainable solutions. Included in the Stockholm 2001 POPs treaty both countries signed are commitments to the precautionary approach that move chemical regulation and management from a 'regulate-and-reduce' approach to a preventive one. A lack of scientific certainty regarding potential harm is no longer regarded as a barrier to taking preventive action. There is a need to continue to embrace this preventive approach to chemical regulation and environmental protection and entrench it into policies and decision-making.

Need for policy linkages

In the past decade, progress has been made in shifting away from

studying physical impacts on the environment and the physical vulnerability of different ecosystems, to a more integrated understanding of the linkages between environmental change, and social, and economic strategies for coping with them. As we become more aware of the complex nature of environmental issues and ecosystem functions, and as new environmental challenges emerge, we need to introduce more integrated management policies and tools. Policies must continue to integrate social-economic-environmental approaches and move from environmental protection to the broader concept of resource management—witness the approach recently agreed upon for the management of old-growth forests in the Pacific Northwest.

Need to support municipal governments

Recent efforts to overcome environmental and social problems related to sprawl also provide lessons in how to address issues that require broader, more inclusive decision-making and land use planning. Local environmental governing bodies, especially where community- and city-level cooperation are integral aspects of decision-making, can help to steer and prioritize not only local action, but also international and national action. Since strengthening the voice of cities and municipal regions in decision-making creates capacity for successful policy, more emphasis should be placed on local and regional levels of environmental policy development and strengthening regional

initiatives, institutes, and alliances. Governments at all levels need to invest more in public transportation and to promote a move away from the use of personal vehicles, especially for commuting and short trips. Overcoming investments already made in present-day energy and transportation infrastructure to allow the adoption of renewable energy and alternative fuels, and moving toward new technologies while avoiding major disruptions remains a significant challenge.

Shared Ecosystems and Bilateral Cooperation

Long-standing history of cooperation

Canada and the United States have one of the longest common borders in the world and share ecosystems, air, and watersheds, wildlife and fishery resources. The two countries enjoy a long history of cooperation in managing their shared environment through numerous bilateral treaties, agreements, and other accords. The International Joint Commission (IJC) was instrumental in the cleanup of the Great Lakes over the past 30 years, and the Canada–US Air Quality Agreement has achieved notable success in regulating the pollutants that cause acid rain. Transboundary air pollution has more recently emerged as a problem requiring even greater cooperation between the two countries and they have strengthened these measures, agreeing to more aggressive NO_x emission controls under the Ozone Annex to the Agreement, for example. The 1972

Great Lakes Water Quality Agreement (GLWQA) is another long-standing effort that committed the two countries to work together for a common cause.

International organizations help manage shared environments

During the 1990s, North American free trade strengthened the economic ties between the countries, and the movement of goods, services, capital, and ideas accelerated. At the same time, regional environmental degradation evoked heightened recognition of the interdependent nature of cross-border ecosystems. Since 1994, the Commission for Environmental Cooperation of North America (CEC) has created opportunities and forums for the two countries, together with Mexico, to soundly manage chemicals, assess and reduce the impacts of trade on the environment, and prioritize ways to conserve biodiversity, among other actions. The IJC and the CEC continue to be effective international organizations for managing transboundary resources, serving as models for similar challenges in the rest of the world.

Cross border management and research increasing

Government departments such as Forestry Canada and the US Forest Service, disaster prevention agencies, and fisheries departments also work hand in hand across the border. To better monitor and manage their shared agendas, the two countries have reconciled standards, such as those related to corporate average

fuel consumption and policies for greater road transportation energy efficiency and alternative fuels. They also conduct research together, including their international work on bioinvasions and bilateral research on children's health.

Need for ongoing environmental cooperation

In addition, Canada and the United States are party to many international accords in which they work with other countries to address global environmental problems. All these successful cooperative efforts between the two countries reveal the importance of bilateral action for both transboundary pollution and shared ecosystems and biodiversity. More than any other step, cooperative action helped to stem acid rain and to protect wetlands, for example. And even in transboundary issues of conflict the need for cooperation prevailed, as in the case of the Pacific Salmon Treaty.

Ongoing environmental cooperation is in the mutual interest of both countries. They need to continue to support bilateral institutions through stable funding arrangements, ensuring full transparency, the participation of all stakeholders, and the collaboration of the scientific community. Given the continental nature of climatic systems, it is vital that the two countries intensify their cooperative efforts to address both climate change and disaster preparedness by planning and implementing a comprehensive, integrated, binational strategy.

Public Participation and Stakeholder Involvement

NGOs influential

The birth of the modern environmental movement in North America early in the 1970s and continued pressure from NGOs have contributed significantly to the region's success in addressing environmental problems. Since the 1980s and the adoption of national and international goals for sustainable development, civil society has gained more opportunities for participation in environmental decision-making. Through NGOs and other voluntary organizations, working with corporate and financial interests and consumers, civil society has won a louder voice in influencing decisions and assumed a larger role in ensuring that environmental problems are addressed. NGOs were influential in helping to clean up the Great Lakes, for example.

Indigenous peoples gaining a voice

More recently, indigenous communities, which had been overlooked in decisions about resources that affect their livelihoods and cultures, have participated in land agreements and settlements and gained new rights and responsibilities over their environments. Examples highlighted in this report include the establishment of new forms of resource management based on shared responsibility by the James Bay Cree in Quebec and the Nuu-chah-nulth First Nation in BC, Canada. The integration of civil society, including indigenous

peoples, into the policy process in North America is also underscored earlier by the combined efforts of multiple parties to support a comprehensive plan to restore and preserve the Florida Everglades and the multi-stakeholder work to address habitat restoration and other concerns to help salmon recovery.

Need to increase public participation

Nongovernmental organizations and increased scientific understanding of ecosystems have both been instrumental in moving toward more holistic management systems and their adoption by governments and industry. Implementing these sustainability goals remains a challenge, and NGO observation will likely continue to play a role in helping to turn the concept of sustainable development into reality. It is critical that we continue to acknowledge the importance of local peoples' rights, improve the participation of all stakeholders, increase transparency, and invite more cooperative resource management in developing and implementing sustainable development programs. Indigenous knowledge systems (IKS), particularly those that reinforce sustainable development, should be more thoroughly researched and documented. Consultative processes to ensure that they are enshrined adequately in laws are a precondition for instituting such principles and rights. Legal and regulatory measures should also define community property rights and provide institutional legitimacy

to community-based resource management practices by making communities part of the national legal and regulatory framework.

Need to increase industry ecoefficiency

While for the most part the environment is either ignored or still a peripheral consideration to economic interests in industry, some firms are trying to build it into their core strategies, as illustrated by the changes taking place in some logging companies in the Pacific Northwest highlighted in this report. Policy changes may still be required, however, to encourage the more holistic changes needed for industries to adopt ecoefficiency, especially if market incentives prove inadequate (CEC 2001).

Affluence and the Environment

Consumption offsetting environmental gains

The ability to address pollution and other problems that became apparent over the 30-year period was influenced not only by the institution of environmental governance and pressure from an informed and active civil society, but also by economic growth and general prosperity. On the other hand, it is ever more apparent that affluence stimulates consumption and energy use, which have offset advances in environmental efficiency. Fueled by economic prosperity, low energy prices, and population growth, per capita consumption has increased steadily since 1972. Rising per capita incomes and accompanying lifestyle changes are closely tied to many

environmentally significant consumption patterns. By 1996, North America's ecological footprint was four times greater than the world average, its forest footprint was 4.4 times larger, and its CO₂ footprint almost five times the world average. Per capita annual gasoline consumption for motor vehicles was nine times the world average. Thus, transportation in North America strongly affects worldwide CO₂ emissions. In 1997, the US transport sector accounted for more than one-third of total world transportation energy use and about 5 percent of CO₂ emitted worldwide as a result of human activity. Reliance on private automobiles for transport is a significant factor in North America's greenhouse gas emissions.

Climate change will have important impacts

Unsustainable patterns of consumption and production in North America are a major cause of global environmental deterioration. Clearly, North America has an inequitable and unsustainable impact on the global environment in particular, and contributes to a disproportionate degree to the changing global climate. Climate change will inevitably cause damage, especially to low-lying islands, coastal systems, and arid and semi-arid ecosystems, affecting millions of inhabitants of these regions, rich and poor. It may also contribute to a rise in the scale and intensity of natural weather hazards. Developing countries, particularly small-island developing states, are least able to cope with or

adapt to these changes and events, raising difficult questions of equity between the North and the South in terms of the emissions that cause human-induced climate change.

Global climate change will also have important impacts on North America. It is likely to increase the risks associated with invasive species and certain vectors may already be expanding their geographic ranges. The magnitude, frequency, and cost of extreme hydrological events in some regions of North America are forecast to increase, while higher temperatures could lead to an increase in insect populations and outbreaks of fire and human health threats. Water levels in inland lakes and streams may decline with consequences for both irrigation and human water consumption.

Urgent need to address climate change

Many of the environmental changes that will occur over the next 30 years have already been determined by past and current actions. Land degradation, natural resource use, biodiversity loss, freshwater scarcity, and impacts from a changing climate are shaping up as the most difficult issues to address. Even if the United States and Canada were to meet the Kyoto targets, it would have a marginal effect on the concentration of greenhouse gases in the atmosphere, and even with their stabilization in the long term, warming will continue for several decades. Given its large share of the planet's CO₂ emissions, which are directly proportional to fuel use, the region will need a substantial

change in its automobile use, more fuel-efficient technologies, and changes in municipal planning and urban development strategies, including investment in public transport. None of this will happen without understanding the role of policy drivers and having the political will to introduce improvements.

Need for more appropriate models

Many of North America's environmental policies underscored in this report provide blueprints for other regions. With globalization, however, there is the danger that inefficient and wasteful consumption patterns will spread. To prevent this, North America along with other developed countries need to accept more responsibility for environmental change. To date, lacking guaranteed protection of economic interests and the individual capacity to connect climate to individual behavior, North America has not achieved committed cuts to greenhouse gas emissions and the United States has declined to support the Kyoto Accord, a step with uncertain impacts on Canada-US relations and their cooperation toward environmental goals.

To achieve sustainable development and equal shares in a world with limited resources and capacities for renewal, producers and consumers—especially in high-income nations such as Canada and the United States—will need to adopt development approaches that limit material growth. The use or waste of nonrenewable resources must be minimized. Appropriate national

and regional development policies should provide a viable alternative to inappropriate and unsustainable levels of consumption and point the way to move from material-intensive development to material-minimal development.

A strategic policy framework built on a vision of human well-being based on quality and values rather than quantity and materials is required. Reduction of resource use, energy, and waste must be encouraged through policies aimed at changing behavior to curb conspicuous consumption and adopt new, appropriate production and consumption patterns.

Need to move towards dematerialization and ecoefficiency

Various measures and tools need to be promoted, as suggested above, such as incorporating environmental costs, environmental taxes, and the removal of perverse subsidies.

Adapting infrastructure and logistics that encourage the commercialization of 'sustainable', 'fairly traded', and 'environmental' products and other products with special 'green' connotations will facilitate the move toward dematerialization and ecoefficiency amongst producers.

The use of economic instruments focusing especially on industrial ecology and cleaner production practices can provide incentives for ecoefficient production. Active financing of sustainable production and consumption should be encouraged. By all these means, revenue can be generated to finance sustainable development and send

signals to the market that help to change patterns.

Need to support ENGOs

The work of community groups and environmental NGOs in promoting a greater sense of belonging to local environments in North American cities and taking personal responsibility for them should be supported with a view both to educating civil society about their impacts on the global environment and to promoting community and individual action to decrease environmental footprints of the wealthy. Such groups promote a variety of initiatives such as smart growth planning, community gardening or community-supported agriculture projects, transport alternatives like cycling and bike paths, green belt projects, energy-saving measures, and organic food cooperatives; among others.

Need to understand human impact

Efforts should be made to obtain and exchange better data that will provide needed information about how to effect production and consumption changes at the consumer, business, and corporate levels. Information should be generated, for example, on the impacts of corporate actions at the level of local communities and the environment; on ways to promote corporate responsibility and accountability; on ways to create consumer ethics and responsibilities for environmental and social impacts; and on the impacts of environmental scarcity and over consumption on the health of vulnerable human groups. Re-

search should be targeted through pilot projects and monitoring of alternative approaches at the local level, including material recycling. More support is needed for research and promotion of fuel alternatives and energy-saving vehicles.

Information and Education

Need for better information

Expanding human interference with natural processes and the complexity of new and emerging environmental issues in North America point to the need for better scientific understanding about how the natural world functions and how humans can adjust to live in harmony with nature. At present, we lack adequate information about ecosystem health, resilience, and carrying capacities; the more subtle, long-term, diffuse, cumulative, complex, and cross-cutting environmental problems; links between trade and environment; impacts of environmental change on vulnerable sectors of society; and links between environmental issues in developed and developing countries, and especially the link between affluent lifestyles and global climate change. Without reliable, credible, comprehensive, and accessible data and information, it is not possible to assess the state, condition, and trends of ecosystem components; the effectiveness of policy; or the links between our actions, environmental conditions, and economic costs. Yet government cutbacks have weakened or eliminated many of the basic

monitoring systems that provide baseline data. There is a need to rethink what is essential data, and to make sure that resources are in place to produce it. This is a precondition for having meaningful and reliable sustainability indicators.

Need for more environmental education

Environmental education offers an excellent and relatively untapped opportunity to impart environmental values and lay out the costs of overexploitation to society. Improved knowledge about, and valuing of, ecosystem functions can stimulate better policy and management approaches to minimize or halt adverse trends where ecosystems and the provision of environmental goods and services are threatened by environmental change and degradation. Education should play a larger role in helping to instruct societies about the importance of a healthy environment, the links to personal behavior, and the reasons for modifying consumption patterns. The role of the mass media and advertising in influencing our decisions needs to be better appreciated. Consumers can be influenced by the use of socially and environmentally conscious marketing that highlights consumption as a key motor of environmental degradation. Consumers need to be able to make informed choices and to understand how their buying can influence the market for environmental and social gains.

Education and awareness raising is needed for policymakers, citizens,

and media alike. It should be used forcefully to help change unsustainable lifestyles and consumer behavior. Environmental education should therefore be integrated and comprehensively covered in academic, business, and economic curricula. Environmental study also needs to become an integral part of economic theory and practice and should be taught in all university economics courses. Ministries of Environment and Education should be encouraged to integrate environmental education in all academic curricula, at all levels, and in all subjects, including those in professional, economics, and business schools.

The Next 30 Years

On the eve of the World Summit on Sustainable Development, it has become evident that protecting the environment and human security is a more challenging task than it may have seemed 30 years ago, or even 10 years ago. We live with the decisions of the past just as future generations must live with our decisions. The sustainable development vision needs a long time horizon but immediate action. Achieving, within the next 30 years, the social and environmental vision laid out in the 1990s, will require drastic steps. To begin with, there is an ever more urgent need to recognize that human security depends on the abundance and health of environmental assets, goods, and services. We must find ways to ensure that their benefits are delivered in a

sustainable and equitable way for current and future generations. At the same time, we must develop environmental and human resilience to cope with the environmental and climatic changes that are inevitable.

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Hanson, International Institute for Sustainable Development, Canada; Peter Hardi, International Institute for Sustainable Development, Canada; Asit Hazra, Environment Canada, Canada; Alan D. Hecht, Office of International Activities, United States Environmental Protection Agency, United States; David Henry, Canadian Heritage, Environment Canada, Canada; John Herity, Environment Canada, Canada; George Herrfuth, United States Department of State, United States; Christine T. Hogan, International Affairs Directorate, Environment Canada, Canada; Mark Hovorka, Environment Canada, Canada; Tom Iavari, Natural Resources Conservation Service, United States; Gary Ironside, Environment Canada, Canada; Heather James, Pacific Operations, Fisheries and Oceans, Canada; Yvan Jobin, Foreign Affairs and International Trade, Canada; Margaret Kain, Forest Service, United States Department of Agriculture, United States; John Karau, Fisheries and Oceans Canada, Canada; Margaret Kenny, Environment Canada, Canada; Mara Kerry, Canadian Nature Federation, Canada; Frederick W. Kutz, United States Environmental Protection Agency, United States; Jim LaBau, Forest Service, United States Department of Agriculture, United States; Keith Laughlin*, Council on Environmental Quality, United States; Jay Lawimore, National Oceanic and Atmospheric Agency, United States; Douglas J. Lawrence, Natural Resources Conservation Service, United States Department of Agriculture United States; Rick Lee, University of Victoria, Canada; Annick LeHenaff, Environment Canada, Canada; Perry Lindstrom, United States Department of Energy, United States; Amory Lovins, Rocky Mountain Institute, United States; H. Gyde Lund, Forest Information Services, United States; Mary Ann Lyle, Federal Emergency Management Agency, United States; Late Elisabeth Mann Borgese, International Ocean Institute, Dalhousie University, Canada; Alex Manson, Environment Canada, Canada; Ian Marshall, Environment Canada, Canada; Tim Marta, Agriculture and Agri-Food Canada, Canada; Gordon McBean, University of Western Ontario, Canada; Jessica McCann, Community Transportation Association of America, United States; Beverly D. McIntyre, Office of Global Change, United States Department of State, United States; Elizabeth McLanahan, National Oceanic and Atmospheric Agency, United States; Mary Lou McQuaide, Solid Waste Association of North America, United States; Terry McRae, Agriculture and Agri-Food Canada, Canada; Richard Meganck, Unit for Sustainable Development and Environment, Organization of American States, United States; Valdis E. Mezainis, International Programs, United States Forest Service, United States; Craig Miller, Environment Canada, Canada; Paul Miller, North American Commission for Environmental Cooperation, Canada; Rebecca Milo, Environment Canada, Canada; Charles E. Morrison, East-West Center, United States; Gloria Mundo, United States Census Bureau, United States; Pumulo Muyatwa, International Institute for Sustainable Development, Canada; Tony Myers, Health Canada, Canada; Adil Najam, Department of International Relations, Center for Energy and Environmental Studies, Boston University, United States; Brenda O'Conner, Environment Canada, Canada; Edward Ohanion, Office of Water, United States Environmental Protection Agency, United States; Robin O'Malley, The H. John Heinz III Center for Science, Economics and the Environment, United States; Jim Osborne, Environment Canada, Canada; Gail Osherenko, Dartmouth College, United States; Christine Padoch, The New York Botanical Garden, United States; Jeanne Pagnan, Twin Dolphins Consultants, Canada; Dennis Peacock, United States National Science Foundation, United States; Phil Perkins, Yellowstone National Park, United States; Erica Phipps, North American Commission for Environmental Cooperation, Canada; Cindy Pollack-Shea, Florida Sustainable Communities Center, United States; Sharon Powers, National Agricultural Statistics Service, United States; Don Pryor, National Oceanic and Atmospheric Agency, United States; Thomas Pyle, Office of Polar Programs, United States National Science Foundation, United States; David J. Rapport, The University of Western Ontario, Canada; Walter Rast, Great Lakes Water Quality Board, International Joint Commission, Canada; David Redford, United States Environmental Protection Agency, United States; Dieter Riedel, Health Canada, Canada; Richard Robarts, Environment Canada, Canada; Brian Roberts, Indian and Northern Affairs, Canada; Guy Rochon, Environment Canada, Canada; Jane M. Rohling, United States Department of Agriculture, United States; David Roodman, World Watch Institute, United States; Carol Rosen, World Resources Institute, United States; Denyse Rousseau, Foreign Affairs and International Trade, Canada; Clay Rubec, Environment Canada, Canada; David Runnalls, International Institute for Sustainable Development, Canada; Kathleen Sullivan Sealey,

Department of Biology, University of Miami, United States; Stephen Seidel, United States Environmental Protection Agency, United States; Parvina A. Shamsieva-Cohen*, Global Resource Information Database, Sioux Falls, United States; Victor Shantora, Commission for Environmental Cooperation, United States; Cameron Siles, Environment Canada, Canada; Brad Smith, Forest Service, United States Department of Agriculture, United States; Bryan Smith, Environment Canada, Canada; Sharon Lee Smith, Environment Canada, Canada; Susan Solomon, National Ocean and Atmospheric Administration, United States; Jim Steele, Commercial Services, Environment Canada, Canada; Janet Stephenson, Natural Resources Canada, Canada; John W. B. Stewart, University of Saskatchewan, Canada; Anita Street, Office of Planning, Analysis and Accountability, United States Environmental Protection Agency, United States; Nick Sundt, United States Global Change Research Program, United States; David Sutherland, National Ocean and Atmospheric Administration, United States; James Tansey, University of British Columbia, Canada; Charles Tarnocai, Agriculture and Agri-Food, Canada Research Branch, Canada; Jeffrey A. Thornton, International Environmental Management Services Ltd., United States; Kelly Torck,

Environment Canada, Canada; John R. Townshend, University of Maryland, United States; Suzanne Tremblay, Statistics Canada, Statistical Reference Centre, Canada; Jacques Trenchia, Canadian Forest Service-Science Branch, Natural Resources Canada, Canada; Daniel Tunstall, World Resources Institute, United States; David G. Victor, Science and Technology Council on Foreign Relations, United States; Jean-Louis Wallace, Environmental Relations Division, Foreign Affairs and International Trade, Canada; Frank Wania, University of Toronto at Scarborough Canada; R. Douglas Wells, Forestry Transportation Operations Branch, Transportation and Works Department, Canada; Thomas E. Werkema, Atofina Chemicals Inc., United States; Denis White, United States Environmental Protection Agency, United States; Gilbert F. White, University of Colorado, United States; Keith Wiebe, United States Department of Agriculture, United States; Tara Wilkinson, Commission for Environmental Cooperation, Canada; Heather Wood, Environment Canada, Canada; Oran R. Young, Dartmouth College, United States; John Zacharias, Urban Studies Programme, Department of Geography, Concordia University, Canada.

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 Chapter 11: Tim McCabe, USDA/NRCS

Acronyms and Abbreviations

AOC	Areas of Concern	EPA	Environmental Protection Agency
ARNEWS	Acid Rain National Early Warning System	EPC	Emergency Preparedness Canada
BC	British Columbia	EPCA	Energy Policy and Conservation Act
BFW	Boreal Forest Watch	EPCRA	Emergency Planning and Community Right-to-Know Act
CAS	College of Agricultural Sciences	ERS	Economic Research Service
CBC	Community-Based Conservation	ESA	Endangered Species Act (United States)
CBD	Convention on Biological Diversity	EU	European Union
CCD	Convention to Combat Desertification	FAO	Food and Agriculture Organization of the United Nations
CCFM	Canadian Council of Forest Ministers	FSC	Forest Stewardship Council
CD-ROM	Compact disk–read only memory	FDRP	Flood Damage Reduction Program
CEC	Commission for Environmental Cooperation	FEMA	Federal Emergency Management Agency
CEHN	Children’s Environmental Health Network	FICMNEW	Federal Interagency Committee for the Management of Noxious and Exotic Weeds
CFC	Chlorofluorocarbon	FSC	Forest Stewardship Council
CGIAR	Consultative Group on International Agricultural Research	G7	Group of Seven: Canada, France, Germany, Italy, Japan, United Kingdom, United States
CH ₄	Methane	GDP	Gross Domestic Product
CIAT	International Centre for Tropical Agriculture	GEO	Global Environment Outlook
CICH	Canadian Institute of Child Health	GFW	Global Forest Watch
CIDA	Canadian International Development Agency	GLWQA	Great Lakes Waters Quality Agreement
cm	Centimeter	GMO	Genetically Modified Organism
CNG	Compressed Natural Gas	GNP	Gross National Product
CNW	Canadian News Wire	GRID	Global Resource Information Database
CO	Carbon Monoxide	HABs	Harmful Algal Blooms
CO ₂	Carbon Dioxide	HDI	Human Development Index
DDT	Dichlorodiphenyltrichloroethane	HMIS	Hazardous Materials Incidents System
DFAIT	Department of Foreign Affairs and International Trade	IABIN	Inter-American Biodiversity Information Network
DPSIR	Driving force-Pressure-State-Impact-Response	ICLEI	International Council for Local Environmental Initiatives
EC	European Community	IEA	International Energy Agency
ECOHAB	Ecology and Oceanography of Harmful Algal Blooms	IIED	International Institute of Environment and Development
EIA	Environmental Impact Assessment	IISD	International Institute for Sustainable Development
ENGO	Environmental Non-Governmental Organization	IJC	International Joint Commission
ENS	Environment News Service		
ENSO	El Niño Southern Oscillation		

IPCC	Intergovernmental Panel on Climate Change	PSIR	Pressure-State-Impact-Response
IPM	Integrated Pest Management	PSR	pressure-state-response
JISAO	Joint Institute for the Study of the Atmosphere and Ocean	PSR	Physicians for Social Responsibility
LDAC	Learning Disabilities Association of Canada	RAP	Remedial Action Plan
MASS	Montane Alternative Silvicultural Systems	SARA	Species At Risk Act (Canada)
MSRM	Ministry of Sustainable Resource Management	SO ₂	Sulphur Dioxide
NAACO	National Ambient Air Quality Objectives (Canada)	SOE	State Of the Environment
NAFTA	North American Free Trade Agreement	SUV	Sport Utility Vehicles
NASS	National Agricultural Statistics Service	TEA	Transportation Equity Act
NEECAUM	Northeast States for Coordinated Air Use Management	TU	Trout Unlimited
NDFP	National Forestry Database Program	UK	United Kingdom
NG	National Geographic	UN	United Nations
NGO	Non-Governmental Organization	ULI	Urban Land Institute
NIAID	National Institute of Allergy and Infectious Diseases	UNCCD	United Nations Secretariat of the Convention to Combat Desertification
NMFS	National Marine Fisheries Service	UNCED	United Nations Conference on Environment and Development
NOx	Nitrous Oxides	UNCHS	United Nations Centre for Human Settlements
NOAA	National Oceanic and Atmospheric Administration	UNCOD	United Nations Conference on Desertification
NRCan	Natural Resources Canada	UNCTAD	United Nations Conference on Trade and Development
NRDC	Natural Resources Defense Council	UNDP	United Nations Development Programme
NRTEE	National Round Table on the Environment and the Economy	UNEP	United Nations Environment Programme
NSWCP	National Soil and Water Conservation Program	UNEP-WCMC	United Nations Environment Programme-World Conservation Monitoring Centre
O ₃	Ozone	UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
OCIPEP	Office of Critical Infrastructure and Emergency Preparedness	UNESCO	United Nations Educational, Scientific and Cultural Organization
ODS	Ozone-Depleting Substance	UNFCCC	United Nations Framework Convention on Climate Change
OECD	Organization for Economic Cooperation and Development	US	United States
OCIPEP	Office of Critical Infrastructure and Emergency Preparedness	USDA	US Department of Agriculture
OMA	Ontario Medical Association	US EPA	United States Environmental Protection Agency
PCB	Polychlorinated Biphenyls	USGCRP	US Global Change Research Program
PCP	Permanent Cover Program (Canada)	USGS	United States Geological Survey
PDO	Pacific Decadal Oscillation	US IWG	US Interagency Working Group
PEHC	Pew Environmental Health Commission	VOC	Volatile Organic Compound
PFRA	Prairie Farm Rehabilitation Administration	WHO	World Health Organization
PM _{2.5}	Particulate matter with a diameter of 2.5 microns or less	WRI	World Resources Institute
PMRA	Pest Management Regulatory Agency	WWF	World Wide Fund for Nature
POPs	Persistent Organic Pollutants	WRM	World Rainforest Movement
PSC	Pacific Salmon Commission	YCELP	Yale Center for Environmental Law and Policy