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Environment

01/02



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Members of the Advisory Board are instrumental in the final selection of articles for each edition of ANNUAL EDITIONS. Their review of articles for content, level, currentness, and appropriateness provides critical direction to the editor and staff. We think that you will find their careful consideration well reflected in this volume.

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In publishing ANNUAL EDITIONS we recognize the enormous role played by the magazines, newspapers, and journals of the public press in providing current, first-rate educational information in a broad spectrum of interest areas. Many of these articles are appropriate for students, researchers, and professionals seeking accurate, current material to help bridge the gap between principles and theories and the real world. These articles, however, become more useful for study when those of lasting value are carefully collected, organized, indexed, and reproduced in a low-cost format, which provides easy and permanent access when the material is needed. That is the role played by ANNUAL EDITIONS.

As a new millennium begins, environmental dilemmas long foreseen by natural and social scientists have begun to emerge in a number of guises: population/food imbalances, problems of energy scarcity, acid rain, toxic and hazardous wastes, ozone depletion, water shortages, massive soil erosion, global atmospheric pollution and possible climate change, forest dieback and tropical deforestation, and the highest rates of plant and animal extinction the world has known in 65 million years.

These and other problems have worsened in spite of an increasing amount of national and international attention to environmental issues and increased environmental awareness and legislation. The problems have resulted from centuries of exploitation and unwise use of resources, accelerated recently by the short-sighted public policies that have favored the short-term, expedient approach to problem solving over longer-term economic and ecological good sense. In Africa, for example, the drive to produce enough food to support a growing population has caused the use of increasingly fragile and marginal resources, resulting in the dryland deterioration that brings famine to that troubled continent. Similar social and economic problems have contributed to massive deforestation in Middle and South America and Southeast Asia.

During the decade of the eighties, economic problems generated by resource scarcity caused the relaxation of environmental quality standards and contributed to the legislature's refusal to enact environmentally sound protective measures, which were viewed as too costly. More recently, in the nineties, governments adopted environmental protection policies that were often cosmetic, designed for good press but little else. Even with these public relations policies, governments often lacked either the will or the means to implement them properly. The absence of effective environmental policy has been particularly apparent in those countries that are striving to become economically developed. But even in the more highly developed nations, economic concerns tend to favor a loosening of environmental controls. In the interests of maintaining jobs for the timber industry, for example, many of the last areas of old-growth forests in the United States are imperiled, and in the interests of maintaining agricultural productivity at all costs, destructive and toxic chemicals continue to be used on the nation's farmlands. In addition, concerns over energy availability have created the need for foreign policy and military action to protect the developed nations' access to cheap oil and have prompted increasing reliance on technological quick fixes, as well as the development of environmentally-sensitive areas to new energy resource exploration and exploitation.

There is some reason to hope that, globally, a new environmental consciousness is awakening at the dawning of a new millennium. The dissolution of the Soviet Union lifted the

Iron Curtain, and the environmental horror stories that emerged from Eastern Europe and the newly independent states that made up the former USSR gave new incentives to international cooperation. International conferences have been held on global warming and other environmental issues, and, in spite of the recalcitrance of some of the world's most important countries, there is some evidence of an increased international desire to do something about environmental quality before it is too late.

The articles contained in *Annual Editions: Environment 01/02* have been selected for the light they shed on these and other problems and issues. The selection process was aimed at including material that will be readily assimilated by the general reader. Additionally, every effort has been made to choose articles that encourage an understanding of the nature of the environmental problems that beset us and how, with wisdom and knowledge and the proper perspective, they can be solved or at least mitigated. Accordingly, the selections in this book have been chosen more for their intellectual content than for their emotional tone. They have been arranged into an order of topics—the global environment, population and food, energy, the biosphere, resources, and pollution—that lends itself to a progressive understanding of the causes and effects of human modifications of Earth's environmental systems. We will not be protected against the ecological consequences of human actions by remaining ignorant of them. Although the knowledge gained through the use of this book may not allow any of us to escape the environmental predicament, it should ensure that we do not continue to act and react in ways that will make that predicament worse.

The *World Wide Web* sites in this edition can be used to further explore the topics. These sites will be cross-referenced by number in the *topic guide*. In addition, this edition contains both a newly refreshed *Environmental Information Retrieval guide* and *glossary*.

Readers can have input into the next edition of *Annual Editions: Environment* by completing and returning the postpaid *article rating form* at the back of the book.



John L. Allen
Editor

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1. Environmental Surprises: Planning for the Unexpected, Chris Bright, *The Futurist*, July/August 2000. 8

Those scientists who investigate the different possibilities of the future have come up with some interesting ways to anticipate the consequences of the complex processes at work in today's world. Two of their major findings are that **ecological change** is nearly always irreversible and that **human systems** need to find a way to work with, rather than against, **natural systems**.

2. The Nemesis Effect, Chris Bright, *World Watch*, May/June 1999. 14

The complexity of **environmental systems** and human interactions with them suggests that environmental pressures produced by human activities will begin to converge in ways that will produce a number of unexpected **environmental crises**. The only way to avoid the "nemesis" of unpredicted environmental crisis is to do a better job of managing the human/environmental systems.

3. Harnessing Corporate Power to Heal the Planet, L. Hunter Lovins and Amory B. Lovins, *The World & I*, April 2000. 24

One of the great intellectual shifts of the late twentieth century is the emergence of a new form of economics called "**natural capitalism**." The basis of the new corporate thinking is to enhance **resource productivity** through recycling and other efforts to eliminate the concept of waste. The primary goal of natural capitalism is to reverse the global trend of ecosystem destruction by using nature as a mentor and model in manufacturing.

4. Crossing the Threshold: Early Signs of an Environmental Awakening, Lester R. Brown, *World Watch*, March/April 1999. 30

An **environmental threshold** is a critical parameter beyond which significant **environmental change** becomes inevitable. Globally, we are approaching some important environmental thresholds (the number of endangered species, for example). But we may also be approaching some key breakthroughs in social concepts and organization that will enable us to restructure the **global economy** before environmental deterioration can lead to irreversible economic decline.



The Global Environment: An Emerging World View

Four selections provide information on the current state of Earth and the changes we will face.



The World's Population: People and Hunger

Four selections examine the problems the world will have in feeding its ever-increasing population.

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| 5. The Population Surprise , Max Singer, <i>The Atlantic Monthly</i> , August 1999. | 42 |
| For years, population experts have been predicting that the world's population will continue to grow well into the twenty-first century before stabilizing sometime after 2050. Most of these predictions have been based on the demographic transition , a pattern of population growth experienced in the industrialized nations in which population growth eventually approaches zero. Recent evidence suggests that rather than leveling off, the world's population will actually enter a period of decline. | |
| 6. Population and Consumption: What We Know, What We Need to Know , Robert W. Kates, <i>Environment</i> , April 2000. | 44 |
| A general consensus exists among scientists that the roots of the current environmental crisis are to be found in a combination of population growth , affluence, and increasing technology . No such consensus exists, however, about the ultimate causes of either population growth or the desire to consume. Notwithstanding this lack of agreement, society needs to sublimate the desire to acquire things for the good of the global commons . | |
| 7. Food for All in the 21st Century , Gordon Conway, <i>Environment</i> , January/February 2000. | 52 |
| For people in the world's industrialized countries, there is little awareness of the depth of the global food problem . In order for agricultural systems to provide enough food to feed the world's population in the twenty-first century, that awareness needs to develop, as does agricultural and natural resource production aimed at not just equitable food production but at sustainability . | |
| 8. Escaping Hunger, Escaping Excess , Gary Gardner and Brian Halweil, <i>World Watch</i> , July/August 2000. | 61 |
| Malnutrition is a growing global epidemic. Malnourishment includes both the underfed of the poorer countries and the overfed of the richer ones, and because misunderstanding exists as to the nature of malnutrition, policy responses to it have been inadequate. When taken in total, the world's food problem often appears to be more a problem of allocation than a problem of supply. | |

Overview

- 9. King Coal's Weakening Grip on Power,** Seth Dunn, *World Watch*, September/October 1999. **70**
72
Although the fuel of choice today is petroleum, for most of the last thousand years coal has been the **fossil fuel** most in demand for uses ranging from the village blacksmith to the modern electrical generation power plant. The use of coal has left a legacy of human and **environmental costs** that we have only now begun to assess. Initiatives to replace coal as a primary fuel in all societies suggest that the reign of this destructive **energy source** is nearing an end.
- 10. Oil, Profit\$, and the Question of Alternative Energy,** Richard Rosentreter, *The Humanist*, September/October 2000. **79**
Even though the costs of **fossil fuels**, particularly oil and natural gas, continue to rise, there has been public policy encouragement for the development of **alternative energy** sources, such as solar power, wind power, and others. It could be argued that the failure of alternative energy to capture either public attention or public money is the result of the political influence wielded by large corporations wedded to nonrenewable energy.
- 11. Here Comes the Sun: Whatever Happened to Solar Energy?** Eric Weltman, *In These Times*, February 7, 2000. **83**
Amidst the oil embargos and nuclear accidents of the seventies, the future seemed to belong to **solar energy**, but federal dollars for research funding for solar power has decreased more than 600 percent since 1980, and **renewable energy** is expected to supply only about 3 percent of the needs of the United States in 2020. The primary reason for not implementing these alternative energy sources is the **political environment** surrounding **renewable energy** issues.
- 12. The Hydrogen Experiment,** Seth Dunn, *World Watch*, November/December 2000. **87**
Iceland is an isolated volcanic island long adjusted to using **alternative energy** sources, particularly **geothermal energy** from the country's many hot springs and thermal vents. Now a new alternative energy experiment has been set into motion in Iceland's capital city—**hydrogen power**.
- 13. Power Play,** *Business Week*, February 12, 2001. **97**
The energy crisis in California is a prime example of over-extended expectations on environmental issues. This article focuses on the manipulation and mismanagement of generating electrical energy and how these actions can impact on the average citizen. Implications are that the deregulation of energy sources could affect the entire nation.



Energy: Present and Future Problems

Six articles consider the problems of meeting present and future energy needs. Alternative energy sources are also examined.



Biosphere: Endangered Species

Four articles examine the problems in the world's biosphere. Not only are plants and animals endangered, but many human groups are also disastrously affected by deforestation and primitive agricultural policies.

- 14. Bull Market in Wind Energy**, Christopher Flavin, **103**
World Watch, March/April 1999.

Wind power is one of the world's most rapidly expanding industries, and both industrialized and developing countries are discovering that **electrical energy** from wind-driven turbines is not only cheap and environmentally protective but also technologically accessible. In some rapidly developing countries like China, the potential of wind energy exceeds the current demand for electricity.

Overview

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- 15. Planet of Weeds**, David Quammen, *Harper's*, October 1998. **108**

Earth has undergone periods of major **biological extinction** requiring millions of years of recovery time. Biologists believe that we are entering another such period: a significant reduction in **biodiversity** brought about not by natural forces but by human action. Over the next century huge percentages of Earth's plants and animals will disappear, leaving behind impoverished ecosystems dominated by "weeds," the hardiest, most adaptable plants and animals, including the consummate weed: **Homo sapiens**.

A. PLANTS

- 16. Invasive Species: Pathogens of Globalization**, Christopher Bright, *Foreign Policy*, Fall 1999. **116**

One of the least expected and least visible consequences of economic globalization has been the spread of **invasive species**—plants and animals that are hitchhiking through the global trading network and finding niches where they can survive better than native species. This **bioinvasion** is difficult to control because it means altering the nature of the **global trading economy** that released invasive species in the first place.

B. ANIMALS

- 17. Mass Extinction**, David Hosansky, *CQ Researcher*, September 15, 2000. **123**

Biologists cannot be precise about the number of species that are becoming extinct because they don't know how many species exist. What they can say, however, is that the rate of **biological extinction** over the past few centuries is 100 to 10,000 times the normal rate. The Earth has lost over 30 percent of its species since 1970 and it may be that half of all existing **animal species** in 2000 will be gone by the end of the twenty-first century.

18. Watching vs. Taking, Howard Youth, *World Watch*, **130**
May/June 2000.

In many parts of the world, people have turned to **wildlife watching** for recreation and business instead of for hunting and poaching. The reasons are largely economic: a live lion in a Kenyan game reserve may generate as much as \$575,000 in tourist dollars. This is **ecotourism** at its most productive. Certainly the growing awareness of global **biodiversity** loss is an issue, as the public becomes more aware that watching rare and endangered species can be a valuable experience—and one not easily replicated.

Overview **140**

19. The Tragedy of the Commons: 30 Years Later, **142**

Joanna Burger and Michael Gochfeld, *Environment*, December 1998.

In 1968, the pioneering human ecologist Garrett Hardin argued in an article entitled "**The Tragedy of the Commons**" that increasing human **population** would create such pressure on finite resources at both local and global levels that the inevitable consequence would be overexploitation and **environmental crisis**. Hardin's work spawned new approaches to **resource management**, but, 30 years later, the problem of the commons still exists.

A. LAND

20. Where Have All the Farmers Gone? Brian Halweil, **150**
World Watch, September/October 2000.

The movement toward a **global economy** has meant a standardization in the management of much of the world's land. These new standardized **land management** practices have, in turn, led to a decrease in the number of farmers. As **agribusiness**, in the form of large corporations, takes over more and more of the world's farmland, not only is a way of life lost but also crop diversity, ecosystems, and cultures are threatened.

B. WATER

21. When the World's Wells Run Dry, Sandra Postel, **162**
World Watch, September/October 1999.

Most of the water used in **irrigation agriculture** is **groundwater** rather than water drawn from surface reservoirs. And because groundwater is being extracted or withdrawn at rates far in excess of its renewal or recharge, the world is quickly running short of one of its most precious resources. The only solution is to develop plans to reduce overconsumption of groundwater and to ensure sustainable groundwater use.



**Resources:
Land, Water,
and Air**

Six selections discuss the environmental problems affecting our land, water, and air resources.



Pollution: The Hazards of Growth

Four selections weigh the environmental impacts of the growth of human population.

- 22. Oceans Are on the Critical List**, Anne Platt McGinn, **170**
USA Today Magazine (*Society for the Advancement of Education*), January 2000.

The world's oceans are both central to the **global economy** and to human and planetary health. Yet these critical areas are being threatened by overfishing, **habitat degradation**, pollution, introduction of alien species, and **climate change**. Unfortunately, protection efforts are being hampered and the human impact on oceans is in danger of disrupting life on the planet.

C. AIR

- 23. The Human Impact on Climate**, Thomas R. Karl and **174**
Kevin E. Trenberth, *Scientific American*, December 1999.

Scientists are in general agreement that the **global climate** is undergoing a warming trend. There is even substantial agreement that much of this temperature increase is human-induced. What is not known is exactly how much of the **global warming** can be attributed to natural processes or to human ones. We can have accurate **climate monitoring** systems in place by the middle of the century, but to wait until those systems are in place before taking action to halt the warming trend would be foolish.

- 24. Warming Up: The Real Evidence for the Greenhouse Effect**, Gregg Easterbrook, *The New Republic*, November 8, 1999. **180**

Despite the scientific and nonscientific rhetoric and wrangling over **global warming**, it is clear that the planet is becoming warmer and that human activities are playing some role in that process. Whoever develops a **clean energy** system will not only aid in the global warming problem but also will have a significant competitive advantage in twenty-first-century economics.

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- 25. Making Things Last: Reinventing Our Material Culture**, Gary Gardner and Payal Sampat, *The Futurist*, May 1999. **188**

Consumption of industrial products in countries like the United States have increased nearly twentyfold in this century and manufacturing has converted unprecedented amounts of **raw materials** to usable products that then end up as **solid waste**. The waste that characterizes the industrialized countries of the world has produced enormous damage to both human and **environmental health**.

26. Groundwater Shock: The Polluting of the World's Major Freshwater Stores, Payal Sampat, *World Watch*, January/February 2000. 193

Most of the planet's freshwater—97 percent to be exact—is stored in vast underground **aquifers**, which supply nearly 40 percent of the world's population with drinking water and over 90 percent of the world's irrigated agriculture with the water necessary to sustain it. While the pollution of surface water is easily recognizable and has more readily understood sources, **groundwater pollution** is not only more difficult to identify but also tends to have sources that are less visible.

27. POPs Culture, Anne Platt McGinn, *World Watch*, March/April 2000. 204

While industrial innovation is usually viewed as a good thing, at least economically, one form of innovation that the world could do without is that which produces **persistent organic pollutants** or "POPs." Many of these substances, widely used in both agricultural and industry, are so toxic and so durable that they may be creating **public health** problems 1,000 years from now.

28. It's a Breath of Fresh Air, David Whitman, *U.S. News & World Report*, April 17, 2000. 212

When the world celebrated the 30th anniversary of the original **Earth Day** in April 2000, the United States was pleased with the progress made in **environmental cleanup**. While most Americans surveyed in 2000 believed that the environment had improved only slightly since 1970, the fact is that the environmental trend in the United States has produced substantial reductions in air and water **pollution**, without forestalling **economic growth**.

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ENVIRONMENT

Twentieth Edition

01/02

EDITOR

John L. Allen

University of Wyoming

John L. Allen is professor of geography at the University of Wyoming. He received his bachelor's degree in 1963 and his M.A. in 1964 from the University of Wyoming, and in 1969 he received his Ph.D. from Clark University. His special area of interest is the impact of contemporary human societies on environmental systems.

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Topic Guide

This topic guide suggests how the selections in this book relate to the subjects covered in your course.

The Web icon (🌐) under the topic articles easily identifies the relevant Web sites, which are numbered and annotated on the next two pages. By linking the articles and the Web sites by topic, this ANNUAL EDITIONS reader becomes a powerful learning and research tool.

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● AE: Environment

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The following sites were available at the time of publication. Visit our Web site—we update DUSHKIN ONLINE regularly to reflect any changes.

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1. Britannica's Internet Guide

<http://www.britannica.com>

This site presents extensive links to material on world geography and culture, encompassing material on wildlife, human lifestyles, and the environment.

2. EnviroLink

<http://envirolink.netforchange.com>

One of the world's largest environmental information clearing-houses, EnviroLink is a grassroots nonprofit organization that unites organizations and volunteers around the world and provides up-to-date information and resources.

3. Library of Congress

<http://www.loc.gov>

Examine this extensive Web site to learn about resource tools, library services/resources, exhibitions, and databases in many different subfields of environmental studies.

4. SocioSite: Sociological Subject Areas

<http://www.pscw.uva.nl/sociosite/TOPICS/>

This huge sociological site from the University of Amsterdam provides many discussions and references of interest to students of the environment, such as the links to information on ecology and consumerism.

5. U.S. Geological Survey

<http://www.usgs.gov>

This site and its many links are replete with information and resources in environmental studies, from explanations of El Niño to discussion of concerns about water resources.

The Global Environment: An Emerging World View

6. Earth Science Enterprise

<http://www.earth.nasa.gov>

This site will direct you to information about NASA's Mission to Planet Earth program and its Science of the Earth System. Surf here to learn about satellites, El Niño, and even "strategic visions" of interest to environmentalists.

7. National Geographic Society

<http://www.nationalgeographic.com>

This site provides links to National Geographic's huge archive of maps, articles, and other documents. There is a great deal of material related to the atmosphere, the oceans, and other environmental topics.

8. Santa Fe Institute

<http://acoma.santafe.edu>

This home page of the Santa Fe Institute—a nonprofit, multidisciplinary research and education center—will lead to many interesting links related to its primary goal: to create a new kind of scientific research community, pursuing emerging science.

9. United Nations

<http://www.unsystem.org>

Visit this official Web site Locator for the United Nations System of Organizations to get a sense of the scope of international environmental inquiry today. Various UN organizations concern themselves with everything from maritime law to habitat protection to agriculture.

10. United Nations Environment Programme

<http://www.unep.ch>

Consult this home page of UNEP for links to critical topics of concern to environmentalists, including desertification, migratory species, and the impact of trade on the environment. The site will direct you to useful databases and global resource information.

The World's Population: People and Hunger

11. The Hunger Project

<http://www.thp.org>

Browse through this nonprofit organization's site to explore the ways in which it attempts to achieve its goal: the sustainable end to global hunger through leadership at all levels of society. The Hunger Project contends that the persistence of hunger is at the heart of the major security issues that are threatening our planet.

12. Penn Library Resources

<http://www.library.upenn.edu/resources/websitest.html>

This vast site is rich in links to information about virtually every subject you can think of in environmental studies. Its extensive population and demography resources address such concerns as migration, family planning, and health and nutrition in various world regions.

13. World Health Organization

<http://www.who.int>

This home page of the World Health Organization will provide links to a wealth of statistical and analytical information about health and the environment in the developing world.

14. WWW Virtual Library: Demography & Population Studies

<http://demography.anu.edu.au/VirtualLibrary/>

This is a definitive guide to demography and population studies. A multitude of important links to information about global poverty and hunger can be found here.

Energy: Present and Future Problems

15. Alternative Energy Institute, Inc.

<http://www.altenergy.org>

On this site created by a nonprofit organization, you can learn about the impacts of the use of conventional fuels on the environment. Also learn about research work on new forms of energy.

16. Communications for a Sustainable Future

<http://csf.colorado.edu>

This site will lead to information on topics in international environmental sustainability. It pays particular attention to the political economics of protecting the environment.

17. Energy and the Environment: Resources for a Networked World

<http://zebu.uoregon.edu/energy.html>

This University of Oregon site points to an extensive array of materials having to do with energy sources—both renewable and nonrenewable—as well as other topics of interest to students of the environment.

18. Institute for Global Communication/EcoNet

<http://www.igc.org/igc/gateway/>

This environmentally friendly site provides links to dozens of governmental, organizational, and commercial sites having to do with energy sources. Resources address energy efficiency, renewable generating sources, global warming, and more.

19. U.S. Department of Energy

<http://www.energy.gov>

Scrolling through the links provided by this Department of Energy home page will lead to information about fossil fuels and a variety of sustainable/renewable energy sources.

Biosphere: Endangered Species

20. Friends of the Earth

<http://www.foe.co.uk/index.html>

Friends of the Earth, a nonprofit organization based in the United Kingdom, pursues a number of campaigns to protect the Earth and its living creatures. This site has links to many important environmental sites, covering such broad topics as ozone depletion, soil erosion, and biodiversity.

21. GORP: Great Outdoor Recreation Pages

http://www.gorp.com/gor/resource/Us_National_Park/AK/wild_den.htm

This GORP program is an example of an organization that is now offering wildlife watching. Visit this site to investigate what these specialized tours have to offer.

22. Smithsonian Institution Web Site

<http://www.si.edu>

Looking through this site, which will provide access to many of the enormous resources of the Smithsonian, offers a sense of the biological diversity that is threatened by humans' unsound environmental policies and practices.

23. Tennessee Green

<http://kornet.org/tngreen/>

Visit this site to find a wealth of information related to sustainability and ways that we can "lighten our load on the environment." It provides links to other environmental sites and guidance to articles and books.

24. World Wildlife Federation

<http://www.wwf.org>

This home page of the WWF leads to an extensive array of links to information about endangered species, wildlife management and preservation, and more. It provides many suggestions for how to take an active part in protecting the biosphere.

Resources: Land, Water, and Air

25. Global Climate Change

<http://www.puc.state.oh.us/consumer/gcc/index.html>

PUCO (Public Utilities Commission of Ohio) aims for this site to serve as a clearinghouse of information related to global climate change. Its extensive links provide an explanation of the science and chronology of global climate change, acronyms, definitions, and more.

26. National Oceanic and Atmospheric Administration

<http://www.noaa.gov>

Through this home page of NOAA, part of the U.S. Department of Commerce, find information about coastal issues, fisheries, climate, and more.

27. National Operational Hydrologic Remote Sensing Center

<http://www.nohrsc.nws.gov>

Flood images are available at this site of the NOHRSC, which works with the U.S. National Weather Service to track weather-related information.

28. Virtual Seminar in Global Political Economy/Global Cities & Social Movements

<http://csf.colorado.edu/gpe/gpe95b/resources.html>

This site of Internet resources is rich in links to subjects of interest in regional environmental studies, covering topics such as sustainable cities, megacities, and urban planning. Links to many international nongovernmental organizations are included.

29. Websurfers Biweekly Earth Science Review

<http://shell.rmi.net/~michaelg/index.html>

This is a biweekly compilation of Internet sites devoted to the terrestrial and planetary sciences. It includes a list of hyperlinks to related earth science sites and news items.

Pollution: The Hazards of Growth

30. IISDnet

<http://iisd1.iisd.ca>

This site of the International Institute for Sustainable Development, a Canadian organization, presents information through links on business and sustainable development, developing ideas, and Hot Topics.

31. Persistent Organic Pollutants

<http://irptc.unep.ch/pops/>

Visit this site to learn more about persistent organic pollutants (POPs) and the issues and concerns surrounding them.

32. School of Labor and Industrial Relations: Hot Links

<http://www.lir.msu.edu/hotlinks/>

This Michigan State University SLIR page goes to sites regarding industrial relations throughout the world. It has links to U.S. government statistics, newspapers and libraries, international intergovernmental organizations, and more.

33. Space Research Institute

<http://arc.iki.rssi.ru/Welcome.html>

For a change of pace, browse through this home page of Russia's Space Research Institute for information on its Environment Monitoring Information Systems, the IKI Satellite Situation Center, and its Data Archive.

34. Worldwatch Institute

<http://www.worldwatch.org>

The Worldwatch Institute is dedicated to fostering the evolution of an environmentally sustainable society in which human needs are met without threatening the health of the natural environment. This site provides access to *World Watch Magazine* and *State of the World 2000*. Click on Alerts and Press Briefings for discussions of current problems.

We highly recommend that you review our Web site for expanded information and our other product lines. We are continually updating and adding links to our Web site in order to offer you the most usable and useful information that will support and expand the value of your Annual Editions. You can reach us at: <http://www.dushkin.com/annualeditions/>.

Unit Selections

1. **Environmental Surprises: Planning for the Unexpected**, Chris Bright
2. **The Nemesis Effect**, Chris Bright
3. **Harnessing Corporate Power to Heal the Planet**, L. Hunter Lovins and Amory B. Lovins
4. **Crossing the Threshold: Early Signs of an Environmental Awakening**, Lester R. Brown

Key Points to Consider

- ❖ Why are environmental changes so difficult to predict and how can human planning systems develop mechanisms to adjust to continued environmental change?
- ❖ How are environmental systems linked together and how do they tend to converge? Illustrate an example of a synergistic environmental problem such as the link between climate change and forest fires.
- ❖ What is meant by the term “natural capitalism” and how does the application of principles of this form of economics promise a new creation of appropriate environmental strategies? How do the concepts of natural capitalism fit into the present methods for dealing with the world’s resources and systems?
- ❖ What are some social thresholds of environmental problems? How do environmental events like hurricanes increase both public awareness and government and corporate action on environmental issues?



Links

www.dushkin.com/online/

6. **Earth Science Enterprise**
<http://www.earth.nasa.gov>
7. **National Geographic Society**
<http://www.nationalgeographic.com>
8. **Santa Fe Institute**
<http://acoma.santafe.edu>
9. **United Nations**
<http://www.unsystem.org>
10. **United Nations Environment Programme**
<http://www.unep.ch>

These sites are annotated on pages 4 and 5.