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## **Population And The Environment: A Bibliography**

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Many informed observers consider world population growth to be the most important ecological problem facing the planet today and in the future. Yet the population question has been virtually invisible as an issue in the public environmental debate. It is discussed only occasionally in most environmental publications, while environmental articles in general interest magazines scarcely ever mention it. Population concerns were pushed off the agenda at the Rio Earth Summit in 1992 before the conference even began. Why?

The population issue is probably the most uncomfortable and divisive of all the environmental concerns. It strikes at the heart of our ideals of personal freedom, individual autonomy, and human rights and involves the most personal decisions a couple can make. The idea of population control is offensive to the religious beliefs of many people. Environmentalists who want to raise concerns about global warming or deforestation or other such issues have a difficult enough time without bringing up a topic even more controversial. Thus, the population issue tends to be avoided. However, may feel that if this issue is ignored, it will eventually render all other environmental concerns irrelevant.

Fortunately, the United Nations International Conference on Population and Development last September in Cairo has brought greater visibility to this neglected issue. To understand the issues raised, both environmentalists and the general public need more information on population problems.

This bibliography is intended to provide an overview of current resources about population and the environment, geared toward a popular or non-specialist audience. It is a selection of items published since 1986 and generally widely available in larger public or medium-sized academic libraries. Specialist academic or professional works are not included. Also not included are the many excellent articles which have come out in environmental journals in preparation for the Cairo Conference. An attempt has been made to also present points of view other than that of the mainstream environmental and population control community, though opposition groups do not appear to publish a great deal and their works are not widely available.

This bibliography is divided into two parts. The first section lists books by topic or emphasis. The second section gives materials in other forms-- periodicals, videos, and childrens books. Most of these, except where noted, represent the mainstream viewpoint.

### **THE POPULATION PROBLEM**

Harrison, Paul. *The Third Revolution: Environment, Population and a Sustainable World*. I.B. Tauris in association with the World Wide Fund for Nature, 1992. 359 p. bibliog. index. ISBN 1-18043-501-4. \$35.00.

Paul Harrison has been the principal researcher for the United Nations Population Fund (UNFPA) annual report *The State of World Population* and is the author of the bestseller *Inside the Third World*. In this book he tries to sort out the conflicting claims about the role of population in the global environmental crisis.

Noting that the world is too complex for oversimplified solutions, Harrison explains how Malthusians tend to concentrate on population to the exclusion of other problems, critics on the left point to everything but population as the source of our environmental woes, and critics on the right assert that human ingenuity will solve any possible problems. Harrison finds merit in all of these arguments. He analyzes specific environmental problems such as deforestation, soil erosion, air pollution, etc. to see what share of the responsibility can be assigned to population growth and what share can be attributed to other factors, such as technological change or increase in per-capita consumption. In many cases, a significant share can be blamed on population growth, and this is likely to go up as population increases.

Interspersed among these analyses are case studies of Madagascar, Burkina Faso, Abidjan, and Bangladesh, concentrating on the lives of individuals and their struggles to survive worsening conditions. These stories show the effects of overpopulation, environmental degradation, and economic injustice on a personal level, providing a welcome human counterpoint to the rest of the book.

Harrison likens the world situation at the present to the situation of Hamlet in the Shakespeare play. Hamlet learns quickly what action he must take, but he continually delays until he has less than half an hour to live, and several innocent lives were lost in the meantime. Will the world wait for catastrophic environmental problems before doing anything? There are options we can take to avoid this fate.

This book gives a fair, balanced, and lucidly written assessment of the world population situation. It is highly recommended as an introduction to the subject.

Ehrlich, Paul R., and Anne H. Ehrlich. *The Population Explosion*. Simon and Schuster, c1990. 320 p. bibliog. index. ISBN 0-671-68984-3. \$18.95.

Since the publication of *The Population Bomb* in 1968, Paul and Anne Ehrlich have been at the forefront of the population debate. *The Population Explosion* can be considered an update of that work, incorporating new population figures and with further information on serious environmental problems that are appearing much sooner than they had anticipated. Firm advocates of the need to halt and reverse population growth, the Ehrlich's wrote this book to appeal to a wide audience, presenting clear, well supported arguments in a brisk, non-technical style.

The Ehrlichs assert that the important issue about population is not population density, but the carrying capacity of the earth. The authors begin by confronting the taboos against dealing with population issues. They then present projected world population increases and try to calculate how much food can realistically be grown on the planet. While clearly alarmed at the rapid rate of population growth in poor developing countries, they don't hesitate to criticize the population policies of the industrialized nations, particularly the United States. By their profligate consumption of natural resources, residents of these countries contribute a disproportionate share of the world's environmental problems. Among the environmental problems linked to population are desertification, global warming, pollution, rain forest destruction, loss of biodiversity, and degradation of the agricultural base, ultimately leading to reduced food supplies. The Ehrlichs also address their critics, refuting arguments that population growth is necessary for economic health or national security.

This book urges citizens to become active in population issues. The Ehrlichs present steps that countries can take to slow their growth, as well as actions individuals can take to educate their fellow citizens. They include a listing of population organizations, books for further reading, and sample letters to public officials.

The Population Explosion is an excellent introduction to the population question, and should be considered a basic work in the field.

*Population, Resources and the Environment: The Critical Challenges.* United Nations Population Fund,. 1991. 154 p. bibliog. ISBN 0-89714-101-6. \$24.75.

This study from the United Nations Population Fund provides a detailed examination of linkages between population and the environment. It finds that the bulk of today's environmental degradation is done by two groups, the top richest billion and the bottom poorest billion. The richest billion destroys the environment through rapid over-consumption of resources and vast generation of wastes, while the bottom billion destroys their resources out of necessity and a lack of other options. This book mainly concerns itself with documenting the environmental impact of the latter group, whose numbers are increasing the fastest.

Distinguishing between demographic projections and predictions of the future (projections don't take environmental and other effects into account), the book explains how a youthful, rapidly growing population may overwhelm local environmental carrying capacity. Though per-capita resource use is low-- in many cases lower than any reasonable definition of human decency-- the cumulated effect of rapidly increasing numbers of these marginalized people is significant. Specific resource issues are examined, such as climate change and ozone depletion, agricultural lands, water, tropical forests, and biodiversity, linkages are established to such quality of life issues as health, employment, landlessness, urbanization, population distribution and migration, environmental refugees, wastes and pollution, poverty, and women's status. A chapter is devoted to describing the population and environmental situations in seven developing countries. Possible policy responses are suggested to help alleviate some of the problems. Included in appendices are various official statements by international bodies on population and the environment, plus a table of population characteristics of regions and countries.

This compact book is a basic source of information on population growth's impact on the environment. It cites data and statistics from many other works, all noted in the lengthy list of references at the end of the book-- an excellent tool in itself for further research.

Meadows, Donella H., Dennis L. Meadows, & Jorgen Randers. *Beyond the Limits: Confronting Global Collapse, Envisioning a Sustainable Future.* Chelsea Green, c1992. 300 p. graphs. bibliog. index. ISBN 0-930031-55-5. \$19.95.

This work is a sequel to the 1972 bestseller *The Limits to Growth*. In both books, the authors use a computer model called World3 to project the interactions between population growth, industrial growth, food production, resource consumption and pollution into the 21st century. Using the latest available figures, the authors reran the computer program but received similar results-- if present trends continue unchanged, the world faces a global economic and environmental collapse in the next century, with population plummeting as death rates rise.

A major theme of the book is the concept of overshoot, to inadvertently go beyond a limit. They feel that human use of many resources and generation of some pollutants have already surpassed rates that are physically sustainable (in ozone-depleting chemicals, for example). They give a lucid explanation of the mathematics of exponential growth and its significance to population and industrial growth, followed by a discussion of the limiting factors of resources and pollutants. They describe how the computer model plots the interactions of these factors and show thirteen scenarios the computer produced as they varied each of the factors. Most show overshoot and collapse in the next century. But by stabilizing population, moderating per capita industrial output, and reducing pollution we can achieve a sustainable society. The sooner these policies are implemented the better chance we have-- the computer projects that a 20 year delay will result in a partial collapse, stabilizing at a much reduced standard of living.

This is a frightening book, but a must for people who want a clear-eyed look at the ramifications of present world trends. An excellent glossary and annotated bibliography are provided. Persons with technical skills will enjoy the detailed descriptions of computer modeling. Documentation sources are listed so that others may set up and experiment with the World3 computer model.

*Elephants in the Volkswagen: Facing The Tough Questions About An Overcrowded Country.* Lindsay Grant, ed. W.H. Freeman & Co., c1992. 272 p. bibliog. notes, index. ISBN 0-7167-2267-4, \$22.95. 0-7167-2268-2 (pbk.), \$13.95.

This book asks the question: what is the optimum population of the United States? Lindsay Grant, Dept. of State Coordinator for the landmark Global 2000 Report to the President, has collected essays on this topic by experts in various fields. Grant argues that this country makes political decisions on such issues as education, energy policy, transportation, or immigration without considering their demographic impacts. This is population policy making by default, and we should be aware of the potential results.

Several authors identify energy as a limiting factor in population size. David and Maria Pimentel point out that the U.S. achieves its high agricultural yields through a prodigious use of finite fossil fuel and ground water resources. Paul Werbos notes that renewable energy and conservation cannot fill the energy needs of an increased population at our present standard of living. Paul and Anne Ehrlich argue that due to wasteful technology and consumption patterns, Americans do much more damage to the planet than the more numerous third world poor. These chapters present a convincing case that the U.S. population should be reduced below current levels.

Other authors deal with urban population stresses, military readiness, and the already degraded environments of the Chesapeake Bay and Western U.S. Several chapters discuss the dramatic impact of immigration on US population growth. A section of the book is devoted to strategies to reduce population growth, and contrasting case studies are given of a relatively stable Europe and an increasingly desperate Central America. Grant provides an excellent summation of the points raised, and rebuts critics who claim that resources are inexhaustible and technology infallible.

This work is valuable both in focusing on what overpopulation means to the United States, and in providing information on specific aspects of the population problem. *Resources, Environment, and Population: Present Knowledge, Future Options.* Ed. by Kingsley Davis and Mikhail S. Bernstam. The Population Council and Oxford University Press, 1991. 423 p. bibliogs. ISBN 0-19-507049-6 (cloth), \$29.95. ISBN 0-19-507050-X

(paper), \$15.00. This publication is based on an interdisciplinary conference held at the Hoover Institution in 1989, and is published as a supplement of *Population and Development Review*, v. 16, 1990. The editors, senior research fellows at the Hoover Institution, have gathered experts from a variety of fields in the natural and social sciences to contribute to this work. Though the contributors seem to basically agree that both population growth and industrial development are harming the environment, they sometimes differ in their analysis of the problems as well as their suggestions for solutions.

An introductory article by the distinguished demographer Kingsley Davis critically examines the concepts of carrying capacity, limits to growth, and the demographic transition. Following is an article defining and analyzing sustainable development by Herman Daly, and articles critiquing population forecasting. Most of the rest of the selections deal with specific environmental problems related to population and development, such as water scarcity, energy, acid rain, climate, deforestation, species extinction, etc. Some present unusual viewpoints, such as one that finds ocean dumping less harmful than other alternatives. Others focus on particular regions, such as a comparison of Guatemala and the Sudan, soil erosion in China, and biomass burning in the tropics. The final section of the book looks at policies which may exacerbate population and environment problems and the difficulties of finding solutions. Some of these use Garrett Hardin's *"Tragedy of the Commons"* as a point of departure. Virginia Abernethy challenges the idea that rich countries should share resources with poorer countries, feeling it will fuel population growth. David and Maria Pimentel describe the undesirable side effects of the Green Revolution. Mikhail S. Bernstam and Elwood Carlson examine how Soviet style economics lead to declines in both environmental health and living standards.

This book is valuable for providing a critical examination of conventional thinking on population and the environment, and presents a wide range of viewpoints and information on specific areas of population/environment interaction. It is somewhat scholarly in tone, and is recommended more as supplementary reading than as a basic text.

Ponting, Clive. *A Green History of the World: The Environment and the Collapse of Great Civilizations*. St. Martins Press, c1991. 432 p. bibliog. index. ISBN 0-312-06987-1. \$24.94.

Over the ages civilizations have risen and fallen, leaving future generations to wonder what went wrong. Historian Clive Ponting suggests that increasing populations pushed local resources beyond sustainable limits, causing the decline of their civilization. The story of the mistakes of the past should be a lesson to us in the present day. Ponting sets the stage with the case of Easter Island, where population increase and a technology requiring large amounts of wood lead to deforestation, soil erosion, and the collapse of the population and their civilization. He then backs up to the beginning of history, explaining ecosystems, hunter-gatherer life, and subsistence techniques. Three core areas of the world--Southwest Asia, China, and Mesoamerica-- began the transition to agriculture and civilization as we know it. Drought prone areas such as the Mediterranean, the Indus Valley, and Mesoamerica could not sustain the intensive agriculture needed for large populations and became increasingly degraded. Areas with more resilient soils and friendlier climates such as Europe, China, and the Nile Valley proved more stable in the long run, but even they could only produce so much food. Large numbers of people lived on the edge of starvation, keeping population in check.

Europe broke out of this pattern when it began to conquer and colonize other areas of the world, particularly the Americas, where the native population was largely killed off by European diseases. The ability to

appropriate the resources and labor of other continents enabled Europe to improve its standard of living and indeed live well beyond its means. Lowered mortality rates caused population to shoot up, first in Europe, then in the rest of the world. Europe's population leveled off in the 20th Century, but in developing countries in neocolonial poverty, it continue to rise. The industrial revolution vastly increased the rate at which resources were extracted and used, and created massive quantities of pollution. Agricultural land is degrading at record rates.

Past civilizations went beyond the limits of their local resources. Is modern civilization reaching the limits of the planet? Signs of strain are increasing, while population continues to rise.

In examining the lessons of history, this book provides a unique perspective on questions of population and sustainability. Though not overly technical, it is a dense and rather formidable book. But it tells a fascinating story and the reader is amply rewarded for the effort.

## **STATISTICS**

*World Population Prospects*, 1990. United Nations, Dept. of International Economic and Social Affairs. Population Studies, no. 120. 607 p. bibliog. ISBN 92-1-151223-9. \$85.00.

This publication is the source of many of the commonly quoted population statistics found in other books and journals. It presents the results of the 12th round of United Nations population estimates and projects, a project which they undertake every couple of years.

Most of this book consists of detailed tables of statistics, organized by region and country, showing population estimates for every fifth year between 1950 and 2025. These include breakdowns by gender and age, and rural and urban residents. Also shown are median age, dependency ratios, population density, sex ratios, average annual change, life expectancy (both male and female), and rates for growth, births, deaths, fertility, reproduction, and infant mortality. There are four sets of data for each region and country for 1990 to 2025 which project figures based on low, medium, high, and constant growth rates. These varying projections are frequently referred to in other publications. There are a variety of other statistical tables in the book, generally comparing one or more of these factors between countries and regions, such as population projections or crude birth rates.

There is a summary of the data and major findings in the first part of the publication. Graphs are provided for some of the data, as well as a few simplified tables highlighting significant trends. Changes in the estimates between this and the 1988 population revision are noted. A detailed description of the demographic methodology used was provided in the 1988 edition and was not repeated in 1990, except to note changes. Sources of data for each country are noted. Since much of the information is provided by the governments of the individual countries, it might be wise to approach some of the statistics with scepticism. The immigration figures in particular look suspect.

This is the basic source for population statistics, and is the best place to look for figures on specific countries and regions. The data is also available on magnetic tape for \$350.00. Two subsets of data, Demographic Indicators, 1990 and Sex and Age, 1990 are also available on IBM or Macintosh diskettes for \$100 each.

*World Resources. A Report by the World Resources Institute in collaboration with the United Nations Environment Programme and the United Nations Development Programme.* Biennial. Oxford University Press. bibliogs. index. 1990-91 ed. ISBN 0-19-506229-9 (paper), \$17.95. ISBN 0-19-506228-0 (cloth), \$29.95.

*World Resources* is a frequently cited source of statistics on resource use and environmental issues all over the world. Though it contains information on all kinds of environment and development issues, most are directly or indirectly related to population and sustainable development. The volume for 1990-91 is divided into four sections. Part one gives an overview of the serious challenges facing the planet. Part two focuses more closely on specific issues. In this volume they explore climate change and the status of Latin America. The climate change section contains many charts and tables comparing the greenhouse gas emissions of various countries. The section on Latin America shows particularly the role of economic factors in the environmental problems of developing countries and how the restoration of democracy in many countries is providing an opportunity for environmental concerns to be heard.

Parts three and four are the heart of the publication. Part three reviews the status of a variety of resource issues beginning with population and health. Within each topic there are several shorter articles on related topics, text boxes highlighting particular issues, charts and graphs, and extensive bibliographical references. Other topics covered are human settlements, food and agriculture, forests and rangelands, wildlife and habitat, energy, freshwater, oceans and coasts, atmosphere, global cycles and systems, and policies and institutions. Supporting statistics for each of these chapters are provided in Part four. Colored tabs on the page edges provide for easy reference between each topic and the statistics that go with it. The statistics come from a variety of source, most in the population section come from the United Nations Population Division. Each table includes explanatory notes.

This work is a treasure trove of information and is an excellent compliment to other statistical sources on population. It includes not only the standard population statistics, but also related information on such things as education, child health, sanitation, land area use, agricultural production, food trade and aid, wildlife habitat loss, waste generation, freshwater reserves and withdrawals, and others. It is an excellent source for anyone seeking data on environmental and development issues. It is also available in machine readable form, on 5.25 and 3.5 inch formats, for \$119.95.

*The State of World Population*, 1990. United Nations Population Fund, 1990. 34 p. bibliography.

This is the 1990 issue of the annual UNFPA publication *The State of World Population*. Chiefly concerned with the current world population situation and status of population control efforts, this issue also examines the effects that growing human numbers are having on the environment. This publication is essentially a narrative summation of statistics which are presented in other United Nations publications. The statistics are explained in short topical sections, with many boldfaced subheadings. Important points are italicized, and there are charts and graphs, as well as tables of statistics on population and social indicators for countries and regions. The aim is to give the reader a quick grasp of the basic ideas.

In explaining the population situation, this work explains the real significance of the statistics, pointing out how many more people are living in marginal conditions and how the increasing numbers of people using the same resource base leaves fewer options open for future generations. Though food and energy production have thus far kept pace with population growth, the environmental impacts have been serious.

Meeting the food and energy needs of 3 billion more people by 2025 is predicted to have major impacts on land degradation, deforestation, and pollution, even if there is a reduction in resource use by the industrialized countries. Included are many specific suggestions for steps to reduce rapid population growth. Some are surprisingly simple, like reliable access to contraceptives. Efforts to increase child spacing and discourage teenage pregnancy can make a significant impact on population growth rates, and cut maternal and infant mortality rates at the same time.

This is an excellent source for any reader looking for a quick summary of the population problem, and is particularly strong in the area of population policy. Weeks, John R. *Population: an Introduction to Concepts and Issues*. 5th ed. Wadsworth, c1992. 579 p. bibliog. index. ISBN 0-534-17346-2. \$33.00. This is an introductory level college textbook, now in its fifth edition. It is intended for students with no previous experience in the field, so is an excellent source of background information for persons who want a better understanding of how population statistics and forecasts are figured and what their significance is.

The author describes the methods of population data gathering, and what possible errors or inaccuracies there may be. After covering the history of world population growth, he explains the main schools of thought on population theory (Chapters 3 and 13), which are extremely helpful in clarifying the positions held by various countries and individuals regarding population issues. Detailed discussions of fertility concepts and measurements are provided, along with explanations of sex structure, life chances, household structure, women, aging, and urbanization. While quite interesting, these chapters are oriented more towards practical socioeconomic applications rather than how they impact the planet.

Chapters 13 and 15 on economic development and population policies provide details on the interrelationships between economics and population and how countries may try to lower their rate of population growth. Both of these topics are of crucial importance to advocates of sustainable development. Chapter 14 on food and the environment provides a basic outline of the situation, but the topic is covered much more fully in other books.

Each chapter includes a summary and conclusions, a list of main points, and a short annotated bibliography. A more extensive bibliography, as well as a glossary, are provided at the end of the book. An excellent appendix explains how population figures are calculated, but the index could be more complete. The text is very readable and well organized, with welcome touches of humor.

## **SOLUTIONS I: SUSTAINABLE DEVELOPMENT**

World Commission on Environment and Development. *Our Common Future*. Oxford University Press, 1987. 383 p. bibliog. ISBN 0-19-282080-X. \$12.95.

The World Commission on Environment and Development, chaired by Gro Harlem Brundtland, Prime Minister of Norway, was commissioned by the United Nations to study and report on long-term environmental strategies for achieving sustainable development. This report, commonly referred to as the *Brundtland Report*, is a key document in its field.

The book begins with a lengthy summary of the Commission's findings and recommendations. The remainder is divided into three parts. The first explains the problem of growing numbers of people living in

poverty and the environmental stresses they cause, the growth of pollution problems in the industrialized world, and how global economic changes in the 1970s and 80s have slowed efforts to correct these problems. The concept of sustainable development is introduced, emphasizing the role of international political and economic cooperation in achieving it. In the second part, particular problems are examined in more detail, including population, food, species and ecosystems, energy, industry, and urbanization. In part three, topics include managing the global commons, the relationship between militarization, development and the environment, and proposals for institutional and legal changes. Sprinkled throughout the text are statements by a wide variety of people who spoke at the World commission public hearings, which were conducted in cities in five continents.

The focus of this work is on environmental problems as problems relating to uneven global economic development, and who's solutions lie in concerted international action by governments and industries. Information was synthesized from a wide range of sources. Though it has the dryish tone of an official report, it does have a sense of urgency rarely found in such a document.

*State of the world: A Worldwatch Institute Report on progress toward a sustainable society.* Annual. W.W. Norton & Co. bibliog., index. \$11.95 (1994 ed.)

This highly respected publication, published under the direction of Worldwatch president Lester Brown, has since 1984 presented an annual collection of articles on the world's progress (or lack of it) towards a sustainable society. Though most of the articles are not specifically about population, they are generally on related subjects, and the connection with population is frequently cited.

The 1994 issues does focus more than previous issues on population woes. The forward mentions the Cairo Population Conference and the lead article is on the carrying capacity of the planet, where the link between population stabilization and sustainability is explicitly made. Other related articles in this issue focus on forest policy, safeguarding the oceans, energy and transportation, and food insecurity, which comes full circle in addressing the question of planetary carrying capacity and population growth.

The articles are clear and readable, and are aimed at an audience of non- specialists. There are supporting graphs and tables all through the text, and a list of them at the beginning of the book makes them easy to find. The graphs and tables from this book and other Worldwatch publications are available on 3 1/2 and 5 1/4 inch diskettes for IBM compatible computers for \$89.00 from the Worldwatch Institute. *The State of the World* is also available in 27 other languages.

Ramphal, Sridath. *Our Country the Planet: Forging a Partnership for Survival.* Island Press, 1992. 291 p. bibliog. index. ISBN 1-55963-165-1 (cloth), \$32.00. ISBN 1-55963-164-3 (paper), \$15.00.

Our Country the Planet was published on the eve of the Rio Earth Summit as a plea to the industrialized world to assist the developing countries in overcoming the poverty that causes them to degrade the environment just for daily survival. The author, Sir Shidath Ramphal, president of the World Conservation Union and former foreign minister of Guyana, has served on five independent international commissions on global issues, including the Brundtland Commission. He has a deep understanding of the problems of the third world and their perspectives on the global environmental crisis.

Ramphal discusses the major world environmental problems and shows how the industrialized countries with their excessive consumption of natural resources have caused most of the environmental damage. They need to moderate their consumption, and they have the technological and financial means to do so. However, the poor countries, forced by crushing foreign debt payments, trade barriers, and population growth to consume their resources at unsustainable levels, need assistance from the wealthy countries if they are to improve their environmental situation.

Population is linked to economic development. Only when people have economic security, the status of women is improved, and child mortality rates are low do birth rates drop to more manageable levels.

Because this is a global crisis, the author states, the rich and poor nations of the world must work together. He writes of the necessity for international cooperation and on the ethical obligation to go beyond national boundaries and see the entire planet as our country. The rich countries of the world cannot abandon the poor countries if we are to have any hope of solving the world's environmental problems and living sustainably on the Earth.

This is an eloquent and compassionate book, valuable particularly for providing a voice for third world concerns.

Piel, Gerard. *Only One World: Our Own to Make and to Keep*. W. H. Freeman and Co., 1992. 367 p. bibliog. index. ISBN 0-7167-2316-6. \$21.95.

The author of *Only one World*, Gerard Piel, is the founder of the modern *Scientific American*. He is a technological and social optimist and, despite the serious threats facing the environment, he feels that population control through economic development is achievable if nations will work together to solve their problems.

Piel brings his background in science to bear in his explanation of the biology of the planet, origins and evolution of life, and the various forms of environmental destruction now facing the Earth. The bulk of the book, however, is devoted to the problem of helping poor countries join the industrial revolution and raise the standards of living of their people, thus enabling them to reduce their population growth. The industrialized countries have done a poor job of leading the way, given their excessive consumption and pollution, Cold War manipulation of the developing countries, and reneging on their promises of foreign aid. The only things they have proved willing to export are armaments and the labor-intensive manufacturing jobs of their own citizens, the driving force being corporate profits rather than development assistance. Analyzing the situation in several world regions, however, the author finds much reason for hope. Several countries are on the brink of industrialization with declining birth rates, though they still have many impoverished citizens. Included among this group are China and India, the two most populous countries, which had been considered hopeless cases by many writers on the population situation. The other success stories are the Southeast Asian countries, which are in Japan's economic sphere of influence.

One thing that these countries have in common is a strong governmental economic policy. On the other hand, the relatively high GNP's of the Arab countries and Latin America have done little to raise living standards of most of their people, and Africa shows little progress of any kind. The author also examines the two most pressing problems related to population growth-- agriculture and energy, but finds hope in

technological advances and prudent management. Population will eventually stabilize, but it will make a great difference to the environment whether it stabilizes at 10 billion or 20 billion. Despite all of the difficulties described, there is a refreshing sense of optimism in this book.

*Population, technology, and lifestyle: the transition to sustainability.* Ed. by Robert Goodlund, Herman E. Daly, Salah El Serafy. Island Press, c1992. 154 p. bibliog. index. ISBN 1-55963-199-6. \$19.00.

This book is a response to the Brundtland Report's recommendations on sustainable development. The editors, all from the World Bank, are experts on environmental development issues (Herman Daly is the author of *For the Common Good*, the basic text on the economics of sustainable development). Their aim, and that of the other contributors, is to bolster the case for a rapid transition to sustainability, and suggest specifics of what is needed to achieve it.

The first couple of chapters discuss the limits we face on the Earth. With population and pollution increasing dramatically, urgent steps are needed to stop and possibly reverse population growth and decrease "throughput," that is, use of energy and natural resources and their associated environmental degradation. Several authors cite a study which found that humans were already directly or indirectly using about 40% of land plant production. A single doubling of population (predicted in 35 years) would result in 80% use, with 100% shortly thereafter. Thus, the world may be effectively "full" in less than 40 years.

The rest of the chapters in this volume concern the economics of sustainable growth, dealing with such topics as how the GNP and market prices send the wrong economic signals, environmental evaluation of development and investment in the third world, and accounting for "natural capital." Several authors refute the claim that economic growth in industrialized countries will enable developing countries to grow their way out of poverty. On the contrary, the authors assert that industrialized countries need to assume a pattern of negative growth (though they may continue to develop) in order to free up resources for the developing countries to reach an acceptable standard of living. This will be politically difficult, but environmental limits will eventually force a decision, and it is better to plan an orderly transition now. Some of the chapters are rather technical and will be easier for readers with some familiarity with economics. However, since many arguments used against environmental protection and sustainable development are economic ones, this is a useful source of information on the economic necessity of protecting the environment.

## **SOLUTIONS II: IS SUSTAINABLE DEVELOPMENT ENOUGH TO AVERT DISASTER?**

Hardin, Garrett. *Living within Limits: Ecology, Economics, and Population Taboos.* Oxford University Press, 1993. 339 p. bibliog. index. ISBN 0-19-507811-X. \$25.00.

Biologist Hardin is the author of the famous essay "*The Tragedy of the Commons*," a landmark work in the environmental field. This showed how an unregulated village common pasture was inevitably overgrazed when each individual farmer tried to maximize his own profits by adding more cattle. In this book he expands his thesis to other economic and environmental problems related to population.

Using logic and simple mathematics, Hardin demonstrates the impossibility of escaping from the limits of the earth's carrying capacity by such means as space travel, or "free" nuclear energy. He then turns to the impossibility of long term exponential growth, demolishing economic theories of compound interest and

economic growth along the way. This section of the book makes a powerful case that a continuation of present trends in resource use and population will be disasterous.

Hardin continually evokes Malthus and the "natural" population control of disease and starvation. He feels that individuals reap the benefits of childbearing while externalizing the costs onto society as a whole-- a repeat of the tragedy of the commons. Only when children bring economic hardship will people lower their birthrate. He is a critic of the demographic transition theory, and thinks food aid is foolhardy. He believes that as population in the third world increases, the demands for aid will only escalate, and the industrialized countries risk impoverishing themselves with irrational and misplaced compassion. He believes we should end foreign aid and immigration and leave developing countries to be responsible for themselves and solve their population problems as they see fit. This may involve letting nature take its course, i.e. allowing people to starve.

This is a controversial point of view (some might term it ecofascist) by a leading figure of the neo-Malthusian wing of the of the population field. The ideas are horrifying, but thought-provoking. The book is intended for a popular audience, and should be read by persons who wish to be familiar with the whole range of opinions on population control.

Abernethy, Virginia D. *Population Politics: the Choices that Shape our Future*. Insight Books, c1993. 350 p. bibliog. index. ISBN 0-306-44461-5. \$26.50

Does aid to developing countries actually fuel the population explosion? Is the demographic transition model completely wrong? These are among the questions asked by Virginia Abernethy, anthropologist and editor of the journal *Population and Environment*. She challenges the traditional assumptions of demographers, development experts, and economists that economic development, lower infant mortality rates, and education can slow down birth rates.

The author examines the modern countries which have achieved low fertility rates and finds that birth rates lowered before death rates did, responding to diminishing resources rather than increased survival chances of their children. Times of increased economic opportunity produced high birthrates, followed by falling rates as the economic picture worsened. In the absence of contraceptives, crude birth control methods were used, such as long lactation periods, withdrawal, abstinence, abortion, abandonment, and infanticide. She finds the same pattern in developing countries, whose birth rates were lower before examples of western affluence, promises of aid, and opportunity to emigrate raised expectations. Falling birthrates can now be attributed to increasingly desperate circumstances rather than the success of development aid.

The last few chapters of the book concentrate on the United States and the affects of immigration. The United States population, already swollen by the ranks of the baby boomers and their children, will find most of its future growth from immigration. The US could set a good example of a sustainable society, but we are already beyond the carrying capacity of the land, and environmental damage is increasing quickly. Further population growth, she says, will make it impossible to reduce energy use and pollution, because all per capita decreases are offset by rising population. In addition, she finds that immigration hurts American workers, overloads the infrastructure, and stresses the social fabric.

This book offers controversial views, but they are clearly stated and the arguments well supported. It does not offer much in the way of solutions to the population problem-- the assumption seems to be that third world countries will solve their problems only when the industrialized countries cut off aid and immigration. Still, it is a useful addition to the population debate, and since the immigration issue is heating up again in the United States, is a timely addition to the literature which both sides of the issue should be familiar with.

### **OPPOSING VIEWS: IS POPULATION GROWTH THE PROBLEM?**

Simon, Julian. *Population matters: People, Resources, Environments, and Immigration*. Transaction Pubs. c1990. 577 p. bibliographical references and index. ISBN 0-88738-300-0. \$34.95.

Julian Simon, a professor of business administration at the University of Maryland, is a long-time critic of efforts to control population growth. In this book he has collected a series of essays, mostly previously published, on various aspects of the population and natural resources question. His major point is that natural resources are not finite. Population increases cause temporary scarcities, but this forces people to find new sources or invent substitutes, which increases wealth and resources for all.

Simon presents many statistics to support his views. He considers price to be the only meaningful measure of scarcity, and by this measure natural resources have become more, not less abundant. He finds no correlation between rapid population growth and slow economic growth. On the contrary, the quality of life for people worldwide has increased. He sees no reason that these trends should not continue indefinitely as long as governments don't interfere with the free market economy. Human intelligence will overcome any environmental difficulties. Some of Simon's conclusions will surprise readers. He finds a decrease in air pollution and an increase in prime farmland and forest lands. He denies that soil erosion, desertification or species extinctions are problems. Disappointingly, the greenhouse effect and ozone hole are not mentioned.

More disappointing is his paranoid tone in discussing population control advocates. He does quote at length from critics, but prefaces their remarks by claiming that they are personal attacks. He feels he relies on scientific fact for all of his views, but his opponents have a political ideology to promote, namely, to increase government controls and limit individual freedom. He hints at other hidden motives, but does not specify, and levels charges of corruption against various organizations.

Though the author had no affiliation with the Reagan administration, he shares many of their views, and the book provides valuable explanations of many of that administration's positions. The numerous essays are quite repetitious. Still, it will provide excellent practice at critical reading skills. Hartmann, Betsy.

*Reproductive Rights and Wrongs: The Global Politics of Population Control and Contraceptive Choice*.

Perennial Library, c1987. 368 p. bibliog. index. ISBN 0-06-096171-6. \$10.95. Author Betsy Hartmann spent several years living in villages in Bangladesh and India, experiencing first hand the hard lives of third world women. The obsession of governments and western aid agencies with population control, the author asserts, has led to the violation of basic human rights of many poor women all over the developing world.

Rapid population growth is not a normal condition, Hartmann states, but is rather a symptom of poverty and inequality. The problems of starvation and environmental degradation, blamed on the rising number of poor, are instead caused by unequal land distribution. The legacy of colonialism has left developing countries with

an elite class who owns most of the land and grows crops for export, pushing the poor into marginal areas. When the poor demand their rights, the resulting "political instability" is blamed on overpopulation. The rich want to control the numbers of the poor because they are a threat to their power.

Ironically, poor women want family planning services and safe, legal abortion to space children and limit their number. International aid agencies' single-minded pursuit of population control at the expense of basic health care, education, economic reform, and women's social equality ignores the very things which help women to not need large families for economic survival. But it is more politically expedient than challenging the power structure to bring about those reforms.

Hormonal birth control methods and IUDs are pushed on women without adequate medical supervision, and many experience side effects and stop using them. The safer, but less profitable barrier methods are frequently unavailable. Government workers are often given quotas of birth control or sterilization clients that they must recruit. This encourages abusive practices such as bribing or coercing people to agree to sterilization, often without telling them it is irreversible. Many people become disenchanted, resulting in a popular backlash against all forms of family planning. The author offers case studies from several countries as illustrations of the right and wrong ways to deal with the population problem.

Hartmann raises disturbing questions about population control efforts in developing countries. She charges that Western population control experts condone abuses which would never be tolerated in their own countries. This book should be read by anyone with an interest in population policy and human rights.

#### **NON-BOOK SOURCES: Periodicals**

*Population And Environment: A Journal Of Interdisciplinary Studies*. Human Science Press. Began in 1980. Bimonthly (formerly quarterly). ISSN 0199-0093. 1 year subscription (academic year 1992-93) \$45.00 (individual), \$55.00 (individual outside the US), \$185 (institutional), \$215 (institutional outside the US)

This journal, which was formerly published under the title of *Journal of Population*, describes itself as "a journal that focuses primarily upon the linkages between demographics and environmental variables." It is an academic rather than popular journal, but the articles for the most part are quite accessible and packed with information.

The articles in each issue vary in style, intent, and length. Most fit into the mainstream environmental views on population, but some advocate drastic measures to curb population growth. There is a particular emphasis on immigration, as one would expect in a journal edited by Virginia Abernethy. Despite the title, the topics covered also vary widely. Some are pure demographics, some focus on economic issues, and some address specifically environmental concerns. Most include a bibliography, some have an abstract. Illustrations are confined to maps or graphs. Some issues have book reviews, others have a feature called "Private Bag, a special section for correspondence and controversy." This has included guest editorials and in one issue, testimony on the immigration reform bill.

Recent topics covered in this journal have included a critique of the Brundtland report's optimism about raising third world living standards, a refutation of Julian Simon's view that prices are a valid indicator of resource supply, obstacles to a simpler lifestyle in industrialized countries, population growth trends in India,

the impact of infertility caused by the Bhopal disaster on the lives of women, a comparison of seasonal birthrates in Canada and the Northern US, management issues in Nepal's parks and preserves, and the impact of immigration on U.S. wages. Volume 14, no. 1 (Sept. 1992) had an outstanding article by Robert

McConnell on the deterioration of California's environment caused by factors related to overpopulation, particularly increased motor vehicle use, military activities, and business and industrial activities. Volume 13, no. 4 contained four articles on prehistoric impacts of overpopulation in the Mediterranean and the Americas.

This small but interesting journal has recently expanded to a bimonthly schedule to accommodate the growing amount of research in this field. It is well worth seeking out for its thought-provoking articles on specific aspects of the population problem. *Population Bulletin*. Population Reference Bureau. Began in 1945. Quarterly. ISSN 0032-468X. Distributed to members of the Population Reference Bureau. 1993 U.S. membership rates: \$45.00 individual, \$30.00 educator, \$25.00 student/senior, \$55.00 library/nonprofit institution, \$200 other organizations. Single issues \$7.00.

The Population Reference Bureau (PRB) is a private-nonprofit organization dedicated to the dissemination of objective demographic information. It produces this highly respected series, each issue of which deals with a single topic. The format is that of a long essay or short book, averaging around 40-50 pages. There are a variety of excellent statistical charts and graphs, as well as illustrations and tables of statistics. Sections of highlighted text serve to explain further details within a topic. There is an abstract of the contents of each issue, and a list of suggested readings. The essays themselves are concise and readable, and there is a list of discussion questions at the end of each issue, making them excellent educational tools.

Many recent issues would be of particular interest to environmentally concerned citizens. Robert Repetto's "*Population, resources, environment: an uncertain future*" (v. 42, no. 2, July 1987) provides an excellent overview of the relationship between environmental degradation and increasing population pressures. This issue was updated and reprinted in July 1991. "*Food and population, beyond five billion*" by Peter Hendry (v. 43, no. 2, April 1988) describes the efforts to produce higher yields on land which is degrading under the pressure of intensified cultivation. "*Population and water resources: a delicate balance*" by Malin Falkenmark and Carl Widstrand (v. 47, no. 3, Nov. 1992) shows how growing populations place additional stresses on water supplies in countries already subject to drought. "*China's demographic dilemma*" (v. 47, no. 1, June 1992) explains China's controversial birth control policies, while "*Africa's expanding population*" (v. 44 no. 3, Nov. 1989) describes the precarious situation of that continent.

Educators will find this a very valuable resource. *Population Today: News, the Numbers, and Analysis*. Population Reference Bureau. Began in 1984. 11 issues per year. ISSN 0749-2448. Distributed to members of the Population Reference Bureau (see *Population Bulletin* for details). This monthly newsletter of the Population Reference Bureau was formerly published under the title *Intercom*. It features short articles, mostly reporting the latest demographic issues and their importance. Concise and informative, they are filled with relevant charts and statistics and are a good way to keep up on population trends and their significance, either environmental, economic, social or political. Each issue features an article spotlighting the population situation in a particular country, with vital statistics. There are also short news items, announcements of upcoming events, and lists of recently published books. December 1992 included a review of important developments during 1992, as well as an index for the year. A look in the index under "Environment" lists articles on the Rio Summit, water supply issues (excerpted from an issue of *Population*

Bulletin), the effect of population growth on CO2 emissions, and United Nations statements linking population and the environment. Especially valuable is a highlighted section in each issue giving the latest available population figures. For example, March 1993 reports the estimated U.S. population as of Nov. 1, 1992 (256,410,000), the figure from one year previously, estimated world population, and latest provisional statistics from the U.S. on live births, deaths, natural increase, marriages and divorces. Though this section is buried toward the back of the issue and may be difficult to locate at first, it is the place to look if you need current statistics.

This publication should be of interest to anyone following current developments in the population field.

*The ZPG Reporter*. Published by Zero Population Growth, Inc. 6 issues yearly. ISSN 0199-0071. Distributed to members (1994 dues: \$20, \$10 student and seniors).

This is the newsletter of Zero Population Growth, a national nonprofit organization. It features articles and short news items on a variety of topics related to population growth and its effects on the economy and the environment.

This is a publication aimed to encourage citizen activism in population policy. Following most feature articles is a highlighted box entitled "What you can do", containing suggestions for citizen actions. These may include standard environmental remedies such as recycling or riding a bike, to suggestions and sample letters to write to the media or government officials. Members are also encouraged to get involved with their local ZPG chapters. Extra copies of the newsletter are available to members for distribution to libraries, community centers, etc.

This is an invaluable source for citizens looking for ways to make their voices heard in national population policy.

## **VIDEO SOURCES**

*What Is The Limit?* A production of the National Audubon Society, Washington D.C. Produced by State of the Art, Inc. Produced and directed by Tom Goodwin, c1987. VHS, color, 23 mi. \$25.00.

Peter Berle, president of the National Audubon Society, hosts this look at population's impact on the environment. Human activities are changing the face of the planet, and the 9000 people being born per hour in the world will significantly add to these changes. Development must be sustainable, and the industrialized and developing countries are dependent on each other to achieve a sustainable world.

The video quickly covers the pertinent facts in the population/environment connection-- the rapidly accelerating rate of population growth after the 1880s, overconsumption by the industrialized countries, and the high rates of population increase in the poorest countries who can least afford it. Humans have basic needs for fresh water, food, a safe place to live, health care, a chance to learn, and a job. Poor people all over the world lack these basics, and supplying them becomes increasingly difficult when population is increasing rapidly. Humans already make huge demands on the resource base, and that will only increase as the needs of more and more people must be met. Air pollution caused by more and more cars and industry is causing health problems, poisoned lakes and streams, disruption of the ozone layer, and possibly climate

change. Water resources are already overtaxed and existing supplies are being polluted. Topsoil is being lost at alarming rates as the land is pushed to provide more food. Tropical forests are being destroyed for fuelwood and cash. Hundreds of thousands of species will be lost, but that means little to a hungry farmer struggling to feed his growing family.

The final part of the video raises ethical questions about the inequality between rich and poor countries, community needs versus individual rights, and the need for military expenditures. The United States stopped being a world leader in population control in the 1980s, and several congress people give their opinions on the issue. As a touch of irony as the credits roll, voices are heard expressing commonly-held opinions asserting that population control is unimportant.

This video is an excellent introduction to the subject, providing an overview of the major points in a relatively short running time.

*The People Bomb*. Cable News network, originated by Ted Turner. CNN Special reports, c1992. VHS, color, 90 min. Available from Turner Multimedia Library. ISBN 0780603753.

This lengthy but informative documentary presents reports by CNN correspondents around the world on the root causes of overpopulation and the successes and failures of population control efforts. It places a special emphasis on the role of the low status and powerlessness of women in developing countries, and sees their education and empowerment as key to population control. Many women want small families, but lack of information, lack of access to contraceptives, and cultural barriers prevent them from having control over their fertility.

The opening segment features Paul Ehrlich's comment that it isn't just the number of people that is important, but how much impact each person has on the planet. A large, poor family in Nepal is contrasted with a small upper middle class family in California, in which each individual consumes 30 times as much as their Nepalese counterparts. This is what makes the U.S. overpopulated with only 250 million people.

Other reports focus on people in various developing countries. A family living on the violent streets of Rio De Janeiro or in the isolated mountain of Bolivia have little accurate information on birth control. Ethiopian women die from illegal abortions because they cannot afford contraceptives, and taboos against discussing sexuality are strong. High infant mortality rates in Nepal encourage women to endanger their health by having as many children as possible. Daughters in India receive much less care and education than sons, and are taught to have a negative self-image. Sons are strongly preferred, leading to abortions of female fetuses, female infanticide and abandonment. The Indian government, alarmed at rapid population growth, forced or tricked people into being sterilized often under unsafe and unsanitary conditions. Many people have died of complications. The Phillipines successful birth control program was derailed by the Catholic Church. Machismo culture in Mexico encourages men to prove their virility by fathering many children. Indonesia's aggressive family planning program has curbed their birthrate, but coercive practices could cause a backlash. Kerala's success at birth control despite its poverty seems to rest on education for women, and good health and nutrition programs.

This is a good introduction to the problems inherent in solving the population problem, and is recommended for viewers with stamina interested in working for solutions.

*When The Bough Breaks*. Produced by Lawrence Moore and Robbie Stamp. A Central Observer Production made in association with the Television Trust for the Environment. Distributed by Bullfrog Films, 1990. VHS, color, 52 minutes. ISBN 1-56029-400-0. \$295.

This British-made documentary argues that the children of the world are the most vulnerable victims of a degraded environment. There are currently two billion children under the age of 16. Aid workers, political activists, child advocates and others explain the dangers and hardships that face these children, but the most moving evidence comes from the children themselves.

The video is divided into six sections, each concentrating on a particular threat to the well-being of children. Part one focuses on severe pollution in Poland where there are high rates of premature and stillborn births and sick children. Included are films of women giving birth and photos of stillborn infants with birth defects. Part two explains the difficulty of obtaining clean water for drinking or washing in places like New Delhi. As a result, five million children per year worldwide die from diarrhea. Part three follows an Eritrean family in a refugee camp, fleeing war and desertification. As global warming changes weather patterns, more families will be forced to leave their homes. Part four shows the impact of the international debt crisis on a Bolivian family, where the children must work to support the family after the state-supported tin mines closed.

Part five on population notes that with three people born every second, the 1990's will see the largest number of children ever born in history, but on a planet with increasingly limited resources. People in rich countries consume a disproportionate share of those resources, while in poor areas, people have more children to maximize the labor force in their own family just to survive. The population problem tends to correct itself when people can earn an adequate income and be assured that their children will live. But poor people have little control over their lives, and women cannot choose the number of children they have. The Reagan administration blocked international family planning aid. The video closes with interviews with children in the US and UK who are concerned about the environment.

This is a powerful and persuasive film, and makes no secret of its disapproval of the political priorities of the industrialized countries. There are frequent statements comparing such things as military spending or cigarette advertising budgets to amounts of money necessary to make significant improvements in the lives of children. Though perhaps a bit strong for small children, this is worthwhile viewing for people young and old. *Race To Save the Planet*. Save the Earth, Feed the World. Produced by Andrew Liebman, Jane West. Directed by Andrew Liebman, et al. WGBH Science Unit. c1990. VHS, color, 60 min. \$29.95. This episode of the television series *Race to Save the Planet* focuses on agriculture and food supply. It states that though population has doubled in the last 50 years, food production has tripled. However, population will double again soon, while modern agricultural methods are proving to have serious environmental costs.

Some of these environmental costs are illustrated by examples from around the world. Pesticide spraying in California's Central Valley has caused wildlife poisonings and is suspected of causing clusters of cancer cases in the area. The Green Revolution in Indonesia provided improved strains of rice to keep yields growing faster than population, but pesticide use and year-round rice cultivation lead to a huge increase in pesticide-resistant insects. Australia has the dubious distinction of having the highest per-capita amount of damaged agricultural land. Cattle ranching encouraged deforestation and importation of higher-yield non-native grasses. In combination with drought and overgrazing, this led to severe erosion. Soil erosion is also a problem in the American Midwest, where 40 million acres were affected by the Dust Bowl of the 1930s. The

land recovered with improved farming practices, but these were again abandoned as demand for grain increased. Soil erosion is again a problem, and farmers try to make up for lost soil by increasing use of chemical fertilizers. In the Sahel, food production has declined by one fifth due to deforestation, drought, and abandonment of crop rotation. The people are now planting trees, building rainwater dams, and trying to curb their high birthrate. As Lester Brown of the Worldwatch Institute points out, population and food supply cannot both increase forever.

Examples of organic farms in North Dakota and California, as well as an historical farm in Massachusetts, show alternatives to modern chemical farming methods. Biotechnology is also examined, but it will not provide all the answers. New food supplies are now growing more slowly than population, and farms are being pushed harder to produce.

Though the emphasis in this video is on agriculture, the population issue is never far away. Since food supply is a critical factor in the population question, it merits a closer examination, and this video is a good introduction to the problem.

## **SOURCES FOR CHILDREN**

Becklake, John, and Sue Becklake. *The Population Explosion*. Gloucester Press, 1990. 36 p. index. ISBN 0-531-17198-1. \$12.90.

This book is part of the Green Issues series. Presented in a large, attractive picture book format, this publication is an excellent introduction to this subject for children.

The work is divided into four short chapters. The table of contents includes a summary of each chapter. The chapters themselves begin with a set-off column of large-type text emphasizing the main ideas. Small text boxes throughout the chapter highlight particular points, such as famine and debt, or illiteracy rates. There are also two excellent double page color charts, with explanatory text, one showing world population growth over time, the other mapping population and growth rates by country. These graphics are more expressive to young readers than just statistics. A glossary is also included.

The book covers such topics as why the population explosion is an important issue, damage done to the environment by industrialization and overpopulation, efforts being made to control population growth, and what may happen if those efforts don't succeed. There is a special emphasis on why birthrates dropped as countries became industrialized and individuals had better health care and more financial security, and how that compares with the situation in poorer countries. This explanation of the human side of this demographic transition is a strong point of this book. The text is clear and readable and makes its points succinctly. It should appeal to children in upper level grade school.

Blashford, Jean F. and Wallace B. Black. *Too Many People?* Children's Press, c1992. index. ISBN 0-515-05513-5. \$26.60.

This entry in the *Saving Planet Earth* series addresses the environmental effects of world population growth. The authors, who were also responsible for the other books in this series, were the same team who produced the *Young People's Science Encyclopedia*. Here they have worked with technical consultants from

the Population Reference Bureau. They have also included opposing viewpoints, so as to present a broad range of opinions to the young reader.

The book explains the significance of population growth rates and the impacts these rising numbers have on deforestation, soil erosion, poverty, disease and starvation, particularly in the developing countries. The effects upon children are emphasized. Food is an important issue and the authors explain the limitations of the green revolution and the wider effects of environmentally expensive eating habits in the wealthier nations. Industrialized countries are cited for their use of environmentally destructive technology, causing pollution and global warming. Stressing the importance of family planning, the authors offer simple explanations of a wide range of birth control options. Throughout the book are areas set off from the rest of the text, highlighting facts and figures, or presenting simple experiments that the student can perform to illustrate such text points as the importance of nutrients to crops or the differences in wealth between rich and poor nations. The authors present suggestions for actions children can take to contribute to achieving a sustainable society, including consuming fewer products, conserving energy, and eating less meat. Included are instructions on how to write to legislators, a list of governmental addresses for the US and Canada, and a list of concerned organizations.

This is a highly complex and controversial topic and the authors have done an admirable job of simplification, though there are still a great many statistics to contend with. A glossary of demographic terms is included. The book is well illustrated with sometimes disturbing photographs. This work appears to be intended for motivated upper grade school students, but given the difficulty of the subject, could still be profitably read by junior high school age students.

Bernards, Neal, *Population: Detecting Bias*. Curriculum consultant, Jo Anne Buggey. Greenhaven Press, c1992. 36 p. bibliog. index. ISBN 0-89908-622-5. \$10.95.

This book is one of the *Opposing viewpoints* junior series, which is designed to teach critical thinking skills. Each book in the series is designed around one particular skill, illustrated by a particular topic.

This book is on detecting bias in the population debate.

After an introductory section defining bias, sample pro and con arguments are presented on overpopulation and the future of humanity, world resources and population, root causes, and the need for family planning programs. Marginal notes comment on the tone of the language, use of loaded words, use of supporting data, etc. to attempt to get the student to recognize how the issue is being argued and how the writer's opinions slant the argument. There are student activities at the end of each chapter, including one how to detect bias in editorial cartoons.

It is not clear whether the arguments presented in the book were written specifically for the purpose of illustrating bias, or whether they represent real writings which are being excerpted. As no credits are given, one suspects the former. They are simpler and more obviously biased than most adult population literature, but probably more restrained than the comments on many talk-radio programs. Also included is a short bibliography, mostly of periodicals articles, and a list of organizations on both sides of the population issue.

Even though the emphasis is more on teaching than on population, this is a good introduction to the most basic issues of the population debate, as well as excellent guidance on how to "read between the lines." It is especially recommended for upper level grade school or junior high school students, though many teens and adults could learn something from it as well.

Gallant, Roy A. *The Peopling of Planet Earth: Human Population Growth through the Ages*. Macmillan, c1990. 163 p. bibliog. index. ISBN 0-02-735772-4. \$15.95

This work offers a history of world population from its origins to the crowded present. Roy Gallant, author of more than 70 books on scientific subjects for children, presents the problem from a very Malthusian viewpoint.

The author explores the creation myths of various cultures and early scientific theories of the origin of life. He traces the origins of the human species from the earliest fossil remains, explains the transition from hunter gatherer to farmer and the rise of ancient cities, and shows how humans spread to every habitable part of the planet. Along the way he introduces the concept of the carrying capacity of the planet. Using Europe from the middle ages through the 19th century as an example, the author illustrates the geometric growth of population and the constraining factors of famine, disease, and war. There are excellent charts explaining growth curves and age structure. Though there is a chapter on climate change, ozone depletion, and acid rain, the author emphasizes the rapid growth in third world countries and its associated problems of drought, desertification, and deforestation. He notes that population growth has slowed in the industrialized countries, but feels that it is unlikely that the developing countries will be able to control theirs, a situation which will lead to huge numbers of people living lives of misery and starvation.

This work is more pessimistic than most children's books on this topic. It seems to imply that population is only a third world problem and doesn't really discuss possible solutions. Still, the historical perspective is quite valuable. It also contains an excellent glossary, and the bibliography would be useful to both children and adults. The book is probably best for junior high and high school age students.