Is There a Population Problem?

by Albert A. Bartlett

This is Albert Bartlett's revised version of an article that was published in Wild Earth: A journal for creatures who care about their habitat,. *(P.O. Box 455, Richmond, Vermont, 05477) Vol. 7, No. 3, Fall 1997, pp. 88-90.*

My answer to the question is "YES" there is a problem. The scale of human activities is now so large that we are appreciably affecting the climate and ecosystems in the U.S. and the world.

The total impact of people on the environment is proportional to each of two factors:

A) The number of people, and

B) The average impact of each person.

If we are to reduce the total impact of people on the global environment, we must address the first, or preferably both, of these factors.

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There are many strong forces that will cause continued growth of the average impact of each person on the global environment. To the extent that people in underdeveloped countries seek to increase their material standard of living to levels more like ours, material consumption per capita will grow. So we are left with the imperative of halting population growth, and then of studying the question, "Can this stable population be sustained?"

To gain a better appreciation of the seriousness of the problem, let us review some very elementary arithmetic. Let us consider a quantity that is experiencing steady growth at a rate such as 5% per year.

First we note that this growing quantity will double in size in a fixed time. This doubling time is found by dividing 70 by the percent growth per year. For example, the doubling time for a steady growth rate of 5% per year is 70 / 5 = 14 years.

Second, we note that a few doublings can give enormous numbers. It is convenient to remember that ten doublings causes the growing quantity to increase in size by a factor of approximately 1000: twenty doublings will cause an increase by a factor of 1,000,000, etc.[2,3]

Let us look at some current [1997] approximate data (see box).

	United States	World
Population	270 million	5700 million
Annual Increase	3 million	90 million
Annual Growth Rate	1 % per year	1.6 % per year
Doubling Time	70 years	44 years

The smallness of the annual growth rates is both deceiving and disarming. We might initially think that surely nothing bad could happen at growth rates as small as 1 % or 1.6 % per year. A study of the doubling times brings us back to reality. If the world population continues to grow at its present rate, it will double before today's (1997) college students are my age (74)! Think what this means in terms of food and resource consumption.

Population growth rates do not remain constant; they change in response to physical and social factors. The world population growth rate was close to zero through most of human history, and it started to increase significantly a few centuries ago. Around 1970 it reached a high of

about 2 % per year, from which it has recently declined to the estimated 1.6 % per year. Detailed social studies and more elegant mathematical models can give us insight into the mechanisms that affect these rates of growth.

Why, then, do we need to look at the simple models of constant growth rates?

First, they are a useful, though approximate, representation of the facts.

Second, we in the United States are in a culture that worships growth. Steady growth of populations of our towns and cities is the goal toward which the powerful promotional groups in our communities continuously aspire. If a town's population is growing, the town is said to be "healthy," or "vibrant," and if the population is not growing the town is said to be "stagnant." Something that is not growing should properly be called "stable." Yet, the promoters of growth universally use the word "stagnant" to describe the condition of stability, because "stagnant" suggests something unpleasant while "stable" would suggest something worthwhile, pleasant and desirable.

Since continued growth is the goal of the promoters in our communities, we should understand the arithmetic of steady growth.

Now let's look at some global aspects of our population problem.

1) GLOBAL WARMING

There is a growing scientific consensus that the early phases of global warming may be upon us now. With each passing year, our knowledge of the situation will increase so that we will know better if the earth is warming, and if so, how rapidly change may occur. Whether or not the earth is warming, it is clear that by pouring increasing quantities of greenhouse gases into the earth's atmosphere each year, we are embarked on a global experiment whose outcome we don't know. We don't know if the effects of increasing the greenhouse gases in the earth's atmosphere are reversible. We don't know if the atmosphere go back to its pre-industrial condition if we stopped all emissions of greenhouse gases, and if it would go back, we don't know how long it would take.

On the scale of a human lifetime, these changes happen very slowly. So the burden of dealing with the unknown outcome of the present global experiment, will not fall on today's political decision makers: it will fall on our children and grandchildren. Present population growth, so ardently advocated by the many in the older generations, is putting our children and grandchildren at risk. For centuries, parents have worked so their children could have better lives and opportunities than they had. We may now be doing just the reverse. We may be guaranteeing that our children will not have the resources, opportunities and environment that we have enjoyed.

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2) THE OZONE HOLE

The destruction of ozone in the high atmosphere allows more ultra-violet light to reach the surface of the earth where it can have serious biological effects on plants and animals, including humans.

3) FOOD GRAIN

The WorldWatch Institute reports that global annual per capita production of grain dropped from 346 kilograms per person in 1984 to 313 kilograms per person in 1996.[4] This is a drop of 9.5 % in just 8 years.

We've all heard it said that per capita food production has been growing ever since the time of Thomas Malthus, and that this growth has proven him wrong. Since the late 1980s grain production has leveled off, so the continuing growth of populations means that the per capita production of food is declining. Perhaps Malthus was right after all.

4) WORLD OCEANIC FISHERIES

Growth in the annual oceanic fish catch stopped in 1989, and since then the available fish per capita has been declining. For

many of the world's people, fish is a major source of protein. Most of the world's major fishing areas are seriously depleted. The Grand Banks off of Newfoundland was one of the world's major fisheries, with stocks of fish once thought to be unlimited. Now, these fish stocks are apparently almost gone.

5) FRESH WATER

A report in January of 1997 from Stockholm indicated that by the year 2025, two-thirds of the world's people will suffer from water shortages, and the report noted that the rate of use of fresh water was growing at twice the rate of world population.

All of these problems are caused by population growth, and none of these problems can be "solved" if population growth continues.

Today we hear many people talking about 'Sustainability," as though we can accommodate continued population growth with something vague and ill-defined that is called "sustainable development." The thought seems to be that there is no need to worry about population: all we need to do is to make minor modifications of our way of life, (conserve, recycle, etc.) and this will suffice to make our society "sustainable." Please remember the First Law of Sustainability:[5]

> *It is not possible to sustain population growth or growth in the rates of consumption of resources.*

We now must address two questions:

1) Where on Earth is the population problem the worst? It is my opinion that the world's worst population problem is right here in the United States. This is because of our high per capita resource consumption. It has been estimated that a person added to the population of the United States will have 30 or more times the impact on world resources as will a person added to the population of an underdeveloped nation. Indeed, resource consumption in North America is roughly the same as resource consumption in the entire rest of the world.

2) Where should we apply our efforts to have the most beneficial effect in helping to solve the population problem? The answer is, right here in the U.S.

For many people, the population problem is a problem of 'those people," in distant undeveloped countries. In early 1997, many people successfully lobbied Congress to restore family planning assistance in the U.S. foreign aid programs. This was a great victory, but it treats 'those people" as though they were the big problem. As one member of Congress said,

> *Unchecked population growth in the Third World means depletion of water resources. It means famine. It means suffering. It pushes popu-lations to clear rainforests. It pushes populations to go out and graze on land that cannot sustain cattle, and that leads to expansion of deserts worldwide. We all have a stake in the global environment.*[6]

It is so easy to blame the problem on others and to identify what other people should do to solve the problem, while we ignore our own responsibilities and avoid doing anything to reduce the population problem in the U.S. We need to work to stop population growth in the U.S.

There are two sources that contribute approximately equally to population growth in the U.S.: the excess of births over deaths, and immigration. Both of these must be addressed.

Let's compare three aspects of efforts to stop population growth in other countries with efforts to stop population growth in the United States.

1) When we give family planning assistance to other countries, we are dealing with countries over which we have no legal jurisdiction and where we have little or no immediate political responsibility.

When we confront population growth in the United States, we are dealing with a country where we as citizens have full and complete jurisdiction, and where we have political and family responsibilities. It should be much easier to solve our problem than it is to solve other peoples' problems.

2) The negative effects of runaway population growth in an underdeveloped country are generally felt only in that country and in its immediate neighbors.

The negative effects of population growth in the U.S. are felt throughout the entire world, because of our enormous per capita consumption of resources.

Indeed, one of the aims of the many free-trade agreements about which we currently hear so much, is to open up the world's resources for consumption by consumers in the U.S.

3) In countries receiving family planning assistance from the U.S. there will always be individuals who will claim that this assistance is a form of "genocide." They will be strengthened in this belief if we in the U.S. fail to take steps to halt our own population growth. As Tim Wirth of the U.S. Department of State has said, the best thing that we in the U.S. can do to help other countries stop their population growth, is to set an example and stop our own population growth.

As you think about addressing the problem of population growth in the U.S., please ponder this challenge:

Can you think of any problem, on any scale, from microscopic to global, whose long-term solution is in any demonstrable way, aided, assisted, or advanced, by having continued population growth – at the local level, the state level, the national level, or globally?

So we can see that Pogo was right: "We've met the enemy, and they's us!"

NOTES

1. This article is adapted from a talk Professor Bartlett gave on a panel on population at the 49th annual World Affairs Conference at the University of Colorado, Boulder, April 9, 1997. The other speaker on the panel was the distinguished Russian physicist Sergei Kapitza from Moscow. Presiding was Dr. Judith Jacobsen of Boulder.

2. A. A. Bartlett, "Forgotten Fundamentals of the Energy Crisis," *American Journal of Physics*, Vol. 46, September 1978, pp. 876-888.

3. A. A. Bartlett, "The Arithmetic of Growth: Methods of Calculation." *Population & Environment*, Vol. 14, March 1993, pp. 359-387.

4. WorldWatch Institute, Washington, D.C., *State of the World: 1997*, W. W. Norton & Co., New York, p.24.

5. A. A. Bartlett, "Reflections on Sustainability, Population Growth, and the Environment," *Population & Environment*, Vol. 16, September 1994, pp. 5-35. This article was revised and reprinted in the *Renewable Resources Journal*, Vol. 15, No. 4, Winter 1997-1998, pp.6-23.

6. *Population & Habitat Update*,Vol. 9, No. 2, March 1997, p.5. Population & Habitat Campaign of the National Audubon Society, Boulder, CO., 80303.

Our Southern Border is Trashed, Dangerous

by Robert Park, Founder of the Article IV, Section 4 Foundation, in a letter to the *Arizona Republic*

The governors of Arizona and New Mexico have made a gesture toward dealing with our crisis on the border, all the while continuing to hold hands with their counterparts in Mexico.

In 1980, President Jimmy Carter declared an emergency in Florida over a paltry 125,000 Cubans and sent troops to deal with it. Among that group were some serious bad guys and some mental cases.

Twenty plus years later, by some estimates, three million illegals cross our nation's southern border annually, laying waste to thousands of acres of private, state, federal and Indian lands. Fires are set in national forests; the fragile Sonoran Desert is being trampled to dust; tons and tons of clothing, trash and human waste are discarded randomly in such places as the San Pedro Riparian National Conservation Area, Buenos Aires National Wildlife Refuge, and Cabeza Prieta Refuge where the Sonoran Pronghorn is being driven to extinction -- extinction, as in forever – damage only a tank armada can surpass. No one living today will see much, if any, of it restored. Not even tax dollars can help.

Organ Pipe Cactus National Monument has been designated America's most dangerous park – a site where Park Ranger Kris Eggle was murdered by a drug smuggler. That's to say nothing of the carnage on our roadways by drug and people smugglers.

Much of the area is a no-man's land where nearly each and every death that occurs is classifiable as murder. Even our military's training missions are disrupted when invaders make intrusions.

After years of mis- or malfeasance in Washington, the Border Patrol was finally given a most important tool: direct access to the FBI criminal fingerprint data base known as IAFIS. Get this: in its first nine months of operation, it identified 102,024 lookouts involving major crimes to include 391 homicide suspects, 136 kidnapping suspects, 525 sexual assault suspects, 849 robbery suspects, 5,154 suspects for assaults of other types, and 10,394 suspects involved with dangerous narcotics. All this as a direct result of IAFIS technology.

Go back just 5 years. That's approximately 650,000 criminals who made it, lurking in neighborhoods across America – awaiting amnesty.

Ten years have passed since six states charged the federal government with having failed to meet its obligation under the Invasion Clause. As mentioned above, matters have grown exponentially worse.

American patience has grown thin – a fact made highly visible by the recent heroic Minuteman Project.

Let's go back to court!