

# WORLD•WATCH

VISION FOR A SUSTAINABLE WORLD

## Population AND ITS DISCONTENTS

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One of 12 features in this special issue

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# Global Population Reduction: Confronting the Inevitable

Looking past the near-term concerns that have plagued population policy at the political level, it is increasingly apparent that the long-term sustainability of civilization will require not just a leveling-off of human numbers as projected over the coming half-century, but a colossal reduction in both population and consumption.

It has become increasingly apparent over the past half-century that there is a growing tension between two seemingly irreconcilable trends. On one hand, moderate to conservative demographic projections indicate that global human numbers will almost certainly reach 9 billion, perhaps more, by mid-21st century. On the other, prudent and increasingly reliable scientific estimates suggest that the Earth's long-term sustainable human carrying capacity, at what might be defined as an "adequate" to "moderately comfortable" developed-world standard of living, may not be much greater than 2 to 3 billion. It may be considerably less, particularly if the normative lifestyle (level of consumption) aspired to is anywhere close to that of the United States.

As a consequence of this modern-day "Malthusian dilemma," it is past time to think boldly about the midrange future and to consider alternatives that go beyond merely slowing or stopping the growth of global population. The human species must develop and quickly implement a well-conceived, clearly articulated, flexible, equitable, and internationally coordinated program focused on bringing about a *very significant reduction* in human numbers over the next two or more centuries. This effort will likely require a global population shrinkage of at least two-thirds to three-fourths, from a probable mid-to-late 21st century peak in the 9 to 10 billion range to a future (23<sup>rd</sup> century and beyond) "population optimum" of not more than 2 to 3 billion.

Obviously, a demographic change of this magnitude will require a major reorientation of human thought, values, expectations, and lifestyles. There is no guarantee that such a program will be successful. But if humanity fails in this effort, nature will almost certainly impose

an even harsher reality. As a practicing physical anthropologist and human evolutionary biologist, I am concerned that this rapidly metastasizing (yet still partly hidden) demographic and environmental crisis could emerge as the greatest evolutionary/ecological "bottleneck" that our species has yet encountered.

Although the need for population reduction is controversial, it can be tested scientifically. The hypothesis may be falsified if it can clearly be shown that ongoing estimates of global population size over the next few hundred years will not exceed our increasingly accurate projections of both current and future optimal carrying capacities. However, the hypothesis will be confirmed if future global population size continues to exceed those carrying capacity estimates by a significant margin. And even if the 2 to 3 billion optimal carrying capacity estimate turns out to be off by, say, a factor of two, achieving a global population optimum of 4 to 6 billion would still necessitate a very substantial reduction from the 9-plus billion projected for mid-century.

## Below the Radar?

It is surprising how little scientific and public attention has been directed toward establishing quantifiable, testable, and socioculturally agreed-upon parameters for what the Earth's long-term human carrying capacity might actually be. Unfortunately, with only a few notable exceptions, many otherwise well-qualified scientific investigators and public policy analysts have been rather hesitant to take a clear and forthright position on this profoundly important matter. One wonders why—inherent caution, concerns about professional reputation, the increasingly specialized structure of both the scientific and political enterprises, or any of several other reasons. Given the issue's global nature and ramifications, perhaps the chief reason is simply "scale paralysis," that enervating sense of individual and collective powerlessness when confronted by problems whose magnitude seems overwhelming.

Certainly the rough-and-ready human carrying capacity estimates of the more distant past show considerable variation, ranging from fewer than 1 billion to over 20 billion. And it is obvious that it will be difficult to engen-

der any sort of effective response to the crisis if the desired future population goals continue to be poorly understood and imperfectly articulated. It is, however, worthy of note that several investigators and organizations have developed reasonably well thought out positions on future global population optima, and those estimates have all clustered in the range of 1 to 3 billion.

I hope my hypothesis is wrong and that various demographic optimists are correct in claiming that human numbers will begin to stabilize and decline somewhat sooner than expected. But this optimism is warranted only by corroborative data, that is, only if the above-mentioned “irreconcilable numbers” show unmistakable evidence of coming into much closer congruence.

Clearly, assertions that the Earth might be able to support a population of 10, 15, or even 20 billion people for an indefinite period of time at a standard of living superior to the present are not only cruelly misleading but almost certainly false. Notwithstanding our current addiction to continued and uninterrupted economic growth, humanity must recognize that there are *finite physical, biological, and ecological limits* to the Earth’s long-term sustainable carrying capacity. And to judge by the growing concerns about maintaining the quality, stability, and/or sustainability of the Earth’s atmosphere, water, forests, croplands, fisheries, and so on, there is little if any doubt that many of these limits will soon be reached, if they haven’t already been surpassed. Since at some point the damage stemming from the mutually reinforcing effects of excessive human reproduction and overconsumption of resources could well become irreversible, and because there is only one Earth with which to experiment, it would undoubtedly be better for our species to err on the side of prudence, exercising wherever possible a cautious and careful stewardship.

Perhaps it is time that the burden of proof on these matters, so long shouldered by so-called neo-Malthusian pessimists, be shifted to the “cornucopian optimists.” Let them answer: What is the evidence that the Earth can withstand, without irreparable damage, another two or more centuries during which global human numbers and per-capita consumption increasingly exceed the Earth’s optimal (sustainable) carrying capacity?

In any event, having established a “quantifiable and falsifiable” frame of reference, it is time to make the case that current rhetoric about “slowing the growth of” or even “stabilizing” global human numbers is clearly insufficient. Both the empirical data and inexorable logic suggest that our default position for the next two or three centuries ought to seek a very significant reduction in global human numbers.

## Acknowledging Our Dilemma

Is it naive to hope that, once a critical mass of concerned investigators begins to make a serious case for such a

reduction, it would become much easier for scientists, environmentalists, politicians, economists, moralists, and other concerned citizens of the planet to speak forthrightly about humanity’s critical need for population stabilization and shrinkage? At the least, they should not feel as though they are committing political, professional, or moral suicide by raising these issues. Time is increasingly precious, and our window of opportunity for effective remedial action may not be open much longer—assuming it has not already closed.

Until demonstrated otherwise, I would therefore argue that insufficiently restrained population growth should be considered the single most important feature in a complex (and synergistic) physical, ecological, biocultural, and sociopolitical landscape. Regulating human population size, and confronting the numerous problems that will be engendered by its eventual and inevitable contraction, should thus be accorded a central position within the modern dilemma, and as such should be dealt with much more forthrightly, and promptly, than has heretofore been the case.

More than half a century ago, at the dawn of the nuclear age, Albert Einstein suggested that we would require a new manner of thinking if humankind were to survive. Even though the population explosion is neither as instantaneous nor as spectacular as its nuclear counterpart, the ultimate consequences may be just as real (and potentially just as devastating) as the so-called nuclear winter scenarios promulgated in the early 1980s.

That there will be a large-scale reduction in global human numbers over the next two or three centuries appears to be inevitable. The primary issue seems to be whether this process will be under conscious human control and (hopefully) relatively benign, or whether it will turn out to be unpredictably chaotic and (perhaps) catastrophic. We must begin our new manner of thinking about this critically important global issue now, so that Einstein’s prescient and legitimate concerns about human and civilizational survival into the 21st century and beyond may be addressed as rapidly, fully, and humanely as possible.

*Don’t speak to me of shortage. My world is vast  
And has more than enough—for no more than enough.  
There is a shortage of nothing, save will and wisdom;  
But there is a longage of people.*

—Garrett Hardin (1975)

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