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OP-ED CONTRIBUTOR

Overpopulation Is Not the Problem

By ERLE C. ELLIS
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BALTIMORE — MANY scientists believe that by transforming the earth's natural landscapes, we are undermining the very life support systems that sustain us.

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Katherine Streeter

This is nonsense. Even today, I hear some of my scientific colleagues repeat these and similar claims — often unchallenged.

The evidence from archaeology is clear. Our predece in the genus Homo used social hunting strategies ar of stone and fire to extract more sustenance from landscapes than would otherwise be possible.

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Even before the last ice age had ended, thousands of years before agriculture, hunter-gatherer societies were well established across the earth and depended increasingly on sophisticated technological strategies to sustain growing populations in landscapes long ago transformed by their ancestors.

The planet's carrying capacity for prehistoric human hunter-gatherers was probably no more than 100 million. But without their Paleolithic technologies and ways of life, the number would be far less — perhaps a few tens of millions. The rise of agriculture enabled

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even greater population growth requiring ever more intensive land-use practices to gain more sustenance from the same old land. At their peak, those agricultural systems might have sustained as many as three billion people in poverty on near-vegetarian diets.

The world population is now estimated at 7.2 billion. But with current industrial technologies, the Food and Agriculture Organization of the United Nations has estimated that the more than nine billion people expected by 2050 as the population nears its peak could be supported as long as necessary investments in infrastructure and conducive trade, anti-poverty and food security policies are in place. Who knows what will be possible with the technologies of the future? The important message from these rough numbers should be clear. There really is no such thing as a human carrying capacity. We are nothing at all like bacteria in a petri dish.

Why is it that highly trained natural scientists don't understand this? My experience is likely to be illustrative. Trained as a biologist, I learned the classic mathematics of population growth — that populations must have their limits and must ultimately reach a balance with their environments. Not to think so would be to misunderstand physics: there is only one earth, of course!

It was only after years of research into the ecology of agriculture in China that I reached the point where my observations forced me to see beyond my biologists's blinders. Unable to explain how populations grew for millenniums while increasing the productivity of the same land, I discovered the agricultural economist Ester Boserup, the antidote to the demographer and economist Thomas Malthus and his theory that population growth tends to outrun the food supply. Her theories of population growth as a driver of land productivity explained the data I was gathering in ways that Malthus could never do. While remaining an ecologist, I became a fellow traveler with those who directly study long-term human-environment relationships — archaeologists, geographers, environmental historians and agricultural economists.

The science of human sustenance is inherently a social science. Neither physics nor chemistry nor even biology is adequate to understand how it has been possible for one species to reshape both its own future and the destiny of an entire planet. This is the science of the Anthropocene. The idea that humans must live within the natural environmental limits of our planet denies the realities of our entire history, and most likely the future. Humans are niche creators. We transform ecosystems to sustain ourselves. This is what we do and have always done. Our planet's human-carrying capacity emerges from the capabilities of our social systems and our technologies more than from any environmental limits.

Two hundred thousand years ago we started down this path. The planet will never be the same. It is time for all of us to wake up to the limits we really face: the social and technological systems that sustain us need improvement.

There is no environmental reason for people to go hungry now or in the future. There is no need to use any more land to sustain humanity — increasing land productivity using existing technologies can boost global supplies and even leave more land for nature — a goal that is both more popular and more possible than ever.

The only limits to creating a planet that future generations will be proud of are our imaginations and our social systems. In moving toward a better Anthropocene, the environment will be what we make it.

Erle C. Ellis is an associate professor of geography and environmental systems at the University of Maryland, Baltimore County, and a visiting associate professor at Harvard's Graduate School of Design.

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