

Chaos and Complex Systems discussion

28 November 2023

Moderator: Terry Allard

Topic: THE FUTURE AIN'T WHAT IT USED TO BE (Part 1: Global Population Decline)

Source material: **The World's Population May Peak in Your Lifetime. What Happens Next?**

NY Times Opinion, by Dean Spears, Corrected September 26, 2023

Bottom Line: Global population will peak sometime between the 2060's and the 2080's in 2085 at 10 Billion and then begin a precipitous decline to levels we haven't seen for 2,000 years.

Observations:

1. The global population has quadrupled from 2 billion to 8 billion people over the past 100 years.
2. Global population was relatively stable at 110 million from 1,000 B.C. through 1,000 A.D.
3. Most people now live in countries where population growth is below replacement rate (~2 births per woman).
4. If the world fertility rate was at the current US level (1.66 bpw), population would crash to less than 2 billion within 10 generations (300 years) and continue declining.
5. Fewer and fewer countries have high birthrates about replacement values (mostly in Africa). Europe, China, Brazil and India are now below replacement rates.
6. All countries including in sub-Saharan Africa show a precipitous decline in birthrates as living standards increased.
7. Fertility rates are below replacement where abortions are restricted and where they are freely available.

Assumptions:

1. Advances in living standards, technology and medicine occur because there are so many more people around to generate innovation.
2. Men and women today want smaller families.
3. Women have greater freedom and opportunities reducing the reproductive time window.
4. Decreasing birth rates will increase the relative proportion of older, non-reproductive
5. Fewer and fewer people of reproductive age will spiral population growth down.

Consequences:

1. Children born today will live to see the end of global population growth.
2. Population changes over the next 200 years do not diminish the urgency to address human-related global warming now when climate changes are getting locked in.
3. Fewer people means less innovation and a likely reduction in positive advances.
4. Future innovation may be enhanced through automation, super-computing and artificial intelligence.
5. Top-heavy, aging global populations will hit hard on the decreasing numbers of younger, working age people.
6. ... ???