

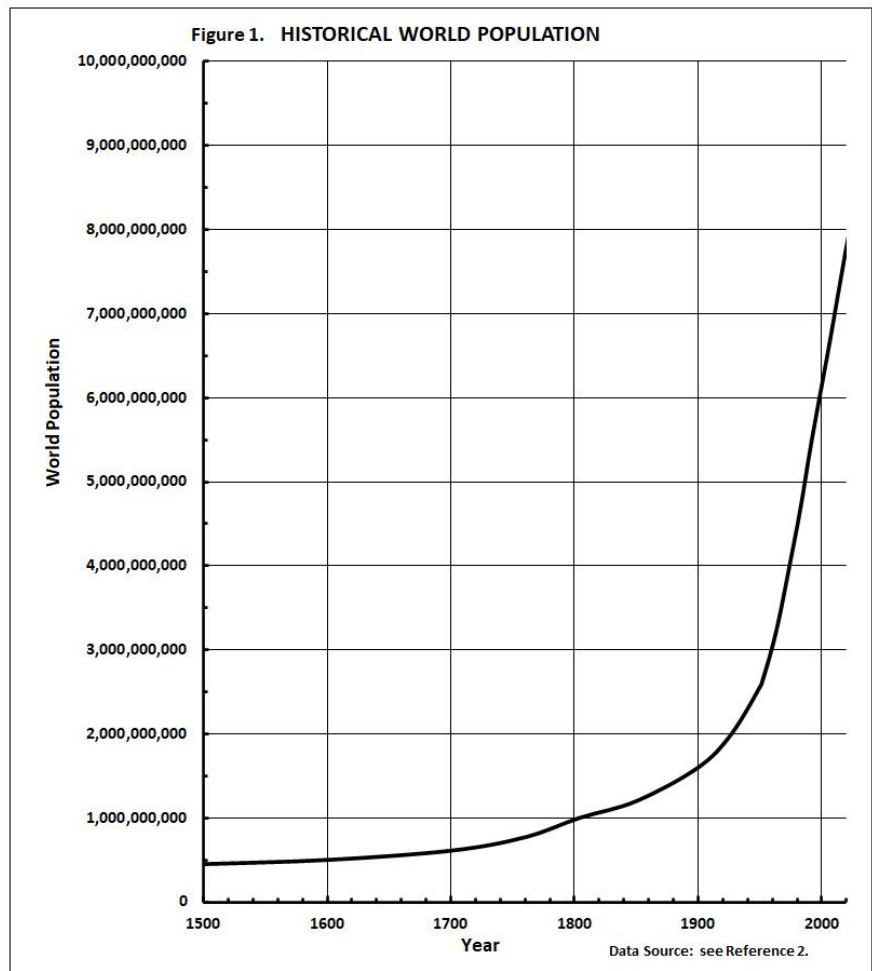
## Overpopulation by Edwin Eugene Ott, 20200411

I think it would be wise for humanity to again consider purposefully limiting our population.

Since 1950, human population has increased over threefold. Our population today is estimated to be about 7.8 billion.<sup>1,2</sup> The total number of people who have ever been born has been estimated to be about 108 billion.<sup>3,4</sup> Using the preceding numbers, we could say that over 7 percent of all humans that ever existed are alive today!

In the 1950s, there were many worries about the exploding world population and

predictions of terrible disasters for humans based upon an inability to feed more people. Those predictions did not come true because biologists did not understand or foresee humanity's inventiveness and adaptability. They did not understand that humans are a very different animal from all others existing previously. They did not recognize that we humans literally eat the Earth. So,



<sup>1</sup> We can only estimate population numbers. Obtaining an exact count is still impossible even with today's technology. If you doubt this assertion, just follow today's debate about getting accurate numbers in the US 2020 Census.

<sup>2</sup> Source: Worldometer, <https://www.worldometers.info/world-population/>, accessed 20200407.

<sup>3</sup> Source: Population Reference Bureau, <https://www.prb.org/howmanypeoplehaveeverlivedonearth/>, accessed 20200407. This estimate is based upon defining humans as first existing 50,000 years ago.

<sup>4</sup> Estimating this number is fraught with difficulties. A few years ago, I tried my hand at estimating the number of humans that have lived beyond early childhood over the last 10,000 years. My estimate, probably better described as a guestimate, was about 50 billion.

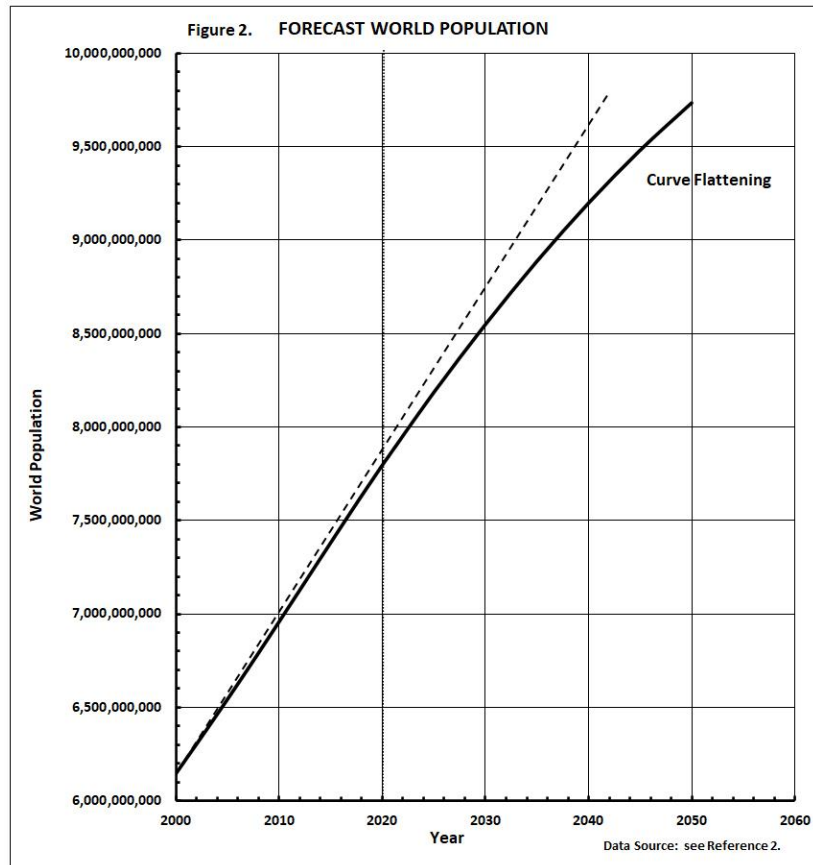
disaster was averted. Right? Not really. The disaster fell upon all other living lifeforms that we cherish. Species are being annihilated today at alarming rates. Our climate is changing due to the wastes we excrete, and biomes are being destroyed with the construction of our artifacts, including cities, roads, agriculture, mining, and deforestation.

Overpopulation has many detrimental side effects upon humanity itself. One is that we are forced to live in closer contact. Since 1950, the number of people living in cities has grown three times faster than in non-urban areas. Urbanization is not a purposeful or self-imposed course, but a necessity of population increase. With population increase comes greater conflict within humanity itself. Throughout human history we have fought amongst ourselves. As population increases, internal conflicts become larger, more destructive, and, perhaps, even more deadly.

It is also more likely that increased populations living within increasingly more dense cities will be a creation zones for more deadly diseases, such as we are now experiencing with COVID-19. Consider the fact that we now have two countries (China and India) that each have populations more than three times the world population in year 1500. The USA is now the third highest population country with  $\frac{3}{4}$  the world population at the time Columbus sailed to the New World. It is not surprising that COVID-19 probably began in China. Could it be that people in China, and perhaps India, have better immunity to this disease than the rest of the world? Today, we in the USA are in a similar situation as Native Americans were when Europeans introduced their diseases into the Americas in 1492. The principal difference today is that diseases can move so easily from one population to another due to our modern transportation and interconnectedness.

As shown in Figure 1, above, human population has been growing at exponential rates since the beginning of the Industrial Revolution. There is some hope that human population growth will stabilize at some future time. Today we are all being urged to flatten the growth curve of COVID-19. Human population is predicted by the same general type of mathematical model as the growth of Coronavirus and all other biological organisms. An exponential curve begins to flatten when the growth rate begins to lessen. Analysis of human populations growth since the 1950s has shown an overall decreasing growth rate. It is

surmised that this decrease is a result of populations becoming more urban. Figure 2 shows the predicted population to the year 2060. Some flattening is seen in this future forecast. These data are based upon forecasts made by the United Nations and represent a medium-variant projection and are projected to reach stability in the year 2100 at 10.9 billion plus or minus 1.5 billion at a 95% confidence interval.<sup>5</sup>



Nearly 86% of the world population increase by the year 2100 is forecast to occur in Sub-Saharan Africa.<sup>6</sup> One must keep in mind that all these population forecasts are based upon data gathered during the period 1951 to 2019. During the first half of this period annual growth rates experienced two upward spikes. Statistical projections are just educated guesses when we do not understand the underlying causes.

As we have seen with COVID-19, efforts to control biological functions require massive changes. Human population has been largely controlled by *de facto* changes, such as environmental calamities, war, and disease. Genocide is a purposeful control that should never be used. Some countries, most notably China, have attempted to limit population through two child and one child policies. Such controls have met with mixed evaluations of success. We must

<sup>5</sup> United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects 2019 Highlights, page 5, [https://population.un.org/wpp/Publications/Files/WPP2019\\_Highlights.pdf](https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf), accessed 20200409.

<sup>6</sup> *Ibid*, table 1, page 6.

also recognize that controls to increase population have been used, such as the Catholic Church position against birth control. There are mounting economic pressures to increase population, such as concerns with social security systems in view of aging populations. I hope to say more about economic systems in a future essay.

Neither disease, nor global warming, will destroy all human life. We will continue so long as we do not destroy ourselves in nuclear warfare or experience some natural event such as a collision with a massive asteroid. However, if we do not limit our population, then many of the dystopian societies that science fiction writers have envisioned will come to pass. This is not to say that new societies will be bad, for the humans that live in them will not have the same values as we do today; however, we today would consider them intolerable. There are many societies in existence today in which I would not like to live. We can either attempt to make a future world in which we would like to live or continue to increase population and accept what comes.

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