Population

In science (specifically biology), a **population** is a number of all the organisms of the same group or species who live in a particular geographical area and are capable of interbreeding. The area of a sexual population is the area where inter-breeding is possible between any pair within the area and more probable than cross-breeding with individuals from other areas. In sociology, **population** refers to a collection of humans. Demography is a social science which entails the statistical study of populations. Population, in simpler terms, is the number of people in a city or town, region, country or world; population is usually determined by a process called census (a process of collecting, analysing, compiling and publishing data).

World population

In demographics, the **world population** is the total number of humans currently living, and was estimated to have reached 7,800,000,000 people as of March 2020. It took over 2 million years of human prehistory and history for the world's population to reach 1 billion, and only 200 years more to reach 7 billion. The world population has experienced continuous growth following the Great Famine of 1315–1317 and the end of the Black Death in 1350, when it was near 370 million. The highest global population growth rates, with increases of over 1.8% per year, occurred between 1955 and 1975 – peaking at 2.1% between 1965 and 1970.[7] The growth rate declined to 1.2% between 2010 and 2015 and is projected to decline further in the course of the 21st century. The global population is still increasing, but there is significant uncertainty about its long-term trajectory due to changing rates of fertility and mortality. The UN Department of Economics and Social Affairs projects between 9–10 billion people by 2050, and gives an 80% confidence interval of 10–12 billion by the end of the 21st century. Other demographers predict that world population will begin to decline in the second half of the 21st century. Total annual births were highest in the late 1980s at about 139 million, and as of 2011 were expected to remain essentially constant at a level of 135 million, while deaths numbered 56 million per year and were expected to increase to 80 million per year by 2040. The median age of the world's population was estimated to be 30.4 years in 2018.

Population by region

Six of the Earth's seven continents are permanently inhabited on a large scale. Asia is the most populous continent, with its 4.64 billion inhabitants accounting for 60% of the world population. The world's two most populated countries, China and India, together constitute about 36% of the world's population. Africa is the second most populated continent, with around 1.34 billion people, or 17% of the world's population. Europe's 747 million people make up 10% of the world's population as of 2020, while the Latin American and Caribbean regions are home to around 653 million (8%). North America, primarily consisting of the United States and Canada, has a population of around 368 million (5%), and Oceania, the least populated region, has about 42 million inhabitants (0.5%). Antarctica only has a very small, fluctuating population of about 1200 people based mainly in polar science stations.

10 most populous countries

Rank	Country	Population	% of world	Date
1	China	1,408,157,600	17.9%	29 May 2021
2	India	1,377,526,306	17.5%	29 May 2021
3	United States	331,752,381	4.21%	29 May 2021
4	Indonesia	269,603,400	3.43%	1 Jul 2020
5	Pakistan	220,892,331	2.81%	1 Jul 2020
6	Brazil	213,198,999	2.71%	29 May 2021
7	Nigeria	206,139,587	2.62%	1 Jul 2020
8	Bangladesh	170,746,092	2.17%	29 May 2021
9	Russia	146,748,590	1.86%	1 Jan 2020
10	Mexico	127,792,286	1.62%	1 Jul 2020

History

Estimates of world population by their nature are an aspect of modernity, possible only since the Age of Discovery. Early estimates for the population of the world date to the 17th century: William Petty in 1682 estimated world population at 320 million (modern estimates ranging close to twice this number); by the late 18th century, estimates ranged close to one

billion (consistent with modern estimates). More refined estimates, broken down by continents, were published in the first half of the 19th century, at 600 million to 1 billion in the early 1800s and at 800 million to 1 billion in the 1840s. It is difficult for estimates to be better than rough approximations, as even modern population estimates are fraught with uncertainties on the order of 3% to 5%.

Modern history

During the European Agricultural and Industrial Revolutions, the life expectancy of children increased dramatically. The percentage of the children born in London who died before the age of five decreased from 74.5% in 1730–1749 to 31.8% in 1810–1829. Between 1700 and 1900, Europe's population increased from about 100 million to over 400 million. Altogether, the areas populated by people of European descent comprised 36% of the world's population in 1900. Population growth in the West became more rapid after the introduction of vaccination and other improvements in medicine and sanitation.

Many countries in the developing world have experienced extremely rapid population growth since the early 20th century, due to economic development and improvements in public health. China's population rose from approximately 430 million in 1850 to 580 million in 1953, and now stands at over 1.3 billion. The population of the Indian subcontinent, which was about 125 million in 1750, increased to 389 million in 1941; today, India, Pakistan and Bangladesh are collectively home to about 1.63 billion people. Java had about 5 million inhabitants in 1815; its present-day successor, Indonesia, now has a population of over 140 million. In just one hundred years, the population of Brazil decupled (x10), from about 17 million in 1900, or about 1% of the world population in that year, to about 176 million in 2000, or almost 3% of the global population in the very early 21st century. Mexico's population grew from 13.6 million in 1900 to about 112 million in 2010. Between the 1920s and 2000s, **Kenya's** population grew from 2.9 million to 37 million.

Milestones by the billions

It is estimated that the world population reached one billion for the first time in 1804. It was another 123 years before it reached two billion in 1927, but it took only 33 years to reach three billion in 1960. Thereafter, the global population reached four billion in 1974, five billion in 1987, six billion in 1999 and, according to the United States Census Bureau, seven

billion in March 2012. The United Nations, however, estimated that the world population reached seven billion in October 2011. According to current projections, the global population will reach eight billion by 2024, and is likely to reach around nine billion by 2042. Alternative scenarios for 2050 range from a low of 7.4 billion to a high of more than 10.6 billion. Projected figures vary depending on underlying statistical assumptions and the variables used in projection calculations, especially the fertility variable. Long-range predictions to 2150 range from a population decline to 3.2 billion in the "low scenario", to "high scenarios" of 24.8 billion. One extreme scenario predicted a massive increase to 256 billion by 2150, assuming the global fertility rate remained at its 1995 level of 3.04 children per woman; however, by 2010 the global fertility rate had declined to 2.52. There is no estimation for the exact day or month the world's population surpassed one or two billion. The points at which it reached three and four billion were not officially noted, but the International Database of the United States Census Bureau placed them in July 1959 and April 1974 respectively. The United Nations did determine, and commemorate, the "Day of 5 Billion" on 11 July 1987, and the "Day of 6 Billion" on 12 October 1999. The Population Division of the United Nations declared the "Day of 7 Billion" to be 31 October 2011.

Global demographics

As of 2012, the global sex ratio is approximately 1.01 males to 1 female. The greater number of men is possibly due to the significant sex imbalances evident in the Indian and Chinese populations. Approximately 26.3% of the global population is aged under 15, while 65.9% is aged 15–64 and 7.9% is aged 65 or over. The median age of the world's population was estimated to be 29.7 years in 2014, and is expected to rise to 37.9 years by 2050.

According to the World Health Organization, the global average life expectancy is 71.4 years as of 2015, with women living an average of 74 years and men approximately 69 years. In 2010, the global fertility rate was estimated at 2.52 children per woman. In June 2012, British researchers calculated the total weight of Earth's human population as approximately 287 million tonnes, with the average person weighing around 62 kilograms (137 lb).

Fluctuation

Population size fluctuates at differing rates in differing regions. Nonetheless, population growth is the long-standing trend on all inhabited continents, as well as in most individual

states. During the 20th century, the global population saw its greatest increase in known history, rising from about 1.6 billion in 1900 to over 6 billion in 2000. A number of factors contributed to this increase, including the lessening of the mortality rate in many countries by improved sanitation and medical advances, and a massive increase in agricultural productivity attributed to the Green Revolution. In 2000, the United Nations estimated that the world's population was growing at an annual rate of 1.1% (equivalent to around 75 million people), down from a peak of 88 million per year in 1989. By 2000, there were approximately ten times as many people on Earth as there had been in 1700. Globally, the population growth rate has been steadily declining from its peak of 2.2% in 1963, but growth remains high in Latin America, the Middle East, and Sub-Saharan Africa. During the 2010s, Japan and some countries in Europe began to encounter negative population growth (i.e. a net decrease in population over time), due to sub-replacement fertility rates. In 2006, the United Nations stated that the rate of population growth was visibly diminishing due to the ongoing global demographic transition. If this trend continues, the rate of growth may diminish to zero by 2050, concurrent with a world population plateau of 9.2 billion. However, this is only one of many estimates published by the UN; in 2009, UN population projections for 2050 ranged between around 8 billion and 10.5 billion. An alternative scenario is given by the statistician Jorgen Randers, who argues that traditional projections insufficiently take into account the downward impact of global urbanization on fertility. Randers' "most likely scenario" reveals a peak in the world population in the early 2040s at about 8.1 billion people, followed by decline. Adrian Raftery, a University of Washington professor of statistics and of sociology, states that "there’s a 70 percent probability the world population will not stabilize this century. Population, which had sort of fallen off the world’s agenda, remains a very important issue."

Environmental impacts

A number of scientists have argued that the current global population expansion and accompanying increase in resource consumption threatens the world's ecosystem. The InterAcademy Panel Statement on Population Growth, which was ratified by 58 member national academies in 1994, states that "unprecedented" population growth aggravates many environmental problems, including rising levels of atmospheric carbon dioxide, global warming, and pollution. Indeed, some analysts claim that overpopulation's most serious impact is its effect on the environment.

Scientists contend that human overpopulation, continued human population growth and overconsumption, particularly by the wealthy, are the primary drivers of mass species extinction. By 2050 population growth, along with profligate consumption, could result in oceans containing more plastic than fish by weight. In November 2017, a statement by 15,364 scientists from 184 countries asserted that rapid human population growth is the "primary driver behind many ecological and even societal threats." African wildlife populations are declining significantly as growing human populations encroach on protected ecosystems, such as the Serengeti. The *Global Assessment Report on Biodiversity and Ecosystem Services*, released by IPBES in 2019, states that human population growth is a factor in biodiversity loss. According to a 2020 World Wildlife Fund *Living Planet Report* and its Living Planet Index, global wildlife populations have plummeted by 68% since 1970 as a result of overconsumption, population growth and intensive farming, which experts assert is further evidence that humans have unleashed a sixth mass extinction event on earth. A July 2017 study published in *Environmental Research Letters* argued that the most significant way individuals could mitigate their own carbon footprint is to have fewer children, followed by living without a vehicle, foregoing air travel, and adopting a plant-based diet.

Population control

Human population control is the practice of intervening to alter the rate of population growth. Historically, human population control has been implemented by limiting a region's birth rate, by voluntary contraception or by government mandate. It has been undertaken as a response to factors including high or increasing levels of poverty, environmental concerns, and religious reasons. The use of abortion in some population control strategies has caused controversy, with religious organizations such as the Roman Catholic Church explicitly opposing any intervention in the human reproductive process. The University of Nebraska publication *Green Illusions* argues that population control to alleviate environmental pressures need not be coercive. It states that "Women who are educated, economically engaged, and in control of their own bodies can enjoy the freedom of bearing children at their own pace, which happens to be a rate that is appropriate for the aggregate ecological endowment of our planet." The book *Fatal Misconception* by Matthew Connelly similarly points to the importance of supporting the rights of women in bringing population levels down over time. Paul Ehrlich also advocates making "modern contraception and back-up

abortion available to all and give women full equal rights, pay and opportunities with men," noting that it could possibly "lead to a low enough total fertility rate that the needed shrinkage of population would follow. [But] it will take a very long time to humanely reduce total population to a size that is sustainable." Ehrlich places the optimum global population size at 1.5 to 2 billion people. Other academicians and public figures have pointed to the role of agriculture and agricultural productivity of increasing human carrying capacity, which results in population overshoot, as with any other species when their food supply experiences an increase, which in turn results in resource depletion and mass poverty and starvation in the case of humans.

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