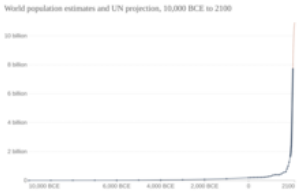
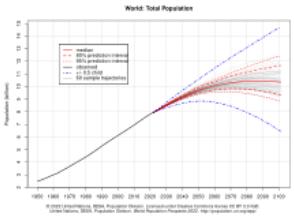
World population

In demographics, the **world population** is the total number of humans currently living. It was estimated by the United Nations to have exceeded eight billion in mid-November 2022. It took over 200,000 years of human prehistory and history for the human population to reach one billion and only 219 years more to reach 8 billion.[3]



World population growth from 10,000 BCE to 2021[1]

The human population experienced continuous growth following the Great Famine of 1315–1317 and the end of the Black Death in 1350, when it was nearly 370,000,000.[4] 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.[5] The growth rate declined to 1.1% between 2015 and 2020 and is projected to decline further in the 21st century.[6][7] The global population is still increasing, but there is significant uncertainty about its long-term trajectory due to changing fertility and mortality rates.[8] The UN Department of Economics and Social Affairs projects between 9 and 10 billion people by 2050 and gives an 80% confidence interval of 10–12 billion by the end of the 21st century,[2] with a growth rate by then of zero.[7] Other demographers predict that the human population will begin to decline in the second half of the 21st century.[9]



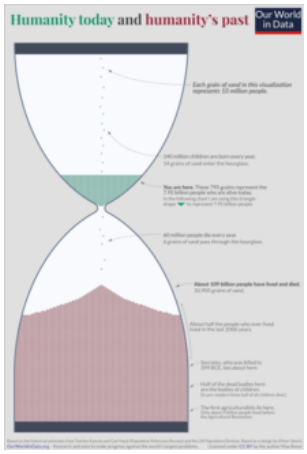
High, medium, and low projections of the future human world population[2]

The total number of births globally is currently (2015–2020) 140 million/year, which is projected to peak during the period 2040–2045 at 141 million/year and then decline slowly to 126 million/year by 2100.[10] The total number of deaths is currently 57 million/year and is projected to grow steadily to 121 million/year by 2100.[11]

The median age of human beings as of 2020 is 31 years.[12]

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[13] date to the 17th century: William Petty, in 1682, estimated the world population at 320 million (current estimates ranging close to twice this number); by the late 18th century, estimates ranged close to one billion (consistent with current estimates).[14] 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 800 million to 1 billion in the 1840s.[15]



Visual comparison of the world population in past and present

It is difficult for estimates to be better than rough approximations, as even current population estimates are fraught with uncertainties from 3% to 5%.[16]

Ancient and post-classical history

Estimates of the population of the world at the time agriculture emerged in around 10,000 BC have ranged between 1 million and 15 million.[17][18] Even earlier, genetic evidence suggests humans may have gone through a population bottleneck of between 1,000 and 10,000 people about 70,000 BC, according to the now largely discredited Toba catastrophe theory. By contrast, it is estimated that around 50–60 million people lived in the combined eastern and western Roman Empire in the 4th century AD.[19]

The Plague of Justinian caused Europe's population to drop by around 50% between the 6th and 8th centuries AD.[20] The population of Europe was more than 70 million in 1340.[21] From 1340 to 1400, the world's population fell from an estimated 443 million to 350–375 million,[22] with the Indian subcontinent suffering the most tremendous loss and Europe suffering the Black Death pandemic;[23] it took 200 years for European population figures to recover.[24] The population of China decreased from 123 million in 1200 to 65 million in 1393,[25] presumably from a combination of Mongol invasions, famine, and plague.[26]

Starting in AD 2, the Han dynasty of ancient China kept consistent family registers to properly assess the poll taxes and labor service duties of each household.[27] In that year, the population of Western Han was recorded as 57,671,400 individuals in 12,366,470 households, decreasing to 47,566,772 individuals in 9,348,227 households by AD 146, towards the end of the Han dynasty.[27] From 200 to 400, the world population fell from an estimated 257 million to 206 million, with China suffering the greatest loss.[23] At the founding of the Ming dynasty in 1368, China's population was reported to be close to 60 million; toward the end of the dynasty in 1644, it may have approached 150 million.[28] England's population reached an estimated 5.6 million in 1650, up from an estimated 2.6 million in 1500.[29] New crops that were brought to Asia and Europe from the Americas by Portuguese and Spanish colonists in the 16th century are believed to have contributed to population growth.[30][31][32] Since their introduction to Africa by Portuguese traders in the 16th century,[33] maize and cassava have similarly replaced traditional African crops as the most important staple food crops grown on the continent.[34]

The pre-Columbian population of the Americas is uncertain; historian David Henige called it "the most unanswerable question in the world."[35] By the end of the 20th century, scholarly consensus favored an estimate of roughly 55 million people, but numbers from various sources have ranged from 10 million to 100 million.[36] Encounters between European explorers and populations in the rest of the world often introduced local epidemics of extraordinary virulence.[37] According to the most extreme scholarly claims, as many as 90% of the Native American population of the New World died of Old World diseases such as smallpox, measles, and influenza.[38] Over the centuries, the Europeans had developed high degrees of immunity to these diseases, while the indigenous peoples had no such immunity.[39]

Modern history

During the European Agricultural and Industrial Revolutions, the life expectancy of children increased dramatically.[42] 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.[43][44] Between 1700 and 1900, Europe's population increased from about 100 million to over 400 million.[45] Altogether, the areas populated by people of European descent comprised 36% of the world's population in 1900.[46]

Map showing urban areas with at least one million inhabitants in 2006. Only 3% of the world's population lived in urban areas in 1800; this proportion had risen to 47% by 2000, and reached 50.5% by 2010.[40] By 2050, the proportion may reach 70%.[41]

Population growth in the Western world became more rapid after the introduction of vaccination and other improvements in medicine and sanitation.[47] Improved material conditions led to the population of Britain increasing from 10 million to 40 million in the 19th century.[48] The population of the United Kingdom reached 60 million in 2006.[49] The United States saw its population grow from around 5.3 million in 1800 to 106 million in 1920, exceeding 307 million in 2010.[50]

The first half of the 20th century in Imperial Russia and the Soviet Union was marked by a succession of major wars, famines and other disasters which caused large-scale population losses (approximately 60 million excess deaths).[51][52] After the collapse of the Soviet Union, Russia's population declined significantly – from 150 million in 1991 to 143 million in 2012[53] – but by 2013 this decline appeared to have halted.[54]

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,[55] 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;[56] today, India, Pakistan and Bangladesh are collectively home to about 1.63 billion people.[57] Java, an island in Indonesia, had about 5 million inhabitants in 1815; it had a population of over 139 million in 2020.[58] 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.[59][60] Between the 1920s and 2000s, Kenya's population grew from 2.9 million to 37 million.[61]

Milestones by the billions

The UN 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.[63] Thereafter, it took 14 years for the global population to reach four billion in 1974, 13 years to reach five billion in 1987, 12 years to reach six billion in 1999 and, according to the United States Census Bureau, 13 years to reach seven billion in March 2012.[64] The United Nations, however, estimated that the world population reached seven billion in October 2011.[65][66][67]

World population milestones in billions[62] (Worldometers estimates)

Population	1	2	3	4	5	6	7	8	9	10
Year	1804	1930	1960	1974	1987	1999	2011	2022	*2037*	*2057*
Years elapsed	200,000+	126	30	14	13	12	12	11	*15*	*20*

According to the UN, the global population reached eight billion in November 2022,[68] but because the growth rate is slowing, it will take another 15 years to reach around 9 billion by 2037 and 20 years to reach 10 billion by 2057.[69] Alternative scenarios for 2050 range from a low of 7.4 billion to a high of more than 10.6 billion.[70] Projected figures vary depending on underlying statistical assumptions and the variables used in projection calculations, especially the fertility and mortality variables. 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.[70] 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.[71][72]

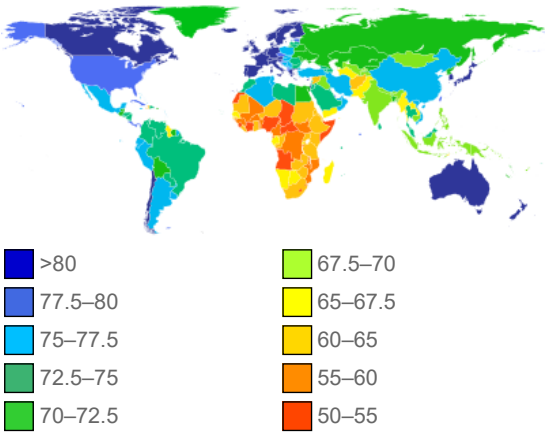
There is no estimation for the exact day or month the world's population surpassed one or two billion. The points at which it reached three and four billion were not officially noted, but the International Database of the United States Census Bureau placed them in July 1959 and April 1974 respectively. 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 Seven Billion" to be 31 October 2011.[73] The United Nations marked the birth of the eight billionth person on 15 November 2022.[74][68]

Global demographics

As of 2012, the global sex ratio is approximately 1.01 males to 1 female.[76] 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.[76] The median age of the world's population is estimated to be 31 years in 2020,[12] and is expected to rise to 37.9 years by 2050.[77]

According to the World Health Organization, the global average life expectancy is 73.3 years as of 2020, with women living an average of 75.9 years and men approximately 70.8 years.[78] In 2010, the global fertility rate was estimated at 2.44 children per woman.[79] In June 2012, British researchers calculated the total weight of Earth's human population as approximately 287 million tonnes (630 billion pounds), with the average person weighing around 62 kilograms (137 lb).[80]

The IMF estimated nominal 2021 gross world product at US$94.94 trillion, giving an annual global per capita figure of around US$12,290.[81] Around 9.3% of the world population live in extreme poverty, subsisting on less than US$1.9 per day;[82] around 8.9% are malnourished.[83] 87% of the world's over-15s are considered literate.[84] As of April 2022, there were about 5 billion global Internet users, constituting 63% of the world population.[85]



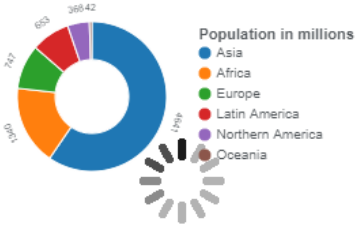
2015 map showing average life expectancy by country in years. In 2015, the World Health Organization estimated the average global life expectancy as 71.4 years.[75]

The Han Chinese are the world's largest single ethnic group, constituting over 19% of the global population in 2011.[86] The world's most-spoken languages are English (1.132B), Mandarin Chinese (1.117B), Hindi (615M), Spanish (534M) and French (280M). More than three billion people speak an Indo-European language, which is the largest language family by number of speakers. Standard Arabic is a language with no native speakers, but the total number of speakers is estimated at 274 million people.[87]

The largest religious categories in the world as of 2020 are estimated as follows: Christianity (31%), Islam (25%), Unaffiliated (16%) and Hinduism (15%).[88]

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%). Northern 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%).[90] Antarctica only has a very small, fluctuating population of about 1200 people based mainly in polar science stations.[91]



World population (millions, UN estimates)[89]

#	Most populous countries	2000	2015	2030[A]
1	China[B]	1,270	1,376	1,416
2	India	1,053	1,311	1,528
3	United States	283	322	356
4	Indonesia	212	258	295
5	Pakistan	136	208	245
6	Brazil	176	206	228
7	Nigeria	123	182	263
8	Bangladesh	131	161	186
9	Russia	146	146	149
10	Mexico	103	127	148
	World total	6,127	7,349	8,501

Notes:

A. 2030 = Medium variant.

B. China excludes Hong Kong and Macau.

Population by region (2020 estimates)

Region	Density (inhabitants/km²)	Population (millions)	Most populous country	Most populous city (metropolitan area)
Asia	104.1	4,641	1,411,778,000 – China[note 1]	13,515,000 – Tokyo Metropolis (37,400,000 – Greater Tokyo Area)
Africa	44.4	1,340	211,401,000 – Nigeria	9,500,000 – Cairo (20,076,000 – Greater Cairo)
Europe	73.4	747	146,171,000 – Russia, approx. 110 million in Europe	13,200,000 – Moscow (20,004,000 – Moscow metropolitan area)
Latin America	24.1	653	214,103,000 – Brazil	12,252,000 – São Paulo City (21,650,000 – São Paulo Metro Area)
Northern America[note 2]	14.9	368	332,909,000 – United States	8,804,000 – New York City (23,582,649 – New York metropolitan area[92])
Oceania	5	42	25,917,000 – Australia	5,367,000 – Sydney
Antarctica	~0	0.004[91]	N/A[note 3]	1,258 – McMurdo Station

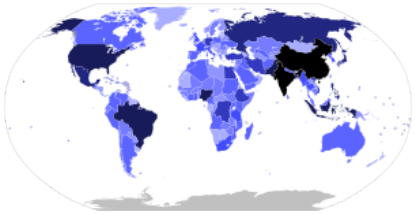
Largest populations by country

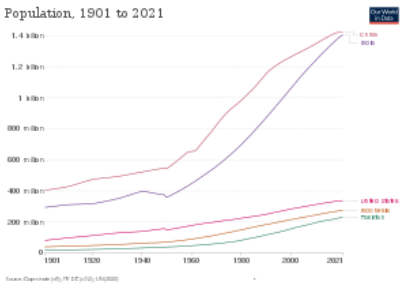
10 most populous countries

Rank	Country / Dependency	Population	Percentage of the world	Date	Source (official or from the United Nations)
1	China	1,412,600,000	17.6%	31 Dec 2021	National annual estimate[93]
2	India	1,373,761,000	17.1%	1 Mar 2022	Annual national estimate[94]
3	United States	333,762,966	4.16%	10 Mar 2023	National population clock[95]
4	Indonesia	275,773,800	3.44%	1 Jul 2022	National annual estimate[96]
5	Pakistan	229,488,994	2.86%	1 Jul 2022	UN projection[97]
6	Nigeria	216,746,934	2.70%	1 Jul 2022	UN projection[97]
7	Brazil	215,871,402	2.69%	10 Mar 2023	National population clock[98]
8	Bangladesh	168,220,000	2.10%	1 Jul 2020	Annual Population Estimate[99]
9	Russia	147,190,000	1.84%	1 Oct 2021	2021 preliminary census results[100]
10	Mexico	128,271,248	1.60%	31 Mar 2022	National quarterly estimate[101]

Approximately 4.5 billion people live in these ten countries, representing around 56% of the world's population as of July 2022.

Cartogram showing the distribution of the world population, each square represents half a million people.


A map of world population in 2019



1901 to 2021 population graph of the five countries with the highest current populations

Most densely populated countries

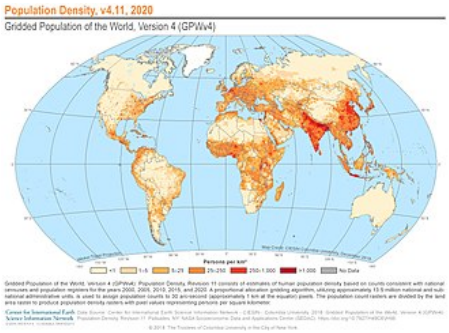
The tables below list the world's most densely populated countries, both in absolute terms and in comparison to their total populations, as of November 2022. All areas and populations are from The World Factbook, unless otherwise noted.

10 most densely populated countries (with population above 5 million)[102]

Rank	Country	Population	Area (km^2)	Density (pop/km^2)
1	Singapore	5,921,231	719	8,235
2	Bangladesh	165,650,475	148,460	1,116
3	Palestine[103]	5,223,000	6,025	867
4	Taiwan	23,580,712	35,980	655
5	South Korea	51,844,834	99,720	520
6	Lebanon	5,296,814	10,400	509
7	Rwanda	13,173,730	26,338	500
8	Burundi	12,696,478	27,830	456
9	India	1,389,637,446	3,287,263	423
10	Netherlands	17,400,824	41,543	419

Countries ranking highly in both total population (more than 20 million people) and population density (more than 250 people per square kilometer)[102]

Rank	Country	Population	Area (km^2)	Density (pop/km^2)	Population trend
1	India	1,389,637,446	3,287,263	423	Growing
2	Pakistan	242,923,845	796,095	305	Rapidly growing
3	Bangladesh	165,650,475	148,460	1,116	Growing
4	Japan	124,214,766	377,915	329	Declining[104]
5	Philippines	114,597,229	300,000	382	Growing
6	Vietnam	103,808,319	331,210	313	Growing
7	United Kingdom	67,791,400	243,610	278	Growing
8	South Korea	51,844,834	99,720	520	Steady
9	Taiwan	23,580,712	35,980	655	Steady
10	Sri Lanka	23,187,516	65,610	353	Growing



Population density (people per km^2) map of the world in 2020. Red areas denote regions of highest population density

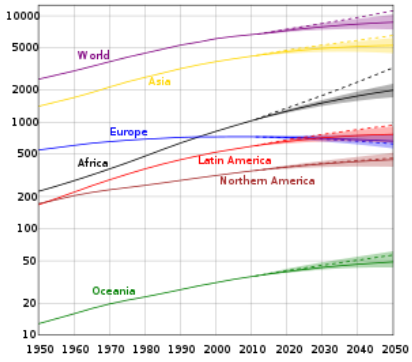
Fluctuation

Population size fluctuates at differing rates in differing regions. Nonetheless, population growth has been 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[105] as the whole world entered the early phases of what has come to be called the "demographic transition". Some of the key factors contributing to this increase included 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.[106][107] By 2000, there were approximately ten times as many people on Earth as there had been in 1700.

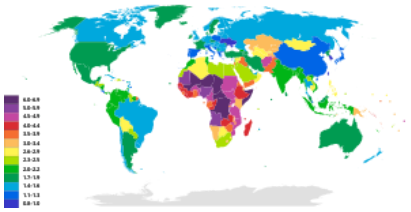
However, this rapid growth did not last. During the period 2000–2005, the United Nations estimates that the world's population was growing at an annual rate of 1.3% (equivalent to around 80 million people), down from a peak of 2.1% during the period 1965–1970.[6] Globally, although the population growth rate has been steadily declining from its peak in 1968,[108] growth still remains high in Sub-Saharan Africa.[109]

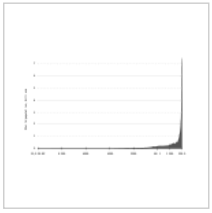
In fact, during the 2010s, Japan and some countries in Europe began to reduce in population, due to sub-replacement fertility rates.[104]

In 2019, the United Nations reported that the rate of population growth continues to decline due to the ongoing global demographic transition. If this trend continues, the rate of growth may diminish to zero by 2100, concurrent with a world population plateau of 10.9 billion.[6][69] 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.[110] 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.[111] 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."[112]

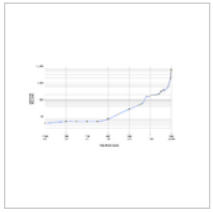


Estimates of population evolution in different continents between 1950 and 2050, according to the United Nations. The vertical axis is logarithmic and is in millions of people.

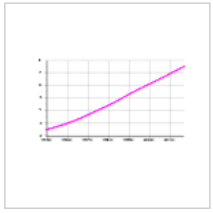

Map of countries by fertility rate (2020), according to the Population Reference Bureau



Estimated world population figures, 10,000 BC–AD 2000



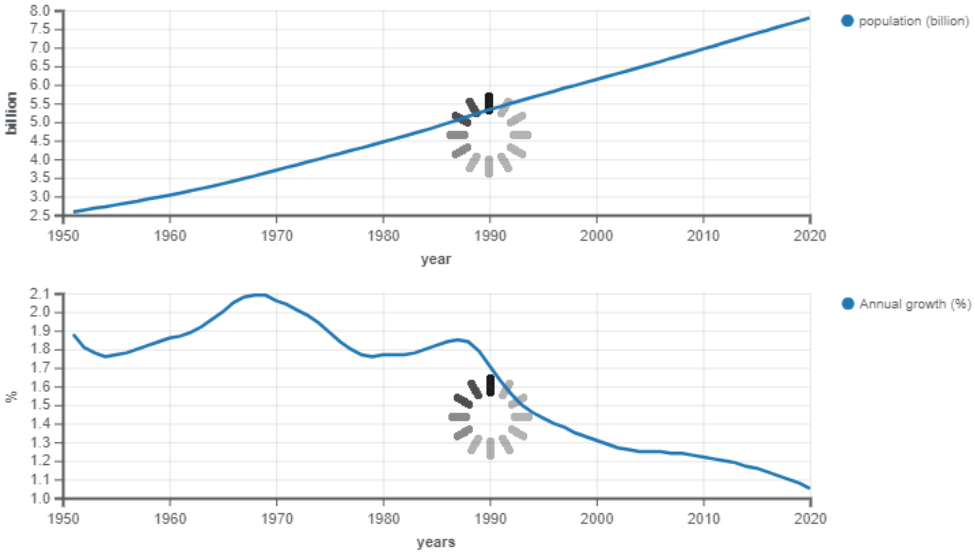
Estimated world population figures, 10,000 BC–AD 2000 (in log y scale)



World population figures, 1950–2017

A world population clock in August 2022 at Eureka! in Halifax, West Yorkshire.

Annual population growth



Global annual population growth[113]

Year	Population	Yearly growth		Density (pop/km²)	Urban population	
		%	Number		Number	%
1951	2,584,034,261	1.88%	47,603,112	17	775,067,697	30%
1952	2,630,861,562	1.81%	46,827,301	18	799,282,533	30%
1953	2,677,608,960	1.78%	46,747,398	18	824,289,989	31%
1954	2,724,846,741	1.76%	47,237,781	18	850,179,106	31%
1955	2,773,019,936	1.77%	48,173,195	19	877,008,842	32%
1956	2,822,443,282	1.78%	49,423,346	19	904,685,164	32%
1957	2,873,306,090	1.80%	50,862,808	19	933,113,168	32%
1958	2,925,686,705	1.82%	52,380,615	20	962,537,113	33%
1959	2,979,576,185	1.84%	53,889,480	20	992,820,546	33%
1960	3,034,949,748	1.86%	55,373,563	20	1,023,845,517	34%
1961	3,091,843,507	1.87%	56,893,759	21	1,055,435,648	34%
1962	3,150,420,795	1.89%	58,577,288	21	1,088,376,703	35%
1963	3,211,001,009	1.92%	60,580,214	22	1,122,561,940	35%
1964	3,273,978,338	1.96%	62,977,329	22	1,157,813,355	35%
1965	3,339,583,597	2.00%	65,605,259	22	1,188,469,224	36%
1966	3,407,922,630	2.05%	68,339,033	23	1,219,993,032	36%
1967	3,478,769,962	2.08%	70,847,332	23	1,252,566,565	36%
1968	3,551,599,127	2.09%	72,829,165	24	1,285,933,432	36%
1969	3,625,680,627	2.09%	74,081,500	24	1,319,833,474	36%
1970	3,700,437,046	2.06%	74,756,419	25	1,354,215,496	37%
1971	3,775,759,617	2.04%	75,322,571	25	1,388,834,099	37%
1972	3,851,650,245	2.01%	75,890,628	26	1,424,734,781	37%
1973	3,927,780,238	1.98%	76,129,993	26	1,462,178,370	37%
1974	4,003,794,172	1.94%	76,013,934	27	1,501,134,655	37%
1975	4,079,480,606	1.89%	75,686,434	27	1,538,624,994	38%
1976	4,154,666,864	1.84%	75,186,258	28	1,577,376,141	38%
1977	4,229,506,060	1.80%	74,839,196	28	1,616,419,308	38%
1978	4,304,533,501	1.77%	75,027,441	29	1,659,306,117	39%
1979	4,380,506,100	1.76%	75,972,599	29	1,706,021,638	39%
1980	4,458,003,514	1.77%	77,497,414	30	1,754,201,029	39%
1981	4,536,996,762	1.77%	78,993,248	30	1,804,215,203	40%
1982	4,617,386,542	1.77%	80,389,780	31	1,854,134,229	40%
1983	4,699,569,304	1.78%	82,182,762	32	1,903,822,436	41%
1984	4,784,011,621	1.80%	84,442,317	32	1,955,106,433	41%
1985	4,870,921,740	1.82%	86,910,119	33	2,007,939,063	41%
1986	4,960,567,912	1.84%	89,646,172	33	2,062,604,394	42%
1987	5,052,522,147	1.85%	91,954,235	34	2,118,882,551	42%
1988	5,145,426,008	1.84%	92,903,861	35	2,176,126,537	42%
1989	5,237,441,558	1.79%	92,015,550	35	2,233,140,502	43%
1990	5,327,231,061	1.71%	89,789,503	36	2,290,228,096	43%
1991	5,414,289,444	1.63%	87,058,383	36	2,347,462,336	43%
1992	5,498,919,809	1.56%	84,630,365	37	2,404,337,297	44%
1993	5,581,597,546	1.50%	82,677,737	37	2,461,223,528	44%
1994	5,663,150,427	1.46%	81,552,881	38	2,518,254,111	44%
1995	5,744,212,979	1.43%	81,062,552	39	2,575,505,235	45%
1996	5,824,891,951	1.40%	80,678,972	39	2,632,941,583	45%
1997	5,905,045,788	1.38%	80,153,837	40	2,690,813,541	46%
1998	5,984,793,942	1.35%	79,748,154	40	2,749,213,598	46%
1999	6,064,239,055	1.33%	79,445,113	41	2,808,231,655	46%
2000	6,143,494,000	1.31%	79,255,000	41	2,868,308,000	46%
2001	6,222,627,000	1.29%	79,133,000	42	2,933,079,000	47%
2002	6,301,773,000	1.27%	79,147,000	42	3,001,808,000	47%
2003	6,381,185,000	1.26%	79,412,000	43	3,071,744,000	48%
2004	6,461,159,000	1.25%	79,974,000	43	3,143,045,000	48%

Year	Population	Yearly growth		Density (pop/km^2)	Urban population	
		%	Number		Number	%
2005	6,541,907,000	1.25%	80,748,000	44	3,215,906,000	49%
2006	6,623,518,000	1.25%	81,611,000	44	3,289,446,000	50%
2007	6,705,947,000	1.24%	82,429,000	45	3,363,610,000	50%
2008	6,789,089,000	1.24%	83,142,000	46	3,439,719,000	50%
2009	6,872,767,000	1.23%	83,678,000	47	3,516,830,000	51%
2010	6,956,824,000	1.22%	84,057,000	47	3,594,868,000	51%
2011	7,041,194,000	1.21%	84,371,000	47	3,671,424,000	52%
2012	7,125,828,000	1.20%	84,634,000	48	3,747,843,000	52%
2013	7,210,582,000	1.19%	84,754,000	48	3,824,990,000	53%
2014	7,295,291,000	1.17%	84,709,000	49	3,902,832,000	53%
2015	7,379,797,000	1.16%	84,506,000	50	3,981,498,000	54%
2016	7,464,022,000	1.14%	84,225,000	50	4,060,653,000	54%
2017	7,547,859,000	1.12%	83,837,000	51	4,140,189,000	55%
2018	7,631,091,000	1.10%	83,232,000	51	4,219,817,000	55%
2019	7,713,468,000	1.08%	82,377,000	52	4,299,439,000	56%
2020	7,795,000,000	1.05%	81,331,000	52	4,378,900,000	56%

Population growth by region

The table below shows historical and predicted regional population figures in millions.[114][115][116] The availability of historical population figures varies by region.

World historical and predicted populations (in millions)[117][118][119]

Region	1500	1600	1700	1750	1800	1850	1900	1950	1999	2008	2010	2012	2050	2150
World	585	660	710	791	978	1,262	1,650	2,521	6,008	6,707	6,896	7,052	9,725	9,746
Africa	86	114	106	106	107	111	133	221	783	973	1,022	1,052	2,478	2,308
Asia	282	350	411	502	635	809	947	1,402	3,700	4,054	4,164	4,250	5,267	5,561
Europe	168	170	178	190	203	276	408	547	675	732	738	740	734	517
Latin America[Note 1]	40	20	10	16	24	38	74	167	508	577	590	603	784	912
Northern America[Note 1]	6	3	2	2	7	26	82	172	312	337	345	351	433	398
Oceania	3	3	3	2	2	2	6	13	30	34	37	38	57	51

World historical and predicted populations by percentage distribution[117][118]

Region	1500	1600	1700	1750	1800	1850	1900	1950	1999	2008	2010	2012	2050	2150
Africa	14.7	17.3	14.9	13.4	10.9	8.8	8.1	8.8	13.0	14.5	14.8	15.2	25.5	23.7
Asia	48.2	53.0	57.9	63.5	64.9	64.1	57.4	55.6	61.6	60.4	60.4	60.3	54.2	57.1
Europe	28.7	25.8	25.1	20.6	20.8	21.9	24.7	21.7	11.2	10.9	10.7	10.5	7.6	5.3
Latin America[Note 1]	6.8	3.0	1.4	2.0	2.5	3.0	4.5	6.6	8.5	8.6	8.6	8.6	8.1	9.4
Northern America[Note 1]	1.0	0.5	0.3	0.3	0.7	2.1	5.0	6.8	5.2	5.0	5.0	5.0	4.5	4.1
Oceania	0.5	0.5	0.4	0.3	0.2	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.5

Past population

The following table gives estimates, in millions, of population in the past. The data for 1750 to 1900 are from the UN report "The World at Six Billion"[120] whereas the data from 1950 to 2015 are from a UN data sheet.[89]

Year	World	Africa	Asia	Europe	Latin America & Carib.[Note 1]	North America [Note 1]	Oceania	Notes
70,000 BC	< 0.015				0	0		[121]
10,000 BC	4							[122]
8000 BC	5							
6500 BC	5							
5000 BC	5							
4000 BC	7							
3000 BC	14							
2000 BC	27							
1000 BC	50	7	33	9				
500 BC	100	14	66	16				
AD 1	200	23	141	28				
1000	400	70	269	50	8	1	2	
1500	458	86	243	84	39	3	3	
1600	580	114	339	111	10	3	3	
1700	682	106	436	125	10	2	3	
1750	791	106	502	163	16	2	2	
1800	1,000	107	656	203	24	7	3	
1850	1,262	111	809	276	38	26	2	
1900	1,650	133	947	408	74	82	6	
1950	2,525	229	1,394	549	169	172	12.7	[123]
1955	2,758	254	1,534	577	193	187	14.2	
1960	3,018	285	1,687	606	221	204	15.8	
1965	3,322	322	1,875	635	254	219	17.5	
1970	3,682	366	2,120	657	288	231	19.7	
1975	4,061	416	2,378	677	326	242	21.5	
1980	4,440	478	2,626	694	365	254	23.0	
1985	4,853	550	2,897	708	406	267	24.9	
1990	5,310	632	3,202	721	447	281	27.0	
1995	5,735	720	3,475	728	487	296	29.1	
2000	6,127	814	3,714	726	527	314	31.1	
2005	6,520	920	3,945	729	564	329	33.4	
2010	6,930	1,044	4,170	735	600	344	36.4	
2015	7,349	1,186	4,393	738	634	358	39.3	

Using the above figures, the change in population from 2010 to 2015 was:

- World: +420 million
- Africa: +142 million
- Asia: +223 million
- Europe: +3 million
- Latin America and Caribbean: +35 million
- Northern America: +14 million
- Oceania: +2.9 million

1. **North America** is here defined to include the northernmost countries and territories of North America: Canada, the United States, Greenland, Bermuda, and Saint Pierre and Miquelon. **Latin America & Carib.** comprises Mexico, Central America, the Caribbean, and South America.

Projections

Long-term global population growth is difficult to predict. The United Nations and the US Census Bureau both give different estimates – according to the UN, the world population reached seven billion in late 2011,[114] while the USCB asserted that this occurred in March 2012.[124] Since 1951 the UN has issued multiple projections of future world population, based on different assumptions. From 2000 to 2005, the UN consistently revised these projections downward, until the 2006 revision, issued on 14 March 2007, revised the 2050 mid-range estimate upwards by 273 million.

Complicating the UN's and others' attempts to project future populations is the fact that average global birth rates, as well as mortality rates, are declining rapidly, as the nations of the world progress through the stages of the demographic transition, but both vary greatly between developed countries (where birth rates and mortality rates are often low) and developing countries (where birth and mortality rates typically remain high). Different ethnicities also display varying birth rates. Both of these can change rapidly due to disease epidemics, wars and other mass catastrophes, or advances in medicine and public health.

The UN's first report in 1951 showed that during the period 1950–55 the crude birth rate was 36.9/1,000 population and the crude death rate was 19.1/1,000. By the period 2015–20 both numbers had dropped significantly to 18.5/1,000 for the crude birth rate and 7.5/1,000 for the crude death rate. UN projections for 2100 show a further decline in the crude birth rate to 11.6/1,000 and an increase in the crude death rate to 11.2/1,000.[125],[126]

The total number of births globally is currently (2015–20) 140 million/year, is projected to peak during the period 2040–45 at 141 million/year and thereafter decline slowly to 126 million/year by 2100.[10] The total number of deaths is currently 57 million/year and is projected to grow steadily to 121 million/year by 2100.[11]

2012 United Nations projections show a continued increase in population in the near future with a steady decline in population growth rate; the global population is expected to reach between 8.3 and 10.9 billion by 2050.[127][128] 2003 UN Population Division population projections for the year 2150 range between 3.2 and 24.8 billion.[71] One of many independent mathematical models supports the lower estimate,[129] while a 2014 estimate forecasts between 9.3 and 12.6 billion in 2100, and continued growth thereafter.[130][131] The 2019 Revision of the UN estimates gives the "medium variant" population as; nearly 8.6 billion in 2030, about 9.7 billion in 2050 and about 10.9 billion in 2100.[132] In December 2019, the German Foundation for World Population projected that the global population will reach 8 billion by 2023 as it increases by 156 every minute.[133] In a modeled future projection by the Institute for Health Metrics and Evaluation the global population was projected to peak in 2064 at 9.73 billion people and decline to 8.79 billion in 2100.[134] Some analysts have questioned the sustainability of further world population growth, highlighting the growing pressures on the environment,[135][136] global food supplies, and energy resources.[137][138][139]

UN (medium variant – 2019 revision) and US Census Bureau (June 2015) estimates[140][141]

Year	UN est. (millions)	Difference	USCB est. (millions)	Difference
2005	6,542	–	6,473	–
2010	6,957	415	6,866	393
2015	7,380	423	7,256	390
2020	7,795	415	7,643	380
2025	8,184	390	8,007	363
2030	8,549	364	8,341	334
2035	8,888	339	8,646	306
2040	9,199	311	8,926	280
2045	9,482	283	9,180	254
2050	9,735	253	9,408	228

UN 2019 estimates and medium variant projections (in millions)[140]

Year	World	Asia	Africa	Europe	Latin America/Caribbean	Northern America	Oceania
2000	6,144	3,741 (60.9%)	811 (13.2%)	726 (11.8%)	522 (8.5%)	312 (5.1%)	31 (0.5%)
2005	6,542	3,978 (60.8%)	916 (14.0%)	729 (11.2%)	558 (8.5%)	327 (5.0%)	34 (0.5%)
2010	6,957	4,210 (60.5%)	1,039 (14.9%)	736 (10.6%)	591 (8.5%)	343 (4.9%)	37 (0.5%)
2015	7,380	4,434 (60.1%)	1,182 (16.0%)	743 (10.1%)	624 (8.5%)	357 (4.8%)	40 (0.5%)
2020	7,795	4,641 (59.5%)	1,341 (17.2%)	748 (9.6%)	654 (8.4%)	369 (4.7%)	43 (0.6%)
2025	8,184	4,823 (58.9%)	1,509 (18.4%)	746 (9.1%)	682 (8.3%)	380 (4.6%)	45 (0.6%)
2030	8,549	4,974 (58.2%)	1,688 (19.8%)	741 (8.7%)	706 (8.3%)	391 (4.6%)	48 (0.6%)
2035	8,888	5,096 (57.3%)	1,878 (21.1%)	735 (8.3%)	726 (8.2%)	401 (4.5%)	50 (0.6%)
2040	9,199	5,189 (56.4%)	2,077 (22.6%)	728 (7.9%)	742 (8.1%)	410 (4.5%)	53 (0.6%)
2045	9,482	5,253 (55.4%)	2,282 (24.1%)	720 (7.6%)	754 (8.0%)	418 (4.4%)	55 (0.6%)
2050	9,735	5,290 (54.3%)	2,489 (25.6%)	711 (7.3%)	762 (7.8%)	425 (4.4%)	57 (0.6%)
2055	9,958	5,302 (53.2%)	2,698 (27.1%)	700 (7.0%)	767 (7.7%)	432 (4.3%)	60 (0.6%)
2060	10,152	5,289 (52.1%)	2,905 (28.6%)	689 (6.8%)	768 (7.6%)	439 (4.3%)	62 (0.6%)
2065	10,318	5,256 (51.0%)	3,109 (30.1%)	677 (6.6%)	765 (7.4%)	447 (4.3%)	64 (0.6%)
2070	10,459	5,207 (49.8%)	3,308 (31.6%)	667 (6.4%)	759 (7.3%)	454 (4.3%)	66 (0.6%)
2075	10,577	5,143 (48.6%)	3,499 (33.1%)	657 (6.2%)	750 (7.1%)	461 (4.4%)	67 (0.6%)
2080	10,674	5,068 (47.5%)	3,681 (34.5%)	650 (6.1%)	739 (6.9%)	468 (4.4%)	69 (0.7%)
2085	10,750	4,987 (46.4%)	3,851 (35.8%)	643 (6.0%)	726 (6.8%)	474 (4.4%)	71 (0.7%)
2090	10,810	4,901 (45.3%)	4,008 (37.1%)	638 (5.9%)	711 (6.6%)	479 (4.4%)	72 (0.7%)
2095	10,852	4,812 (44.3%)	4,152 (38.3%)	634 (5.8%)	696 (6.4%)	485 (4.5%)	74 (0.7%)
2100	10,875	4,719 (43.4%)	4,280 (39.4%)	630 (5.8%)	680 (6.3%)	491 (4.5%)	75 (0.7%)

Mathematical approximations

In 1975, Sebastian von Hoerner proposed a formula for population growth which represented hyperbolic growth with an infinite population in 2025.[142] The hyperbolic growth of the world population observed until the 1970s was later correlated to a non-linear second-order positive feedback between demographic growth and technological development. This feedback can be described as follows: technological advance → increase in the carrying capacity of land for people → demographic growth → more people → more potential inventors → acceleration of technological advance → accelerating growth of the carrying capacity → faster population growth → accelerating growth of the number of potential inventors → faster technological advance → hence, the faster growth of the Earth's carrying capacity for people, and so on.[143] The transition from hyperbolic growth to slower rates of growth is related to the demographic transition.

According to the Russian demographer Sergey Kapitsa,[144] the world population grew between 67,000 BC and 1965 according to the following formula:

$$N = \frac{C}{\tau} \operatorname{arccot} \frac{T_0 - T}{\tau},$$

where

N is current population,
T is the current year,
$C = (1.86 \pm 0.01) \cdot 10^{11}$,
$T_0 = 2007 \pm 1$,
$\tau = 42 \pm 1$.

Years for world population to double

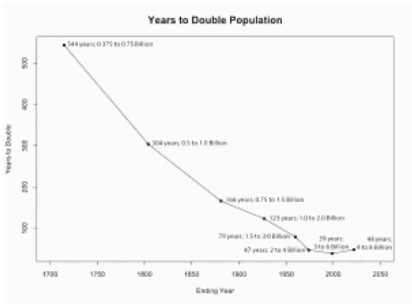
According to linear interpolation and extrapolation of UNDESA population estimates, the world population has doubled, or will double, in the years listed in the tables below (with two different starting points). During the 2nd millennium, each doubling took roughly half as long as the previous doubling, fitting the hyperbolic growth model mentioned above. However, after 2024, it is unlikely that there will be another doubling of the global population in the 21st century.[145]

Starting at 500 million

Population (in billions)	0.5	1	2	4	8	16
Year	1500	1804	1927	1974	2022	n/a
Years elapsed	—	304	123	47	48	—

Starting at 375 million

Population (in billions)	0.375	0.75	1.5	3	6	12
Year	1171	1715	1881	1960	1999	c. 2100[146]
Years elapsed	—	544	166	79	39	c. 100+



Historic chart showing the periods of time the world population has taken to double, from 1700 to 2000

Number of humans who have ever lived

The total number of humans who have ever lived is estimated to be approximately 100 billion. Such estimates can only be rough approximations, as even modern population estimates are subject to uncertainty of around 3% to 5%.[16] Kapitsa (1996) cites estimates ranging between 80 and 150 billion.[147] The PRB puts the figure at 117 billion as of 2020, estimating that the current world population is 6.7% of all the humans who have ever lived.[148] Haub (1995) prepared another figure, updated in 2002 and 2011; the 2011 figure was approximately 107 billion.[149][150][151] Haub characterized this figure as an estimate that required "selecting population sizes for different points from antiquity to the present and applying assumed birth rates to each period".[150]

Robust population data only exist for the last two or three centuries. Until the late 18th century, few governments had ever performed an accurate census. In many early attempts, such as in Ancient Egypt and the Persian Empire, the focus was on counting merely a subset of the population for purposes of taxation or military service.[152] Thus, there is a significant margin of error when estimating ancient global populations.

Pre-modern infant mortality rates are another critical factor for such an estimate; these rates are very difficult to estimate for ancient times due to a lack of accurate records. Haub (1995) estimates that around 40% of those who have ever lived did not survive beyond their first birthday. Haub also stated that "life expectancy at birth probably averaged only about ten years for most of human history",[150] which is not to be mistaken for the life expectancy after reaching adulthood. The latter equally depended on period, location and social standing, but calculations identify averages from roughly 30 years upward.

See also

- Demographics of the world
- Anthropocene
- Birth control
- Coastal population growth
- Demographic transition
- Population decline
- Doomsday argument
- Family planning
- Food security
- Human overpopulation
- Megacity
- Natalism
- One-child policy
- Population growth
- Population dynamics
- Two-child policy

Lists:

- List of population concern organizations
- List of countries and dependencies by population
- List of sovereign states and dependencies by total fertility rate
- List of countries by population growth rate
- List of countries by past and projected future population
- List of countries by population in 1900
- List of countries and dependencies by population density
- List of largest cities
- List of religious populations
- Lists of organisms by population – for non-human global populations

Historical:

- Historical censuses
- Historical demography

Explanatory notes

1. Excluding its Special Administrative Regions (SARs) of Hong Kong and Macau.
2. Excludes Mexico, Central America and the Caribbean, which are included here under Latin America.
3. The Antarctic Treaty System limits the nature of national claims in Antarctica. Of the territorial claims in Antarctica, the Ross Dependency has the largest population.

References

1. "World population estimates and UN projection" (https://ourworldindata.org/grapher/world-population-1750-2015-and-un-projection-until-2100). *Our World in Data*. Retrieved 1 November 2021.
2. "World Population Prospects – Population Division – United Nations" (https://population.un.org/wpp/Graphs/Probabilistic/POP/TOT/900). United Nations. Retrieved 1 November 2021.
3. Kight, Stef W.; Lysik, Tory (14 November 2022). "The human race at 8 billion" (https://www.axios.com/2022/11/14/global-population-8-billion-data-world-humans-un). *Axios*. Retrieved 15 November 2022.
4. Jean-Noël Biraben (1980), "An Essay Concerning Mankind's Evolution". *Population*, Selected Papers. Vol. 4. pp. 1–13. Original paper in French:(b) Jean-Noël Biraben (1979)."Essai sur l'évolution du nombre des hommes". *Population*. Vol. 34 (no. 1). pp. 13–25.
5. "World Population Prospects" (https://web.archive.org/web/20160919061238/https://esa.un.org/unpd/wpp/DataQuery/). United Nations. Archived from the original (https://esa.un.org/unpd/wpp/DataQuery/) on 19 September 2016. Retrieved 15 September 2016.
6. "World Population Prospects 2019, Population Growth Rate file, estimates tab" (https://population.un.org/wpp/Download/Standard/Population/). *United Nations Department of Economic and Social Affairs*. 2019.

7. "World Population Prospects 2019, Population Growth Rate file, medium variant tab" (https://population.un.org/wpp/Download/Standard/Population/). *United Nations Department of Economic and Social Affairs*. 2019.
8. Ortiz-Ospina, Esteban; Roser, Max (9 May 2013). "World Population Growth" (https://ourworldindata.org/world-population-growth). *Our World in Data*. Archived (https://web.archive.org/web/20161013144559/https://ourworldindata.org/world-population-growth/) from the original on 13 October 2016. Retrieved 13 October 2016.
9. Cave, Damien; Bubola, Emma; Sang-Hun, Choe (22 May 2021). "Long Slide Looms for World Population, With Sweeping Ramifications" (https://ghostarchive.org/archive/20211228/https://www.nytimes.com/2021/05/22/world/global-population-shrinking.html). *The New York Times*. ISSN 0362-4331 (https://www.worldcat.org/issn/0362-4331). Archived from the original (https://www.nytimes.com/2021/05/22/world/global-population-shrinking.html) on 28 December 2021. Retrieved 23 May 2021.
10. "World Population Prospects 2019, Births file" (https://population.un.org/wpp/Download/Standard/Fertility/). *United Nations Department of Economic and Social Affairs*. 2019.
11. "World Population Prospects 2019, Deaths file" (https://population.un.org/wpp/Download/Standard/Mortality/). *United Nations Department of Economic and Social Affairs*. 2019.
12. "World" (https://www.cia.gov/the-world-factbook/countries/world/), *The World Factbook*, Central Intelligence Agency, 19 October 2021, retrieved 1 November 2021
13. the compound "world population" becomes common from c. the 1930s, adapted from early 20th-century "world's population"; pre-20th century authors use "population of the world".
14. "The population of the world, which Sir W. P. in 1682, stated at only 320 millions, has been estimated by some writers at about 730 million, by others, at upwards of 900 million; Mr. Wallace, of Edinburgh, conjectured it might amount to 1 billion, and this number has since generally been adopted who have noticed the subject;" *The Monthly Magazine* 4 (July–December 1797), p. 167 (https://books.google.com/books?id=0S0AAAAAYAAJ&pg=PA167#v=onepage&q&f=false).
15. 600 million: Simon Gray, *The Happiness of States* (1818), p. 356 (https://books.google.com/books?id=ue5eAAAAcAAJ&pg=PA356) Archived (https://web.archive.org/web/20190606203312/https://books.google.com/books?id=ue5eAAAAcAAJ&pg=PA356) 6 June 2019 at the Wayback Machine. 800 million: Gordon Hall, Samuel Newell, *The Conversion of the World* (1818), p. 10 (https://books.google.com/books?id=ZzA3AAAAMAAJ&pg=PA10) Archived (https://web.archive.org/web/20190606203315/https://books.google.com/books?id=ZzA3AAAAMAAJ&pg=PA10) 6 June 2019 at the Wayback Machine. 800 to 1000 million: John Redman Coxe, *Considerations Respecting the Recognition of Friends in Another World* (1845), p. 21 (https://archive.org/details/60340180R.nlm.nih.gov/page/n28) (footnote with references).
16. "[E]ven recent demographic data is accurate only from 3 to 5%, although in demography traditionally more digits are indicated than those having a meaning. This is partially due to the ethical difficulty in rounding off numbers that supposedly represent real people, officially counted during a census". Sergei P. Kapitza, "The phenomenological theory of world population growth", *Physics-Uspekhi* 39(1) 57–71 (1996).
17. Luc-Normand Tellier (2009). *Urban world history: an economic and geographical perspective* (https://books.google.com/books?id=cXuCjDbxC1YC&pg=PA26). p. 26. ISBN 978-2-7605-1588-8.
18. Ralph Thomlinson, 1975, Demographic Problems: Controversy over population control, 2nd Ed., Dickenson Publishing Company, Ecino, CA, ISBN 0-8221-0166-1.
19. Dr. Kenneth W. Harl (1998). "Population estimates of the Roman Empire" (https://web.archive.org/web/20160507061006/http://www.tulane.edu/~august/H303/handouts/Population.htm). Tulane.edu. Archived from the original (http://www.tulane.edu/~august/H303/handouts/Population.htm) on 7 May 2016. Retrieved 8 December 2012.
20. "Plague, Plague Information, Black Death Facts, News, Photos" (http://science.nationalgeographic.com/science/health-and-human-body/human-diseases/plague-article.html). *National Geographic*. Archived (https://web.archive.org/web/20130722230538/http://science.nationalgeographic.com/science/health-and-human-body/human-diseases/plague-article.html) from the original on 22 July 2013. Retrieved 3 November 2008.
21. "History of Europe – Demographic and agricultural growth" (http://www.britannica.com/EBchecked/topic/195896/history-of-Europe/276190/Demographic-and-agricultural-growth#ref=ref994290). *Encyclopædia Britannica*. 2012. Archived (https://web.archive.org/web/20121220154316/http://www.britannica.com/EBchecked/topic/195896/history-of-Europe/276190/Demographic-and-agricultural-growth#ref=ref994290) from the original on 20 December 2012. Retrieved 17 December 2012.
22. "Historical Estimates of World Population" (https://www.census.gov/population/international/data/worldpop/table_history.php). Census.gov. Archived (https://web.archive.org/web/20120709092946/https://www.census.gov/population/international/data/worldpop/table_history.php) from the original on 9 July 2012. Retrieved 12 November 2016.
23. Biraben, Jean-Noël (1979). "Essai sur l'évolution du nombre des hommes" (https://www.jstor.org/stable/1531855). *Population*. **34** (1): 13–25. doi:10.2307/1531855 (https://doi.org/10.2307%2F1531855). JSTOR 1531855 (https://www.jstor.org/stable/1531855). Retrieved 11 February 2022.
24. Jay, Peter (17 July 2000). "A Distant Mirror" (https://web.archive.org/web/20080725005418/http://www.time.com/time/europe/magazine/2000/0717/peter.html). *TIME Europe*. **156** (3). Archived from the original (http://www.time.com/time/world/article/0,8599,2050585,00.html) on 25 July 2008. Retrieved 9 August 2014.
25. Horst R. Thieme (2003). *Mathematics in population biology* (https://books.google.com/books?id=cHcjnkrMweYC&pg=PA285). p. 285. ISBN 978-0-691-09291-1.
26. Graziella Caselli; Gillaume Wunsch & Jacques Vallin (2005). *Demography: Analysis and Synthesis, Four Volume Set: A Treatise in Population* (https://books.google.com/books?id=nmgNXoiAiU4C&pg=RA2-PA34). p. 34. ISBN 978-0-12-765660-1.
27. Nishijima, Sadao (1986), "The economic and social history of Former Han", in Twitchett, Denis; Loewe, Michael, *Cambridge History of China: Volume I: the Ch'in and Han Empires, 221 B.C. – A.D. 220*, Cambridge: Cambridge University Press, pp 595–96.
28. "Qing China's Internal Crisis: Land Shortage, Famine, Rural Poverty" (http://afe.easia.columbia.edu/special/china_1750_demographic.htm). Columbia University: Asia for Educators. 2009. Archived (https://web.archive.org/web/20110708082757/http://afe.easia.columbia.edu/special/china_1750_demographic.htm) from the original on 8 July 2011. Retrieved 9 July 2013.
29. "History of Europe – Demographics" (http://www.britannica.com/EBchecked/topic/195896/history-of-Europe/58335/Demographics#ref=ref310375). *Encyclopædia Britannica*. Archived (https://web.archive.org/web/20130723052625/http://www.britannica.com/EBchecked/topic/195896/history-of-Europe/58335/Demographics#ref=ref310375) from the original on 23 July 2013. Retrieved 9 July 2013.
30. "China's Population: Readings and Maps" (http://afe.easia.columbia.edu/china/geog/population.htm). Columbia University: East Asian Curriculum Project. Archived (https://web.archive.org/web/20110719173803/http://afe.easia.columbia.edu/china/geog/population.htm) from the original on 19 July 2011. Retrieved 18 December 2012.
31. "The Columbian Exchange" (http://archive.wikiwix.com/cache/20110726194333/http://www.learnnc.org/lp/editions/nchist-twoworlds/1866). University of North Carolina. Archived from the original (http://www.learnnc.org/lp/editions/nchist-twoworlds/1866) on 26 July 2011. Retrieved 18 December 2012.
32. Collingham, Lizzie (2006). *Vindaloo: the Portuguese and the chilli pepper. Curry: A Tale of Cooks and Conquerors*. Oxford: Oxford University Press. pp. 47–73. ISBN 978-0-19-988381-3.
33. "Super-Sized Cassava Plants May Help Fight Hunger in Africa" (https://web.archive.org/web/20131208143623/http://researchnews.osu.edu/archive/suprtubr.htm). Ohio State University. 24 May 2006. Archived from the original (http://researchnews.osu.edu/archive/suprtubr.htm) on 8 December 2013. Retrieved 9 July 2013.
34. Brabazon, James (2000). *Albert Schweitzer: a biography* (https://archive.org/details/albertschweitzer00jame). Syracuse University Press. p. 242 (https://archive.org/details/albertschweitzer00jame/page/242). ISBN 978-0-8156-0675-8.
35. "U.S. News & World Report: How many people were here before Columbus? Pick a number" (https://web.archive.org/web/20080305224956/http://www.usna.edu/Users/history/kolp/HH345/PRE1492.HTM). 18 August 1997. Archived from the original (http://www.usna.edu/Users/history/kolp/HH345/PRE1492.HTM) on 5 March 2008. Retrieved 9 August 2019.

36. Snow, D. R (16 June 1995). "Microchronology and Demographic Evidence Relating to the Size of Pre-Columbian North American Indian Populations". *Science*. **268** (5217): 1601–1604. Bibcode:1995Sci...268.1601S (https://ui.adsabs.harvard.edu/abs/1995Sci...268.1601S). doi:10.1126/science.268.5217.1601 (https://doi.org/10.1126%2Fscience.268.5217.1601). PMID 17754613 (https://pubmed.ncbi.nlm.nih.gov/17754613). S2CID 8512954 (https://api.semanticscholar.org/CorpusID:8512954).
37. Arthur C. Aufderheide; Conrado Rodríguez-Martín & Odin Langsjoen (1998). *The Cambridge encyclopedia of human paleopathology* (https://archive.org/details/cambridgeencyclo0000aufd). Cambridge University Press. p. 205 (https://archive.org/details/cambridgeencyclo0000aufd/page/205). ISBN 978-0-521-55203-5.
38. "The Story Of... Smallpox – and other Deadly Eurasian Germs" (https://www.pbs.org/gunsgermssteel/variables/smallpox.html). Public Broadcasting Service. 2005. Archived (https://web.archive.org/web/20180129120446/http://www.pbs.org/gunsgermssteel/variables/smallpox.html) from the original on 29 January 2018. Retrieved 24 April 2013.
39. Austin Alchon, Suzanne (2003). *A pest in the land: new world epidemics in a global perspective* (https://books.google.com/books?id=YiHHnV08ebkC&pg=PA31). University of New Mexico Press. p. 31. ISBN 978-0-8263-2871-7. Archived (https://web.archive.org/web/20160518062224/https://books.google.com/books?id=YiHHnV08ebkC&pg=PA31&dq#v=onepage&q=&f=false) from the original on 18 May 2016. Retrieved 15 November 2015.
40. "World Demographics Profile 2012" (http://www.indexmundi.com/world/demographics_profile.html). Index Mundi. Archived (https://web.archive.org/web/20120607034921/http://www.indexmundi.com/world/demographics_profile.html) from the original on 7 June 2012. Retrieved 22 May 2012.
41. "By 2050, 70% of the world's population will be urban. Is that a good thing?" (http://www.fastcodesign.com/1669244/by-2050-70-of-the-worlds-population-will-be-urban-is-that-a-good-thing). Fast Co. Design. 2012. Archived (https://web.archive.org/web/20120512121735/http://www.fastcodesign.com/1669244/by-2050-70-of-the-worlds-population-will-be-urban-is-that-a-good-thing) from the original on 12 May 2012. Retrieved 1 May 2012.
42. *Population crises and cycles in history – A review by Claire Russell and W.M.S. Russell* (https://web.archive.org/web/20110405081151/http://home.vicnet.net.au/~ozideas/poprus.htm), Vicnet.net.au, archived from the original (http://home.vicnet.net.au/~ozideas/poprus.htm) on 5 April 2011, retrieved 26 March 2015
43. Buer, Mabel C. (1926). *Health, Wealth and Population in the Early Days of the Industrial Revolution* (https://archive.org/details/b29977368). London: George Routledge & Sons. p. 30 (https://archive.org/details/b29977368/page/30). ISBN 978-0-415-38218-2.
44. "The Foundling Hospital" (https://www.bbc.co.uk/history/british/victorians/foundling_01.shtml). BBC History. 5 October 2012. Archived (https://web.archive.org/web/20130617072755/http://www.bbc.co.uk/history/british/victorians/foundling_01.shtml) from the original on 17 June 2013. Retrieved 22 April 2013.
45. "Modernization – Population Change" (http://www.britannica.com/EBchecked/topic/387301/modernization/12022/Population-change). *Encyclopædia Britannica*. Archived (https://web.archive.org/web/20090406074344/http://www.britannica.com/EBchecked/topic/387301/modernization/12022/Population-change) from the original on 6 April 2009. Retrieved 6 February 2013.
46. Graziella Caselli; Gillaume Wunsch & Jacques Vallin (2005). *Demography: Analysis and Synthesis, Four Volume Set: A Treatise in Population* (https://books.google.com/books?id=nmgNXoiAiU4C&pg=RA2-PA42). p. 42. ISBN 978-0-12-765660-1.
47. "Victorian Medicine – From Fluke to Theory" (https://www.bbc.co.uk/history/british/victorians/victorian_medicine_01.shtml). BBC History. 1 February 2002. Archived (https://web.archive.org/web/20130305103509/http://www.bbc.co.uk/history/british/victorians/victorian_medicine_01.shtml) from the original on 5 March 2013. Retrieved 17 February 2013.
48. "A portrait of Britain in 2031" (https://www.independent.co.uk/news/uk/home-news/a-portrait-of-britain-in-2031-395231.html). *The Independent*. 24 October 2007. Archived (https://web.archive.org/web/20171209044150/https://www.independent.co.uk/news/uk/home-news/a-portrait-of-britain-in-2031-395231.html) from the original on 9 December 2017. Retrieved 17 February 2013.
49. "UK population breaks through 60m" (http://news.bbc.co.uk/1/hi/uk/5281360.stm). *BBC News*. 24 August 2006. Archived (https://web.archive.org/web/20090208232413/http://news.bbc.co.uk/1/hi/uk/5281360.stm) from the original on 8 February 2009. Retrieved 14 April 2012.
50. "US population through history" (http://geography.about.com/od/obtainpopulationdata/a/uspop.htm). About.com. Archived (https://web.archive.org/web/20120113011006/http://geography.about.com/od/obtainpopulationdata/a/uspop.htm) from the original on 13 January 2012. Retrieved 14 April 2012.
51. Jay Winter, Emmanuel Sivan (2000). *War and Remembrance in the Twentieth Century* (https://books.google.com/books?id=ZK2A5x7E8IkC&pg=PA64). Cambridge University Press. p. 64. ISBN 978-0521794367. Archived (https://web.archive.org/web/20150904015129/https://books.google.com/books?id=ZK2A5x7E8IkC&pg=PA64) from the original on 4 September 2015. Retrieved 20 July 2015.
52. Mark Harrison (2002). *Accounting for War: Soviet Production, Employment, and the Defence Burden, 1940–1945* (https://books.google.com/books?id=yJcD7_Q_rQ8C&pg=PA167). p. 167. ISBN 978-0-521-89424-1.
53. "Vladimir Putin vows to reverse Russian population decline" (https://www.telegraph.co.uk/news/worldnews/vladimir-putin/9078672/Vladimir-Putin-vows-to-reverse-Russian-population-decline.html). *The Daily Telegraph*. 13 February 2012. Archived (https://web.archive.org/web/20120424133957/http://www.telegraph.co.uk/news/worldnews/vladimir-putin/9078672/Vladimir-Putin-vows-to-reverse-Russian-population-decline.html) from the original on 24 April 2012. Retrieved 13 April 2012.
54. "Russia's Population Decline Said To Have 'Stopped' " (http://www.rferl.org/content/russia-demography-health-birthrate-deaths/24998304.html). Radio Free Europe/Radio Liberty. 27 May 2013. Retrieved 15 June 2013.
55. Schran, Peter (1978). "China's demographic evolution 1850–1953 reconsidered". *The China Quarterly*. **75** (75): 639–646. doi:10.1017/S0305741000042594 (https://doi.org/10.1017%2FS0305741000042594). JSTOR 652987 (https://www.jstor.org/stable/652987). S2CID 154294204 (https://api.semanticscholar.org/CorpusID:154294204).
56. "Reintegrating India with the World Economy" (http://www.petersoninstitute.org/publications/chapters_preview/98/1iie2806.pdf) (PDF). Peterson Institute for International Economics. 2003. Archived (https://web.archive.org/web/20120304085740/http://www.petersoninstitute.org/publications/chapters_preview/98/1iie2806.pdf) (PDF) from the original on 4 March 2012. Retrieved 8 November 2012.
57. "The World Factbook – Central Intelligence Agency" (https://web.archive.org/web/20110927165947/https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html#in). *cia.gov*. Archived from the original (https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html#in) on 27 September 2011. Retrieved 8 January 2017.
58. "Java (island, Indonesia)" (https://www.britannica.com/place/Java-island-Indonesia). *Encyclopædia Britannica*. Archived (https://web.archive.org/web/20221110131115/https://www.britannica.com/place/Java-island-Indonesia) from the original on 10 November 2022. Retrieved 16 November 2022.
59. Jorge Durand (March 2004). "From Traitors to Heroes: 100 Years of Mexican Migration Policies" (http://www.migrationinformation.org/Feature/display.cfm?ID=203). University of Guadalajara. Archived (https://web.archive.org/web/20110505074111/http://www.migrationinformation.org/Feature/display.cfm?ID=203) from the original on 5 May 2011. Retrieved 16 July 2013.
60. "Population and Housing Census: Mexico 2010" (http://www.hist.umn.edu/~rmccaa/ipums-global/mexico_ipums_dublin_workshop.pdf) (PDF). University of Minnesota. 3 March 2011. Archived (https://web.archive.org/web/20131103195505/http://www.hist.umn.edu/~rmccaa/ipums-global/mexico_ipums_dublin_workshop.pdf) (PDF) from the original on 3 November 2013. Retrieved 16 July 2013.
61. Heinsohn, Gunnar (7 January 2008). "Kenya's Violence: Exploding population" (https://www.nytimes.com/2008/01/17/opinion/17iht-edheinsohn.1.9292632.html). *The New York Times*. Archived (https://web.archive.org/web/20140715084143/http://www.nytimes.com/2008/01/17/opinion/17iht-edheinsohn.1.9292632.html) from the original on 15 July 2014. Retrieved 7 July 2013.
62. Nations, United. "World population to reach 8 billion on 15 November 2022" (https://www.un.org/en/desa/world-population-reach-8-billion-15-november-2022). United Nations. Retrieved 14 November 2022.
63. "The World at Six Billion: Introduction" (https://web.archive.org/web/20160205063346/http://www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf) (PDF). United Nations. 1999. Archived from the original (https://www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf) (PDF) on 5 February 2016. Retrieved 14 July 2013.

64. "U.S. Census Bureau – World POPClock Projection" (https://www.census.gov/population/popclockworld.html). July 2013. Archived (https://web.archive.org/web/20111118011415/http://www.census.gov/population/popclockworld.html) from the original on 18 November 2011. Retrieved 18 February 2018. The number on this page is automatically updated daily.
65. "Population seven billion: UN sets out challenges" (https://www.bbc.co.uk/news/world-15459643). *BBC News*. 26 October 2011. Archived (https://web.archive.org/web/20111026202531/http://www.bbc.co.uk/news/world-15459643) from the original on 26 October 2011. Retrieved 27 October 2011.
66. Coleman, Jasmine (31 October 2011). "World's 'seven billionth baby' is born" (https://www.theguardian.com/world/2011/oct/31/seven-billionth-baby-born-philippines?intcmp=122). *The Guardian*. London. Archived (https://web.archive.org/web/20130930143837/http://www.theguardian.com/world/2011/oct/31/seven-billionth-baby-born-philippines?intcmp=122) from the original on 30 September 2013. Retrieved 31 October 2011.
67. "7 billion people is a 'serious challenge" (http://www.upi.com/Top_News/US/2011/10/31/7-billion-people-is-a-serious-challenge/UPI-73301320046200/). United Press International. 31 October 2011. Archived (https://web.archive.org/web/20111103213419/http://www.upi.com/Top_News/US/2011/10/31/7-billion-people-is-a-serious-challenge/UPI-73301320046200/) from the original on 3 November 2011. Retrieved 9 November 2011.
68. "World set to reach 8 billion people on 15 November 2022" (https://www.unfpa.org/press/world-set-reach-8-billion-people-15-november-2022). *United Nations Population Fund*. Retrieved 8 October 2022.
69. "World Population Prospects 2019, Total Population – Both Sexes file, Medium Variant tab" (https://population.un.org/wpp/Download/Standard/Population/). *United Nations Department of Economic and Social Affairs*. 2019.
70. *"Ch. 5: Population Size and Composition" (https://www.un.org/esa/population/publications/wpp2000/chapter5.pdf) (PDF). *World Population Prospects, the 2000 Revision*. Vol. III. United Nations Population Division. p. 171. Retrieved 3 July 2010.
    - "Executive Summary" (https://www.un.org/esa/population/publications/wpp2002/English.pdf) (PDF). *World Population Prospects: The 2002 Revision Volume III: Analytical Report*. 2002. Retrieved 3 July 2010.
    - "World Population to 2300" (https://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf) (PDF). New York: United Nations Department of Economic and Social Affairs: Population Division. 2004. pp. 3, 14. Archived (https://web.archive.org/web/20180919132323/http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf) (PDF) from the original on 19 September 2018. Retrieved 3 July 2010.
    - "World Population: 1950–2050" (https://www.census.gov/ipc/www/idb/worldpopgraph.php). United States Census Bureau. June 2010. Archived (https://web.archive.org/web/20131005014003/http://www.census.gov/ipc/www/idb/worldpopgraph.php) from the original on 5 October 2013. Retrieved 3 July 2010.
    - "2009 World Population Data Sheet" (http://www.prb.org/pdf09/09wpds_eng.pdf) (PDF). Washington, DC: Population Reference Bureau. 2009. Archived (https://web.archive.org/web/20100422034436/http://www.prb.org/pdf09/09wpds_eng.pdf) (PDF) from the original on 22 April 2010. Retrieved 3 July 2010.
71. "Key Findings" (https://www.un.org/esa/population/publications/longrange/longrangeKeyFind.pdf) (PDF). *Long-Range Population Projections. Proceedings of the United Nations Technical Working Group on Long-Range Population Projections*. New York: United Nations: Department of Economic and Social Affairs. 2003. Retrieved 3 July 2010.
72. "Total fertility estimates, 1950–2010" (https://web.archive.org/web/20120607191518/http://esa.un.org/unpd/wpp/Excel-Data/DB01_Period_Indicators/WPP2010_DB1_F01_TOTAL_FERTILITY.XLS). UN Population Division. April 2011. Archived from the original (http://esa.un.org/unpd/wpp/Excel-Data/DB01_Period_Indicators/WPP2010_DB1_F01_TOTAL_FERTILITY.XLS) on 7 June 2012. Retrieved 14 June 2012.
73. "World Population Prospects, the 2008 Revision – Frequently Asked Questions" (https://web.archive.org/web/20150224215308/http://esa.un.org/unpd/wpp/Other-Information/faq.htm). Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. 10 November 2010. Archived from the original (http://esa.un.org/unpd/wpp/Other-Information/faq.htm) on 24 February 2015. Retrieved 26 March 2015.
74. "World population to reach 8 billion this year, as growth rate slows" (https://news.un.org/en/story/2022/07/1122272) Archived (https://web.archive.org/web/20220716035213/https://news.un.org/en/story/2022/07/1122272) 16 July 2022 at the Wayback Machine, UN News, 11 July 2022.
75. "World Health Statistics 2016: Monitoring health for the SDGs Annex B: tables of health statistics by country, WHO region and globally" (https://www.who.int/gho/publications/world_health_statistics/2016/EN_WHS2016_AnnexB.pdf) (PDF). World Health Organization. 2016. p. 110. Archived (https://web.archive.org/web/20180517033759/http://www.who.int/gho/publications/world_health_statistics/2016/EN_WHS2016_AnnexB.pdf) (PDF) from the original on 17 May 2018. Retrieved 3 August 2018.
76. "World Demographics Profile 2011" (http://www.indexmundi.com/world/demographics_profile.html). Index Mundi. Archived (https://web.archive.org/web/20111130063938/http://www.indexmundi.com/world/demographics_profile.html) from the original on 30 November 2011. Retrieved 18 November 2011.
77. Janneh, Abdoulie (April 2012). "General debate on national experience in population matters: adolescents and youth" (https://www.un.org/esa/population/cpd/cpd2012/Agenda%20item%204/UN%20system%20statements/ECA_Item4.pdf) (PDF). United Nations Economic Commission for Africa. Archived (https://web.archive.org/web/20131110111359/http://www.un.org/esa/population/cpd/cpd2012/Agenda%20item%204/UN%20system%20statements/ECA_Item4.pdf) (PDF) from the original on 10 November 2013. Retrieved 19 February 2014.
78. "WHO, 2020 Life Expectancy" (https://apps.who.int/gho/data/node.main.688). World Health Organization. Retrieved 27 July 2022.
79. "Children per woman" (https://ourworldindata.org/grapher/children-per-woman-UN). *Our World in Data*. Retrieved 1 November 2021.
80. "Global weight gain more damaging than rising numbers" (https://www.bbc.co.uk/news/health-18462985). BBC. 18 June 2012. Archived (https://web.archive.org/web/20130204103058/http://www.bbc.co.uk/news/health-18462985) from the original on 4 February 2013. Retrieved 12 February 2013.
81. "World Economic Outlook (October 2021)" (https://www.imf.org/external/datamapper/datasets/WEO). *Imf.org*. Retrieved 1 November 2021.
82. "Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population) | Data" (https://data.worldbank.org/indicator/SI.POV.DDAY). World Bank. Retrieved 1 November 2021.
83. Food and Agriculture Organization of the United Nations, *The State of Food Insecurity in the World* (http://www.fao.org/docrep/016/i3027e/i3027e02.pdf) Archived (https://web.archive.org/web/20140611064129/http://www.fao.org/docrep/016/i3027e/i3027e02.pdf) 11 June 2014 at the Wayback Machine. WorldHunger.org. 2012. Retrieved 26 April 2012.
84. "Literacy Rate, Adult Total (% of people ages 15 and above)" (https://data.worldbank.org/indicator/SE.ADT.LITR.ZS). *The World Bank*. September 2021.
85. "Global digital population as of April 2022" (https://www.statista.com/statistics/617136/digital-population-worldwide/). *Statista*. April 2022.
86. "World's Most Typical Person: Han Chinese Man" (https://blogs.wsj.com/chinarealtime/2011/03/04/worlds-most-typical-person-han-chinese-man/) Archived (https://web.archive.org/web/20190606203315/https://blogs.wsj.com/chinarealtime/2011/03/04/worlds-most-typical-person-han-chinese-man/) 6 June 2019 at the Wayback Machine. *Wall Street Journal*. 4 March 2011. Retrieved 18 November 2011.
87. Ghosh, Iman (15 February 2020). "Ranked: The 100 Most Spoken Languages Around the World" (https://www.visualcapitalist.com/100-most-spoken-languages/). *Visual Capitalist*. Retrieved 1 November 2021.
88. "Religious Composition by Country, 2010–2050" (https://www.pewforum.org/2015/04/02/religious-projection-table/2010/number/all/). Pew Research Center. 2 April 2015.
89. "World Population Prospects: The 2015 Revision" (https://web.archive.org/web/20151222125602/http://esa.un.org/unpd/wpp/DVD/Files/1_Indicators%20(Standard)/EXCEL_FILES/1_Population/WPP2015_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.XLS). UN Population Division. Archived from the original (http://esa.un.org/unpd/wpp/DVD/Files/1_Indicators%20(Standard)/EXCEL_FILES/1_Population/WPP2015_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.XLS) on 22 December 2015. Retrieved 19 January 2016.. Linked to at Download Files (https://web.archive.org/web/20151225073428/http://esa.un.org/unpd/wpp/Download/Standard/Population/), where it states that the figures are for 1 July of the given year.

90. "Regions in the world by population (2020)" (https://www.worldometers.info/world-population/population-by-region/). Retrieved 5 October 2020.
91. "Antarctica" (https://www.cia.gov/the-world-factbook/countries/antarctica/). *The World Factbook*. 19 June 2014. Retrieved 18 March 2015.
92. "USA: Combined Metropolitan Areas" (http://citypopulation.de/en/usa/combmetro/). CityPopulation.de. August 2021. Retrieved 19 November 2021.
93. "人口总量保持增长，增长速度持续放缓" (http://www.stats.gov.cn/tjsj/sjjd/202201/t20220118_1826538.html) [The total population keeps growing, and the growth rate continues to slow down]. *National Bureau of Statistics of China* (in Chinese). Retrieved 18 January 2022.
94. "Report Population Projection 2019" (https://nhm.gov.in/New_Updates_2018/Report_Population_Projection_2019.pdf) (PDF). *Nhm.gov.in*. Retrieved 27 July 2022.
95. "Population Clock" (https://www.census.gov/popclock/). *Census.gov*. Archived (https://web.archive.org/web/20151117025617/http://www.census.gov/popclock/) from the original on 17 November 2015. Retrieved 18 April 2020.
96. "Mid Year Population (Thousand People)" (https://www.bps.go.id/indicator/12/1975/1/mid-year-population.html). Badan Pusat Statistik – Indonesia. Retrieved 16 March 2022.
97. "World Population Prospects 2019" (https://population.un.org/wpp/Download/Files/1_Indicators%20(Standard)/EXCEL_FILES/1_Population/WPP2019_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.xlsx). United Nations.
98. "IBGE | Projeção da população" (https://www.ibge.gov.br/apps/populacao/projecao/index.html). *Ibge.gov.br*. Archived (https://web.archive.org/web/20200204104203/https://www.ibge.gov.br/apps/populacao/projecao/index.html) from the original on 4 February 2020. Retrieved 22 November 2019.
99. "Monthly Statidtical Bulletin – Bangladesh" (http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/c885f359_ef11_4abe_95f6_021865be3401/2022-05-12-10-42-55414488d843db66462b5410cb439c22.pdf) (PDF). *2022-05-12-10-42-55414488d843db66462b5410cb439c22.pdf*. Bangladesh Bureau of Statistics. February 2022. Archived (https://web.archive.org/web/20220608195522/http://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/c885f359_ef11_4abe_95f6_021865be3401/2022-05-12-10-42-55414488d843db66462b5410cb439c22.pdf) (PDF) from the original on 8 June 2022. Retrieved 8 June 2022.
100. Times, The Moscow (30 May 2022). "Russia Reports 147M Population in 2021" (https://www.themoscowtimes.com/2022/05/30/russia-reports-147m-population-in-2021-a77834). *Moscow Times*. Retrieved 2 June 2022.
101. "Mexico Population | Moody's Analytics" (https://www.economy.com/mexico/population/not-seasonally-adjusted). *Economy.com*. Retrieved 2 June 2022.
102. "Countries – The World Factbook" (https://www.cia.gov/the-world-factbook/countries/). *cia.gov*. Retrieved 15 November 2022.
103. "UNData app" (http://data.un.org/en/iso/ps.html). United Nations. Retrieved 15 November 2022.
104. Demetriou, Danielle (17 April 2013). "Japan's population suffers biggest fall in history" (https://www.telegraph.co.uk/news/worldnews/asia/japan/9999591/Japans-population-suffers-biggest-fall-in-history.html). *The Daily Telegraph*. London. Archived (https://web.archive.org/web/20130521221053/http://www.telegraph.co.uk/news/worldnews/asia/japan/9999591/Japans-population-suffers-biggest-fall-in-history.html) from the original on 21 May 2013. Retrieved 22 July 2013.
105. "World Population Clock (under World Pop Milestone section)" (https://www.worldometers.info/world-population/). *Worldometer*. 2022.
106. "The limits of a Green Revolution?" (http://news.bbc.co.uk/2/hi/in_depth/6496585.stm). *BBC News*. 29 March 2007. Archived (https://web.archive.org/web/20110728055441/http://news.bbc.co.uk/2/hi/in_depth/6496585.stm) from the original on 28 July 2011. Retrieved 1 August 2010.
107. "The Real Green Revolution" (https://web.archive.org/web/20080422210924/http://www.energybulletin.net/19525.html). Energybulletin.net. Archived from the original (http://www.energybulletin.net/19525.html) on 22 April 2008. Retrieved 1 August 2010.
108. Roser, Max (18 June 2019). "Two centuries of rapid global population growth will come to an end" (https://ourworldindata.org/world-population-growth-past-future). *Our World in Data*.
109. Ron Nielsen (2006). *The Little Green Handbook* (https://archive.org/details/littlegreenhandb00ronn). New York: Picador. ISBN 978-0-312-42581-4.
110. "UN population estimates and projections, database query, August 2009" (https://web.archive.org/web/20100819143228/http://esa.un.org/UNPP/). United Nations. 11 March 2009. Archived from the original (http://esa.un.org/unpp/) on 19 August 2010. Retrieved 1 August 2010.
111. Randers, Jorgen (2012). *2052: A Global Forecast for the Next Forty Years*. Vermont: Chelsea Green Publishing. p. 62.
112. World population to keep growing this century, hit 11 billion by 2100 (http://www.washington.edu/news/2014/09/18/world-population-to-keep-growing-this-century-hit-11-billion-by-2100/) Archived (https://web.archive.org/web/20161204155734/http://www.washington.edu/news/2014/09/18/world-population-to-keep-growing-this-century-hit-11-billion-by-2100/) 4 December 2016 at the Wayback Machine. UWToday. 18 September 2014
113. "World Population by Year" (https://www.worldometers.info/world-population/world-population-by-year/). *Worldometers.info*. Retrieved 30 May 2020.
114. "World Population Prospects: The 2008 Revision" (https://www.un.org/esa/population/publications/wpp2008/wpp2008_highlights.pdf) (PDF). Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. June 2009. Archived (https://web.archive.org/web/20130319095657/http://www.un.org/esa/population/publications/wpp2008/wpp2008_highlights.pdf) (PDF) from the original on 19 March 2013. Retrieved 20 June 2013.
115. "The World at Six Billion" (https://www.un.org/esa/population/publications/sixbillion/sixbillion.htm). United Nations. 12 October 1999. Archived (https://web.archive.org/web/20130709223435/http://www.un.org/esa/population/publications/sixbillion/sixbillion.htm) from the original on 9 July 2013. Retrieved 1 August 2010.
116. "Population Growth over Human History" (https://web.archive.org/web/20110724101452/http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html). University of Michigan. 4 January 2006. Archived from the original (http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html) on 24 July 2011. Retrieved 9 March 2013.
117. Figures include the former Soviet countries in Europe. Caselli, Graziella; Gillaume Wunsch; Jacques Vallin (20 December 2005). *Demography: Analysis and Synthesis, Four Volume Set: A Treatise in Population*. Academic Press. p. 42. ISBN 978-0-12-765660-1.
118. "UN report – 2004 data" (https://web.archive.org/web/20160205063346/http://www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf) (PDF). Archived from the original (https://www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf) (PDF) on 5 February 2016. Retrieved 1 August 2010.
119. "World Population Prospects The 2015 Revision" (https://web.archive.org/web/20140320035709/http://esa.un.org/unpd/wpp/unpp/panel_population.htm). Archived from the original (http://esa.un.org/unpd/wpp/Publications/Files/Key_Findings_WPP_2015.pdf) (PDF) on 20 March 2014.
120. "The World at Six Billion" (https://www.un.org/esa/population/publications/sixbillion/sixbillion.htm). UN Population Division. Archived (https://web.archive.org/web/20160305042434/http://www.un.org/esa/population/publications/sixbillion/sixbillion.htm) from the original on 5 March 2016., Table 2 (https://web.archive.org/web/20160101220025/http://www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf)
121. Fewer than 15,000 individuals, according to the Toba catastrophe theory, though this theory has been criticized by some scientists. See: "Toba super-volcano catastrophe idea "dismissed" " (https://www.bbc.co.uk/news/science-environment-22355515). *BBC News*. 30 April 2013. Archived (https://web.archive.org/web/20150107140627/http://www.bbc.co.uk/news/science-environment-22355515) from the original on 7 January 2015. Retrieved 21 March 2015.
122. An approximation based on figures from different sources as listed at the US Census Bureau's Historical Estimates of World Population (https://www.census.gov/data/tables/time-series/demo/international-programs/historical-est-worldpop.html) Archived (https://web.archive.org/web/20190502001420/https://www.census.gov/data/tables/time-series/demo/international-programs/historical-est-worldpop.html) 2 May 2019 at the Wayback Machine; see also *Kremer, Michael (1993). "Population Growth and Technological Change: One Million B.C. to 1990". *The Quarterly Journal of Economics*. **108** (3): 681–716. doi:10.2307/2118405 (https://doi.org/10.2307%2F2118405). JSTOR 2118405 (https://www.jstor.org/stable/2118405).

123. An approximation based on figures from different sources as listed at the US Census Bureau's Total Midyear Population for the World: 1950–2050 (https://www.census.gov/population/international/data/worldpop/table_population.php) Archived (https://web.archive.org/web/20170521041303/https://www.census.gov/population/international/data/worldpop/table_population.php) 21 May 2017 at the Wayback Machine
124. "Notes on the World POPClock and World Vital Events" (https://www.census.gov/ipc/www/popwnote.html). US Census Bureau. Archived (https://web.archive.org/web/20131002103104/http://www.census.gov/ipc/www/popwnote.html) from the original on 2 October 2013. Retrieved 12 February 2013.
125. "World Population Prospects 2019, Crude Birth Rate file" (https://population.un.org/wpp/Download/Standard/Population/). *United Nations Department of Economic and Social Affairs*. 2019.
126. "World Population Prospects 2019, Crude Death Rate file" (https://population.un.org/wpp/Download/Standard/Mortality/). *United Nations Department of Economic and Social Affairs*. 2019.
127. "World Population Prospects, the 2012 Revision – "Low variant" and "High variant" values" (https://web.archive.org/web/20140701185837/http://esa.un.org/wpp/unpp/panel_population.htm). UN. 2012. Archived from the original (http://esa.un.org/wpp/unpp/panel_population.htm) on 1 July 2014. Retrieved 15 June 2013.
128. "World population projected to reach 9.6 billion by 2050 – UN report" (https://www.un.org/apps/news/story.asp?NewsID=45165). UN News Centre. 14 June 2013. Archived (https://web.archive.org/web/20130823185917/http://www.un.org/apps/news/story.asp?NewsID=45165) from the original on 23 August 2013. Retrieved 16 June 2013.
129. "A model predicts that the world's populations will stop growing in 2050" (https://www.sciencedaily.com/releases/2013/04/130404072923.htm). ScienceDaily.com. 4 April 2013. Archived (https://web.archive.org/web/20200102113023/https://www.sciencedaily.com/releases/2013/04/130404072923.htm) from the original on 2 January 2020. Retrieved 3 June 2013.
130. Carrington, Damien (18 September 2014). "World population to hit 12bn in 2100 – with 70% chance of continuous rise" (https://www.theguardian.com/environment/2014/sep/18/world-population-new-study-11bn-2100). *The Guardian*. Archived (https://web.archive.org/web/20140920203432/http://www.theguardian.com/environment/2014/sep/18/world-population-new-study-11bn-2100) from the original on 20 September 2014. Retrieved 21 September 2014.
131. Gerland, P.; Raftery, A. E.; Ev Ikova, H.; Li, N.; Gu, D.; Spoorenberg, T.; Alkema, L.; Fosdick, B. K.; Chunn, J.; Lalic, N.; Bay, G.; Buettner, T.; Heilig, G. K.; Wilmoth, J. (14 September 2014). "World population stabilization unlikely this century" (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4230924). *Science*. AAAS. **346** (6206): 234–7. Bibcode:2014Sci...346..234G (https://ui.adsabs.harvard.edu/abs/2014Sci...346..234G). doi:10.1126/science.1257469 (https://doi.org/10.1126%2Fscience.1257469). ISSN 1095-9203 (https://www.worldcat.org/issn/1095-9203). PMC 4230924 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4230924). PMID 25301627 (https://pubmed.ncbi.nlm.nih.gov/25301627).
132. "World Population Prospects 2019: Highlights" (https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf) (PDF). Archived (https://web.archive.org/web/20190703142439/https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf) (PDF) from the original on 3 July 2019. Retrieved 8 July 2019.
133. Silk, John (21 December 2019). "World's population to hit 7.75 billion in 2019" (https://www.dw.com/en/worlds-population-to-hit-775-billion-in-2019/a-51758905). Deutsche Welle. Retrieved 17 July 2020.
134. "World population in 2100 could be 2 billion below UN forecasts, study suggests" (https://www.theguardian.com/world/2020/jul/15/world-population-in-2100-could-be-2-billion-below-un-forecasts-study-suggests). *The Guardian*. 15 July 2020. Retrieved 15 July 2020.
135. Stokstad, Erik (5 May 2019). "Landmark analysis documents the alarming global decline of nature" (https://www.science.org/content/article/landmark-analysis-documents-alarming-global-decline-nature). *Science*. AAAS. Retrieved 19 July 2020. "Driving these threats are the growing human population, which has doubled since 1970 to 7.6 billion, and consumption. (Per capita of use of materials is up 15% over the past 5 decades.)"
136. Crist, Eileen; Ripple, William J.; Ehrlich, Paul R.; Rees, William E.; Wolf, Christopher (2022). "Scientists' warning on population" (https://scientistswarning.forestry.oregonstate.edu/sites/default/files/Crist2022.pdf) (PDF). *Science of the Total Environment*. **845**: 157166. Bibcode:2022ScTEn.845o7166C (https://ui.adsabs.harvard.edu/abs/2022ScTEn.845o7166C). doi:10.1016/j.scitotenv.2022.157166 (https://doi.org/10.1016%2Fj.scitotenv.2022.157166). PMID 35803428 (https://pubmed.ncbi.nlm.nih.gov/35803428). S2CID 250387801 (https://api.semanticscholar.org/CorpusID:250387801).
137. Peter P. Rogers; Kazi F. Jalal & John A. Boyd (2008). *An Introduction To Sustainable Development* (https://books.google.com/books?id=GZ4Pvk0LVQMC). p. 53. ISBN 978-1849770477.
138. "Overpopulation's Real Victim Will Be the Environment" (https://web.archive.org/web/20130218180534/http://www.time.com/time/specials/packages/article/0,28804,2097720_2097782_2097814,00.html). *Time*. 26 October 2011. Archived from the original (http://www.time.com/time/specials/packages/article/0,28804,2097720_2097782_2097814,00.html) on 18 February 2013. Retrieved 18 February 2013.
139. Zehner, Ozzie (2012). *Green Illusions* (http://greenillusions.org). Lincoln and London: University of Nebraska Press. pp. 187–331. Archived (https://web.archive.org/web/20191129202344/http://www.greenillusions.org/) from the original on 29 November 2019. Retrieved 10 April 2020.
140. "World Population Prospects: The 2019 Revision" (https://population.un.org/wpp/Download/Files/1_Indicators%20(Standard)/EXCEL_FILES/1_Population/WPP2019_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.xlsx) (XLS). Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. June 2019. Retrieved 8 July 2019.
141. "World Population – Total Midyear Population for the World: 1950–2050" (https://www.census.gov/population/international/data/worldpop/table_population.php). Census.gov. July 2015. Archived (https://web.archive.org/web/20170521041303/https://www.census.gov/population/international/data/worldpop/table_population.php) from the original on 21 May 2017. Retrieved 7 March 2016.
142. Sebastien von Hoerner (1975). "Population Explosion and Interstellar Expansion". *Journal of the British Interplanetary Society*. **28** (28): 691–712. Bibcode:1975JBIS...28..691V (https://ui.adsabs.harvard.edu/abs/1975JBIS...28..691V).
143. *Introduction to Social Macrodynamics* (http://urss.ru/cgi-bin/db.pl?cp=&page=Book&id=37484&lang=en&blang=en&list=14). Archived (https://web.archive.org/web/20120210055935/http://urss.ru/cgi-bin/db.pl?cp=&lang=en&blang=en&list=14&page=Book&id=37484) 10 February 2012 at the Wayback Machine. Andrey Korotayev et al. For a rigorous mathematical analysis of this issue, see "A Compact Mathematical Model of the World System Economic and Demographic Growth, 1 CE – 1973 CE" (https://arxiv.org/abs/1206.0496). Archived (https://web.archive.org/web/20190217142233/https://arxiv.org/abs/1206.0496) 17 February 2019 at the Wayback Machine.
144. Kapitsa, Sergei P. (1996). "The phenomenological theory of world population growth" (https://web.archive.org/web/20090511041230/http://srs.dl.ac.uk/SPEAKERS/KAPITZA/Uspekhi_96.html). *Physics-Uspekhi*. **39** (1): 57–71. Bibcode:1996PhyU...39...57K (https://ui.adsabs.harvard.edu/abs/1996PhyU...39...57K). doi:10.1070/pu1996v039n01abeh000127 (https://doi.org/10.1070%2Fpu1996v039n01abeh000127). S2CID 250877833 (https://api.semanticscholar.org/CorpusID:250877833). Archived from the original (http://srs.dl.ac.uk/SPEAKERS/KAPITZA/Uspekhi_96.html) on 11 May 2009. Retrieved 26 July 2013.
145. Lutz, Wolfgang; Sanderson, Warren; Scherbov, Sergei (19 June 1997). "Doubling of world population unlikely" (http://pure.iiasa.ac.at/5299/1/RR-97-10.pdf) (PDF). *Nature*. **387** (6635): 803–805. Bibcode:1997Natur.387..803L (https://ui.adsabs.harvard.edu/abs/1997Natur.387..803L). doi:10.1038/42935 (https://doi.org/10.1038%2F42935). PMID 9194559 (https://pubmed.ncbi.nlm.nih.gov/9194559). S2CID 4306159 (https://api.semanticscholar.org/CorpusID:4306159).
146. "No way to stop human population growth?" (https://www.science.org/content/article/no-way-stop-human-population-growth). *www.science.org*.
147. Sergei P. Kapitza, "The phenomenological theory of world population growth", *Physics-Uspekhi* 39(1) 57–71 (1996), citing K. M. Weiss, *Human Biology* 56637 (1984) and N. Keyfitz, *Applied Mathematical Demography* (New York: Wiley, 1977).
148. "How Many People Have Ever Lived on Earth?" (https://www.prb.org/articles/how-many-people-have-ever-lived-on-earth/). *PRB*. Retrieved 1 November 2021.

149. Curtin, Ciara (1 March 2007). "Fact or Fiction?: Living People Outnumber the Dead" (http://www.sciam.com/article.cfm?id=fact-or-fiction-living-outnumber-dead). *Scientific American*. Scientific American, Inc. (published September 2007). **297** (3): 126. Bibcode:2007SciAm.297c.126C (https://ui.adsabs.harvard.edu/abs/2007SciAm.297c.126C). doi:10.1038/scientificamerican0907-126 (https://doi.org/10.1038%2Fscientificamerican0907-126). PMID 17784634 (https://pubmed.ncbi.nlm.nih.gov/17784634). Retrieved 4 August 2008. *Note: text of paper publication slightly different from text of on-line publication*.
150. Haub, Carl (November–December 2002). "How Many People Have Ever Lived on Earth?" (http://www.prb.org/pdf/PT_novdec02.pdf) (PDF). *Population Today*. Population Reference Bureau. **30** (8): 3–4. Archived (https://web.archive.org/web/20110812104745/http://www.prb.org/pdf/PT_novdec02.pdf) (PDF) from the original on 12 August 2011. Retrieved 4 August 2008.
151. Haub, Carl (October 2011). "How Many People Have Ever Lived on Earth?" (https://web.archive.org/web/20130424014209/http://www.prb.org/Articles/2002/HowManyPeopleHaveEverLivedonEarth.aspx). Population Reference Bureau. Archived from the original (http://www.prb.org/Articles/2002/HowManyPeopleHaveEverLivedonEarth.aspx) on 24 April 2013. Retrieved 29 April 2013.
152. Kuhrt, A. (1995). *The Ancient Near East, c. 3000–330 BCE*. Vol. 2. London: Routledge. p. 695.

Sources

- This article incorporates public domain material (https://www.cia.gov/the-world-factbook/about/copyright-and-contributors/) from World Factbook (https://www.cia.gov/the-world-factbook/). CIA.

Further reading

- Cohen, Joel E. (1995). *How Many People Can the Earth Support?*. New York: W. W. Norton. ISBN 978-0-393-31495-3.
- "World Population Prospects, the 2012 Revision" (https://web.archive.org/web/20150816232627/http://esa.un.org/unpd/wpp/index.htm). United Nations Population Division. Retrieved 19 May 2014.
- "World Population Prospects, the 2010 Revision" (https://web.archive.org/web/20150816232627/http://esa.un.org/unpd/wpp/index.htm). United Nations Population Division. Retrieved 25 June 2013.
- "World Population History Graph" (https://web.archive.org/web/20150816232627/http://esa.un.org/unpd/wpp/index.htm) World population graph 10000 BC – AD 1950.
- "Symptoms of The Global Demographic Decline" (http://demographia.ru/eng/articles/index.html?idR=67&idArt=1815). Demographia.ru. Retrieved 25 June 2013.
- "World (https://www.cia.gov/the-world-factbook/countries/world/)". *The World Factbook*. US Central Intelligence Agency (CIA). Retrieved 6 November 2012.
- "The World in Balance" (https://www.pbs.org/wgbh/nova/transcripts/3108_worldbal.html) (transcript). Two-part PBS *Nova* episode on world population. 20 April 2004. Retrieved 19 July 2013.
- "The Environmental Politics of Population and Overpopulation" (https://berkeley.academia.edu/OzzieZehner/Papers/911571/The_Environmental_Politics_of_Population_and_Overpopulation/). University of California, Berkeley. 2012. Retrieved 19 July 2013.
- "Global population: Faces of the future" (https://www.economist.com/news/international/21579817-lot-more-people-faces-future). *The Economist*. 22 June 2013. Retrieved 25 June 2013.
- "Creating new life – and other ways to feed the world" (https://www.bbc.co.uk/news/science-environment-23253917). BBC News. 23 July 2013. Retrieved 23 July 2013.
- World Population Growth (https://ourworldindata.org/world-population-growth/) (Oct 2016), Esteban Ortiz-Ospina and Max Roser, OurWorldInData.org
- "Human population numbers as a function of food supply" (http://sacredlands.org/food_and_population.htm). Russel Hopfenberg (Duke University, Durham, NC), David Pimentel (Cornell University, Ithaca, NY).

External links

Organizations

- The Day of 6 Billion (http://www.unfpa.org/press/six-billion-growing-population-and-sustainable-development-will-population-issues-undermine) and 7 Billion (https://web.archive.org/web/20130718121104/http://7billionactions.org/) – Official homepages maintained by UNFPA
- Population Reference Bureau (http://www.prb.org/) – News and issues related to population
- Berlin Institute for Population and Development (http://www.berlin-institut.org/index.php?id=48)

Statistics and maps

- HiveGroup.com – World population statistics presented in a treemap interface (http://www.hivegroup.com/gallery/worldpop/)
- Win.tue.nl – World countries mapped by population size (http://www.win.tue.nl/~speckman/Cartograms/WorldCarto.html)

Population clocks

- U.S. and World Population Clock (US Census Bureau) (https://www.census.gov/popclock/)
- World Population Clock – Worldometer (https://www.worldometers.info/world-population/)