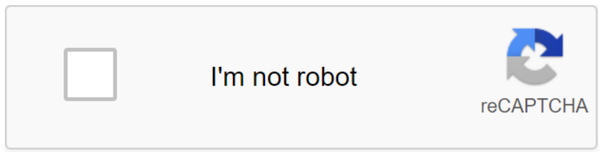

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Human population growth population puzzle answers

Chapter 19: Population and Community Ecology By the end of this section, you will be able to: Discuss how population growth can be exponentially Explain how humans have expanded the carrying capacity of their habitats Relate population growth and age structure to levels of economic development in different countries discuss the long-term effects of uncontrolled human population growth Concepts the dynamics of animal populations can be applied to human population growth. Humans are not unique in their ability to change the environment. For example, beaver dams change the flow environment where they are built. Humans, however, have the opportunity to change their environment to increase its carrying capacity, sometimes to the detriment of other species. The World's population and their use of resources are growing rapidly, to the extent that some are concerned about the ability of the Earth's environment to sustain its human population. Long-term exponential growth carries with it the potential risks of hunger, disease and large-scale death, as well as the social consequences of poverty, such as increased crime. Human technologies, and in particular the use of fossil fuel energy, have caused unprecedented changes in the Earth's environment, changing ecosystems to the point where some of them may be at risk of collapse. Changes on a global scale, including ozone depletion, desertification and the loss of topsoil, as well as global climate change, are caused by human activities. The world's population is now growing exponentially (Figure 1). Figure 1: Population growth since 1000 AD is exponential. The consequence of exponential growth rates is that the time it takes to add a certain number of people to the population is getting shorter. The figure shows that 123 years were needed to add 1 billion people between 1804 and 1930, but it took only 24 years to add two billion people between 1975 and 1999. This acceleration in growth is likely to begin to decline in the coming decades. Despite this, the population will continue to increase and the threat of overpopulation remains, especially as the damage to ecosystems and biodiversity reduces human ability to carry the planet. Figure 2: The time between adding every billion people to Earth decreases over time. (credit: modification of Ryan T. Kragun's work) Click on this interactive view of how human populations have changed over time. Humans are unique in their ability to change the environment in many ways. This ability is responsible for population growth because it resets the vector and overcomes density-dependent growth regulation. Much of this ability is related to human intelligence, and communication. People are building shelters to protect themselves from the elements and have developed developed and domesticated animals to increase their food supplies. In addition, people use language to bring this technology to new generations, allowing them to improve previous advances. Other factors for population growth are migration and public health. Humans originated in Africa, but since then we have migrated to almost all inhabited land on Earth, thereby increasing the area we colonized. Health, sanitation and the use of antibiotics and vaccines have reduced the ability of infectious diseases to limit population growth in developed countries. In the past, diseases such as the fourteenth-century bubonic plaque have taken 30 to 60 per cent of Europe's population and reduced the world's total population by one hundred million. Infectious diseases continue to have an impact on population growth. For example, life expectancy in sub-Saharan Africa, which increased from 1950 to 1990, began to decline after 1985, mainly as a result of HIV/AIDS deaths. The reduction in life expectancy from HIV/AIDS is estimated to have been 7 years in 2005.1 The decline in life expectancy is an indicator of higher mortality rates and leads to a decline in fertility. The main reason for the acceleration of growth for people over the past 200 years has been the decline in mortality as a result of the technological advances of the industrial age, the urbanization that supported these technologies, and especially the exploitation of energy in fossil fuels. Fossil fuels are responsible for a sharp increase in the resources available for population growth through agriculture (mechanization, pesticides and fertilizers) and the collection of wild populations. The age structure of the population is an important factor in population dynamics. The age structure is the proportion of the population of different age categories. Models that include age structure make it possible to better predict population growth, as well as the ability to link this growth to the level of economic development in the region. Countries with rapid growth have a pyramidal shape in their age chart, showing the predominance of young people, many of whom are of reproductive age (Figure 3). This trend is most common in underdeveloped countries where people will not live to old age because of less optimal living conditions and high birth rates. The age structures of areas with slow growth, including developed countries such as the United States, still have a pyramidal structure, but with far fewer young people and people of reproductive age and a greater proportion of older persons. In other developed countries, such as Italy, population growth is not zero. The age structure of these populations is more conical, with an even greater middle-aged and elderly people. Actual Factual indicators in different countries are shown in Figure 3, with the highest rates tending to be in the less economically developed countries of Africa and Asia. Art Link figure 3: Typical time structure figures are shown. The rapid growth chart narrows to the point of pointing out that the number of people quickly decreases with age. In the slow growth model, the number of people steadily declines with age. Stable population diagrams are rounded up from above, showing that the number of individuals in the age group is gradually decreasing and then increasing for the older part of the population. The age patterns for a rapidly growing, slow-growing and stable population are shown in stages from 1 to 3. What type of population change do you think is Stage 4? Identify the answer q869407 Show Response/reveal-response hidden answer a869407 Stage 4 represents a population that is shrinking. Figure 4: Percentage population growth rates in different countries are shown. Note that the highest growth occurs in the less economically developed countries of Africa and Asia. The long-term effects of exponential population growth Many gloomy predictions have been made about the world's population leading up to a major crisis called the demographic explosion. In the 1968 book The Bomb of the Population, biologist Dr. Paul R. Ehrlich wrote, The battle to feed all of humanity is over. In the 1970s, hundreds of millions of people would starve to death, despite any disaster programs being launched now. At the moment, nothing can prevent a significant increase in mortality in the world. 2 While many critics see this statement as an exaggeration, the laws of exponential population growth are still in place, and uncontrolled population growth cannot continue indefinitely. Efforts to moderate population control have led to the development of a one-child policy in China that penalizes urban couples who have more than one child. Due to the fact that some couples want to have a male heir, many Chinese couples still have more than one child. The effectiveness of this policy in limiting overall population growth is controversial, as is the policy itself. In addition, there is evidence that there has been infanticide among women in some rural areas of the country. Family planning education programmes in other countries have had a significant positive impact on limiting population growth and improving living standards. Despite population control policies, the population continues to grow. As a follow-up need to produce more and more food to feed our population, inequalities in access to food and other resources will continue The United Nations estimates that by 2100, the world's population could range from 6 billion (reduction) to 16 billion. There's no way to know, to know population growth will be moderate to the point where the crisis described by Dr. Ehrlich will be averted. Another consequence of population growth is the changes and degradation of the natural environment. Many countries are trying to reduce human impacts on climate change by limiting greenhouse gas emissions. However, the global climate change treaty remains elusive, and many underdeveloped countries trying to improve their economic situation may be less likely to accept such provisions without compensation if it means slowing their economic development. In addition, in some developed countries, including the United States, the role of human action in climate change has become a much-discussed socio-political issue. In this way, we are entering the future with considerable uncertainty about our ability to curb human population growth and protect our environment to maintain the carrying capacity of the human race. Visit this website and select Running a Movie for Animation discussing the global impact of population growth. The population of the Earth is growing exponentially. People have increased their capacity through technology, urbanization and the use of fossil fuel energy. The age structure of the population allows us to predict population growth. Uncontrolled population growth can have serious long-term consequences for human well-being and the earth's ecosystems. A country with zero population growth is likely to be. in Africa, Asia is economically underdeveloped (reveal-answer q'482810 (Show Answer)/reveal-answer (hidden answer a'482810) economically developed underdeveloped countries with zero population growth rates in Europe (identify-response q'830037 (Show Answer)/reveal-answer (hidden answer a830037 (2/hidden answer) Which of the following is not a way to increase a person's carrier capacity to the environment? farming using large amounts of domestication of natural animal resources using the language identify-response q858600show answer/reveal-responsehidden answer a858600 2/hidden answer Describe age Fast-growing countries have a significant proportion of the population at reproductive age or younger. , a large proportion of older people are concentrated in zero-growth countries, and the lowest proportion is most common in fast-growing countries. Footnotes 1 Danny Dorling, Mary Shaw and George Davey Smith, Global Life Inequality AIDS, BMJ 332, No 7542 (March 2006): 662-664, doi: 10.1136/bmj.332.7542.662. 2 Paul R. Erlich, prologue to Population bomb, (1968; repr., New York: Ballantine, 1970). Age-sharing proportion of the population in each age class is a one-child policy policy in China to limit population growth by limiting urban couples to have only one child or face a fine in the form of a fine