

COLUMBUS STATE COMMUNITY COLLEGE

ESSH 1101 - Introduction to Environmental Science, Safety & Health

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Homework 2 – Human Population Dynamics

Environmental Science, 16th Ed. by Tyler and Spoolman - Chapter 6

1. What was the world's peak *human population growth rate* (as a percentage), and what was the year of this peak rate? What is the approximate current human population growth rate?

The **world's peak human growth rate percentage** was 2.2% in the mid 1960's (Figure 6.2). The **approximate current human population growth rate** is 1.21%

2. List three factors that account for the rapid increase in the world's human population over the past 200 years.

Three factors that account for the rapid increase in the world's human population over the past 200 years are:

- The rate of population growth
- Uneven distribution of population growth
- Population migration from rural to urban environments

3. Summarize (in one sentence) Thomas Malthus' prediction regarding human populations. (The answer is not in the textbook, and you will need to research the answer.)

Thomas Malthus predicted that an exponentially growing population would self-correct through war, famine, and disease and to avoid war and famine people should enact deliberate population control measures like birth control and celibacy.

4. If the United States' fertility has remained at below replacement levels since 1972, why is the population of the U.S. still increasing?

The population of the United States is still increasing despite a low total fertility rate (TFR) because there have been more births than deaths and the influx of legal immigrants and refugees.

5. Why is it important to consider the *age structure* of a human population?

Age structure is important when determining the human population because it provides an important factor for determining the total fertility rate (TFR) and whether or not the population is increasing or decreasing.

6. What are four different problems related to rapid population decline due to an aging population?

Four different problems associated with rapid population decline due to aging are:

- Threaten economic growth
- Produce labor shortages
- Less government revenue (taxes/wages)
- Less entrepreneurship

7. Since some Western European countries are experiencing zero population growth, what stage of *demographic transition* are they likely in?

Western European countries are currently experiencing zero population growth because birth and death rates are nearly equal. This demographic transition **stage is known as the “Stage 4 Postindustrial” stage.**

8. Identify and describe two different strategies for slowing the human population growth of a country.

Two different strategies for slowing human population growth are:

- Reducing poverty – by reducing poverty and increasing incomes, the population rise tends to grow more slowly
- Family planning – education and clinical service programs help families and couples choose how many children to have and when via education, birth control, birth spacing, and health care for pregnant women and infants

9. List four undesirable effects of urban sprawl.

Four undesirable effects of urban sprawl are:

- Land and Biodiversity → loss of cropland, forests, grasslands, wetlands, etc.
- Water → pollution of surface water and aquifer (drinking water sources)
- Energy, Air, and Climate → increased energy use, waste, and general pollution
- Economic → downtown business decline, unemployment/poverty

10. Define the term *smart growth* and explain its benefits.

Smart growth is a set of policies and tools that encourage more environmentally sustainable urban development. In theory, smart growth would entail the manipulation of zoning laws and other urban planning tools to discourage sprawl, reduce traffic, and protect ecology all in an effort to channel growth to reduce the suburbs ecological footprint.