Human Geography

Central Connecticut State University
Geography Department

Lecturer
Donald J. Poland, MS, AICP

Key Concepts in Urban Geography

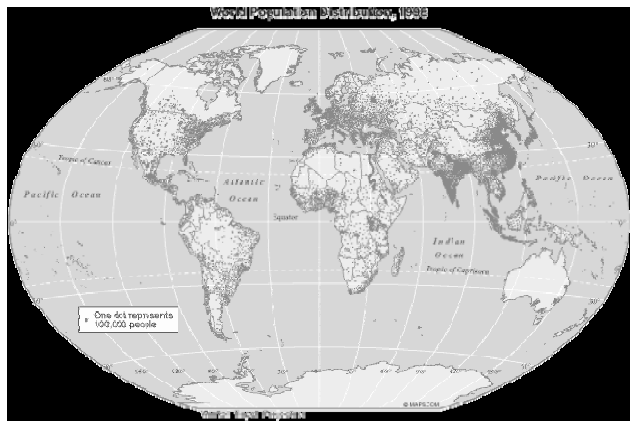
Alan Latham, Derek McCormack, Kim McNamara, and Donald McNeil
SAGE Publications, Inc. Thousand Oaks, California 91320

Chapter 1. Location and Movement

Chapter 2. Population
Overview

- Distribution of World Population
- Population Statistics
- Population Control
- Population Pyramids
- Demographic Transition Theory
- Overpopulation (Malthus and Neo-Malthusians)

Chapter 2. Population
World Population Distribution



Chapter 2. Population
Density

- **Arithmetic Density** – the total number of people per a unit of land area. U.S. = 76/mi^2; NYC=1,000,000/mi^2; Australia = 7/mi^2
- **Physiological Density** – the total number of people per a unit of arable (farmable) land.

Chapter 2. Population
Overpopulation

- Overpopulation: is when there are too many people relative to available resources. Simple density is not the determinant. May be a value judgment.

Chapter 2. Population
Population Distribution

- Population Concentrations
  - East Asia
  - South Asia
  - South East Asia
  - Europe
  - North America
- Sparsely Populated Regions
  - Dry lands
  - Wet lands
  - Cold lands
  - High lands

Chapter 2. Population
World and Country Population Totals

Distribution and Structure: 3/4 of people live on 5% of earth's surface!

Total: 6.8 billion on planet as of March 5, 2010 (US Census Bureau)

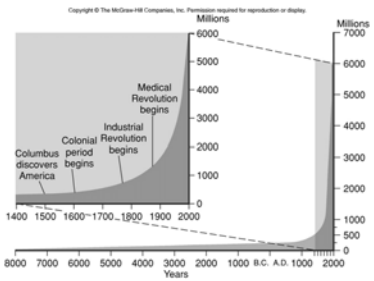
Five most populous regions and countries

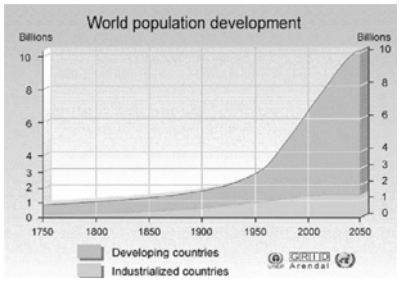
REGION	POPULATION	COUNTRY	POPULATION
• East Asia	1.6 billion	China	1.3 billion
• South Asia	1.5 billion	India	1.1 billion
• Europe	1 billion	U.S.	300 million
• SE Asia	600 million	Indonesia	250 million
• E N. America & Canada	275 million	Brazil	188 million

Chapter 2. Population
Human Population Growth

How many people will the planet eventually support?

The U.S. Census Bureau and the United Nations Statistics Division both agree that world population will level off somewhere between 9 and 11 billion people and then start to fall.





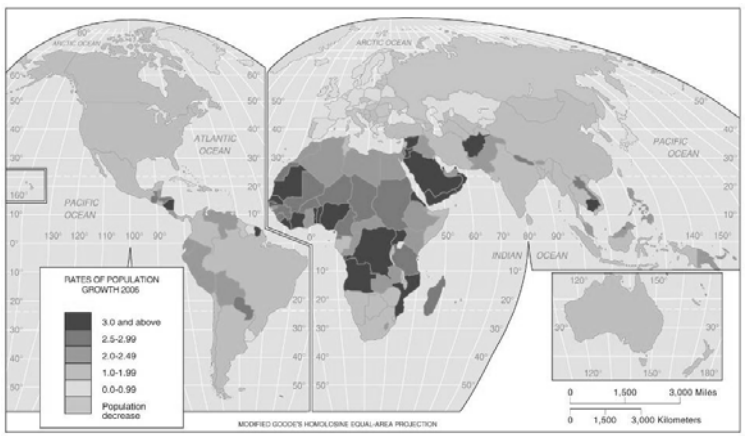
Chapter 2. Population
Definitions and Characteristics

Crude Birth Rate: Referred to as the birth rate, is the annual number of live births per 1000 population. It is crude because it relates births to total population with no regards for the age or sex of population. Birth rate is strongly influenced by the age and sex structure of population, by customs and family size expectations, and population policies. Birth rates over 30/1000 considered high, 19 to 30/1000 transitional, and below 18/1000 considered low. Highs of 45 to 50/1000 in West African nations and lows of 9 or 10/1000 in many European nations.

Crude Death Rates: Aka the **mortality rate**, is the annual number of deaths per 1000 population. High death rates were once associated with developing nations and low death rates with industrialized nations. However, that has changed since WWII. Infant mortality rates and life expectancies improved as antibiotics, vaccinations, and pesticides to treat diseases and control disease carriers were made available in almost all parts of the world and as increased attention was paid to funding improvements in urban and rural sanitary facilities and safe water supplies.

Natural Increase: The percentage growth of a population in a year, computed as the crude birth rate minus the crude death rate.

Chapter 2. Population
Rate of Natural Increase



Chapter 2. Population
Doubling Time

- How long will it take for a population of a given area to double in size?
- Doubling time assumes the population will grow at a given annual rate.
- Approximated by dividing the annual rate of population increase into 70.

Source: National Geographic Magazine

Doubling Time

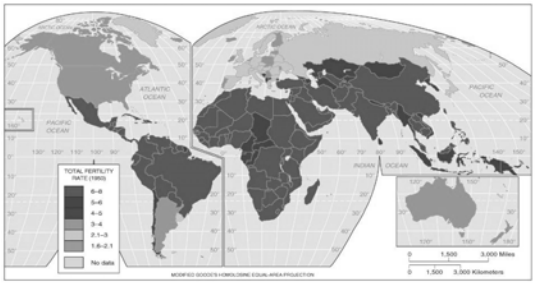
- World = 50
- U.S. = 35
- MDC = 550
- LDC = 40
- Honduras = 22
- Denmark = 700
- Russia = never?

Example: Bangladesh
70 / R.N.I. => 70/2.09 = 33.5 years

Bangladesh with a population of 144.3 million people in 2005 will have approximately 288.6 million people in 2038, if the population continues to grow at current rates.

Chapter 2. Population
Total Fertility Rate

Total Fertility Rate: is the rate and probability of reproduction among fertile females, the only segment of population bearing children. The total fertility rate tells us the average number of children that would be born to each women if, during her childbearing years, she bore children at the current year's rate for women that age. Rates of 2.1 to 2.3 to maintain/replace for the existing population.



(a)

Chapter 2. Population

Total Fertility Rate - the average number of children a women will have in her childbearing years. This rate varies from just over 1 (Japan, Italy) to around 7 (Niger, Mali). The U.S. rate is 2.

2.1 is generally regarded as the replacement rate (the rate at which a population neither grows nor shrinks) in the developed world. In less developed countries this rate should be higher to account for so many children not reaching childbearing age.

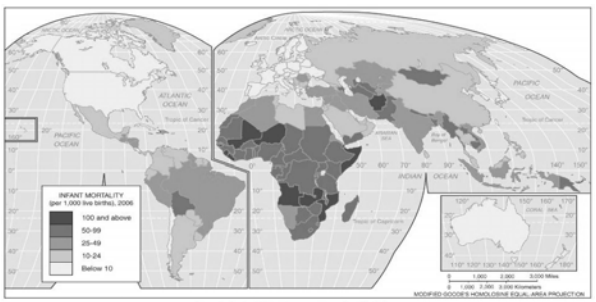
Palestinian Territories	Fertility Rate
1975-1980	7.39
1980-1985	7.00
1985-1990	6.43
1990-1995	6.46
1995-2000	5.99
2000-2005	5.57

U.K.	Fertility Rate
1975-1980	1.72
1980-1985	1.80
1985-1990	1.81
1990-1995	1.78
1995-2000	1.70
2000-2005	1.66

Africa	Fertility Rate
1975-1980	6.60
1980-1985	6.45
1985-1990	6.11
1990-1995	5.67
1995-2000	5.26
2000-2005	4.97

Chapter 2. Population
Infant Mortality Rate

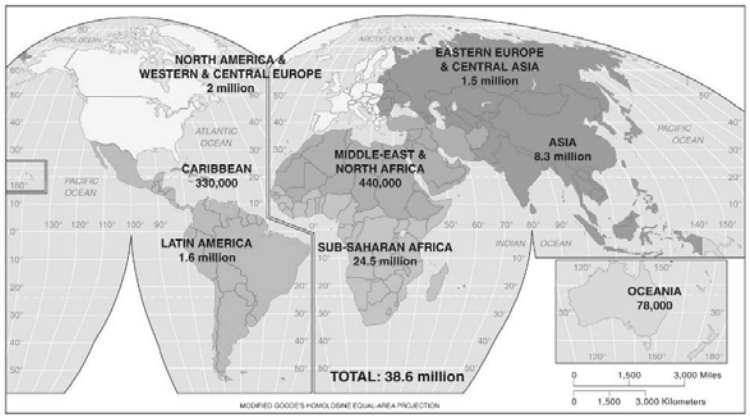
Infant Mortality Rate: the number of deaths of children under the age of one *per thousand live births.* The rate ranges from as low as 3 (Singapore, Iceland) to as much as 150 (Sierra Leone, Afghanistan). The U.S. rate is just over 6. High *infant mortality* tends to result in higher fertility rates as families seek "insurance" for the loss of children.



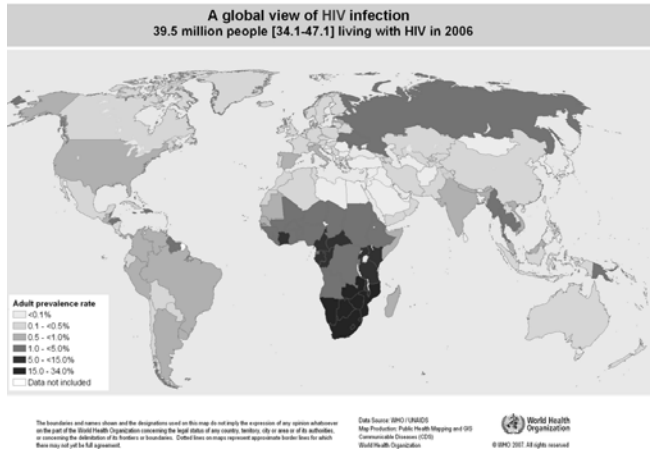
Chapter 2. Population
World Death Rates

- Epidemiological Transition is the shift from infectious to degenerative diseases that occurs with development.
- Infectious diseases (developing world)
  - HIV/AIDS
  - SARS
  - Malaria
  - Cholera
- Degenerative diseases (developed countries)
  - Obesity
  - Tobacco use

Chapter 2. Population
Adults and Children Living with HIV/AIDS (2006)

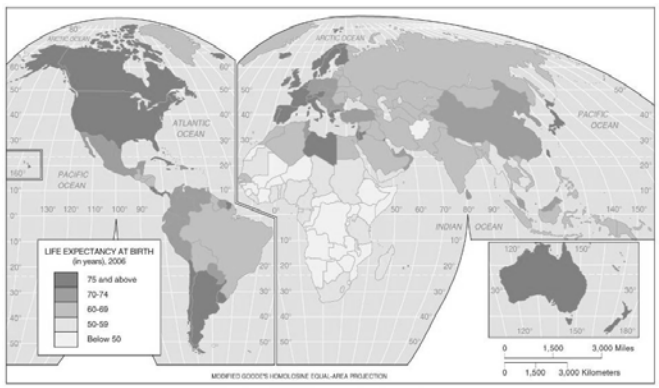


Chapter 2. Population
A Global view of HIV Infection



Chapter 2. Population
Life Expectancy

- Rapid increase throughout the world
- Infant mortality rate declining in most countries
- Antibiotics/immunization



Chapter 2. Population
New Influences on Birth Rates

- Family planning programs
- Contraceptive technology
- Role of mass media
  - Radio/TV Soap Operas ("Twende na Wakati" in 1990s Tanzania, which means "Let's Go with the Times")

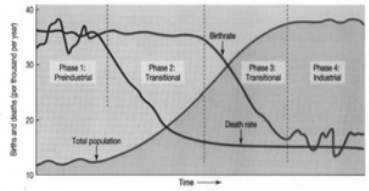
Government Billboard, Indonesia

Chapter 2. Population
Population Controls

- Obstacles
  - Manufacture/distribution expense
  - Religion
  - Low female status
    - Many studies show that fastest way to reduce fertility rate is to encourage more women to get educated
  - Preference for male children

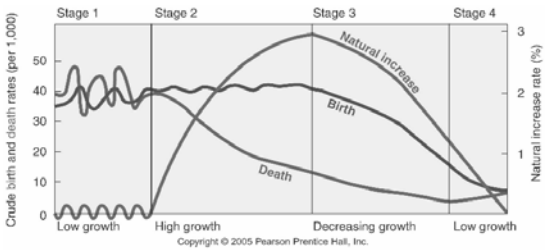
Chapter 2. Population
Demographic Transition Model

- **Stage one (preindustrial/pre-agricultural)**
  - Crude birth/death rate high
  - Fragile, but stable, population
- **Stage two (improved agriculture and medicine)**
  - Lower death rates
  - Infant mortality rate falls
  - Natural increase very high
- **Stage three (attitudes change)**
  - Indicative of richer developed countries
  - Higher standards of living/education
  - Crude birth rate finally falls
- **Stage four**
  - Crude birth/death rates low
  - Population stable
  - Populations aging



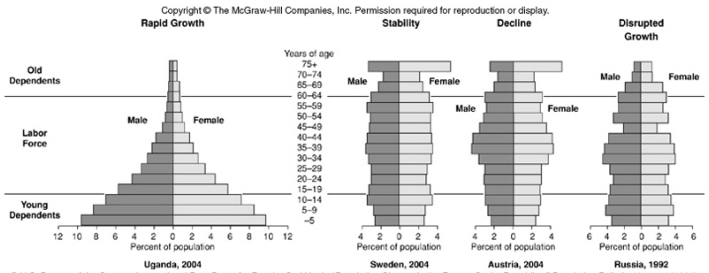
Chapter 2. Population
Problems with the Demographic Transition Model

- based on European experience, assumes all countries will progress to complete industrialization
- many countries reducing growth rate dramatically without increase in wealth – TV and family planning seem to be at work
- on the other hand, some countries "stuck" in stage 2 or stage 3, particularly in Sub-Saharan Africa and Middle East



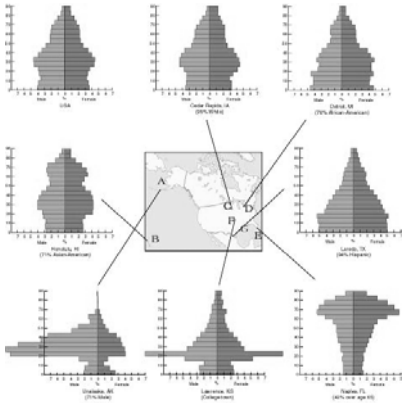
Chapter 2. Population
Population Pyramids

- Rapid growth
- Stability
- Decline
- Disrupted growth

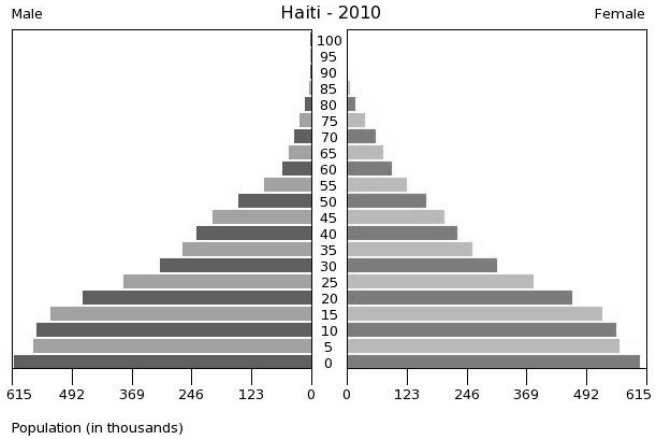


© U.S. Bureau of the Census, International Data Base; for Russia: Carl Haub, "Population Change in the Former Soviet Republics," Population Bulletin 49, no. 4 (1994).

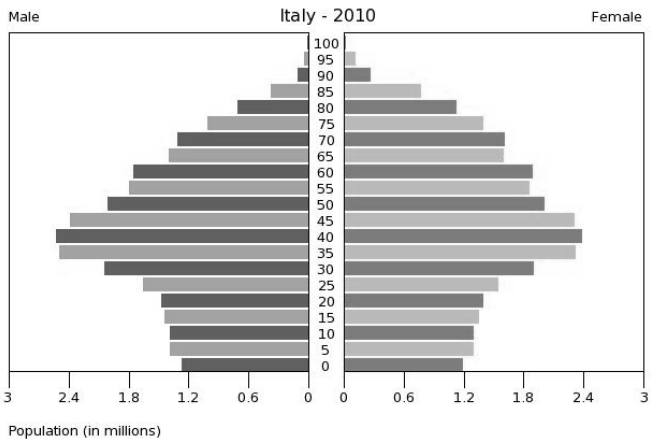
Chapter 2. Population
Population Pyramids



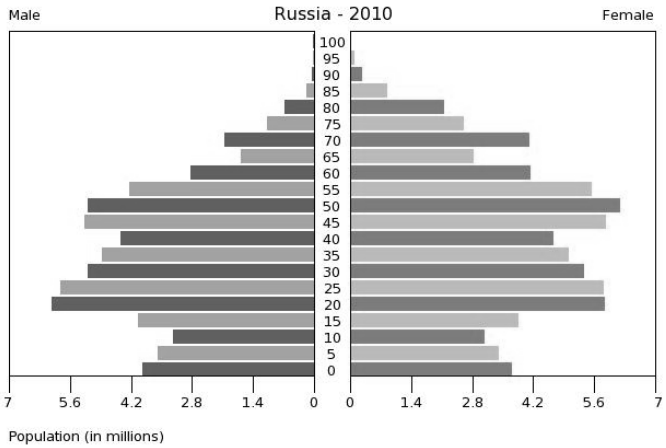
Chapter 2. Population
Population Pyramids



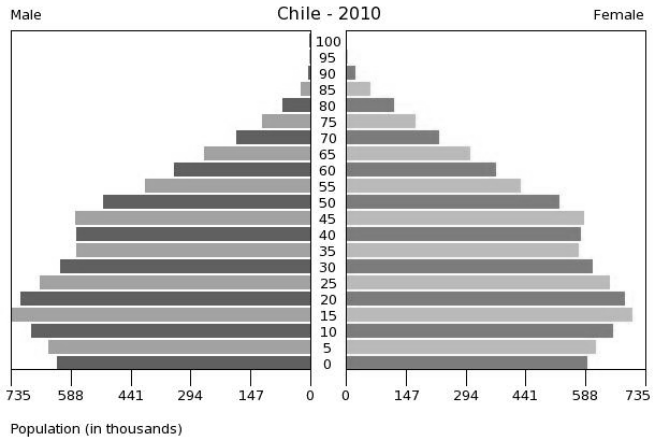
Chapter 2. Population
Population Pyramids



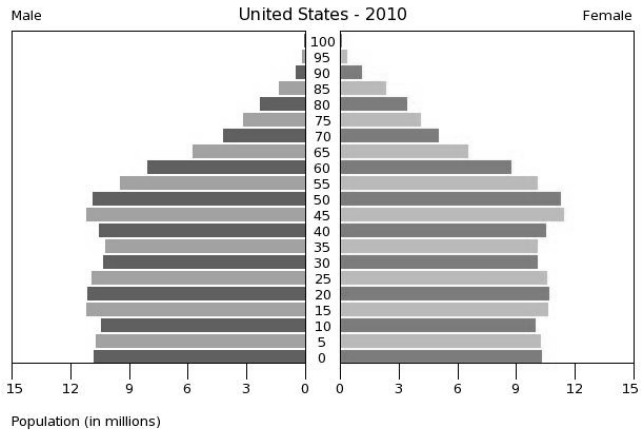
Chapter 2. Population
Population Pyramids



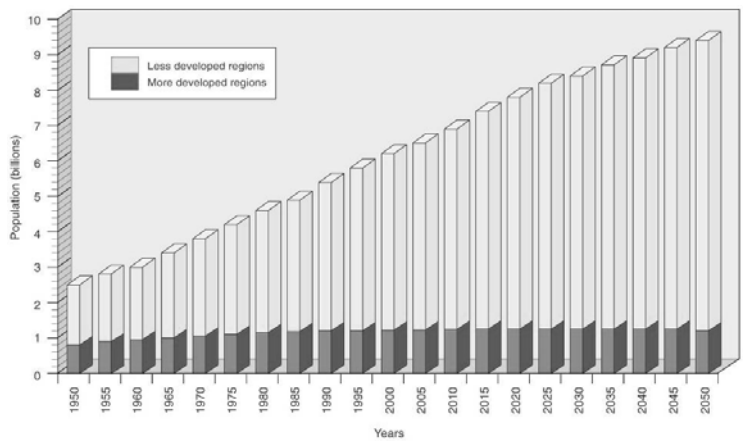
Chapter 2. Population
Population Pyramids



Chapter 2. Population
Population Pyramids



Chapter 2. Population
Population Shift



Chapter 2. Population
An Aging World

Discussion (pair-share)

What are the implications of an aging population for:

1.The U.S. housing market?

2.Social security and pension funds?

3.Public financing of colleges and universities?

4.Global migration flows?

Chapter 2. Population
Overpopulation

- When consumption of natural resources by people outstrip the ability of a natural region to replace those natural resources.

Chapter 2. Population
Jean Antoine Condorcet (1743-1794)

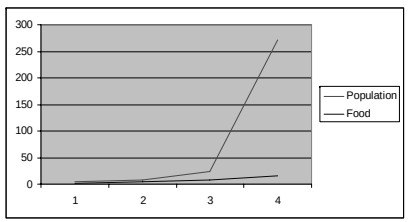
- predicted that innovation, resulting increased wealth, and choice would provide food and resources in the future and lead to fewer children per family
- believed that society was perfectible

Chapter 2. Population
Thomas Malthus on Population

- Malthus, responding to Condorcet, predicted population would outrun food supply, leading to a decrease in food per person.

Assumptions

- Populations grow exponentially.
- Food supply grows arithmetically.
- Food shortages and chaos inevitable.



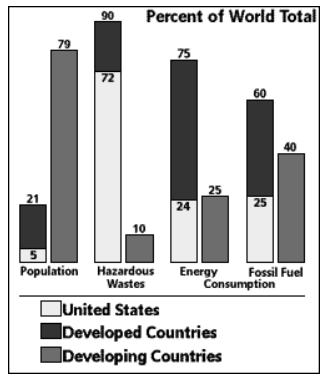
Chapter 2. Population
Technology, Energy Consumption, and Environmental Impacts

There has been a dramatic increase in:

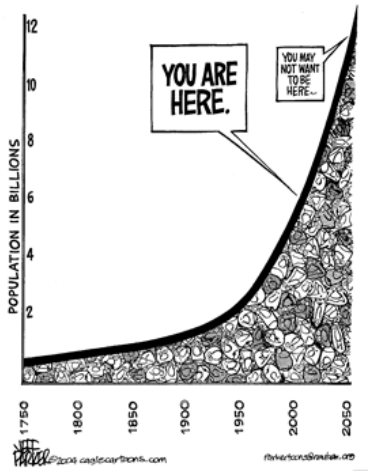
•individual energy use over time: 3,000 kcal/person - 300,000 kcal/person

•the power of technology to change the environment: think stone axe versus bulldozer versus atomic bomb.

•The scope and severity of environmental impacts.



Chapter 2. Population
The End



Chapter 2. Population

- Distribution of World Population
- Population Statistics
- Population Control
- Population Pyramids
- Demographic Transition Theory
- Overpopulation (Malthus and Neo-Malthusians